As confidentially submitted to the Securities and Exchange Commission on December 3, 2021.

This draft registration statement has not been publicly filed with the
Securities and Exchange Commission and all information herein remains strictly confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Tempus Labs, Inc.
(Exact name of Registrant as specified in its charter)

Delaware	7370	47-4903308
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

600 West Chicago Avenue, Suite 510
Chicago, Illinois 60654
(800) 976-5448
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Eric Lefkofsky
Chief Executive Officer, Founder and Chairman
Tempus Labs, Inc.
600 West Chicago Avenue, Suite 510
Chicago, Illinois 60654
(800) 976-5448
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Nicole Brookshire Christina T. Roupas Richard Segal Courtney M.W. Tygesson Cooley LLP 444 West Lake Street, Suite 1700 Chicago, Illinois 60606	Erik Phelps Executive Vice President and Chief Administrative and Legal Officer Tempus Labs, Inc. 600 West Chicago Avenue, Suite 510 Chicago, Illinois 60654 (800) 976-5448	Alan F. Denenberg Yasin Keshvargar Davis Polk & Wardwell LLP 1600 El Camino Real Menlo Park, California 94025 (650) 752-2000

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☐
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee
Class A common stock, par value $0.0001 per share	$	$

(1) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(o) of the Securities Act of 1933, as amended.
(2) Includes the aggregate offering price of additional shares that the underwriters have the option to purchase to cover over-allotments, if any.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant will file a further amendment which specifically states that this Registration Statement will thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement will become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS (Subject to Completion)
Issued , 2021

Shares

TEMPUS

CLASS A COMMON STOCK

This is an initial public offering of shares of Class A common stock of Tempus Labs, Inc. We are offering shares of our Class A common stock.

Prior to this offering, there has been no public market for our Class A common stock. It is currently estimated that the initial public offering price will be between $ and $ per share.

The selling stockholders identified in this prospectus have granted the underwriters the option to purchase up to an additional shares of Class A common stock on the same terms as set forth above within 30 days from the date of this prospectus to cover over-allotments, if any. We will not receive any proceeds from any sale of shares by the selling stockholders.

Following this offering, we will have two classes of common stock: Class A common stock and Class B common stock. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting, conversion and transfer rights. Each share of Class A common stock is entitled to one vote. Each share of Class B common stock is entitled to votes and is convertible at any time into one share of Class A common stock. In addition, all shares of Class B common stock will automatically convert into shares of Class A common stock in certain circumstances, including on the date that our Chief Executive Officer, Founder and Chairman (i) ceases to serve as an executive officer or member of our Board of Directors or (ii) ceases to own, together with his controlled entities, at least shares of our Class B common stock (as adjusted for stock splits, stock dividends, combinations, subdivisions and recapitalizations). See the section titled "Description of Capital Stock—Class A Common Stock and Class B Common Stock." Our Chief Executive Officer, Founder and Chairman will beneficially own 100% of our outstanding Class B common stock and will beneficially own approximately % of the voting power of our outstanding capital stock immediately following this offering, assuming no exercise of the underwriters' option to purchase additional shares of Class A common stock to cover over-allotments, if any. As a result, we will be a "controlled company" within the meaning of the corporate governance rules of the Nasdaq stock market, however, we have elected not to take advantage of the controlled company exemption.

We intend to apply to list our Class A common stock on the Nasdaq Market under the symbol "TIME."

We are an "emerging growth company" as defined under the federal securities laws and, as such, we have elected to comply with certain reduced reporting requirements for this prospectus and may elect to do so in future filings.

Investing in our Class A common stock involves risks. See "Risk Factors" beginning on page 23.

	Per Share	***Total***
Initial public offering price	*$*	*$*
Underwriting discounts and commissions (1)	*$*	*$*
Proceeds, before expenses, to Tempus Labs, Inc.	*$*	*$*
Proceeds, before expenses, to the selling stockholders	*$*	*$*

(1) See "Underwriting" for additional information regarding compensation payable to the underwriters.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of Class A common stock to purchasers on , 2021.

MORGAN STANLEY *J.P. MORGAN* *ALLEN & COMPANY LLC*
BofA SECURITIES *COWEN*

Prospectus dated , 2021.

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Neither we, the selling stockholders, nor any of the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. Neither we, the selling stockholders, nor any of the underwriters take responsibility for, or can provide any assurance as to the reliability of, any other information that others may give you. We, the selling stockholders and the underwriters are offering to sell, and seeking offers to buy, shares of our Class A common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our Class A common stock.

For investors outside the United States: neither we, the selling stockholders, nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of our Class A common stock and the distribution of this prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our Class A common stock. You should read this entire prospectus carefully, including the sections titled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this prospectus, before making an investment decision. Unless the context otherwise requires, all references in this prospectus to "Tempus," the "company," "we," "our," "us" or similar terms refer to Tempus Labs, Inc. and its subsidiaries.

Overview

We endeavor to unlock the true power of precision medicine by creating Intelligent Diagnostics through the practical application of artificial intelligence, or AI, in healthcare. Intelligent Diagnostics use artificial intelligence to make laboratory tests more accurate, tailored, and personal. Unlike traditional laboratory tests, an Intelligent Diagnostic contextualizes the laboratory test result to a specific patient, by incorporating an individual's longitudinal clinical data into the result.

To accomplish this, we built both a technology platform to free healthcare data from silos and an operating system to make this data useful. We refer to the combination of those as the Tempus Platform. Our proprietary technology has allowed us to amass what we consider to be one of the largest libraries of clinical and molecular oncology data in the world. Our goal is to embed AI throughout every aspect of diagnostic testing to enable physicians and researchers to make personalized, data-driven decisions that improve patient care. We started in oncology in 2016 and have expanded into neuropsychology, infectious diseases, and cardiology, with aspirations to eventually be in all major disease areas.

We make tests intelligent by connecting laboratory results to a patient's own clinical data, thereby personalizing the results. Our novel insight was realizing that all laboratory test results, genomic or otherwise, could be contextualized for a specific patient based upon that patient's unique characteristics, and technology could therefore guide therapy selection and treatment decisions to allow each patient to progress on their own unique path. The drugs recommended, the clinical trials explored, the care pathways evaluated, the adverse events considered—all have the potential to be refined and enhanced when test results are connected to a patient's personal profile, enabling the right patient to be routed to the right therapy at the right time.

The ability to deploy AI in precision medicine at scale has only recently become possible. Advances in cloud computing, imaging technologies, and low-cost molecular profiling, along with the digitization of vast amounts of healthcare data, have created a landscape that we believe is finally ripe for AI. However, despite an increase in the availability of healthcare data, physicians and researchers are largely unable today to leverage this data to improve patient care. The vast majority of healthcare data remains disconnected and lacks harmonization and structure. Traditional diagnostic tests are typically based only on a single data modality, such as a blood-based biomarker or a genomic mutation, and do not connect and integrate other forms of relevant clinical data, such as outcomes, or adverse events, or pathology results, which are essential for many clinical decisions.

In order to bring AI to healthcare at scale, we began by rebuilding the foundation of how data flows in and out of healthcare institutions. We established data pipes, going to and from providers, to allow for the free exchange of data between physicians, who interpret data, and diagnostic and life science companies, who provide data. Without this capability, we believe that data could continue to accumulate without impacting patient care. Tempus has built this integrated Platform, and we are now deploying it at scale in oncology, and other diseases, in the United States. Our Platform connects multiple stakeholders within the larger healthcare ecosystem, often in

near real time, to assemble and integrate the data we collect, thereby providing an opportunity for physicians to make data-driven decisions in the clinic and for researchers to discover and develop therapeutics. We aim to help doctors find the best therapies for their patients, help pharmaceutical and biotechnology companies make the best drugs possible, and enable patients to access emerging therapies and clinical trials when appropriate.

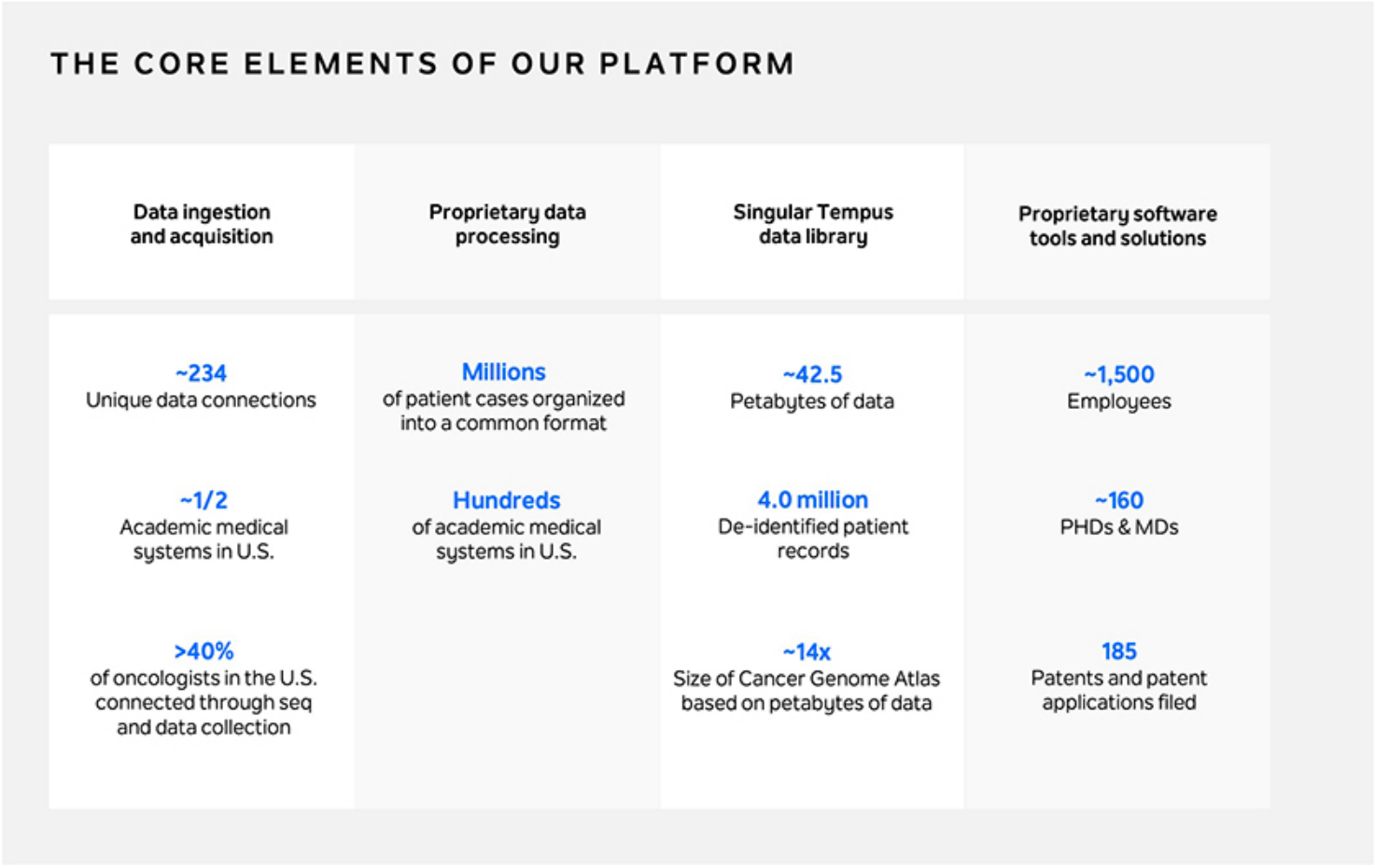
Tempus is a technology company focused on healthcare that straddles two converging worlds. We strive to combine deep healthcare expertise, providing next-generation diagnostics across multiple disease areas, with leading technology capabilities, harnessing the power of data and analytics to help personalize medicine. Unlike traditional diagnostic labs, we can incorporate unique patient information, such as clinical, molecular, and imaging data, with the goal of making our tests more intelligent and our results more insightful. Unlike technology companies, we are deeply rooted in clinical care delivery as one of the largest sequencers of patients in the United States. Straddling both worlds is advantageous as we believe Intelligent Diagnostics represent the future of precision medicine, informing more personalized and data-driven therapy selection and development.

Our Platform includes proprietary software and dedicated data pipelines that create a network of healthcare institutions through approximately 234 unique data connections, many of which supply us with complex multimodal data in near real time, across approximately 1,034 healthcare institutions that order our products and services. Healthcare institutions supply us with this data in our capacity as a covered entity (for example, when we provide Next Generation Sequencing, or NGS, services on behalf of a patient), or as a business associate (for example, when we provide clinical trial matching services or data de-identification and structuring services). In addition to the data we receive in these capacities, we currently have a limited number of paid license agreements through which we acquire de-identified data directly from healthcare associations or institutions. We integrate this data into a unified multimodal database through which we offer numerous analytical and decision support capabilities to our customers. We establish dedicated and integrated data connections with healthcare institutions to enhance the information we provide in our clinical reports, and to increase the effectiveness of our clinical trial matching services. In certain circumstances, we may cover the actual direct costs associated with the technical integrations needed to create a data connection.

We have launched a suite of different products derived from our Platform, which have gained significant traction over the past five years. In 2020 alone, we performed more than one million diagnostic laboratory tests, and our clinical NGS volume in oncology rose from approximately 31,000 samples in 2018 to approximately 104,000 in 2020. In the nine months ended September 30, 2021, we sequenced approximately 112,408 samples. Through September 30, 2021 our offerings have been used by more than 5,000 oncologists across hundreds of provider networks, including more than half of all academic medical centers in the United States. Our database has grown to be approximately fourteen times the size of The Cancer Genome Atlas, the largest public genomic dataset that we know of in oncology, as we now have approximately 42.5 petabytes of connected clinical and molecular data. Between our sequencing and data collection efforts, we are connected in some way to more than 40% of all oncologists practicing in the United States.

We originally set out to build a sustainable business model in oncology as our first proof of concept. To date, we have focused primarily on establishing and growing our oncology business, which represents the majority of both the data we have amassed and our revenues. Even though our cancer business was at an early stage, we next expanded into neuropsychology, as we believed our model was extensible across disease areas. Having gained early traction in depression, we moved into infectious disease, which was largely prioritized due to the COVID-19 pandemic. With the decline of COVID-19 testing revenue, we intend to expand our infectious disease offering to cover broader viral testing. Our next category is in cardiology, through our collaboration with Geisinger. Each time we enter a new disease area we look to expand upon the model we deployed in oncology by developing Intelligent Diagnostics connected to clinical data, and by amassing large amounts of de-identified data to advance patient care and accelerate drug discovery and development. Once we obtain sufficient data, we also expect to deploy our AI and machine learning capabilities to build algorithmic diagnostics at scale across diseases.

To manage our growth, we have assembled a world-class team of approximately 1,500 employees, including hundreds with diverse expertise across genetics, molecular and computational biology, bioinformatics, regulatory affairs, medical, product and engineering, and data science. Roughly one-third of our team is technical, with over 160 PhDs and MDs on staff.

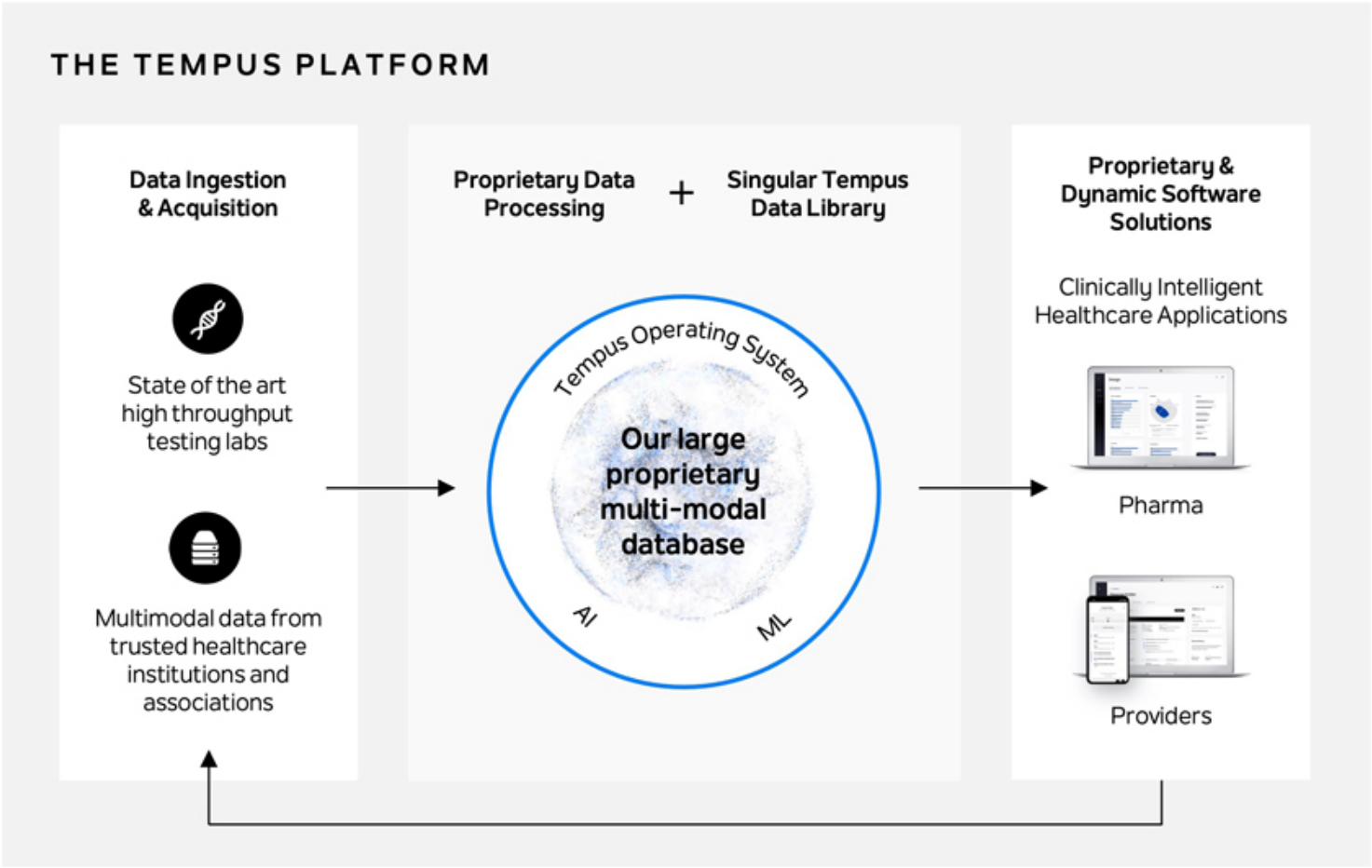


We generated total revenue of $62.1 million and $188.0 million in the years ended December 31, 2019 and 2020, respectively, and $87.2 million and $184.5 million in the nine months ended September 30, 2020 and 2021, respectively. Revenue generated from COVID-19 testing was $89.5 million, or 47.6% of our total revenue, $29.5 million, or 33.8% of our total revenue, and $84.9 million, or 46.0% of our total revenue, for the year ended December 31, 2020, the nine months ended September 30, 2020 and the nine months ended September 30, 2021, respectively. We anticipate that demand for, and revenue from, our COVID-19 testing products will decrease materially in future periods due to the lower prevalence of COVID-19 from successful containment efforts and the vaccination of a substantial majority of Americans, reduced testing needs of many of our clients, and the entrance of other testing providers into the market, and that such decreases would have an adverse effect on our results of operations. We incurred net losses of $115.0 million and $209.9 million in the years ended December 31, 2019 and 2020, respectively, and of $155.7 million and $200.2 million in the nine months ended September 30, 2020 and 2021, respectively.

The Tempus Platform

The Tempus Platform combines multiple elements into a vertically integrated infrastructure that enables us to ingest data from providers, structure and harmonize the data into a common database, provide laboratory diagnostic testing when requested, and deliver personalized results that provide clinical context by leveraging our data. We offer closed-loop, full-stack, bi-directional integrations between a clinician's desktop and our laboratory diagnostic capabilities, analytics platform, and vast repository of multimodal data. The key elements of our

Platform, represented in the diagram below, collectively help power a variety of healthcare applications for providers and life sciences researchers. We believe each of these elements is difficult for competitors to replicate, and together represent a significant competitive advantage.



Data Ingestion and Acquisition

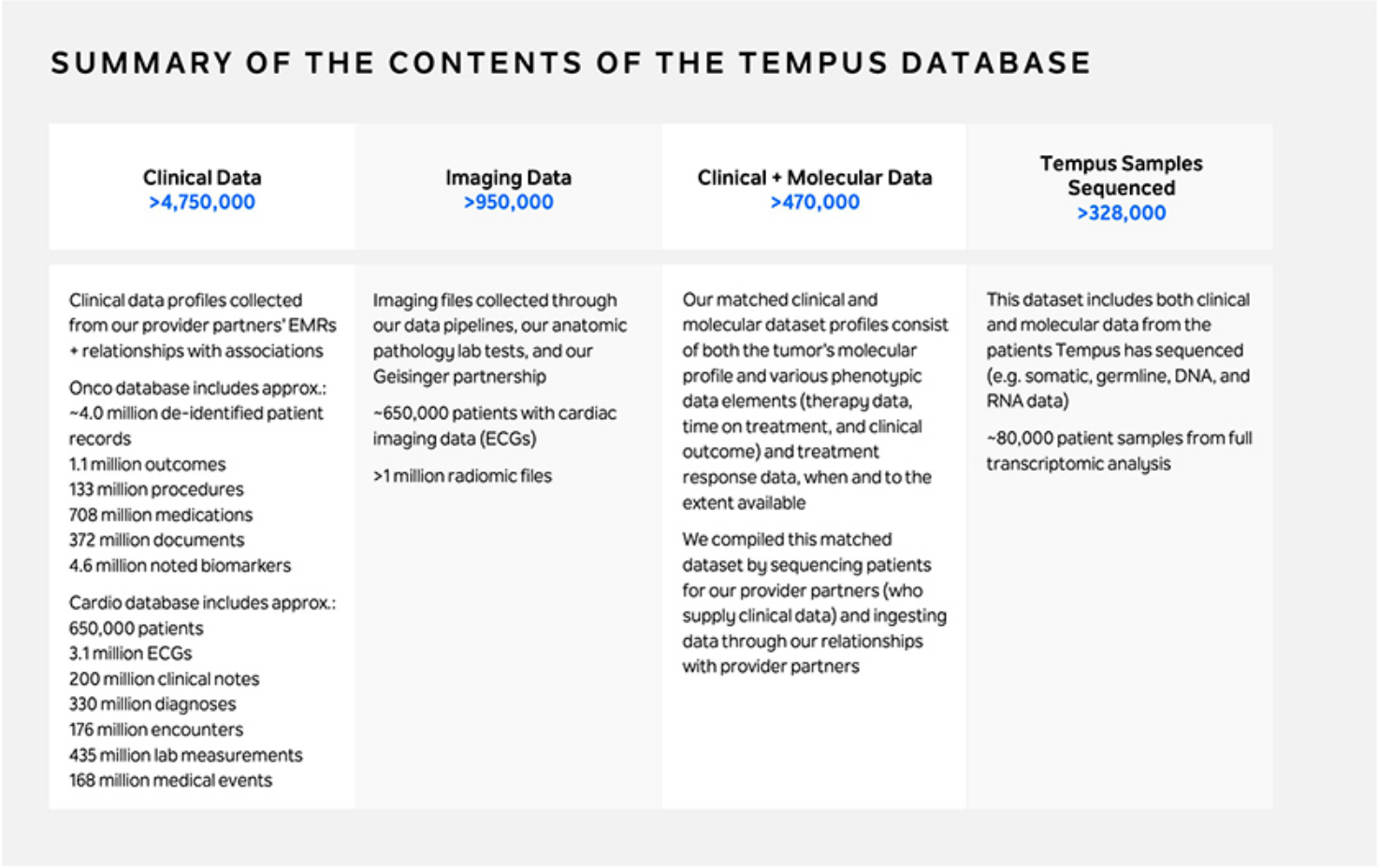
We ingest healthcare data in near real time and at scale, including molecular, clinical and imaging data. We developed the software infrastructure and dedicated data pipelines to aggregate large amounts of multimodal data directly from healthcare institutions. Our software connects to a provider's electronic health record, or EHR, system, their data warehouse, or their third-party data provider to pull relevant structured and unstructured data that the provider has agreed to contribute to us, including longitudinal follow-up data in certain circumstances. We have established relationships with hundreds of provider networks in the United States, including approximately half of all academic medical centers. In addition, we work with numerous industry associations, including the American Society of Clinical Oncology, or ASCO, to structure and distribute the cancer data that they collect as part of CancerLinq, which is their oncology data effort. We also ingest data via our two high-throughput diagnostic testing labs in Chicago and Atlanta, through which we offer a range of anatomical and molecular NGS tests. We intend to expand these capabilities with a new genomics lab in Raleigh, NC that we plan to operationalize by the end of 2021.

Proprietary Data Processing

Once we ingest data, we deploy proprietary clinical data abstraction tools, including natural language processing, optical character recognition, and our abstraction software, to structure, harmonize, and de-identify the data we collect. We have developed various software tools to streamline and help secure this process. Once appropriately de-identified, we store the data in our multimodal database.

Our Proprietary Multimodal Database

We believe most healthcare databases lack real-time functionality, depth among data types, and the scale of matched clinical and molecular records needed to meaningfully improve therapeutic research and development. Tempus is attempting to solve this problem by democratizing the use of near real-time molecular, clinical and imaging data by embedding our solution into the clinical care of patients. As our testing volume has grown, and as our dedicated data pipelines have expanded, the size of our database has increased exponentially. Since we launched our Platform in 2016, Tempus has amassed more than 300 million documents and more than 4.7 million patient records, including over 950,000 with imaging data, more than 470,000 with matched clinical records linked with genomic information, and approximately 80,000 with full transcriptomic profiles. Within oncology specifically, we believe this represents one of the largest and most comprehensive molecular libraries of cancer patients in the world. The breadth of our database, the quality and diversity of our data, as well as its regularly updating nature, allow us to offer a variety of AI-enabled solutions to the market. We also retain the rights to broadly commercialize the de-identified data we collect. As our database continues to grow from its current size of approximately 42.5 petabytes, we believe new AI applications and opportunities will emerge that are only possible with scale that will drive further innovations in patient treatment. The graph below shows our historical database growth and its composition:



Proprietary Software Tools and Solutions

We have developed numerous software tools that power our Platform, making our services accessible to multiple constituencies within the healthcare ecosystem and creating a back-end infrastructure that supports our various product lines. We employ AI techniques including neural networks, deep learning, and other statistical learning techniques to generate patient-specific insights. Some of these AI models can be not only trained and validated for research use, but also developed into clinical-grade algorithmic tests, or Algos, and deployed clinically as part of routine care. As our data advantage and system architecture continue to improve, we believe our existing Intelligent Diagnostics will gain further adoption thereby accelerating our ability to deploy technologies, including Algos, in the clinical setting.

Our Three Product Lines

We have developed multiple products derived from our Platform that are designed to create an economic model that allows us to invest in structuring and harmonizing data, which is a necessary precursor for deploying AI at scale. Our products are organized under three product lines, each of which is designed to enable and enhance the others, thereby creating network effects in each of the markets in which we operate. Our business model allows both Tempus and our customers to unlock value from the data we make available in different ways across our different product lines. We believe these network effects provide a unique advantage to our business, as the compounding value of each data record in our database serves to enhance our competitive advantage. The more data we collect, the smarter our tests become, the more applications we can launch, the more physicians join our network, further growing our database, making our tests smarter for clinicians and our database more valuable for researchers. We describe below our three product lines—Genomics, Data, and Algos. For the year ended December 31, 2019, Genomics and Data represented 45% and 55% of our total revenue, respectively. For the year ended December 31, 2020, Genomics and Data represented 81% and 19% of our total revenue, respectively. For the nine months ended September 30, 2020, Genomics and Data represented 84% and 16% of our total revenue, respectively. For the nine months ended September 30, 2021, Genomics and Data represented 84% and 16% of our total revenue, respectively. For the nine months ended September 30, 2021, revenue generated from Algos was less than $1.0 million and was reported within our Data and other product line.

Genomics

Our *Genomics* product line leverages our laboratories to provide NGS diagnostics, polymerase chain reaction, or PCR, profiling, molecular genotyping, and other anatomic and molecular pathology testing to healthcare providers, life sciences companies, researchers, and other third parties. We operate robotic sequencing labs in Chicago and Atlanta with automated bioinformatics and variant classification and reporting that allow us to operate as a high-quality, low-cost NGS provider that broadly serves the market. Our labs are certified by the Clinical Laboratory Improvement Amendments, or CLIA, and accredited by the College of American Pathologists, or CAP. We also plan to open an additional sequencing lab in Raleigh by the end of 2021. However, unlike other laboratory diagnostic testing providers, many of our tests are connected to clinical data in some manner, which allows our suite of tests to be self-learning, becoming more accurate and precise with each new test that we run. Our current primary assays include:

- xT – 648 gene solid tumor cancer assay;
- xE – whole exome cancer assay;
- xF – 105 gene liquid biopsy cancer assay (we are currently performing analytical validation on a larger approximately 520 gene version);
- xG – 52 gene inherited cancer risk germline assay;
- nP – pharmacogenomics profiling in neuropsychology;
- iC – PCR test for COVID-19; and
- iD – pan viral assay for infectious disease (including COVID-19, Influenza and RSV).

We are also currently developing xM, a low pass whole genome + methylation assay for monitoring for cancer recurrence and minimal residual disease.

Our cancer tests have gained wide market adoption and allowed us to amass what we consider to be one of the largest clinical and molecular oncology datasets in the world, which we make available to physicians and life sciences companies. Because our Platform is designed to be extensible across disease areas, we hope, over time, to have similar success in neuropsychology, cardiology, infectious disease, and the other disease categories in which we choose to expand.

Data

Our *Data* product line facilitates drug discovery and development for life sciences companies through two primary products, *Insights* and *Therapies*. Through our *Insights* product, we license libraries of linked clinical, molecular, and imaging de-identified data and provide a suite of analytic and cloud-and-compute tools to pharmaceutical and biotechnology companies. Historically, datasets in healthcare have been siloed, often lacking important contextual information such as outcome and treatment response data. Our Insights offering is designed to address this void across multiple diseases, enabling pharmaceutical and biotechnology companies to improve decision-making across the drug lifecycle from discovery, research and development, to commercialization. Customers either pay us on a per file basis or through multi-year data licensing agreements to access our de-identified database of clinical records. At present, we work with 15 of the 20 largest public pharmaceutical companies based on 2020 revenue, and, as of September 30, 2021, we have signed contracts with a remaining total contract value of $184 million, a majority of which we expect to deliver over the next several years. See "Business" for additional discussion regarding our remaining total contract value.

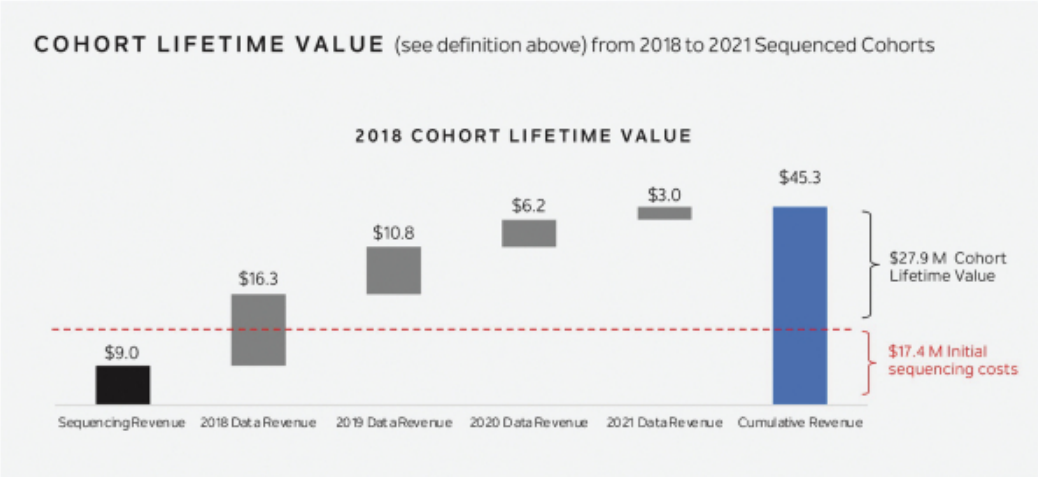
We retain broad rights to commercialize most of the de-identified data we collect, and we are able to license the same de-identified records to multiple customers. Additionally, because many of our data profiles regularly update with clinical outcome and response data over time, the value of a single de-identified record can increase over time.

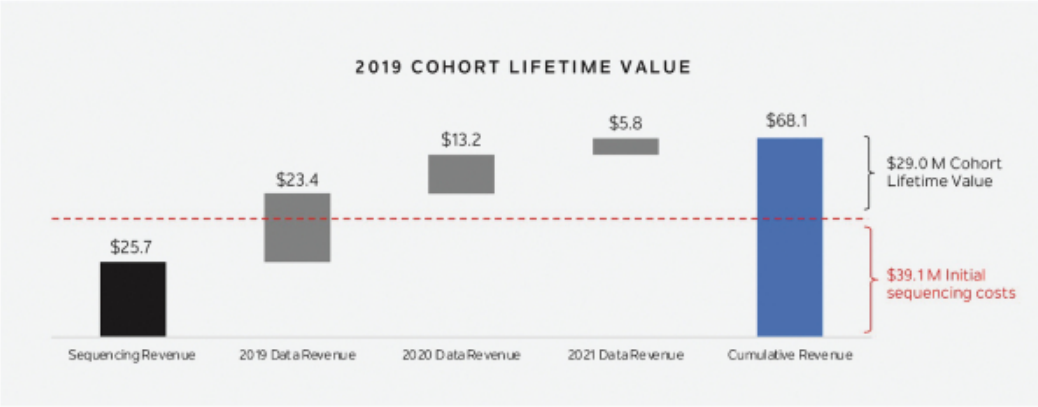
To evaluate the revenue stream in our Data product line, we rely on "Cohort Lifetime Value." We define "Cohort Lifetime Value" as the cumulative revenue attributable to a specific cohort of de-identified records, including revenue derived both from the initial sequencing (Genomics) and licensing (Data and other), less the initial sequencing costs incurred to generate the data ultimately licensed. Sequencing revenue is a component of genomics revenue in our Consolidated Statement of Operations and differs from total genomics revenue due to other components, including COVID-19 PCR testing and other lab services unrelated to our data business. Data revenue is a component of data and other revenue and represents the revenues recognized in each period attributable to each cohort. Initial sequencing costs are a component of cost of revenue, genomics in our Consolidated Statement of Operations and include laboratory personnel compensation and benefits, as well as the cost of laboratory supplies and consumables, depreciation of laboratory equipment, shipping costs, and certain allocated overhead expenses. Total initial sequencing costs differ from total cost of revenues, genomics due to other components, including costs associated with COVID-19 PCR testing and other lab services unrelated to our data business. Notably, "Cohort Lifetime Value" also does not include costs reported as cost of revenues, data and other in the Consolidated Statement of Operations. Cost of revenues, data and other were $6.3 million and $7.1 million for the years ended December 31, 2019 and 2020, respectively, and were $5.0 million and $8.0 million for the nine months ended September 30, 2020 and 2021, respectively. These costs represent 18.5% and 19.6% of data and other revenue for the years ended December 31, 2019 and 2020, respectively, and 36.1% and 26.5% for the nine months ended September 30, 2020 and 2021, respectively.

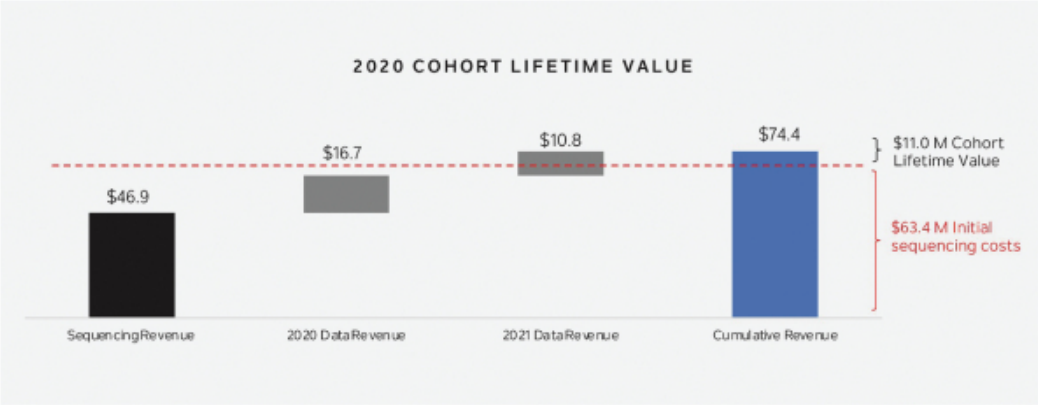
In 2018, the first full year that we operated a laboratory, we sequenced samples from approximately 7,500 patients. From that 2018 cohort of sequenced patients, through September 30, 2021, we generated $45.3 million of combined revenue from sequencing, data licensing of de-identified data derived from those records, and clinical trials matching, which is approximately 5.0 times the revenue we received from sequencing at the onset. The total cost to sequence the 2018 cohort was $17.4 million, of which $9.0 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.3 million of data revenue from that cohort in 2018, finishing the year with a "Cohort Lifetime Value" of $7.9 million. As more customers licensed de-identified records from the 2018 cohort in subsequent years, we generated additional revenue in 2019, 2020 and 2021 from the 2018 cohort, and as of September 30, 2021, the 2018 "Cohort Lifetime Value" for this customer was $27.9 million. We maintained a similar trend for the 2019 cohort through its first two years in existence. The total cost to sequence the 2019 cohort was $39.1 million, of which $25.7 million was covered by

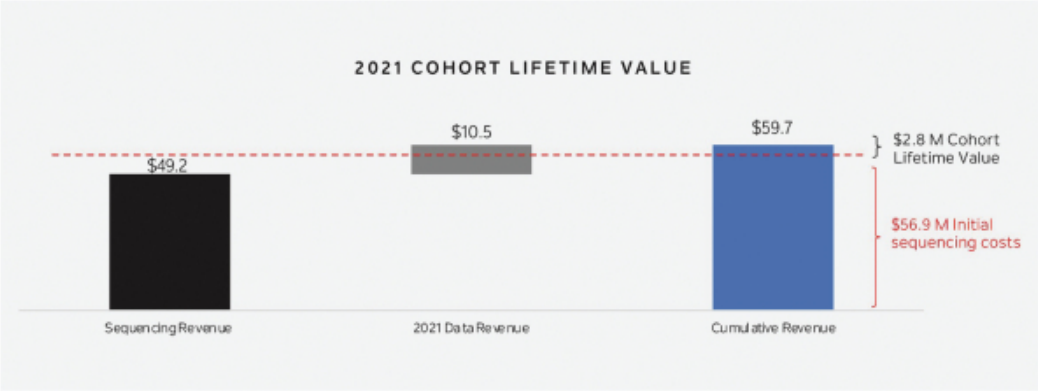
the reimbursement for the corresponding sequencing tests. We then generated $23.4 million of data revenue from that cohort in 2019, finishing the year with a "Cohort Lifetime Value" of $10.0 million. We generated additional data revenue in 2020 and 2021, and as of September 30, 2021, the 2019 "Cohort Lifetime Value" was $29.0 million. The total cost to sequence the 2020 cohort was $63.4 million, of which $46.9 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.7 million of data revenue from that cohort in 2020, finishing the year with a "Cohort Lifetime Value" of $0.2 million. We generated additional data revenue in 2021, and as of September 30, 2021, the 2020 "Cohort Lifetime Value" was $11.0 million.

"Cohort Lifetime Value" for the 2018, 2019, 2020 and 2021 data cohorts is illustrated in the graphs below.









Our second product within our Data product line, *Therapies*, is designed to leverage the broad network of physicians we work with in oncology to provide clinical trial matching services for pharmaceutical companies that are looking to reach hard-to-find and underserved patient populations. Our clinical trial matching product is built on top of our near real-time data feeds and harnesses AI to accelerate the connection between patients, clinical trial providers (hospitals), and clinical trial sponsors (life sciences companies). We empower both oncologists to help their patients find clinical trials and pharmaceutical companies to enroll patients into their trials. We generate revenue from both matching the patient to the trial (through notices we send to physicians alerting them of potential trials that are a fit for their patients), and from the patient actually enrolling in the trial. Since its introduction, this program has gained significant traction with more than 1,670 oncologists fully enrolled, more than 75 clinical trials onboarded and active, and more than 5,800 patients were identified for potential enrollment into clinical trials in our network, as of November 1, 2021. We believe the breadth of our network, the data to which we have near real-time access, and our relationships with oncologists enable us to offer a clinical trial matching service that has the potential to materially expand patient access to and accelerate enrollment in clinical trials in the United States.

Algos

Our newest product line, *Algos*, focuses on developing and providing diagnostics that are algorithmic in nature. Algos are tests that can be run without additional chemistry or biology; they are simply 0's and 1's

running on digitized data derived from a laboratory test. Algos leverage AI-driven insights to produce clinically validated and actionable information for physicians.

We currently offer two algorithmic tests in oncology: our tumor origin test, or TO test, and our homologous recombination deficiency test, or HRD test. Our TO test is designed to predict the site of origin for cancer patients for whom the primary tumor site is unknown, which represents approximately 3% of cancer patients. Our TO test compares the molecular profile of the tumor with profiles of other cancers in our database. Our HRD test is designed to identify patients who might be sensitive to poly (ADP-ribose) polymerase inhibitors, or PARP inhibitors, which we estimate represent approximately 936,000 addressable patients in breast, ovarian, pancreatic and prostate cancer patients. Identifying which patients are PARP sensitive can help physicians pursue specific courses of treatment, which may meaningfully prolong the patient's life expectancy.

We are also developing Algos in other disease areas. In cardiology, for example, we entered into a collaboration with Geisinger to build algorithmic models that aid clinicians in identifying patients at increased risk of developing atrial fibrillation, or AFib, along with a variety of other cardiac conditions. These Algos were trained off Geisinger's dataset of approximately 3.2 million electrocardiograms, or ECGs, across approximately 600,000 patients, with decades of longitudinal connected clinical data, including outcome and response data. As part of this initiative, the U.S. Food and Drug Administration, or FDA, recently awarded Tempus breakthrough designation status for an algorithm to predict AFib from a normal ECG for certain populations. Approximately 3.5% of all ECG results appear not to have AFib upon initial read, yet a major cardiac trauma or stroke occurs in these patients within a year. We estimate that approximately 300 million ECGs are run annually worldwide, and accordingly, this group of algorithms could affect up to ten and a half million patients.

We are also advancing Algos that are designed to predict aortic stenosis, and we are working on other disease areas within cardiology, such as low ejection fraction and familial hypercholesterolemia. If broadly deployed, we believe these Algos could have widespread clinical applicability, increase life expectancy, and reduce the total cost of care.

Our Algos product line represents an emerging category of diagnostics and has the potential to be highly disruptive across diagnostic tests in a broad set of disease areas. We believe that as our database grows, we will be able to expand our Algos offering, with the goal of launching hundreds or thousands of Algos at some point in the future, representing a significant long-term opportunity that may be substantially larger than our other existing product lines. We believe our ability to launch Algos at scale could be a unique differentiator of our Platform. For Algos, we use data the same way legacy diagnostic companies use chemistry in the battle against disease, improving patient care by learning from the patients who have come before, and tailoring test results based on a patient's unique profile. While we only have two Algos tests at present, we have a goal of launching at least 50 Algos by year end 2025. Some Algos will likely yield little to no reimbursement until their clinical utility is well established, and some may obtain reimbursement at prevailing rates for comparable tests. Through September 30, 2021 our Algos have been ordered more than 9,400 times and have generated approximately $100 per test on average. Eventually, we would like to launch hundreds, if not thousands, of Algos.

Market Opportunity

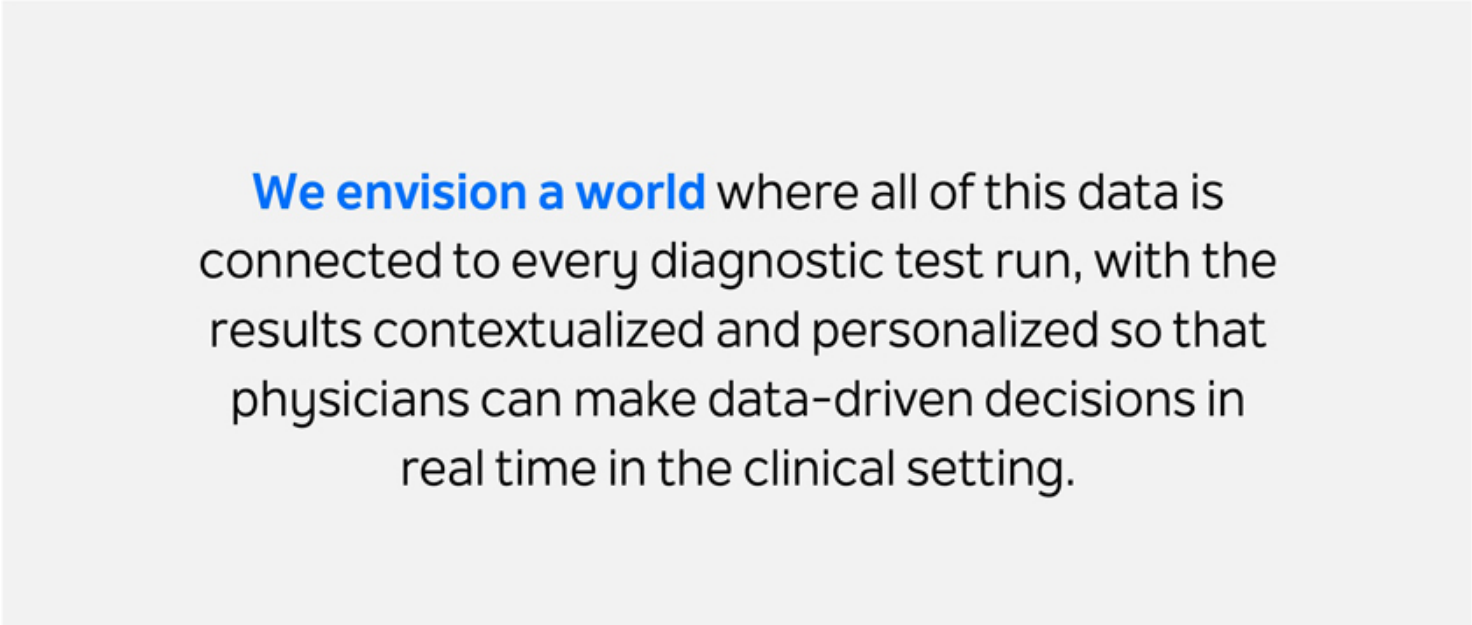
We believe our Platform's impact on healthcare could be profound, and that quantifying our potential market opportunity is challenging, especially for opportunities like Algos that are in their infancy. Our Platform is particularly well suited when there exists both heterogeneous conditions that make up a diseased population and a variety of potential therapeutics or therapeutic pathways, often prescribed based on trial and error. When these conditions exist, technology and AI can facilitate precision medicine through data associations that substantially reduce the guesswork associated with which drug to prescribe, in what amount, and in which order. We are currently focused on oncology, neuropsychology, cardiology, and infectious diseases, in which there is over $4 trillion of economic burden according to publicly available sources.

Within these markets, our Platform addresses both the clinical diagnostic testing market as well as the market for therapeutic research and development. Our Genomics product line targets an addressable market opportunity for diagnostic testing services that we estimate at over $70 billion across oncology and neuropsychology. Our Data product line operates within a market in which life sciences companies spent an estimated $219 billion in 2020 on research and development according to Evaluate Pharma, and addresses needs within the $38 billion clinical trial services market, the $46 billion market for biomarker discovery, and the $29 billion market for third party research for "real world evidence", as estimated according to Mordor Intelligence and our internal estimates. Over time, we believe that the potential market opportunity for our Algos product line could be substantially larger than our other product lines combined.

Long-Term Vision

We are in the early stages of addressing the significant market opportunity that is emerging as AI permeates healthcare. Based on our current customer adoption, Tempus has already built what we consider to be one of the largest multimodal datasets for cancer patients in the world (with other diseases following). We believe our competitive advantages are substantial. Our Genomics product line, which is based on our strong and extensive relationships with providers, feeds our Platform; our Data product line is powered by dedicated, near real-time data pipelines that we believe are increasingly difficult to replicate; and our proprietary technology has allowed us to scale where others have been unable. As we are now connected to more than 40% of all oncologists practicing in the United States in some way, and a growing number of neuropsychiatric, infectious disease, and cardiology patients, we have reached what we believe is an inflection point for adoption. As we collect more data, our tests become more accurate, we launch more applications, which leads more physicians to join our network, thereby growing our database even further, making our tests more precise for clinicians and our database more valuable for researchers

Our goal is to make vast amounts of healthcare information accessible and useful, allowing data to be organized and analyzed for the benefit of patients, physicians, and researchers. We envision a world where currently siloed, inaccessible datasets are instantly available through a single, purpose-built Platform to bring AI to healthcare. In oncology, this means the ability to generate new insights using molecular and anatomic pathology, bioinformatics, genomic variant analysis, inherited cancer risk, computational biology, drug label data, noted adverse events, clinical trials data, research publications, investigational studies, care pathways, real world evidentiary studies, and phenotypic and morphologic data. We envision a world where all of this data is connected to every diagnostic test run, with the results contextualized and personalized so that physicians can make data-driven decisions in real time in the clinical setting.



Tempus has built the first version of our desired world—in oncology, in the United States—as our platform connects a patient's genomic and clinical data to help physicians determine the optimal therapeutic path. Our tests are designed to know who the patient is. When we have the requisite data, the tests do not recommend drugs that have already been prescribed or clinical trials for which patients are not eligible.

Our current product and service offerings represent the first step toward our singular pursuit: a world where physicians tailor their patient's treatment based on data, so that every complex case is handled in a personalized fashion, making the promise of precision medicine a reality. We endeavor to make all laboratory tests (genomic or otherwise) AI-enabled or "Intelligent" because we believe this is the fastest path to bring the promise of AI to healthcare, improving outcomes for those most in need.

To this singular pursuit we are indelibly focused.

For a glimpse into how these technologies might influence care over time:

Imagine the world as it exists today. A 44 year old female feels a lump in her left breast. She sees her gynecologist, who orders a biopsy. The patient is diagnosed with triple negative breast cancer, which has metastasized to her lung. The patient is prescribed chemotherapy (paclitaxel), but her tumors don't respond. Despite another course of chemotherapy (capecitabine), the patient's survival rate is limited to approximately a year.

Now imagine a future world, where artificial intelligence and technology combine at scale to revolutionize treatment options. Not only does the same 44 year old patient receive a biopsy and scans, but her physician has access to a wealth of clinically relevant information including her clinical history, pathology images, germline, and tumor molecular profile to better inform precision care:

- *Once the patient receives a biopsy, her diagnostic pathology slides are automatically connected to Tempus' cloud platform. Within minutes, dozens of diagnostic algorithms run on her pathology images. Of note, the algorithm suggests the patient has HRD and an overexpression of c-Met protein.*

- *The patient's physician orders molecular profiling of her tumor using Tempus' whole genome & whole transcriptome assay. The results confirm the patient is HRD positive and c-Met amplified. Sequencing also reveals the patient has high expression levels of CD4O along with loss of heterozygosity for HLA A*01:01 in her tumor and is eligible for an immunotherapy trial targeting CD40.*

- *Tempus automatically scans the patient's clinical history, which reveals that the patient had an ECG at her last visit. Tempus runs a body of cardiology-focused algorithms against the ECG and detects a high probability of developing atrial fibrillation, a potentially serious condition the patient and physician were unaware of.*

With access to both multimodal data and artificial intelligence, the physician prescribes a different course of treatment. Her oncologist starts with a PARP inhibitor to address her HRD status, and surgical ablation to address her atrial fibrillation. The patient also enrolls in an immunotherapy clinical trial, which begins after chemotherapy, with an immunotherapy drug targeting CD40. The patient responds well, having a complete radiologic response with no tumors in her breast or lung. Her physician orders quarterly minimal residual disease testing using Tempus' cell free DNA assay, and the patient is routinely monitored on an annual basis thereafter.

Our Competitive Advantages

- We are both a technology company and a healthcare company, allowing us to harness the advantages of both to advance precision medicine.

- We have built a Platform that is connected to hundreds of provider networks, allowing us to amass a large repository of multimodal data that we believe is essential for bringing AI to healthcare.
- Our Intelligent Diagnostics provide significant value to our customers, which has fostered broad adoption of many of our products.
- Our business model has inherent network effects that help drive adoption and improve our data advantage with each new order placed.
- Our Platform was built to collect, structure, harmonize and analyze large amounts of multimodal data.
- Our Platform is disease agnostic and facilitates rapid expansion into different disease categories.
- The size of our database and the breadth of our multimodal data capabilities position us well to be able to launch algorithmic diagnostics (Algos) at scale.
- Many of our products and services are already widely used throughout the healthcare ecosystem.

Our Growth Strategy

- Grow our database and the number of providers connected to our Platform.
- Drive increased adoption of our Genomics product across healthcare providers.
- Drive increased adoption of our data licensing and clinical trial matching products with pharmaceutical and biotechnology companies.
- Validate and deploy Algos at scale.
- Expand our capabilities and commercial traction outside of oncology, including in neuropsychology, infectious disease, cardiology, and other disease categories.
- Expand internationally.

Risk Factors Summary

Investing in our Class A common stock involves substantial risk. The risks described in the section titled “Risk Factors” immediately following this summary may cause us to not realize the full benefits of our strengths or may cause us to be unable to successfully execute all or part of our strategy. Some of the more significant challenges include the following:

- We have incurred significant losses since inception, we may continue to incur losses in the future, and we may not be able to generate sufficient revenue to achieve and maintain profitability.
- As demand for COVID-19 testing decreases or such testing is no longer necessary, we expect our COVID-19 testing revenue to decrease, and if the Emergency Use Authorizations for our COVID-19 diagnostic tests or tests we license are terminated or revoked, we may be unable to secure regulatory approval for our test.
- Our current or future products may not achieve or maintain sufficient commercial market acceptance.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- The success of our business depends on our continued access to, and ability to monetize, de-identified patient data.

- Our limited operating history and rapid growth make it difficult to evaluate our future prospects and the risks and challenges we may encounter.
- We will need to raise additional capital to fund our existing operations, develop our Platform, commercialize new products or expand our operations.
- If third-party payers, including commercial payers and government healthcare programs, do not provide coverage of, or adequate reimbursement for, our tests, our business, financial condition and results of operations will be negatively affected.
- Failure of, or defects in, our Platform's artificial intelligence software, or increased regulation in this space, could impair our ability to process our data, develop products, or provide test results, and harm our business, financial condition and results of operations.
- If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue or to achieve and then sustain profitability.
- We rely on a limited number of suppliers or, in some cases, sole suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or promptly transition to alternative suppliers.
- If our existing laboratory and storage facilities become damaged or inoperable or we are required to vacate our existing facilities, our ability to perform our tests and pursue our research and development efforts may be jeopardized.
- We conduct business in a heavily regulated industry, and changes in regulations or violations of regulations may, directly or indirectly, reduce our revenue, adversely affect our business, financial condition and results of operations.
- If we are unable to obtain, maintain and enforce sufficient intellectual property protection for our Platform and products, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors or other third parties could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.
- We are highly dependent on the services of Eric Lefkofsky and other members of our senior management team and the loss of any member of our senior management team or our inability to attract and retain highly skilled scientists, clinicians, sales representatives and business development managers could adversely affect our business, financial condition and results of operations.
- We have identified a material weakness in our internal control over financial reporting.
- We depend on information technology systems, including on premises, co-located and third-party data centers and platforms, and any interruptions of service or failures may impair and harm our business, financial condition and results of operations.
- The dual class structure of our common stock will have the effect of concentrating voting control with our Chief Executive Officer, Founder and Chairman, which will limit your ability to influence the outcome of important decisions.
- We have not elected to take advantage of the "controlled company" exemption to the corporate governance rules for publicly listed companies but may do so in the future.

Corporate Information

We were originally formed under the name Bioin LLC in Delaware in August 2015 and we converted to a Delaware corporation in September 2015 under the name Bioin Inc. We changed our name to Tempus Health, Inc. later in 2015 and in 2016, we changed our name to Tempus Labs, Inc. Our principal executive offices are located at 600 West Chicago Avenue, Suite 510 Chicago, Illinois 60654, and our telephone number is (800) 976-5448. Our website address is www.tempus.com. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus.

The Tempus logo, "Tempus" and our other registered and common law trade names, trademarks and service marks are the property of Tempus Labs, Inc. or our subsidiaries. Other trade names, trademarks and service marks used in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. We may take advantage of certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by our independent registered public accounting firm under Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a non-binding advisory vote on executive compensation and any golden parachute payments. We may take advantage of these exemptions for up to five years or until we are no longer an emerging growth company, whichever is earlier. We will cease to be an emerging growth company prior to the end of such five-year period if certain earlier events occur, including if we become a "large accelerated filer" as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, our annual gross revenues exceed $1.07 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period. In particular, in this prospectus, we have provided only two years of audited financial statements and have not included all of the executive compensation related information that would be required if we were not an emerging growth company. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock. In addition, the JOBS Act provides that an "emerging growth company" can delay adopting new or revised accounting standards until those standards apply to private companies. We have elected to use the extended transition period under the JOBS Act. Accordingly, our financial statements may not be comparable to the financial statements of public companies that comply with such new or revised accounting standards.

THE OFFERING

Class A common stock offered by us	shares
Option to purchase additional shares of Class A common stock offered by the selling stockholders to cover over-allotments, if any	shares
Class A common stock to be outstanding immediately after this offering	shares
Class B common stock to be outstanding immediately after this offering	shares
Total Class A common stock and Class B common stock to be outstanding immediately after this offering	shares
Use of proceeds	We estimate that our net proceeds from the sale of our Class A common stock that we are offering will be approximately $ million, assuming an initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses. We will not receive any proceeds from any sale of shares of our Class A common stock by the selling stockholders. The principal purposes of this offering are to increase our capitalization and financial flexibility, facilitate an orderly distribution of shares for the selling stockholders, create a public market for our Class A common stock and facilitate our future access to the capital markets. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. However, we currently intend to use the net proceeds we receive from this offering for general corporate purposes, including working capital, operating expenses and capital expenditures. We may also use a portion of the net proceeds to acquire complementary businesses, products, services or technologies. At this time, we do not have agreements or commitments to enter into any material acquisitions. See the section titled “Use of Proceeds” for additional information.
Voting rights	We will have two classes of common stock following this offering: Class A common stock and Class B common stock. Each share of Class A common stock is entitled to one vote and each share of Class B common stock is entitled to votes and is convertible at any time into one share of Class A common stock. In addition, all shares of Class B common stock will automatically convert into shares of Class A common stock in certain circumstances,

	including on the date that Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman (1) ceases to serve as an executive officer or member of our Board of Directors or (2) ceases to own, together with his controlled entities, at least shares of Class B common stock (as adjusted for stock splits, stock dividends, combinations, subdivisions and recapitalizations). See the section titled "Description of Capital Stock—Class A Common Stock and Class B Common Stock." Holders of Class A common stock and Class B common stock will generally vote together as a single class, unless otherwise required by law or our amended and restated certificate of incorporation that will be in effect on the closing of this offering. Our Chief Executive Officer, Founder and Chairman, Eric Lefkofsky, will beneficially own 100% of our outstanding Class B common stock and will hold approximately % of the voting power of our outstanding shares immediately following this offering. As a result, Mr. Lefkofsky will have the ability to control the outcome of matters submitted to our stockholders for approval, including the election of our directors and the approval of any change in control transaction. See the sections titled "Principal and Selling Stockholders" and "Description of Capital Stock" for additional information.
Risk factors	You should carefully read the section titled "Risk Factors" beginning on page 23 and the other information included in this prospectus for a discussion of facts that you should consider before deciding to invest in shares of our Class A common stock.
Proposed trading symbol	"TIME"

The number of shares of Class A common stock and Class B common stock that will be outstanding immediately after this offering as noted above is based on shares of Class A common stock and no shares of Class B common stock outstanding as of September 30, 2021, and excludes:

- shares of Class A common stock issuable on the vesting and settlement of restricted stock units, or RSUs, outstanding as of under our Third Amended and Restated 2015 Stock Plan, as amended, or 2015 Plan, for which the performance-based vesting condition will be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock issuable on the vesting and settlement of RSUs granted after under the 2015 Plan for which the performance-based vesting condition will be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;

- shares of Class A common stock that may become issuable upon the vesting and settlement of Performance-Vesting Restricted Stock Units, or PSUs, outstanding as of , 2021 under our 2015 Plan, for which the performance-based vesting condition may be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock reserved for future issuance under our 2021 Equity Incentive Plan, or 2021 Plan, plus a number of shares of Class A common stock not to exceed (consisting of the number of shares that remain available under the 2015 Plan as of immediately prior to the effective date of the 2021 Plan, and any shares underlying RSUs outstanding under the 2015 Plan that expire or otherwise terminate prior to settlement after the effective date of the 2021 Plan), as well as any future increases, including annual automatic evergreen increases, in the number of shares of Class A common stock reserved for issuance under the 2021 Plan;
- shares of Class A common stock issuable on the exercise of a stock option outstanding as of under the 2015 Plan, with an exercise price of $ per share;
- up to shares of Class A common stock issuable upon conversion of an outstanding convertible promissory note, which is convertible beginning in March 2026, as more fully described in the section of this prospectus titled "Description of Capital Stock—Convertible Promissory Note"; and
- the expected issuance on or around December 9, 2022 of 145,466 shares of Class A common stock to former stockholders of AKESOgen, Inc. in connection with our purchase of all of the outstanding shares of AKESOgen, Inc. See Note 3 to our consolidated financial statements included elsewhere in this prospectus.

In addition, unless we specifically state otherwise, the information in this prospectus (except for the historical financial statements and the related discussion of such financial information) assumes:

- a -for-one forward stock split of our Class A common stock to be effected prior to the closing of this offering;
- the filing of our amended and restated certificate of incorporation and the effectiveness of our amended and restated bylaws, each of which will occur immediately prior to the closing of this offering;
- the conversion on a one-for one basis of all outstanding shares of our Series B redeemable convertible preferred stock into an aggregate of shares of Class B common stock, which will occur immediately prior to the closing of this offering;
- the conversion on a one-for-one basis of all outstanding shares of redeemable convertible preferred stock, other than our Series B redeemable convertible preferred stock, into an aggregate of shares of Class A common stock, which will occur immediately prior to the closing of this offering;
- the issuance of additional shares of Class A common stock, which we refer to as the Additional Class A Conversion Shares, upon the conversion of all outstanding shares of our redeemable convertible preferred stock and immediately prior to the closing of this offering, pursuant to provisions of our certificate of incorporation as currently in effect, assuming an initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus;
- the issuance of shares of Class A common stock upon the settlement of RSUs outstanding as of under our 2015 Plan for which the performance-based vesting condition will be satisfied in connection with this offering and for which any service-based vesting condition was satisfied on or before the date of this offering, which settlement will be effected upon the earlier of (i) the expiration of the lock-up period in connection with this offering and (ii) March 15, 2022;

- the conversion of all outstanding shares of our nonvoting common stock into shares of Class A common stock, which will occur immediately prior to the closing of this offering;
- no exercise of the underwriters' option to purchase up to additional shares of Class A common stock from the selling stockholders in this offering to cover over-allotments, if any; and
- no exercise of options or settlement of outstanding RSUs except as described above.

Additional Class A Conversion Shares

Upon any conversion of our redeemable convertible preferred stock into common stock, including in connection with the closing of this offering, we are obligated to pay declared or accrued dividends on shares of our redeemable convertible preferred stock, at our option, in cash or in shares of common stock. As of the date of this prospectus, shares of redeemable convertible preferred stock have accrued approximately $ million in unpaid dividends, which we expect to pay in shares of our common stock. As a result, at the closing of this offering, we expect to issue the Additional Class A Conversion Shares to holders of shares of our redeemable convertible preferred stock. The number of Additional Class A Conversion Shares to be issued depends on the initial public offering price of our Class A common stock. Based on an assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, we will issue Additional Class A Conversion Shares immediately prior to the closing of this offering. For illustrative purposes only, the table below shows the number of Additional Class A Conversion Shares that would be issuable at various initial public offering prices, as well as the total number shares of our Class A common stock that would be outstanding after this offering as a result:

Assumed Initial Public Offering Price ($)	Additional Class A Conversion Shares	Estimated Total Shares of Class A Common Stock Outstanding After this Offering	Estimated Total Shares of Class B Common Stock Outstanding After this Offering

SUMMARY CONSOLIDATED FINANCIAL DATA

The summary consolidated statement of operations data for the years ended December 31, 2019 and 2020 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statements of operations data for the nine months ended September 30, 2020 and 2021 and the summary consolidated balance sheet data as of September 30, 2021 have been derived from our unaudited interim consolidated financial statements included elsewhere in this prospectus. The unaudited consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements, and in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly our financial position and results of operations. You should read the consolidated financial data set forth below in conjunction with our consolidated financial statements and the accompanying notes and the information in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained elsewhere in this prospectus. Our historical and interim results are not necessarily indicative of the results to be expected for the full year or any other period in the future.

	Year Ended December 31,		Nine Months Ended September 30,	
	2019	2020	2020	2021
	(in thousands, except share and per share data)			
Consolidated Statements of Operations Data:				
Revenue:				
Genomics	$ 27,890	$ 151,911	$ 73,224	$ 154,514
Data and Other	34,167	36,093	13,928	30,029
Total revenue	62,057	188,004	87,152	184,543
Cost and operating expenses:				
Cost of revenues, genomics	39,685	152,198	80,416	129,283
Cost of revenues, data and other	6,330	7,092	5,028	7,948
Technology research and development	25,608	45,861	32,800	49,543
Research and development	31,253	45,415	32,308	42,526
Selling, general and administrative	78,962	130,892	88,006	144,158
Total cost and operating expenses	181,838	381,458	238,558	373,458
Loss from operations	(119,781)	(193,454)	(151,406)	(188,915)
Interest income	4,860	1,495	1,224	510
Interest expense	(28)	(18,929)	(5,528)	(11,351)
Other expenses, net	(2)	(466)	(2)	(1)
Loss before provision for income taxes	(114,951)	(211,354)	(155,712)	(199,757)
Provision for (benefit from) income taxes	—	—	—	—
Earnings (losses) from equity method investments	—	1,500	—	(454)
Net loss	$ (114,951)	$ (209,854)	$ (155,712)	$ (200,211)
Accretion of convertible preferred stock to redemption value	(7,303)	(7,381)	(3,203)	(106)
Dividends on Series A, B, B-1, B-2, C, D, E, F and G preferred shares	(23,640)	(34,420)	(25,523)	(26,595)
Cumulative Undeclared Dividends on Series C preferred shares	(2,250)	(2,250)	(1,893)	(2,004)
Net loss available to common shareholders, basic and diluted	$ (148,144)	$ (253,905)	$ (186,331)	$ (228,916)
Net loss per share attributable to common shareholders, basic and diluted	$ (2.41)	$ (4.05)	$ (2.97)	$ (3.64)

	Year Ended December 31,		Nine Months Ended September 30,	
	2019	2020	2020	2021
	(in thousands, except share and per share data)			
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted(1)	61,347	62,706	62,697	62,973
Pro forma net loss per share attributable to common stockholders, basic and diluted(2)		$		$
Weighted-average shares used to compute pro forma net loss per share attributable to common stockholders, basic and diluted(2)				

(1) See Notes 2 and 11 to our consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted net loss per share attributable to common stockholders.

(2) Pro forma net loss per share gives effect to (a) the automatic conversion of all of our outstanding shares of Series B redeemable convertible preferred stock into shares of Class B common stock, which will occur immediately prior to the closing of this offering, (b) the automatic conversion of all of our outstanding shares of redeemable convertible preferred stock, other than our Series B preferred stock, into shares of Class A common stock, which will occur immediately prior to the closing of this offering, (c) the issuance of the Additional Class A Conversion Shares, which will occur upon the conversion of all outstanding shares of our redeemable convertible preferred stock and immediately prior to the closing of this offering, (d) the automatic conversion of all of our nonvoting common stock into shares of Class A common stock, which will occur immediately prior to the closing of this offering, (e) the issuance of shares of Class A common stock upon settlement of RSUs for which the service-based vesting condition was satisfied on or before the date of the offering and for which the performance-based vesting condition will be satisfied in connection with this offering, which settlement will occur upon the later of (i) the expiration of the lock-up period in connection with this offering and (ii) March 15, 2022, and (f) stock-based compensation expense of approximately $ million related to the vesting of RSUs subject to service-based and performance-based vesting conditions that will be satisfied upon consummation of this offering, as further described in Note 9 to our consolidated financial statements included elsewhere in this prospectus. See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

	September 30, 2021		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)(3)
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and restricted cash	$ 345,725	$	$
Total assets	551,347		
Working capital(4)	351,621		
Redeemable convertible preferred stock	890,535		
Total stockholders' (deficit) equity	(739,322)		

(1) The pro forma consolidated balance sheet data gives effect to (a) the automatic conversion of all of our outstanding shares of Series B redeemable convertible preferred stock into shares of Class B common stock, which will occur immediately prior to the closing of this offering, (b) the automatic conversion of all of our outstanding shares of redeemable convertible preferred stock, other than our Series B preferred stock, into shares of Class A common stock, which will occur immediately prior to the closing of this offering, (c) the issuance of the Additional Class A Conversion Shares, which will

occur upon the conversion of all outstanding shares of our redeemable convertible preferred stock and immediately prior to the closing of this offering, (d) the automatic conversion of all of our nonvoting common stock into shares of Class A common stock, which will occur immediately prior to the closing of this offering, (e) the filing and effectiveness of our amended and restated certificate of incorporation, which will occur immediately prior to the closing of this offering, (f) the issuance of shares of Class A common stock upon settlement of RSUs for which the service-based vesting condition was satisfied on or before the date of the offering and for which the performance-based vesting condition will be satisfied in connection with this offering, which settlement will occur upon the later of (i) the expiration of the lock-up period in connection with this offering and (ii) March 15, 2022, and (g) stock-based compensation expense of approximately $ million related to the vesting of RSUs subject to service-based and performance-based vesting conditions that will be satisfied upon consummation of this offering, as further described in Note 9 to our consolidated financial statements included elsewhere in this prospectus. See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

(2) The pro forma as adjusted consolidated balance sheet data reflects (a) the pro forma adjustments set forth in footnote (1) above and (b) our receipt of $ million in net proceeds from the sale of shares of Class A common stock that we are offering at an assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, total assets, working capital and total stockholders' (deficit) equity by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of Class A common stock offered by us would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, total assets, working capital and total stockholders' (deficit) equity by $ million, assuming the assumed initial public offering price of $ per share of Class A common stock remains the same, and after deducting the estimated underwriting discounts and commissions.

(4) Working capital is defined as current assets less current liabilities.

RISK FACTORS

Investing in our Class A common stock involves a high degree of risk. You should consider and carefully read all of the risks and uncertainties described below, as well as other information included in this prospectus, including our consolidated financial statements and related notes appearing elsewhere in this prospectus, before making an investment decision. The risks described below are not the only ones we face. The occurrence of any of the following risks or additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition, or results of operations. In such case, the trading price of our Class A common stock could decline, and you may lose some or all of your original investment.

Risks Related to Our Business and Strategy

We have incurred significant losses since inception, we may continue to incur losses in the future, and we may not be able to generate sufficient revenue to achieve and maintain profitability.

We have incurred significant losses since our inception. For the years ended December 31, 2019 and 2020 and the nine months ended September 30, 2020 and 2021, we incurred net losses of $115.0 million, $209.9 million, $155.7 million, and $200.2 million, respectively. As of September 30, 2021, we had an accumulated deficit of $739.3 million. To date, we have financed our operations principally from the sale of stock and convertible securities, and revenue from precision oncology and COVID-19 testing in our Genomics business, and from our Insights product in our Data business. We have devoted substantially all of our resources to the development and commercialization of our Platform and current products and to research and development activities related to Platform development and future products, including regulatory initiatives to obtain marketing approval for our diagnostic tests, and sales and marketing activities for our Genomics and Data businesses. We will need to generate substantial revenue to achieve and then sustain profitability, and even if we achieve profitability, we cannot be sure that we will remain profitable for any period of time.

As demand for COVID-19 testing decreases or such testing is no longer necessary, we expect our COVID-19 testing revenue to decrease, and if the Emergency Use Authorizations for our COVID-19 diagnostic tests or tests we license are terminated or revoked, we may be unable to secure regulatory approval for our test.

We currently offer reverse transcription polymerase chain reaction, or PCR, diagnostic tests for the qualitative detection of nucleic acid from the SARS-CoV-2 virus in nasopharyngeal swab specimens from individuals suspected of having COVID-19. We anticipate that demand for our COVID-19 testing products will decrease in future periods due to successful containment efforts, the successful vaccination of a majority of Americans and other factors, and such decreases would have an adverse effect on our results of operations. Revenue from COVID-19 testing accounted for $89.5 million, or 47.6%, of our revenue in the year ended December 31, 2020, $29.5 million, or 33.8%, of our revenue in the nine months ended September 30, 2020, and for $84.9 million, or 46.0%, of our revenue in the nine months ended September 30, 2021, of which $32.3 million and $9.4 million, and $45.2 million and $64.3 million, was derived from contracts with the Illinois Department of Public Health, or IDPH, and CVS Pharmacy, Inc., or CVS, respectively. We expect revenue from our contracts with the IDPH and CVS, and from other customers seeking COVID-19 testing products, to decrease substantially over time as the prevalence of COVID-19 subsides and as other COVID-19 testing providers enter the market. Pursuant to our agreement with the IDPH, we have agreed to provide COVID-19 testing services for up to 6,000 specimens per day, subject to our ability to reduce our volume commitment if IDPH does not deliver 60,000 tests to us over any 14-day period. The term of the agreement runs through June 30, 2022, prior to which IDPH may terminate the agreement for convenience upon ten days' prior written notice. Our agreement with CVS, which accounted for 24.0% and 34.8% of our revenue for the year ended December 31, 2020 and the nine months ended September 30, 2021, respectively, expired in July 2021. Effective October 2021, we entered into a substantially similar agreement with CVS, under which CVS has agreed to purchase certain COVID-19 testing products and services from us without a minimum purchase commitment. The term of this agreement runs through October 1, 2022, prior to which either party may terminate the agreement for convenience upon 90 days' prior written notice or for the other party's uncured material breach.

CVS may also terminate the agreement if we fail to return test results within a certain period of time, and the agreement will terminate automatically upon the expiration or termination, as and if applicable, of CVS's arrangements with the U.S. Department of Health and Human Services.

In addition, we currently provide our COVID-19 testing products under emergency use authorizations, or EUAs, issued by the Food & Drug Administration, or FDA, to us or our licensor, permitting us to offer these tests without having completed the normally applicable FDA review and clearance or approval process for marketing authorization (with the related standards that would apply to demonstrate safety and effectiveness) or in some cases, as an LDT. Although the FDA has waived certain regulatory requirements for the duration of the EUAs, we remain subject to specific conditions of the authorizations, including ensuring appropriate labeling as approved by the FDA specifically for purposes of the EUAs, maintaining records of distribution to authorized laboratories, collecting data on occurrences of any false positives or false negatives, and tracking any adverse events. As with other FDA-regulated products, compliance or product performance issues could emerge during the course of the marketing and use of our products under an EUA, that could impact our ability to continue the sale and distribution of these products.

Our EUAs or those of our licensors could be terminated or revoked at any time, including if the FDA determines the criteria for issuance are no longer met or other circumstances make such revocation appropriate to protect public health or safety, which could harm our future business prospects. Once an EUA is revoked or terminated, we will be required to stop marketing the applicable COVID-19 test immediately unless we can obtain FDA clearance for that COVID-19 test under a traditional regulatory pathway, which is lengthy and expensive, and which we may never receive. We also would be subject to the full and usual regulatory obligations for device manufacturers, including the FDA's quality system regulations.

Our current or future products may not achieve or maintain sufficient commercial market acceptance.

We believe our commercial success is dependent upon our ability to continue to successfully market and sell our current Genomic diagnostics products, including diagnostic tests in oncology and infectious diseases, to continue to grow our Data business by expanding our current relationships and developing new relationships with clinicians and pharmaceutical and biotechnology customers, and to develop and commercialize new products based on our Platform, including by expanding our Genomics product line to new disease areas and by advancing our existing and future Algos tests. Our ability to achieve and maintain sufficient commercial market acceptance of our existing and future products will depend on a number of factors, including:

- our ability to increase awareness of our Genomics and Algos diagnostic tests, including new product offerings as they become available;
- the rate of adoption and/or endorsement of our Genomics and Algos diagnostic tests by clinicians, pharmaceutical and biotechnology companies, KOLs, and advocacy groups;
- the timing and scope of obtaining any necessary approvals by regulatory agencies, including the FDA, for our diagnostic tests, any software offerings, Algos, or any features of our Platform, in each case, that may be subject to regulatory oversight;
- our ability to obtain positive coverage decisions for our tests from additional commercial payers and to broaden the scope of indications included in such coverage decisions;
- our ability to obtain reimbursement and expanded coverage from government payers, including Medicare;
- our ability to increase demand for our Data business, including by expanding our database of patient information and increasing the utility of our product offerings;
- our ability to successfully expand beyond oncology into infectious disease, neuropsychology and other indications;
- our ability to build and maintain robust data sets with respect to patient populations in geographic regions that we may seek to enter in the future;

- the impact of our investments in Platform development, product innovation and commercial growth;
- public perception of our products, those of our competitors and the industry in which we operate, including our ability to avoid adverse publicity from defects or errors; and
- our ability to further validate our Platform through clinical research and accompanying publications.

We cannot assure that we will be successful in addressing each of these criteria or other criteria that might affect the market acceptance of our products. If we are unsuccessful in achieving and maintaining sufficient market acceptance of our products, our business, financial condition and results of operations will suffer.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. Because we plan to operate our business with a long-term focus, these fluctuations may be more pronounced than those experienced by other companies that operate with a shorter-term focus. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the level of demand for any of our products, which may vary significantly;
- the timing and cost of, and level of investment in, research, development, regulatory approval and commercialization activities relating to our Platform and products, which may change from time to time;
- the volume and customer mix of our Genomics and Algos diagnostic testing and other products;
- the start and completion of projects in which our Data products are utilized;
- the introduction of new products or product enhancements by us or others in our industry;
- coverage and reimbursement policies with respect to our products and products that compete with our products;
- expenditures that we may incur to acquire, develop or commercialize additional products and technologies;
- changes in governmental regulations, including with respect to privacy and data security and medical device regulation, and our compliance therewith, or in the status of our regulatory approvals or applications;
- future accounting pronouncements or changes in our accounting policies;
- developments or disruptions in the business and operations of our clinical, commercial and other partners;
- the impact of natural disasters, political and economic instability, including wars, terrorism, and political unrest, epidemics or pandemics, boycotts, curtailment of trade and other business restrictions; and
- general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

Additionally, it is difficult to predict the amounts, if any, we will be able to collect for our diagnostic tests from commercial payers. We are a participating network provider in an extremely small number of commercial payers from whom we receive reimbursement for our diagnostic tests. Payers determine the amount they are willing to reimburse us for tests. We have provided testing to patients with many disease types and indications, most of the time as a non-participating provider. Even when payers have paid a claim, they may elect at any time to review previously paid claims for overpayment against these claims. While we have not experienced significant retroactive adjustments to date, in the event of an overpayment determination, the payer may offset

the amount they determine they overpaid against amounts they owe us on current claims. We have limited leverage to dispute these retroactive adjustments and we cannot predict when, or how often, a payer might engage in these reviews. A significant amount of these offsets by one or more payers in any given quarter could have a material effect on our results of operations and cause them to fall below expectations or guidance we may provide. Due to the inherent variability and unpredictability of the reimbursement landscape, including related to the amount that payers reimburse us for any of our tests, previously recorded revenue adjustments are not indicative of future revenue adjustments from actual cash collections, which may fluctuate significantly.

In addition, the demand for our Genomics and Data products will depend in part upon the research and development and clinical budgets of pharmaceutical and biotechnology customers, which are impacted by factors beyond our control, such as:

- changes in government programs (such as the National Institutes of Health) that provide funding to research institutions and companies;
- macroeconomic conditions, the political climate and the ongoing impact of the COVID-19 pandemic;
- changes in the regulatory environment;
- differences in budgetary cycles;
- competitor products or pricing;
- market-driven pressures to consolidate operations and reduce costs; and
- market acceptance of relatively new products.

Our operating results may fluctuate significantly due to reductions and delays in research and development or clinical expenditures by these customers, including delays caused by these customers' reducing activities in response to the COVID-19 pandemic. Further, many of our data licensing agreements allow us to deliver data to our customers over a period of time, which can span a year or longer. Revenue pursuant to our data licensing agreements is recognized upon delivery of the data to the customer. The actual timing of data deliveries can be based on a variety of factors, including, but not limited to, the customer's requirements and/or our technological, operational, and human capital capacity.

The cumulative effects of the factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated guidance we may provide.

The success of our business depends on our continued access to, and ability to monetize, de-identified patient data.

Our business relies on our ability to obtain, process, monetize and distribute highly regulated data in the healthcare industry, in a manner that complies with applicable laws, regulations and contractual and technological restrictions. The data that we collect through the provision of Genomics tests is critical to our ability to offer our Data and Algos products and services. We have historically generated more revenue from the sale of products and services that leverage our de-identified data than we have from the provision of the underlying Genomics test related to such data, and we expect this trend to continue. Our Platform also includes proprietary software and dedicated data pipelines that create a network of healthcare institutions that supply us with complex multimodal data. Further, we rely on certain collaborations and licensing agreements to access

important data. The success of our business depends on our continued access to, and ability to monetize, this internal and external de-identified patient data. As we seek to expand our business into additional disease areas and geographies, we will also need to be successful in building and maintaining sufficiently large relevant data sets and obtaining the permissions necessary to de-identify and use that data for commercial purposes.

Our ability to maintain, expand and monetize our datasets are subject to a number of factors, many of which are outside of our control. With respect to data included in our Data and Algos products, we rely on a combination of the statutory rights available to us as a HIPAA covered entity and as a HIPAA business associate. As a HIPAA covered entity, we utilize data generated through our provision of Genomic tests. As a HIPAA business associate, we rely on providers to obtain the requisite consents from their patients, with whom we may have no direct contact, to use the de-identified data that we generate in the provision of our other offerings to the providers, or that we generate from the protected health information, or PHI, we obtain from providers. More broadly, the failure by us or our data suppliers and processors to obtain patient data in a compliant manner could have a harmful effect on our ability to use and disclose data which in turn could impair our functions and operations, including our ability to share data with third parties or incorporate it into our products. In addition, the use, processing and distribution of patient data may require us or our data suppliers and processors to obtain consent from third parties or follow additional laws, regulations or contractual and technological restrictions that apply to the healthcare industry. These requirements could interfere with our ability to deploy our products, prevent creation of new products, or otherwise limit data-driven activities that benefit us. Moreover, due to lack of valid notice, sufficient consents or waiver, we may be subject to claims or liability for use or disclosure of data or other information.

We are also dependent on the healthcare institutions within our network continuing to provide us with broad access to data to multimodal data to support the robustness of our Genomics tests and other offerings, as well as on maintaining our collaborations with ASCO, QCCA, NCCA, Geisinger and similar organizations, and entering into similar collaborations with other organizations in the future, particularly as we attempt to expand into other disease areas. These third parties may have interests that diverge from our interests, including a desire to monetize their data in different ways, and there can be no assurance that we will be successful in maintaining and growing our datasets. Further, our arrangements with some of these third parties are not exclusive, which could allow such parties to provide data to our competitors, thereby adversely impacting our ability to offer differentiated products and services. Our practice of making available to providers the raw data from our Genomics testing along with corresponding clinical data we may have structured as part of providing testing also may allow those providers to use data in ways that may be harmful to our business interests.

The use, processing and distribution of patient data is also the subject of complex, interconnected and frequently changing laws and regulations in the United States and globally. We have policies and procedures in place to address the proper handling and use of data, but could face claims that our practices occur in a manner not permitted under applicable laws or our agreements with or obligations to data providers, patients or other third parties. These claims or liabilities and other failures to comply with applicable requirements could subject us to unexpected costs and adversely affect our business, financial condition and results of operations. Further, any actual or perceived failure to comply with applicable privacy and data security laws could have an adverse impact on the willingness of the third parties on whom we rely for access to data to continue to provide us with such data.

The continued adoption of our products and services is dependent on a number of factors, many of which are interrelated.

Our ability to execute our growth strategy and become profitable is highly dependent on a number of factors, many of which are interrelated.

Continued adoption and use of our Genomics product line will depend on several factors, including the prices we charge for our tests, the scope of coverage and amount of reimbursement available from third-party payers for our tests, the availability of clinical data that support the value of our tests and the inclusion of our tests in industry treatment guidelines. In addition, many clinicians, hospital systems and pharmaceutical

companies have existing relationships with companies that develop molecular diagnostic tests, including our competitors, and may continue to use their tests instead of ours. Despite our business development efforts, it could be difficult, expensive and/or time-consuming for healthcare providers to switch diagnostic tests for their patients, and our tests may not be widely accepted by physicians, if at all, which could in turn hinder the growth of sales of our tests. If we are unable to achieve commercial success for our tests, our business, financial condition and results of operations would be materially and adversely affected. We are also particularly dependent on our oncology tests, which accounted for 43%, 27%, and 31% of our revenue in the years ended December 31, 2019 and 2020 and the nine months ended September 30, 2021, respectively. We cannot assure that our oncology tests will continue to maintain or gain market acceptance, and any failure to do so would materially harm our business, financial condition and results of operations.

Continued adoption of and use of our Data products will depend, in part, on our ability to maintain relationships and to enter into new relationships with pharmaceutical and biotechnology customers and provide relevant data to such customers for outcomes research, companion diagnostic development, novel target discovery and validation, among other uses. This can be difficult due to many factors, including the type of data required and our ability to deliver it to our pharmaceutical and biotechnology customers' satisfaction. Our pharmaceutical and biotechnology customers may decide to decrease or discontinue their use of our Insights product due to changes in their research and product development plans, failures in their clinical trials, financial constraints, or other circumstances outside of our control. Furthermore, pharmaceutical and biotechnology companies may decline to do business with us or decrease or discontinue their use of our data due to a strategic collaboration with any of our competitors. We invest resources in seeking to develop relationships with pharmaceutical and biotechnology companies regarding potential commercial opportunities on an ongoing basis. There can be no assurance that any of this investment will result in a commercial agreement, that the resulting relationship will be successful, or that the data we provide as part of the engagement will produce successful outcomes. If we cannot maintain our current relationships, or enter into new relationships, with pharmaceutical and biotechnology companies, our product development could be delayed and revenue and results of operations could be adversely affected.

The scope and robustness of the Data products and Algos that we can offer our customers also depend significantly on the continued success of our Genomics product line, as the data that we collect through genomic testing is an essential component of our Data products and Algos. Further, we believe that growth in the use of our Data products will help drive awareness and adoption of our Genomics product line, which in turn will drive further growth within our Data and Algos product lines. However, there can be no assurance that we will realize these synergies.

Our limited operating history and rapid growth make it difficult to evaluate our future prospects and the risks and challenges we may encounter.

We were founded in 2015 and have experienced rapid growth in revenue, adoption of our products and services, testing volume, size of our datasets, clinical trial matches and other metrics that we believe are important to assessing our business. In addition, we operate in highly competitive markets characterized by rapid technological advances and our business has, and we expect it to continue, to evolve over time to remain competitive. Our limited operating history, evolving business, rapid growth and ambitious goals make it difficult to evaluate our future prospects and the risks and challenges we may encounter, and may increase the risk that we will not continue to grow at or near historical rates. Further, these factors may make it difficult for us to achieve our stated milestones and goals, and to accurately project the future performance of our business. For example, we may never realize the potential benefits of our technology as contemplated elsewhere in this prospectus, including the section titled "Prospectus Summary—Long-Term Vision."

If we fail to address the risks and difficulties that we face, including those described elsewhere in this "Risk factors" section, our business, financial condition and results of operations could be adversely affected. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in rapidly changing industries. If our assumptions regarding

these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations and our business, financial condition and results of operations could be adversely affected.

We will need to raise additional capital to fund our existing operations, develop our Platform, commercialize new products or expand our operations.

We will need to raise additional capital in the future to expand our business, meet existing obligations, pursue acquisitions or strategic investments, or take advantage of financing opportunities or for other reasons, including to:

- increase our sales and marketing efforts to drive market adoption of our current products and services, and address competitive developments;
- fund development and marketing efforts of our products under development or any other future products we may develop;
- acquire, license or invest in technologies;
- acquire or invest in complementary businesses or assets; and
- finance capital expenditures and general and administrative expenses.

Our present and future funding requirements will depend on many factors, including:

- our ability to achieve revenue growth and favorable gross profits;
- our rate of progress in establishing payer coverage and reimbursement arrangements with domestic and international commercial payers and government payers;
- the cost of expanding our laboratory operations and product offerings, including our sales and marketing efforts;
- our rate of progress in, and costs of our sales and marketing activities associated with, establishing adoption of and reimbursement for our current products, including our diagnostic tests and our data analytics products;
- the rate at which we choose to advance, rate of progress in, and costs of our research and development activities associated with, products in development;
- the effect of competing technological and market developments;
- costs related to our international expansion; and
- the potential costs of and delays in product development as a result of any existing or new regulatory oversight applicable to our products.

We have no committed sources of capital. We may seek to sell equity or convertible securities, enter into a credit facility or another form of third-party funding, or seek other debt financing. The various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity or convertible securities, dilution to our stockholders could result. Any preferred equity securities issued also could provide for rights, preferences or privileges senior to those of holders of our common stock. If we raise funds by issuing debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our Platform or products or grant licenses on terms that are not favorable to us. These alternatives of raising additional capital may not be available to us on acceptable or commercially reasonable terms, if at all, or in amounts sufficient to meet our needs. The failure to obtain any required future financing may require us to reduce or curtail existing operations and could contribute to negative market perceptions about us or our securities.

Our Algos product line is nascent.

As of September 30, 2021, we had only two commercialized Algos. While we have a number of additional Algos in development, we may not be successful in developing and commercializing these or future Algos, or in attaining our Algo development targets. Further, the scope and robustness of the Algos that we can offer our customers depend significantly on the continued success of our Genomics product line and access to third-party data, of which there can be no assurance. We also cannot accurately estimate how our future Algos will be priced, whether reimbursement can be obtained or whether we will generate any revenue from such Algos. Further, the use of diagnostics that are entirely algorithmic in nature is novel and today represent only a small proportion of the diagnostics market. While we believe Algos represent a significant long-term opportunity for us, there can be no assurances that a robust and sustained market for such diagnostics will develop or that we will successfully compete in any such market.

New product development and commercialization involve a lengthy and complex process and we may be unable to develop or commercialize new products on a timely basis, or at all.

Products that are under development have taken time and considerable resources to develop, and we may not be able to complete the development and commercialization of such products on a timely basis, or at all.

Before we can commercialize any new Genomics or Algos diagnostic products, we will need to expend significant funds in order to:

- conduct substantial research and development, including validation studies and, in some cases, clinical trials;
- further develop and scale our laboratory or algorithmic processes to accommodate diagnostic tests in additional disease areas; and
- further develop and scale our infrastructure to be able to analyze increasingly large amounts of data.

Our diagnostic product development process involves a high degree of risk, and product development efforts may fail for many reasons, including:

- failure of the diagnostic product to perform as expected, including defects and errors;
- lack of validation data; or
- failure to demonstrate the clinical utility of the diagnostic test.

Expanding the offerings of our Data business is also a speculative and risky endeavor and may require us to:

- acquire additional access to patient healthcare information that is relevant to the products we offer;
- correctly identify customer needs and preferences and predict future needs and preferences;
- allocate our research and development funding to areas with higher growth prospects; and
- anticipate and respond to our competitors' development of new products and technological innovations.

Our Platform development plan involves using data and analytical insights generated from our current products to foster research and development in our future products. However, if we are unable to generate additional or compatible data and insights, then we may not be able to advance our products under development as quickly, or at all, or without significant additional investment.

As we develop our products, we have made and will have to make significant investments in Platform development, marketing and selling resources, which could adversely affect our future cash flows. We may also rely on third parties to develop new products that we may license and include in our overall offering, particularly with respect to our Algos business, and we may exert limited or no control over such development efforts.

In addition, in our development and commercialization plans for our business lines, we may forego other opportunities that may provide greater revenue or be more profitable. For example, while we expect to provide diagnostic and data technologies to pharmaceutical and biotechnology companies (including companies in which our Chief Executive Officer, Founder, and Chairman, Eric Lefkofsky, or our other executive officers, directors or significant stockholders may have significant or controlling voting and economic interests) developing therapeutics for various diseases, including cancers, we do not currently expect to conduct development of therapeutics ourselves. As a result, even if our development efforts result in commercially viable products, our business and results of operations could underperform in comparison to our customers and competitors.

We may not be successful in updating or otherwise enhancing our Platform and products.

As of September 30, 2021, we offered approximately eight genomics diagnostics tests across oncology, infectious diseases, and neuropsychology, and three algorithmic diagnostic tests across oncology and cardiology. A major part of our strategy is bringing new high-value enhancements to our customers through updates to our Platform and existing products, which may include expanding our existing products with additional features, applications and data modalities. We expect to make significant investments to advance these efforts.

Enhancing our Platform and products is a speculative and risky endeavor. Features, applications and data modalities that initially show promise may fail to achieve the desired results or may not achieve acceptable levels of analytical accuracy or utility. We may need to alter our products in development and repeat studies before we identify a potentially successful update. Product development is expensive, may take years to complete and can have uncertain outcomes. Failure can occur at any stage of the development. Even if we confirm that our products can be successfully updated for additional features, applications and data modalities, those features, applications and data modalities may be limited in scope to only some diseases, disease segments, patient markets or geographies. If, after development, an updated product appears successful, we may, depending on the nature of the update, need to obtain FDA's, EMA's and other regulatory clearances, authorizations or approvals before we can market the updated product. The FDA's and EMA's clearance, authorization or approval pathways are likely to require significant time and expenditures. The FDA, EMA or other applicable regulatory authority may not clear, authorize or approve any product update we develop and may even change the applicable regulations or the application of those regulations in ways that would impact our existing products or services, including our Platform. Even if we develop a product update that receives regulatory clearance, authorization or approval, we or our collaborators would need to commit substantial resources to commercialize, sell and market the updated product, which may never achieve significant market acceptance among various stakeholders and be commercially successful.

In addition, we generally sell our products in industries that are characterized by rapid technological changes, frequent new product introductions and changing industry standards. If we do not develop Platform and product enhancements based on technological innovation on a timely basis, our Platform and products may become obsolete over time and our financial and competitive position will suffer. Our success will depend on several factors, including our ability to:

- correctly identify customer needs and preferences and predict future needs and preferences;
- allocate our research and development funding to areas with higher growth prospects;
- anticipate and respond to our competitors' development of new products and technological innovations;
- innovate and develop new technologies and applications, and acquire or obtain rights to third-party technologies that may have valuable applications in the markets we serve;
- successfully develop and commercialize new technologies and applications in a timely manner; and
- convince customers to adopt new technologies and applications.

The expenses or losses associated with unsuccessful expansion of our Platform could adversely affect our business, financial condition and results of operations.

If we are not successful in leveraging our Platform to identify, develop and commercialize additional genomic and algorithmic tests, our ability to expand our business and achieve our strategic objectives would be impaired.

A key element of our strategy is to leverage our Platform to identify, develop and potentially commercialize genomic and algorithmic tests beyond our current portfolio to diagnose various types of diseases. Identifying new genomic and algorithmic tests requires substantial technical, financial and human resources, whether or not any genomic or algorithmic tests are ultimately developed and commercialized. We may pursue what we believe is a promising opportunity to leverage our Platform only to discover that certain of our risk or resource allocation decisions were incorrect or insufficient, or that individual genomic or algorithmic tests have limitations that were previously unknown or underappreciated.

Our strategy of pursuing the value of our Platform to develop genomic and algorithmic tests over a long time horizon and across a broad array of human diseases may not be effective. In the event that material decisions in any of these areas turn out to be incorrect or sub-optimal, we may experience a material adverse impact on our business and ability to fund our operations, and we may never realize what we believe is the potential of our Platform for developing and commercializing genomic and algorithmic tests.

If our existing and new products fail to achieve and sustain sufficient scientific acceptance, we will not generate expected revenue and our prospects may be harmed.

The life sciences scientific community is comprised of a small number of early adopters and key opinion leaders who significantly influence the rest of the community. The success of life sciences products is due, in large part, to acceptance by the scientific community and their adoption of certain products as best practice in the applicable field of research. The current system of academic and scientific research views publishing in a peer-reviewed journal as a measure of success. In such journal publications, the researchers will describe not only their discoveries but also the methods and typically the products used to fuel such discoveries. Mentions in peer-reviewed journal publications is a good barometer for the general acceptance of our products as best practices. Ensuring that early adopters and key opinion leaders publish research involving the use of our products is critical to ensuring our products gain widespread acceptance and market growth. Continuing to maintain good relationships with such key opinion leaders is vital to growing our market. The number of times our products were mentioned in peer-reviewed publications has increased significantly in recent years. As of September 30, 2021, our products have been mentioned in 55 peer-reviewed articles published or accepted for publication in major journals, including 38 that were Tempus-authored. We cannot assure investors, however, that our products will continue to be mentioned in peer-reviewed articles with any frequency or that any new products that we introduce in the future will be mentioned in peer-reviewed articles. In addition, self-authored journal publications that mention our products may present an actual, potential or perceived conflict of interest and, therefore, the number of publications in which our products are mentioned may not be indicative of the level of acceptance of our products. If too few researchers describe the use of our products, too many researchers shift to a competing product and publish research outlining their use of that product or too many researchers negatively describe the use or usability of our products in publications, it may drive existing and potential customers away from our products, which could harm our operating results. Any decrease in the frequency at which our products are mentioned in peer reviewed journals may negatively impact our prospects.

Our diagnostic products, or our competitors' diagnostic products, could have defects or errors or otherwise fail to meet the expectations of patients, physicians and third-party payers; in such cases our operating results, reputation and business could suffer.

The success of our Genomics and Algos products depends in part on patients', physicians' and third-party payers' confidence that our Platform can provide reliable, high-quality intelligent diagnostics that will improve

clinical outcomes and lower healthcare costs, as well as our ability to comply with applicable privacy and data security requirements. We believe that patients, physicians and third-party payers are likely to be particularly sensitive to product defects and errors in the use of our products, including if our products fail to detect genomic alterations or other clinical relevant information with high accuracy from samples, if we fail to list or inaccurately include certain treatment options and available clinical trials in our test reports, or if we fail to comply with applicable privacy and data security laws, and there can be no guarantee that we will be successful in this regard. Furthermore, if our competitors' diagnostic products do not perform to expectations or if they fail to comply with applicable laws and regulations, it may result in lower confidence in us as well. As a result, the failure of our diagnostic products or our competitors' diagnostic products to perform as expected, or failure by us or our competitors to comply with applicable laws and regulations, could significantly impair our operating results and our reputation. In addition, we may be subject to legal claims arising from any such failures, including claims that defects or errors in our diagnostic products led to injury or death. Confidence in us, as well as the strength of our brand and reputation, could also be eroded by perceived failures by us or our competitors, even absent any evidence of failure or wrongdoing.

If we are unable to support demand for our current and future Genomics product line, including ensuring that we have adequate capacity to meet increased demand, or we are unable to successfully manage our anticipated growth, our business could suffer.

As the volume of our Genomics product line sales grows, we will need to continue to increase our workflow capacity for sample intake, customer service, billing and general process improvements, expand our internal quality assurance program and extend our Platform to support comprehensive genomic analysis at a larger scale within expected turnaround times. We will need additional certified laboratory scientists and other scientific and technical personnel to process higher volumes of our Genomics tests. Portions of our process are not automated and will require additional personnel to scale. We will also need to purchase additional equipment, some of which can take several months or more to procure, set up and validate, and increase our software and computing capacity to meet increased demand. There can be no assurance that any of these increases in scale, expansion of personnel, equipment, software and computing capacities or process enhancements will be successfully implemented, if at all, or that we will have adequate space in our laboratory facility or be able to secure additional facility space to accommodate such required expansion.

As we commercialize additional Genomics products, we will need to incorporate new equipment, implement new technology systems and laboratory processes, and hire new personnel with different qualifications. Failure to manage this growth or transition could result in turnaround time delays, higher product costs, declining product quality, deteriorating customer service and slower responses to competitive challenges. A failure in any one of these areas could make it difficult for us to meet market expectations for our products and could damage our reputation and the prospects for our business.

In addition, our ability to manage our growth properly will require us to continue to improve our operational, financial and management controls, as well as our reporting systems and procedures. The time and resources required to implement these new systems and procedures is uncertain and could be demanding, and failure to complete this in a timely and efficient manner could adversely affect our business, financial condition and results of operations.

If third-party payers, including commercial payers and government healthcare programs, do not provide coverage of, or adequate reimbursement for, our tests, our business, financial condition and results of operations will be negatively affected.

For the years ended December 31, 2019 and 2020, we received payment through reimbursement on approximately 50% and 48% of our clinical oncology NGS tests, respectively. We did not receive payment on approximately 50% and 52% of our clinical oncology NGS tests during the same periods, respectively. In addition, we receive a substantial portion of our diagnostic revenue from a limited number of third-party

commercial payers, most of which have not contracted with us to be a participating provider. We also receive reimbursement from Medicare for claims submitted with respect to our various diagnostic tests. Approximately 30% and 29% of our clinical tests were for Medicare beneficiaries in the years 2019 and 2020, respectively, and 27% for the nine months ended September 30, 2021. Our revenue and commercial success depend on achieving coverage and reimbursement for our tests from payers, including both commercial and government payers. If payers do not provide coverage of, or do not provide adequate reimbursement for our tests, we may need to seek payment from the patient, which may adversely affect demand for our tests.

In addition, because our Genomics and Algos diagnostic tests represent new approaches to the diagnosis of diseases, we cannot accurately estimate how they would be priced, whether reimbursement could be obtained or any potential revenue generated. Coverage determinations by a payer may depend on a number of factors, including but not limited to a payer's determination that a test is appropriate, medically necessary or cost-effective. If we are unable to provide payers with sufficient evidence of the clinical utility and validity of our test, they may not provide coverage, may provide limited coverage or may terminate coverage, which will adversely affect our business, financial condition and results of operations. To the extent that more competitors enter our markets, the availability of coverage and the reimbursement rate for our tests may decrease as we encounter pricing pressure from our competitors.

Each payer makes its own decision as to whether to provide coverage for our tests, whether to enter into a contract with us and the reimbursement rate for a test. Negotiating with payers is time-consuming, and payers often insist on their standard form contracts, which may allow payers to terminate coverage on short notice, impose significant obligations on us and create additional regulatory and compliance hurdles for us. There can be no guarantee that a payer will provide adequate coverage or reimbursement for our tests or that we can reach an agreement with the payer on reasonable terms without being subject to additional regulatory and compliance risks. In cases where there is no coverage, or we do not have a contracted rate for reimbursement with the payer, the patient is typically responsible for a greater share of the cost of the test, which may result in delay of revenue, increase collection costs or decrease the likelihood of collection. We maintain a financial assistance program under which we assess patient financial need and offer discounted or no-cost tests to certain patients who meet the financial and other eligibility criteria of the program. This may result in scrutiny by payers of our financial assistance program and could result in recoupment actions or termination of coverage of our tests.

Our claims for reimbursement have in the past been denied and may again in the future be denied, and we have needed, and again may need, to appeal such denials in order to get paid. Such appeals may not result in payment. Payers may perform audits of historically paid claims and attempt to recoup funds years after the funds were initially distributed if the payers believe the funds were paid in error or determine that our tests were medically unnecessary. If a payer's audit of our claims results in a negative finding, and we are unable to reverse the finding through appeal, any subsequent recoupment could result in a material adverse effect on our revenue. Additionally, in some cases commercial payers for whom we are not a participating provider may elect at any time to review claims previously paid and determine the amount they paid was excessive. In these situations, the payer typically notifies us of its decision and then offsets the amount it determines to be overpaid against amounts it owes us on current claims. We do not have a mechanism to dispute these retroactive adjustments, and we cannot predict when, or how often, a payer might engage in these reviews, as historic success and payments are not indicative of future success of and payments from such appeals.

Our efforts to become a participating provider of a number of commercial payers may not be successful. When we contract with a payer as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained.

Although we are a participating provider with an extremely small number of commercial payers, other large, national commercial payers, including Anthem, Aetna and Humana, have issued non-coverage policies that consider tissue and liquid comprehensive genomic profile testing, including certain of our Genomics tests, as

experimental or investigational. If we are not successful in obtaining coverage from such payers, or if other payers issue similar non-coverage policies, our business, financial condition and results of operations could be materially and adversely affected.

Coverage and reimbursement are ever changing, and we are not in control of how our competitors' coverage and pricing strategies are established. Some of our competitors have widespread brand recognition and substantially greater financial and technical resources and development, production and marketing capabilities than we do. Others may develop lower-priced, less complex tests that payers and healthcare professionals could view as functionally equivalent to our products, which could force us to lower the list price of our tests and impact our operating margins and our ability to achieve and maintain profitability. Payers may compare our products to our competitors and utilize them as precedents, which may impact our coverage and reimbursement. In addition, technological innovations that result in the creation of enhanced diagnostic tools that are more effective than ours may enable other clinical laboratories, hospitals, medical personnel or medical providers to provide specialized diagnostic tests similar to ours in a more patient-friendly, efficient or cost-effective manner than is currently possible.

In the United States, many significant decisions about reimbursement for new diagnostics are made by the Centers for Medicare & Medicaid Services, or CMS, which makes a national coverage determination, or NCD, as to whether and to what extent a new diagnostic will be covered and reimbursed under Medicare, although it frequently delegates this authority to local Medicare Administrative Contractors, or MACs, which may make a local coverage determination, or LCD, with respect to coverage and reimbursement. Private payers tend to follow Medicare to a substantial degree. It is difficult to predict what CMS or the applicable MACs will decide with respect to reimbursement for novel diagnostic products such as ours.

Medicare's NCD for next generation sequencing, or NGS, first established in 2018 and subsequently updated in 2020, states that NGS oncology tests (such as our Tempus|xT and Tempus|xF tests), would be covered by Medicare nationally if and when: (1) performed in a Clinical Laboratory Improvement Amendments, or CLIA, certified laboratory, (2) ordered by a treating physician, (3) the patient meets certain clinical and treatment criteria, including having recurrent, relapsed, refractory, metastatic, or advanced stages III or IV cancer, (4) the test is approved or cleared by the FDA as a companion in vitro diagnostic for an FDA approved or cleared indication for use in that patient's cancer, and (5) results are provided to the treating physician for management of the patient using a report template to specify treatment options. The NGS NCD also states that each MAC may provide local coverage of other next-generation sequencing tests for cancer patients only when the test is performed by a CLIA-certified laboratory, ordered by a treating physician and the patient meets the same clinical and treatment criteria required of nationally covered next-generation sequencing tests under the NGS NCD. An NGS test is typically not covered by Medicare when cancer patients do not have the above-noted indications for cancer under either an NCD or LCD.

National Government Services, Inc., or the Local MAC, is the MAC that makes LCDs for tests conducted at our Chicago laboratory. The Local MAC has issued two LCDs related to genetic testing in cancer, each of which currently requires claims to be submitted under a single current procedural terminology, or CPT code that describes the test. Because no CPT code comprehensively describes our NGS oncology tests, we have historically submitted claims using individual codes based on the cancer subtype profiled. On March 25, 2021, the Local MAC instructed us to submit our claims using a different designated CPT code and the Local MAC indicated that such claims would be individually reviewed. Claims we have submitted under this were summarily denied.

We have begun the process of appealing these denials, but the outcome of any appeal is uncertain and the appeal process is typically slow and costly, and multiple levels of appeal may be required to reach final adjudication of the outstanding claims. In early November 2021, we received favorable results on a small number (fewer than 35) of outstanding level 2 claims that were adjudicated and have received payment for those claims as a result of the appeals process. We still have more than 3,000 outstanding level 2 appeals that have not been finally adjudicated as of November 5, 2021. As a result of the uncertainty inherent in the appeals process, it is

impossible for us to predict when the payments for NGS oncology tests performed for Medicare beneficiaries in our Chicago laboratory after March 25, 2021 will be finally adjudicated or whether we will receive any payment for the claims we have submitted to the Local MAC after March 25, 2021.

In addition to claims submitted after the March 25, 2021 guidance, on July 23, 2021, the Local MAC issued revised instructions for CPT coding, which may be applicable to our NGS oncology tests performed after the date of the revised guidance, and further updated those instructions on July 29, 2021. We have sought additional clarification on this guidance from the Local MAC in order to understand its impact on our coding procedures. We are also attempting to assess the impact of this updated guidance on the payments we may receive for Medicare claims submitted to the Local MAC. At present, the outcome is uncertain and it is possible that the Local MAC will deny all claims related to the NGS oncology testing we perform for Medicare beneficiaries in our Chicago laboratory based on its July guidance. As of September 30, 2021, these claims represent approximately 27% of our clinical testing volume. While we intend to appeal any future denials of claims that we believe are inappropriate, the outcome of any appeal process is likely to be both lengthy and costly and the result of any such process is uncertain. As a result, beginning in the second quarter of 2021, we estimated the reimbursement rate for tests performed within our contractual allowances with a zero percent expected reimbursement for these tests.

In addition, pursuant to the regulations of CMS, we cannot bill Medicare directly for tests provided for Medicare beneficiaries in some situations. CMS adopted an exception to its laboratory date of service regulation, and if certain conditions are met, molecular testing laboratories such as us can rely on that exception to bill Medicare directly, instead of seeking payment from the hospital. If this exception is repealed or curtailed by CMS, or its laboratory date of service regulation is otherwise changed to adversely impact our ability to bill Medicare directly, our revenue could be materially reduced.

Some payers have implemented, or are in the process of implementing, laboratory benefit management programs, often using third-party benefit managers to manage these programs. The stated goals of these programs are to help improve the quality of outpatient laboratory services, support evidence-based guidelines for patient care and lower costs. The impact on laboratories, such as us, of active laboratory benefit management by third parties is unclear, and we expect that it would have a negative impact on our revenue in the short term. Payers may resist reimbursement for our tests in favor of less expensive tests, require pre-authorization for our tests, or impose additional pricing pressure on and substantial administrative burden for reimbursement for our tests. We expect to continue to focus substantial resources on increasing adoption of, and coverage and reimbursement for, our current tests and any future tests we may develop. We believe it may take several years to achieve broad coverage and adequate contracted reimbursement with a majority of payers for our tests. However, we cannot predict whether, under what circumstances, or at what price levels payers will cover and reimburse our tests. If we fail to establish and maintain broad adoption of, and coverage and reimbursement for, our tests, our ability to generate revenue could be harmed and our business, financial condition and results of operations could suffer.

If we are unable to obtain or maintain adequate reimbursement for our Genomics product line outside of the United States, our ability to expand internationally will be compromised.

A substantial portion of our Genomics product line revenues come from third-party payer reimbursement. In many countries outside of the United States, various coverage, pricing and reimbursement approvals are required for our tests to be available to patients in significant volume. We expect that it will take several years to establish broad coverage and reimbursement for our tests with payers in countries outside of the United States, and our efforts may not be successful.

Even if public or private reimbursement is obtained, it may cover competing tests, or the reimbursement may be limited to a subset of the eligible patient population or conditioned upon local performance of the tests or other requirements we may have difficulty satisfying.

Reimbursement levels outside of the United States may vary considerably from the domestic reimbursement amounts we receive. We may also be negatively affected by the financial instability of, and austerity measures implemented by, several countries in the European Union, or EU, and elsewhere.

Failure of, or defects in, our Platform's artificial intelligence software, or increased regulation in this space, could impair our ability to process our data, develop products, or provide test results, and harm our business, financial condition and results of operations.

Artificial intelligence is enabled by or integrated into our Platform and, as a result, our diagnostic and data products and is a significant element of our current business and our future strategy. As with many developing technologies, artificial intelligence presents risks and challenges that could affect its further development, adoption, and use, and therefore our business. Algorithms may be flawed or biased, and datasets may be insufficient, of poor quality or contain biased information. Overcoming technical obstacles and correcting defects or errors could prove to be impossible or impracticable, and the costs incurred may be substantial and adversely affect our results of operations. If the diagnoses, recommendations, forecasts or analyses that our Platform's artificial intelligence applications assist in producing are deficient or inaccurate, we could be subjected to competitive harm, potential legal liability and brand or reputational harm.

In addition, inappropriate or controversial data practices by data scientists, engineers and end-users of our or our competitors' products could impair the acceptance of artificial intelligence products. Though our business practices are designed to mitigate many of these risks, if we enable or offer artificial intelligence products that are controversial because of their purported or real impact on human rights, privacy, employment, or other social issues, we may experience brand or reputational harm. Additionally, regulation in the artificial intelligence space is constantly changing and increasing, and may make it difficult for us to continue using our artificial intelligence approach to diagnostics and data analysis.

If our Platform does not function reliably, fails to meet expectations in terms of performance, or cannot be fully utilized due to increasing regulation or reputational concerns, we may be unable to provide or our customers may stop using our products.

We may experience challenges with the acquisition, development, enhancement or deployment of technology necessary for our businesses.

Our Platform requires sophisticated computer systems and software in order to accurately and efficiently capture, service and process increasing volumes of health data, in particular a growing number of genomic profiles generated by our customers through various NGS test kits, sequencers and sample materials from different manufacturers. Some of the technologies are changing rapidly and we must continue to adapt to these changes in a timely and effective manner at an acceptable cost. There can be no assurance that we will be able to develop, acquire, enhance, deploy or integrate new technologies, including technologies needed to integrate genomics data into our Platform, that these new technologies will be effective and efficient, will meet our needs or achieve our expected goals or that we will be able to do so as quickly or cost effectively as our competitors.

If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue or to achieve and then sustain profitability.

Growing understanding of the importance of biomarkers linked with therapy selection and response is leading to more companies offering products in genomic testing, including NGS diagnostics and PCR profiling. In addition, there are a number of healthcare technology companies providing data analysis products, including artificial intelligence-driven data platforms and diagnostic products.

Our competitors with respect to our Genomics products include certain diagnostic companies, such as Foundation Medicine, Inc., which was acquired by Roche Holdings, Inc., Caris Life Sciences, Guardant Health, Inc., Neogenomics, and ResolutionBio, which was acquired by Agilent, among others, with respect to our currently marketed precision oncology tests, and legacy diagnostic laboratories, such as Quest and LabCorp. In addition, our competitors for our pharmacogenetic test in neuropsychology include Myriad Genetics, Inc. and Genomind, Inc.

Our competitors with respect to our Data products include Flatiron Health, Inc., IQVIA Holdings Inc., and ConcertAI, among others. Furthermore, our Data products also face competition from CROs, such as Covance, ICON, Syneos, PPD, and others, who provide data and clinical trial matching services to pharmaceutical and biotechnology companies.

Our competitors with respect to our Algos products include Roche Holdings, Inc., Caris Life Sciences, Guardant Health, Inc., Illumina, Inc., and others, with respect to our TO test, and Myriad Genetics, Inc., Caris Life Sciences, and others, with respect to our HRD test. We may also compete with companies developing or commercializing algorithm-based diagnostics using a variety of different data modalities, including digital pathology companies such as PathAI, Inc. and PaigeAI. In cardiology, we believe our competitors may include HeartFlow Inc. and Eko Devices, Inc. In addition, we are aware that academic medical centers may be developing their own Algos and may decide to enter this market.

Some of our competitors and potential competitors may have longer operating histories; larger customer bases; greater brand recognition and market penetration; substantially greater financial, technological and research and development resources and selling and marketing capabilities; and more experience dealing with third-party payers. As a result, they may be able to respond more quickly to changes in customer requirements, devote greater resources to the development, promotion and sale of their products than we do or sell their products at prices designed to win significant levels of market share. We may not be able to compete effectively against these organizations. Increased competition and cost-saving initiatives on the part of governmental entities and other third-party payers are likely to result in pricing pressures, which could harm our sales or ability to gain market share. In addition, competitors may be acquired by, receive investments from or enter into other commercial relationships with larger, well-established and well-financed companies. Certain of our competitors may be able to secure key inputs from vendors on more favorable terms, devote greater resources to marketing and promotional campaigns, adopt more aggressive pricing policies and devote substantially more resources to product development than we can. In addition, companies or governments that control access to genetic testing through umbrella contracts or regional preferences could promote our competitors or prevent us from selling certain products. If we are unable to compete successfully against current and future competitors, we may be unable to increase market acceptance and sales of our tests, which could prevent us from increasing our revenue or achieving profitability and could cause our stock price to decline.

The sizes of the markets for our current and future products have not been established with precision, and may be smaller than we estimate.

Our estimates of the annual total addressable markets for our current products and products under development are based on a number of internal and third-party estimates, including, without limitation, the number of patients profiled with genomic diagnostics in the diseases we test, the assumed prices for genomic and algorithmic testing products, the number of genomic and algorithmic tests that we are able to successfully develop and commercialize, and the existing market for multimodal patient data and clinical trial matching services. While we believe our assumptions and the data underlying our estimates are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. As a result, our estimates of the annual total addressable market for our current or future products may prove to be incorrect. If the actual number of patients who would benefit from our products, the price at which we can sell our products, the number of genomic or algorithmic tests we are able to successfully develop and commercialize, or the annual total addressable market for our products is smaller than we have estimated, it may impair our sales growth and have an adverse impact on our business, financial condition and results of operations.

The industries in which we operate are subject to rapid change, which could make our Platform, our current products and any future products we may develop obsolete.

The healthcare diagnostic and data industries are characterized by rapid changes, including technological and scientific breakthroughs, frequent new product introductions and enhancements and evolving industry

standards, any of which could make our current and future products obsolete. Our future success will depend on our ability to keep pace with the evolving needs of our customers on a timely and cost-effective basis and to pursue new market opportunities that develop as a result of scientific and technological advances. In recent years, there have been numerous advances in technologies relating to genomic diagnostic testing, as well as advances in the application of artificial intelligence to healthcare diagnostics and decision-making. We must continuously enhance our Platform and our existing diagnostic, data and analytics products and develop new products to keep pace with evolving standards of care. If we do not update our product offerings to reflect new scientific knowledge about disease biology, information about new therapies or relevant clinical trials, or insights regarding the current treatment landscape for applicable indications and advances in computational biology, software development, and artificial intelligence, our Platform and products could become obsolete and sales of our current products and any new products we may develop could decline or fail to grow as expected. Further, to the extent that pharmaceutical or biotechnology companies are able to develop therapies or technologies that eradicate or substantially limit the incidence of diseases for which we sell diagnostics, the market for our applicable products could disappear entirely.

Our research and development strategy emphasizes rapid innovation and advancement of successful hires who may not have prior industry expertise, and we frequently prioritize patient care and customer satisfaction over short-term financial results. If we cannot maintain or properly manage our culture as we grow, our business may be harmed.

We have a research and development strategy that encourages employees to quickly develop and launch technologies intended to solve our customers' most important problems and prioritizes the advancement of Platform and product development, technology and engineering employees to positions of significant responsibility based on merit despite, in some cases, limited prior work or industry experience. Successful entry-level hires are often quickly advanced and rewarded with significant responsibilities, including in important customer-facing roles as project managers, development leads, and product managers. As our business grows and becomes more complex, our cultural emphasis on moving quickly and staffing research and development personnel, including certain customer-facing employees, without significant industry experience may result in unintended outcomes or in decisions that are poorly received by customers or other stakeholders. For example, in many cases we launch, at our expense, pilot deployments with customers without a long-term contract in place, and some of those deployments have not resulted in the customer's adoption or expansion of its use of our products, or the generation of significant, or any, revenue or payments. In addition, as we continue to grow, including geographically, and as we develop a public company infrastructure, we may find it difficult to maintain our culture.

Our culture also prioritizes patient care and customer satisfaction over short-term financial results, and we frequently make product decisions that may reduce our short-term revenue or cash flow if we believe that the decisions are consistent with our mission and thereby have the potential to improve our financial performance over the long term. These decisions may not produce the long-term benefits and results that we expect or may be poorly received in the short term by the public markets, in which case our customer growth and our business, financial condition and results of operations may be harmed.

We may not be able to successfully market, sell or distribute our products, and if we are unable to expand our sales organization to adequately address our customers' needs, our business, financial condition and results of operations may be adversely affected.

We may not be able to market, sell or distribute our data products and diagnostic tests, and other products we may develop effectively enough to support our planned growth. We currently sell our Genomics and Algos tests to clinicians and hospital systems in the United States through our own sales organization, and we sell our Data products to pharmaceutical and biotechnology companies through our business development team.

Each of our target markets is large, distinctive and diverse. As a result, we believe it is necessary for many of our sales representatives and business development managers to have established diagnostic- or healthcare

data-focused expertise. Competition for such employees within the precision diagnostics and healthcare data analytics industries is intense. We may not be able to attract and retain personnel or be able to build an efficient and effective sales organization or business development team, which could negatively impact sales and market acceptance of our products and limit our revenue growth and potential profitability.

Our expected future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees. Our future financial performance and our ability to commercialize our products, to increase our sales and to compete effectively will depend, in part, on our ability to manage this potential future growth effectively, without compromising quality.

If we are not successful in executing our strategy to increase sales of our Data products to large pharmaceutical and biotechnology customers, our results of operations may suffer.

An important part of our growth strategy is to increase sales of Data products, and in particular our Insights product, to large pharmaceutical and biotechnology companies. Sales to large companies involve risks that may not be present (or that are present to a lesser extent) with sales to small-to-mid-sized entities. These risks include:

- increased leverage held by large customers in negotiating contractual arrangements with us;
- changes in key decisionmakers within these organizations that may negatively impact our ability to negotiate in the future;
- customer employees may perceive that our products pose a threat to their internal control and advocate for internally developed solutions over our product;
- resources may be spent on a potential customer that ultimately elects not to purchase our products;
- more stringent requirements in our service contracts, including stricter service response times, and increased penalties for any failure to meet service requirements;
- increased competition from larger competitors that traditionally target large enterprises and government entities; and
- less predictability in completing some of our sales than we do with smaller customers.

Sales to large pharmaceutical and biotechnology companies is often a lengthy process, generally taking several months and sometimes longer. Following the establishment of the relationship, the negotiation of purchase terms can be time-consuming, and a potential customer may require an extended evaluation and testing period. Due to the length, size, scope, and requirements of these evaluations, we frequently provide short-term pilot deployments of our Data products at no or low cost. We sometimes spend substantial time, effort and money in our sales efforts without producing any sales. The success of the investments that we make to acquire customers depends on factors such as our ability to identify potential customers for which our data products have an opportunity to add significant value to the customer's business, our ability to identify and agree with the potential customer on an appropriate pilot deployment to demonstrate the value of our products, and whether we successfully execute on such pilot deployment. Even if the pilot deployment is successful, we or the customer could choose not to enter into a larger contract for a variety of reasons. For example, product purchases by large companies are frequently subject to budget constraints, leadership changes, multiple approvals, and unplanned administrative, processing, and other delays, any of which could significantly delay or entirely prevent our realization of sales. As a result, in the event a sale is not completed or is canceled or delayed, we may have incurred substantial expenses, making it more difficult for us to become profitable or otherwise negatively impacting our financial results.

Finally, large companies typically (i) have longer implementation cycles, (ii) require greater product functionality and scalability and a broader range of services, including design services, (iii) demand that vendors take on a larger share of risks, (iv) sometimes require acceptance provisions that can lead to a delay in revenue recognition and (v) expect greater payment flexibility from vendors.

All of these factors can add further risk to business conducted with these customers. If sales expected from a large customer for a particular quarter are not realized in that quarter or at all, our business, financial condition and results of operations could be materially and adversely affected.

If our existing customers do not renew their licenses, do not buy additional products from us, or renew at lower prices, our business and operating results will suffer.

For the year ended December 31, 2020, we derived $22.1 million, or approximately 61% of our Data product line revenue from three customers. After removing the impact of COVID-19 testing revenue, we derived $23.6 million, or approximately 24%, of total revenue from the same three customers for the year ended December 31, 2020. We expect to continue to derive a significant portion of our Data product line revenues from renewal of existing agreements. As a result, maintaining the renewal rate of our existing customers and selling additional products to them is critical to our future operating results. Factors that may affect the renewal rate for our customers and our ability to sell additional products to them include:

- the price, performance, and functionality of our products;
- the availability, price, performance, and functionality of competing products;
- the effectiveness of our support services;
- our ability to develop complementary products;
- the success of competitive products or technologies;
- the stability, performance, and security of our technological infrastructure; and
- the business environment of our customers.

We deliver our Insights product through license agreements that allow our customers to use de-identified datasets for a specified term or for specified uses. Our customers have no obligation to renew their licenses for our Data products after the license ends, and many of our contracts may be terminated or reduced in scope either immediately or upon notice. In addition, our customers may negotiate terms less advantageous to us upon renewal, which may reduce our revenues from these customers. Factors that are not within our control may contribute to a reduction in our Data product line revenues. For instance, our customers may change the indications in which they are conducting research and development, which could result in a reduced demand for our products and thus a lower aggregate renewal fee. The loss, reduction in scope, or delay of a large contract, or the loss or delay of multiple contracts, could materially adversely affect our business, financial condition and results of operations.

Our future operating results also depend, in part, on our ability to sell expanded products to our existing customers. For example, the willingness of existing customers to expand their use of our Insights product will depend on our ability to deliver meaningful information and insights relevant to our customers' research and development endeavors, which we may not do successfully. If our customers fail to renew their agreements, renew their agreements upon less favorable terms or at lower fee levels, or fail to purchase expanded licenses from us, our revenues may decline and our future revenues may be constrained.

A significant portion of our Data product line revenues are generated by sales to life sciences industry customers, and factors that adversely affect this industry could also adversely affect our Data business sales.

A significant portion of our current Data products sales are to customers in the life sciences industry, in particular the pharmaceutical and biotechnology industry. Demand for our Data products could be affected by factors that adversely affect the life sciences industry. The life sciences industry is highly regulated and competitive and has experienced periods of considerable consolidation. Consolidation among our customers

could cause us to lose customers, decrease the available market for our products, and adversely affect our business, financial condition and results of operations. In addition, changes in regulations that make investment in the life sciences industry less attractive or drug development more expensive could adversely impact the demand for our data analytics products. For these reasons and others, selling data analytics products to life sciences companies can be competitive, expensive, and time consuming, often requiring significant upfront time and expense without any assurance that we will successfully complete a sale. Accordingly, our operating results and our ability to efficiently provide our products to life sciences companies and to grow or maintain our customer base could be adversely affected as a result of factors that affect the life sciences industry generally.

We have invested and expect to continue to invest in research and development efforts that further enhance our data analytics. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in research and development efforts that further enhance our data analytics, often in response to our customers' requirements. These investments may involve significant time, risks, and uncertainties, including the risk that the expenses associated with these investments may affect our margins and operating results and that such investments may not generate sufficient revenues to offset liabilities assumed and expenses associated with these new investments. The healthcare data analytics industry changes rapidly as a result of technological and product developments, which may render our Platform and products less desirable. We believe that we must continue to invest a significant amount of time and resources in our Platform and products to maintain and improve our competitive position. If we do not achieve the benefits anticipated from these investments, if the achievement of these benefits is delayed, or if a slowdown in general computing power impacts the rate at which we expect our physics-based simulations to increase in power and domain applicability, our revenue and operating results may be adversely affected.

If we are unable to collect receivables from our customers, our operating results may be adversely affected.

While the majority of our current customers are well-established large companies and hospital systems, we also provide our Data products to smaller institutions and companies and our Genomics product line to individuals. Our financial success depends upon the creditworthiness and ultimate collection of amounts due from our customers, including our smaller customers with fewer financial resources. If we are not able to collect amounts due from our customers, we may be required to write-off significant accounts receivable and recognize bad debt expenses, which could materially and adversely affect our operating results.

We rely on a limited number of suppliers or, in some cases, sole suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or promptly transition to alternative suppliers.

We rely on a limited number of suppliers or, in some cases, sole suppliers, including Illumina Inc., or Illumina, for certain sequencers, reagents, blood tubes and other equipment, instruments and materials that we use in our laboratory operations. Purchases from this supplier accounted for approximately 14% and 23% of total vendor payments for the year ended December 31, 2019 and 2020, respectively, and approximately 21% and 24% of total vendor payments for the nine months ended September 30, 2020 and 2021, respectively. Amounts due to this supplier approximated $4.1 million and $5.3 million at December 31, 2019 and 2020, respectively, and $3.9 million and $1.0 million at September 30, 2020 and 2021, respectively. An interruption in our laboratory operations could occur if we encounter delays or difficulties in securing these laboratory equipment, instruments or materials, and if we cannot then obtain an acceptable substitute. Any such interruption could significantly and adversely affect our business, financial condition and results of operations. We rely on Illumina as the sole supplier of the sequencers and as the sole provider of maintenance and repair services for these sequencers. Any disruption in operations of Illumina or other sole or limited suppliers or termination or suspension of our relationships with them could materially and adversely impact our supply chain and laboratory operations of our diagnostic testing business and thus our ability to conduct our business and generate revenue.

These limited or sole suppliers could engage in diverse types of businesses, including selling products in competition with us, and there can be no assurance that we can continue to receive required equipment, instruments or materials from them.

We believe that there are only a limited number of manufacturers that are capable of supplying and servicing the equipment and materials necessary for our laboratory operations, including sequencers and various associated reagents, and potentially replacing our current suppliers. The use of equipment or materials furnished by replacement suppliers would require us to alter our laboratory operations. Transitioning to a new supplier would be time-consuming and expensive, may result in interruptions in our laboratory operations, could affect the performance specifications of our laboratory operations or could require that we revalidate our tests. There can be no assurance that we will be able to secure alternative equipment, reagents and other materials, bring such equipment, reagents and materials online, and revalidate our tests without experiencing interruptions in our workflow. In the case of an alternative supplier for Illumina, for example, there can be no assurance that replacement sequencers and various associated reagents will be available or will meet our quality control and performance requirements for our laboratory operations. If we should encounter delays or difficulties in securing, reconfiguring or integrating the equipment and reagents we require for our products or in revalidating our products, our business, financial condition and results of operations could be materially and adversely affected.

Certain disruptions in supply of, and changes in the competitive environment for, raw materials and components integral to the manufacturing of our products may adversely affect our ability to achieve and maintain profitability.

We use a broad range of materials and supplies, including chemicals and other electronic components, in our Genomics product line. A significant disruption in the supply of these materials, including disruptions stemming from the COVID-19 pandemic, could decrease production and shipping levels, materially increase our operating costs and materially adversely affect our profit margins. Shortages of materials or interruptions in transportation systems, labor strikes, work stoppages, infectious disease, epidemics or pandemics including COVID-19, outbreaks, conflict, civil unrest, acts of terrorism or other interruptions to or difficulties in the employment of labor or transportation in the markets in which we purchase materials, components and supplies for the production of our diagnostic tests, in each case may adversely affect our ability to maintain our testing capacity. Unforeseen end-of-life or unavailability for certain components, such as enzymes, could cause backorders as we modify our product specifications to accommodate replacement components. If we were to experience a significant disruption in the supply of, or prolonged shortage of, critical components from any of our suppliers and could not procure the components from other sources, we would be unable to sustain our testing capacity, which would adversely affect our sales, margins and customer relations.

If our existing laboratory and storage facilities become damaged or inoperable or we are required to vacate our existing facilities, our ability to perform our tests and pursue our research and development efforts may be jeopardized.

We currently derive nearly all of our diagnostic revenue from tests performed at laboratory facilities located in Chicago, Illinois and Atlanta, Georgia, and these facilities generally do not have redundant capabilities. Further, while we are currently in the process of validating our new laboratory facility in Raleigh, North Carolina, there is no assurance that we will successfully complete such validation in a timely manner or at all, and we will not be able to operationalize this facility until such validation is complete. Our facilities and equipment could be harmed or rendered inoperable by natural or man-made disasters, including war, fire, earthquake, power loss, communications failure or terrorism, which may render it difficult or impossible for us to operate our Genomics product line for some period of time and which may also cause us to lose valuable stored tissue samples, including organoids. The inability to perform our tests or to reduce the backlog that could develop if a facility is inoperable for even a short period of time, may result in the loss of customers or harm to our reputation, and we may be unable to regain those customers or repair our reputation. Furthermore, our facilities and the equipment we use to perform our research and development work could be unavailable or costly and time-consuming to repair or replace. It would be difficult, time-consuming and expensive to rebuild a

facility, to locate and qualify a new facility or enable a third party to practice our proprietary technology, particularly in light of licensure and accreditation requirements. Even if we are able to find a third party with such qualifications to perform our tests, the parties may be unable to agree on commercially reasonable terms.

We carry insurance for damage to our property and disruption of our business, but this insurance may not cover all of the risks associated with damage or disruption to our facilities and business, may not provide coverage in amounts sufficient to cover our potential losses and may not continue to be available to us on acceptable terms, if at all.

We rely on commercial courier delivery services to transport samples to our laboratory facility in a timely and cost-efficient manner and if these delivery services are disrupted, our business will be harmed.

Our business depends on our ability to deliver test results quickly and reliably to our customers. Blood and tissue samples sent from the United States by patients, physicians or hospital pathology departments are typically received within days for analysis at our Chicago or Atlanta facilities. Disruptions in delivery services to transport samples to that facility, whether due to labor disruptions, bad weather, natural disaster, terrorist acts or threats or for other reasons could adversely affect specimen integrity and our ability to process samples in a timely manner, delay our provision of test results to our customers, and ultimately our reputation and our business. In addition, if we are unable to continue to obtain expedited delivery services to transport samples to us on commercially reasonable terms, our business, financial condition and results of operations may be adversely affected.

If we cannot provide quality technical support and services for our Data products, we could lose customers and our business and prospects will suffer.

Our ability to provide relevant information to customers of our Data business, and in particular of our Insights product, depends substantially on our ability to provide quality technical support and services during the term of their license. Accordingly, we need highly trained technical support and services personnel. Hiring support and services personnel is very competitive in our industry due to the limited number of people available with the necessary scientific and technical backgrounds and ability to understand our products and the needs of our customers. To effectively support new customers and the expanding needs of current customers, we will need to substantially expand our support and services staff and develop our support infrastructure and processes. If we are unable to attract, train or retain the number of highly qualified technical services personnel that our business needs, our business and prospects will suffer.

Seasonality may cause fluctuations in our revenue and results of operations.

We believe that there are significant seasonal factors which may cause sales of our products, such as our Insights product and our infectious disease tests, to vary on a quarterly or yearly basis and increase the magnitude of quarterly or annual fluctuations in our operating results. We believe that this seasonality results from a number of factors, including the procurement and budgeting cycles of many of our customers, especially pharmaceutical and biotechnology customers. These customers typically have calendar year fiscal years, which result in a disproportionate amount of their purchasing activity occurring during our fourth quarter. These factors have contributed, and may contribute in the future, to substantial fluctuations in our quarterly operating results. Because of these fluctuations, it is possible that in some quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our common stock would likely decrease. These fluctuations, among other factors, also mean that our operating results in any particular period may not be relied upon as an indication of future performance. Seasonal or cyclical variations in our sales have in the past, and may in the future, become more or less pronounced over time, and have in the past materially affected, and may in the future materially affect, our business, financial condition and results of operations. Additionally, impacts of the COVID-19 pandemic could cause unpredictable temporary or permanent fluctuations in seasonal or cyclical variations, including seasonal demand for COVID-19 tests.

Risks Related to Our Highly Regulated Industry

Our collection, processing, use and disclosure of personally identifiable information, including patient and employee information, is subject to privacy and security regulations, and our failure to comply with those regulations or to adequately secure the information in our possession could result in significant liability or reputational harm.

The privacy and security of personally identifiable information stored, maintained, received or transmitted, including electronically, is a major issue in the United States and abroad. We collect, process, maintain, retain, evaluate, utilize and distribute large amounts of personal health and financial information and other confidential and sensitive data about our customers, employees and others in the ordinary course of our business. Concerns about and claims challenging our practices with regard to the collection, use, retention, disclosure or security of personally identifiable information or other privacy-related matters, even if unfounded and even if we are in compliance with applicable laws, could damage our reputation and harm our business, financial condition and results of operations.

Numerous federal, state and foreign laws and regulations govern collection, dissemination, use and confidentiality of personally identifiable information and protected health information, including HIPAA; state privacy and confidentiality laws (including state laws requiring disclosure of breaches); federal and state consumer protection and employment laws; and European and other foreign data protection laws. A range of enforcement agencies exist at both the state and federal levels that can enforce these laws and regulations. New privacy legislation may create additional rights for consumers and impose additional requirements on businesses. As these laws and regulations increase in complexity and number, they may change frequently, sometimes conflict and increase our compliance efforts, costs and risks.

HIPAA, as amended by HITECH, establishes a set of national privacy and security standards for the protection of PHI by health plans, healthcare clearinghouses, and certain healthcare providers that submit certain covered transactions electronically, or ‘‘covered entities,’’ and their ‘‘business associates,’’ which are persons or entities that perform certain services for, or on behalf of, a covered entity that involve creating, receiving, maintaining or transmitting PHI, and their covered subcontractors. We are a covered entity under HIPAA, and also routinely receive large amounts of PHI as a business associate under HIPAA, and therefore must comply with its requirements to protect the privacy and security of health information and must provide individuals with certain rights with respect to their health information. If we engage a business associate to help us carry out healthcare activities and functions, we must have a written business associate contract or other arrangement with the business associate that establishes specifically what the business associate has been engaged to do and requires the business associate to comply with the same requirements.

Penalties for violations of these laws vary. For instance, a single breach incident can result in findings of violations of multiple HIPAA provisions. Penalties for failure to comply with a requirement of HIPAA and HITECH vary significantly, and include civil monetary penalties for each provision of HIPAA that is violated and, in certain circumstances, criminal penalties, including imprisonment and/or additional fines. A person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face additional fines and up to one-year imprisonment. The criminal penalties increase if the wrongful conduct involves false pretenses or the intent to sell, transfer, or use identifiable health information for commercial advantage, personal gain, or malicious harm. In addition, any allegation that we have violated HIPAA, regardless of its merit, could harm our reputation and consume significant internal resources. Responding to government investigations regarding alleged violations of these and other laws and regulations, even if ultimately concluded with no findings of violations or no penalties imposed, can consume company resources and impact our business and, if public, harm our reputation.

Data privacy remains an evolving landscape at both the domestic and international level, with new regulations coming into effect. For example, various states, such as California and Massachusetts, have implemented similar privacy laws and regulations, such as the California Confidentiality of Medical Information

Act, that impose restrictive requirements regulating the use and disclosure of health information and other personally identifiable information, and the California Consumer Privacy Act, which came into effect on January 1, 2020, and creates new data privacy rights for users. For example, the CCPA requires covered businesses that process personal information of California residents to disclose their data collection, use and sharing practices. Further, the CCPA provides California residents with new data privacy rights (including the ability to opt out of certain disclosures of personal data), imposes new operational requirements for covered businesses, provides for civil penalties for violations as well as a private right of action for data breaches and statutory damages (that is expected to increase data breach class action litigation and result in significant exposure to costly legal judgements and settlements). Aspects of the CCPA and its interpretation and enforcement remain uncertain. In addition, it is anticipated that the CCPA will be expanded on January 1, 2023, when the California Privacy Rights Act of 2020, or CPRA, becomes operative. The CPRA will, among other things, give California residents the ability to limit use of certain sensitive personal information, further restrict the use of cross-contextual advertising, establish restrictions on the retention of personal information, expand the types of data breaches subject to the CCPA's private right of action, provide for increased penalties for CPRA violations concerning California residents under the age of 16, and establish a new California Privacy Protection Agency to implement and enforce the CPRA. Although there are limited exemptions for clinical trial data under the CCPA, the CCPA and other similar laws could impact our business activities depending on how they are interpreted. New legislation proposed or enacted in various other states will continue to shape the data privacy environment nationally. For example, Virginia recently passed its Consumer Data Protection Act, and Colorado recently passed the Colorado Privacy Act, both of which differ from the CPRA and become effective in 2023. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to confidential, sensitive and personal information than federal, international or other state laws, and such laws may differ from each other, which may complicate compliance efforts.

In addition, all 50 U.S. states and the District of Columbia have enacted breach notification laws that may require us to notify patients, customers, employees or regulators in the event of unauthorized access to or disclosure of personal or confidential information experienced by us or our service providers. These laws are not consistent, and compliance in the event of a widespread data breach is difficult and may be costly. Moreover, states have been frequently amending existing laws, requiring attention to changing regulatory requirements. We also may be contractually required to notify patients or other counterparties of a security breach. Although we may have contractual protections with our service providers, any actual or perceived security breach could harm our reputation and brand, expose us to potential liability or require us to expend significant resources on data security and in responding to any such actual or perceived breach. Any contractual protections we may have from our service providers may not be sufficient to adequately protect us from any such liabilities and losses, and we may be unable to enforce any such contractual protections. In addition to government regulation, privacy advocates and industry groups have and may in the future propose self-regulatory standards from time to time. These and other industry standards may legally or contractually apply to us, or we may elect to comply with such standards.

These laws and regulations are not necessarily preempted by HIPAA, particularly if a state affords greater protection to individuals than HIPAA. Where state laws are more protective, we may have to comply with the stricter provisions. In addition to fines and penalties imposed upon violators, some of these state laws also afford private rights of action to individuals who believe their personal information has been misused. The interplay of federal and state laws may be subject to varying interpretations by courts and government agencies, creating complex compliance issues for us and our clients, and potentially exposing us to additional expense, adverse publicity and liability. Further, as regulatory focus on privacy issues continues to increase and laws and regulations concerning the protection of personal information expand and become more complex, these potential risks to our business could intensify. Changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as PHI or other types of sensitive personally identifiable information, or PII, or increased demands for enhanced data security infrastructure applied to personally identifiable information, could greatly increase our costs of providing our products, decrease demand for our products, reduce our revenue and/or subject us to additional risks.

In addition, the interpretation and application of consumer, health-related, and data protection laws, especially with respect to genetic samples and data, in the United States, the EU (including all countries in the EEA), and elsewhere are often uncertain, contradictory, and in flux. We may operate in a number of countries outside of the United States whose laws may in some cases be more stringent than the requirements in the United States. For example, EU member countries have specific requirements relating to cross-border transfers of personal data to certain jurisdictions, including to the United States where our laboratory resides. In addition, some countries have stricter consumer notice and/or consent requirements relating to personal data collection, use or sharing, more stringent requirements relating to organizations' privacy programs and provide stronger individual rights. Moreover, international privacy and data security regulations continue to become more complex and have greater consequences. For instance, the General Data Protection Regulation, or GDPR, went into effect in May 2018 and imposes stringent data protection requirements for controllers and processors of personal data of persons within the EU. The GDPR applies to any company established in the EU as well as to those outside the EU if they collect and use personal data in connection with the offering of goods or services to individuals in the EU or the monitoring of their behavior. The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, higher standards for obtaining consent from individuals to process their personal data, more robust disclosures to individuals and a strengthened individual data rights regime, timelines for data breach notifications as short as 72 hours for notification to supervisory authorities, limitations on retention of information, increased requirements pertaining to health data, other special categories of personal data and pseudonymised (i.e., key-coded) data and additional obligations when we contract third-party processors in connection with the processing of the personal data. The GDPR provides that EU member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric or health data, which could limit our ability to use and share personal data or could cause our costs to increase, and harm our business, financial condition and results of operations. Failure to comply with the requirements of GDPR may result in significant fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Failure to comply with the GDPR and other applicable privacy or data security-related laws, rules or regulations could result in material penalties imposed by regulators, affect our compliance with client contracts and have an adverse effect on our business, financial condition and results of operations.

European data protection law, including the GDPR, also imposes strict rules on the transfer of personal data from Europe to the United States and other countries unless the parties to the transfer have implemented specific safeguards to protect the transferred personal data. These obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other requirements or our practices. In addition, these rules are constantly under scrutiny. For example, the EU-US Privacy Shield and the Swiss-US Privacy Shield were both invalidated by the Court of Justice of the EU, in a case known colloquially as "Schrems II," and the Swiss Commissioner, respectively. Further, the EU Standard Contractual Clauses are the subject of legal challenges in European courts and the Standard Contractual Clauses as well as any successor version(s) of those clauses may face additional challenges in the future and be found similarly invalidated, and the absence of successor safeguards for continued data transfer could require us to create duplicative, and potentially expensive, information technology infrastructure and business operations in Europe or limit our ability to collect and use personal information collected in Europe. Notwithstanding the foregoing challenges, the use of the EU Standard Contractual Clauses has also been called into question by the European courts. Use of the standard contractual clauses must now be assessed on a case-by-case basis taking into account the legal regime applicable in the destination country, in particular regarding applicable surveillance laws and relevant rights of individuals with respect to the transferred data. In the context of any given transfer, where the legal regime applicable in the destination country may or does conflict with the intended operation of the standard contractual clauses, the decision in Schrems II and subsequent draft guidance from the European Data Protection Board, or EDPB, may require the parties to that transfer to implement certain supplementary technical, organizational and/or contractual measures to rely on the standard contractual clauses as a GDPR-compliant 'transfer mechanism.' However, the aforementioned draft guidance from the EDPB on such supplementary technical, organizational

and/or contractual measures appears to conclude that no combination of such measures could be sufficient to allow effective reliance on the standard contractual clauses in the context of transfers of personal data 'in the clear' to recipients in countries where the power granted to public authorities to access the transferred data goes beyond that which is 'necessary and proportionate in a democratic society'—which may, following the CJEU's conclusions in Schrems II on relevant powers of U.S. public authorities and commentary in that draft EDPB guidance, include the United States in certain circumstances (e.g., where Section 702 of the US Foreign Intelligence Surveillance Act applies). If we are unable to implement a valid compliance mechanism for cross-border personal data transfers, we may face increased exposure to regulatory actions, substantial fines and injunctions against processing or transferring personal data from Europe.

Furthermore, in June 2021, the European Commission adopted new standard contractual clauses under the GDPR for transfers of personal data outside the EEA to countries that the European Commission has not deemed to provide an adequate level of protection for such personal data. If we elect to rely on the new standard contractual clauses for personal data transfers out of Europe, we may be required to expend significant resources to update our contractual arrangements and to meet the obligations the new standard contractual clauses impose; for example, we may be required to conduct transfer impact assessments for such cross-border personal data transfers and implement additional security measures. In addition, the EU Commission has proposed a new ePrivacy Regulation that would address various matters, including provisions specifically aimed at the use of cookies to identify an individual's online behavior, and any such ePrivacy Regulation may provide for new compliance obligations and significant penalties. Any of these changes to EU data protection law or its interpretation could disrupt and harm our business. We rely on a mixture of safeguards to transfer personal data from the EU to the United States, and could be impacted by changes in law as a result of a future review of these transfer mechanisms by European regulators or current challenges to these mechanisms in the European courts.

In addition, the United Kingdom leaving the EU could also lead to further legislative and regulatory changes. It remains unclear how the United Kingdom data protection laws or regulations will develop in the medium to longer term and how data transfer to the United Kingdom from the EU will be regulated, especially following the United Kingdom's departure from the EU on January 31, 2020 without a deal. However, the United Kingdom has transposed the GDPR into domestic law with the Data Protection Act 2018, which remains in force following the United Kingdom's departure from the EU. As of January 1, 2021, and the expiry of transitional arrangements agreed to between the United Kingdom and EU, data processing in the United Kingdom is governed by a United Kingdom version of the GDPR (combining the GDPR and the Data Protection Act 2018), exposing us to two parallel regimes, each of which potentially authorizes similar fines and other potentially divergent enforcement actions for certain violations. On June 28, 2021, the European Commission issued an adequacy decision under the GDPR which allows personal data transfers (other than those carried out for the purposes of United Kingdom immigration control) from the EEA to the United Kingdom to continue without restriction for four years (ending June 27, 2025). After that period, the adequacy decision may be renewed, only if the United Kingdom continues to ensure an adequate level of data protection. During these four years, the European Commission will continue to monitor the situation in the United Kingdom and could intervene at any point if the United Kingdom deviates from the level of data protection in place at the time of the issuance of the adequacy decision. If the adequacy decision is withdrawn or not renewed, transfers of personal data from the EEA to the United Kingdom will require a valid 'transfer mechanism' and we may be required to implement new processes and put new agreements in place, such as standard contractual clauses, to enable transfers of personal data form the EEA to the United Kingdom to continue.

Because of the breadth of these laws and the narrowness of their exceptions and safe harbors, it is possible that our current practices could be challenged under one or more of such laws, or that we will have to modify our business practices substantially to begin operating in these areas. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform. Federal, state and foreign enforcement bodies have increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry.

With the GDPR, CCPA, CPRA, and other laws, regulations and other obligations relating to privacy and data protection imposing new and relatively burdensome obligations, and with substantial uncertainty over the interpretation and application of these and other obligations, we may face challenges in addressing their requirements and making necessary changes to our policies and practices, and may incur significant costs and expenses in an effort to do so. Additionally, if third parties we work with, such as vendors or service providers, violate applicable laws or regulations or our policies, such violations may also put our or our customers' data at risk and could in turn have an adverse effect on our business, financial condition and results of operations. Any failure or perceived failure by us or our service providers to comply with our applicable policies or notices relating to privacy or data protection, our contractual or other obligations to third parties, or any of our other legal obligations relating to privacy or data protection, may result in governmental investigations or enforcement actions, litigation, claims and other proceedings, harm our reputation, and could result in significant liability.

We conduct business in a heavily regulated industry, and changes in regulations or violations of regulations may, directly or indirectly, reduce our revenue, adversely affect our business, financial condition and results of operations.

The diagnostic testing industry is highly regulated, and there can be no assurance that the regulatory environment in which we operate will not change significantly and adversely to us in the future. Areas of the regulatory environment that may affect our ability to conduct business include, without limitation:

- federal and state laws applicable to test ordering, documentation of tests ordered, billing practices and claims payment and/or regulatory agencies enforcing those laws and regulations;
- federal and state health care fraud and abuse laws;
- federal and state laboratory anti-mark-up laws;
- coverage and reimbursement levels by Medicare, Medicaid, other governmental payers and private insurers;
- restrictions on coverage of and reimbursement for tests;
- federal and state laws governing laboratory testing, including CLIA, and state licensing laws;
- federal and state laws and enforcement policies governing the development, use and distribution of diagnostic medical devices, including laboratory developed tests, or LDTs;
- federal and state laws and enforcement policies governing the use of artificial intelligence in analyzing data, including data in healthcare related areas;
- federal, state and local laws governing the handling and disposal of medical and hazardous waste;
- federal and state Occupational Safety and Health Administration rules and regulations;
- the Health Insurance Portability and Accountability Act of 1996, or HIPAA, and similar state data privacy and security laws; and
- consumer protection laws.

In particular, the laws and regulations governing the marketing of diagnostic tests are complex, and there are often no sufficient regulatory or judicial interpretations of these laws and regulations. For example, some of our diagnostic tests are actively regulated by the FDA pursuant to the medical device provisions of the Federal Food, Drug and Cosmetic Act, or FDCA. The FDA defines a medical device to include any instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article, including a component, part or accessory, intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease, in man or other animals. Many of our genomic and algorithmic diagnostic tests are likely to be considered by the FDA to be medical devices. Among other things, pursuant to the FDCA and its implementing regulations, the FDA regulates the research, design, testing, manufacturing,

safety, labeling, storage, recordkeeping, premarket clearance or approval, marketing and promotion and sales and distribution of medical devices in the United States to ensure that medical devices distributed domestically are safe and effective for their intended uses. In addition, the FDA regulates the import and export of medical devices. If we do not comply with these requirements or fail to adequately comply, our business, financial condition and results of operations may be harmed.

Changes in the current regulatory framework for algorithmic diagnostic products and services can impose additional regulatory burdens on us. On September 27, 2019, the FDA's Center for Devices and Radiological Health released a draft guidance on clinical decision support software to describe their planned regulatory approach for certain healthcare software functions. The FDA is also currently considering the development of novel regulatory pathways for artificial intelligence technologies and other software. As the regulatory framework evolves, we may incur substantial costs to ensure compliance with new or amended laws and regulations. Failure to comply with any of these laws and regulations could result in enforcement actions against us, damage to our reputation and loss of goodwill, any of which could have a material adverse effect on our business, financial condition and results of operations.

Certain of our tests are currently marketed as LDTs, and future changes in FDA enforcement discretion for LDTs could subject our operations to much more significant regulatory requirements.

The FDA has a policy of enforcement discretion with respect to LDTs whereby the FDA does not actively enforce its regulatory requirements for such tests. However, the FDA has stated its intention to modify its enforcement discretion policy with respect to LDTs. If there are changes in FDA policy, or if the FDA disagrees that we are marketing our tests as LDTs within the scope of its policy of enforcement discretion, we may become subject to extensive regulatory requirements and may be required to stop selling our existing tests or launching any other tests we may develop and to conduct additional clinical trials or take other actions prior to continuing to market our tests. This could significantly increase the costs and expenses of conducting, or otherwise harm, our business, financial condition and results of operations. Additionally, because our Platform and other software applications we make available include functionality related to the reporting of results from the LDTs we run, the FDA could attempt to regulate the software applications, including portions of our Platform, that we utilize to provides results of the LDTs to our customers and this may require costly modifications, additional development or the reduction in functionality in our offerings which could, in turn, make them less attractive to our customers.

We market some of our tests as LDTs. While we believe that we are in material compliance with applicable laws and regulations, we cannot assure that the FDA will agree with us.

On July 31, 2014, the FDA notified Congress of its intent to modify its policy of enforcement discretion with respect to LDTs. On October 3, 2014, FDA issued two draft guidances, entitled "Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)," or the Framework Guidance, and "FDA Notification and Medical Device Reporting for Laboratory Developed Tests (LDTs)." The Framework Guidance stated that the FDA intended to modify its policy of enforcement discretion with respect to LDTs in a risk-based manner consistent with the existing classification of medical devices. Thus, pursuant to the Framework Guidance, the FDA planned to begin to enforce its medical device requirements, including premarket submission requirements, on LDTs that have historically been marketed without FDA premarket review and oversight. The FDA could ultimately modify its current approach to LDTs (including the various software components we use to prepare and deliver the results of the LDTs) in a way that would subject our products marketed as LDTs to the enforcement of regulatory requirements. If such changes to the regulatory framework occur, we could be subject to enforcement of regulatory requirements as a device manufacturer such as registration and listing requirements, medical device reporting requirements and the requirements of the FDA's Quality System Regulation. Additionally, if the FDA begins to enforce its premarket submission regulations with respect to LDTs, we may be required to obtain premarket clearance or approval for our products we plan to commercialize as LDTs.

There is no guarantee that the FDA will grant 510(k) clearance or a premarket approval of our products and failure to obtain necessary clearances or approvals for our products would adversely affect our ability to grow our business.

Before we begin to label and market certain of our products for use as clinical diagnostics in the United States, including as companion diagnostics, we may be required to obtain either 510(k) clearance or a premarket approval, or supplemental premarket approval, or respectively, PMA or sPMA, from the FDA, unless an exemption applies or FDA exercises its enforcement discretion and refrains from enforcing its medical device requirements. For example, the FDA has a policy of refraining from enforcing such requirements with respect to LDTs, which the FDA considers to be a type of *in vitro* diagnostic test that is designed, manufactured and used within a single laboratory. The FDA has also largely refrained from regulating pharmacogenomic tests like those we perform in our neuropsychology business.

The process of obtaining a PMA is a rigorous, costly, lengthy and uncertain process. In the PMA process, the FDA must determine that a proposed device is safe and effective for its intended use based, in part, on extensive data, including, but not limited to, technical, pre-clinical, clinical trial, manufacturing and labeling data. In the 510(k) clearance process, the FDA must determine that a proposed device is "substantially equivalent" to a device legally on the market, known as a "predicate" device, in order to clear the proposed device for marketing. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics and not raise different questions of safety or effectiveness than the predicate device. Clinical data is sometimes required to support a substantial equivalence determination.

The FDA can delay, limit or deny clearance or approval of a device for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA that our products are safe or effective for their intended uses;
- the disagreement of the FDA with the design, conduct or implementation of our clinical trials or the analysis or interpretation of data from our pre-clinical studies or clinical trials;
- serious and unexpected adverse effects experienced by participants in our clinical trials;
- the data from our pre-clinical studies and clinical trials may be insufficient to support clearance or approval, where required;
- our inability to demonstrate that the clinical and other benefits of any of our tests outweigh the risks;
- an advisory committee, if convened by the FDA, may recommend against approval of our PMA or other application for any of our tests or may recommend that the FDA require, as a condition of approval, additional pre-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions, or even if an advisory committee, if convened, makes a favorable recommendation, the FDA may still not approve the test;
- the FDA may identify deficiencies in our marketing application, and in our manufacturing processes, facilities or analytical methods or those of our third-party contract manufacturers;
- the potential for approval policies or regulations of the FDA to change significantly in a manner rendering our clinical data or regulatory filings insufficient for the clearance or approval; and
- the FDA may audit our clinical trial data and conclude that the data is not sufficiently reliable to support a PMA application.

In foreign jurisdictions, we may be required to procure similar regulatory approvals or clearances prior to marketing our diagnostic products. For example, in the Europe Union, we would need to comply with the new Medical Device Regulation 2017/745 and In Vitro Diagnostic Regulation 2017/746, which became effective May 26, 2017, with application dates of May 26, 2021 (postponed from 2020) and May 26, 2022, respectively. Obtaining the requisite regulatory approvals or clearances in foreign jurisdictions can be expensive and may involve considerable delay.

Any delay or failure to obtain necessary regulatory approvals or clearances would have a material adverse effect on our business, financial condition and results of operations.

Modifications to our FDA-cleared or approved products may require new 510(k) clearances or premarket approvals, or may require us to cease marketing or recall the modified products until clearances are obtained.

For any product approved pursuant to a PMA, we are required to seek supplemental approval for many types of changes to the approved product, for which we will need to determine whether a PMA supplement or other regulatory filing is needed or whether the change may be reported via the PMA Annual Report. Similarly, any modification to a 510(k)-cleared device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, design, or manufacture, requires new 510(k) clearance or, possibly, approval of a new PMA. If the FDA requires us to seek approvals or clearances for modifications to our previously approved or cleared products, for which we concluded that new approvals or clearances are unnecessary, we may be required to cease marketing or distribution of our products or to recall the modified product until we obtain the approval or clearance, and we may be subject to significant regulatory fines or penalties.

Our products may in the future be subject to product recalls. A recall of our products, either voluntarily or at the direction of the FDA or another governmental authority, or the discovery of serious safety issues with our products, could have a significant adverse impact on us.

The FDA has the authority to require the recall of commercialized products that are subject to FDA regulation in the event of material deficiencies or defects in design or manufacture. We may also, on our own initiative, recall a product. The FDA requires that certain classifications of recalls be reported to the FDA within ten working days after the recall is initiated. In the case of FDA-approved tests, a government-mandated or voluntary recall by us or one of our distributors could occur as a result of an unacceptable risk to health, component failures, malfunctions, manufacturing errors, design or labeling defects or other deficiencies and issues. Recalls of any of our products could impair our ability to produce our products in a cost-effective and timely manner, which would have an adverse effect on our reputation, business, financial condition and results of operations. We may be subject to liability claims, may be required to bear costs or may take other actions that may have a negative impact on our future sales and our ability to generate profits. We may initiate voluntary recalls involving our products in the future that we determine do not require notification to the FDA. If the FDA disagrees with our determinations, the FDA could require us to report those actions and take enforcement action for failing to report the recalls when they were conducted. A future recall announcement could harm our reputation with customers and negatively affect our business, financial condition and results of operations.

If we initiate a correction or removal for one of our tests, issue a safety alert or undertake a field action or recall to reduce a risk to health imposed by the test, this could lead to increased scrutiny by the FDA and our customers regarding the quality and safety of our tests and to negative publicity, including FDA alerts, press releases or administrative or judicial actions. Furthermore, circulation of any such negative publicity could harm our reputation, be used by competitors against us in competitive situations and cause customers to delay purchase decisions or cancel orders.

Our "research use only" and any potential "investigational use only" products could become subject to more onerous regulation by the FDA or other regulatory agencies in the future, which could increase our costs and delay our commercialization efforts, thereby materially and adversely affecting our business, financial condition and results of operations.

In the United States, some of our products are currently available, or may become available, for research use only, or RUO, or for investigational use only, or IUO, depending on the proposed application. We make our RUO and IUO products available to a variety of parties, including pharmaceutical and biotechnology companies

and research institutes. Because RUO and IUO products are not intended for use in clinical practice and cannot be advertised or promoted for clinical or diagnostic claims, they are exempt from many regulatory requirements otherwise applicable to medical devices. In particular, while the FDA regulations require that RUO products be labeled "For Research Use Only. Not for use in diagnostic procedures," and that IUO products be labeled "For Investigational Use Only. The performance characteristics of this product have not been established," such products are not subject to the FDA's pre- and post-market controls for medical devices.

A significant change in the laws governing RUO or IUO products or how they are enforced may require us to change our business model in order to maintain compliance. For instance, in November 2013 the FDA issued a guidance document entitled "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only or Investigational Use Only," or the RUO/IUO Guidance, which highlights the FDA's interpretation that distribution of RUO or IUO products with any labeling, advertising or promotion that suggests that clinical laboratories can validate the test through their own procedures and subsequently offer it for clinical diagnostic use as an LDT is in conflict with the RUO or IUO status. The RUO/IUO Guidance further articulates the FDA's position that any assistance offered in performing clinical validation or verification, or similar specialized technical support, to clinical laboratories, is in conflict with RUO or IUO status. If we engage in any activities that the FDA deems to be in conflict with the RUO or IUO status held by any of our products so labeled, we may be subject to immediate, severe and broad FDA enforcement action that would adversely affect our ability to continue operations. Accordingly, if the FDA finds that we are distributing our RUO or IUO products in a manner that is inconsistent with its RUO/IUO Guidance, we may be forced to stop distribution of our RUO/IUO tests until we are in compliance, which would reduce our revenue, increase our costs and adversely affect our business, financial condition and results of operations.

Even if we receive regulatory approval of our products, we will continue to be subject to extensive regulatory oversight.

Medical devices are subject to extensive regulation by the FDA in the United States, the European Commission, European Economic Area, or EEA, Competent Authorities, and comparable regulatory agencies in other territories where we do or may do business. If any of our products are approved by the FDA, the European Commission, EEA Competent Authorities, or other comparable foreign regulatory agencies, we will be required to timely file various reports. If these reports are not filed timely, regulators may impose sanctions and sales of our products may suffer, and we may be subject to product liability or regulatory enforcement actions, all of which could harm our business, financial condition and results of operations. In addition, as a condition of approving a PMA application, the FDA may also require some form of post-approval study or post-market surveillance, whereby the applicant conducts a follow-up study or follows certain patient groups for a number of years and makes periodic reports to the FDA on the clinical status of those patients when necessary to protect the public health or to provide additional safety and effectiveness data for the device. The product labeling must be updated and submitted in a PMA supplement as results, including any adverse event data from the post-approval study, become available. Failure to conduct or timely complete post-approval studies in compliance with applicable regulations, update the product labeling, or comply with other post-approval requirements could result in withdrawal of approval of the PMA, which would harm our business, financial condition and results of operations.

The FDA and the Federal Trade Commission, or FTC, also regulate the advertising and promotion of medical devices to ensure that their promotional claims made are consistent with the applicable marketing authorizations, that there are adequate and reasonable data to substantiate the claims, and that the promotional labeling and advertising is neither false nor misleading in any respect. If the FDA or FTC determines that any of our promotional claims are false, misleading, not substantiated or not permissible, we may be subject to enforcement actions and we may be required to revise our promotional claims and make other corrections or restitutions.

The FDA, state and foreign authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA, state or foreign regulatory agencies, which may include any of the following sanctions:

- adverse publicity, warning letters, untitled letters, fines, injunctions, consent decrees and civil penalties;
- repair, replacement, refunds, recalls, termination of distribution, administrative detention or seizures of our products;
- operating restrictions, partial suspension or total shutdown of production;
- customer notifications or repair, replacement or refunds;
- refusing our requests for clearances or approvals of new products, new intended uses or modifications to existing products;
- withdrawals of current clearances or approvals, resulting in prohibitions on sales of our products;
- refusal to issue certificates needed to export products for sale in other countries; and
- criminal prosecution.

Any of these sanctions could also result in higher than anticipated costs or lower than anticipated sales of our products and have a material adverse effect on our business, financial condition and results of operations.

In addition, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions which may prevent or delay approval or clearance of our current or future products under development. For example, in November 2018, FDA officials announced forthcoming steps that the FDA intends to take to modernize the premarket notification pathway under Section 510(k) of the FDCA.

Among other things, the FDA announced that it planned to develop proposals to drive manufacturers utilizing the 510(k) pathway toward the use of newer predicates. These proposals included plans to potentially sunset certain older devices that were used as predicates under the 510(k) clearance pathway, and to potentially publish a list of devices that have been cleared on the basis of demonstrated substantial equivalence to predicate devices that are more than 10 years old. In May 2019, the FDA solicited public feedback on these proposals. The FDA requested public feedback on whether it should consider certain actions that might require new authority, such as whether to sunset certain older devices that were used as predicates under the 510(k) clearance pathway. These proposals have not yet been finalized or adopted, and the FDA may work with Congress to implement such proposals through legislation. Accordingly, it is unclear the extent to which any proposals, if adopted, could impose additional regulatory requirements on us that could delay our ability to obtain new 510(k) clearances, increase the costs of compliance, or restrict our ability to maintain our current clearances, or otherwise create competition that may negatively affect our business, financial condition and results of operations.

The FDA may establish performance criteria for classes of devices for which we or our competitors seek or currently have received clearance, and it is unclear the extent to which such performance standards, if established, could impact our ability to obtain new 510(k) clearances or otherwise create competition that may negatively affect our business, financial condition and results of operations.

Any new statutes, regulations or revisions or reinterpretations of existing regulations may impose additional costs or lengthen review times of our current or future products or make it more difficult to obtain clearance or approval for, manufacture, market or distribute our products.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be promulgated that could prevent, limit or delay regulatory clearance or approval of our diagnostic tests.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad.

We may never obtain approval in the EU or in any other foreign country for any of our products and, even if we do, we may never be able to commercialize them in any other jurisdiction, which would limit our ability to realize their full market potential.

In order to eventually market any of our current or future products in any particular foreign jurisdiction, we must comply with numerous and varying regulatory requirements on a jurisdiction-by-jurisdiction basis regarding quality, safety, data privacy, performance and efficacy. In addition, products offered in one country may not be accepted by regulatory authorities in other countries. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods.

Seeking foreign regulatory clearance, authorization or approval could result in difficulties and costs for us and require additional studies, trials or investigations which could be costly and time-consuming. Regulatory requirements and ethical approval obligations can vary widely from country to country and could delay or prevent the introduction of our products in those countries. If we or our collaborators fail to comply with regulatory requirements in international markets or to obtain and maintain required regulatory clearances, authorizations or approvals in international markets, or if those approvals are delayed, our target market will be reduced and our ability to realize the full market potential of our products will be unrealized.

Failure to comply with federal, state and foreign laboratory licensing requirements and the applicable requirements of the FDA or any other regulatory authority, could cause us to lose the ability to perform our tests, experience disruptions to our business, or become subject to administrative or judicial sanctions.

We are subject to the CLIA, a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. CLIA regulations establish specific standards with respect to personnel qualifications, facility administration, proficiency testing, quality control, quality assurance and inspections. Any testing subject to CLIA regulation must be performed in a CLIA certified laboratory. CLIA certification is also required in order for us to be eligible to bill state and federal healthcare programs, as well as commercial payers, for our tests. We have a current CLIA certificate to perform our tests at our laboratories in Chicago and Atlanta and have commenced the process of obtaining CLIA certification to perform our tests at our proposed laboratory in Raleigh, North Carolina. To maintain this certificate, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make random inspections of our laboratory from time to time.

We are also required to maintain clinical laboratory licenses to perform testing in Illinois and Georgia, and we will be required to maintain these licenses to perform testing at our proposed facility in Raleigh. State laboratory laws establish standards for day-to-day operation of our clinical laboratories, including the training and skills required of personnel and quality control. In addition, some other states require our laboratories to be licensed in the state in order to test specimens from those states. In addition to Illinois and Georgia, our laboratories are licensed in California, Rhode Island, Pennsylvania, New York and Maryland. Although we have obtained licenses from states where we believe we are required to be licensed, it is possible that other states we are not aware of currently require out-of-state laboratories to obtain licensure in order to test specimens from the state, and that other states may adopt similar requirements in the future.

We may also be subject to regulations in foreign jurisdictions as we seek to expand international utilization of our tests or as such jurisdictions adopt new licensure requirements, which may require review of our tests in order to offer them or may have other limitations such as restrictions on the transport of specimens necessary for us to perform our tests that may limit our ability to make our tests available outside of the United States. Complying with licensure requirements in new jurisdictions may be expensive, time-consuming and subject us to significant and unanticipated delays.

Failure to comply with applicable clinical laboratory licensure requirements may result in a range of enforcement actions, including suspension, limitation or revocation of our CLIA certificate and/or state licenses, imposition of a directed plan of action, on-site monitoring, civil monetary penalties, criminal sanctions, inability to receive reimbursement from Medicare, Medicaid and commercial payers, as well as significant adverse publicity. Any sanction imposed under CLIA, its implementing regulations, or state or foreign laws or regulations governing clinical laboratory licensure or our failure to renew our CLIA certificate, a state or foreign license or accreditation, could have a material adverse effect on our business, financial condition and results of operations. Even if we were able to bring our laboratory back into compliance, we could incur significant expenses and potentially lose revenue in doing so.

In order to test specimens from New York, LDTs must be approved by the New York State Department of Health, or NYSDOH, on a product-by-product basis before they are offered, and a version of our Tempus|xT test has been approved by NYSDOH. We will need to seek NYSDOH approval of any future LDTs we develop and want to offer for clinical testing to New York residents, and there can be no assurance that we will be able to obtain such approval. As a result, we are subject to periodic inspection by the NYSDOH and are required to demonstrate ongoing compliance with NYSDOH regulations and standards. To the extent NYSDOH identifies any non-compliance and we are unable to implement satisfactory corrective actions to remedy such non-compliance, the State of New York could withdraw approval for our tests.

The College of American Pathologists, or CAP, maintains a clinical laboratory accreditation program. While not required to operate a CLIA-certified laboratory, many private insurers require CAP accreditation as a condition to contracting with clinical laboratories to cover their tests. In addition, some countries outside the United States require CAP accreditation as a condition to permitting clinical laboratories to test samples taken from their citizens. We have obtained CAP accreditation for our Chicago and Atlanta laboratories, and we expect to apply for CAP accreditation for our planned Raleigh, North Carolina laboratory. In order to maintain CAP accreditation, we are subject to survey for compliance with CAP standards every two years. Failure to maintain CAP accreditation could have a material adverse effect on the sales of our tests and the results of our operations.

We are subject to numerous federal and state healthcare statutes and regulations; complying with such laws pertaining to our business is an expensive and time-consuming process, and any failure to comply could result in substantial penalties and a material adverse effect to our business, financial condition and results of operations.

Our operations are subject to other extensive federal, state, local and foreign laws and regulations, all of which are subject to change. These laws and regulations may include, among others:

- the federal Anti-Kickback Statute, or AKS, which prohibits knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind (e.g. provision of free or discounted goods, services or items), in return for or to induce such person to refer an individual, or to purchase, lease, order, arrange for or recommend purchasing, leasing or ordering, any good, facility, item or service that is reimbursable, in whole or in part, under a federal healthcare program. The term ‘‘remuneration’’ has been broadly interpreted to include anything of value, such as phlebotomy kits. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration that are alleged to be intended to induce referrals, purchases or recommendations of covered items or services may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct *per se* illegal under the AKS. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all its facts and circumstances. Several courts have held that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the AKS has been violated. Moreover, a person or entity does not need to

have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Violations are subject to significant civil monetary penalties, plus up to three times the remuneration involved. Violations of the AKS may also result in criminal penalties, including additional fines and imprisonment of up to ten years, and exclusion from Medicare, Medicaid or other governmental healthcare programs;

- the Eliminating Kickbacks in Recovery Act of 2018, or EKRA, which prohibits knowingly and willfully soliciting or receiving any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, in return for referring a patient or patronage to a laboratory; or paying or offering any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, to induce a referral of an individual to a laboratory or in exchange for an individual using the services of that laboratory. EKRA was enacted to help reduce opioid-related fraud and abuse. However, EKRA defines the term "laboratory" broadly and without reference to any connection to substance use disorder treatment. The EKRA applies to all payers including commercial payers and government payers. Violations of EKRA are subject to significant fines and/or up to 10 years in jail, separate and apart from existing AKS regulations and penalties. The law includes a limited number of exceptions, some of which closely align with corresponding AKS exceptions and safe harbors, and others that materially differ. Currently, there is no regulation interpreting or implementing EKRA, nor any guidance released by a federal agency regarding the scope of EKRA. Accordingly, we cannot guarantee that our relationships with providers, sales representatives, or customers will not be subject to scrutiny or will withstand regulatory challenge under EKRA;
- the Stark Law, which prohibits a physician from making a referral for certain designated health services covered by the Medicare or Medicaid program, including laboratory and pathology services, if the physician or an immediate family member of the physician has a financial relationship with the entity providing the designated health services and prohibits that entity from billing, presenting or causing to be presented a claim for the designated health services furnished pursuant to the prohibited referral, unless an exception applies. Sanctions for violating the Stark Law include denial of payment, significant civil monetary penalties (on a per claim basis and additional penalties for a circumvention scheme), and exclusion from the federal healthcare programs;
- the federal Civil Monetary Penalties Law, which prohibits, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies. Violations can result in significant civil monetary penalties for each wrongful act;
- federal and state "Anti-Markup" rules, which, among other things, typically prohibit a physician or supplier billing for clinical or diagnostic tests (with certain exceptions) from marking up the price of a purchased test performed by another physician or supplier that does not "share a practice" with the billing physician or supplier;
- the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, biologicals, and kits, medical devices or supplies that require premarket approval by or notification to the FDA, and for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to CMS, information related to (i) payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and, beginning in 2022, payments and other transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists and certified nurse midwives during the previous year; and (ii) ownership and investment interests in such manufacturers held by physicians and their immediate family members. Failure to submit required information may result in significant civil monetary penalties for any payments, transfers of value or ownership or investment interests that are not timely, accurately, and completely reported in an annual submission, and may result in liability under other federal laws or regulations;

- the federal government may bring a lawsuit under the False Claims Act, or the FCA, against any party whom it believes has knowingly or recklessly presented, or caused to be presented, a false or fraudulent request for payment from the federal government, or who has made a false statement or used a false record to get a claim for payment approved. The federal government and a number of courts have taken the position that claims presented in violation of certain other statutes, including the AKS or the Stark Law, can also be considered a violation of the FCA based on the theory that a provider impliedly certifies compliance with all applicable laws, regulations, and other rules when submitting claims for reimbursement. An FCA violation may provide the basis for the imposition of administrative penalties as well as exclusion from participation in governmental healthcare programs, including Medicare and Medicaid. A number of states including California have enacted laws that are similar to the federal FCA. Private individuals can bring FCA "*qui tam*" actions, on behalf of the government and such individuals, commonly known as "whistleblowers," may share in amounts paid by the entity to the government in fines or settlement. When an entity is determined to have violated the FCA, the government may impose civil fines and penalties for each false claim, plus treble damages, and exclude the entity from participation in federal healthcare programs;
- the HIPAA fraud and abuse provisions, which created federal criminal statutes that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private insurers, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose obligations on covered entities, including certain healthcare providers, health plans, and healthcare clearinghouses, as well as their respective business associates that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information, and their covered subcontractors;
- federal and state laws related to, among other things, unlawful schemes to defraud, excessive fees for services, unlawful trade practices, insurance fraud, kickbacks, patient inducement and statutory or common law fraud restrict the provision of products, services or items for free or at reduced charge to government or non-government healthcare program beneficiaries. These laws and regulations relating to the provision of items or services for free are complex and are subject to interpretation by the courts and by government agencies;
- other federal and state fraud and abuse laws, such as state anti-kickback, self-referrals, false claims and anti-markup laws, any of which may extend to services reimbursable by any payer, including private insurers;
- state laws that prohibit other specified practices, such as billing physicians for tests that they order; providing tests at no or discounted cost to induce adoption; waiving co-insurance, co-payments, deductibles or other amounts owed by patients; billing a state healthcare program at a price that is higher than what is charged to other payers; or employing, exercising control over or splitting fees with licensed medical professionals; and
- similar foreign laws and regulations in the countries in which we operate or may operate in the future.

As a clinical laboratory, our business practices may face additional scrutiny from various government agencies such as the Department of Justice, the U.S. Department of Health and Human Services Office of Inspector General, or OIG, and CMS. Certain arrangements between clinical laboratories and referring

physicians have been identified in fraud alerts issued by the OIG as implicating the AKS. The OIG has stated that it is particularly concerned about these types of arrangements because the choice of laboratory and the decision to order laboratory tests typically are made or strongly influenced by the physician, with little or no patient input. Moreover, the provision of payments or other items of value by a clinical laboratory to a referral source could be prohibited under the Stark Law unless the arrangement meets all criteria of an exception. The government has been active in enforcement of these laws against clinical laboratories.

Numerous states have enacted laws prohibiting business corporations, such as us, from practicing medicine and from employing or engaging physicians and other medical professionals (generally referred to as the prohibition against the corporate practice of medicine), which could include physician laboratory directors. These laws are designed to prevent interference in the medical decision-making process by anyone who is not a licensed medical professional. For example, the medical boards of certain states have indicated that determining the appropriate diagnostic tests for a particular condition and taking responsibility for the ultimate overall care of a patient, including making treatment options available to the patient, would constitute the unlicensed practice of medicine if performed by an unlicensed person. Violation of these laws may result in sanctions and civil or criminal penalties. It is possible that governmental authorities may conclude that our business practices, including our consulting and advisory board arrangements with physicians and other healthcare providers, a small number of whom may receive stock or stock options as compensation for services provided, do not comply with current or future corporate practice of medicine statutes, regulations, agency guidance or case law.

The growth and international expansion of our business may increase the potential of violating applicable laws and regulations. The risk is further increased by the fact that many such laws and regulations have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Efforts to ensure that our internal operations and business arrangements with third parties comply with applicable laws and regulations will involve substantial costs. Any action brought against us for violation of these or other laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Any of the foregoing consequences could seriously harm our business, financial condition and results of operations. To the extent our business operations are found to be in violation of any of these laws or regulations, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with the law and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and pursue our strategy. If any of the healthcare providers or other parties with whom we interact or may interact in the future, are found not to be in compliance with applicable laws and regulations, they may be subject to criminal, civil or administrative sanctions, including exclusions from participation in various healthcare programs, which could also negatively affect our business, financial condition and results of operations.

If the validity of an informed consent from patients regarding our tests was challenged, we could be forced to stop offering our products or using our resources, and our business, financial condition and results of operations could be negatively affected.

We seek to ensure that all data and biological samples that we receive from our customers have been collected from patients, subjects or participants who have provided the necessary informed consent for purposes that extend to our development activities. In many instances, this requires the physician or hospital system ordering the diagnostic system to obtain the consent of the patient. We also have certain relationships where data and samples, and certain data licensed to us by third parties, are provided to us in a de-identified manner. The collection and analysis of data and samples in many different jurisdictions results in complex legal questions regarding the adequacy of informed consent and the status of genetic material under a large number of different legal systems. Therefore, with respect to data and samples received from our customers, we rely on physicians

and hospital systems to comply, and with regard to data received from our suppliers, we rely on these third parties to comply, with the informed consent requirements and with applicable local law regarding informed consent. The subject's informed consent obtained in any particular jurisdiction could be challenged in the future, and that consent could prove invalid, unlawful or otherwise inadequate for our purposes. Any findings against us, or our customers or suppliers, could deny us access to or force us to stop using some of our data and clinical samples, which would hinder our product development efforts, potentially involve us in costly and prolonged litigation, result in reputational harm and adversely affect our business, financial condition and results of operations.

We may be subject to fines, penalties, licensure requirements, or legal liability, if it is determined that through our test reports we are practicing medicine without a license.

Many of our test reports delivered to physicians provide information regarding therapies and clinical trials that physicians may use in making treatment decisions for their patients and certain other reports provide pharmacogenomic information. We make members of our organization available to discuss the information provided in the reports. Certain state laws prohibit the practice of medicine without a license. Our customer service representatives and medical affairs team provide support to our customers, including assistance in interpreting the test report results. A governmental authority or other parties could allege that the identification of available therapies and clinical trials in our reports and the related customer service we provide constitute the practice of medicine. A state may seek to have us discontinue the inclusion of certain aspects of our test reports or the related services we provide, or subject us to fines, penalties, or licensure requirements. Any determination that we are practicing medicine without a license may result in significant liability to us, and our business, financial condition and results of operations would be harmed.

Our billing and claim processing are complex and time-consuming, and any delay in submitting claims or failure to comply with applicable billing requirements could hinder collection and have an adverse effect on our revenue.

Billing for our diagnostic tests is complex, time-consuming and expensive. Depending on the billing arrangement and applicable law, we bill various payers, such as Medicare, Medicaid, health plans, insurance companies, hospital systems, providers, and patients, all of which may have different billing requirements. Several factors make the billing process complex, including:

- differences between the list prices for our tests and the reimbursement rates of payers;
- compliance with complex federal and state regulations related to billing government healthcare programs, including Medicare and Medicaid, to the extent our tests are covered by such programs;
- differences in coverage among payers and the effect of patient co-payments or co-insurance;
- differences in information, pre-authorization and other billing requirements among payers;
- changes to codes and coding instructions governing our tests;
- incorrect or missing billing information; and
- the resources required to manage the billing and claim appeals process.

These billing complexities and the related uncertainty in obtaining payment for our tests could negatively affect our revenue and cash flow, our ability to achieve profitability and the consistency and comparability of our results of operations. In addition, if claims for our tests are not submitted to payers on a timely basis, or if we fail to comply with applicable billing requirements, it could have an adverse effect on our business, financial condition and results of operations.

In addition, the coding procedure used by third-party payers to identify various procedures, including our tests, during the billing process is complex, does not adapt well to our tests and may not enable coverage and

adequate reimbursement rates. Third-party payers usually require us to identify the test for which we are seeking reimbursement using a CPT code. CPT coding plays a significant role in how our diagnostic tests are reimbursed both from commercial and governmental payers. For example, no CPT code comprehensively describes our NGS oncology tests, so we have historically submitted claims using individual codes or combinations of codes based on the cancer subtype profiled. However, providers, such as the Local MAC, have in the past and may in the future disagree with our CPT code selection and instruct us to submit our claims using a different designated CPT code. Any disputes over appropriate coding, or requirements that we submit claims under codes with lower reimbursement rates, may materially adversely affect our business financial condition and results of operations,

Use of coding for billing our products that does not describe a specific test, requires the claim to be examined to determine what test was provided, whether the test was appropriate and medically necessary, and whether payment should be rendered, which may require a letter of medical necessity from the ordering physician. This process has in the past and may in the future result in a delay in processing the claim, a lower reimbursement amount or denial of the claim. For example, we are currently disputing denials of a substantial number of our NGS oncology tests by the Local MAC. Because billing third-party payers for our tests is an unpredictable, challenging, time-consuming and costly process, we may face long collection cycles and the risk that we may never collect at all, either of which could adversely affect our business, financial condition and results of operations, and we may have to increase collection efforts and incur additional costs.

Changes in healthcare laws, regulations and policies could increase our costs, decrease our sales and revenues and negatively impact reimbursement for our tests.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or the ACA, became law. This law substantially changed the way health care is financed by both commercial payers and government payers, and significantly impacted our industry. The ACA contains a number of provisions that impacted existing state and federal healthcare programs or result in the development of new programs, including those governing enrollments in state and federal healthcare programs, reimbursement changes and fraud and abuse. Our business, financial condition and results of operations have been and will continue to be affected by the ACA, including in ways we cannot currently predict.

Since its enactment, there have been efforts to repeal all or part of the ACA. For example, on June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and will remain open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that other challenges to the ACA will be made in the future. It is unclear how any such challenges and litigation, and the healthcare reform measures of the Biden administration will impact the ACA and our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, reduced Medicare payments to providers by 2% per fiscal year, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with a temporary suspension from May 1, 2020 through December 31, 2021 due to the COVID-19 pandemic, unless additional Congressional action is taken.

We anticipate there will continue to be proposals by legislators at both the federal and state levels, regulators and commercial and government payers to reduce healthcare costs while expanding individual

healthcare benefits. Certain of these changes could impose additional limitations on the prices we will be able to charge for our tests, the coverage of, or the amounts of reimbursement available for our tests from commercial and government payers. Further, it is possible that additional governmental action will be taken in response to the COVID-19 pandemic.

We face risks related to handling of hazardous materials and other regulations governing environmental safety.

Our operations are subject to complex and stringent environmental, health, safety and other governmental laws and regulations that both public officials and private individuals may seek to enforce. Our activities that are subject to these regulations include, among other things, our use of hazardous materials in manufacturing and in our products, and the generation, transportation and storage of waste. We could discover that we or our suppliers are not in material compliance with these regulations. Existing laws and regulations may also be revised or reinterpreted, or new laws and regulations may become applicable to us, whether retroactively or prospectively, that may have a negative effect on our business, financial condition and results of operations. It is also impossible to eliminate completely the risk of accidental environmental contamination or injury to individuals. In such an event, we could be liable for any damages that result, which could adversely affect our business, financial condition and results of operations.

Risks Related to Our Intellectual Property

If we are unable to obtain, maintain and enforce sufficient intellectual property protection for our Platform and products, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors or other third parties could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our Platform, products and other proprietary technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to protect our intellectual property, third parties may be able to compete more effectively against us. In addition, we have incurred and may continue to incur substantial litigation costs in our attempts to recover or restrict use of our intellectual property.

To the extent our intellectual property offers inadequate protection, or is found to be invalid or unenforceable, we would be exposed to a greater risk of direct competition. If our intellectual property does not provide adequate coverage of our competitors' products, our competitive position could be adversely affected, as could our business, financial condition and results of operations. Both the patent application process and the process of managing patent disputes can be time-consuming and expensive. Our pending and future owned and licensed patent applications may not result in patents being issued which protect our technology, effectively prevent others from commercializing competitive technologies or otherwise provide any competitive advantage. In fact, patent applications may not issue as patents at all. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance.

As is the case with other biotechnology companies, our success depends in part on our ability to obtain and maintain protection of the intellectual property we own solely and may own jointly with others or we have licensed and may continue to license from others, particularly patents, in the United States and other countries with respect to our products and technologies. We apply for patents covering our products and technologies and uses thereof, as we deem appropriate. However, obtaining and enforcing patents, and specifically biotechnology patents, is costly, time-consuming and complex, and we may fail to apply for patents on important products, services and technologies in a timely fashion or at all, or we may fail to apply for patents in potentially relevant jurisdictions. We may not be able to obtain or maintain patent applications and patents due to the subject matter

claimed in such patent applications and patents being in disclosures in the public domain. In some cases, the inventions we attempt to patent may have been previously discovered by others and entered the public domain, which may preclude our ability to obtain patent protection for such inventions. We may not be able to file and prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Although we enter into nondisclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach these agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. Moreover, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed to us. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

We own or license numerous U.S. patents and pending U.S. patent applications, with international counterparts in certain countries. It is possible that our or our licensors' pending patent applications will not result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products or services, may not provide us with any competitive advantages, or may be challenged and invalidated by third parties. It is possible that others will design around our current or future patented technologies to circumvent our owned or licensed patents by developing similar or alternative technologies or therapeutics in a non-infringing manner. If the patent protection provided by the patents and patent applications we own or license is not sufficiently broad to impede such competition, our ability to successfully commercialize our products could be negatively affected, which could have a material adverse effect on our business, financial condition and results of operations. Some of our patent rights may be challenged in the future, including at the United States Patent and Trademark Office, or USPTO, in post-grant proceedings, at the European Patent Office, or EPO, in opposition proceedings. We may not be successful in defending any such challenges made against our owned or licensed patents or patent applications. Any successful third-party challenge to such patent rights could result in their unenforceability or invalidity and increased competition to our business. We have challenged and may choose to challenge the patents or patent applications of third parties. The outcome of patent litigation or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, if successful, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business.

The patent positions of life sciences companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. As a result, the issuance, scope, validity, enforceability and commercial value of any patent rights are highly uncertain. No consistent policy regarding the breadth of claims allowed in such companies' patents has emerged to date in the United States or elsewhere. Courts frequently render opinions in the biotechnology field that may affect the patentability of certain inventions or discoveries, including opinions that may affect the patentability of methods for analyzing or comparing DNA sequences.

In particular, the patent positions of companies engaged in the development and commercialization of genomic and algorithmic diagnostic tests, like our current products and services, and our future products, are particularly uncertain. Various courts, including the U.S. Supreme Court, have rendered decisions that affect the scope of patentability of certain inventions or discoveries relating to certain diagnostic tests and related methods. These decisions state, among other things, that a patent claim that recites an abstract idea, natural phenomenon or law of nature (for example, the relationship between particular genetic variants and cancer) are not themselves patentable. Precisely what constitutes an abstract idea, natural phenomenon or law of nature is uncertain, and it is possible that certain aspects of genetic or algorithmic diagnostics tests would be found not patentable. Accordingly, the evolving legal and administrative standards around the world, including in the United States

may adversely affect our ability to obtain patents and may facilitate third-party challenges to any owned or licensed patents. The laws of some foreign jurisdictions do not protect intellectual property rights to the same extent as the laws of the United States, and we may encounter difficulties in protecting and defending such rights in foreign jurisdictions. The legal systems of many foreign jurisdictions do not favor the enforcement of patent rights and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patent rights and other violations of our intellectual property rights thereunder. Proceedings to enforce our patent rights and other intellectual property protection in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

Changes in patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our Platform and products.

Changes in either the patent laws or in interpretations of patent laws in the United States or other countries or regions may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. We may not develop additional proprietary products, methods and technologies that are patentable.

Assuming that other requirements for patentability are met, prior to March 16, 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. On or after March 16, 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 16, 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO on or after March 16, 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (i) file any patent application related to our products or (ii) invent any of the inventions claimed in our or our licensor's patents or patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications are prosecuted and also affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to challenge the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings, to attack the validity of a patent. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence might not be sufficient to invalidate the claim if presented in a district court action. Accordingly, third parties have used and may continue to use the USPTO proceedings to invalidate our patent claims that would not have been invalidated if first challenged by the third party in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding our or our licensors' prosecution of patent applications and enforcement or defense of issued patents, all of which could have a material adverse effect on our business, financial condition and results of operations.

The patent positions of companies engaged in the development and commercialization of biotechnology and software are particularly uncertain. Court rulings may narrow the scope of patent protection available in certain circumstances and weaken the rights of patent owners in certain situations. We cannot predict how decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents. Any similar adverse changes in the patent laws of other jurisdictions could also have a material adverse effect on our business, financial condition and results of operations. Depending on future actions by the U.S. Congress, the federal courts and the

USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

Issued patents covering our Platform or products could be found invalid or unenforceable if challenged.

Our owned and licensed patents and patent applications may be subject to priority, validity, inventorship and enforceability disputes. If we or our licensors are unsuccessful in any of these proceedings, such patents and patent applications may be narrowed, invalidated or held unenforceable and we may be required to obtain licenses from third parties, which may not be available on commercially reasonable terms or at all, or we may be required to cease the development, manufacture and commercialization the products we may develop. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability and our owned and licensed patents may be challenged in courts or patent offices in the United States and abroad. Some of our owned or licensed patent rights may be challenged at a future point in time in opposition, derivation, re-examination, *inter partes* review, post-grant review or interference proceedings and other similar proceedings in foreign jurisdictions. Any successful third-party challenge to our patent rights in this or any other proceeding could result in the narrowing, unenforceability or invalidity, in whole or in part, of such patent rights, which may lead to increased competition to our business, which could harm our business, financial condition and results of operations. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize our current or future products.

We may not be aware of all third-party intellectual property rights potentially relating to our Platform and products. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until approximately 18 months after filing or, in some cases, not until such patent applications issue as patents. We might not have been the first to make the inventions covered by each of our pending patent applications and we might not have been the first to file patent applications for these inventions. To determine the priority of these inventions, we may participate in interference proceedings, derivation proceedings or other post-grant proceedings declared by the USPTO that could result in substantial cost to us. The outcome of such proceedings is uncertain. No assurance can be given that other patent applications will not have priority over our patent applications. In addition, changes to the patent laws of the United States allow for various post-grant opposition proceedings that have not been extensively tested, and their outcome is therefore uncertain. Our licensors may also license patent rights to others, and we may not be aware of such licenses before they are granted or such licenses may be subject to disputes or uncertainties that affect patent rights licensed by us or could limit our ability to enforce such patent rights. If third parties bring actions against our owned or licensed patent rights, we could experience significant costs and management distraction.

In patent litigation in the United States or abroad, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, written description, non-enablement or failure to claim patent-eligible subject matter. Grounds for an unenforceability assertion could include an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Similar claims may also be raised before administrative bodies in the United States or abroad, even outside the context of litigation, through mechanisms including re-examination, post-grant review and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patent rights in such a way that they no longer cover our Platform and products. The outcome of patent litigation or patent office proceedings following assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for

example, we cannot be certain that there is no invalidating prior art, of which we and our licensing partners and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our Platform and products. Such a loss of patent protection could have a material adverse impact on our business, financial condition and results of operations.

We and our licensors may initiate or become involved in legal proceedings against a third party to enforce a patent covering our Platform or one of our products. Defendants in such proceedings could counterclaim that the patents covering our Platform or product are invalid or unenforceable and could institute legal proceedings to challenge such patents both in court and before patent offices.

We rely on licenses from third parties to provide certain products, and if we lose these licenses or if our rights under these licenses are limited, then our business will be adversely impacted.

We are, and we may acquire companies that are, party to various license agreements that grant us rights to use certain intellectual property, including de-identified patient data, artificial intelligence software, and certain patents and patent applications, typically in certain specified fields of use. We may need to obtain additional licenses from others to advance our research, development and commercialization activities. Our future licenses may not provide us with exclusive rights to use the licensed intellectual property and technology, or may not provide us with exclusive rights to use such intellectual property and technology in all relevant fields of use and in all territories in which we may wish to develop or commercialize our technology in the future. As a result, we may not be able to prevent competitors or other third parties from developing and commercializing competitive products, including in territories covered by our licenses.

If these licenses are terminated, or if the underlying intellectual property rights fail to provide the intended rights and protections, our ability to develop and commercialize products and technology covered by these license agreements would be limited or lost, and our competitors or other third parties might have the freedom to develop, produce, seek regulatory approval of, or to market, products identical or similar to ours and we may be required to cease our development and commercialization activities. Our actual or potential licensors could also take action with respect to our licensed intellectual property that may decrease the value of such licensed intellectual property. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

Moreover, disputes could arise with respect to any aspect of our license agreements, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- our financial or other obligations under the license agreement;
- the extent to which our Platform, products, and processes infringe, misappropriate, or otherwise violate the intellectual property of the licensor that is not subject to the licensing agreement;
- the licensing of patent and other rights controlled by our licensors or developed under our collaborative development relationships to others;
- the sublicensing of patent and other rights;
- the inventorship and ownership of inventions and know-how licensed to us or resulting from the joint creation or use of intellectual property by our licensors, us and/or our partners; and
- the validity, enforceability or priority of licensed patent rights.

If we do not prevail in such disputes, we may lose any of such license agreements, the license agreements may not be meaningful for our business and operations, and we may be subject to unnecessary or additional payment obligations.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements could be susceptible to multiple interpretations. The resolution of any such contract interpretation disagreement could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition and results of operations. Moreover, if disputes over licensed intellectual property impair our ability to enforce licensed intellectual property against third parties or use it to defend ourselves in litigation, the value of such licensed intellectual property may be diminished.

Additionally, our licenses may be subject to certain rights of third parties, and, as a result, our current and future licenses may not provide us with exclusive rights to use the licensed intellectual property and technology. Such licenses may be subject to reservations of rights including certain non-commercial rights reserved by universities and certain rights retained by the U.S. government, including march-in rights. Patents licensed to us could be put at risk of being invalidated or interpreted narrowly in litigation filed by or against our licensors or another licensee or in administrative proceedings brought by or against our licensors or another licensee in response to such litigation or for other reasons. As a result, we may not be able to prevent competitors or other third parties from developing and commercializing competitive products, including in territories covered by our licenses.

If we fail to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product, which could have a material adverse effect on our business, financial condition and results of operations. If any of these license agreements is terminated, if the licensor fails to abide by the terms of the license agreement, if the licensor fails to prevent infringement, misappropriation, or other violations by third parties, or if the licensed patent or other rights are found to be invalid or unenforceable, we may lose our rights to develop and market our technology, may be unable to achieve our business goals and our results of operations and financial condition could be adversely affected. In addition, we may seek to obtain additional licenses from our licensors and, in connection with obtaining such licenses, we may agree to amend our existing licenses in a manner that may be more favorable to the licensors, including by agreeing to terms that could enable third parties, including our competitors, to receive licenses to a portion of the intellectual property that is subject to our existing licenses and to compete with our products. Absent the license agreements, we could infringe, misappropriate or otherwise violate patents or other intellectual property rights subject to those agreements, and if the license agreements are terminated, we may be subject to litigation by the licensor. Litigation could result in substantial costs and be a distraction to management. If we do not prevail, we may be required to pay damages, including treble damages, attorneys' fees, costs and expenses, royalties or, be enjoined from selling our products and services, including our tests, which could adversely affect our ability to offer products , and our business, financial condition and results of operations.

If we cannot license and maintain rights to use third-party intellectual property on reasonable terms, we may not be able to successfully commercialize our products. Our licensed or acquired technology may lose value or utility over time.

From time to time, we may identify third-party intellectual property we may need, including to develop or commercialize new products. We may also need to negotiate licenses before or after introducing a commercial product, and we may not be able to obtain necessary licenses to such intellectual property. The licensing or acquisition of third party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to enter into the necessary licenses on acceptable

terms or at all, if any necessary licenses are subsequently terminated, if the licensors fail to abide by the terms of the licenses or fail to prevent infringement, misappropriation, or other violations by third parties, or if the licensed patents or other rights are found to be invalid or unenforceable, our business, financial condition and results of operations may suffer. In addition, any technology licensed or acquired by us may lose value or utility, including as a result of a change in the industry, in our business objectives, others' technology, our dispute with the licensor, and other circumstances outside our control. In return for the use of a third party's technology, we may agree to pay the licensor royalties based on sales of our products or services. Royalties are a component of the cost of products and affect the margins on our products. If we are unable to negotiate reasonable royalties or if we have to pay royalties on technology that becomes less useful for us or ceases to provide value to us, our profit margin will be reduced and we may suffer losses.

We may not be able to protect or enforce our intellectual property rights adequately throughout the world.

Filing, prosecuting and defending patents and trademarks on our Platform and products in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some territories outside the United States are less extensive than those in the United States. In some cases, we or our licensors may not be able to obtain patent or trademark protection for certain technology outside of the United States. In addition, the laws of some foreign countries and regions do not protect intellectual property rights to the same extent as the federal and state laws in the United States, and we may encounter difficulties in protecting and defending such rights in foreign jurisdictions where we do pursue patent or trademark protection. Consequently, we may not be able to prevent third parties from practicing our inventions in all jurisdictions, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our inventions in jurisdictions where we have not pursued and obtained patent protection to develop their own products and may also export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products. Our patents or other intellectual property rights existing outside the United States may not be effective or sufficient to prevent them from competing. Similarly, intellectual property rights may be exhausted in certain situations, and others could import our products sold abroad and compete with us domestically.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries and regions, and particularly developing countries, do not favor the enforcement of patents, trademarks, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement, misappropriation or other violations of our patents, trademarks or other intellectual property, or marketing of competing products in violation of our intellectual property rights generally in such jurisdictions. Proceedings to enforce our patent or other intellectual property rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents or other intellectual property at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded to us, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our business, financial condition and results of operations could be materially and adversely affected.

If we are unable to protect the confidentiality of our trade secrets, the value of our Platform and other technology could be materially adversely affected and our business could be harmed.

In addition to pursuing patents on our Platform and other technology, we take steps to protect our intellectual property and proprietary know-how and technology that is not patentable or that we elect not to patent, including certain of our algorithms and software. We seek to protect our trade secrets and proprietary know-how and technology by entering into agreements, including confidentiality agreements, non-disclosure agreements and intellectual property assignment agreements, with our employees, consultants, academic institutions, corporate partners and, when needed, our advisers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other proprietary information will not be disclosed or that competitors or other third parties will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized use or disclosure. If we are required to assert our rights against such party, it could result in significant cost and distraction.

Monitoring unauthorized use or disclosure is difficult, and we do not know whether the steps we have taken to prevent such use or disclosure are, or will be, adequate. If we were to enforce a claim that a third party had illegally obtained and was using our trade secrets, it would be expensive and time-consuming, and the outcome would be unpredictable. In addition, trade secrets can be difficult to protect and some courts inside and outside the United States are less willing or unwilling to protect trade secrets.

We also seek to preserve the integrity and confidentiality of our proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached and we may not have adequate remedies for any breach. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor, absent patent protection, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed trade secrets of their former employers.

We have employed or engaged and expect to employ or engage individuals who were previously employed at or associated with universities or other companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we have in the past been, and may again in the future be, subject to claims that our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers or other third parties, or to claims that we have improperly used or obtained such trade secrets. Litigation may be necessary to defend against these claims. If we lose, in addition to paying monetary damages, we may be deprived of valuable intellectual property and face increased competition. A loss of key research personnel or work product could hamper or prevent our ability to commercialize potential products, which could harm our business. Even if we are successful in defending against these claims, litigation could result in damage to our reputation and substantial costs and be a distraction to management and affected individuals.

We may not be able to protect and enforce our trademarks and we could infringe or otherwise violate others' trademarks and if our trademarks are not adequately protected, then we may not be able to build name recognition in our markets of interest.

We have not yet registered trademarks in all of our potential markets, although we have registered Tempus and certain diagnostic test names for certain classes of goods and services in the United States. If we apply to register additional trademarks in the United States and other countries, our applications may not be allowed for registration in a timely fashion or at all, and our registered trademarks may not be maintained or enforced and our trademarks may be challenged, infringed, circumvented or declared generic or determined to be infringing on or otherwise violating another mark. For example, opposition or cancellation proceedings may be filed against our trademark applications and registrations, and our trademarks may not survive such proceedings. Such proceedings can be expensive and time-consuming, particularly for a company of our size. If we do not timely register and enforce marks used in connection with our Platform or products, we may encounter difficulty in enforcing them against third parties, and if these marks are registered by others, we could infringe or otherwise violate such trademarks.

We may not be able to protect our rights to these trademarks, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors or other third parties may adopt trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement or other violation claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks. Over the long term, if we are unable to establish name recognition based on our trademarks, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks may be ineffective and could result in substantial costs and diversion of resources. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

We may be subject to claims challenging the inventorship or ownership of our owned or licensed intellectual property or claims asserting ownership of what we regard as our own intellectual property.

While it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. Moreover, even when we obtain agreements assigning intellectual property to us, the assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Furthermore, individuals executing agreements with us may have preexisting or competing obligations to a third party, such as an academic institution, and thus an agreement with us may be ineffective in perfecting ownership of inventions developed by that individual. Disputes about the ownership of intellectual property that we may own may have a material adverse effect on our business, financial condition and results of operations.

We or our licensors may be subject to claims that former employees, collaborators or other third parties have an interest in or right to our owned or licensed patents, trade secrets or other intellectual property. For example, we or our licensors may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing such intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership of our owned or licensed patents, trade secrets or other intellectual property. If we or our licensors fail in defending against any such claims, in addition to paying monetary damages, we may lose exclusive ownership of, or right to use, valuable intellectual property. An inability to incorporate such technologies or features would harm our business and may prevent us from successfully commercializing our products or at all. In addition, we may lose personnel as a result of such claims and any such litigation or the threat thereof may adversely affect our ability to hire employees or contract

with independent contractors. A loss of key personnel or their work product could hamper or prevent our ability to commercialize our products. Even if we are successful in defending against such claims, litigation could result in damage to our reputation and substantial costs and be a distraction to management and other employees. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

We may become involved in litigation and other legal proceedings alleging that we are infringing, misappropriating or otherwise violating third-party intellectual property rights, or asserting our intellectual property rights, which could be time-intensive and costly and may adversely affect our business, financial condition and results of operations.

We may become involved with litigation or USPTO actions with various third parties. We expect that the number of such claims may increase as the number of our products grows, and the level of competition in our industry segments increases. Given the vast number of patents in our field of technology, we cannot be certain or guarantee that we do not infringe existing patents or that we will not infringe patents that may be granted in the future. Many companies and institutions have filed, and continue to file, patent applications related to the development and commercialization of genomic and algorithmic diagnostic tests. Some of these patent applications have already been allowed or issued and others may issue in the future. Since this area is competitive and of strong interest to biotechnology companies, there will likely be additional patent applications filed and additional patents granted in the future, as well as additional research and development programs expected in the future. If a patent holder believes the manufacture, use, sale or importation of our products infringe its patent, the patent holder may sue us even if we own or have licensed other patent protection for our technology. The biotechnology industry is characterized by extensive and complex litigation regarding patents and other intellectual property rights. Moreover, we may face patent infringement claims from nonpracticing entities that have no relevant product revenue and against whom our owned or licensed patent portfolio may therefore have no deterrent effect. Any infringement claim, regardless of its validity, could harm our business by, among other things, resulting in time-consuming and costly litigation, diverting management's time and attention from the development of our business, or requiring the payment of monetary damages (including treble damages, attorneys' fees, costs and expenses if we are found to have willfully infringed) and ongoing royalties.

Litigation may be necessary for us to enforce our intellectual property and proprietary rights or to determine the scope, coverage and validity of the intellectual property and proprietary rights of others. The outcome of such lawsuits, as well as any other litigation or proceeding, is inherently uncertain and might not be favorable to us. Further, we could encounter delays in product introductions, or interruptions in the sale of products, as we develop alternative products. In addition, if we resort to legal proceedings to enforce our intellectual property rights or to determine the validity, scope and coverage of the intellectual property or other proprietary rights of others, the proceedings could be burdensome and expensive, even if we were to prevail. If we do not prevail in such legal proceedings, we may be required to pay damages, and we may lose significant intellectual property protection for our products, such that competitors could copy our products. Any litigation that may be necessary in the future could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition and results of operations.

As we move into new markets and applications for our Platform or products, incumbent participants in such markets may assert their patents and other intellectual property or proprietary rights against us as a means of slowing our entry into such markets or as a means to extract substantial license and royalty payments from us. As our business matures and our public profile grows, we may also be subject to an increased number of allegations of patent infringement, whether by our competitors or other patent owners, both in the United States and throughout the world wherever we seek to commercialize our products. Our competitors and others may have significantly larger and more mature patent portfolios than we have. In addition, while we can assert our own patents or other rights during litigation, our own patents may provide little or no deterrence or protection against patent holding companies or other patent owners who have no relevant product or service revenue. Therefore, our commercial success may depend in part on our non-infringement of the patents or other rights of third parties and on our success in defending ourselves in litigation.

However, our research, development and commercialization activities may be subject to claims that we infringe or otherwise violate patents or other intellectual property rights owned or controlled by third parties. There is a substantial amount of litigation and other patent challenges, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology industry, including patent infringement lawsuits, interferences, oppositions and *inter partes* review proceedings before the USPTO, and corresponding proceedings before foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing products. As the intelligent medicine and healthcare data analytics industries expand and more patents are issued, the risk increases that our Platform or products may be subject to claims of infringement of the patent rights of third parties. Numerous significant intellectual property issues have been litigated, are being litigated and will likely continue to be litigated, between existing and new participants in our existing and targeted markets, and our competitors have asserted and may in the future assert that our Platform or products infringe, misappropriate or otherwise violate their intellectual property rights as part of a business strategy to impede our successful entry into or growth in those markets, and we may enforce our owned or licensed intellectual property rights against our competitors and other parties.

Third parties may assert that we are employing their patents, proprietary technology or trade secrets without authorization. By interacting with us, our licensors may learn more about our business or technology and could assert additional patent rights against us, such as patent rights that are not currently licensed to us or patent rights that may be obtained by any such licensors in the future, which may occur if such patent rights are not available for licensing or if they are not offered on acceptable or commercially reasonable terms. Because patent applications can take many years to issue and are not publicly available until a certain period of time passes from filing, there may be currently pending patent applications which may later result in issued patents that our current or future products and services may infringe. In addition, similar to what other companies in our industry have experienced, we expect our competitors and others may develop or obtain patents with our Platform or products in mind and claim that making, having made, using, selling, offering to sell or importing our products infringes these patents.

Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed, which could adversely affect our ability to commercialize our technology. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there can be no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent or find that our technology did not infringe any such claims. Further, even if we were successful in defending against any such claims, such claims could require us to incur substantial costs and divert financial resources and the attention of our management and technical personnel in defending against any of these claims. Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can, for example, because they have substantially greater resources.

If any third-party patent were to be asserted against us, there can be no assurance that any defenses will be successful. If our defenses to such assertion were unsuccessful, the third-party making claims against us may be able to obtain injunctive or other relief, including by court order, which could block our ability to develop, commercialize and sell certain products, and could result in the award of substantial damages against us, including treble damages, attorney's fees, costs and expenses if we are found to have willfully infringed. In the event of a successful claim of infringement against us, we may be required to pay damages and ongoing royalties, and obtain one or more licenses from third parties, or be prohibited from selling certain products. Further, we may be required to redesign our technology in a non-infringing manner which may not be commercially feasible. We could also be required or may choose to obtain a license from such third party to continue developing, manufacturing and marketing our technology. However, we may not be able to obtain these licenses on acceptable or commercially reasonable terms, if at all, or these licenses may be non-exclusive, which

could result in our competitors gaining access to the same intellectual property. In addition, we could encounter delays in product introductions while we attempt to develop alternative products to avoid infringing third-party patents or otherwise violating proprietary rights. Defense of any lawsuit or failure to obtain any of these licenses could prevent us from commercializing products, and the prohibition of sale of any of our products could materially affect our business and our ability to gain market acceptance for our products. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our scientific and management personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

In addition, our agreements with some of our customers, suppliers or other entities with whom we do business require us to defend or indemnify these parties to the extent they become involved in infringement claims, including the types of claims described above. We could also voluntarily agree to defend or indemnify third parties in instances where we are not obligated to do so if we determine it would be important to our business relationships. If we are required or agree to defend or indemnify third parties in connection with any infringement claims, we could incur significant costs and expenses that could adversely affect our business, financial condition and results of operations.

Obtaining and maintaining our patent and trademark protection depends on compliance with various required procedures, document submissions, fee payments and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications and trademarks and trademark applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States at several stages over the lifetime of the patents and/or applications and trademarks and trademark applications. We have systems in place to remind us to pay these fees, and we rely on our outside counsel to pay these fees due to U.S. and non-U.S. patent and trademark agencies. The USPTO and various foreign governmental patent and trademark agencies require compliance with a number of procedural, documentary, fee payment and other similar requirements during the patent and trademark application processes. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or forfeiture of the patent or patent application or trademark or trademark application and thus the partial or complete loss of patent or trademark rights in the relevant jurisdiction. Such an event would allow our competitors to enter the unprotected market and have a material adverse effect on our business, financial condition and results of operations.

Patent terms may be inadequate to protect our competitive position for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our Platform or products are obtained, once the patent life has expired, we may be open to competition. Given the amount of time required for the development, testing and regulatory review of our new products, patents

protecting them might expire before or shortly after they are commercialized. As a result, our owned and licensed patent portfolio may not provide us with a sufficient exclusivity period to exclude others from commercializing products similar or identical to ours.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to ours, but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our license partners or future collaborators, might not have been the first to make the inventions covered by the issued patent or pending patent applications that we license or may own in the future;
- we, or our license partners or future collaborators, might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents;
- issued patents that we hold rights to now or in the future may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- others may have access to the same intellectual property rights licensed to us in the future on a nonexclusive basis;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents or other intellectual property rights of others may have an adverse effect on our business; or
- we may choose not to file a patent for certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

Our products contain third-party open source software components and failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products or may require us to publicly disclose our proprietary software.

Our products contain software tools licensed by third parties under open source software licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source software licensors generally do not provide warranties or other contractual protections regarding infringement or other violation claims or the quality of the code. Some open source software licenses contain requirements that the licensee make its source code publicly available if the licensee creates modifications or derivative works using the open source software or provide software services at no cost to the user, depending on the type of open source software the licensee uses and how the licensee uses it. If we combine our proprietary software with open source software in a certain manner, we could, under certain open source software licenses, be required to release the source code of our proprietary software to the public for free. This would allow our

competitors to create similar products with less development effort and time and ultimately could result in a loss of product sales and revenue. In addition, some companies that use third-party open source software have faced claims challenging their use of such open source software, seeking enforcement of open source license provisions, asserting ownership of open source software incorporated in products and demanding compliance with the terms of the applicable open source license. We may be subject to suits by third parties claiming ownership of what we believe to be open source software, or claiming non-compliance with the applicable open source licensing terms. Use of open source software may also present additional security risks because the public availability of such software may make it easier for hackers and other third parties to compromise or attempt to compromise our Platform and systems. If an author or other third party that distributes such open source software were to allege that we had not complied with the conditions of an open source license, we could incur significant legal costs defending ourselves against such allegations. In the event such claims were successful, we could be subject to significant damages or be enjoined from the distribution of our products.

There is little legal precedent and the terms of many open source software licenses have not been interpreted by United States courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our products. Moreover, we cannot assure investors that our processes for monitoring and controlling our use of open source software in our products will be effective. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue offering our products on terms that are not economically feasible, to re-engineer our product, to discontinue the sale of our products if re-engineering could not be accomplished on a timely basis, or to make generally available, in source code form, our proprietary code, any of which could adversely affect our business, financial condition and results of operations.

General Risk Factors

The COVID-19 global pandemic and the worldwide attempts to contain it could harm our business and our results of operations have been and could continue to be adversely impacted by such pandemic.

The COVID-19 global pandemic and the various attempts throughout the world to contain it, have created significant volatility, uncertainty and disruption. In response to government directives and guidelines, health care advisories and employee and customer concerns, we altered certain aspects of our operations. Many of our employees worked remotely from home and those on site followed social distance guidelines, which have impacted their productivity. Any resurgence of COVID-19 could cause us or government authorities to reimpose these operating restrictions.

We also experienced significant reduction in access to our customers, including restrictions on our ability to market and distribute our tests and to collect samples. Our partners, vendors and customers similarly had their operations altered or temporarily suspended. Due to impacts and measures resulting from the COVID-19 pandemic, we experienced and could again experience unpredictable reductions in the demand for our tests as healthcare customers divert medical resources and priorities toward the treatment of the virus. To the extent the COVID-19 pandemic continues to cause or again causes severe disruption, vendors of equipment and reagents for our operations could also reduce production or even go out of business, resulting in supply constraints for us. The COVID-19 pandemic has resulted in, and could continue to cause, increased costs or delays to production and development of our products.

The full extent to which the COVID-19 pandemic and the various responses to it impacts our business, operations and financial results will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the pandemic, including any resurgence in the United States; governmental, business and individuals' actions that have been and continue to be taken in response to the pandemic; the availability, cost to access and effectiveness of COVID-19 tests, vaccines and medicines; the effect on our customers and customer demand for and ability to pay for our tests; restrictions on our employees' ability to work and travel; disruptions related to the distribution of our tests, including impacts on logistics of

shipping and receiving blood collection kits; and any stoppages, disruptions or increased costs associated with development, production and marketing of our products. During the COVID-19 pandemic, we may not be able to maintain the same level of customer outreach and service, which could negatively impact our customers' perception of us. We will continue to actively monitor the issues raised by the COVID-19 pandemic and may take further actions that alter our operations, as may be required by federal, state, local or foreign authorities, or that we determine are in the best interests of our employees, customers and stockholders. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on our financial results.

The COVID-19 pandemic has also led to uncertainties related to our growth, forecast and trends. Our historic results such as revenues, operating margins, cash flows, tests performed, and other financial and operating metrics, may not be indicative of our results for future periods. For example, we expect our COVID-19 diagnostic testing revenue to decline substantially over time as the COVID-19 pandemic wanes and demand for testing subsides. In addition, increases in the number of diagnostic tests performed by us prior to the COVID-19 pandemic may reflect an acceleration of growth that we may not see during or after the COVID-19 pandemic. The COVID-19 pandemic and its future developments present uncertainties with respect to our performance, financial condition, volume of business, results of operations, and cash flows. Due to the uncertain scope and duration of the COVID-19 pandemic and uncertain timing of any recovery or normalization, we are currently unable to estimate the resulting impacts on our operations and financial results. In addition to the impacts to our business, the global economy is likely to be significantly weakened as a result of actions taken in response to the COVID-19 pandemic. To the extent that such a weakened global economy impacts customers' ability or willingness to pay for our tests, our business, financial condition and results of operations could be negatively impacted.

We may acquire businesses, form joint ventures or make investments in companies or technologies that could negatively affect our operating results, distract management's attention from other business concerns, dilute our stockholders' ownership, and significantly increase our debt, costs, expenses, liabilities and risks.

We have made acquisitions of businesses, technologies and assets and may pursue additional acquisitions in the future. We also may pursue strategic alliances and additional joint ventures that leverage our Platform and industry experience to expand our product offerings or distribution. We have limited experience with acquisitions and forming strategic partnerships. We compete for those opportunities with others including our competitors, some of which have greater financial or operational resources than we do. We may not be able to identify suitable acquisition candidates or strategic partners, we may have inadequate access to information or insufficient time to complete due diligence, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Difficulties in assimilating acquired businesses include redeployment or loss of key employees and their severance, combination of teams and processes in various functional areas, reorganization or closures of facilities, relocation or disposition of excess equipment, and increased litigation, regulatory and compliance risks, any of which could be expensive and time consuming and adversely affect us. Integration of an acquired business also may disrupt our ongoing operations and require management resources that we would otherwise focus on developing our existing business. In addition, any acquisition could result in the incurrence of debt, contingent liabilities or future write-offs of intangible assets or goodwill, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. We may also experience losses related to investments in other companies, which could have a material negative effect on our business, financial condition and results of operations. We may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions, joint ventures or investments, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. Additional funds may not be available on terms that are favorable to us, or at all. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred net losses since our inception and we may never achieve or sustain profitability. Generally, losses incurred will carry forward until such losses expire (for losses generated prior to January 1, 2018) or are used to offset future taxable income, if any. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the IRC, if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-change net operating loss, or NOL, carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We have not completed a study to assess whether an ownership change for purposes of Section 382 or 383 has occurred, or whether there have been multiple ownership changes since our inception. For purposes of Section 382 or 383, we may have experienced ownership changes in the past and may experience ownership changes in the future as a result of shifts in our stock ownership (some of which shifts are outside our control). As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset such taxable income will be subject to limitations. Similar provisions of state tax law may also apply to limit our use of accumulated state tax attributes. Therefore, if we attain profitability, we may be unable to use a material portion of our NOL carryforwards and other tax attributes, which could adversely affect our future cash flows. In addition, the Tax Cuts and Jobs Act of 2017 imposes a reduction to the maximum deduction allowed for NOLs generated in tax years beginning after December 31, 2017, but allows such NOLs to be carried forward indefinitely. These changes may adversely affect our future cash flow.

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value added, or similar taxes, and we could be subject to tax liabilities with respect to past or future sales, which could adversely affect our results of operations.

We do not collect sales and use, value added, and similar taxes in all jurisdictions in which we have sales, based on our belief that such taxes are not applicable or that we are not required to collect such taxes with respect to the jurisdiction. Sales and use, value added, and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties, and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties, and interest or future requirements may adversely affect our results of operations.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions. For example, in connection with adopting and implementing the new revenue recognition standard, FASB ASC Topic 606, *Revenue from Contracts with Customers*, management has made and will continue to make judgments and assumptions based on our interpretation of the new standard. The new revenue recognition standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. It is possible that interpretation, industry practice and guidance may evolve as we work toward implementing these new accounting standards. If our assumptions change or if actual circumstances differ from our assumptions, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of analysts and investors, resulting in a decline in the market price of our common stock.

We are highly dependent on the services of Eric Lefkofksy and other members of our senior management team and the loss of any member of our senior management team or our inability to attract and retain highly skilled scientists, clinicians, sales representatives and business development managers could adversely affect our business, financial condition and results of operations.

Our success depends on the skills, experience and performance of key members of our senior management team. In particular, we are highly dependent on the services of Eric Lefkofsky, our Founder, Chief Executive Officer, and Chairman of our board of directors. Mr. Lefkofsky spends substantially all of his professional time with us, and he is highly active in our management; however, he does devote some of his time and attention to other endeavors. Mr. Lefkofsky is also a co-founder and serves as Executive Chairman of the board of Pathos AI, Inc., an AI-enabled drug development company that has entered into an agreement with us, is the managing partner and co-founder of Lightbank LLC, a private venture capital firm specializing in investments in technology companies that has invested in us, and is a member of the board of directors of Groupon, Inc., which he co-founded.

The individual and collective efforts of Mr. Lefkofsky and our other employees will be important as we continue to develop our Platform and additional products, and as we expand our commercial activities. The loss or incapacity of existing members of our executive management team could adversely affect our operations if we experience difficulties in hiring qualified successors. Our executive officers signed offer letters when first joining our company, and have entered into subsequent employment agreements, and we cannot guarantee their retention for any period of time. We do not maintain "key person" insurance on any of our employees, including Mr. Lefkofsky. Additionally, we have a number of key employees whose equity ownership in our company gives them a substantial amount of personal wealth. As a result, it may be difficult for us to continue to retain and motivate these employees, and this wealth could affect their decisions about whether or not they continue to work for us or at all.

Our research and development programs and laboratory operations depend on our ability to attract and retain highly skilled scientists and technicians. We may not be able to attract or retain qualified scientists and technicians in the future due to the competition for qualified personnel among life science businesses, particularly near our laboratories in Chicago and Atlanta and our planned laboratory in Raleigh. We also face competition from universities and public and private research institutions in recruiting and retaining highly qualified scientific personnel. In addition, we may have difficulties locating, recruiting or retaining qualified sales representatives and business development managers, as well as software engineers. Recruiting and retention difficulties can limit our ability to support our research and development and sales programs. All of our employees are at-will, which means that either we or the employee may terminate their employment at any time.

We have identified a material weakness in our internal control over financial reporting.

In connection with the preparation of our consolidated financial statements, we identified a material weakness in our internal control over financial reporting as of December 31, 2020, as described below. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our consolidated financial statements will not be prevented or detected on a timely basis.

We did not design or maintain an effective control environment due to an insufficient complement of personnel with the appropriate level of technical accounting and financial reporting knowledge and experience commensurate with our financial reporting requirements.

This material weakness did not result in a material misstatement to the financial statements. However, this material weakness could result in material misstatements potentially impacting one or more of the financial statement accounts and disclosures that would not be prevented or detected.

We have taken steps to remediate this material weakness by hiring a Chief Accounting Officer and other key technical accounting and financial reporting roles to further develop and document our accounting policies and

financial reporting procedures, including ongoing senior management review. Management will continue to work to remediate this material weakness by hiring additional qualified accounting and financial reporting personnel, training existing personnel, and further evolving our accounting processes. At this time, we do not anticipate the costs associated with remediating this material weakness will be material. We expect that completion of the remediation of the material weakness could extend beyond December 31, 2021. There is no assurance that we will be able to remediate the material weakness in a timely manner or that in the future additional material weaknesses will not exist or otherwise be discovered. If we are not able to remedy this material weakness, we may not be able to manage our business effectively or accurately report our financial performance on a timely basis, which could cause a decline in our common stock price and adversely affect our business, financial condition, and results of operations.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

Upon completion of this offering, we will be required to document and test our internal controls over financial reporting pursuant to Section 404 of Sarbanes-Oxley Act of 2002, or Section 404, so that our management can certify as to the effectiveness of our internal controls over financial reporting. Likewise, our independent registered public accounting firm will be required to provide an attestation report on the effectiveness of our internal control over financial reporting at such time as we cease to be an "emerging growth company," as defined in the Jumpstart our Business Startups Act of 2012, or the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse if a material weakness is identified.

We have recently commenced the costly and challenging process of compiling the system and processing documentation necessary to perform the evaluation needed to comply with Section 404, but we may not be able to complete our evaluation, testing and any required remediation in a timely fashion once initiated. Our compliance with Section 404 will require that we incur substantial expenses and expend significant management efforts. We will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge and compile the system and process documentation necessary to perform the evaluation needed to comply with Section 404 and to remediate our material weakness described above.

If our management is unable to conclude that we have effective internal controls over financial reporting, or to certify the effectiveness of such controls, or if our independent registered public accounting firm cannot render an unqualified opinion on management's assessment and the effectiveness of our internal control over financial reporting, or if we are unable to remediate our material weakness described above, or if material weaknesses in our internal controls are identified in the future, we could be subject to regulatory scrutiny and a loss of public confidence, which could have a material adverse effect on our business and our stock price. In addition, if we do not maintain adequate financial and management personnel, processes and controls, we may not be able to manage our business effectively or accurately report our financial performance on a timely basis, which could cause a decline in our common stock price and adversely affect our business, financial condition, and results of operations.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. We designed our disclosure controls and procedures to provide reasonable assurance that information we must disclose in reports we file or submit under the Exchange Act is accumulated, communicated to management, recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA, CMS and non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and cause serious harm to our reputation. We currently have a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and our code of conduct and the other precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses, or in protecting us from governmental investigations, lawsuits or other actions stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could result in the imposition of significant civil, criminal and administrative penalties, including, without limitation, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs or from coverage of commercial payers, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with the law and curtailment or restructuring of our operations, which could have a significantly adverse impact on our business, financial condition and results of operations. Whether or not we are successful in defending against such actions, we could incur substantial costs and expenses, including legal fees, and divert the attention of management from the operation of our business.

Legal claims and proceedings could adversely impact our business.

We have been and may in the future be subject to threatened or actual legal claims and regulatory proceedings. We consider our historical experiences with such claims and proceedings to be in the normal course of our business or typical for our industry; however, it is difficult to assess the outcome of these matters, and we may not prevail in any current or future proceedings or litigation. For example, we have received a demand from a significant stockholder to provide certain of our books and records pursuant to Section 220 of the Delaware Corporation Law, and any future litigation related to this request could materially adversely affect us. Regardless of their merit, any threatened or actual claims or proceedings can require significant time and expense to investigate and defend. Since litigation is inherently uncertain, there is no guarantee that we will be successful in defending ourselves against such claims or proceedings, or that our assessment of the materiality of these matters, including any reserves taken in connection therewith, will be consistent with the ultimate outcome of such matters.

Certain of our officers, directors and principal stockholders may pursue corporate opportunities independent of us that could present conflicts with our and our stockholders' interests.

Certain of our officers, directors and principal stockholders are in the business of making or advising on investments in companies and hold (and may from time to time in the future acquire) interests in or provide advice or services to businesses that may directly or indirectly compete with our business or be suppliers or customers of ours. These persons may also pursue acquisitions that may be complementary to our business or enter into lines that we may otherwise be well positioned to enter, and, as a result, those acquisition opportunities may not be available to us. For example our Chief Executive Officer, Founder, and Chairman, Eric Lefkofsky, is

a co-founder and serves as Executive Chairman of the board of Pathos AI, Inc., a company engaged in the discovery and development of therapeutics and with whom we have a commercial relationship, as well as Lightbank LLC, a private venture capital firm specializing in investments in technology companies. Our charter provides that none of our officers or directors who are also an officer, director, employee, partner, managing director, principal, independent contractor or other affiliate of our principal stockholders will be liable to us or our stockholders for breach of any fiduciary duty by reason of the fact that any such individual pursues or acquires a corporate opportunity for its own account or the account of an affiliate, as applicable, instead of us, directs a corporate opportunity to any other person, instead of us or does not communicate information regarding a corporate opportunity to us.

If we were to be sued for product liability or professional liability, we could face substantial liabilities that exceed our resources.

The marketing, sale and use of our products could lead to the filing of product liability claims were someone to allege that our products identified inaccurate or incomplete information regarding the sample or information analyzed, reported inaccurate or incomplete information concerning the available therapies for a disease, or otherwise failed to perform as designed. We may also be subject to professional liability for errors in, a misunderstanding of, or inappropriate reliance upon, the information we provide in the ordinary course of our business activities. A product liability or professional liability claim could result in substantial damages and be costly and time-consuming for us to defend.

We maintain product and professional liability insurance, but this insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims. Any product liability or professional liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability or professional liability lawsuit could damage our reputation or cause current clinical customers to terminate existing agreements with us and potential clinical customers to seek other partners, any of which could adversely impact our results of operations.

We depend on information technology systems, including on-premises, co-located and third-party data centers and platforms, and any interruptions of service or failures may impair and harm our business, financial condition and results of operations.

We depend on information technology and telecommunications systems for significant elements of our operations, including our laboratory information management system, our computational biology system, our artificial intelligence algorithms, our knowledge management system, and our customer reporting. We have installed, and expect to expand, a number of enterprise software systems that affect a broad range of business processes and functional areas, including for example, systems handling human resources, financial controls and reporting, contract management, regulatory compliance and other infrastructure operations. In addition to the aforementioned business systems, we intend to extend the capabilities of both our preventative and detective security controls by augmenting the monitoring and alerting functions, the network design and the automatic countermeasure operations of our technical systems. These information technology and telecommunications systems support a variety of functions, including laboratory operations, test validation, sample tracking, quality control, customer service support, billing and reimbursement, research and development activities, scientific and medical curation and general administrative activities. In addition, our third-party provider of billing and collections services for late-stage clinical testing in the United States depends upon technology and telecommunications systems provided by its outside vendors.

We also rely on on-premises, co-located and third-party infrastructure throughout the United States to perform computationally demanding analysis tasks for our algorithmic diagnostic products and our data business, as well as for our research and development program and for other business purposes. Information technology and telecommunications systems are vulnerable to damage from a variety of sources, including

telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of the servers upon which we rely are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. Despite the precautionary measures we have taken to prevent problems that could affect our information technology and telecommunications systems, failures or significant downtime of our information technology or telecommunications systems or those used by our third-party service providers could prevent us from preparing and providing reports to physicians, billing payers, processing reimbursement appeals, handling patient or physician inquiries, conducting research and development activities and managing the administrative aspects of our business.

In the event of any technical problems that may arise in connection with our on-premises, co-located or third-party data centers, we could experience interruptions in our ability to provide AI-enabled products to our customers or in our internal functions, including research and development, which rely on such services, or to operate the other administrative aspects of our business. Interruptions or failures may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, worms, ransomware, security attacks, fraud, spikes in customer usage and denial of service issues. Interruptions or failures in our data analytics operations may reduce our revenue, result in the loss of customers, adversely affect our ability to attract new customers or harm our reputation. Significant interruptions to our research and development programs could cause us to delay the introduction of new products or improvements to existing products, which could adversely impact our business, financial condition, results of operations and the competitiveness of our products. In such events, our insurance policies may not adequately compensate us for losses that we may incur but such events could subject us to liability and cause us to issue credits or cause customers to abandon our products.

In addition, we currently use the Google Cloud Platform, or Google Cloud, for a substantial portion of our computing, storage, data processing, networking and other services. Any significant disruption of, or interference with, our use of Google Cloud could adversely affect our business, financial condition and results of operations. Google has broad discretion to change and interpret the terms of service and other policies with respect to us, and those actions may be unfavorable to our business operations. Google may also take actions beyond our control that could seriously harm our business, including discontinuing or limiting our access to one or more services, increasing pricing terms, terminating or seeking to terminate our contractual relationship altogether or altering how we are able to process data in a way that is unfavorable or costly to us. If our arrangements with Google Cloud were terminated, we could experience interruptions in our ability to conduct our diagnostic tests or to make our data product available to customers, as well as delays and additional expenses in arranging for alternative cloud infrastructure services. Any transition to new cloud providers would be difficult to implement and would cause us to incur significant delays and expense.

Additionally, we are vulnerable to service interruptions experienced by Google Cloud and other providers, and we expect to experience interruptions, delays or outages in service availability in the future due to a variety of factors, including infrastructure changes, human, hardware or software errors, hosting disruptions and capacity constraints. The level of service provided by these providers, or regular or prolonged interruptions in that service, could also affect the use of, and our customers' satisfaction with, our products and could harm our business and reputation. In addition, hosting costs will increase as our customer base grows, which could harm our business if we are unable to grow our revenue faster than the cost of using these services or the services of other providers. Any of these factors could further reduce our revenue or subject us to liability, any of which could adversely affect our business, financial condition and results of operations.

Cyber-based attacks, security breaches, loss of data and other disruptions in relation to our information systems and computer networks could compromise sensitive information related to our business, prevent us from accessing it and expose us to substantial liability, which could adversely affect our business and reputation.

Cyber-attacks, security breaches, computer virus infections, malware execution, and other incidents could cause misappropriation, exposure, loss or other unauthorized disclosure of confidential data, personal information,

materials or information, including those concerning our customers and employees. Increasingly complex methods have been used in cyber-attacks, including ransomware, phishing, supply chain attacks, structured query language injections and distributed denial-of-service attacks. A cyber-attack can also be in the form of unauthorized access to our network resources (or a blocking of authorized access). Ransomware attacks are becoming increasingly prevalent and severe and can lead to significant interruptions, delays, or outages in our operations, disruption of clinical trials, loss of data (including data related to clinical trials), loss of income, significant extra expenses to restore data or systems, reputational loss and the diversion of funds. To alleviate the financial, operational and reputational impact of a ransomware attack, ransomware attack victims may prefer to make payment demands, but if we were to be a victim of such an attack, we may be unwilling or unable to do so (including, for example, if applicable laws or regulations prohibit such payments). Similarly, supply chain attacks have increased in frequency and severity, and we cannot guarantee that third parties and infrastructure in our supply chain have not been compromised or that they do not contain exploitable defects or bugs that could result in a breach or disruption of our systems and networks or the systems or networks of third parties that support us. Despite the security controls we have in place, such attacks are difficult to avoid. Although we are not aware of any such breaches or incidents of our or our third-party vendors' systems or information, we can provide no assurance that we or our vendors will be able to detect, prevent or contain the effects of such attacks or other information security risks, vulnerabilities or threats in the future. The costs of attempting to protect against the foregoing risks and the costs of responding to and remediating systems from a cyber-attack are significant. Large scale data breaches at other entities increase the challenge we and our vendors face in maintaining the security of our information technology systems and of our customers' sensitive information. Following a cyber-attack, our and/or our vendors' remediation efforts may not be successful, and a cyber-attack could result in interruptions, delays or cessation of service, and loss of existing or potential customers. In addition, breaches of our and/or our vendors' security measures and the unauthorized dissemination or availability of sensitive personal information or proprietary information or confidential information about us, our customers or other third parties, could expose our customers' private information and our customers to the risk of financial or medical identity theft, or expose us or other third parties to a risk of loss or misuse of this information, and result in investigations, regulatory enforcement actions, material fines and penalties, loss of customers, litigation or other actions which could have a material adverse effect on our business, financial condition and results of operations. In addition, if we fail to adhere to our privacy policy and other published statements about our privacy or cybersecurity practices, or applicable laws concerning our processing, use, transmission and disclosure of protected information, or if our statements or practices are found to be deceptive or misrepresentative, we could face regulatory actions, fines and other liability. See "Risk Factors—Risks Related to Our Highly Regulated Industry." Our collection, processing, use and disclosure of personally identifiable information, including patient and employee information, is subject to privacy and security regulations, and our failure to comply with those regulations or to adequately secure the information in our possession could result in significant liability or reputational harm."

In the ordinary course of our business, we collect and store sensitive data, including PHI, personally identifiable information, credit card and other financial information, intellectual property and proprietary business information owned or controlled by us or other parties such as customers and payers. We manage and maintain our applications and data utilizing a combination of on-site systems and cloud-based data centers. We utilize external security and infrastructure vendors to manage parts of our data centers. We also communicate sensitive data, including patient data, through phone, Internet, facsimile, multiple third-party vendors and their subcontractors or integrations with third-party electronic medical records. These applications and data encompass a wide variety of information critical to our business, including research and development information, patient data, commercial information and business and financial information. We face a number of risks related to protecting this critical information, including loss of access, intentional or accidental inappropriate use or disclosure, unauthorized access, inappropriate modification and the risk of our being unable to adequately monitor, audit or modify our controls over such critical information. This risk extends to the third-party vendors and subcontractors we use to manage this sensitive data or otherwise process it on our behalf.

The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy, and we devote significant resources to a variety of mechanisms, including

administrative, physical and technical measures, intended to protect such information. Although we take measures designed to protect sensitive data from unauthorized access, use, modification or disclosure, no security measures can be perfect or protect against all threats or vulnerabilities and our information technology infrastructure could be vulnerable to hackers, phishing scams, malware, viruses, security flaws, errors by employees or others who have authorized access to our network, and other malfeasance or inadvertent disruptions. Any breach or interruption of our security measures or information technology infrastructure could compromise our networks, and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, breach, or other loss of information could result in legal claims or proceedings, and liability under federal, state or foreign laws that protect the privacy of personal information, such as HIPAA or HITECH, and regulatory penalties.

Notice of HIPAA breaches must be made to affected individuals, the Secretary of the Department of Health and Human Services or other state, federal or foreign regulators, including State Attorneys General, and for extensive breaches, notice may need to be made to the media. Such a notice could harm our reputation and our ability to compete. Although we have implemented security measures and an enterprise security program to prevent unauthorized access to patient data, such data is currently accessible through multiple channels, and there is no guarantee we can protect all data from breach or exposure. Unauthorized access, loss or dissemination could disrupt our operations (including our ability to perform our analysis, provide test results, bill payers or patients, process claims and appeals, provide customer assistance, conduct research and development, develop intellectual property, collect, process and prepare financial information, provide information about our tests and continue other patient and physician education and outreach efforts, and manage our business) and damage our reputation, any of which could adversely affect our business, financial condition and results of operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in or cancellation of our regulatory approval efforts and significantly increase our costs to recover or reproduce the lost data. We may also rely on third parties for their products or services on which we depend, and similar events relating to their computer systems could also have a material adverse effect on our business, financial condition and results of operations. To the extent that any disruption or security incident were to result in any loss, destruction, or alteration of, or damage or unauthorized access to, our data or other information that is processed or maintained on our behalf, or inappropriate disclosure of or dissemination of any such information, the further development and commercialization of our product candidates could be delayed. We continue to prioritize security and the development of practices and controls to protect our systems. As cyber threats evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities, and these efforts may not be successful.

We have contingency plans and insurance coverage for certain potential claims, liabilities, and costs relating to security incidents that may arise from our business or operations; however, the coverage may not be sufficient to cover all claims, liabilities, and costs arising from the incidents, including fines and penalties. In addition, we cannot be certain that insurance for cybersecurity incidents will continue to be available to us on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. It could be difficult to predict the ultimate resolution of any such incidents or to estimate the amounts or ranges of potential loss, if any, that could result therefrom. If we cannot successfully resolve a security incident or contain any potential loss, it could materially impact our business, financial condition and results of operations.

International expansion of our business exposes us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.

We currently have limited international operations, but our business strategy incorporates potentially significant international expansion. We plan to conduct physician and patient association outreach activities, to extend laboratory capabilities, to expand payer relationships and to market our Data business to pharmaceutical and biotechnology customers outside of the United States. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as privacy regulations, including regulations that limit our ability to collect and distribute de-identified patient data, tax laws, export and

import restrictions, economic sanctions and embargoes, employment laws, healthcare regulatory requirements, including those governing diagnostic testing and reimbursement, and other governmental approvals, permits and licenses;

- failure by us, our distributors, our local partners to obtain regulatory approvals for the use of our products in various countries;
- additional potentially blocking or relevant third-party patent or other intellectual property rights;
- complexities and difficulties in obtaining intellectual property protection and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payer reimbursement regimes, government payers, or patient self-pay systems;
- logistics and regulations associated with shipping blood samples, including infrastructure conditions and transportation delays;
- patient populations that are underrepresented in our databases;
- limits in our ability to penetrate international markets if we are not able to perform our tests locally;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations, currency controls and cash repatriation restrictions;
- natural disasters, political and economic instability, including wars, terrorism, and political unrest, boycotts, curtailment of trade and other business restrictions;
- public health or similar issues, such as epidemics or pandemics, including the current outbreak of COVID-19, that could cause business disruption, and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and distributors' activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, or FCPA, its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our revenue and results of operations.

Our existing debt may affect our flexibility in operating and developing our business and our ability to satisfy our obligations.

As of December 31, 2020, and September 30, 2021, we had indebtedness of $250 million and $243.4 million, respectively, under the convertible promissory note, or Note, that we issued to Google LLC, or Google. For as long as the Note is outstanding, it may have significant negative effects on our future operations, including:

- impairing our ability to obtain additional financing in the future (or to obtain such financing on acceptable terms) for working capital, capital expenditures, acquisitions or other important needs;
- requiring us to repay the principal and accrued interest on the Note if we terminate our agreement with Google for use of Google Cloud or as a result of an event of default under the operating covenants in the Note, which could impair our liquidity and reduce the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other important needs;
- limiting our ability to adjust to rapidly changing conditions in the industry, reducing our ability to withstand competitive pressures and making us more vulnerable to a downturn in general economic conditions or business than our competitors with relatively lower levels of debt.

In addition, the Note contains restrictions on our ability to incur additional debt. Complying with these covenants may cause us to take actions that make it more difficult to successfully execute our business strategy and we may face competition from companies not subject to such restrictions.

We could be adversely affected by violations of the FCPA and other anti-bribery laws.

We are subject to the FCPA, which prohibits companies and their intermediaries from making payments in violation of law to non-U.S. government officials for the purpose of obtaining or retaining business or securing any other improper advantage, as a result of our international operations. We are also subject to similar anti-bribery laws in the jurisdictions in which we operate, including the United Kingdom's Bribery Act of 2010, which also prohibits commercial bribery and makes it a crime for companies to fail to prevent bribery. These laws are complex and far-reaching in nature, and, as a result, we cannot assure that we would not be required in the future to alter one or more of our practices to be in compliance with these laws or any changes in these laws or the interpretation thereof. Any violations of these laws, or allegations of such violations, could disrupt our operations, involve significant management distraction, cause us to incur significant costs and expenses, including legal fees, and result in a material adverse effect on our business, financial condition and results of operations. We could also suffer severe penalties, including criminal and civil penalties, disgorgement and other remedial measures.

Risks Related to Ownership of Our Class A Common Stock

The dual class structure of our common stock will have the effect of concentrating voting control with our Chief Executive Officer, Founder and Chairman, which will limit your ability to influence the outcome of important decisions.

Our Class B common stock has votes per share and our Class A common stock, which is the stock we are offering hereby, has one vote per share. Our Chief Executive Officer, Founder, and Chairman, Eric Lefkofsky, who, collectively with his controlled entities, holds all our outstanding shares of Class B common stock, will beneficially own shares representing approximately % of the voting power of our outstanding capital stock following the completion of this offering. As a result, Mr. Lefkofsky will have the ability to control the outcome of matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions, such as a merger or other sale of our company or our assets, even if his stock ownership represents less than 50% of the outstanding aggregate number of shares of our capital stock. This concentration of voting control will limit the ability of other stockholders to influence corporate matters and may cause us to make strategic decisions that could involve risks to you or that may not be aligned with your interests. As a board member, Mr. Lefkofsky owes a fiduciary duty to our stockholders and is legally obligated to act in good faith and in a manner he reasonably believes to be in the best interests of our stockholders. As a stockholder, Mr. Lefkofsky is entitled to vote his shares in his own interests, which may not always be in the interests of our stockholders generally. Mr. Lefkofsky's control may adversely affect the market price of our Class A common stock.

We have not elected to take advantage of the "controlled company" exemption to the corporate governance rules for publicly listed companies but may do so in the future.

Because our Chief Executive Officer, Founder, and Chairman, Eric Lefkofsky, who, collectively with his controlled entities, holds all our outstanding shares of Class B common stock, will beneficially own shares representing in excess of 50% of the voting power of our outstanding capital stock following the completion of this offering, we are eligible to elect the "controlled company" exemption to the corporate governance rules for publicly listed companies. We have not elected to do so. If we decide to become a "controlled company" under the corporate governance rules for publicly listed companies, we would not be required to have a majority of our board of directors be independent, nor would we be required to have a compensation committee or an independent nominating function. If we choose controlled company status in the future, our status as a controlled company could cause our Class A common stock to be less attractive to certain investors or otherwise harm our trading price.

We cannot predict the impact our dual class structure may have on the market price of our Class A common stock.

We cannot predict whether our dual class structure, combined with the concentrated control of our Chief Executive Officer, Founder and Chairman, who beneficially owns all of the outstanding shares of our Class B common stock, will result in a lower or more volatile market price of our Class A common stock or in adverse publicity or other adverse consequences. Certain index providers have announced restrictions on including companies with multiple-class share structures in certain of their indexes. For example, in July 2017, FTSE Russell and Standard & Poor's announced that they would cease to allow most newly public companies utilizing dual or multi-class capital structures to be included in their indices. Under the announced policies, our dual class capital structure would make us ineligible for inclusion in any of these indices. Given the sustained flow of investment funds into passive strategies that seek to track certain indexes, exclusion from stock indexes would likely preclude investment by many of these funds and could make our Class A common stock less attractive to other investors. As a result, the market price of our Class A common stock could be adversely affected.

No public market for our Class A common stock currently exists, and an active public trading market may not develop or be sustained following this offering.

No public market for our Class A common stock currently exists. An active public trading market for our Class A common stock may not develop following the completion of this offering or, if developed, it may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

We will have broad discretion in the use of the net proceeds to us from this offering and may not use them effectively.

We will have broad discretion in the application of the net proceeds to us from this offering, including for any of the purposes described in the section titled "Use of Proceeds," and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, our ultimate use may vary substantially from our currently intended use. Investors will need to rely upon the judgment of our management with respect to the use of proceeds. Pending use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities, such as money market accounts, certificates of deposit, commercial paper, and guaranteed obligations of the U.S. government that may not generate a high yield for our stockholders. We may use a portion of the net proceeds to acquire complementary businesses, products, services, or technologies. At this time, we do not have agreements or commitments to enter into any material acquisitions. If we do not use the net proceeds that we receive in this offering effectively, our business, financial condition and results of operations could be harmed and the market price of our Class A common stock could decline.

Future sales of our Class A common stock in the public market could cause the market price of our Class A common stock to decline.

Sales of a substantial number of shares of our Class A common stock in the public market following the completion of this offering, or the perception that these sales might occur, could depress the market price of our Class A common stock and could impair our ability to raise capital through the sale of additional equity securities. Many of our existing equity holders have substantial unrecognized gains on the value of the equity they hold based upon the price of this offering, and therefore they may take steps to sell their shares or otherwise secure the unrecognized gains on those shares. We are unable to predict the timing of or the effect that such sales may have on the prevailing market price of our Class A common stock.

All of the Class A common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act of 1933, as amended, or the Securities Act, except for any shares held by our affiliates as defined in Rule 144 under the Securities Act, or Rule 144, and shares subject to lock-up agreements described below.

All of our directors and executive officers, the selling stockholders, and the holders of substantially all of our Class A common stock, Class B common stock and securities exercisable for, or convertible into, our Class A common stock outstanding immediately on the closing of this offering, are subject to lock-up agreements with the underwriters or agreements with market stand-off provisions with us pursuant to which they have agreed that they will not, and will not publicly disclose an intention to, during the period ending , or the restricted period, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any of our shares of common stock, any options or warrants to purchase any of our shares of common stock or any securities convertible into or exchangeable for or that represent the right to receive shares of our common stock or enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock; provided that Morgan Stanley & Co. LLC and J.P. Morgan Securities LLC on behalf of the underwriters may release any of the securities subject to these lock-up agreements at any time, subject to the applicable notice requirements.

In addition, the restricted period may be shortened with respect to a portion of the locked-up securities held by certain lock-up parties, and the lock-up agreements are subject to a number of exceptions. These agreements are further described in the sections titled “Shares Eligible for Future Sale” and “Underwriting.” If not earlier released, all of the shares of Class A common stock not sold in this offering will become eligible for sale upon expiration of the restricted period, except for any shares held by our affiliates as defined in Rule 144.

In addition, there were shares of Class A common stock issuable upon the exercise of options and upon the vesting and settlement of restricted stock units outstanding as of , 2021. The shares of Class A common stock will become eligible for sale in the public market to the extent such options are exercised or restricted stock units vested and settled, subject to the lock-up agreements described above and compliance with applicable securities laws. We intend to register all of the shares of Class A common stock issuable upon the vesting and settlement of outstanding restricted stock units, and other equity incentives we may grant in the future, for public resale under the Securities Act.

Further, based on shares outstanding as of , 2021, holders of approximately shares of Class A common stock (assuming the issuance of the Additional Conversion Shares, as discussed under “Prospectus Summary” above, and assuming no exercise of the underwriters’ option to purchase additional shares) and approximately shares of Class B common stock (assuming the issuance of the Additional Conversion Shares), or % of our capital stock after the completion of this offering, will have rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

Sales, short sales, or hedging transactions involving our equity securities, whether before or after this offering and whether or not we believe them to be prohibited, could adversely affect the price of our Class A common stock.

You will experience immediate and substantial dilution in the net tangible book value of the shares of Class A common stock you purchase in this offering.

The initial public offering price of our Class A common stock will be substantially higher than the pro forma net tangible book value per share of our common stock immediately after this offering. If you purchase shares of our Class A common stock in this offering, you will suffer immediate dilution of $ per share, or $ per share if the underwriters exercise their option to purchase additional shares in full, representing

the difference between our pro forma as adjusted net tangible book value per share as of 2021, after giving effect to the sale of Class A common stock in this offering and the assumed public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus. See the section titled "Dilution."

We do not intend to pay dividends for the foreseeable future and, as a result, your ability to achieve a return on your investment will depend on appreciation in the price of our Class A common stock.

While we have in the past paid dividends to holders of our convertible preferred stock, we do not intend to pay any cash dividends in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, you may need to rely on sales of our Class A common stock after price appreciation, which may never occur, as the only way to realize any future gains on your investment.

We are an "emerging growth company," and we cannot be certain if the reduced reporting and disclosure requirements applicable to emerging growth companies will make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies," including the auditor attestation requirements of Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. Pursuant to Section 107 of the JOBS Act, as an emerging growth company, we have elected to use the extended transition period for complying with new or revised accounting standards until those standards would otherwise apply to private companies. As a result, our consolidated financial statements may not be comparable to the financial statements of issuers who are required to comply with the effective dates for new or revised accounting standards that are applicable to public companies, which may make our Class A common stock less attractive to investors. In addition, if we cease to be an emerging growth company, we will no longer be able to use the extended transition period for complying with new or revised accounting standards.

We will remain an emerging growth company until the earliest of: (1) the last day of the fiscal year following the fifth anniversary of this offering; (2) the last day of the first fiscal year in which our annual gross revenue is $1.07 billion or more; (3) the date on which we have, during the previous rolling three-year period, issued more than $1.0 billion in non-convertible debt securities; and (4) the last day of the fiscal year in which the market value of our Class A common stock held by non-affiliates exceeded $700 million as of June 30 of such fiscal year.

We cannot predict if investors will find our Class A common stock less attractive if we choose to rely on these exemptions. If some investors find our Class A common stock less attractive, there may be a less active trading market for our Class A common stock and our stock price may be more volatile.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our Class A common stock.

In addition to the effects of our dual class structure, provisions in our amended and restated certificate of incorporation and amended and restated bylaws, as they will be in effect upon the completion of this offering, may have the effect of delaying or preventing a change in control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws will include provisions that may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally, subject to certain exceptions, prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. Any of the foregoing provisions could limit the price that investors might be willing to pay in the future for shares of our Class A common stock, and they could deter potential acquirers of our company, thereby reducing the likelihood that you would receive a premium for your shares of our Class A common stock in an acquisition.

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our amended and restated certificate of incorporation, as will be in effect upon the completion of this offering, will provide that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative claim or cause of action brought on our behalf;
- any claim or cause of action asserting a breach of fiduciary duty;
- any claim or cause of action against us arising under the Delaware General Corporation Law;
- any claim or cause of action arising under or seeking to interpret our amended and restated certificate of incorporation or our amended and restated bylaws; and
- any claim or cause of action against us that is governed by the internal affairs doctrine.

The provisions would not apply to suits brought to enforce a duty or liability created by the Securities Exchange Act of 1934, or the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation will further provide that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause or causes of action arising under the Securities Act, including all causes of action asserted against any defendant to such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering.

While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such an instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers, and other employees. If a court were to find either exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business, financial condition and results of operations.

Our stock price may be volatile, and the value of our Class A common stock may decline.

The market price of our Class A common stock may be highly volatile and may fluctuate or decline substantially as a result of a variety of factors, some of which are beyond our control, including:

- actual or anticipated fluctuations in our financial condition or results of operations;
- variance in our financial performance from expectations of securities analysts;
- changes in the pricing of our products;
- changes in our projected operating and financial results;
- changes in laws or regulations applicable to our Platform and products, including changes in the regulation of data or in the structure of healthcare payment systems;
- announcements by us or our competitors of significant business developments, acquisitions, or new products;
- significant data breaches, disruptions to or other incidents involving our products;
- our involvement in litigation or governmental investigations;
- future sales of our Class A common stock by us or our stockholders, as well as the anticipation of lock-up releases;
- changes in senior management or key personnel;
- the issuance of new or changed securities analysts' reports or recommendations;
- the trading volume of our Class A common stock;
- changes in the anticipated future size and growth rate of our market; and
- economic and market conditions in general, or in our industry in particular.

Broad market and industry fluctuations, as well as general economic, political, regulatory, and market conditions, may also negatively impact the market price of our Class A common stock. In addition, technology stocks have historically experienced high levels of volatility. In the past, companies that have experienced volatility in the market price of their securities have been subject to securities class action litigation. We may be the target of this type of litigation in the future, which could result in substantial expenses and divert our management's attention.

If securities or industry analysts do not publish research or publish unfavorable or inaccurate research about our business, the market price and trading volume of our Class A common stock could decline.

The market price and trading volume of our Class A common stock following the completion of this offering will be heavily influenced by the way analysts interpret our financial information and other disclosures. We do not have control over these analysts. If few securities analysts commence coverage of us, or if industry analysts cease coverage of us, our stock price would be negatively affected. If securities or industry analysts do not publish research or reports about our business, downgrade our Class A common stock, or publish negative reports about our business, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our Class A common stock could decrease, which might cause our stock price to decline and could decrease the trading volume of our Class A common stock.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to compliance with our public company responsibilities and corporate governance practices.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company, which we expect to further increase after we are no longer an "emerging growth company."

The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Exchange Act, the listing requirements of the and other applicable securities rules and regulations impose various requirements on public companies. Our management and other personnel devote a substantial amount of time to compliance with these requirements. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly, such as maintaining directors' and officers' liability insurance. We cannot predict or estimate the amount of additional costs we will incur as a public company or the specific timing of such costs, and any such costs may adversely affect our business, financial condition and results of operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations or financial condition, business strategy and plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements because they contain words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "will" or "would" or the negative of these words or other similar terms or expressions. These forward-looking statements include, but are not limited to, statements concerning the following:

- the evolving treatment paradigm for cancer, including physicians' use of molecular data and targeted oncology therapeutics and the market size for our current and future products;
- our ability to expand our business beyond oncology into new disease areas;
- estimates of our addressable market and our expectations regarding our revenue, expenses, capital requirements and operating results;
- our ability to develop new products and services, including our goals and strategy regarding development and commercialization of Algos;
- our ability to maintain and grow our datasets, including in new disease areas and geographies;
- any expectation that the growth of our datasets will improve the quality of our products and services and accelerate their adoption;
- our ability to capture, aggregate, analyze or otherwise utilize genomic data in new ways and in additional diagnostic modalities;
- any expectation that we will continue to commercialize de-identified records and license them to multiple customers;
- the acceptance of our publications in peer-reviewed journals or of our presentations at scientific and medical conference presentations;
- the implementation of our business model and strategic plans for our products, technologies and businesses;
- competitive companies and technologies and our industry;
- the potential of Intelligent Diagnostics to be disruptive across a broad set of disease areas and the clinical trial process;
- our ability to manage and grow our business by expanding our sales to existing customers or introducing our products to new customers;
- third-party payer reimbursement and coverage decisions, including our strategy to increase reimbursement;
- our ability to establish and maintain intellectual property protection for our products or avoid claims of infringement;
- potential effects of evolving and/or extensive government regulation;
- the timing or likelihood of regulatory filings and approvals;
- our ability to hire and retain key personnel;
- our ability to expand internationally;

- our ability to protect and enforce our intellectual property rights, including our trade secret protected proprietary rights in our platform;
- our anticipated cash needs and our needs for additional financing; and
- anticipated trends and challenges in our business and the markets in which we operate.

You should not rely on forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this prospectus primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition and operating results. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described in the section titled "Risk Factors" and elsewhere in this prospectus. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this prospectus. The results, events and circumstances reflected in the forward-looking statements may not be achieved or occur, and actual results, events or circumstances could differ materially from those described in the forward-looking statements.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this prospectus. And while we believe that information provides a reasonable basis for these statements, that information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all relevant information. These statements are inherently uncertain, and investors are cautioned not to unduly rely on these statements.

The forward-looking statements made in this prospectus relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this prospectus to reflect events or circumstances after the date of this prospectus or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments.

MARKET, INDUSTRY AND OTHER DATA

This prospectus contains statistical data, estimates and forecasts that are based on independent industry publications or other publicly available information, as well as other information based on our internal sources. While we believe the industry and market data included in this prospectus are reliable and are based on reasonable assumptions, these data involve many assumptions and limitations, and you are cautioned not to give undue weight to these estimates. We have not independently verified the accuracy or completeness of the data contained in these industry publications and other publicly available information. None of the industry publications referred to in this prospectus were prepared on our or on our affiliates' behalf or at our expense. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the sections titled "Risk Factors" and "Special Note Regarding Forward-Looking Statements." Among other items, certain of the market research included in this prospectus was published prior to the outbreak of the COVID-19 pandemic and did not anticipate the virus or the impact it has caused on our industry. We have utilized this pre-pandemic market research in the absence of updated sources. These and other factors could cause results to differ materially from those expressed in the projections and estimates made by the independent third parties and us. See the section titled "Risk Factors—Risks Related to Our Business and Strategy—The sizes of the markets for our current and future products have not been established with precision, and may be smaller than we estimate."

The sources of certain statistical data, estimates and forecasts contained in this prospectus are the following independent industry publications, reports and other publicly available information:

- Mordor Intelligence, Biomarkers Market—Growth, Trends, COVID-19 Impact, and Forecast (2021-2026), 2021
- Mordor Intelligence, Clinical Trials Market—Growth, Trends, COVID-19 Impact, and Forecast (2021-2026), 2021
- Evaluate Pharma, World Preview 2020, Outlook to 2026, July 2020
- American Clinical Laboratory Association, Value of Lab Testing, 2021
- National Cancer Institute, Cancer Statistics, September 2020
- ClinicalTrials.gov database, 2020: U.S. National Library of Medicine
- GLOBOCAN 2020 database, 2020: Global Cancer Observatory
- National Institute of Mental Health, Major Depression, September 2018
- Anxiety & Depression Association of America, Facts & Statistics, 2021
- Cancers (Basel), PARP Inhibitors in the Treatment of Early Breast Cancer: The Step Beyond?, June 2020
- Gynecologic Oncology, Frequencies of BRCA1 and BRCA2 Mutations Among 1,342 Unselected Patients with Invasive Ovarian Cancer, May 2011
- Journal of Oncology, BRCA Mutations in Prostate Cancer: Prognostic and Predictive Implications, 2020
- World Journal of Urology, Efficacy of Routine Follow-up After First-Line Treatment of Testicular Cancer, October 2004
- The Global Economic Burden of Non-communicable Diseases, Harvard School of Public Health, World Economic Forum (September 2011)
- Mental Health and Substance Use, Mental Health in the Workplace, World Health Organization

- World Cancer Report 2014, International Agency for Research on Cancer, World Health Organization (2014)
- CoronavirusUpdate: COVID-19 likely to cost economy $1 trillion during 2020, says UN trade agency, United Nations, UN News (March 9, 2020)
- American Cancer Society, Cancer Treatment & Survivorship Facts & Figures 2019-2021, 2019
- The Cancer Atlas, The Burden of Cancer, 2019.

USE OF PROCEEDS

We estimate that we will receive net proceeds from this offering of approximately $ million based on an assumed initial public offering price of $ per share of Class A common stock, the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We will not receive any of the proceeds from any sale of Class A common stock in this offering by the selling stockholders identified in this prospectus in the event that the underwriters exercise their option to purchase additional shares to cover over-allotments, although we will pay the expenses, other than the underwriting discounts and commissions, associated with the sale of those shares.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share of Class A common stock, the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us from this offering by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of Class A common stock offered by us would increase (decrease) the net proceeds to us from this offering by approximately $ million, assuming the assumed initial public offering price of $ per share of Class A common stock remains the same, and after deducting estimated underwriting discounts and commissions.

The principal purposes of this offering are to increase our capitalization and financial flexibility, facilitate an orderly distribution of shares for the selling stockholders, create a public market for our Class A common stock and facilitate our future access to the capital markets. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. However, we currently intend to use the net proceeds we receive from this offering for general corporate purposes, including working capital, operating expenses and capital expenditures. We may also use a portion of the net proceeds to acquire complementary businesses, products, services or technologies. At this time, we do not have agreements or commitments to enter into any material acquisitions.

We will have broad discretion over how to use the net proceeds to us from this offering. We intend to invest the net proceeds to us from this offering that are not used as described above in investment-grade, interest-bearing instruments.

DIVIDEND POLICY

Since our incorporation in 2015, we have paid an aggregate of $21.2 million in cash dividends to holders of our preferred stock in satisfaction of dividend obligations accruing pursuant to our certificate of incorporation in effect prior to this offering. As of the date of this prospectus, shares of our convertible preferred stock have accrued approximately $ million in unpaid dividends, which are payable, at our option, in cash or shares of our common stock. We expect to pay these dividends in shares of our common stock in connection with the closing of this offering. See "Prospectus Summary—The Offering" for more information about shares of common stock to be issued in satisfaction of these dividend obligations.

Our amended and restated certificate of incorporation to be in effect upon the closing of this offering will not provide for accruing dividends. We currently intend to retain all available funds and future earnings, if any, to fund the development and expansion of our business, and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our cash and capitalization as of September 30, 2021:

- on an actual basis;
- on a pro forma basis, giving effect to (1) the automatic conversion of all of our outstanding shares of Series B redeemable convertible preferred stock into shares of Class B common stock, which will occur immediately prior to the closing of this offering; (2) the automatic conversion of all of our outstanding shares of redeemable convertible preferred stock, other than our Series B preferred stock, into shares of Class A common stock, which will occur immediately prior to the closing of this offering; (3) the issuance of Additional Class A Conversion Shares, which will occur upon the conversion of all outstanding shares of our redeemable convertible preferred stock and immediately prior to the closing of this offering; (4) the automatic conversion of all of our nonvoting common stock into shares of Class A common stock, which will occur immediately prior to the closing of this offering; (5) the filing and effectiveness of our amended and restated certificate of incorporation, which will occur immediately prior to the closing of this offering; and
- on a pro forma as adjusted basis, giving effect to (1) the pro forma adjustments set forth above and (2) our receipt of $ million in net proceeds from the sale of shares of Class A common stock that we are offering at an assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

You should read this table together with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus.

	As of September 30, 2021		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands except share and per share amounts)		
Cash, cash equivalents and restricted cash	$ 345,725	$	$
Convertible promissory note	243,420		
Redeemable convertible preferred stock, $0.0001 par value, 64,760,746 shares authorized, 61,078,813 shares issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	890,535		
Stockholders' (deficit) equity:			
Preferred stock, $0.0001 par value, no shares authorized, issued, and outstanding, actual; shares authorized, no shares issued and outstanding, pro forma and pro forma as adjusted	—		
Non-voting common stock, $0.001 par value, 63,946,620 shares authorized 4,612,450 shares issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	0		
Class A common stock, $0.001 par value, 181,700,285 shares authorized 58,367,961 shares issued and outstanding, actual; shares authorized, issued and outstanding, pro forma and pro forma as adjusted	6		
Class B common stock, $0.001 par value, 5,374,899 shares authorized no shares issued and outstanding, actual; shares authorized, issued and outstanding, pro forma and pro forma as adjusted	0		
Additional paid-in capital	—		
Accumulated other comprehensive (loss) income	14		
Accumulated deficit	(739,342)		
Total stockholders' (deficit) equity:	$ (739,322)	$	$
Total capitalization	$ 394,633	$	$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share of Class A common stock, the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of Class A common stock offered by us would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, additional paid-in capital, total stockholders' (deficit) equity and total capitalization by approximately $ million, assuming the assumed initial public offering price of $ per share of Class A common stock remains the same, and after deducting estimated underwriting discounts and commissions.

The number of shares of Class A common stock and Class B common stock that will be outstanding immediately after this offering is based on shares of Class A common stock and shares of Class B common stock outstanding as of September 30, 2021, and excludes:

- shares of Class A common stock issuable on the vesting and settlement of RSUs outstanding as of under the 2015 Plan, for which the performance-based vesting condition will be

satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;

- shares of Class A common stock issuable on the vesting and settlement of RSUs granted after September 30, 2021 under the 2015 Plan for which the performance-based vesting condition will be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock that may become issuable upon the vesting and settlement of PSUs outstanding as of September 30, 2021 under our 2015 Plan, for which the performance-based vesting condition may be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock reserved for future issuance under 2021 Plan, plus a number of shares of Class A common stock not to exceed (consisting of the number of shares that remain available under the 2015 Plan as of immediately prior to the effective date of the 2021 Plan, and any shares underlying RSUs outstanding under the 2015 Plan that expire or otherwise terminate prior to settlement after the effective date of the 2021 Plan), as well as any future increases, including annual automatic evergreen increases, in the number of shares of Class A common stock reserved for issuance under the 2021 Plan;
- shares of Class A common stock issuable on the exercise of a stock option outstanding as of September 30, 2021 under the 2015 Plan, with an exercise price of $ per share; and
- up to shares of Class A common stock issuable upon conversion of an outstanding convertible promissory note, which is convertible beginning in March 2026, as more fully described in the section of this prospectus titled “Description of Capital Stock—Convertible Promissory Note.”

DILUTION

If you invest in our Class A common stock in this offering, your interest will be diluted to the extent of the difference between the initial public offering price per share of Class A common stock and the pro forma as adjusted net tangible book value per share immediately after this offering.

Our pro forma net tangible book value as of September 30, 2021 was $ million, or $ per share. Our pro forma net tangible book value per share represents the amount of our total tangible assets less our total liabilities, divided by the number of our shares of common stock outstanding as of September 30, 2021, after giving effect to (1) the automatic conversion of all outstanding shares of our Series B redeemable preferred stock into shares of Class B common stock, which will occur immediately prior to the closing of this offering; (2) the automatic conversion of all outstanding shares of our redeemable convertible preferred stock, other than our Series B preferred stock, into an aggregate of shares of Class A common stock, which will occur immediately prior to the closing of this offering; (3) the issuance of the Additional Class A Conversion Shares, which will occur upon the conversion of all outstanding shares of our redeemable convertible preferred stock and immediately prior to the closing of this offering; (4) the automatic conversion of all of our nonvoting common stock into shares of Class A common stock, which will occur immediately prior to the closing of this offering. See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

After giving effect to the sale by us of shares of Class A common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2021 would have been $ million, or $ per share. This amount represents an immediate increase in pro forma as adjusted net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to new investors purchasing Class A common stock in this offering. We determine dilution by subtracting the pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by investors purchasing Class A common stock in this offering. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value per share as of September 30, 2021	$	
Decrease per share attributable to the pro forma adjustments described above		
Pro forma net tangible book value per share as of September 30, 2021		
Decrease in pro forma as adjusted net tangible book value per share attributable to new investors purchasing shares in this offering		
Pro forma as adjusted net tangible book value per share after giving effect to this offering		
Dilution per share to new investors in this offering		$

The dilution information discussed above is illustrative only and may change based on the actual initial public offering price and other terms of this offering. Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share of Class A common stock, the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value per share by $ per share and increase (decrease) the dilution to new investors by $ per share, in each case assuming the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of Class A common stock offered by us would increase (decrease) our pro forma as adjusted net tangible book value by approximately $ per share and decrease (increase) the dilution to new investors by approximately $ per share, in each case assuming the assumed initial public offering price of $ per share of Class A common stock remains the same, and after deducting estimated underwriting discounts and commissions.

The following table summarizes, as of September 30, 2021, on a pro forma as adjusted basis as described above, the aggregate number of shares of our Class A common stock and Class B common stock, the total consideration and the average price per share (1) paid to us by existing stockholders, and (2) to be paid by new investors acquiring our Class A common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders		%		%	
New investors					
Totals		100.0%	$	100.0%	

Sales by the selling stockholders upon the exercise in full of the underwriters' option to purchase additional shares to cover over-allotments, if any, would cause the number of shares held by existing stockholders to be reduced to shares, or % of the total number of shares of our capital stock outstanding following the closing of this offering, and would increase the number of shares held by new investors to shares, or % of the total number of shares of our capital stock outstanding following the closing of this offering.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by new investors and total consideration paid by all stockholders by $ million, assuming that the number of shares of Class A common stock offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of Class A common stock offered by us would increase (decrease) the total consideration paid by new investors and total consideration paid by all stockholders by $ million, assuming the assumed initial public offering price of $ per share of Class A common stock remains the same, and after deducting estimated underwriting discounts and commissions.

The number of shares of Class A common stock and Class B common stock that will be outstanding immediately after this offering is based on shares of Class A common stock and shares of Class B common stock outstanding as of September 30, 2021, and excludes:

- shares of Class A common stock issuable on the vesting and settlement of RSUs outstanding as of September 30, 2021 under our 2015 Plan, for which the performance-based vesting condition will be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;

- shares of Class A common stock issuable on the vesting and settlement of RSUs granted after September 30, 2021 under the 2015 Plan for which the performance-based vesting condition will be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock that may become issuable to upon the vesting and settlement of PSUs outstanding as of September 30, 2021 under our 2015 Plan, for which the performance-based vesting condition may be satisfied in connection with this offering, but for which the service-based vesting condition will not be satisfied on or before the date of this offering;
- shares of Class A common stock reserved for future issuance under our 2021 Plan, plus a number of shares of Class A common stock not to exceed (consisting of the number of shares that remain available under the 2015 Plan as of immediately prior to the effective date of the 2021 Plan, and any shares underlying RSUs outstanding under the 2015 Plan that expire or otherwise terminate prior to settlement after the effective date of the 2021 Plan), as well as any future increases, including annual automatic evergreen increases, in the number of shares of Class A common stock reserved for issuance under the 2021 Plan;
- shares of Class A common stock issuable on the exercise of a stock option outstanding as of September 30, 2021 under the 2015 Plan, with an exercise price of $ per share; and
- up to shares of Class A common stock issuable upon conversion of an outstanding convertible promissory note, which is convertible beginning in March 2026, as more fully described in the section of this prospectus titled "Description of Capital Stock—Convertible Promissory Note."

To the extent that any outstanding options are exercised, outstanding RSUs vest and settle or new options or RSUs are issued under our stock-based compensation plans, or we issue additional shares of Class A common stock in the future, there will be further dilution to investors participating in this offering. If all outstanding options under the 2015 Plan and RSUs under the 2015 Plan as of September 30, 2021 were exercised or vested and settled, as applicable, then our existing stockholders, including the holders of these options and RSUs, would own % and our new investors would own % of the total number of shares of our Class A common stock and Class B common stock outstanding on the closing of this offering.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this prospectus. Some of the information contained in this discussion and analysis, including information with respect to our planned investments in our sales and marketing, research and development, and general and administrative functions, includes forward-looking statements that involve risks and uncertainties. You should review the sections titled "Special Note Regarding Forward-Looking Statements" and "Risk Factors" for a discussion of forward-looking statements and important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

Tempus is a technology company focused on healthcare that straddles two converging worlds. We strive to combine deep healthcare expertise, providing next-generation diagnostics across multiple disease areas, with leading technology capabilities, harnessing the power of data and analytics to help personalize medicine. We endeavor to unlock the true power of precision medicine by creating Intelligent Diagnostics through the practical application of artificial intelligence, or AI, in healthcare. Intelligent Diagnostics use artificial intelligence to make laboratory tests more accurate, tailored, and personal. Unlike traditional diagnostic labs, we can incorporate unique patient information, such as clinical, molecular, and imaging data, with the goal of making our tests more intelligent and our results more insightful. Unlike other technology companies, we are deeply rooted in clinical care delivery as one of the largest sequencers of cancer patients, and patients with other diseases, in the United States. Straddling both worlds is advantageous as we believe Intelligent Diagnostics represent the future of precision medicine, informing more personalized and data-driven therapy selection and development. We believe their adoption could empower physicians to deliver better care and researchers to develop more precise therapies, with the potential to save millions of lives.

In order to bring AI to healthcare at scale, we believe the foundation of how data flows throughout the ecosystem needs to be rebuilt. We established new data pipes, going to and from providers, to allow for the free exchange of data between physicians, who interpret data, and diagnostic and therapeutic companies, who provide data. Without this capability, we believe that data would continue to accumulate without impacting patient care. To accomplish this, we built both a technology platform to free healthcare data from silos and an operating system to make this data useful. We refer to the combination of those as our Platform. Our Platform connects multiple stakeholders within the larger healthcare ecosystem, often in real time, to assemble and integrate the data we collect, thereby providing an opportunity for physicians to make data-driven decisions in the clinic and for researchers to discover and develop therapeutics. We aim to help physicians find the best therapies for their patients, help pharmaceutical and biotechnology companies make the best drugs possible, and enable patients to access emerging therapies and clinical trials when appropriate.

We primarily operate in the United States and generated total revenue of $62.1 million and $188.0 million in the years ended December 31, 2019 and 2020, respectively, and of $87.2 million and $184.5 million in the nine months ended September 30, 2020 and 2021, respectively. In the year ended December 31, 2019, two separate customers accounted for approximately 14.8% and 17.7% of our total revenue, and revenue from one customer accounted for approximately 16.5% of our total revenue in the year ended December 31, 2020. In the nine months ended September 30, 2020, two customers accounted for 15.6% and 12.6% of our total revenue, respectively. In the nine months ended September 30, 2021, one customer accounted for 34.8% of our total revenue. We also incurred net losses of $115.0 million and $209.9 million in the years ended December 31, 2019 and 2020, respectively, and net losses of $155.7 million and $200.2 million in the nine months ended September 30, 2020 and 2021, respectively.

Our Business Model

We currently offer three product lines: Genomics, Data, and Algos. Each product line is designed to enable and enhance the others, thereby creating network effects in each of the markets in which we operate. We are able

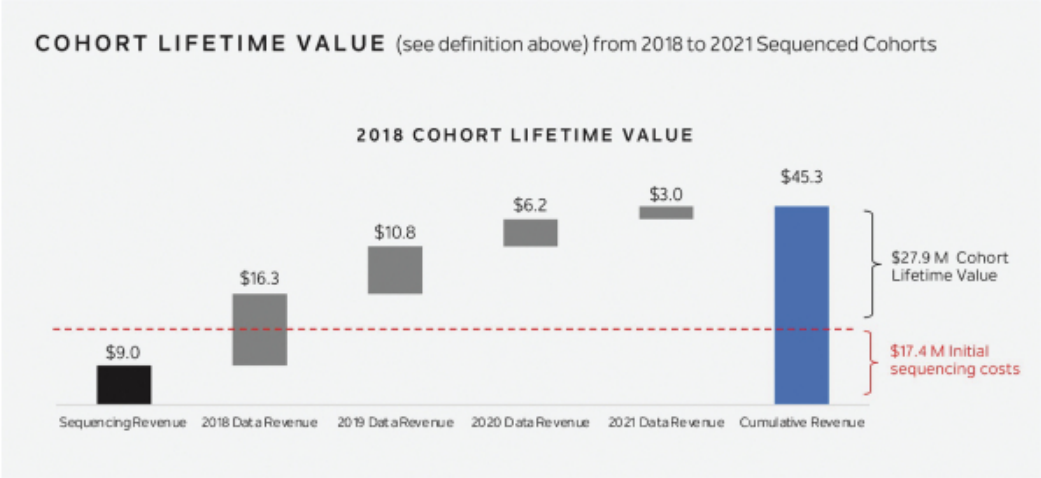
to commercialize records multiple times, both at the time a test is run and thereafter. As a result, we differ from traditional diagnostic companies that need to focus on maximizing gross profit when performing a test. At its core, our business model consists of generating, ingesting and structuring vast amounts of multimodal data through our Genomics product line and commercializing de-identified copies of such data through partnerships with our pharmaceutical customers to aid their drug discovery and development efforts.

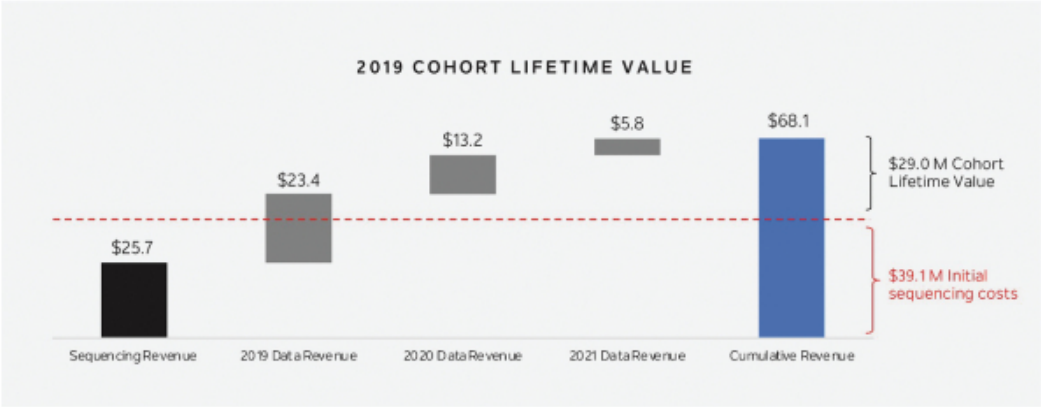
We invest in our database by generating high-quality molecular data and ingesting and structuring the longitudinal clinical records for many of the patients we sequence. While this investment in our business model comes with additional upfront costs, these investments benefit key stakeholders in the healthcare ecosystem over time:

- Healthcare providers benefit from a tailored test result that provides information that can be used in routing patients to the most effective therapy.
- Pharmaceutical and biotechnology companies benefit by licensing deep molecular data and longitudinal clinical data that they can leverage in their drug development efforts.
- We benefit by leveraging the multimodal data to make our current tests more precise and/or to develop new algorithmic tests in the future.

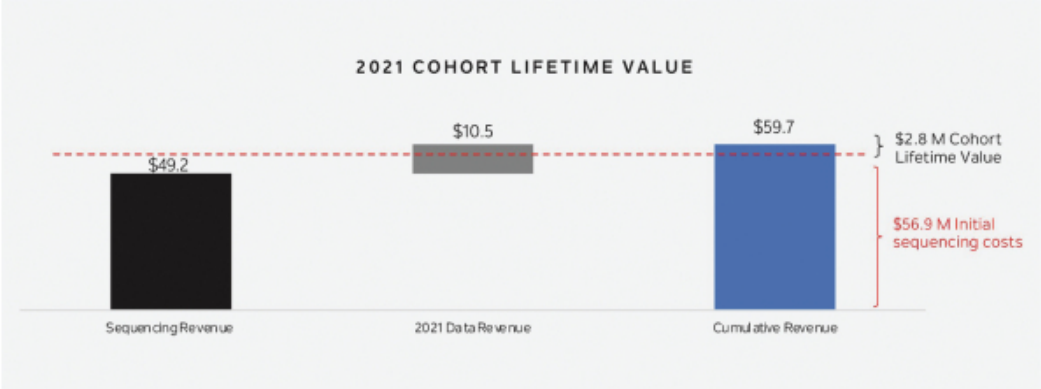
Although we are only five years old, the network effects described above have already been demonstrated with the cohort of records that were added to our database in 2018, 2019, 2020, and 2021. To evaluate the revenue stream in our Data product line, we rely on "Cohort Lifetime Value." We define "Cohort Lifetime Value" as the cumulative revenue attributable to a specific cohort of de-identified records, including revenue derived both from the initial sequencing (Genomics) and licensing (Data and other), less the initial sequencing costs incurred to generate the data ultimately licensed. In 2018, the first full year that we operated a laboratory, we sequenced samples from approximately 7,500 patients. From that 2018 cohort of sequenced patients, through September 30, 2021, we generated $45.3 million of combined revenue from sequencing, data licensing of de-identified data derived from those records, and clinical trials matching, which is approximately 5.0 times the revenue we received from sequencing at the onset. The total cost to sequence the 2018 cohort was $17.4 million, of which $9.0 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.3 million of data revenue from that cohort in 2018, finishing the year with a "Cohort Lifetime Value" of $7.9 million. As more customers licensed de-identified records from the 2018 cohort in subsequent years, we generated additional revenue in 2019, 2020 and 2021 from the 2018 cohort, and as of September 30, 2021, the 2018 "Cohort Lifetime Value" for this cohort was $27.9 million. We maintained a similar trend for the 2019 cohort through its first two years in existence. The total cost to sequence the 2019 cohort was $39.1 million, of which $25.7 million was covered by the reimbursement for the corresponding sequencing tests. We then generated $23.4 million of data revenue from that cohort in 2019, finishing the year with a "Cohort Lifetime Value" of $10.0 million. We generated additional data revenue in 2020 and 2021, and as of September 30, 2021, the 2019 "Cohort Lifetime Value" was $29.0 million. The total cost to sequence the 2020 cohort was $63.4 million, of which $46.9 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.7 million of data revenue from that cohort in 2020, finishing the year with a "Cohort Lifetime Value" of $0.2 million. We generated additional data revenue in 2021, and as of September 30, 2021, the 2020 "Cohort Lifetime Value" was $11.0 million.

The below charts which illustrate our 2018, 2019, 2020 and 2021 "Cohort Lifetime Values," demonstrate that we are not only able to generate revenue when we run an assay, but that we are also able to continue to commercialize the de-identified records for years following running the initial test. As a result, our focus is driving growth in our Genomics product line, which creates the opportunity to drive further growth in our other product lines.


COHORT LIFETIME VALUE (see definition above) from 2018 to 2021 Sequenced Cohorts
2018 COHORT LIFETIME VALUE
$9.0
$16.3
$10.8
$6.2
$3.0
$45.3
$27.9 M Cohort Lifetime Value
$17.4 M Initial sequencing costs
Sequencing Revenue
2018 Data Revenue
2019 Data Revenue
2020 Data Revenue
2021 Data Revenue
Cumulative Revenue


2019 COHORT LIFETIME VALUE
$25.7
$23.4
$13.2
$5.8
$68.1
$29.0 M Cohort Lifetime Value
$39.1 M Initial sequencing costs
Sequencing Revenue
2019 Data Revenue
2020 Data Revenue
2021 Data Revenue
Cumulative Revenue


2020 COHORT LIFETIME VALUE
$46.9
$16.7
$10.8
$74.4
$11.0 M Cohort Lifetime Value
$63.4 M Initial sequencing costs
Sequencing Revenue
2020 Data Revenue
2021 Data Revenue
Cumulative Revenue



Below is a description of each product line:

Genomics

Our Genomics product line leverages our state-of-the-art laboratories to provide next generation sequencing, or NGS, diagnostics, polymerase chain reaction, or PCR, profiling, molecular genotyping and other anatomic and molecular pathology testing to healthcare providers, pharmaceutical companies, biotechnology companies, researchers, and other third parties.

When providing services to healthcare providers, we typically bill commercial payers or government-funded programs (i.e., Medicare and Medicaid) after delivering a test result. We typically operate as an out-of-network provider and the amount that we charge varies depending on the assay being run, the party being billed and other information about the patient's diagnosis. Revenue is generally recognized when we have met the performance obligation relating to an order. We have determined our sole performance obligation to be the delivery of the testing results to the ordering party.

When providing services to pharmaceutical companies, biotechnology companies, researchers, or other third parties, we will invoice the third party after delivering a test result. The amount that is invoiced and recognized as revenue is based on the sequencing of patient samples pursuant to contract terms.

Genomics revenue was $27.9 million and $151.9 million for the years ended December 31, 2019 and 2020, respectively, and $73.2 million and $154.5 million for the nine months ended September 30, 2020 and 2021, respectively. COVID-19 PCR testing accounted for $89.5 million of revenue for the year ended December 31, 2020 and $29.5 million and $84.9 million for the nine months ended September 30, 2020 and 2021, respectively. COVID-19 PCR testing did not generate revenue in the year ended December 31, 2019.

Data and Other

The data generated in our lab or ingested into our Platform as part of the Genomics product line is structured and de-identified, prior to commercialization. This de-identified database is then commercialized to our pharmaceutical and biotechnology partners to facilitate drug discovery and development through two primary Data products, Insights and Therapies.

Through our Insights product, we license libraries of linked clinical, molecular, and imaging de-identified data and provide a suite of analytical services to analytic and cloud-and-compute tools to pharmaceutical and biotechnology companies. Licensing fee prices are consistent across customers and priced based on the characteristics of the data being provided (i.e., number of clinical fields, type of data modalities, etc.). Revenue from our Insights product is generally recognized upon the delivery of licensed records or upon the completion of performance obligations for related services.

Our Therapies product is designed to leverage the broad network of physicians we work with in oncology to provide clinical trial matching services for pharmaceutical companies that are looking to reach hard-to-find and underserved patient populations. This product is built on top of our real-time data feeds and harnesses AI to accelerate the connection between patients, clinical trial providers (hospitals), and clinical trial sponsors (life sciences companies). The fees charged to sponsors are typically fixed and based on a per match and/or per enrollment basis. Revenue from our Therapies product is generally recognized upon a match between a patient and a trial in our network or upon enrollment of a patient that we matched to a trial in our network.

Data revenue was $34.2 million and $36.1 million for the years ended December 31, 2019 and 2020, respectively, and $13.9 million and $30.0 million for the nine months ended September 30, 2020 and 2021, respectively. Our Data revenue is typically back-weighted towards the second half of the year based on the budgeting cycles of our customers.

Algos

Our newest product line, Algos, is focused on developing and providing diagnostics that are algorithmic in nature. Algos are tests that can be run without chemistry or biology; they are simply 0's and 1's running on digitized data derived from a laboratory test. Algos leverage AI-driven insights to produce clinically validated and actionable information for physicians.

We launched our Algos product line in the fourth quarter of 2020 and currently offer two algorithmic tests in oncology: our Tumor Origin, TO, test and our Homologous Recombination Deficiency, HRD, test. Similar to our Genomics product line, we typically bill commercial payers or government-funded programs (i.e., Medicare and Medicaid) after delivering a test result. The amount that we charge varies depending on the algorithms being run, the party being billed and other information about the patient's diagnosis. Revenue is generally recognized based on estimated cash receipts determined by historical and current payment trends. We currently report our Algos revenue within our Data and Other product line.

While our Algos product line does not currently generate significant revenue, we believe it represents a significant opportunity for us and we will incur significant expenses over the next several years as we work to identify and develop algorithms that we can deploy into a clinical setting.

Factors Affecting Our Performance

We believe there are several important factors that have impacted and that we expect will impact our operating performance and results of operations. While each of these areas presents significant opportunities for us, they also pose significant risks and challenges that we must address. See "Risk Factors" for more information.

Research and Development, and New Products

We expect to maintain high levels of investment in product innovation over the coming years as we continue to develop new laboratory assays, develop algorithms, and expand our Platform into new disease areas. These investments will include laboratory costs incurred in validating new or improving current assays, licensing of data sets to accelerate our efforts in new diseases, and development and validation costs for new Algos products. We invested $31.3 million and $45.4 million during the years ended December 31, 2019 and 2020, respectively, and $32.3 million and $42.5 million during the nine months ended September 30, 2020 and 2021, respectively, in research and development. Our ability to develop new products, obtain regulatory approvals when required, launch them into the market, and drive adoption of these products by our customers will continue to play a key role in our results.

Customer Acquisition and Expansion

To grow our business requires both identifying new customers and expanding our partnerships with existing ones across each of our product lines. For Genomics, this entails our field salesforce developing relationships with individual physicians and hospital systems, demonstrating the power our Platform has in enabling them to provide personalized care to their patients. For Data, this entails our pharmaceutical business development teams demonstrating the power our Platform and database have in enabling drug discovery, development and clinical trial matching for our pharmaceutical partners. For Algos, this entails demonstrating the utility of these algorithms in a clinical setting. Since our inception, our offerings have been used by more than 5,000 oncologists and 40 pharmaceutical and biotechnology customers licensing data through our Insights product, including 15 of the 20 largest public pharmaceutical companies based on 2020 revenue. Our financial performance relies heavily on our ability to add customers to our Platform and expand the relationships with our current customers through adoption of our new products.

Investments in Technology

Technology is at the core of everything we do. From receiving orders and ingesting data through our various provider integrations to delivering test results and access to our analytical platform, our Platform plays a key role in driving our business. We will continue to make significant investments in our Platform to continually improve our user experience and allow us to generate, ingest and structure data more efficiently as we expand our offerings. We invested $25.6 million and $45.9 million during the years ended December 31, 2019 and 2020, respectively, and $32.8 million and $49.5 million during the nine months ended September 30, 2020 and 2021, respectively, in technology. We expect to maintain high levels of investment in our technology over the coming years as we continue to develop new features to support our current and future business needs. Our ability to execute on the development of such technology will continue to play a key factor in our results.

Payer Coverage and Reimbursement

Our financial performance relies heavily on our ability to secure reimbursement from payers and government health benefits programs. A substantial majority of the genomic testing we perform is clinical in nature. We typically receive reimbursement for these tests from commercial payers and from government health benefits programs, such as Medicare and Medicaid. The amount of payment we receive varies widely and depends on a variety of factors, including the payer, the assay run, and other characteristics about the patient. For the year ended December 31, 2019 and 2020, we received payment on approximately 50% and 48% of our clinical oncology NGS tests, respectively. We did not receive payment on approximately 50% and 52% of our clinical oncology NGS tests during the same periods, respectively. We will continue to invest significantly in various efforts aimed at improving our average reimbursement, including performing clinical studies to generate evidence of clinical utility, seeking regulatory approval for our tests, and opening additional lab locations. Any changes to medical policies impacting how our tests are reimbursed could have a significant impact on our results.

COVID-19 Global Pandemic

The global outbreak of the novel coronavirus in December 2019, or COVID-19, negatively affected our business in 2020 as testing was delayed due to patients delaying visits and our pharmaceutical partners delaying some of their drug development efforts due to office interruptions or paused clinical trial recruitment. In July 2020, we launched our iD test (COVID-19 PCR test) and received the FDA's emergency use authorization for use in the detection of the COVID-19 and thereafter obtained additional emergency use authorizations for other similar tests, ran some COVID-19 testing as LDTs, and also licensed and used the Saliva Direct assay to perform other COVID-19 testing. This testing generated $89.5 million, $29.5 million, and $84.9 million of revenue for the year ended December 31, 2020 and the nine months ended September 30, 2020 and 2021, respectively. Given the unpredictability surrounding the COVID-19 testing needs going forward, we are unable to predict testing volumes for our test on a go-forward basis, although there is a reasonable likelihood that levels will decline. We expect revenue from COVID-19 testing to decrease materially as a result of a lower prevalence of COVID-19 from successful containment efforts and the vaccination of a substantial majority of Americans, reduced testing needs of

many of our clients, including as a result of the expiration and renegotiation of our COVID-19 testing agreement with CVS Pharmacy, Inc. in July 2021 and November 2021, respectively, and the entrance of other testing providers into the market. In addition, our agreement with CVS, which accounted for 24.0% and 34.8% of our revenue for the year ended December 31, 2020 and the nine months ended September 30, 2021, respectively, expired in July 2021. Effective October 2021, we entered into a substantially similar agreement with CVS under which CVS has agreed to purchase certain COVID-19 testing products and services from us without a minimum purchase commitment. Due to the expiration of our prior agreement with CVS in July 2021, our financial performance in the second half of 2021 may not be comparable to our financial performance in the second half of 2020.

Components of Results of Operations

Revenue

We currently primarily derive our revenue from two product lines: (1) Genomics and (2) Data and Other.

Genomics

Genomics primarily includes revenue from diagnostics, PCR profiling, and other anatomic and molecular pathology testing to healthcare providers, pharmaceutical companies, biotechnology companies, researchers, and other third parties.

Data and Other

Data and Other primarily includes revenue from de-identified data generated through our Genomics product line to our pharmaceutical and biotechnology partners for use in their drug development efforts. These transactions consist of data licensing agreements, AI-enabled clinical trial matching, and analytical services. Our Data revenue is typically back-weighted towards the second half of the year based on the budgeting cycles of our customers. We currently report our Algos revenue within this line item as it is immaterial.

Cost and Operating Expenses

We incur costs to generate revenue for each of our two primary product lines. Cost of revenues for our Genomics product line is a higher percentage of the Genomics revenue than cost of revenues for Data and Other is as a percentage of Data and Other revenue. As revenue shifts between these product lines, total cost of revenue as a percentage of revenue will be impacted.

Cost of Revenues, Genomics

Cost of revenues for Genomics primarily includes personnel lab expenses, including salaries, bonuses, employee benefits and stock-based compensation expenses (which we refer to as “personnel costs”), and amortization of intangible assets, cost of laboratory supplies and consumables, third-party administration fees associated with COVID-19 testing, depreciation of laboratory equipment and shipping costs. Costs associated with performing our tests are recorded as the tests are processed at the time of report delivery. We expect these costs will increase in absolute dollars as our Genomics revenue continues to grow.

Cost of Revenues, Data and Other

Cost of revenues for Data and Other primarily includes data acquisition and royalty fees, and personnel costs related to delivery of our data services and platform, and certain allocated overhead expenses. Costs associated with performing data product services are recorded as incurred. We expect these costs will increase in absolute dollars as our Data and Other revenues continue to grow. We currently report our Algos cost of revenue within this line item as it is immaterial.

Research and Development

Research and development expense primarily includes costs incurred to develop new assays and products, including validation costs, research and development and allocated lab personnel costs, salaries and benefits of the Company's scientific and laboratory research and development teams, amortization of intangible assets, inventory costs, overhead costs, contract services and other related costs. Research and development costs are expensed as incurred. We plan to continue to invest in new assay development and expansion into new disease areas. As a result, we expect that research and development expenses will increase in absolute dollars for the foreseeable future as we continue to invest to support these activities. Our research and development expense will increase in the quarter in which this offering occurs due to stock-based compensation expenses of approximately $ million related to RSUs for which the service-based vesting condition was satisfied and for which the performance-based vesting condition will be satisfied in connection with this offering.

Technology research and development

Technology research and development expense primarily includes personnel costs incurred related to the research and development of our technology platform and applications and the research and development of new products that we hope to bring to the market. Technology research and development costs are expensed as incurred. We plan to continue to invest in technology personnel to support our Platform and new algorithm development. We expect that technology research and development expenses will increase in absolute dollars for the foreseeable future as we continue to invest to support these activities. Our technology research and development expense will increase in the quarter in which this offering occurs due to stock-based compensation expenses of approximately $ million related to RSUs for which the service-based vesting condition was satisfied and for which the performance-based vesting condition will be satisfied in connection with this offering.

Selling, General and Administrative

Our selling, general and administrative expense primarily includes personnel costs for our sales, executive, accounting and finance, legal and human resources functions, commissions, and other general corporate expenses, including software and tools, professional services, real estate costs, and travel costs.

We expect that our selling, general and administrative expenses will continue to increase in absolute dollars after this offering, primarily due to increased headcount and costs associated with operating as a public company, including expenses related to legal, accounting, regulatory, maintaining compliance with exchange listing and requirements of the SEC, director and officer insurance premiums and investor relations. These expenses, though expected to increase in absolute dollars, are expected to decrease modestly as a percentage of revenue in the long term, though they may fluctuate as a percentage from period to period due to the timing and extent of these expenses. Our selling, general and administrative expense will increase in the quarter in which this offering occurs due to stock-based compensation expenses of approximately $ million related to RSUs for which the service-based vesting condition was satisfied and for which the performance-based vesting condition will be satisfied in connection with this offering.

Interest Income

Interest income consists of interest earned on our cash and cash equivalents.

Interest Expense

Interest expense consists primarily of interest from our convertible debt, and capital leases. In 2020, we recorded a loss on extinguishment of debt relating to the conversion of convertible debt into Series G-2 preferred shares. Interest expense related to our convertible debt will continue, but should decrease over time as the principal amount decreases.

Other Income (Expense), Net

Other income (expense), net consists of foreign currency exchange gains and losses. Foreign currency exchange gains and losses relate to transactions and asset and liability balances denominated in currencies other than the U.S. dollar. We expect our foreign currency gains and losses to continue to fluctuate in the future due to changes in foreign currency exchange rates.

Provision for (Benefit from) Income Tax

Provision for (benefit from) income taxes consists of U.S. federal and state income taxes and income taxes in certain foreign jurisdictions in which we conduct business. We maintain a full valuation allowance on our U.S. federal and state deferred tax assets as we have concluded that it is more likely than not that the deferred tax assets will not be realized. Our effective tax rate is affected by tax rates in foreign jurisdictions and the relative amounts of income we earn in those jurisdictions, as well as non-deductible expenses, such as stock-based compensation, and changes in our valuation allowance.

Earnings (Losses) from Equity Method Investments

Earnings (losses) from equity method investments consists of earnings from our joint venture entered during the third quarter of 2020.

Results of Operations

The following table sets forth the significant components of our results of operations for the periods presented.

	Year Ended December 31,		Nine Months Ended September 30,	
	2019	2020	2020	2021
	(in thousands)			
Revenue:				
Genomics	$ 27,890	$ 151,911	$ 73,224	$ 154,514
Data and Other	34,167	36,093	13,928	30,029
Total revenue	62,057	188,004	87,152	184,543
Cost and operating expenses:				
Cost of revenues, genomics	39,685	152,198	80,416	129,283
Cost of revenues, data and other	6,330	7,092	5,028	7,948
Technology research and development	25,608	45,861	32,800	49,543
Research and development	31,253	45,415	32,308	42,526
Selling, general and administrative	78,962	130,892	88,006	144,158
Total cost and operating expenses	181,838	381,458	238,558	373,458
Loss from operations	(119,781)	(193,454)	(151,406)	(188,915)
Interest income	4,860	1,495	1,224	510
Interest expense	(28)	(18,929)	(5,528)	(11,351)
Other expenses, net	(2)	(466)	(2)	(1)
Loss before provision for income taxes	(114,951)	(211,354)	(155,712)	(199,757)
Provision for (benefit from) income taxes	—	—	—	—
Earnings (losses) from equity method investments	—	1,500	—	(454)
Net loss	$(114,951)	$(209,854)	$ (155,712)	$ (200,211)

Comparison of the Nine Months Ended September 30, 2020 and 2021

Revenue

Total revenue was $87.2 million for the nine months ended September 30, 2020 compared to $184.5 million for the nine months ended September 30, 2021, an increase of $97.4 million, or 112%. Adjusted for the impact of COVID-19 PCR testing, revenue increased $41.9 million or 73%, from $57.7 million for the nine months ended September 30, 2020, compared to $99.6 million for the nine months ended September 30, 2021. The increase in revenue was primarily due to increased volume of clinical oncology tests performed in Genomics and increased data deliveries in our Data product line.

Genomics

Genomics, adjusted for the impact of COVID-19 PCR testing, increased $25.8 million, or 59%, from $43.7 million for the nine months ended September 30, 2020, compared to $69.6 million for the nine months ended September 30, 2021. This increase was primarily driven by increases in the number of next generation sequencing tests delivered in oncology, which increased from 31,822 tests for the nine months ended September 30, 2020 to 52,107 tests for the nine months ended September 30, 2021. The increase in revenue was slightly offset by an increase in the contractual allowance of $4.3 million primarily due to the estimated reimbursement rate for tests performed during the second and third quarters of 2021 being computed with the impact of the revised coding instructions received from the Local MAC on March 25, 2021, as well as instructions received in July from communication with the Local MAC. For certain government covered tests, the Local MAC is the only available reimbursement option. Accordingly, we intend to pursue all available appeals with respect to these tests.

Data and Other

Data and Other increased $16.1 million, or 116%, from $13.9 million for the nine months ended September 30, 2020, compared to $30.0 million for the nine months ended September 30, 2021. This increase was primarily driven by increased volume of data deliveries compared to the nine months ended September 30, 2020. Generally, increases in revenue are a result of increases in adoption of our products and services within our existing customer base or adoption by new customers.

Cost and Operating Expenses

Cost of Revenues

Cost of revenues were $85.4 million for the nine months ended September 30, 2020 compared to $137.2 million for the nine months ended September 30, 2021, an increase of $51.8 million, or 61%. Adjusted for the impact of COVID-19 PCR testing, cost of revenue increased $17.8 million or 30.1%, from $59.1 million for the nine months ended September 30, 2020, compared to $76.9 million for the nine months ended September 30, 2021. This increase was primarily due to an increase of $27.0 million of material and service costs, an increase of $11.3 million in service fees related to COVID-19 PCR testing arrangements, and an increase of $5.9 million in personnel, labor and overhead costs.

Cost of Revenues, Genomics

Cost of revenues, Genomics was $80.4 million for the nine months ended September 30, 2020 compared to $129.3 million for the nine months ended September 30, 2021, an increase of $48.9 million, or 61%. This increase was primarily due to an increase of $27.0 million in material and service costs, an increase of $11.3 million in marketing expenses, and a $3.1 million increase in personnel, labor and overhead costs.

Cost of Revenues, Data and Other

Cost of revenues, Data and Other was $5.0 million for the nine months ended September 30, 2020 compared to $7.9 million for the nine months ended September 30, 2021, an increase of $2.9 million, or 58%. This increase was primarily due to an increase in personnel costs.

Research and Development

Research and development expenses were $32.3 million for the nine months ended September 30, 2020 compared to $42.5 million for the nine months ended September 30, 2021, an increase of $10.2 million, or 32%. This increase was primarily due to an increase in personnel-related costs for employees in our research and development group, as we increased our spend and headcount to support continued investment in our technology.

Technology research and development

Technology research and development expenses were $32.8 million for the nine months ended September 30, 2020 compared to $49.5 million for the nine months ended September 30, 2021, an increase of $16.7 million, or 51%. This increase was entirely the result of an increase in personnel-related costs associated with the investment in our cloud infrastructure and new lines of business.

Selling, General and Administrative

Selling, general and administrative expenses were $88.0 million for the nine months ended September 30, 2020 compared to $144.2 million for the nine months ended September 30, 2021, an increase of $56.2 million, or 64%. This increase was primarily due to an increase of $18.8 million in personnel-related costs, an increase of $22.0 million related to cloud storage costs, an increase of $6.0 million related to software and tools, an increase of $4.6 million in contingent consideration expense related to the acquisition of AKESOgen, Inc., and an increase of $4.8 million in rent expense and general other administrative expenses as a result of increased office space to accommodate our increased headcount and overall growth.

Interest Income

Interest income was $1.2 million for the nine months ended September 30, 2020 compared to $0.5 million for the nine months ended September 30, 2021, a decrease of $0.7 million, or 58%. This decrease was primarily due to a significant decrease in interest rates as the U.S. Federal Reserve lowered the risk-free interest rate to nearly zero, which occurred in March 2020.

Interest Expense

Interest expense was $5.5 million for the nine months ended September 30, 2020 compared to $11.4 million for the nine months ended September 30, 2021, an increase of $5.8 million, or 105%. This increase was entirely due to interest expense related to our convertible debt issued in June 2020.

Other Expense, Net

For the nine months ended September 30, 2020, other expense decreased by an immaterial amount compared to the nine months ended September 30, 2021.

Earnings (losses) from Equity Method Investments

We entered into a joint venture in September 2020, which had a loss of $0.5 million for the nine months ended September 30, 2021. There were no earnings or losses from equity method investments for the nine months ended September 30, 2020.

Comparison of the Years Ended December 31, 2019 and 2020

Revenue

Total revenue was $62.1 million for the year ended December 31, 2019 compared to $188.0 million for the year ended December 31, 2020, an increase of $125.9 million, or 203%. Adjusted for the impact of COVID-19 PCR testing, revenue increased $36.4 million or 59%, from $62.1 million for the year ended December 31, 2019, compared to $98.5 million for the year ended December 31, 2019. The increase in revenue is due to increased volume of clinical oncology tests performed in Genomics and increased data deliveries in our Data product line.

Genomics

Genomics, adjusted for the impact of COVID-19 PCR testing, increased $34.5 million, or 124%, from $27.9 million for the year ended December 31, 2019, compared to $62.4 million for the year ended December 31, 2020. This increase was primarily driven by increases in the number of next generation sequencing tests delivered in oncology, which increased from 24,348 tests for the year ended December 31, 2019 to 46,349 tests in the year ended December 31, 2020. The acquisition of AKESOgen, Inc. also contributed $0.7 million of revenue in the year ended December 31, 2019 compared to $11.3 million of revenue in the year ended December 31, 2020.

Data and Other

Data and Other increased $1.9 million, or 6%, from $34.2 million for the year ended December 31, 2019, compared to $36.1 million for the year ended December 31, 2020. Our Data and Other product line was negatively impacted by the effects of COVID-19 due to fewer customer interactions caused by office interruptions and clinical trial recruitments being delayed. Generally, increases in revenue are a result of increases in adoption of our products and services within our existing customer base or adoption by new customers.

Cost and Operating Expenses

Cost of Revenues

Cost of revenues was $46.0 million for the year ended December 31, 2019 compared to $159.3 million for the year ended December 31, 2020, an increase of $113.3 million, or 246%. Adjusted for the impact of COVID-19 PCR testing, cost of revenue increased $36.8 million or 80%, from $46.0 million for the year ended December 31, 2019, compared to $82.8 million for the year ended December 31, 2020. This increase was primarily due to an increase of $19.7 million of material and service costs and $12.6 million in personnel, labor and overhead costs.

Cost of Revenues, Genomics

Cost of revenues, Genomics was $39.7 million for the year ended December 31, 2019 compared to $75.7 million for the year ended December 31, 2020, an increase of $36.0 million, or 91%. This increase was primarily due to an increase of $19.7 million in material and service costs, a $10.6 million increase in production labor and overhead costs, a $3.8 million increase in depreciation expense, and a $1.7 million increase in other costs including costs related to kits and freight.

Cost of Revenues, Data and Other

Cost of revenues, Data and Other was $6.3 million for the year ended December 31, 2019 compared to $7.1 million for the year ended December 31, 2020, an increase of $0.8 million, or 12%. This increase was primarily due to an increase in personnel costs.

Research and development

Research and development expenses were $31.3 million for the year ended December 31, 2019 compared to $45.4 million for the year ended December 31, 2020, an increase of $14.2 million, or 45%. This increase was primarily due to an $8.5 million increase in personnel-related costs for employees in our research and development group, as we increased our spend and headcount to support continued investment in our technology and an increase of $5.5 million in validation and regulatory-related costs.

Technology research and development

Technology research and development expenses were $25.6 million for the year ended December 31, 2019 compared to $45.9 million for the year ended December 31, 2020, an increase of $20.3 million, or 79%. This increase was entirely due to an increase in personnel-related costs associated with the investment in our cloud infrastructure and new lines of business.

Selling, General and Administrative

Selling, general and administrative expenses were $79.0 million for the year ended December 31, 2019 compared to $130.9 million for the year ended December 31, 2020, an increase of $51.9 million, or 66%. This increase was primarily due to an increase of $28.5 million in personnel-related costs, inclusive of $6.0 million of software licenses, as a result of an increase in our headcount, an increase of $11.4 million related to cloud storage costs, an increase of $6.9 million in contingent consideration expense related to the acquisition of AKESOgen, Inc., an increase of $2.9 million in rent expense as a result of increased office space to accommodate our increased headcount, and an increase of $1.5 million professional service expenses related to outside legal, accounting, and consulting.

Interest Income

Interest income was $4.9 million for the year ended December 31, 2019 compared to $1.5 million for the year ended December 31, 2020, a decrease of $3.4 million, or 69%. This decrease was primarily due to a significant decrease in interest rate as the U.S. Federal Reserve lowered the risk-free interest rate to nearly zero.

Interest Expense

Interest expense was immaterial for the year ended December 31, 2019 compared to $18.9 million for the year ended December 31, 2020, an increase of $18.9 million, or 100%. This increase was primarily due to $10.0 million of interest expense related to our convertible debt issued in June 2020, and $8.9 million of loss on extinguishment of $80 million of our promissory note which was converted in November 2020.

Other Expense, Net

For the year ended December 31, 2020, other income (expense), net included bad debt expense of $0.5 million related to customer accounts receivable which were deemed uncollectible. There was no similar charge or gain for the year ended December 31, 2019.

Earnings (losses) from Equity Method Investments

For the year ended December 31, 2019 there were no equity method investments, we entered into a joint venture in September 2020, which had earnings of $1.5 million for the year ended December 31, 2020.

Liquidity and Capital Resources

We have incurred significant losses and negative cash flows from operations since our inception, and as of December 31, 2020 and September 30, 2021, we had an accumulated deficit of $513.0 million and $739.3 million, respectively. We expect to incur additional operating losses in the near future and our operating expenses will increase as we continue to invest in clinical trials and develop new offerings, expand our sales organization, and increase our marketing efforts to drive market adoption of our tests. As demand for our tests continues to increase from physicians and biopharmaceutical companies, we anticipate that our capital expenditure requirements could also increase if we require additional laboratory capacity.

We have funded our operations to date principally from the sale of stock, convertible debt and sales of our products. As of December 31, 2020 and September 30, 2021, we had cash, cash equivalents and restricted cash of $514.2 million and $345.7 million, respectively.

Based on our current business plan, we believe our current cash and cash equivalents and anticipated cash flows from operations will be sufficient to meet our anticipated cash requirements for more than twelve months from the date of this prospectus. We may raise additional capital to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons. As we grow our revenue, our accounts receivable and inventory balances will increase. Any increase in accounts receivable and inventory may not be completely offset by increases in accounts payable and accrued expenses, which could result in greater working capital requirements.

If our available cash and cash equivalents and anticipated cash flows from operations are insufficient to satisfy our liquidity requirements including because of lower demand for our products as a result of lower than currently expected rates of reimbursement from our customers or other risks described elsewhere in this prospectus, we may seek to sell additional common or preferred equity or convertible debt securities, enter into a credit facility or another form of third-party funding or seek other debt financing. The sale of equity and convertible debt securities may result in dilution to our stockholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our platform technologies or products or grant licenses on terms that are not favorable to us. Additional capital may not be available to us on reasonable terms, or at all.

Convertible Promissory Note

On June 22, 2020, in connection with our entry into an agreement for use of Google LLC's, or Google's, Google Cloud Platform, we issued Google a convertible promissory note, or the Note, in the original principal amount of $330.0 million. On November 19, 2020, in connection with our Series G-2 convertible preferred stock financing, we issued Google $80 million of our Series G-2 preferred stock, at a 10% discount to the purchase price per share in such financing, in partial satisfaction of the outstanding principal amount under the Note, and we amended and restated the terms of the Note.

The amended and restated Note, or the Amended Note, has a principal amount of $250.0 million, and bears interest at the rate set forth therein. The principal amount is automatically reduced each year based on a formula taking into account the aggregate value of the Google Cloud Platform services used by us. We account for the principal reductions as an offset to our cloud and compute spend within selling, general and administrative expense in our Consolidated Statements of Operations and Comprehensive Loss. The outstanding principal and accrued interest under the Amended Note, or the Outstanding Amount, is due and payable on the earlier of (1) March 22, 2026, which is the maturity date of the Amended Note, (2) upon the occurrence and during the continuance of an event of default, and (3) upon the occurrence of an acceleration event, which includes any termination by us of our Google Cloud Platform agreement. We generally may not prepay the Outstanding

Amount, except that we may, at our option, prepay the Outstanding Amount in an amount such that the principal amount remaining outstanding after such repayment is $150.0 million.

If the Amended Note is outstanding at the maturity date, Google may, at its option, convert the then outstanding principal amount and interest accrued under the Amended Note into a number of shares of our Class A common stock equal to the quotient obtained by dividing (1) the Outstanding Amount on the maturity date, by (2) the average of the last trading price on each trading day during the twenty day period ending immediately prior to the maturity date.

Cash Flows

The following table summarizes our cash flows for the periods presented:

	Year Ended December 31,		Nine Months Ended September 30,	
	2019	2020	2020	2021
	(in thousands)			
Net cash used in operating activities	$(117,111)	$(206,562)	$ (161,572)	$ (148,229)
Net cash used in investing activities	(43,029)	(13,416)	(11,461)	(19,402)
Net cash provided by (used) in financing activities	196,692	506,107	410,423	(885)

Operating Activities

Cash used in operating activities during the nine months ended September 30, 2020 was $161.6 million, which resulted from a net loss of $155.7 million, a net change in our operating assets and liabilities of $23.9 million, and non-cash charges of $18.1 million. Non-cash charges primarily consisted of $17.0 million of depreciation and amortization. The net change in our operating assets and liabilities was primarily the result of a $20.4 million increase in accounts receivable due to increased volume of clinical oncology tests performed in Genomics and increased data deliveries in our Data product line, a $24.3 million increase in inventory as a result of building supplies for COVID kit tests, a $14.5 million increase in investments and other assets, and a $4.2 million increase in accrued data licensing fees, $13.1 million of which is the result of extending the term of licensed data intangible.

Cash used in operating activities during the nine months ended September 30, 2021 was $148.2 million, which resulted from a net loss of $200.2 million, a net change in our operating assets and liabilities of $32.4 million, and non-cash charges of $19.6 million. Non-cash charges primarily consisted of $18.2 million of depreciation and amortization. The net change in our operating assets and liabilities was primarily the result of a $12.9 million decrease in accounts receivable as a result of Data and other customer payments related to the revenue recognized in the fourth quarter of 2020, $15.6 million decrease in inventory as a result of reducing supplies for COVID kit tests.

Cash used in operating activities during the year ended December 31, 2019 was $117.1 million, which resulted from a net loss of $115.0 million and net change in our operating assets and liabilities of $17.9 million, offset by non-cash charges of $15.8 million. Non-cash charges primarily consisted of $15.0 million of depreciation and amortization. The net change in our operating assets and liabilities was primarily the result of a $13.4 million increase in accounts receivable primarily as a result of Data and other revenue.

Cash used in operating activities during the year ended December 31, 2020 was $206.6 million, which resulted from a net loss of $209.9 million and net change in our operating assets and liabilities of $28.6 million, offset by non-cash charges of $31.9 million. Non-cash charges primarily consisted of $23.1 million of depreciation and amortization and a $8.9 million relating to loss on extinguishment of convertible promissory notes. The net change in our operating assets and liabilities was primarily the result of a $55.8 million increase in accounts receivable primarily as a result of Genomics revenue, specifically COVID-19 sample testing, $29.3 million increase in inventory as a result of supplies for COVID kit tests.

Investing Activities

Cash used in investing activities during the nine months ended September 30, 2020 was $11.5 million, which resulted entirely from purchases of property and equipment.

Cash used in investing activities during the nine months ended September 30, 2021 was $19.4 million, which resulted from investments in non-marketable security of $6.0 million, the release of escrow related to the AKESOgen purchase of $4.0 million, and purchases of property and equipment of $9.4 million.

Cash used in investing activities during the year ended December 31, 2019 was $43.0 million, which resulted primarily from the business combination of AKESOgen, Inc. of $26.0 million and purchases of property and equipment of $17.0 million.

Cash used in investing activities during the year ended December 31, 2020 was $13.4 million, which resulted entirely from purchases of property and equipment.

Financing Activities

Cash provided by financing activities during the nine months ended September 30, 2020 was $410.4 million which was primarily due to net proceeds of $94.1 million from the issuance of convertible preferred stock and net proceeds of $330.0 million from the issuance of a convertible promissory note.

Cash used in financing activities during the nine months ended September 30, 2021 was $0.9 million which was primarily due to net proceeds of $8.9 million from the issuance of convertible preferred stock offset by dividends of $5.6 million and payment of contingent consideration of $3.4 million.

Cash provided by financing activities during the year ended December 31, 2019 was $196.7 million which was primarily due to proceeds of $192.7 million from the issuance of convertible preferred stock and net proceeds of $10.2 million from the issuance of common stock.

Cash provided by financing activities during the year ended December 31, 2020 was $506.1 million which was primarily due to net proceeds of $189.9 million from the issuance of convertible preferred stock and net proceeds of $330.0 million from the issuance of a convertible promissory note.

Contractual Obligations and Commitments

Our contractual commitments will have an impact on our future liquidity. These commitments include future payments on non-cancellable leases, purchase obligations related to data licenses and cloud computing services, and future payments on our convertible promissory note. Where applicable, we calculate our obligation based on termination fees that can be paid to exit the contract. The data license agreements include committed payments for access to certain data and additional payments contingent on the commercialization of such data.

The following table summarizes our contractually committed future obligations as of December 31, 2020:

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(in thousands)				
Operating lease obligations	$ 49,262	$ 6,260	$13,314	$ 13,184	$ 16,504
Purchase obligations	134,417	37,750	40,167	50,000	6,500
Convertible promissory note*	257,987	—	—	257,987	—
Total	441,666	44,010	53,481	321,171	23,004

* Includes $7,987 of interest payable.

The following table summarizes our contractually committed future obligations as of September 30, 2021:

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in thousands)		
Operating lease obligations	$ 44,650	$ 6,489	$13,770	$ 11,502	$ 12,889
Purchase obligations	160,081	30,013	52,960	58,461	18,647
Convertible Promissory Note*	262,694	—	—	262,694	—
Total	467,425	36,502	66,730	332,657	31,536

* Includes $19,274 of interest payable.

Off-Balance Sheet Arrangements

We did not have during the period presented, and we do not currently have, any off-balance sheet financing arrangements or any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Policies and Estimates

We have prepared our consolidated financial statements in accordance with generally accepted accounting principles in the United States, or GAAP. Our preparation of these consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, expenses and related disclosures at the date of the consolidated financial statements, as well as revenue and expenses recorded during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 2 to our audited consolidated financial statements included elsewhere in this prospectus, we believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our financial statements.

Revenue Recognition

We derive Genomics revenue from selling lab services to physicians, academic research institutions, and other parties. We also derive Data and Other revenue from the commercialization of data generated in the lab through the licensing of de-identified datasets to third parties and from matching patients to clinical trials enrolled in its clinical trial network. The majority of our revenue is generated in North America.

We account for our revenue in accordance with ASC Topic 606, *Revenue From Contracts With Customers*. We commence revenue recognition when control of these products is transferred to customers in an amount that reflects the consideration we expect to be entitled to in exchange for such products. This principle is achieved by applying the following five-step approach: (i) we account for a contract when it has approval and commitment from both parties, (ii) the rights of the parties are identified, (iii) payment terms are identified, (iv) the contract has commercial substance and (v) collectability of consideration is probable. Revenue and any contract assets are not recognized until such time that the required conditions are met.

Genomics

For direct bill orders billed to research institutions, pharmaceutical companies, or other third parties, we determine the transaction prices based on established contractual rates with the customer, net of any applicable discounts. Payment is typically due between 30 and 60 days following the date of invoice.

For clinical orders billed to Medicare, Medicaid, and commercial insurance, we determine the transaction price by reducing the standard charge by the estimated effects of any variable consideration, such as contractual allowance and implicit price concessions. We estimate contractual allowances and implicit price concessions based on historical collections in relation to established rates, as well as known current or anticipated reimbursement trends not reflected in the historical data. We monitor the estimated amount to be collected at each reporting period based on actual cash collections in order to assess whether a revision to the estimate is required. Payment is typically due after the claim has been processed by the payor, generally 30-120 days from date of service. While management believes that the estimates are accurate, actual results could differ, and the potential impact on the financial statements could be significant.

Stock-Based Compensation

We recognize compensation expense for equity awards based on the grant-date fair value on a straight-line basis over the remaining requisite service period for the award. For those awards with a market condition, we utilize a Monte Carlo simulation model to estimate the fair value of the restricted stock units.

We issue restricted stock units to certain of our employees. The general terms of the restricted stock units require both a service and performance condition to be satisfied prior to vesting. The service condition is satisfied upon the participant's completion of a required period of continuous service from the vesting start date. The performance condition will be satisfied upon a liquidity event, which would result in recognition of stock-based compensation expense upon the consummation of this offering. For certain other units, a secondary performance condition exists to be vested, which will be satisfied upon achievement of a specific market condition, which could result in recognition of stock-based compensation expense upon the consummation of this offering.

Common Stock Valuations

Prior to this offering our common stock was not publicly traded. As such, we were required to estimate the fair value of our common stock. Our board of directors considered numerous objective and subjective factors to determine the fair value of our common stock as awards were approved, including utilizing third-party valuations to assist with the determination of the estimated fair-market value and common stock price. Given the absence of a public trading market for our common stock, the valuations of common stock were determined in accordance with the guidance provided by the American Institute of Certified Public Accountants Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation, and our board of directors exercised reasonable judgment and considered numerous and subjective factors to determine the best estimate of fair value of our common stock, including the following factors:

- contemporaneous valuations performed by independent third-party specialists;
- the prices, rights, preferences and privileges of our redeemable convertible preferred stock relative to those of our common stock;
- the prices of common or preferred stock sold to third-party investors by us and in secondary transactions or repurchased by us in arms-length transactions;
- lack of marketability of our common stock;
- our actual operating and financial performance;
- current business conditions and projections;
- our stage of development;
- likelihood of achieving a liquidity event, such as an initial public offering or a merger or acquisition of our company given prevailing market conditions;
- the market performance of comparable publicly traded companies; and
- the U.S. and global capital market conditions.

In valuing our common stock, our board of directors determined the equity value of our business using various valuation methods including combinations of income and market approaches with input from management. The income approach estimates value based on the expectation of future cash flows that a company will generate. These future cash flows were discounted to their present values using a discount rate derived from an analysis of the cost of capital of comparable publicly traded companies in our industry or similar business operations as of each valuation date and adjusted to reflect the risks inherent in our cash flows.

For each valuation, the equity value determined by the income and market approaches was then allocated to the common stock. We performed this allocation using the option pricing method, or OPM, which treats the securities comprising our capital structure as call options with exercise prices based on the liquidation preferences of our various series of preferred stock and the exercise prices of our options and warrants, and a probability-weighted expected return method, or PWERM, which involves the estimation of multiple future potential outcomes for us, and estimates of the probability of each potential outcome. The per share value of our common stock determined using the PWERM approach is ultimately based upon probability-weighted per share values resulting from the various future scenarios, which include an initial public offering, merger or sale or continued operation as a private company.

Application of these approaches involves the use of estimates, judgments and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses, and future cash flows, discount rates, market multiples, the selection of comparable companies, and the probability of possible future events. Changes in any or all of these estimates and assumptions or the relationships between those assumptions affect our valuations as of each valuation date and may have a material impact on the valuation of our common stock.

For valuations after the completion of this offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the date of grant. Future expense amounts for any particular period could be affected by changes in our assumptions or market conditions.

In connection with this offering, we expect to incur approximately $ million of stock-based compensation expense related to RSUs for which the service-based vesting condition was satisfied and for which the performance-based vesting condition will be satisfied in connection with this offering.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign currency exchange rates.

Interest Rate Risk

We are exposed to market risk for changes in interest rates related primarily to our cash, cash equivalents and restricted cash, and our indebtedness. As of December 31, 2020, we had cash, cash equivalents and restricted cash of $514.2 million held primarily in cash deposits and money market funds.

Foreign Currency Risk

The majority of our revenue is generated in the United States. Through December 31, 2020, we have generated an insignificant amount of revenues denominated in foreign currencies. As we expand our presence in the international market, our results of operations and cash flows are expected to increasingly be subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to these related changes. As of December 31, 2020, the effect of a hypothetical 10% change in foreign currency

exchange rates would not be material to our financial condition or results of operations. To date, we have not entered into any hedging arrangements with respect to foreign currency risk. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in currency rates.

JOBS Act Accounting Election

We are an "emerging growth company" as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this exemption from new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that have not made this election.

Recent Accounting Pronouncements

See the section titled "Summary of Significant Accounting Policies" in Note 2 to our audited consolidated financial statements included elsewhere in this prospectus for more information.

BUSINESS

Business Overview

We endeavor to unlock the true power of precision medicine by creating Intelligent Diagnostics through the practical application of artificial intelligence, or AI, in healthcare. Intelligent Diagnostics use AI to make laboratory tests more accurate, tailored, and personal. Unlike traditional laboratory tests, an Intelligent Diagnostic contextualizes the laboratory test result to a specific patient, by incorporating an individual's longitudinal clinical data into the result. We believe Intelligent Diagnostics represents an emerging industry that we are pioneering. To accomplish this, we built both a technology platform to free healthcare data from silos and an operating system to make this data useful. We refer to the combination of those as the Tempus Platform. Our investment in this technology has allowed us to amass what we consider to be one of the largest libraries of oncology focused clinical and molecular data in the world. Our goal is to embed AI throughout every aspect of diagnostics to enable physicians and researchers to make data-driven decisions that improve patient care. We started in oncology in 2016 and have expanded into neuropsychology, infectious diseases, and cardiology, with aspirations to eventually be in all major disease areas.

We make tests intelligent by connecting laboratory results to a patient's own data, thereby personalizing the results. Our novel insight was realizing that all laboratory test results, genomic or otherwise, could be contextualized for a specific patient based upon that patient's unique characteristics, and technology could therefore guide therapy selection and treatment decisions to allow each patient to progress on their own unique path. The drugs recommended, the clinical trials explored, the care pathways evaluated, the adverse events considered—all have the potential to be refined and enhanced when test results are connected to a patient's personal profile, enabling the right patient to be routed to the right therapy at the right time.

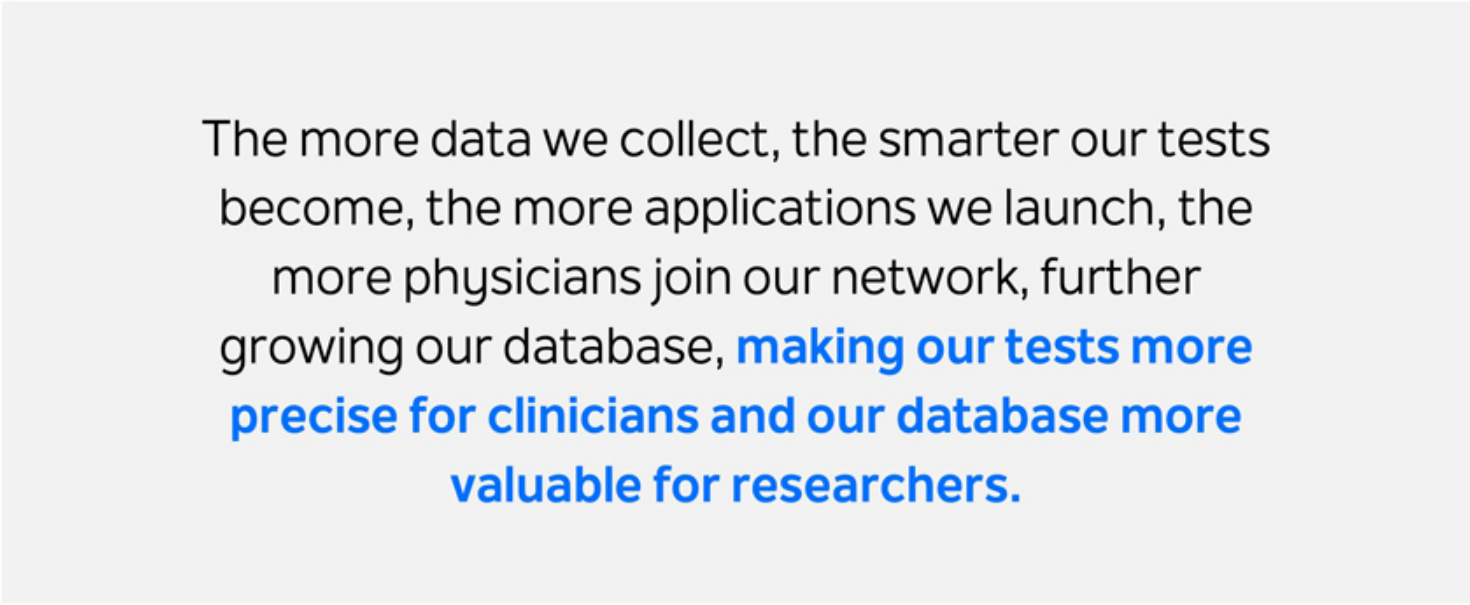
Tempus is a technology company focused on healthcare that straddles two converging worlds. We strive to combine deep healthcare expertise, providing next-generation diagnostics across multiple disease areas, with leading technology capabilities, harnessing the power of data and analytics to help advance personalized medicine. Unlike traditional diagnostic labs, we can incorporate patient information, such as clinical, molecular, and imaging data, with the goal of making our tests more intelligent and our results more insightful. Unlike technology companies, we are deeply rooted in clinical care delivery as one of the largest sequencers of patients in the United States. Straddling both worlds is advantageous as we believe Intelligent Diagnostics represent the future of precision medicine, informing more personalized and data-driven therapeutics. We believe their adoption could empower physicians to deliver better care and researchers to develop more precise therapies, with the potential to save millions of lives.

In order to bring AI to healthcare at scale, we believe the foundation of how data flows throughout the ecosystem needs to be rebuilt. We established data pipes, going to and from providers, to allow for the free exchange of data between physicians, who interpret data, and diagnostic and therapeutic companies, who provide data. Without this capability, we believe that data would continue to accumulate without impacting patient care. Tempus has built this integrated Platform, and we are now deploying it at scale in oncology in the United States. Our Platform connects multiple stakeholders within the larger healthcare ecosystem, often in near real time, to assemble and integrate the data we collect, thereby providing an opportunity for physicians to make data-driven decisions in the clinic and for researchers to discover and develop therapeutics. We endeavor to help doctors find the best therapies for their patients, help life sciences companies make the best drugs possible, and enable patients to access emerging therapies and clinical trials when appropriate.

Our Platform includes proprietary software and dedicated data pipelines that create a network of healthcare institutions through approximately 234 unique data connections, many of which supply us with complex multimodal data in near real time, across approximately 1,034 healthcare institutions that order our products and services. Healthcare institutions supply us with this data in our capacity as a covered entity (for example, when we provide Next Generation Sequencing, or NGS, services on behalf of a patient), or as a business associate (for example, when we provide clinical trial matching services or data de-identification and structuring services). In

addition to the data we receive in these capacities, we currently have a limited number of paid license agreements through which we acquire de-identified data directly from healthcare associations or institutions. We integrate this data into a unified software Platform through which we offer numerous analytical and decision support capabilities to our customers. We establish dedicated and integrated data connections with healthcare institutions to enhance the information we provide in our clinical reports, and to increase the effectiveness of our clinical trial matching services. In certain circumstances, we may cover the actual direct costs associated with the technical integrations needed to create a data connection.

We have developed multiple products—each based on our Platform—that have allowed us to invest in structuring and harmonizing multimodal data, which is a necessary precursor for deploying AI at scale. Our products are organized under three product lines, *Genomics*, *Data*, and *Algos*. Each product line is designed to enable and enhance the others, thereby creating network effects in each of the markets in which we operate. Our business model allows pharmaceutical and biotechnology companies to unlock value from the data we collect, and allows us to monetize a de-identified copy of that data, in different ways across our different product lines. We believe these network effects provide a unique advantage to our business as the compounding value of each data record in our database serves to enhance our competitive moat. The more data we collect, the smarter our tests become, the more applications we launch, the more physicians join our network, further growing our database, making our tests more precise for clinicians and our database more valuable for researchers.



Our *Genomics* product line leverages our laboratories to provide NGS diagnostics, PCR profiling, and other anatomic and molecular pathology testing to healthcare providers, life sciences companies, researchers, and other third parties. However, unlike other laboratory diagnostic testing providers, many of our tests are connected to clinical data in some manner, which allows our suite of tests to be self-learning and become more accurate with each new test that we run. Our *Data* product line facilitates drug discovery and development for life sciences companies through two primary products, Insights and Therapies. Through our Insights product, we license de-identified libraries of linked clinical, molecular, and imaging data and provide a suite of analytic and cloud-and-compute tools to pharmaceutical and biotechnology companies. Our second product within our Data product line, *Therapies*, leverages our broad network of oncologists to provide clinical trial matching services for pharmaceutical companies that are looking to reach hard-to-find and underserved patient populations. Our newest product line, *Algos,* is focused on developing and providing diagnostics that are algorithmic in nature. We currently offer two Algos in oncology and are also developing Algos in other disease areas.

Industry Background

The Limitations of Employing Technology, Data, and AI in Healthcare and Precision Medicine

Technology has had a significant impact on almost every sector of our global economy. From the way we shop online, access information on the internet, or use GPS to navigate the world. We benefit from, and depend on, technology, data, and the vast computational and connective ecosystem that surrounds us. Yet healthcare has seemingly lagged other industries in embracing the power of technology and leveraging the ensuing computational revolution.

We believe this is changing. Recent technological advancements have facilitated the deployment of modern computational methods, such as AI and machine learning, to improve healthcare. Breakthroughs in cloud computing, imaging technologies, and low-cost molecular profiling have made it easier and more cost effective to digitize, structure, harmonize, and store healthcare data, and analyze the resulting datasets at an unprecedented rate. These developments are expediting the adoption of AI, which we believe will impact all aspects of healthcare, from clinical diagnostic testing to the discovery and development of therapeutics, to healthcare delivery more broadly.

Despite the accumulation of healthcare data, we believe the healthcare system still lacks the integrated networks and modern analytical tools necessary to facilitate data-driven care at scale. The vast majority of healthcare data created today remains locked in silos and lacks harmonization due to decentralized institutions using non-standardized methods for collecting data, in addition to a large percentage of the data being in unstructured formats like free text (such as physician progress notes) and non-digitized images (such as pathology slides). Clinical outcomes data, to the extent it even exists, often remains disconnected from diagnostic data, and traditional laboratory tests provide results that are often based only on a single data modality that lack patient context. In addition, clinical and research decisions are too often made based on small sample sizes of historic data.

In order to bring AI to healthcare at scale, we began by rebuilding the foundation of how data flows in and out of healthcare institutions, which we refer to as the Tempus Platform. We have established data pipes, going to and from providers, which allow for the free exchange of data between physicians, who interpret data, and diagnostic and therapeutic companies, who provide data. Harnessing the power of this data at scale required a Platform that could break down data silos, collect vast amounts of multimodal data, structure and harmonize it, and deploy AI to make it useful for physicians and researchers to make data-driven decisions in the clinic or at the lab bench, thereby advancing precision medicine. Without this Platform, we believe the data would continue to pile up at an increasing rate without improving patient care. We have built a version of this Platform and are now deploying it at scale in oncology in the United States, with other disease areas following.

Importance of Multimodal Healthcare Data

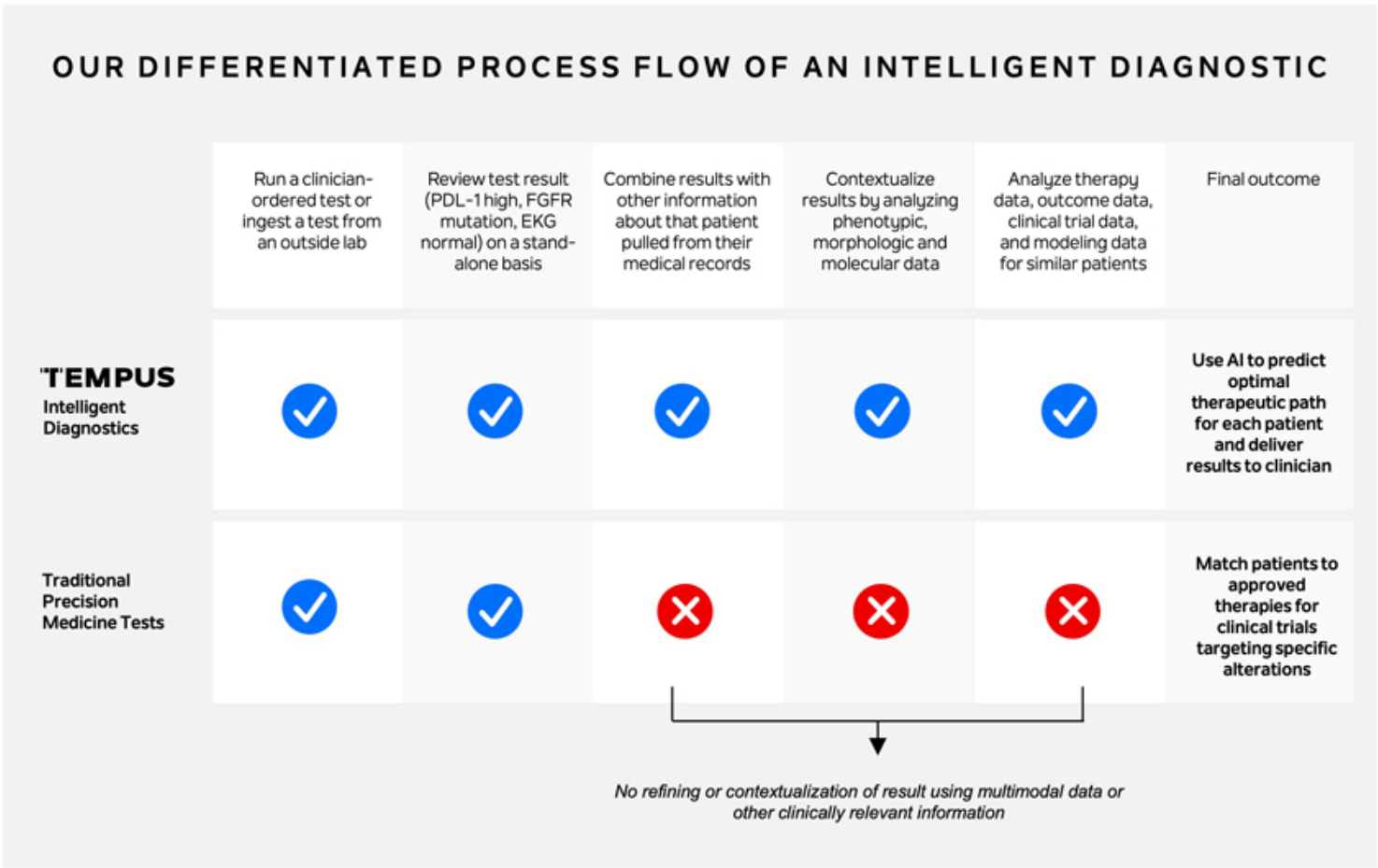
Technology is enabling the healthcare industry to collect data at an unprecedented scale, yet most datasets continue to be fractured or narrowly focused by disease type or data modality; almost none are comprehensive enough to provide a full picture of the patient and their clinically relevant characteristics. We set out to solve that problem by building a platform that collects broad datasets in near real time and at scale. Our Platform is differentiated in several ways. First, we collect data from multiple diagnostic modalities, including NGS, anatomic pathology slides, radiology images, and other laboratory tests. Second, the data we collect is often connected to EHR data, such as key phenotypic characteristics, therapeutic data, and clinical outcome and response data. Third, our Platform is multi-disease, spanning oncology, neurology, cardiology, and infectious disease. Our Platform is purpose built to deploy AI at scale, using multimodal datasets, across disease areas. We believe these differentiators have the potential to transform healthcare.

A New Industry: Intelligent Diagnostics to Advance Precision Medicine

While AI has the potential to broadly impact healthcare, we believe it will transform diagnostics first. Diagnostics, broadly defined, is the process of determining by examination or assessment the nature and circumstance of disease. Physicians use diagnostics all the time; they order blood tests, biopsies, scans, genomic tests, and others. Physicians rely on diagnostic results to make the vast majority of their treatment decisions. Researchers rely on diagnostic tests to better understand disease and make better decisions throughout their discovery processes.

The ability to leverage AI on top of large, harmonized, multimodal datasets provides the opportunity to make diagnostic tests more personalized, and therefore more intelligent. Intelligent Diagnostics incorporate an individual patient's longitudinal phenotypic, morphologic, and molecular data, including outcome data from the patient's EHR, to give laboratory test results clinical context. In doing so, Intelligent Diagnostics can leverage AI to make laboratory tests more accurate, tailored, and personal. The test result itself is designed to be specific to each patient and their own unique patient journey. The result is also informed by our large dataset that enables association of clinical outcomes and therapeutic response for patients who are similar to the patient being treated.

The process for making a diagnostic "intelligent" improves upon the process for performing genomic testing, by leveraging technology and data to add clinical context and therapeutic insights. An Intelligent Diagnostic requires the following: (i) perform a laboratory test or ingest results from a laboratory test; (ii) review the test results on a stand-alone basis; (iii) combine the stand-alone results with other forms of relevant clinical data from that patient's medical records; (iv) contextualize or reconfigure the stand-alone laboratory results to the extent necessary with the insight derived from that patient's clinical history; (v) include the outcome and response data of patients who are similarly situated to the patient for whom the test was ordered; and (vi) use AI to derive analytical and clinically relevant insights and provide those to the physician and patient. See below for an illustration comparing an Intelligent Diagnostic to a standard genomic test:



We believe the adoption and deployment of Intelligent Diagnostics will have a substantial impact on patient care. In oncology, for example, Intelligent Diagnostics have the potential to eventually incorporate insights using data from molecular and anatomic pathology, bioinformatics, genomic variant analysis, inherited cancer risk, computational biology, drug label data, noted adverse events, clinical trial data, research publications, investigational studies, care pathways, real world evidentiary studies, and phenotypic and morphologic data. We already have the ability to incorporate many of these data elements today.

The consequence of incorporating multimodal data is to make precision medicine "personalized" as opposed to "targeted." A targeted diagnostic test might find a specific condition or characteristic of a patient that is relevant to a particular therapy. For example, in cancer, a targeted diagnostic test may identify a genomic biomarker that could inform therapy selection, such as identifying a HER2 amplification that would allow a HER2 inhibitor to be prescribed to a breast cancer patient. The standard test to determine whether a HER2 amplification is present (other than at Tempus) is typically not designed to assess factors such as whether the patient is male or female, old or young, or has diabetes or a heart condition. Nor does the standard test consider the medication the patient has taken or is currently taking, or the adverse events the patient has experienced.

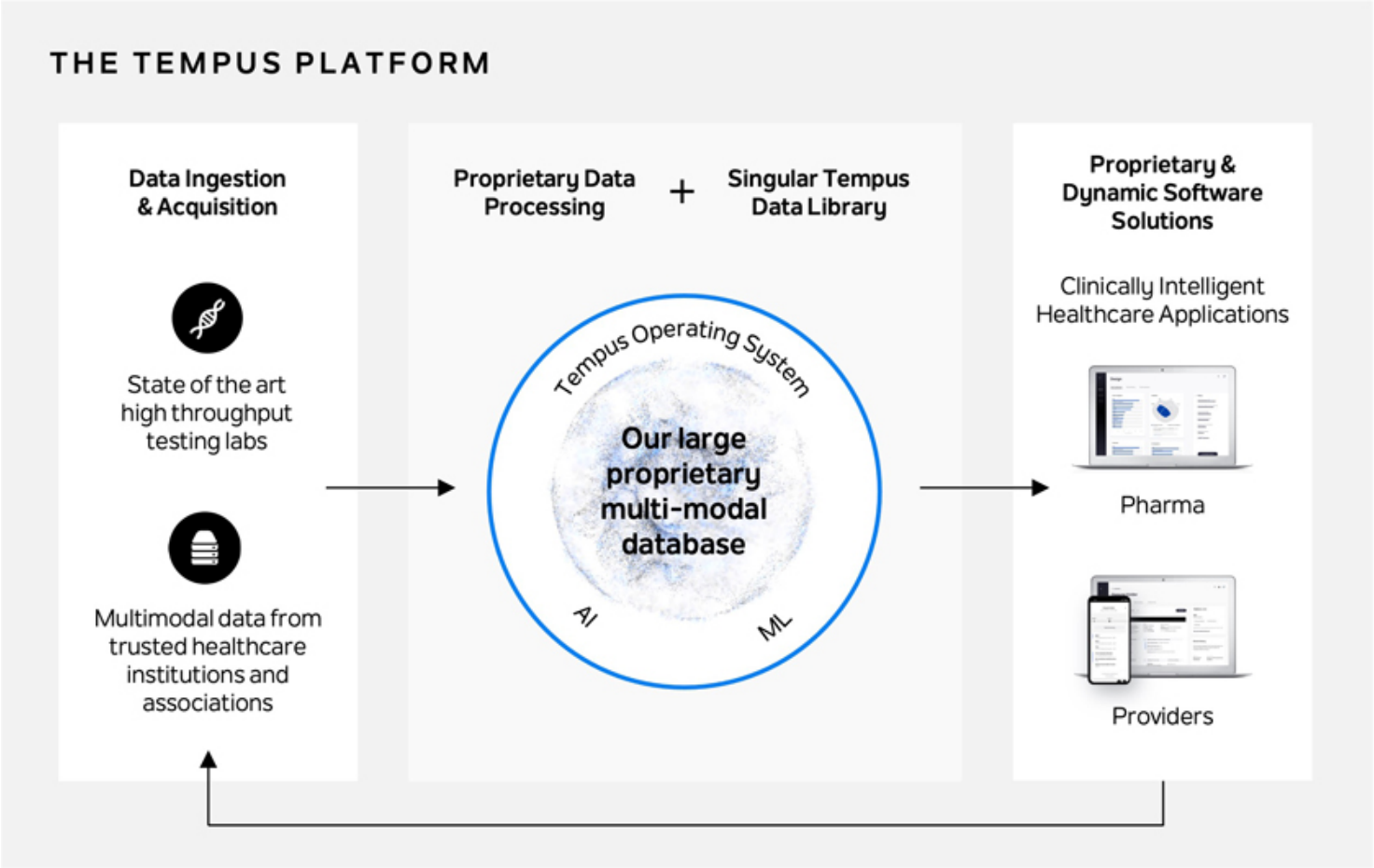
An Intelligent Diagnostic test, by contrast, might recommend specific therapies based not just on a singular characteristic, but on the comprehensive profile of the patient who will receive the proposed therapy. For example, an Intelligent Diagnostic might highlight that the breast cancer patient should consider immunotherapy before taking the HER2 inhibitor, or might highlight a series of adverse events the physician should be aware of based on other phenotypic characteristics for that patient, such as if the patient had a heart condition and therefore an elevated risk of a cardiac adverse event from taking the HER2 inhibitor. By linking multimodal data regarding both the disease, such as cancer or diabetes, and the host, our tests can provide a more comprehensive and holistic view of the patient and reconfigure results based in part on the clinical data we collect and the aggregate information in our database.

Intelligent Diagnostics also have the potential to disrupt the clinical trial process. Today new therapies are typically approved based on randomized clinical trials that apply to broad populations and demonstrate incremental improvements over the existing standard of care. The current process suffers from several inherent flaws. First, clinical trials are generally expensive and slow to complete. Second, if and when therapeutics are approved, they can have less of an impact on the larger population than the trial population, given an inherent bias on who has access to academic medical centers and emerging studies. Third, many new therapies are only effective on a subset of patients that enter clinical trials.

We believe Intelligent Diagnostics and technology can help solve these problems. We believe our ability to contextualize test results to individual patients, to incorporate real world evidence at scale, to identify patterns across similarly situated patients, will help physicians make better, data-driven decisions—which drug to prescribe, which trial to consider, and so on.

The Tempus Platform

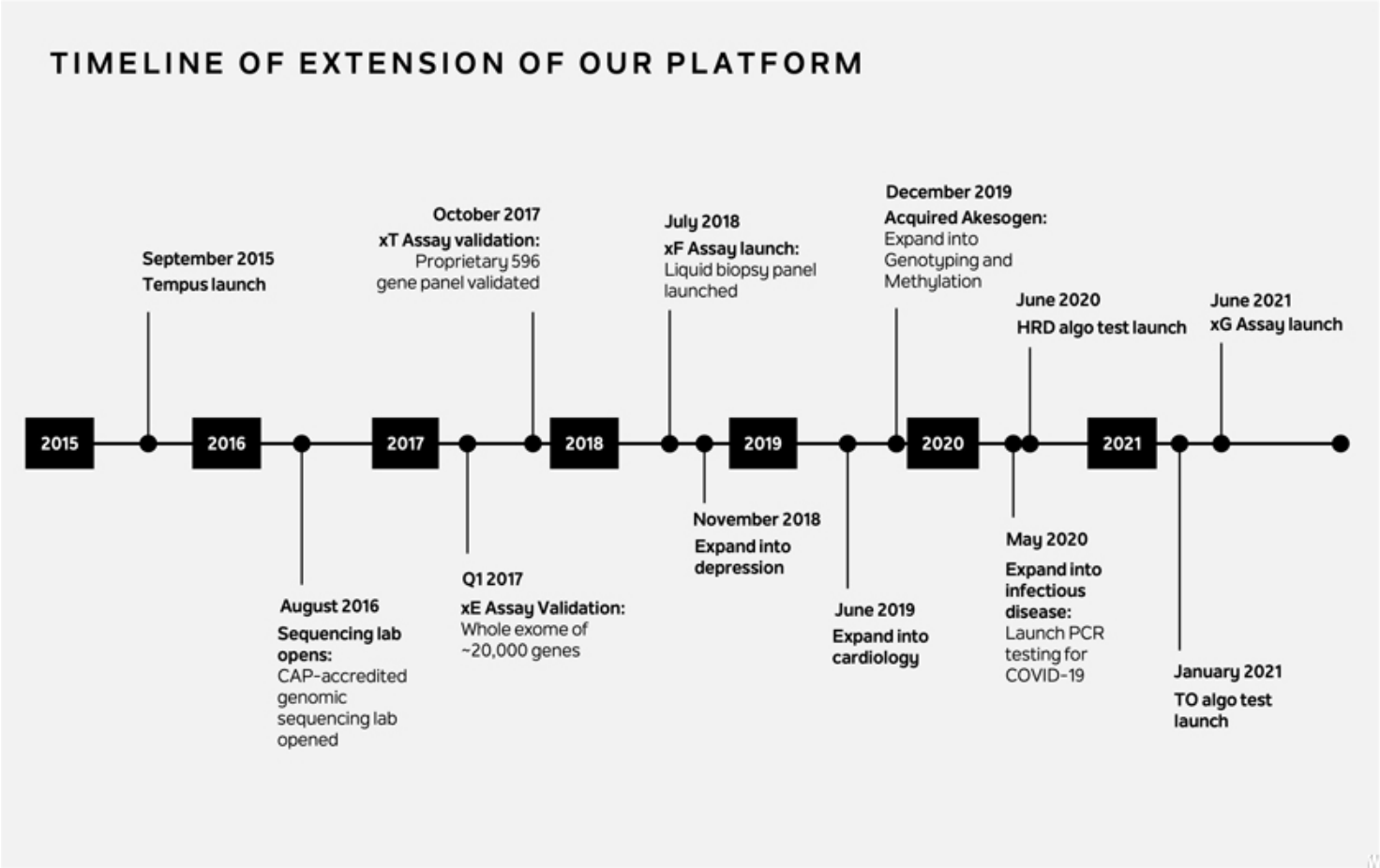
Tempus set out to build proprietary technology to implement Intelligent Diagnostics and to facilitate access to, and use of, the resulting datasets. The Tempus Platform connects multiple stakeholders within the larger healthcare ecosystem and provides both the technical infrastructure for what we consider to be one of the world's largest libraries of matched clinical and molecular data, and an operating system to make that information useful. Our Platform is end-to-end and vertically integrated. It allows us to ingest data from providers, perform diagnostic testing upon request, generate results leveraging our multimodal database, and provide clinical context for a specific patient. Below is a graphic illustrating our Platform's core functionality.



We believe our AI-enabled Platform can provide unique value whenever two conditions exist: a heterogeneous diseased population and a variety of therapeutics or therapeutic pathways, which are often prescribed based on trial and error. For example, in oncology, there is a diverse population diagnosed with cancer, and each subtype has different characteristics. The combination of unique patient characteristics and different cancer subtypes results in a variety of phenotypic attributes (old, young, male, female, black, white, etc.). In addition, there are hundreds of possible therapeutic paths to consider in cancer (surgery, radiotherapy, chemotherapy, targeted therapy, immunotherapy, etc.). These conditions create an ideal backdrop for the benefits of big data and AI.

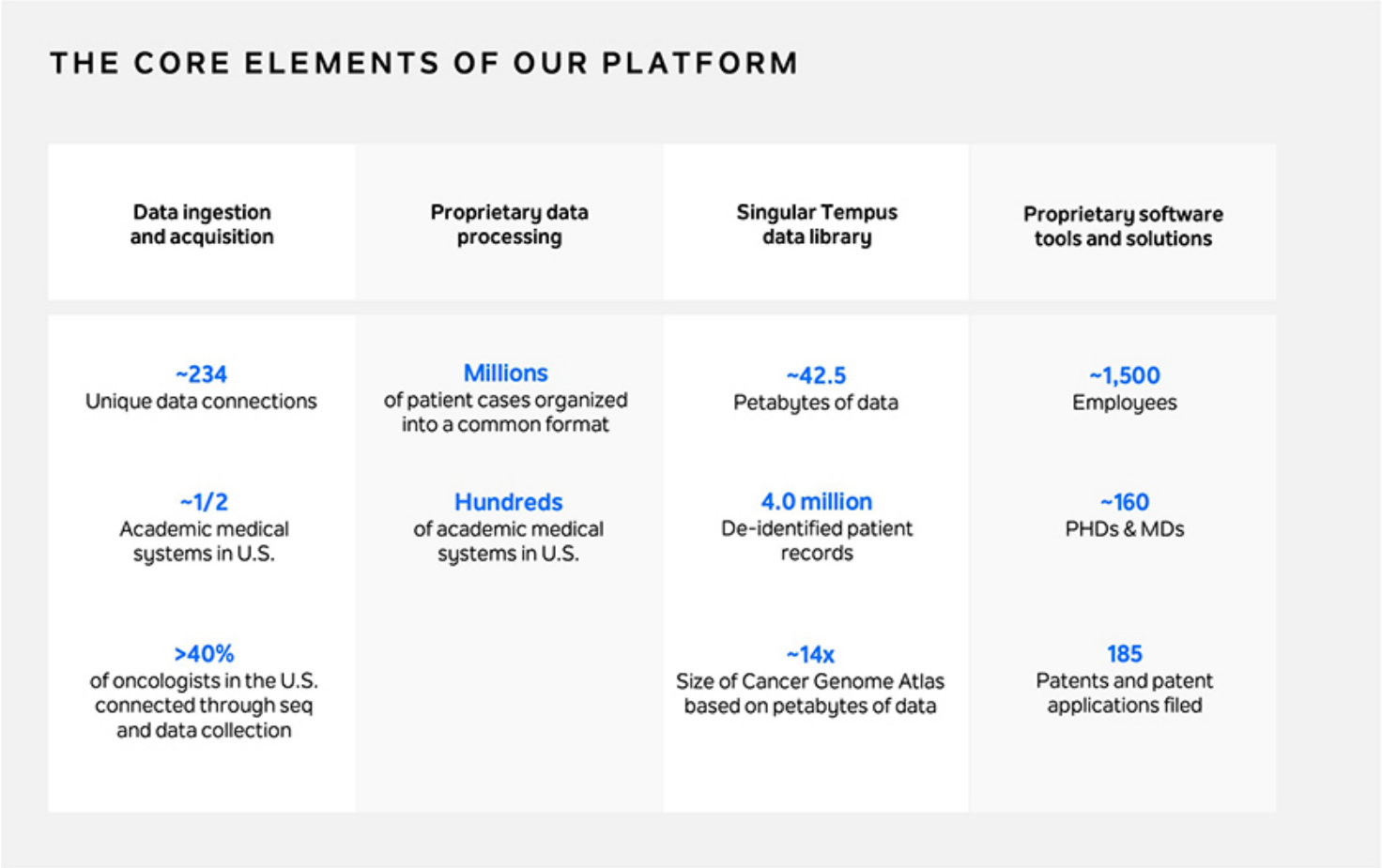
The same is true in neuropsychology. A heterogeneous population suffers from numerous neurological disorder subtypes, such as depression, anxiety, bipolar disorder, and other psychiatric conditions. Like oncology, there is a diverse patient population and a number of prescribed antidepressants, often based on trial and error. Further, the complexity of oncology, neuropsychology, and many other major causes of morbidity necessitate a multimodal data approach, as any single modality (e.g., DNA-only) is unlikely to provide enough information to differentiate meaningful patient subgroups. We believe technology and AI should facilitate data associations and substantially reduce the guesswork associated with which drug to prescribe, in what amount, and in which order.

Facilitated by our relationships with many leading hospitals across the healthcare system in the United States, we believe we are well positioned to introduce precision medicine at scale across multiple disease categories and drive adoption of our Platform and novel AI solutions. We are leveraging our ability to collect, structure and harmonize data, and deploy AI on large datasets to facilitate precision medicine broadly. We initially deployed our Platform in oncology, expanded substantially within oncology, and recently extended into neuropsychology, infectious disease, and cardiology. Below is a timeline of our Platform's evolution, both within oncology and into different disease categories:



Core Elements of our Platform

Our Platform comprises multiple elements that work together to grow our database, generate Intelligent Diagnostics, and integrate the data we collect into clinical practice so that physicians and researchers can make data-driven decisions. Our technology stack allows us to ingest large amounts of multimodal healthcare data, which we then structure and harmonize into a common database that powers a variety of healthcare applications. Our scaled, interconnected provider network covers approximately 40% of U.S. oncologists and provides us with broad data rights, including the rights to longitudinally updated data from time to time. The combination of our Platform and vast provider network yields a powerful flywheel that continues to become more accurate and precise as more patients are added, thereby compounding the network effects of our offering. We believe each of these elements is difficult for competitors to replicate, and together provide us a significant advantage. The following diagram represents the different elements of our Platform.



Ingestion and Generation of Data

We ingest and generate healthcare data at scale through multiple methods into our Platform, including molecular, clinical, and imaging data. Between our sequencing and data collection efforts, we are connected in some way to more than 40% of all oncologists practicing in the United States, along with a growing number of patients in neuropsychology, cardiology, and infectious disease. Our methods for collecting and creating data include the following:

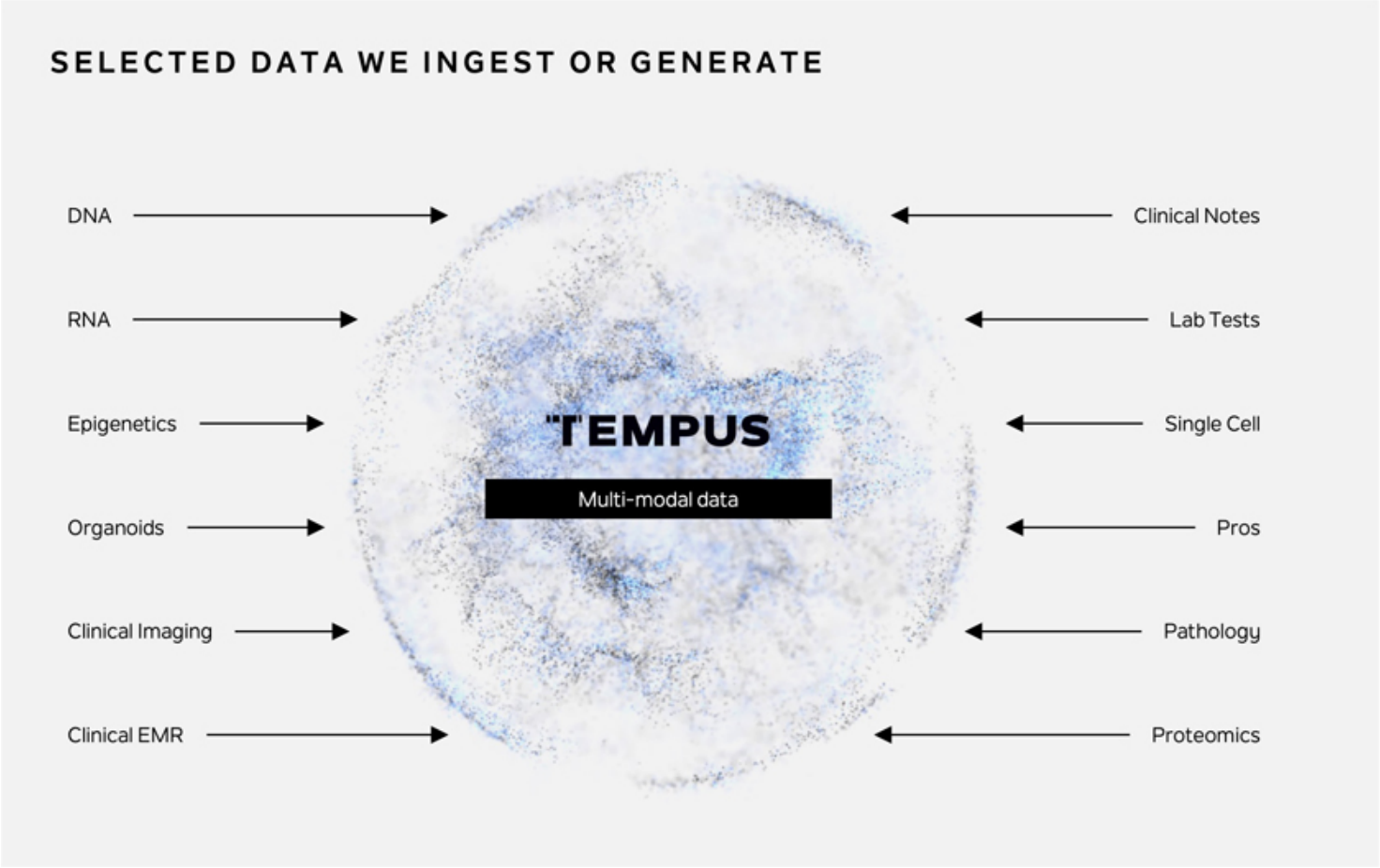
Ingesting data through our relationships and partnerships with healthcare providers. We have developed proprietary tools to establish approximately 234 direct data connections, many of which are bi-directional. We have established relationships with hundreds of provider networks, including approximately half of all academic medical centers in the United States. To obtain data from these sources, we use a variety of near real-time connections (e.g., HL7, FHIR) and batch data exchanges. Healthcare institutions supply us with this data in our capacity as a covered entity (for example, when we provide NGS services on behalf of a patient), or as a business associate (for example, when we provide clinical trial matching services or data de-identification and structuring services). We ingest and structure data using optical character recognition, or OCR, natural language processing, or NLP, and proprietary workflow tools along with manual data curation. Our proprietary tools connect to a provider's EHR system, data warehouse, or their third-party data provider to pull out relevant structured and unstructured data that the provider has agreed to contribute to Tempus, including longitudinal follow-up data to the extent the provider has made such data available. To facilitate these data-sharing relationships, we have developed software products and services that align to our customers' interests by helping providers use our software tools to improve patient care. In certain circumstances, we cover the actual direct costs associated with the technical integrations needed to create a data connection. We cover these costs to help facilitate providers' contribution of data and their corresponding use of our products, which then makes our tests more intelligent and helps them to facilitate the delivery of better care. We generally retain the rights we acquire in de-identified data even if our contractual obligations expire or are terminated.

Relationships with industry associations. In addition to healthcare providers, we work with numerous industry associations in the United States, such as ASCO. Under our collaboration with ASCO, we structure

and distribute the oncology data ASCO collects as part of CancerLinq, which is their oncology data effort. We work with other large associations such as Quality Cancer Care Alliance, or QCCA, and National Cancer Care Alliance, or NCCA, and have agreements in place with large integrated community practices. While our relationships in oncology are widespread, we are making inroads in other disease areas. For example, we hold a perpetual, royalty-bearing license from Geisinger to build algorithmic models and commercialize a de-identified dataset of approximately 3.2 million ECGs, across approximately 600,000 patients, with decades of longitudinal clinical data, including outcome and response data. We also have agreements with numerous other institutions through both our sequencing and data efforts to collect and structure multimodal infectious disease data, and have entered into a variety of partnerships and collaborations across neuropsychology, diabetes, and cardiology giving us access to additional clinical data.

Laboratory diagnostics. In addition to our dedicated data pipelines, we generate data for our Platform from our two high-throughput diagnostic testing labs in Chicago and Atlanta. We intend to expand these capabilities with a new genomics lab in Raleigh that we plan to operationalize by the end of 2021. Our labs offer a range of anatomical and molecular NGS tests, including a broad portfolio of solid tumor and liquid biopsy cancer tests. Our laboratory offerings enable us to populate our database with connected and comprehensive molecular, clinical, and morphologic data that has been de-identified. We also make available an unrestricted copy of the raw files containing the rich data we generate in the laboratory, along with any clinical data we curate, to the providers who order our tests, to further enable their own research efforts.

We ingest and generate a variety of different types of data from different sources. The following represents selected data modalities that we collect and aggregate into our database.



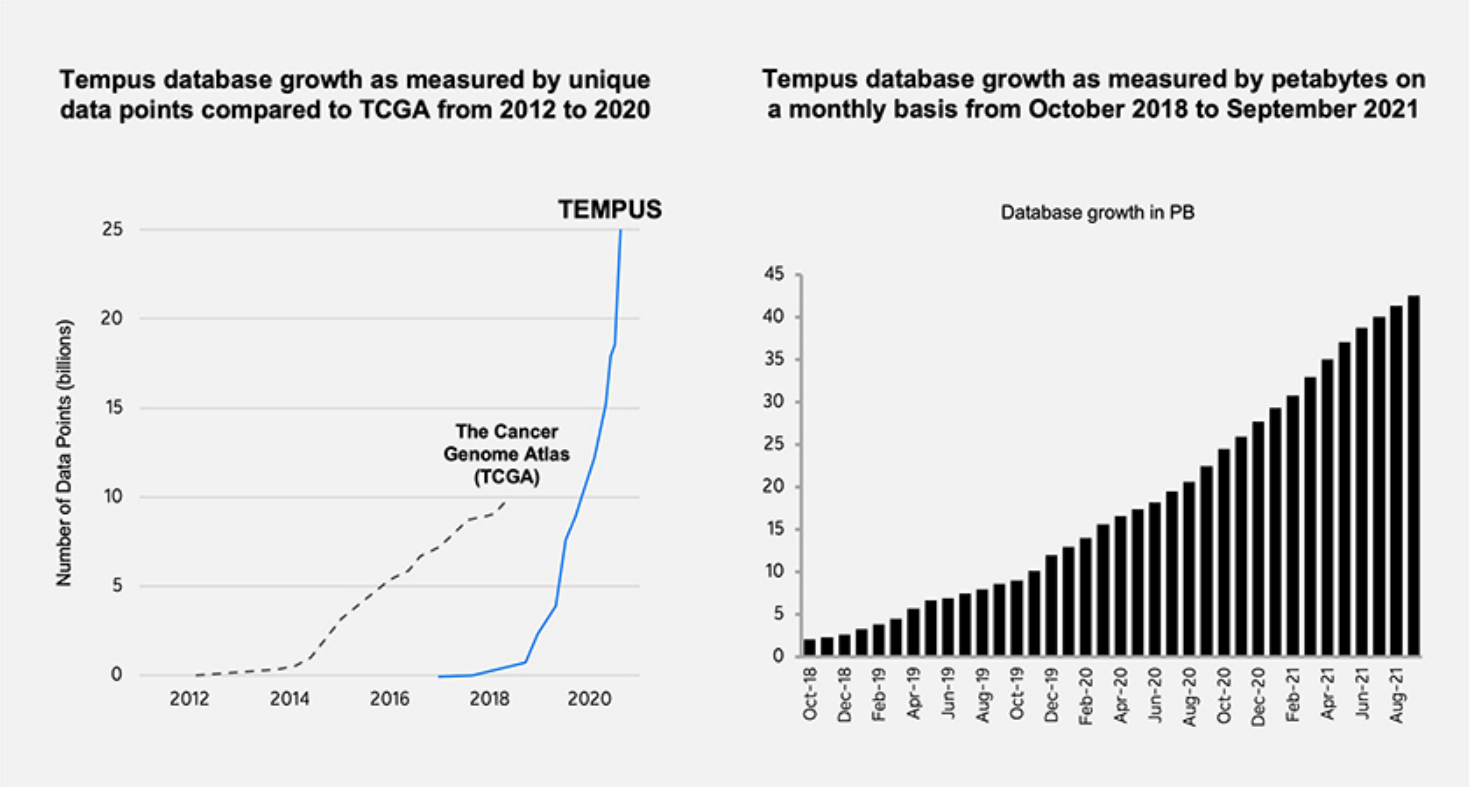
Proprietary Data Processing

Once data is ingested, we apply AI and other technologies to organize millions of records into a common format that spans a variety of data types. For example, we organize clinical data from unstructured documents and structured

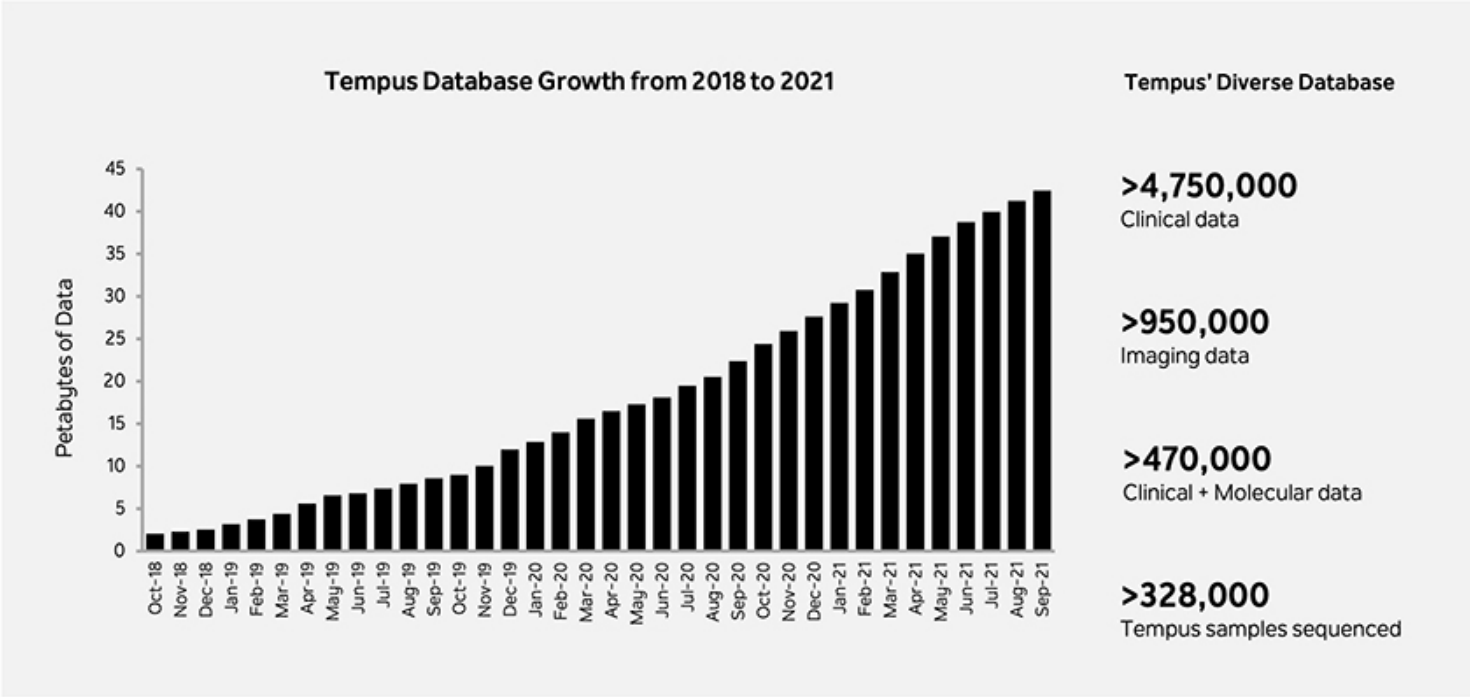
EHR fields, and typically digitize whole-slide pathology images as part of our clinical workflow. We then combine this data with the molecular data that we generate in our labs or process from third parties, giving us a more comprehensive profile of patients. Unstructured data housed in physician notes and other documents is processed using OCR and NLP, mapped to Tempus' Medical Ontology, and routed to data abstractors for further curation and quality control. Typically we receive identified data, either in our capacity as a covered entity under the Health Insurance Portability and Accountability Act, or HIPAA, or to the extent we have a business associate agreement with the provider. Following abstraction and structuring, we de-identify data and only retain the resulting de-identified dataset, other than through our obligations to retain selected identified data as a covered entity provided laboratory tests to clinicians. Many clinicians who order Tempus tests clinically are also involved in research related activities. By making this organized and structured data available to the clinicians (along with raw files associated with the testing we perform) we serve, those clinicians can use the data to further their own research efforts to help patients.

Proprietary Multimodal Database

We believe most healthcare databases lack real-time functionality, depth among data types, and the scale of matched clinical and molecular records needed to meaningfully improve therapeutic research and development. Tempus is attempting to solve this problem by democratizing the use of molecular, clinical, and imaging data at scale. As our testing volume has grown, and as our dedicated data pipelines have expanded, the size of our database has increased exponentially. Since we launched our Platform in 2016, Tempus has amassed an oncology database that is approximately fourteen times the size of The Cancer Genome Atlas, which we believe to be the largest public genomic dataset in oncology, based on the number of data points collected (and approximately 14 times the size based on petabytes of data). This represents what we consider to be one of the largest matched molecular libraries of cancer patients in the world. Our Platform, across all diseases, has ingested more than 300 million documents and contains more than 4.7 million patient records, including more than 950,000 with imaging data, more than 470,000 with matched clinical records linked with genomic information, and approximately 80,000 with full transcriptomic profiles. The breadth of our database, the quality and diversity of its data, as well as its regularly updating nature, allow us to offer a variety of AI-enabled solutions to the market. We also retain the rights to broadly commercialize the de-identified data we collect. As our database continues to grow from its current size of approximately 42.5 petabytes, we believe new AI applications and opportunities will emerge that are only possible with scale, driving innovations in patient treatment that were previously unattainable. The following diagram represents the growth of our database over time.



Another valuable attribute of our dataset is the number of different data modalities represented. We believe multimodal data is a necessary predicate to successfully build and deploy AI-based applications given the complexity of disease and the various attributes across different forms of data (e.g., text, images, molecules, etc.). As of September 30, 2021, our database included the following types of data, among others:



Footnote: Our clinical data typically includes the following information to the extent provided and abstracted by Tempus: unique identifier; age; sex; race/ethnicity; histology; stage of disease; sample type (primary vs. metastatic); anatomical site of sample and method of procurement; cancer treatment history, including therapies administered; timing of relapse and timing of treatments, including cancer-related treatments and surgery; genomic profiling results (e.g., internal, external providers); tumor response; progression free survival; RECIST or equivalent; ECOG/Karnofsky scores, or equivalent; and adverse events.

Proprietary Software Tools and Solutions

We have developed numerous software tools and applications to help make our services accessible to multiple constituencies within the healthcare ecosystem and support our various product lines. We believe this system architecture, which employs AI techniques such as neural networks, deep learning, and other statistical techniques, along with proprietary software tools and applications, represents a key competitive advantage that will be difficult for others to replicate. We describe below some of the core software applications that form part of our Platform.

External Facing Applications

We have two primary software applications that serve as interfaces for different markets and allow our customers to interact with our Platform. Hub is our clinical application for physicians and other healthcare providers and is used primarily in our Genomics product line as an end-to-end application for healthcare providers who use our NGS tests. Lens is our application for life sciences customers, launched in May 2021. Lens is aligned with Insights, one of our products within Data, and allows users to identify, license, and ultimately analyze cohorts of data for research purposes. We typically enable our customers to access our software applications free of charge. However, in some cases we may charge for access to Lens when a customer is interested in some form of customization or Lens' enhanced features.

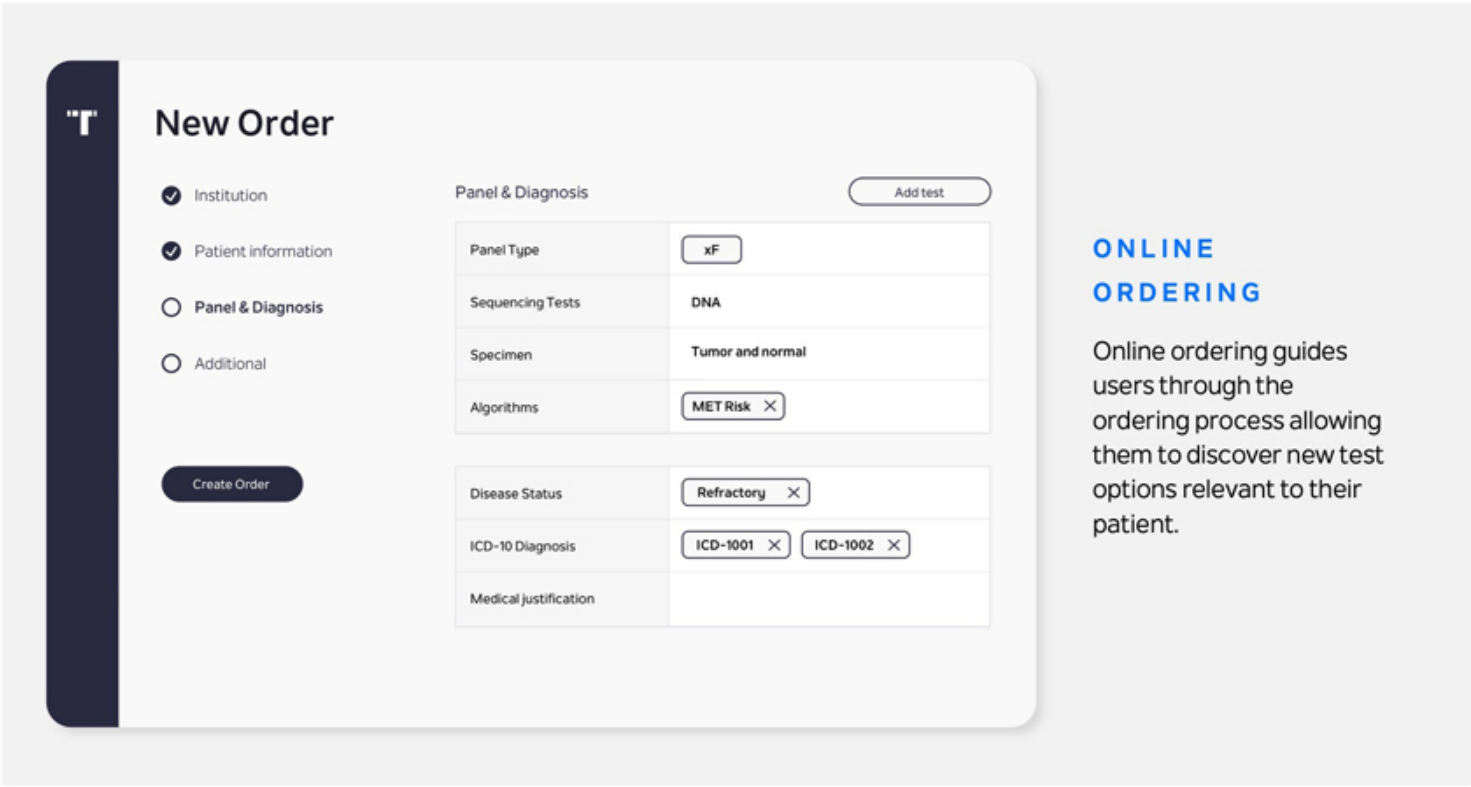
Hub

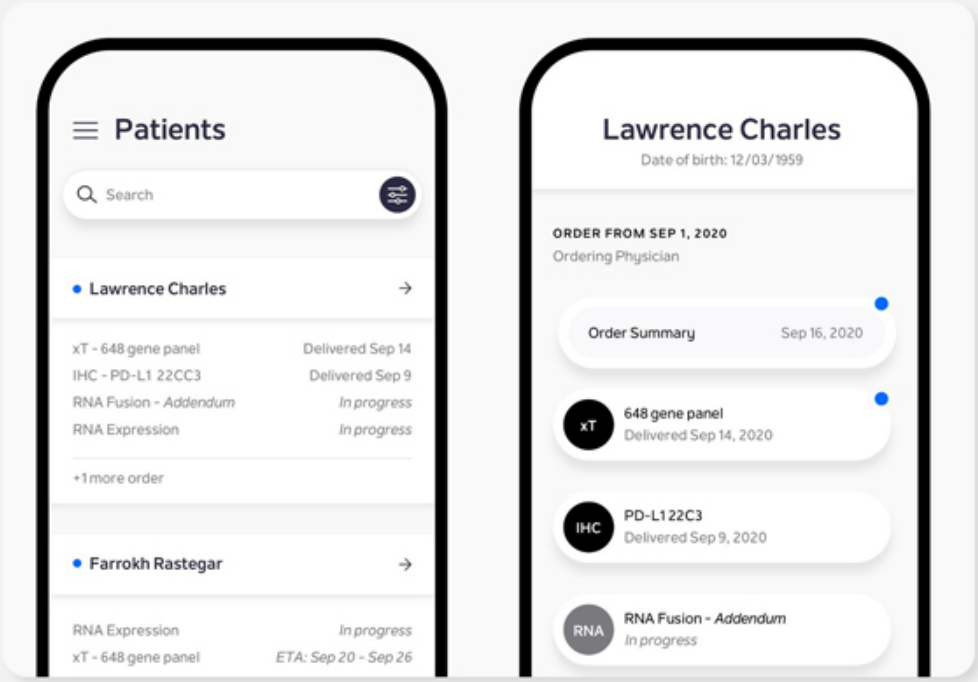
Hub can be accessed on the web or through our mobile applications. Hub enables physicians and other providers to interact with our Platform, place orders for our laboratory tests, track them through the sequencing process, view results, and develop treatment plans using the other information Tempus makes available. Hub streamlines and automates what previously required a significant investment of both time and resources for those ordering and delivering genomic reports.

A physician's experience, through Hub, typically begins with our online ordering feature, which presents providers with Tempus' various test options and guides users through the ordering process. Once Tempus has processed an order and sequenced a specimen, Hub synthesizes information across our various tests, orders, and patients, and presents the information in a consumer-friendly interface. For example, Order Summary synthesizes information from various clinical orders, test results, and other information relevant to a patient's course of treatment. A typical patient might have multiple sequencing events over time. Hub visually presents all of a patient's results side-by-side, so a treating physician can comprehensively view how a patient's disease has changed over time, including in response to therapy. Hub also provides care teams a robust set of search and filtering tools so they can navigate our Platform. Physicians can use Hub to identify similarly situated patients or patient sub-groups, including by specific molecular alteration. Physicians can also export and download the resulting dataset for further analysis.

Hub offers additional functionality that goes beyond ordering and presenting clinical results. Our clinical trial system, for example, handles the complexities of matching patients to clinical trials, by synthesizing clinical and molecular data matched against inclusion and exclusion criteria for the trial. It even allows physicians to activate their point of care as a clinical trial site, if approved by the trial sponsor, in order to easily enroll patients who would otherwise not have access to experimental therapies. The proprietary features within Hub put powerful analytics in the hands of physicians, allowing them to pursue research opportunities using accessible molecular data, and explore immune insights such as HLA type, TCR and BCR profiles, immune infiltrates and neoantigens. Finally, Time on Therapy provides physicians a view into the Tempus Precision Medicine Library, which includes the treatment paths of thousands of patients who display similar molecular or phenotypic profiles to their own patients. These tools enable new patients to potentially benefit from the experience of those that came before.

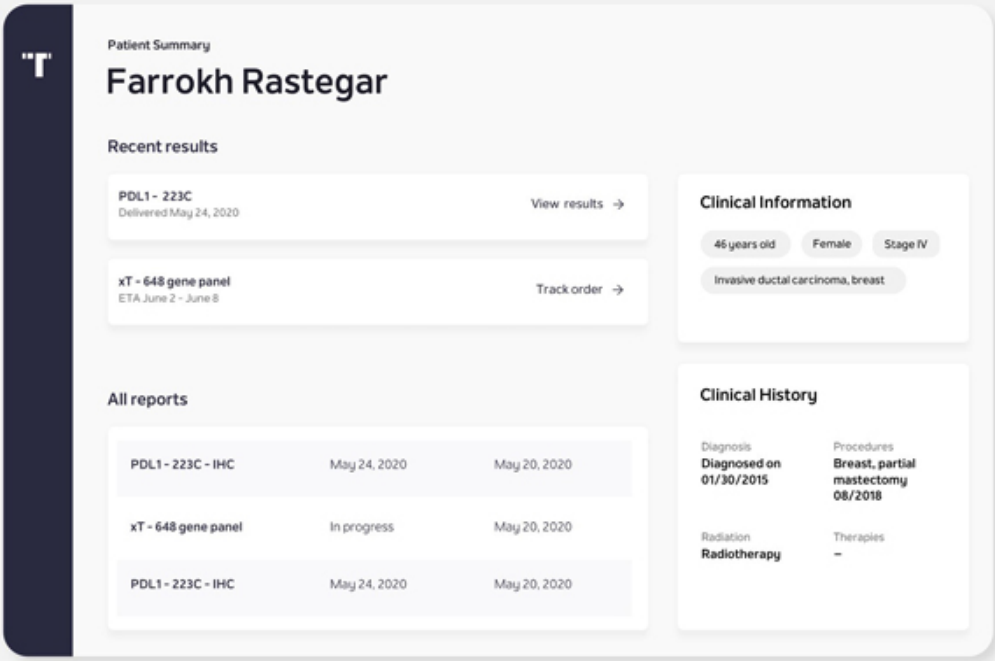
We include below some illustrations depicting some of Hub's capabilities:





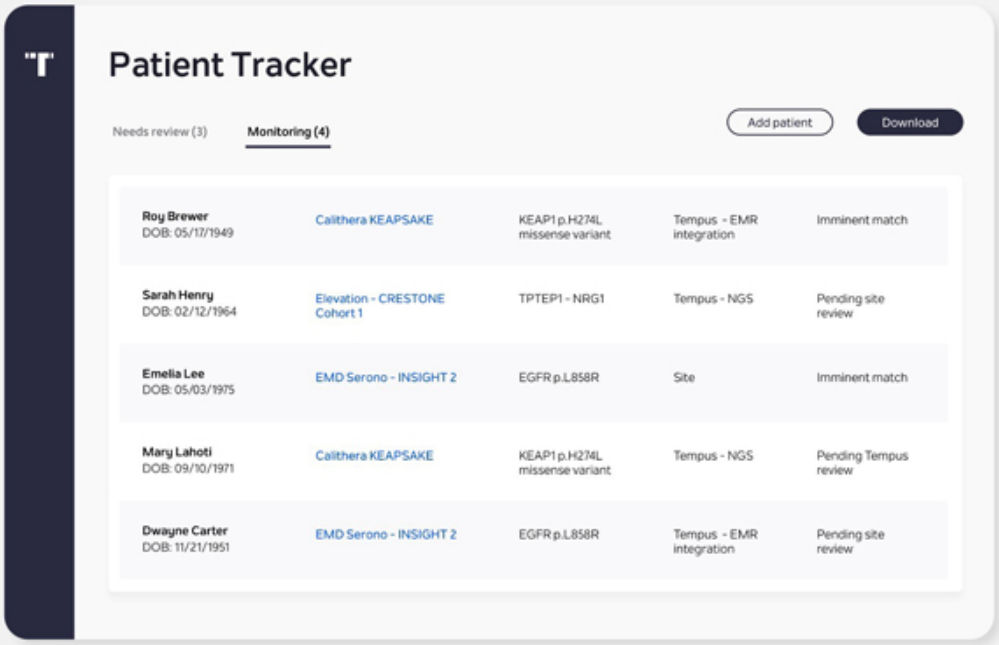
MOBILE APPLICATION

The Tempus mobile application gives users access to the full Tempus experience, even when they are away from their computers. Reports are rendered in interactive views optimized for mobile devices. Physicians can help their patients enroll in trials using their phone.



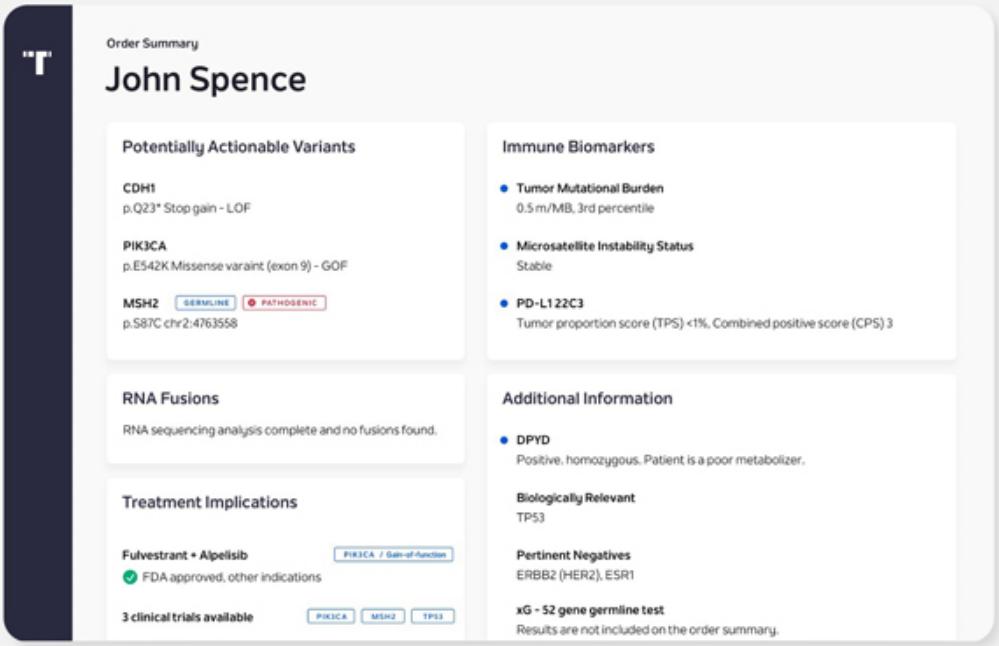
PATIENT SUMMARY

The patient summary interface surfaces all data about a patient in one place. Physicians can see detailed info about orders, such as the estimated delivery date. They can place orders on hold or convert them from solid tumor sequencing to a liquid biopsy. Completed results are summarized in a longitudinal view across orders.



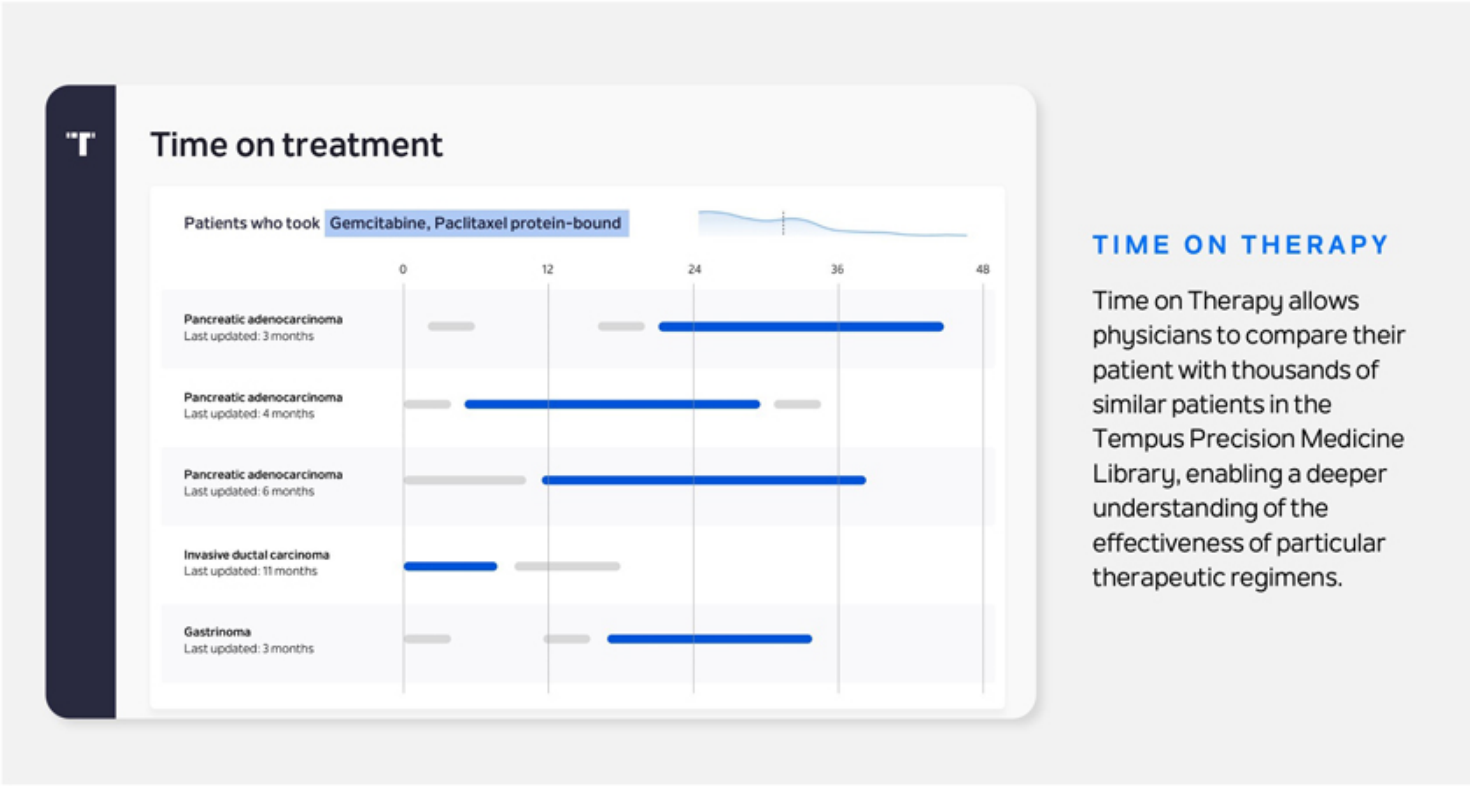
CLINICAL TRIALS

Tempus handles the complexities of clinical trial matching via Hub. A user can help their patient enroll in a clinical trial with minimal keystrokes.



ORDER SUMMARY

Order summary brings the important findings from a patient's order into a single, easily referenced document. It also allows Tempus to deliver insights from the broader Precision Medicine Library that are specifically matched to the patient case under review.



Lens

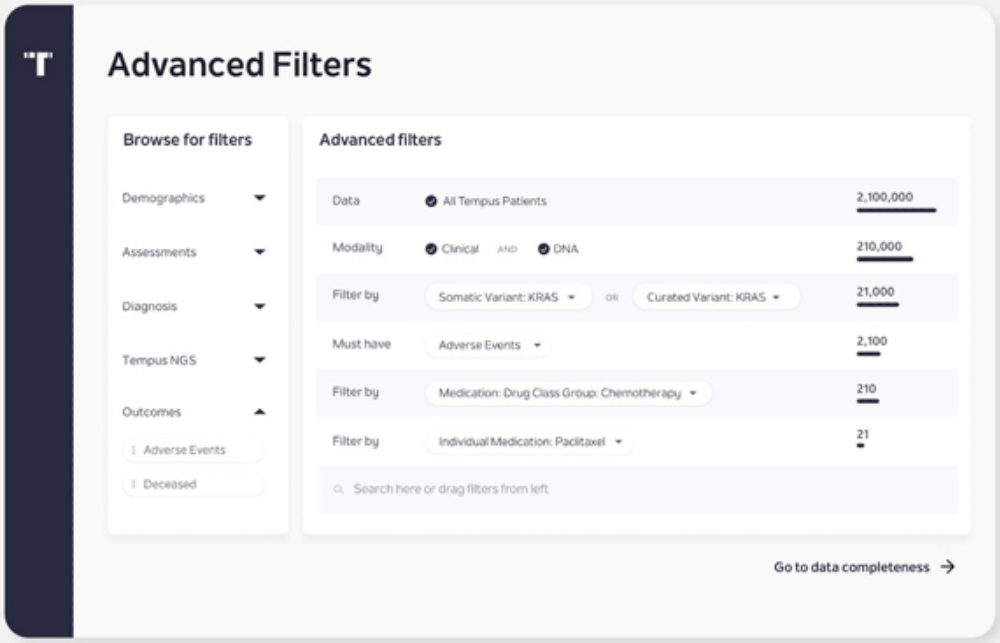
Lens is our software application for life sciences research. We designed Lens to expose our multimodal, de-identified dataset to two main constituencies: (i) clinicians interested in exploring data related both to their own patients and to similarly situated patients from the broader Tempus dataset, and (ii) pharmaceutical and biotechnology clients that are focused on drug discovery and development and want to explore our dataset and/or supplement their own analytics with our tools and data.

With respect to the first constituency, Lens helps users filter our multimodal database to identify groups of patients that meet their research requirements. It allows browsing, segmenting, selecting, and analyzing cohorts of patients using a variety of clinical, molecular, and demographic characteristics. We generally make these aspects of Lens available to our customers without charge because such access helps our customers identify data cohorts of interest and facilitates data licensing opportunities.

In addition to this basic functionality, Lens allows advanced computational users to perform robust analytics using our cloud-and-compute infrastructure and modeling tool set. We launched certain of these advanced features in May 2021, one of which is called Notebooks, a proprietary tool that allows users to run their own AI models within our cloud-and-compute environment, taking advantage of fast and streamlined access to our data and computational infrastructure, and saving researchers time and money. Over time, we intend to enter into separate subscription agreements, and charge separately, for expanded access to Lens and the increased functionality we intend to provide to our users.

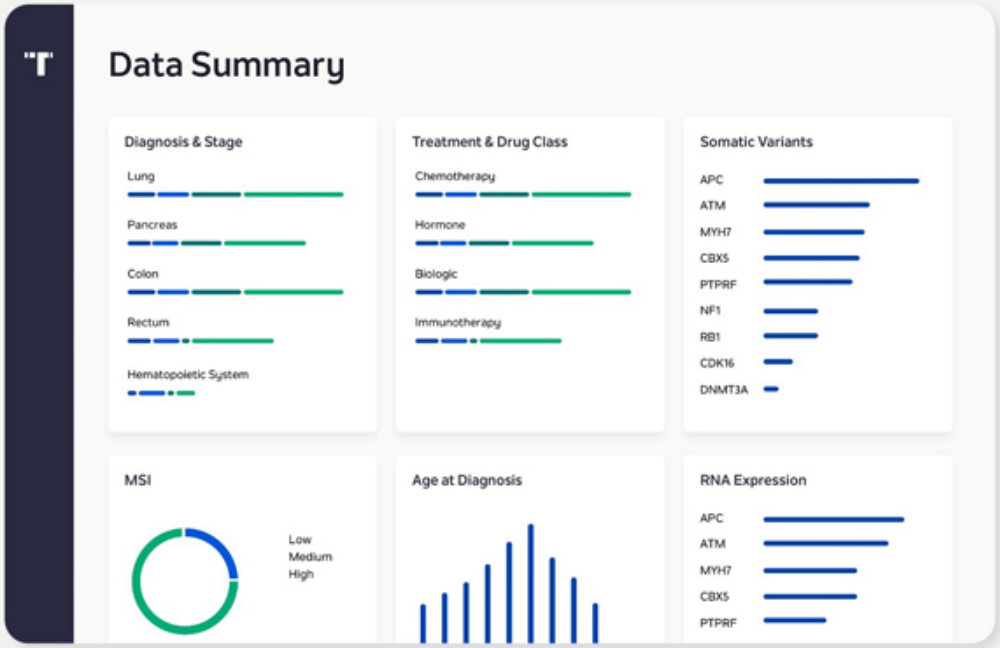
We believe that as Lens evolves, it has the potential to redefine life sciences research as investigators can both use our tools for their computational needs and instantly download the data they need for their analysis. We are not aware of any other application in oncology, or any other major disease area, that allows researchers to build large multimodal cohorts, utilize advanced analytics capabilities to explore the data, and download data for deeper analysis in near real time.

We include below some illustrations depicting some of Lens' current capabilities, which we expect to continue to expand and enhance over time:



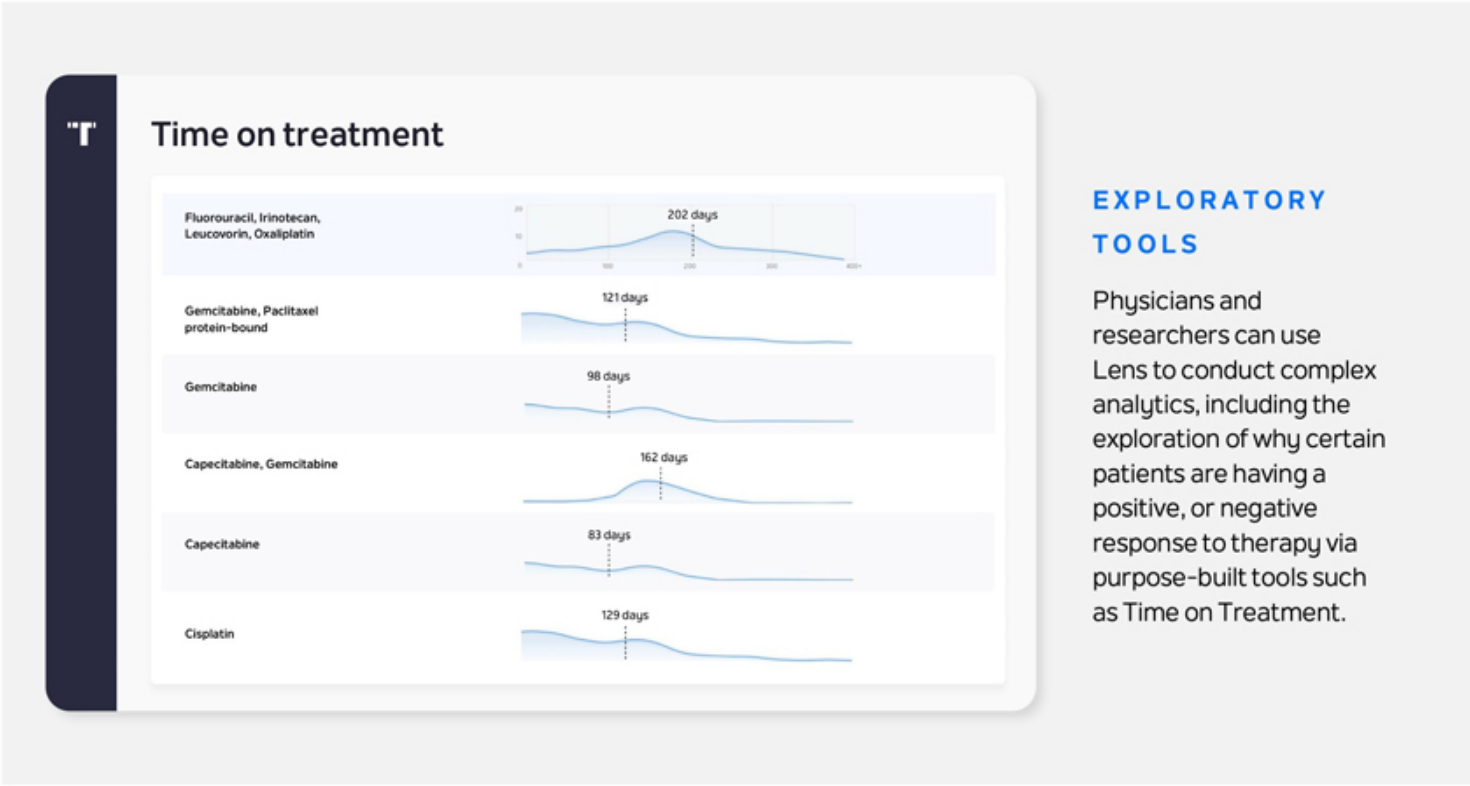
ADVANCED FILTERS

Advanced filters empower users to define and refine a subset of the full dataset based on precise clinical and molecular characteristics, and/or the availability of specific data (e.g. DNA results, RNA, or imaging).



COHORT DESIGN

Researchers are able to quickly build cohorts of interest and explore the unique data elements of the cohort they have designed. This allows researchers to ascertain if their cohort is sufficient for the questions they are trying to answer and the studies they are trying to conduct.





Other Software Applications

Our software applications extend beyond the oncology space. In the neuropsychiatry space, for example, we have built a series of proprietary and customized applications that are oriented around depression and other related psychiatric conditions. In addition, we licensed a customized software tool, which we call TempusPRO, that helps track patient reported outcomes, which we integrate into Hub. Patients use the mobile application to complete regular and systematic check-ins, while providers use the tool to view clinical reports and review the patient reported information. We have developed this application to empower providers to make data-driven, personalized treatment decisions, as well as collect outcome measurements on a regular, longitudinal basis in an effort to build one of the largest real-world multimodal datasets in psychiatry.

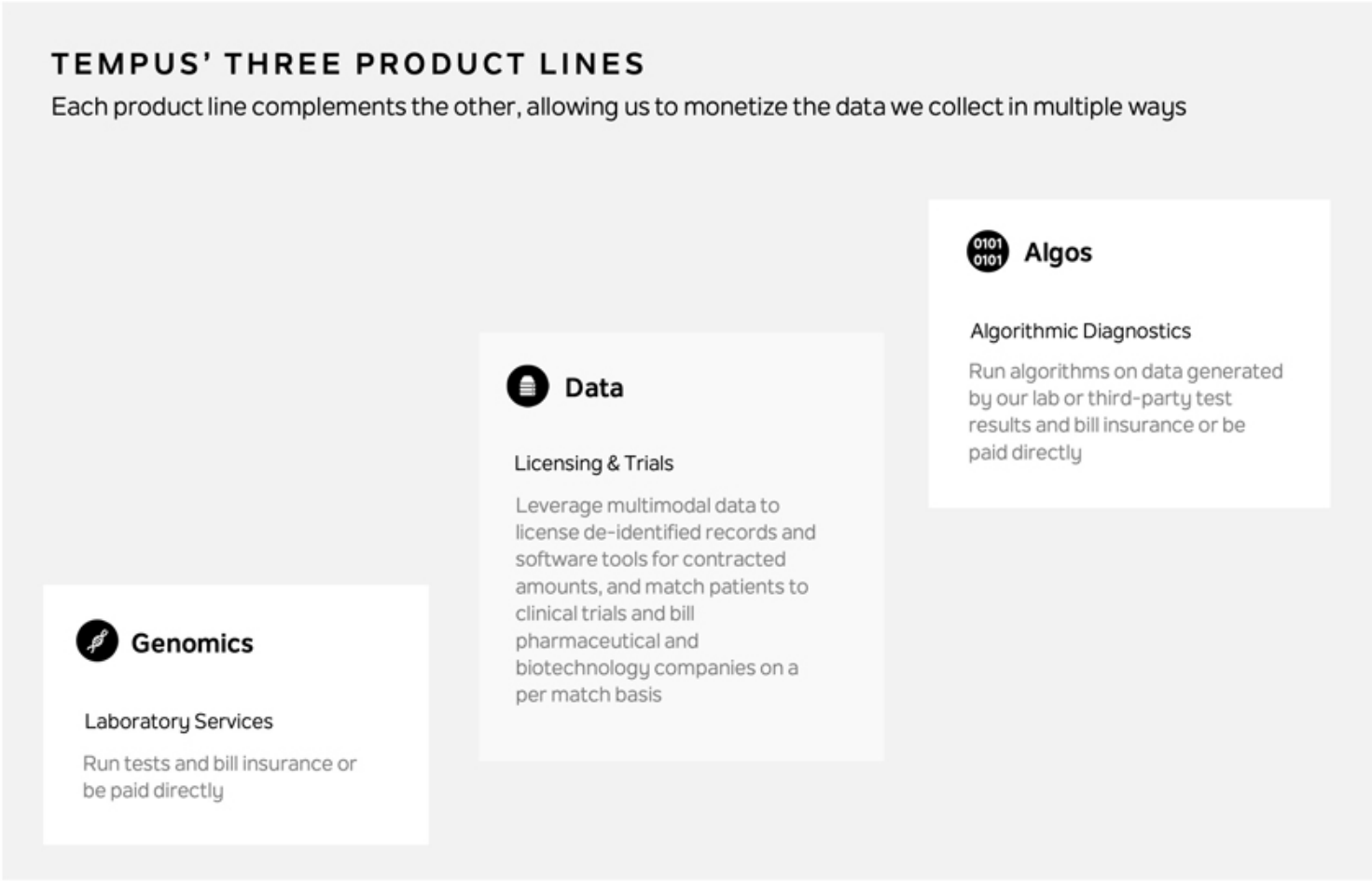
We also have developed a mobile application in the infectious disease space that we use to deliver COVID-19 test results directly to patients. The application allows patients to connect to Tempus and contribute their data in an effort to combine clinical and molecular data for COVID-19 patients. To date, we have more than 17,000 users who have agreed to contribute data to Tempus to advance research and other valuable use cases.

Our Google Cloud Agreement

In June 2020, we signed an agreement with Google to migrate most of our cloud-based infrastructure to the Google Cloud Platform, or GCP. The Agreement with Google has two components: (1) a Master Agreement through which Google provides us with cloud services, as well as other products and services, for a multi-year period during which we committed to make escalating minimum payments with certain termination rights, along with contractual penalties for early termination and (2) a Convertible Note, the balance of which is reduced based on the amount we spend on Google cloud services. We believe our strategic arrangement with Google offers Tempus a distinct competitive advantage because we believe it provides us with attractive cloud and computing rates, along with resources and teams at Google that are aligned to advancing elements of our product roadmap.

Our Three Product Lines

Our products are organized under three product lines, with each product line designed to enable and enhance the others, thereby creating network effects in the markets in which we operate. Our Genomics product line provides a broad arrange of diagnostic testing services to healthcare providers. Our Data product line monetizes de-identified data that we collect and facilitates enrollment in clinical trials. Our Algos product line leverages our database to provide diagnostics entirely driven by data. Our three product lines and their corresponding product offerings are illustrated in the diagram below:

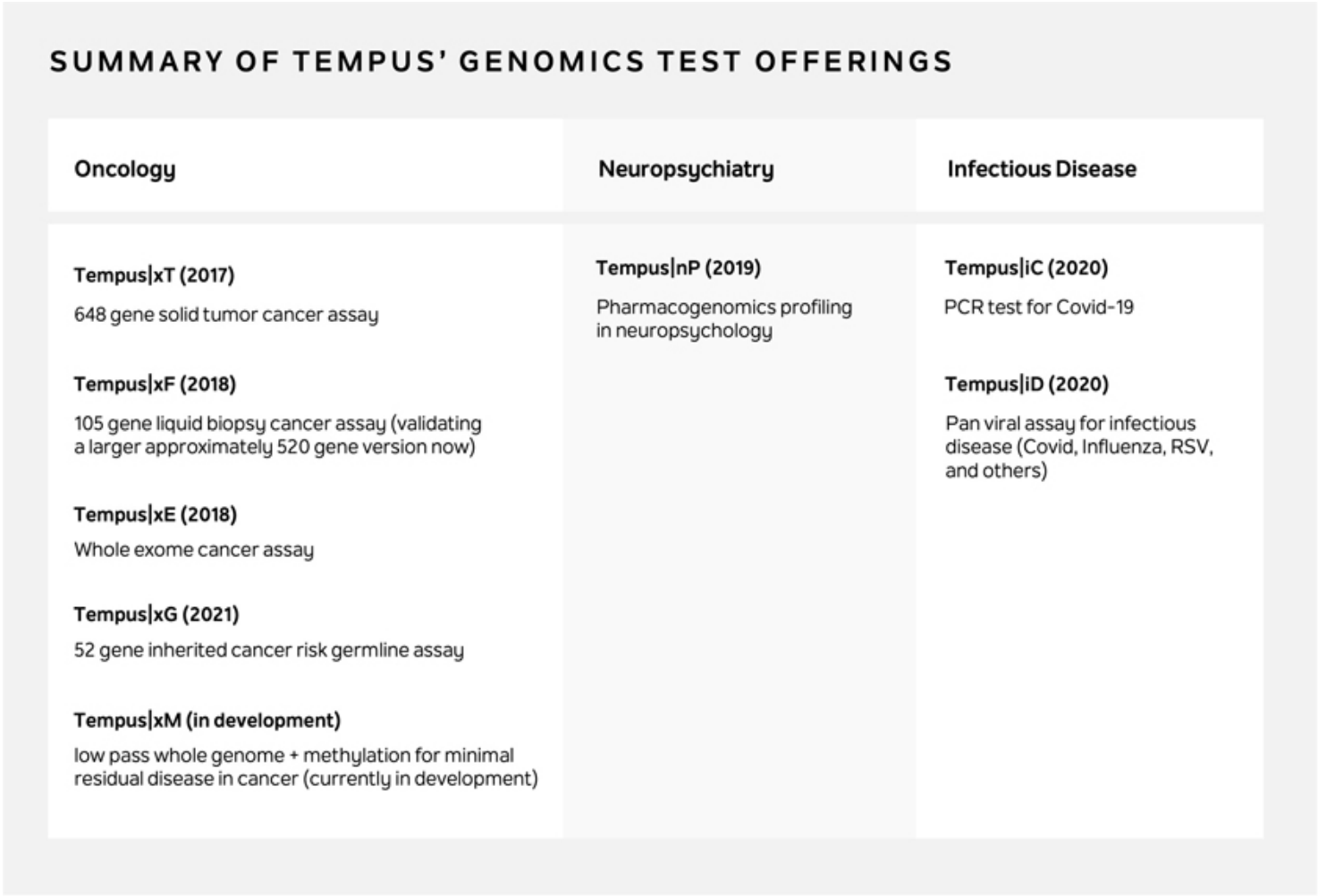


We believe the interrelated nature of our three product lines is unique. Our business model allows our clients to unlock value from our data, and allows us to monetize that data (in de-identified format), in different ways across our different product lines. We believe these network effects and the compounding impact on the value of each data record in our database enhance our competitive advantages.

Genomics

We launched our Genomics product line to provide a comprehensive suite of Intelligent Diagnostics to healthcare providers, and to generate a steady stream of molecular data to help fuel growth in our Data and Algos product lines. As we run more tests through our laboratories, and as those tests are linked to patient records and clinical outcomes, we grow our data assets and leverage them across our other product lines. We operate two laboratories that provide NGS diagnostics, PCR profiling, and other anatomic and molecular pathology tests, and we expect to operationalize a third laboratory by the end of 2021. We have broad capabilities across genomic, transcriptomic, proteomic, microbiomic, epigenetic, and methylation-based assays, and our laboratory infrastructure allows us to operate as a high-quality, low-cost sequencing provider broadly serving the market. However, unlike traditional laboratory diagnostic tests, our tests can be connected to clinical data, in some manner, which allows our suite of diagnostic tests to be self-learning, becoming more accurate and precise with each test that we run. Furthermore, rather than providing a result based on a single data modality, such as a DNA mutation, our Platform leverages data from other modalities and other patients in an effort to be more comprehensive.

We are generally paid for our Genomics services by billing insurance companies, or patients directly, who reimburse us for the tests we run, or by billing providers or pharmaceutical companies directly. The following diagram represents a summary of our test offerings:



Our Oncology Tests

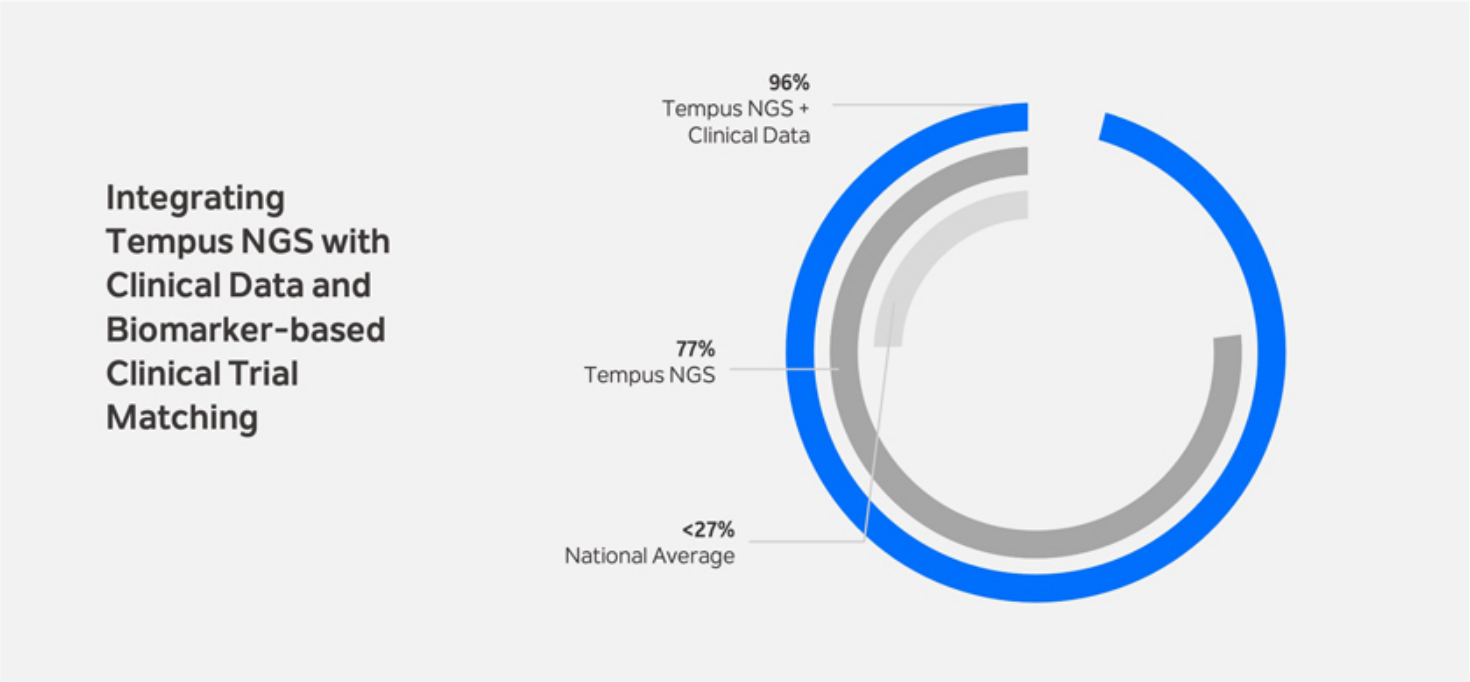
Our Platform's first application was in oncology, where we have built a versatile portfolio of cancer tests spanning across solid tumors and hematologic malignancies, germline and somatic variants, and tissue and liquid biopsies. Since our inception, our approach to precision oncology has been to provide comprehensive genomic profiling through NGS that enables us to both generate clinically relevant insights that may not be possible with narrower testing approaches, and contribute high-quality molecular information back to providers and to our database. We offer large-panel solid tumor and hematologic testing through multiple assays, with our core clinical assay (xT) offering large panel DNA, RNA full transcriptome, and incidental germline findings through normal blood or saliva analyses. Our current offerings also include liquid biopsy (xF), whole exome (xE), and hereditary cancer risk (xG). We are also currently validating a minimal residual disease assay which, if validated, we expect to launch commercially by the middle of 2022. Our oncology tests are differentiated not only because of their breadth, but also because in many cases they are connected to clinical data, which allows us to account for the drugs the patient took historically, how they responded, and for which clinical trials they are actually eligible. We endeavor to not recommend drugs for which a patient has been previously prescribed in a prior line of therapy and failed, and not recommend clinical trials they are not eligible to participate in, based on the inclusion or exclusion criteria of the trial. The following table lists our current oncology test offerings:

Lab Tests	Launch Year	Description
Oncology tests		
Tempus|xT	2017	• Designed to detect actionable oncologic targets by sequencing tumor tissue samples • Typically associated with incidental germline testing for matched normal saliva or blood samples, when available • Fourth generation test that covers 648 genes at 500x coverage spanning approximately 3.6 Mb of genomic space • Includes full TCR, BCR, and HLA typing for immuno-oncology, or IO, signatures • Offered with full transcriptomic profiling at 50 million paired end reads • Detects TMB, MSI, and fusions • The test has a 10-day quoted turnaround time. • In our analytical validation, we demonstrated sensitivities >98% for SNVs, >92% for rearrangements / fusions, >92% for CNVs and indels, and 99.9% for MSI. • Submitted pre-market approval, or PMA, to the FDA in March 2021 for a variation (xT-Onco) based in substantial part on a recent version of the xT assay

Lab Tests	Launch Year	Description
Tempus|xE	2018	• A whole exome cancer assay designed to identify actionable oncologic variants as well as neoantigens across the exome from tissue samples, thus enabling IO applications • Run at 500x coverage for approximately 650 of the most significant onco-driving mutations and 250x depth of coverage for more than 19,000 genes on the panel • Offered with full transcriptomic profiling at 50 million paired end reads. Includes full TCR, BCR, and HLA typing for immuno-oncology, or IO, signatures • Detects TMB, MSI, and fusions
Tempus|xF	2018	• Next-generation liquid biopsy assay covering 105 genes at approximately 20,000x coverage from peripheral blood samples for solid tumors • Typically used for oncogenic and resistance mutations that can be detected in cell free DNA, or cfDNA, from a peripheral blood draw • Currently validating an updated version of assay which covers approximately 525 genes, including bTMB, MSI, additional fusions and CNVs • In our analytical validation, for 0.5% VAF and 30ng of DNA, we demonstrated >99.9% sensitivity for SNVs, 98.8% for indels, >99.9% for CNVs, and 97.4% for rearrangements and fusions. xF also demonstrated 100% sensitivity concordance with Roche AVENIO ctDNA Expanded Kit for indels, CNVs, and rearrangements. We also demonstrated >99.9% specificity for SNVs, indels, and fusions, and 96.2% specificity for CNVs
Tempus|xG	2021	• 52 gene inherited cancer germline panel run off whole exome platform at 75x depth of coverage • Tests hereditary predisposition across common and well-described cancer syndromes such as breast, ovarian, prostate cancer (*BRCA1, BRCA2*), pancreatic cancer (*CDKN2A, PALB2*), colorectal cancer (*APC, BMPR1A*), and Lynch Syndrome (*MLH1, MSH2, MSH6, PMS2, EPCAM*) • Typically used in patients with a personal and / or family history suggestive of hereditary predisposition to cancer and can guide future diagnostic decisions

We are also currently developing xM, a low pass whole genome + methylation for monitoring for cancer recurrence and minimal residual disease.

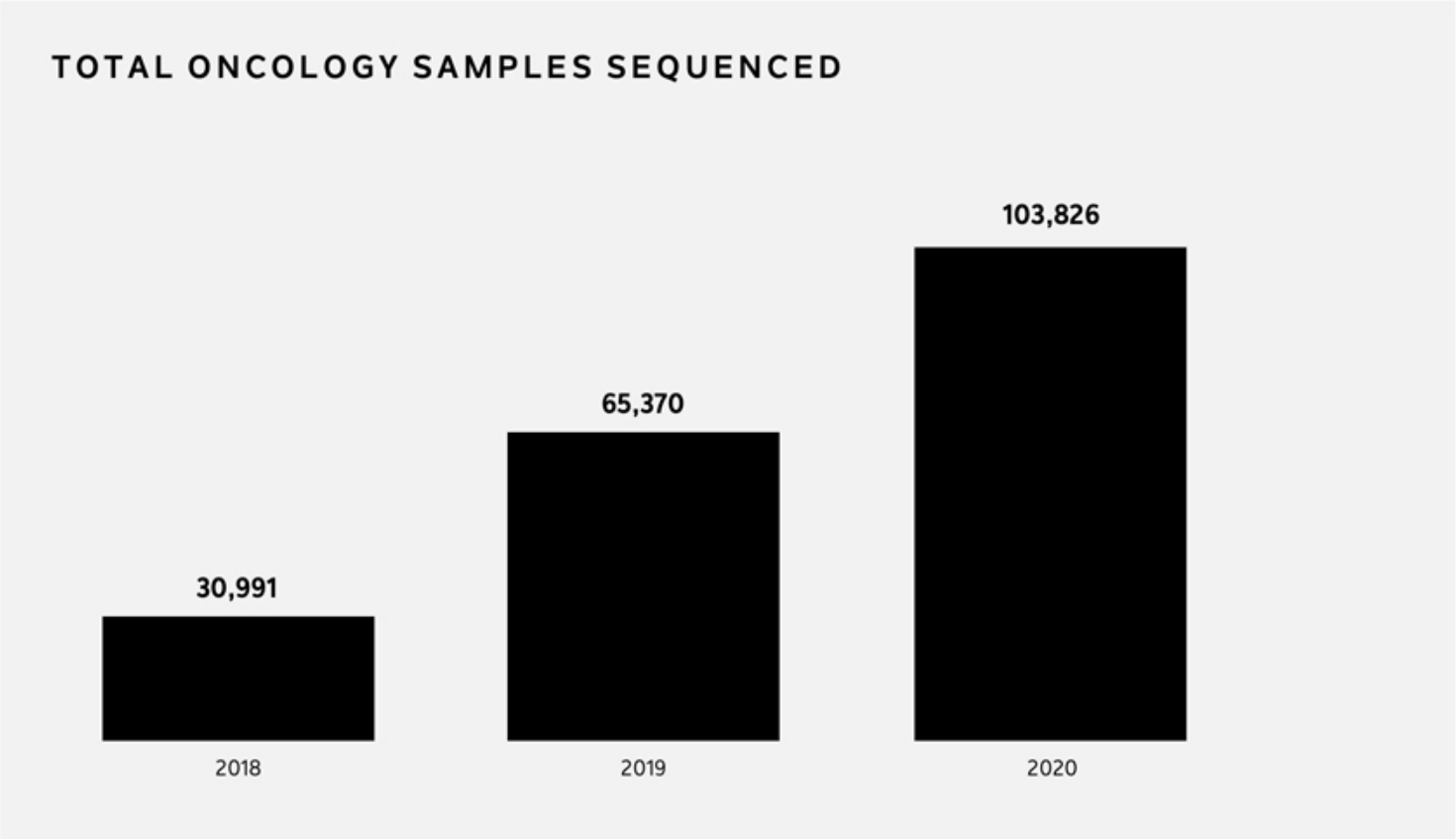
We believe incorporating clinical data in our diagnostic tests has widespread benefits. For example, combining clinical and molecular data resulted in improved therapy matching for patients in a study that we conducted, the results of which were published in Nature Bio in September 2019. In that study, using our sequencing results and matched clinical data from 500 patient samples across a range of tumor types, we observed that 96% of patients could be matched to at least one clinical trial. Approximately 77% of patients were matched to at least one clinical trial based on a gene variant. Of the patients who were not matched to a biomarker-based clinical trial, 19.4% were matched to at least one disease-based clinical trial from clinical data alone.



The results of the Nature Bio study indicated that paired tumor-normal DNA-seq and RNA profiling of patient cancer biopsies yielded high match rates to targeted therapies and clinical trials, and also underscored the value of integrating and contextualizing clinical and molecular data to provide physicians with distilled information regarding their patients' disease and potentially actionable characteristics. In sum, our Platform demonstrated an ability to help maximize personalized therapeutic options for a broader proportion of patients with cancer, which typically cannot be attained through smaller tumor-only DNA-seq panels.

In addition, in a paper we published in Nature Precision Oncology in July 2021, we highlighted the benefits of performing both solid tumor and liquid biopsy profiling. We observed that the concordance of the results of tissue sequencing and liquid testing, even when concurrently profiled, was approximately 70% at most, with both liquid testing and tissue sequencing missing a selected number of potentially actionable mutations. Yet when both are performed, as Tempus often does, the coverage of potentially actionable mutations increases.

We believe the market is recognizing the value of our products and their benefits, as they relate to sequencing both somatic and germline variants, running both solid tumor and liquid biopsies, broadly sequencing RNA in addition to DNA, making available raw files and structured clinical data, and matching the results to clinical data for the patient sequenced. As a result, our clinical volume in oncology rose from approximately 31,000 samples sequenced in 2018 to approximately 104,000 in 2020, and approximately 112,408 in the first nine months of 2021.



Our Neuropsychology Tests

We entered neuropsychology in 2019. We currently offer our proprietary nP assay for pharmacogenomic testing for patients with psychiatric conditions, such as depression, general anxiety disorder, bipolar disorder, and other relevant diagnoses. Despite the growing prevalence of depression and anxiety, their treatment remains largely the same as it has been for decades. Today, there are dozens of antidepressants that are often prescribed based on trial and error, where psychiatrists alter the dose and class of medications when one fails to work. The difficulties in prescribing medications leads many patients to take the wrong medications, in the wrong dose. Emerging evidence demonstrates that there are molecular mechanisms that suggest one drug, or class of drugs, may work better than another based on the genetic profile of the patient, and our assay is designed to elucidate these differences. The following table describes our nP assay.

Neuropsychology Test		
Tempus|nP	2019	• Pharmacogenomic profiling for patients with psychiatric conditions; primarily used for depression • Covers 13 validated genes and approximately 90 variants (e.g., CYP2D6) • Run off whole exome platform at 50x depth of coverage, with an average depth of coverage of approximately 1050x for clinically reported variants • Uses matrix-assisted laser desorption ionization-time of flight (MALDI-TOF) mass spectrometry to analyze approximately 90 pharmacogenetic variants and cover the exonic regions of approximately 20,000 genes at an average coverage of 50X, with an average depth of coverage of approximately 1050x for clinically reported variants

In an effort to bring AI to this field, we are not only performing pharmacogenomic profiling, we also regularly collect two additional data modalities: (i) time on therapy data from the patient's EHR (or directly from the ordering physician), and (ii) patient reported outcome, or PRO, data through our TempusPRO mobile application.

TempusPRO is our patient-facing mobile application that collects PRO measurements on a longitudinal basis. We are also capturing passive lifestyle measurements through mobile sensory devices, such as daily steps and minutes spent exercising. These measurements serve as a quantitative, unbiased backbone to the more qualitative and subjective measures that are commonplace in psychiatry. As we continue to advance the field of psychiatric medicine, we believe our Platform is well suited to extend to additional neurological conditions beyond depression, anxiety, and bipolar disorder, including Alzheimer's disease/dementia, epilepsy, ALS, multiple sclerosis, and others.

Our Infectious Disease Tests

We expanded into infectious diseases in 2020 due to the growing focus from healthcare providers and pharmaceutical companies on better understanding, diagnosing, and treating infectious diseases. Our strategy in infectious diseases is to offer a suite of tests that enable a better understanding of infectious disease, to use the data we collect while running tests to contribute to our Platform, and ultimately to make infectious disease tests intelligent over time.

COVID-19 heightened our collective awareness of how we might use our Platform to combat viruses and other pathogens. We believe there is a need in infectious disease for a more data-driven approach to diagnosis, therapy recommendation, and drug development. For example, there is a limited understanding of why some patients have minimal reactions to viruses and others become ill, why certain patients respond to pathogens and corresponding therapeutics differently, and why some patients have severe adverse reactions to certain drugs while others do not. Collecting sufficient data that provides a more complete picture of the pathogen could result in a better understanding of the disease and improve clinical decisions and therapeutic development. Furthermore, the growing problem of antimicrobial resistance might be addressable with data that helps facilitate a better understanding of pathogens and effective therapies.

We capitalized on the demand for COVID-19 testing to build our database by launching PCR and NGS tests for COVID-19. Our laboratory testing infrastructure and our relationships with a broad customer base enabled us to rapidly scale operations and deliver approximately 2.3 million COVID-19 clinical tests through September 30, 2021. We entered into clinical testing agreements with various clients, including pharmacies, urgent care centers, state departments of health, primary care providers, universities and schools, and corporate clients. In addition, as part of our multimodal data collection efforts, we launched a patient facing mobile application to return results to users and create a portal through which they could elect to contribute their clinical data to Tempus for research purposes.

As COVID-19 testing has materially decreased in the United States in light of the broadly distributed vaccines and changes in CDC guidance as to whom should be tested, we have shifted resources away from COVID-19 testing and do not expect levels of COVID-19 testing to be material to our business going forward. As such, we are focusing our efforts on other infectious diseases areas and on broader respiratory pathogen testing.

Data

Our Data product line facilitates drug discovery and development for pharmaceutical and biotechnology companies through two primary products: Insights and Therapies. We also maintain a growing tumor-derived biological modeling (or organoid) laboratory, which allows us to provide modeling and screening services to our pharmaceutical and biotech clients.

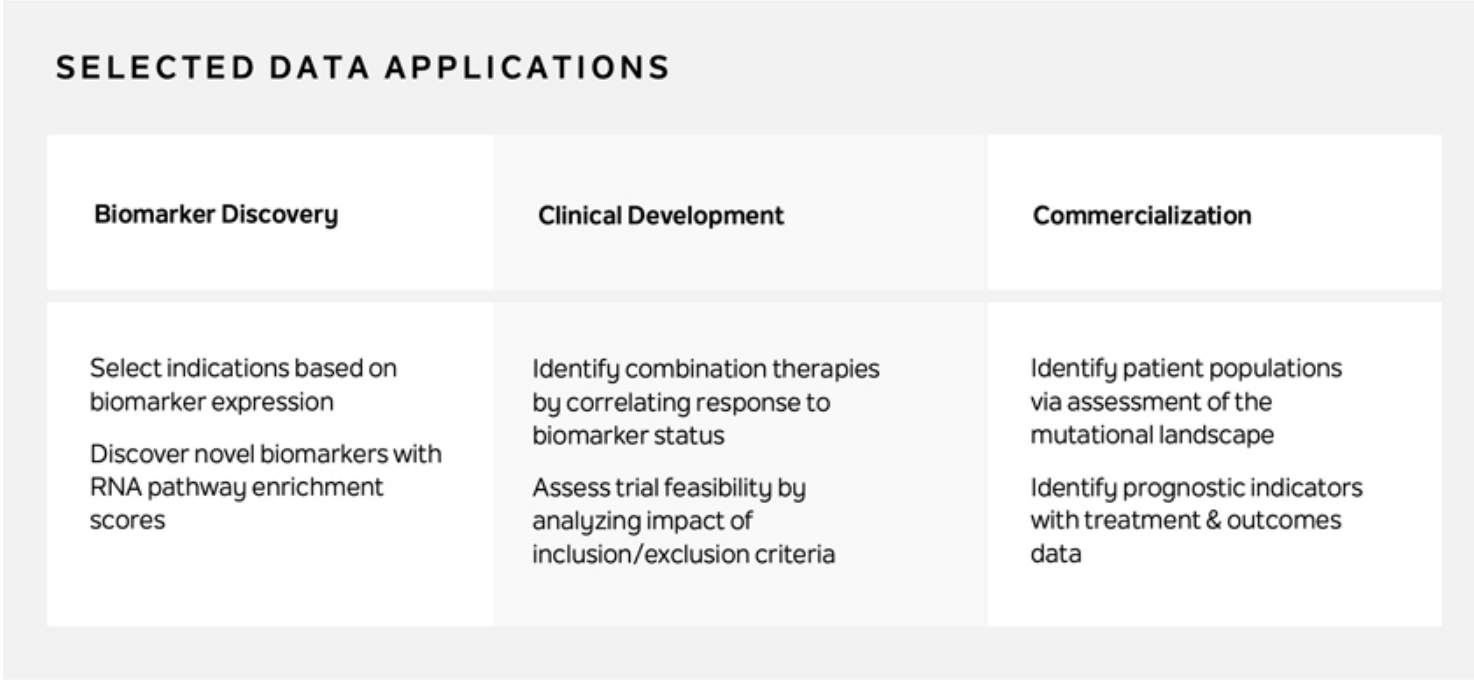
Insights

Historically, the primary means for pharmaceutical and biotechnology companies to build a dataset for drug discovery and development was to run a preclinical study or clinical trial, and to leverage limited datasets such as medical claims data. We believe Tempus is changing the existing paradigm. We launched our Insights product to allow researchers to access large amounts of multimodal healthcare data that historically did not exist at scale in a single consolidated database. We have amassed a large connected dataset, which we organize in near real time across multiple modalities and multiple disease areas, allowing us to work with pharmaceutical and biotechnology companies broadly, from early-state research and development through commercialization.

For our Insights offering, we license libraries of linked, de-identified clinical, molecular, and imaging data, and provide a suite of analytic and cloud-and-compute tools for discovery, research, development, and other commercial purposes. Our primary customers are pharmaceutical and biotechnology companies. These customers either pay us on a per file basis or through multi-year data licensing agreements to use our de-identified patient database. In 2020, we worked with 15 of the 20 largest public pharmaceutical companies based on 2020 revenue and, as of September 30, 2021, we have signed contracts with a remaining total contract value, or Remaining TCV, of $184 million (which includes all products and services provided to life sciences companies). We expect to deliver a majority of this contract value over the next several years.

As of September 30, 2021, Remaining TCV is equal to the total potential value of signed contracts and assumes the exercise of all contract options, all discretionary opt-ins, and no early termination. It excludes any revenue recognized to date on these contracts or any future adjustments made to the contractual value as a result of amendments or terminations. Many of our agreements contain termination clauses, including the ability of our counterparty to terminate for convenience, and there can be no guarantee that contracts will not be terminated, that contractual options and discretionary opt-ins will be exercised, or that we will achieve the full amount of potential revenue represented by these contracts. Remaining TCV is not a calculation of revenue and should be viewed independently of revenue and deferred revenue, as Remaining TCV is not intended to be combined with or replace these items. Similarly, Remaining TCV is not a forecast of future revenue, which can be impacted by, among other things, contract start and end dates and the exercise of contractual options. Moreover, Remaining TCV may differ from similarly titled metrics presented by other companies and may not be comparable to such other metrics.

We believe we offer a unique value proposition to the industry as a cost-effective source of high-quality and comprehensive data on targeted patient populations. Our data is useful across the oncology drug development value chain, and our biotechnology and pharmaceutical customers are using the data to inform decisions in a variety of discovery and development applications, selected below:



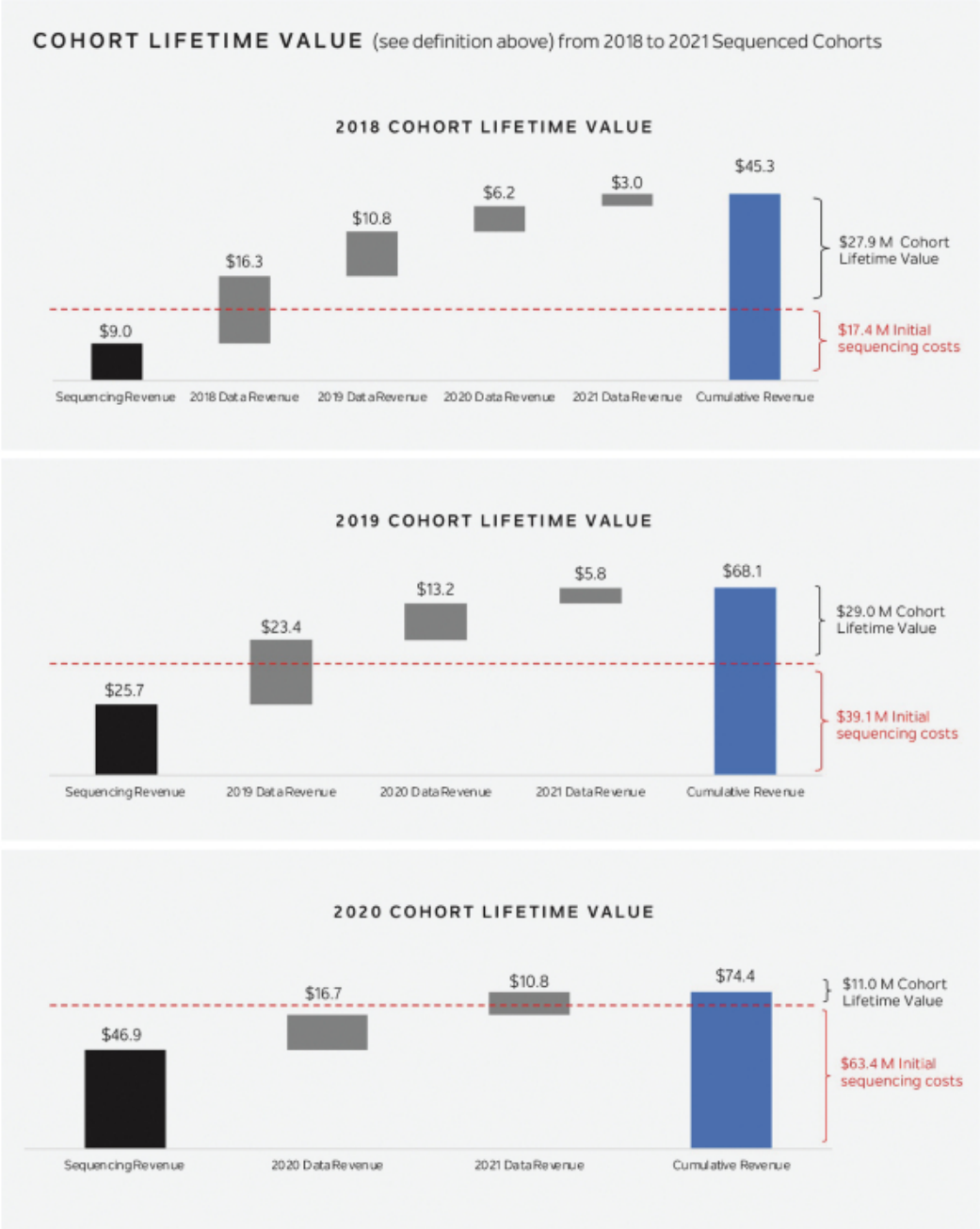
To illustrate an example of how our data can be applied, in December, 2020, we published a peer-reviewed study in ScienceDirect in which we analyzed longitudinal real-world data, or RWD, from a large cohort of patients with breast cancer (n = 4,000) to test whether results were consistent with previous clinical studies and to demonstrate the real-world evidence validity of our database. We also evaluated whole-transcriptome sequencing as a complementary diagnostic tool (n = 400). The conclusions of the study demonstrated that our database mirrored the overall population of patients with breast cancer in the United States, and that near real-time, RWD analyses are feasible in a large, highly heterogeneous database. Furthermore, the study demonstrated that molecular data may aid deficiencies and discrepancies observed from breast cancer clinical RWD.

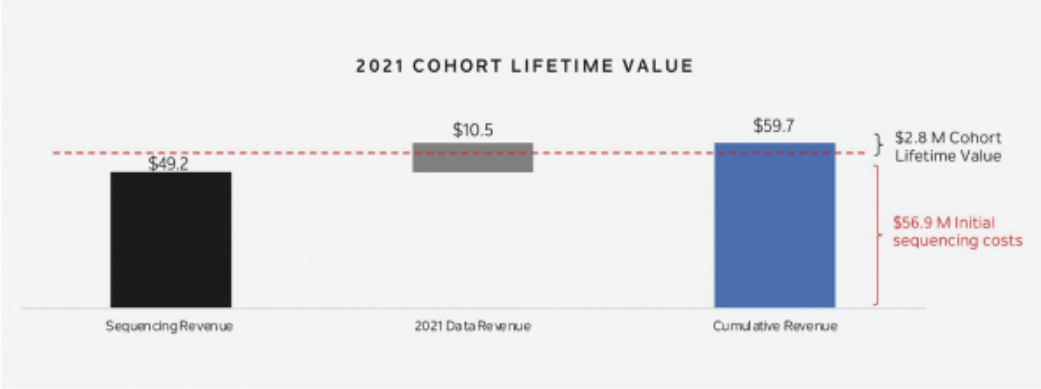
Because many of our data profiles regularly update with clinical outcome and response data over time, the utility of a single de-identified record increases over time. As such, the files we generate by sequencing a patient, when connected to clinical data, are valuable to pharmaceutical and biotechnology companies, as they not only allow users to gain molecular insight into what is happening among cohorts of patients, but they also allow users to track those cohorts over time. As a result, our files behave as if they have a "lifetime value" that increases over time, in a manner similar to a content company where you pay to create content and then monetize the content over time as people subscribe to access the content.

To evaluate the revenue stream in our Data product line, we rely on "Cohort Lifetime Value." We define "Cohort Lifetime Value" as the cumulative revenue attributable to a specific cohort of de-identified records, including revenue derived both from the initial sequencing (Genomics) and licensing (Data and other), less the initial sequencing costs incurred to generate the data ultimately licensed. Sequencing revenue is a component of genomics revenue in our Consolidated Statement of Operations and differs from total genomics revenue due to other components, including COVID-19 PCR testing and other lab services unrelated to our data business. Data revenue is a component of data and other revenue and represents the revenues recognized in each period attributable to each cohort. Initial sequencing costs are a component of cost of revenue, genomics in our Consolidated Statement of Operations and include laboratory personnel compensation and benefits, as well as the cost of laboratory supplies and consumables, depreciation of laboratory equipment, shipping costs, and certain allocated overhead expenses. Total initial sequencing costs differ from total cost of revenues, genomics due to other components, including costs associated with COVID-19 PCR testing and other lab services unrelated to our data business. Notably, "Cohort Lifetime Value" also does not include costs reported as cost of revenues, data and other in the Consolidated Statement of Operations. Cost of revenues, data and other were $6.3 million and $7.1 million for the years ended December 31, 2019 and 2020, respectively, and were $5.0 million and $8.0 million for the nine months ended September 30, 2020 and 2021, respectively. These costs represent 18.5% and 19.6% of data and other revenue for the years ended December 31, 2019 and 2020, respectively, and 36.1% and 26.5% for the nine months ended September 30, 2020 and 2021, respectively.

In 2018, the first full year that we operated a laboratory, we sequenced samples from approximately 7,500 patients. From that 2018 cohort of sequenced patients, through September 30, 2021, we generated $45.3 million of combined revenue from sequencing, data licensing of de-identified data derived from those records, and clinical trials matching, which is approximately 5.0 times the revenue we received from sequencing at the onset. The total cost to sequence the 2018 cohort was $17.4 million, of which $9.0 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.3 million of data revenue from that cohort in 2018, finishing the year with a "Cohort Lifetime Value" of $7.9 million. As more customers licensed de-identified records from the 2018 cohort in subsequent years, we generated additional revenue in 2019, 2020 and 2021 from the 2018 cohort, and as of September 30, 2021, the 2018 "Cohort Lifetime Value" for this cohort was $27.9 million. We maintained a similar trend for the 2019 cohort through its first two years in existence. The total cost to sequence the 2019 cohort was $39.1 million, of which $25.7 million was covered by the reimbursement for the corresponding sequencing tests. We then generated $23.4 million of data revenue from that cohort in 2019, finishing the year with a "Cohort Lifetime Value" of $10.0 million. We generated additional data revenue in 2020 and 2021, and as of September 30, 2021, the 2019 "Cohort Lifetime Value" was $29.0 million. The total cost to sequence the 2020 cohort was $63.4 million, of which $46.9 million was covered by reimbursement for the corresponding sequencing tests. We then generated $16.7 million of data revenue from that cohort in 2020, finishing the year with a "Cohort Lifetime Value" of $0.2 million. We generated additional data revenue in 2021, and as of September 30, 2021, the 2020 "Cohort Lifetime Value" was $11.0 million.

"Cohort Lifetime Value" for the 2018, 2019, 2020 and 2021 data cohorts is illustrated in the graphs below.



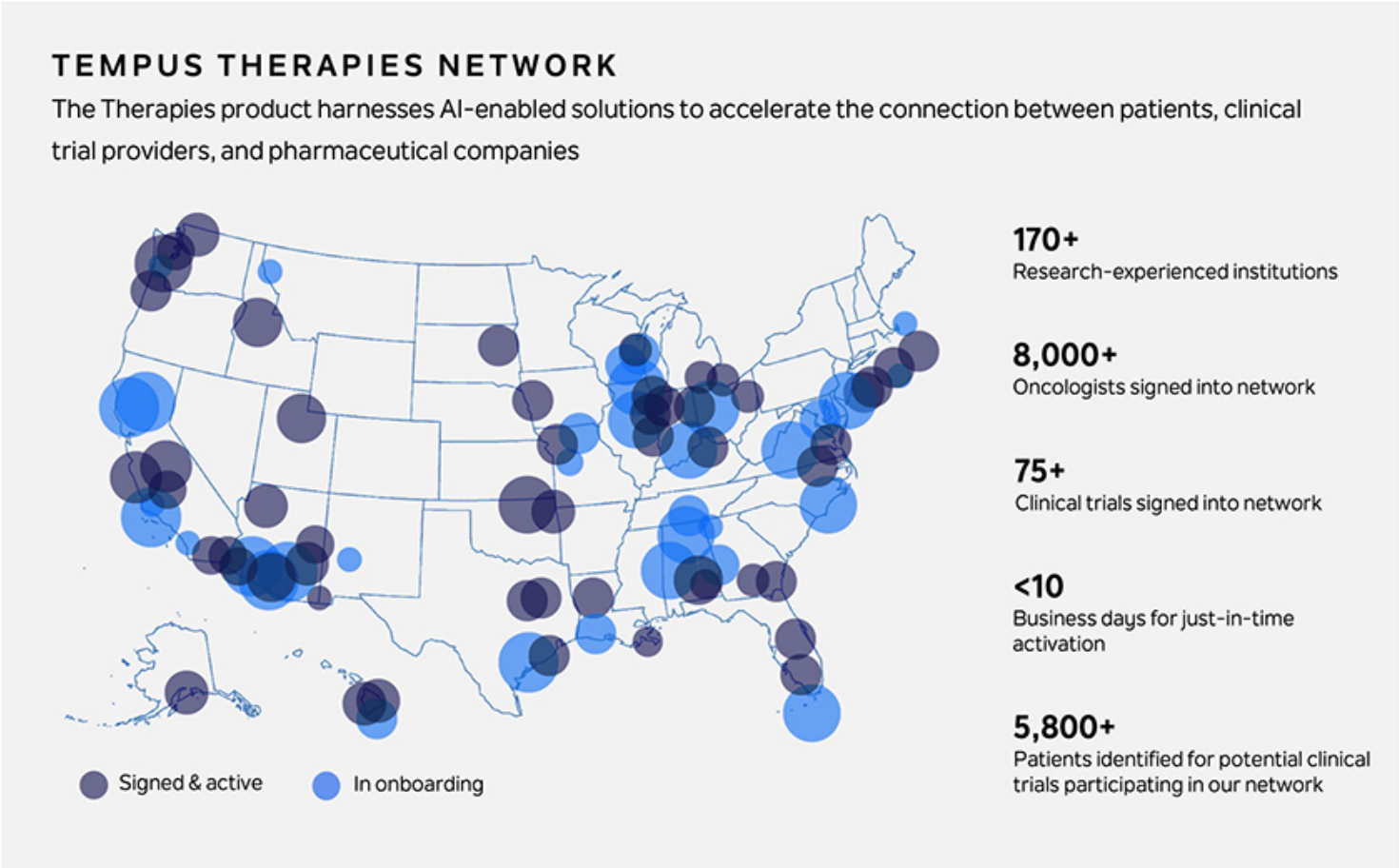


Therapies

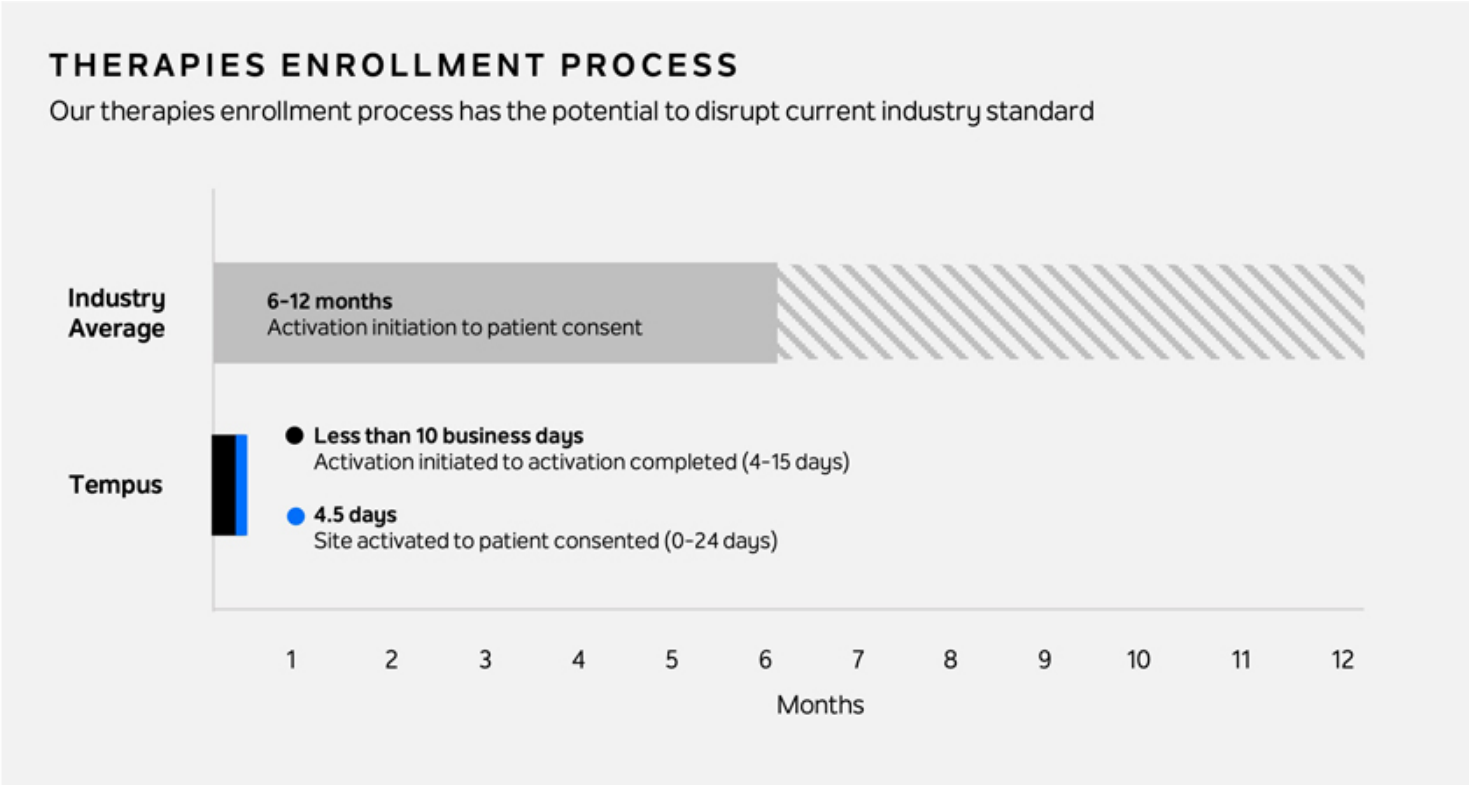
Therapies is our second offering within our Data product line and leverages our broad network of oncologists to provide clinical trial matching services for pharmaceutical companies trying to reach hard-to-find and underserved patient populations. Our clinical trial matching product is built on top of our near real-time data feeds and harnesses AI to accelerate the connection between patients, clinical trial providers, and clinical trial sponsors. We empower both oncologists to help patients find clinical trials and pharmaceutical companies to populate their trials. We generate revenue from both matching a patient to the trial (through notices we send to physicians alerting them of potential trials that are a fit for their patients), and from the patient actually enrolling in the trial.

Our Therapies product is a bold initiative that we do not believe has been implemented at scale in the United States by any other organization. We are endeavoring to create a just-in-time network across a wide variety of academic medical centers and community providers, that can support hundreds or even thousands of trials, in which the administrative and logistical foundation is uniform across the entire network. This network allows us to identify a patient that is a match for a targeted trial and get that patient enrolled within days, even if the trial was not previously open at the hospital (assuming consent of the trial sponsor), anywhere in the United States. Prior to Tempus, we believe it would have been virtually impossible to even attempt to build this type of just-in-time program across oncology, as the required ingredients for success are unique to our Platform, namely: (i) a large genomic sequencing business that is widely adopted and allows for the identification of patients that are molecular matches to trials; (ii) the ability to structure clinical data for those patients in near real time to filter for inclusion and exclusion criteria; (iii) direct pipelines allowing data to be transferred to and from the laboratory and provider; and (iv) an analytic engine able to stratify patients and follow each unique patient journey ensuring that patients actually enroll in the studies.

Our clinical trial matching product is called the TIME Trial® program, which we launched in June of 2019. Since its introduction, this program has gained significant traction and as of November 1, 2021, more than 170 provider networks and research institutions, representing more than 8,100 oncologists, have signed up to join the program. As of November 1, 2021, more than 1,670 oncologists were fully enrolled, more than 75 clinical trials were onboarded and active, and more than 5,800 patients were identified for potential enrollment into clinical trials in our network.

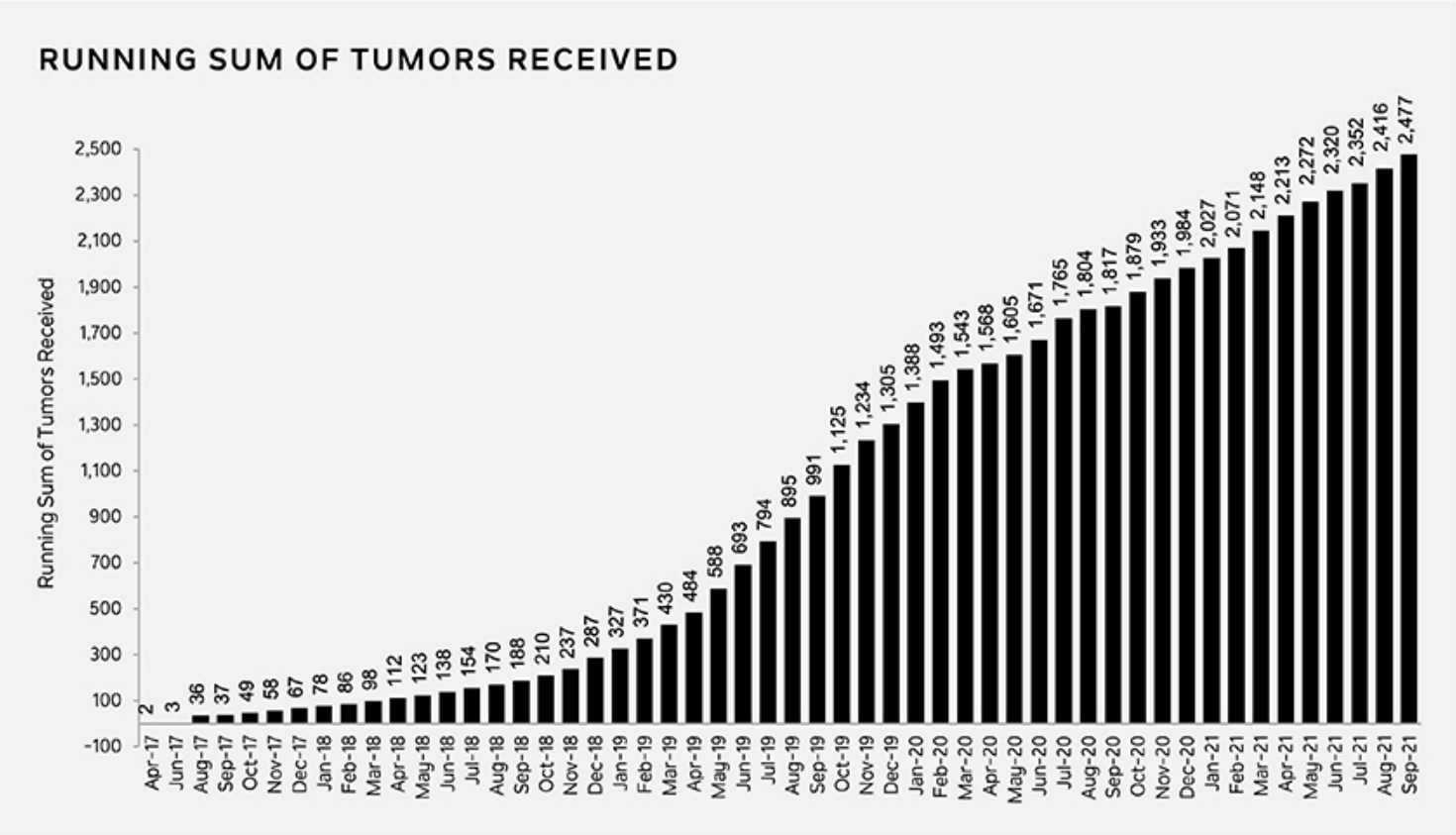


One of the primary benefits of our Therapies product is our ability to facilitate the initiation of a clinical trial in a new location in a short amount of time. Third-party research suggests that it takes 6-12 months, on average, to initiate a new trial site for an ongoing clinical trial in the United States. We have been able to substantially streamline this process by leveraging technology and introducing a standard methodology, with activation of new sites through our Therapies product taking 8.8 days on average between April 2020 and August 2021. A comparison of our average time from site initiation to patient consent with the industry average is below:



Tumor Derived Biological Modeling—Organoids

In addition to our efforts to collect vast amounts of phenotypic, morphologic, and molecular data, we have built a large, biological modeling lab that allows us to test various theories in vitro through our large repository of tumor-derived organoids, or Organoids, and to perform drug screening for our various life sciences clients. Many of our Organoids are fully characterized and sequenced using our NGS panels, providing genomic and transcriptomic data for our models, allowing us to explore various hypotheses that enhance our data. Examples of hypotheses we are able to test in our Organoid lab include: (i) which therapeutics are most effective; (ii) differential levels of drug response by tumor type, genomic profile, or other targeted attributes; (iii) discovery of RNA signatures; (iv) attributes of responders and non-responders; and (v) response rates in therapy-resistant models. We work with numerous collaborators including biotechnology companies, pharmaceutical companies, academic institutions, and government labs. Since 2017, we have scaled our sample collection efforts materially, as shown in the graphic below.



These samples cover a wide range of cancer subtypes, allowing us to work on comprehensive drug screening applications across multiple epithelial based tumor types, such as breast, lung, colorectal, and pancreatic. One of the goals of this screening is to predict a series of therapeutic responses in our Organoids and then test whether or not patients are experiencing similar responses in the clinical setting.

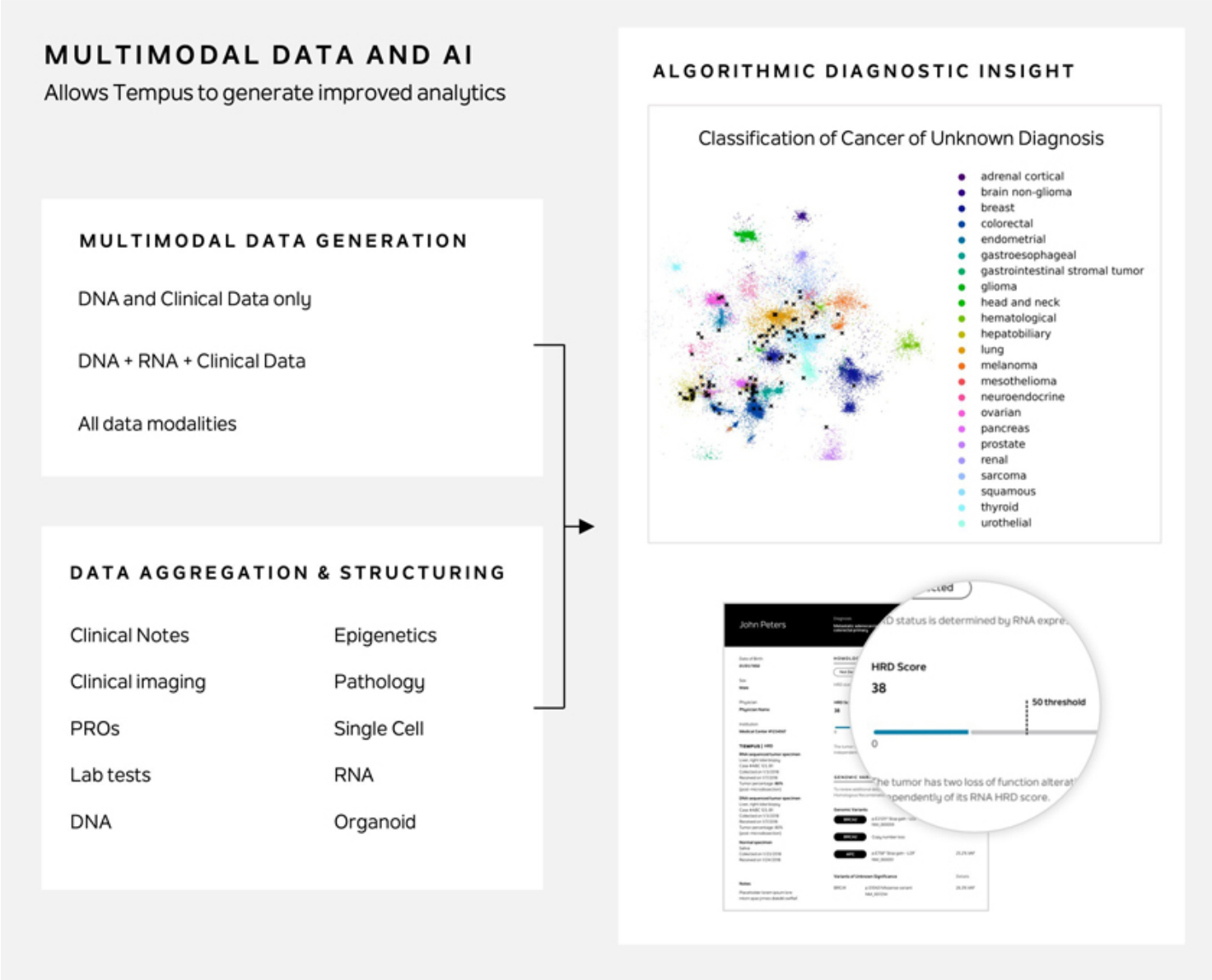
We view biological models as another form of data. Our efforts to grow Organoids are part of our overall strategy to leverage the best of systems biology along with the best of AI to collect the requisite data needed to produce answers broadly throughout healthcare.

Algos

The vastness of our dataset creates an opportunity to use data to algorithmically diagnose and treat patients. Our newest product line, Algos, is focused on developing diagnostics that are algorithmic in nature. We use data the same way legacy diagnostic companies use chemistry in the battle against disease, seeking to improve patient care by learning from all the patients who have come before, and tailoring test results based on each patient's unique profile. Our Algos can be run without the need for additional chemistry or biology; they are simply 0's

and 1's running on digitized data derived from a laboratory test. Algos leverage AI-driven insights to produce clinically validated and actionable information for physicians. For example, algorithmic diagnostics that integrate multimodal data can be used to create a more accurate risk profile for patients, leading to improved outcomes and reduced cost. Our repository of multimodal data allows us to find associations and patterns that are largely invisible through a single data modality, but readily apparent when combined. In addition, we find the strength of our analytic models, and our ability to deploy them clinically, improves as we add additional datasets.

The example diagram below represents how algorithm-based diagnostics work and the value of multimodal data as it relates to improved analytics:



Algorithm-based diagnostics are already being used in healthcare, but are not widespread. For example, algorithms exist today that leverage EHR data and lab results to predict early onset of hospital-borne infections, but these tools are still in the very early stages of adoption and validation. While Algos today represent only a small proportion of the diagnostics market, we expect their adoption to grow substantially in the future. We believe Algos represent a significant long-term opportunity that may be substantially larger than our other existing product lines. We believe our ability to launch Algos at scale is a key differentiator of our Platform.

Our Algos Portfolio

We believe our robust, multimodal dataset creates an opportunity for Algos that otherwise would not be possible and allows us to build AI models at scale, clinically validate them, and deploy the resulting Algos into clinical practice. As of September 30, 2021, we have two commercialized Algos, and we have approximately 24 more in various stages of development. Some Algos will likely yield little to no reimbursement until their clinical utility is established, and some may obtain reimbursement at prevailing rates for comparable tests. Through September 30, 2021 our Algos have been ordered approximately 9,400 times and have generated approximately $100 per test on average. Eventually, we would like to launch hundreds, if not thousands, of Algos. The following table represents our current Algos products, as well as our nearer term Algos in the pipeline:

Algo	Launch Year	Description
Oncology		
Tumor Origin ("TO") Test	2021	• Predicts the site of origin for cancer patients whose primary tumor site is unknown using tumor RNA expression results. • Intended use of the TO test is for cancers of unknown primary, or CUPs, and may help clinicians make more informed decisions where other clinical information like imaging and immunohistochemistry results do not provide a definitive diagnosis. • Uses information from analysis of nucleic acids by NGS performed as part of a separately ordered genomic or transcriptomic test. • Built using a large internal database of more than 20,000 annotated tumors with transcriptomic molecular data. By comparing the molecular profile (transcriptome) of the patient's cancer with profiles of other cancers in our database, we can help pinpoint the origin of the patient's cancer, potentially helping to inform the course of therapy. • For the nine months ended September 30, 2021 ordered on approximately 9% of our solid tumor profiles.
Homologous Recombination Deficiency ("HRD") Test	2020	• A DNA-based algorithmic test that helps identify if a patient has HRD, providing a comprehensive view into a patient's ability to repair double-stranded DNA breaks. • HRD status can be used to identify patients who may be sensitive to PARP inhibitors and/or platinum-based chemotherapy. • Takes into account results from our solid tumor profiling, giving a full view into commonly mutated genes in the HR-pathway, along with a genome wide l LOH score, giving a clinician a complete view of HRD status. • Can be ordered across all major cancer subtypes and does not require additional tissue from the patient. • Currently incorporating RNA into a second version of the algorithm, which is intended to improve prediction

Algo	Launch Year	Description
		accuracy and increase the percentage of tumors that the algorithm can be run on. • For the nine months ended September 30, 2021, ordered on approximately 20% of all solid tumor orders.
Algo	**Launch Year**	**Description**
Cardiology		
Atrial Fibrillation Test	2022 expected launch	• We have developed an algorithm designed to predict AFib from a normal ECG for certain populations. • About 3.5% of patients who receive ECGs appear not to have AFib but will develop AFib, acute coronary syndrome, or similar condition within one year. This Algo is designed to predict major cardiac trauma and stroke risk from these normal ECG results. • The Tempus AFib test received FDA breakthrough designation in March 2021 for patients 40 years of age and older, without pre-existing or concurrent AFib or atrial flutter, and who are at elevated risk of stroke based on a commonly used clinical stroke risk assessment tool (i.e., $CHA_{2DS2\text{-}VASc}$ score of ≥4). • We are also advancing Algos that are designed to predict aortic stenosis, and we are working on other disease areas within cardiology, such as low ejection fraction and familial hypercholesterolemia.

Our Algos Collaboration with Geisinger

Heart disease is the leading cause of death in the United States. About 630,000 Americans die from heart disease annually, with 11.7% of American adults diagnosed with heart disease and millions of patients suffering from undiagnosed, life-threatening, yet highly treatable conditions such as AFib, cardiomyopathy, and valvular heart disease, to name a few. Tempus is working on solutions to find, diagnose, and help treat these patients earlier in order to improve patient outcomes, using routinely generated clinical data, such as data from a 12-lead ECG, a widely used and easily acquired medical test that measures the electrical activity of the heart, to screen patients who might be at high risk and help navigate them to the appropriate interventional therapy.

Our first cardiology products in development are a suite of algorithms that assess an individual's risk of undiagnosed disease from an ECG. The FDA recently granted Tempus breakthrough status for our first ECG software device, which is designed to identify patients at high risk of developing AFib in certain populations (patients 40 years of age and older, without pre-existing or concurrent AFib or atrial flutter, and who are at elevated risk of stroke based on a commonly used clinical stroke risk assessment tool (i.e., CHA_2DS_2-VASc score of ≥4)).

Our work in cardiology has been accelerated by a strategic collaboration with a multidisciplinary cardiovascular research team at Geisinger that leverages 25 years of valuable EHR data. We hold a perpetual, royalty-bearing license from Geisinger to build algorithmic models and commercialize a de-identified dataset of approximately 3.2 million ECGs, across approximately 600,000 patients, with decades of longitudinal clinical data, including outcome and response data.

In parallel, we are working to build out a network of healthcare systems and clinical providers to deploy these clinical algorithms at scale. We believe we are well positioned to build such a network by leveraging the existing technical integrations in place through our current product lines in oncology and neurology.

Customer Case Studies: Aligning the Interests of Key Stakeholders

We designed our Platform to help unlock data from existing silos and facilitate data exchanges across healthcare providers. We believe our technological advancements, deep relationships with providers, and rapid commercial adoption demonstrate the value our Platform creates for the healthcare ecosystem. We benefit from a flywheel effect; the more data we collect, the smarter our tests become, the more applications we launch, the more physicians join our network, further growing our database, making our tests smarter for clinicians and our database more valuable for researchers.

We describe below select case studies that demonstrate the value we deliver to the healthcare ecosystem, with the ultimate goal of helping patients and improving clinical outcomes.

Healthcare Provider and Patient Case Study

Our Platform is designed to help raise the standard of care in precision medicine by enabling physicians to make data-driven decisions. Physicians use our Intelligent Diagnostics, software solutions, and analytic support tools to bring clinically actionable insights to genetic analysis. We see the power of our Platform both in its widespread adoption and, most importantly, the impact it has on patients.

A 50-year old female patient was diagnosed with metastatic gastric cancer. The average life expectancy for someone with stage IV gastric cancer is less than one year, with approximately 5% of patients surviving for five years. The patient's tumor harbored a mutation in a gene indicating that Epstein-Barr virus, or EBV, was involved in the pathogenesis. The tumor mutational burden was not high, but the tumor EBV made the patient a candidate for immunotherapy. Tempus' NGS tests were used to evaluate the patient's suitability for a cancer vaccine clinical trial, and two distinct aspects of Tempus' tests led the treating physician to pursue new treatment recommendations. First, Tempus sequencing used paired tumor and normal specimens to make more accurate somatic mutation calls. Thus, Tempus' test identified neoantigens that could be targeted by the immune system, while excluding germline variants of unknown significance that the immune system would not recognize as foreign. Second, Tempus used whole transcriptome RNA sequencing data to evaluate whether the neoantigens detected from the patient's DNA were expressed in the cell. Ultimately, after evaluation for the vaccine trial, the treating physician recommended checkpoint inhibitor immunotherapy. While the patient responded well to immunotherapy, eventually side effects caused her to seek other treatment modalities. Additional testing identified a mutation downstream, which was used to match the patient into a clinical trial for an ERK inhibitor. Two other mutations indicating possible response to off-label therapies were also found, and the treating physician would be able to evaluate those therapies in the event of treatment failure. This patient was originally sequenced by Tempus in November 2018 and as of September 30, 2021 is alive and well.

Pharmaceutical and Biotechnology Customers: Insights Case Study

We work with pharmaceutical and biotechnology companies in a number of ways, including (i) licensing de-identified data libraries on a one-time or limited duration basis; (ii) licensing de-identified data as part of a multi-year subscription; (iii) performing sequencing services for clinical trials on a bespoke basis or as part of a companion diagnostic, or CDx, claim; (iv) growing patient derived biological models (Organoids) to allow for high-throughput drug screening; and (v) helping companies identify and enroll patients for their clinical trials. Some companies may leverage one of our products, while our relationships with others are more comprehensive.

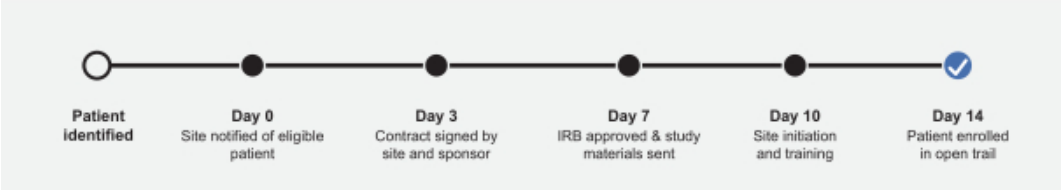
Genmab is an example of a pharmaceutical company that has used many of our products and services. We signed a strategic collaboration with Genmab to help identify novel molecular and immune targets in cancer indications of interest. One aspect of the collaboration is a shared interest in developing new treatments for patients with pancreatic cancer. Tempus and Genmab data scientists collaborated to explore multiple indications in an effort to validate biomarkers and accelerate research and development using Tempus' multimodal datasets. We analyzed de-identified data derived from over 2,000 pancreatic cancer patients with comprehensive DNA

sequencing, full transcriptomic sequencing, longitudinal EHR data, and digital pathology slides to fuel their discovery efforts. We believe comparable multimodal datasets of this depth and breadth have not previously been assembled for pancreatic cancer. Fueled with a unique and larger dataset, computational biologists and data scientists from both organizations identified for further assessment select subtype-specific surfaceome gene targets that were highly expressed in pancreatic cancer samples but lowly expressed in normal tissue. Ultimately, several hundred potential drug discovery targets were identified and are currently being assessed by Genmab using antibody databases, cell-type analyses, immune infiltration, and biological mechanism pathway analyses. The Genmab collaboration demonstrates how Tempus can work as a partner in the target identification and validation process and highlights the valuable insights that can be garnered using Tempus' data. With the shared goal to bring novel drugs to patients in need, Tempus is entitled to receive milestone and royalty payments for programs that advance through clinical development under this collaboration.

Pharmaceutical and Biotechnology Customers: Therapies Case Study

We have created a dynamic marketplace for biopharmaceutical companies to leverage our data to identify eligible patients and activate appropriate sites to increase access to molecularly targeted clinical trials. We believe our offering is well suited for identifying patients for targeted trials. To detect specific mutations that may be the subject of a clinical trial, we offer solid tumor and liquid biopsy NGS panels that are able to detect specific molecular markers; however, we can also match patients tested through other sequencing companies via our direct EHR or clinical database integrations.

When we identify a patient who meets the criteria of a participating clinical trial at one of our TIME Trial® program sites, we inform the patient's treating physician of the trial and if the trial sponsor consents, we can rapidly activate the trial locally on-site. We have been able to substantially streamline the site activation process by leveraging technology and introducing a standard methodology, with Just-in-TIME activations taking 8.8 days on average between April 2020 and August 2021.



The TIME Trial® program has national coverage, including numerous underserved community oncology clinics, allowing us to reach cancer patients who previously did not have access to investigational therapies.

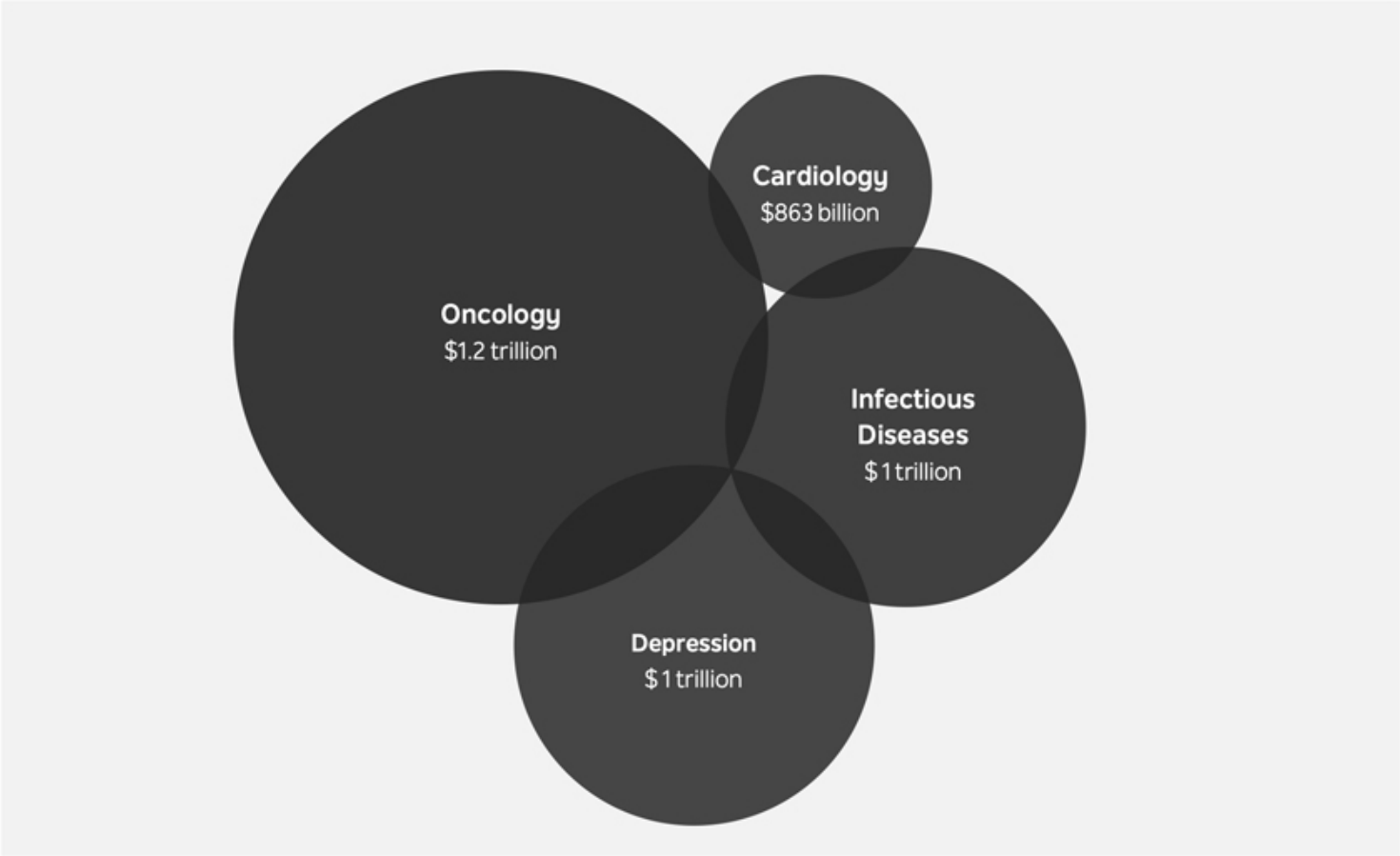
Sermonix is a powerful example of the potential for our Therapies product to expand access to clinical trials and identify hard-to-reach patients. Sermonix, a pharmaceutical company focused on women's oncology, opened a biomarker-driven trial and partnered with Tempus to identify ESR1-positive breast cancer patients. According to the Tempus database of de-identified patient data, ESR1 mutations develop in approximately 14% of all breast cancers. Before engaging Tempus, Sermonix targeted enrolling 24 patients in 18 months and estimated study completion in October 2022.

After Sermonix enrolled in the Tempus TIME Trial® program, we were able to screen and enroll the first patient in September 2020, within weeks of the trial opening. Within the first month, we activated five TIME Trial® sites before the contract research organization, or CRO, with whom Sermonix was working was able to activate its first site. Ultimately, Tempus helped Sermonix activate ten new trial sites through the TIME Trial® program in an average of ten business days for each site. By comparison, it took on average 230 days for the CRO to open each new site. Tempus enrolled 14 of the ultimately 29 patients in the study, and helped shorten the full enrollment time down to ten months.

Our Market Opportunity

We believe our Platform's impact on healthcare could be profound, and that quantifying our potential market opportunity is challenging, especially for opportunities like Algos that are in their infancy. Our Platform is particularly well suited when there exists both heterogeneous conditions that make up a diseased population and a variety of prescribed therapeutics or therapeutic pathways, often based on trial and error. When these conditions exist, we believe technology and AI have the potential to facilitate precision medicine through data associations that substantially reduce the guesswork associated with which drug to prescribe, in what amount, and in which order. We are currently focused on oncology, neuropsychology and specifically depression, cardiology and infectious diseases, in which there is over $4 trillion of economic burden according to publicly available sources.

Within these markets, our Platform addresses both the clinical diagnostic testing market as well as the market for therapeutic research and development. Our Genomics product line targets an addressable market opportunity for diagnostic testing services that we estimate at over $70 billion across oncology and neuropsychology. Our Data product line operates within a market in which life sciences companies spent an estimated $219 billion in 2020 on research and development according to Evaluate Pharma, and addresses needs within the $38 billion clinical trial services market, the $46 billion market for biomarker discovery, and the $29 billion market for "real world evidence", according to Mordor Intelligence and our internal estimates. We believe that the potential market opportunity for our Algos product line could be substantially larger than our other product lines combined.



Genomics Product Line Market Opportunity

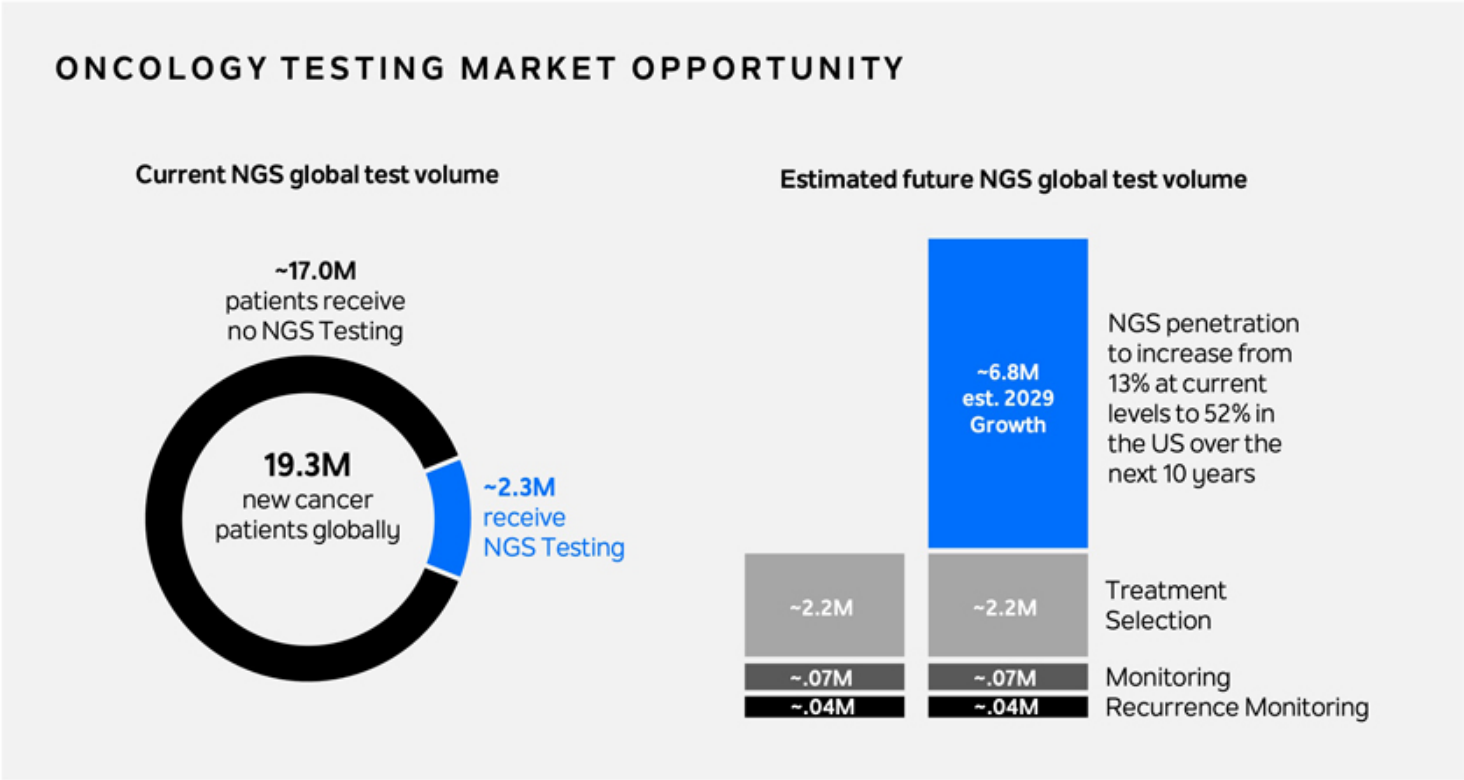
Our automated lab infrastructure is capable of a variety of testing modalities and applications, spanning both anatomic and molecular diagnostics. We believe this infrastructure will enable us to address a wide range of emerging testing applications. We are currently focused on both liquid and tissue molecular testing in oncology, as well as tests for neuropsychology and infectious disease. In oncology alone, the market for NGS sequencing is expected to grow substantially over the next several decades.

Oncology Testing Market Opportunity

At present, we offer three main assays in cancer, including solid tumor profiling, liquid biopsy, and inherited cancer risk screening, and expect to commercialize our fourth assay for cancer recurrence monitoring and measuring minimal residual disease in 2022. We believe our assays provide a comprehensive and holistic range of options for physicians and patients. Over time, we anticipate being able to address other emerging NGS oncology markets, such as early disease screening, as our most recent cancer recurrence and MRD assay (xM) is based on low pass whole genome plus methylation technology, an approach that other companies have used in early detection and disease monitoring.

We believe the oncology testing market is underpenetrated and represents an estimated $60 billion annual global market opportunity across the following testing applications on which we are focused.

Therapy selection: We address the market for therapy selection with our current tissue and liquid biopsy assay offerings and immunohistochemistry staining. We believe that NGS is increasingly becoming the standard of care to help physicians choose a therapy for their cancer patients across multiple cancer types. There were approximately 19.3 million patients estimated to be newly diagnosed with cancer globally in 2020 according to GLOBOCAN, and NGS was performed on only 2.3 million of these patients according to our estimates. Genomic markers are connected to FDA approved therapeutics for cancers including breast, cervical, cholangiocarcinoma, colorectal, skin, esophageal, stomach, head and neck, leukemia, certain other blood cancers, ovarian, prostate, sarcoma, melanoma, thyroid and urothelial. Moreover, there are additional FDA approved therapeutics that are pan-cancer in nature, for which the therapeutic agent may provide treatment options for patients with the identified targeted biomarker, no matter what type of cancer. In addition to newly diagnosed cancer patients, there is also the opportunity for NGS testing to profile patients participating in clinical trials. According to ClinicalTrials.gov, there are 107 immuno-oncology and 3,005 targeted oncology therapy programs ongoing with a total of 539,520 patients enrolled. Combined, we estimate that therapy selection accounted for 20 million tests globally in 2020 and believe that this will grow substantially as patients may be tested multiple times in the future to inform therapy. According to the National Cancer Institute, an estimated 1.8 million patients were diagnosed with new cancer in the United States in 2020.



Monitoring: We anticipate launching our liquid biopsy test for cancer recurrence monitoring and minimal residual disease in 2022. While this market opportunity is currently emerging, we anticipate that newly

diagnosed cancer patients would benefit from a test that could monitor for cancer recurrence following surgical resection or first line therapy as well as monitor for minimal residual disease (MRD) while on therapy. For those estimated 19.3 million newly diagnosed cancer patients globally in 2020 according to GLOBOCAN, we believe that multiple tests within the first year following treatment to monitor for recurrence and minimal residual disease could improve clinical outcomes and become the standard of care for many subtypes in the future. In addition, we believe that a test to monitor for recurrence over a longer time period would also benefit a subset of cancer survivors that are at high risk of recurrence. According to our estimates, a substantial number of cancer patients across all cancers will recur within their lifetime and we estimate a higher percentage are at high risk of recurrence. There were approximately 43.8 million cancer survivors in 2018 globally that were diagnosed within the five years previous to 2018 and there are approximately 17 million cancer survivors in the United States in 2018. We anticipate that a majority of these patients would benefit from a periodic test over time to test for cancer recurrence and believe it may become standard to test these patients regularly as a means of monitoring their disease progression. Based on certain of our estimates and assumptions, we believe that in newly diagnosed patients alone our recurrence monitoring and minimal residual disease test had a more than 50 million test annual global opportunity in 2020.

Neuropsychology Market Opportunity

We estimate the market opportunity for our nP pharmacogenetic test to inform therapy for patients with depression, anxiety, and bipolar disorder was approximately $10 billion in 2020. In 2017, an estimated 12.5 million patients received treatment for major depressive disorder, or MDD, according to data provided by the National Institute of Mental Health. We believe the opportunity to bring AI to neuropsychology is significant and we are at the early stage of the market evolution. It is estimated that 40 million Americans alone suffer from anxiety, and over 16 million Americans have had an episode of depression in the last year alone according to the Anxiety & Depression Association of America. Despite its growing prevalence, treating depression and anxiety remains difficult. Today, there are dozens of antidepressants that are typically prescribed in a trial and error format, where psychiatrists alter the dose and class of medications when one fails to work. The difficulties in prescribing medications leads to many patients taking the wrong medications in the wrong dose. Emerging evidence suggests that there are molecular mechanisms that suggest one drug, or class of drugs, may work better than another based on the genetic profile of the patient. This field, pharmacogenomics, has only recently emerged and has the potential to be as transformative in neuropsychology as it has been in oncology.

Data Product Line Market Opportunity

Our Data product line provides pharmaceutical and biotechnology companies an alternative to acquire data that they would otherwise need to generate through other more expensive means, like running studies, to inform decisions across the drug development lifecycle. It also helps facilitate patient identification and recruitment for clinical trials. According to Evaluate Pharma, in 2020, an estimated $219 billion was spent on clinical development in the United States. Within this market, our Data product line addresses the following spending categories for biotechnology and pharmaceutical researchers:

- Clinical trials market: $38 billion spend in 2020 according to Mordor Intelligence.
- Biomarker discovery: $46 billion spend in 2021 according to Mordor Intelligence.
- Real world evidence: $29 billion spend in 2020 according to our estimates based on third-party research.

Algos Product Line Market Opportunity

Over the longer term, we estimate that the potential market opportunity for our *Algos* product line could be orders of magnitude larger than the current total combined market opportunity of our Genomics and Data product lines. Although such tests currently represent a small portion of laboratory testing volume today, we believe in

the long-term, they could represent a significant percentage of the market, as more and more algorithms are developed that produce diagnostic insights. Within the United States, there are more than seven billion clinical diagnostic tests run annually according to the American Clinical Laboratory Association. We believe our integrated diagnostic Platform provides us with a differentiated foundation for the development and deployment of algorithmic diagnostics, uniquely positioning us to capitalize on this new and emerging market opportunity.

Our Competitive Advantages

We believe the combined power of technology, data, and AI will have a profound impact on the broader healthcare industry, transforming diagnostics, and enabling physicians and researchers to make data-driven decisions that improve clinical outcomes for patients. The industry today largely relies on diagnostics that are often based on a single source of data and do not employ datasets that are appropriate for many researchers and are frequently unable to provide adequate clinical context to inform personalized therapeutics. Tempus, on the other hand, has created an integrated Platform through which we can deploy AI, and has assembled what we consider to be one of the world's largest libraries of clinical and molecular data, and an operating system to make our information useful for physicians and researchers. We believe our competitive advantages, which we describe below, will enable us to drive widespread commercial adoption of our Platform.

We are both a technology company and a healthcare company, allowing us to harness the advantages of both to advance precision medicine.

We believe the challenge of bringing technology, data, and AI to healthcare requires deep industry expertise across both healthcare and technology. We believe Tempus is well positioned as both a technology company, harnessing the power of data and analytics to help usher in a new era of personalized medicine and a healthcare company, providing AI-driven diagnostics across multiple disease areas. We bring technological capabilities across data and AI, which are rarely found among diagnostic companies and yet are necessary for precision medicine. We believe we are differentiated from potential technology competitors in that we have built our Platform to successfully operate in the highly regulated healthcare environment, perform diagnostic testing services as a covered entity, and ingest, collect, structure, and deploy patient data benefiting key stakeholders in the healthcare ecosystem. The team we have assembled has broad experience across technology and healthcare commensurate with the challenge we are undertaking. Our leadership has successfully founded, grown and held leadership positions at technology companies, healthcare providers, life sciences companies, and regulatory bodies such as the FDA. We have approximately 1,500 employees, including hundreds with diverse expertise in genetics, molecular and computational biology, bioinformatics, regulatory affairs, medical, product and engineering, and data science. Roughly one-third of our team is technical, with over 160 PhDs and MDs on staff. In addition, as a testament to our balanced workforce, we have roughly as many lab technicians as we have software engineers.

We have built a Platform that is connected to hundreds of provider networks, allowing us to amass a large repository of multimodal data that we believe is essential for bringing AI to healthcare.

We believe we are the first to build an Intelligent Diagnostic platform at scale that is connected to vast amounts of multimodal data and an operating system to make that information useful for both physicians and researchers, with the ultimate goal of serving patients. Our Platform consists of integrated elements working together to grow our database, generate Intelligent Diagnostics, and help physicians make data-driven decisions in real time in the clinical setting. We have established dedicated data pipelines to ingest large amounts of complex multimodal data from healthcare institutions through approximately 234 direct data connections, many of which supply us with data in near real time, across approximately 1,034 healthcare institutions that order our products and services. We also built a laboratory infrastructure that is capable of providing a robust suite of testing services, including tissue and liquid biopsy sequencing for our customers. Although our company was founded in late 2015, we have already demonstrated the ability to bring AI to healthcare and provide Intelligent Diagnostics to enable precision medicine at scale. We have amassed an oncology database that is over 42.5

Petabytes in size and is approximately fourteen times the size of The Cancer Genome Atlas, the largest public genomic dataset that we know of in oncology. We also recently extended our Platform into neuropsychology, infectious disease, and cardiology. We believe each of the elements of our Platform is difficult for others to replicate.

Our Intelligent Diagnostics provide significant value to our customers, which has fostered broad adoption of many of our products.

Our Platform was designed to align the interests of, and benefit, key stakeholders across the healthcare ecosystem, with the ultimate goal of helping patients. For physicians and other healthcare providers, we offer a suite of products and services that enable them to accelerate their precision medicine efforts, regardless of whether they work in the community setting or within a large healthcare institution. We offer a comprehensive molecular testing portfolio that includes tissue and liquid biopsy NGS tests, which are intelligent, able to provide clinical context for patients, and may help inform therapeutic decisions as a result. In addition to Intelligent Diagnostics, we offer physicians and researchers numerous analytical and software tools to help them manage patients, perform analytics, and derive insights from being a part of our network. We make available to those providers and researchers the raw files that result from our sequencing together with structured clinical data we abstract related to that testing. Through our Therapies product offering, we also help oncologists identify patients eligible for clinical trials. Over time, we believe our Algos product line will offer physicians and patients unique and clinically actionable insights that are only possible by virtue of the data we have assembled. For pharmaceutical and biotechnology companies, we offer paid access to our de-identified database, with unique breadth, quality, and diversity of data, to inform drug discovery and development. We believe our dataset is the largest and most comprehensive to date in oncology (with other disease areas following), spanning multiple data modalities including: phenotypes, pathology slides, radiology scales, DNA, RNA, TCR/BCR, cfDNA, HLA types, immunohistochemistry, lab results, therapy outcome and response data, single cell sequencing, methylation, microbiomics, and epigenomes.

Our business model has inherent network effects that help drive adoption and improve our data advantage with each new order placed.

Each of our three product lines is designed to collectively leverage our database, strengthen the other product lines, and create network effects and competitive advantages within our markets. Our Genomics product line, including our core diagnostics offering, serves as a foundation for our Data product line, which in turn drives our Algos product line. As we collect more data, our tests become more accurate, we launch more applications, and more physicians join our network, thereby growing our database even further to make our tests more precise for clinicians and our database more valuable for researchers. There are multiple network effects we believe will provide a significant competitive advantage and drive adoption of our Platform over time. First, as our Platform becomes more accurate and precise, we believe it inherently drives commercial adoption with physicians and other providers. The breadth and diversity of our multimodal database enables us to deploy AI to improve upon our current tests by making them more accurate and more precise. This helps drive new physicians onto our Platform which further increases the size of our database. As our database grows, it increases our ability to develop entirely new tests, such as Algos, which can further drive adoption among physicians. Second, the growth of our database inherently drives commercial adoption with pharmaceutical and biotechnology companies. An increasing number of physicians and other providers using our tests helps grow our database, which increases its value to researchers, as well as results in a larger customer network through which we can facilitate therapy selection and clinical trial recruitment. Unlike traditional laboratory diagnostics, we have the ability to monetize de-identified data in multiple ways, which provides an opportunity to drive revenue beyond just the revenue we receive for running a laboratory test. We believe this creates a competitive advantage as our business model allows us to offer genomic solutions and build proprietary datasets in ways other lab testing providers cannot, as many of them are focused on maximizing reimbursement and do not have ancillary revenue streams as we do. Moreover, the longitudinal nature of the data we collect further enhances our revenue opportunity as the records we collect have value over time, given that outcomes and response evolve as patients progress through treatment.

Our Platform was built to collect, structure, harmonize and analyze large amounts of multimodal data.

We designed our Platform to be data agnostic. Our Platform can ingest and harmonize data from a wide variety of different healthcare data modalities. Unlike many other laboratory testing providers that focus on a specific modality of data, such as genomics, we currently ingest longitudinal clinical data from EHR including imaging data, generate DNA and RNA profiles along with other forms of molecular data, and perform anatomic pathology analysis. We are able to leverage multimodal data to deploy AI and provide Intelligent Diagnostics that generate insights that may be more powerful than insights provided by a single modality of data alone. We believe the healthcare industry is continuing to move towards using orthogonal and varied datasets to inform decision-making, and we are well positioned to be a partner of choice to facilitate this transformation.

Our Platform is disease agnostic and facilitates rapid expansion into different disease categories.

While we started in oncology, our capabilities to collect, structure, and harmonize data, and deploy AI solutions, are applicable to other disease areas. We believe having a multi-disease focus enables us to engage with providers and pharmaceutical companies in a more comprehensive manner than if we were focused on a single disease. As institutions are often looking for ways to deploy precision medicine broadly across diseases, we believe we are well positioned to be their partner, particularly given our established traction within precision oncology and our emerging strength in other disease areas. We have successfully leveraged the core capabilities of our Platform to expand our offering beyond oncology as we entered into neuropsychology in 2020 (MDD, bipolar disease, anxiety), infectious disease (COVID-19 testing) in 2020, and hope to enter cardiology in the near future (ECG-based algorithms starting with AFib and Aortic Stenosis).

The size of our database and the breadth of our multimodal data capabilities position us well to be able to launch Algos at scale.

We believe our Algos product line represents an emerging category of diagnostics and has the potential to be highly disruptive across a broad set of disease areas. Our Algos use data the same way laboratory diagnostic companies use chemistry in the battle against disease, improving patient care by learning from the patients who have come before, and tailoring test results based on each patient's unique profile. We believe that as our database grows, we will be able to expand our Algos offering, with the goal of launching hundreds or thousands of Algos at some point in the future, representing a significant long-term opportunity that may be substantially larger than our other existing product lines. We believe our ability to launch Algos at scale is a key differentiator of our Platform. We currently offer two algorithmic tests in oncology, our TO test and our HRD test, and have ongoing development efforts in other disease areas, such as cardiology with our recent Afib algorithm that was awarded breakthrough designation by the FDA.

Many of our products and services are already widely used throughout the healthcare ecosystem.

We have established a network that we believe would be difficult for potential competitors to replicate. We have relationships with providers, life sciences companies, and leading industry associations that help provide key competitive advantages around our Platform. We work with hundreds of provider networks, including more than half of all academic medical centers in the United States. We have approximately 234 direct unique data connections, many of which supply us with complex multimodal data in near real time, across approximately 1,034 healthcare institutions that order our products and services. In addition, we work with numerous industry associations, such as ASCO to structure and distribute the oncology data they collect as part of CancerLinq, which is their oncology data effort. To align interests with the healthcare providers who share data with us, we have developed software products and services that help our partners leverage data and benefit from being part of our network to improve patient care and research. These products have gained significant traction over the past five years, as our offerings are used by more than 5,000 oncologists in some way. The value of our products is further evidenced by our volume of repeat ordering from oncologists. Through September 2021, the 12-month retention rate for oncologists ordering more than 5 tests was 91%. We define the 12-month retention rate as having placed an order within the previous 360 days. Between our sequencing and data collection efforts, we are connected in some way to more than 40% of all oncologists practicing in the United States.

Our Growth Strategy

Our goal is to make the promise of precision medicine a reality, and dramatically improve outcomes for those most in need through the broad adoption of AI-enabled diagnostics. Our growth strategy is to:

Grow our database and the number of providers connected to our Platform.

Our database is core to our business model and our ability to deploy AI at scale to enable precision medicine and generate value for ourselves and our customers. We believe we have developed a unique leadership position in the industry, in the United States, given the data we have been able to amass and aim to continue to fuel this growth. We intend to do so by driving commercial adoption of our Platform with healthcare providers, expanding our data sharing relationships, and growing the number of our unique data connections and the hospitals with whom we share data. We also intend to expand our relationships and establish new relationships with industry bodies and associations to help them structure and harmonize their own data to facilitate improvements in patient care. We expect to invest in our laboratory capabilities to leverage the latest technologies and to expand into additional diagnostic modalities as they become adopted by our customers and relevant for helping patients find optimal therapeutics. We are agnostic as to where data originates so long as it enhances precision medicine. Over time, we may also use our Platform to help catalyze the value of data produced by other sources, including other labs. As such, we may evaluate business development opportunities to help grow and consolidate data, whether produced by us or others, both in the United States and abroad.

Drive increased adoption of our Genomics product across healthcare providers.

We serve clinical and research customers broadly through our Genomics product line. We are focused on driving market adoption with physicians by providing a complete portfolio of Intelligent Diagnostics and a suite of software applications that enable them to enhance their precision medicine efforts. We leverage customer feedback to inform product development, including making our tests more precise, and develop new tests and applications that help physicians deliver better clinical outcomes. In oncology, while we currently provide information to help physicians select the right therapy and make sure their patients have access to the most appropriate clinical trials, we are also expanding into other applications, such as disease monitoring and recurrence detection through our new minimal residual disease test, which is currently being validated. We also help clinicians practice precision medicine and provide genetic testing in other disease areas, including neuropsychology and infectious disease. We employ a direct sales force in the United States focused on driving adoption with the clinical community and raising awareness of the benefits of our Platform. For research, we aim to drive adoption of our Genomics product line with life sciences companies by supporting their testing needs for clinical trials and through the development of companion diagnostics. At present, we have approximately 150 sales representatives focused on our Genomics offering, and intend to significantly add resources to the team over time.

Drive increased adoption of our data licensing and clinical trial matching products with pharmaceutical and biotechnology companies.

As of September 30, 2021, we had 40 pharmaceutical and biotechnology customers licensing data through our Insights product, including 15 of the 20 largest public pharmaceutical companies based on 2020 revenue. Our goal is to provide our pharmaceutical and biotechnology customers with a Platform that helps them address challenges throughout their entire product lifecycle. Access to our database, provider network, and laboratory testing capabilities allow our customers to advance their research and clinical initiatives from biomarker discovery through commercialization. The value of multimodal data for informing drug discovery and development is becoming increasingly well understood by life sciences companies. We plan to take advantage of this trend and work to grow the number of companies purchasing de-identified data from us through our Insights product, both those that license data on a per-de-identified record basis as well as those that subscribe to our broader database. We also plan to continue to develop and commercialize software and analytic tools that make

the products and services built on our Platform easier to use, including our Lens application that enhances cloud and compute analytical capabilities for researchers. For our Therapies product, we aim to grow the number of oncologists and the number of clinical trials participating in our network, and to increase the number of patients we identify to enroll into clinical trials. We are leveraging our direct sales force focused on providers to facilitate the onboarding of oncologists and have an enterprise sales team that focuses on pharmaceutical and biotechnology companies to increase the number of clinical trials in the network.

Validate and deploy Algos at scale.

We currently have two Algos that we have commercially launched in oncology, our TO test and our HRD test. We seek to launch additional Algos in oncology and other disease categories, such as cardiology where we have multiple Algos in development. For example, we received breakthrough designation from the FDA for our AFib algorithm based largely on ECG data, and we have a number of other cardiology Algos in development that use ECG data as a primary predictor of potential indications and outcomes. We are commercializing our current Algos to physicians through our direct sales force focused on the clinical market. As more Algos are clinically validated, we expect to leverage this channel to sell additional Algo tests. Over time, we may open our database to third parties to allow them to develop their own Algos using our database, or add our Algos to their existing laboratory tests. We believe the size, breadth, and diversity of our data will ultimately facilitate development of Algos across multiple disease categories.

Expand our capabilities and commercial traction outside of oncology, including in neuropsychology, infectious disease, cardiology, and other disease categories.

We built our Platform to be disease agnostic, and we aim to grow adoption in disease categories in which connecting multimodal data and AI can improve decisions and analytics for physicians and researchers. We believe our AI-enabled Platform is uniquely positioned to generate insights when there exist both heterogeneous conditions among a diseased population and a variety of potential therapeutics or therapeutic pathways, often prescribed based on trial and error. In these disease categories, technology and AI have the potential to facilitate data associations and substantially reduce the guesswork as to which drug to prescribe, in what amount, and in which order. We believe these conditions exist in oncology, neuropsychology, infectious diseases, and cardiology, as well as numerous other life-threatening and chronic diseases. Through our existing relationships with providers and life science companies, we believe we have a high level of visibility into where key healthcare stakeholders desire to advance precision medicine. We believe our Platform is applicable across multiple disease categories, and we plan to extend our offering into additional disease areas. Over time, we believe AI enabled diagnostics will impact all disease categories, and our disease agnostic Platform, broad technology capabilities, and vast customer network, position us well.

Expand internationally.

We believe the opportunity to deploy data and AI in healthcare is global. In many geographies, we believe the healthcare infrastructure is ripe for AI, and in some cases, the ecosystem is even more developed than in the United States. Over time, we intend to expand our capabilities internationally. We are evaluating multiple expansion opportunities, both organic and inorganic. We may acquire or partner with an established entity to facilitate market entry, or we may choose an alternative path focused on organic expansion.

Commercialization

Our commercial efforts are generally focused on driving increased adoption of our various products and services, both by increasing the utilization of existing customers and securing new customers. We employ targeted sales and business development organizations, whose team members are engaged in direct sales and marketing efforts. Our commercial teams typically target healthcare providers and life sciences companies, which are the main purchasers of our products and services. We describe below our overall commercial strategy for each of our three products.

Genomics

Our Genomics product line, largely made up of molecular testing, has two primary customers: physicians and bio-pharma companies. When we sell our tests to physicians we are typically providing them as part of routine clinical care and we are often billing insurance and seeking reimbursement on behalf of the patients for whom the test was ordered. When we sell our test to bio-pharma, we are typically being paid as a contract sequencing provider, either for the trials they are running or as a companion diagnostic to their drug. On the physician side, we commercialize our Genomics products in the United States to clinicians and healthcare providers largely through our dedicated clinical sales organization, that calls on individual doctors or medical practices. As of September 30, 2021, our clinical sales organization in the United States included approximately 150 sales representatives who are primarily contacting oncologists, psychiatrists, and other healthcare providers. Our sales representatives typically have backgrounds either in a particular disease area (such as oncology or neuropsychiatry) or in laboratory testing and therapeutics more generally. We supplement our commercial team with clinical specialists with extensive medical affairs experience who provide molecular support in the field. As of September 30, 2021, we had approximately 136 sales executives in the field focused on oncology and neurology, and we also have a team of 13 sales reps, who largely call on customers virtually throughout our outbound call center, focused predominantly on infectious disease.

In oncology, which currently is our largest market, we are focused on driving adoption by targeting individual treating physicians, academic medical centers, community oncology practices, leading physician networks, and industry associations. We also are exploring relationships with third-party payers and governmental institutions. We have a land and expand strategy, by account, whereby we attempt to sign new accounts and increase adoption of our platform within these accounts over time. As such, we often begin a relationship that is transactional in nature, but seek over time, to work on a more comprehensive basis with healthcare providers, serving an ever increasing percentage of our molecular diagnostic needs over time. We find that once an oncologist starts using Tempus, if they order at least 5 NGS tests from us, their 12-month retention rate is 91%. We define the 12-month retention rate as having placed at least one order in the previous 360 days.

In addition, we believe that interactions among treating physicians help drive adoption of our products. We are focused on key opinion leaders in the industry through direct outreach and indirect marketing efforts. As of September 30, 2021, we have either published or been acknowledged in the following:

- 55 total (38 Tempus-authored) peer-reviewed articles published or accepted for publication in major journals, including publications such as *Nature Biotechnology, Clinical Breast Cancer*, *Nature Medicine,* and *Cell*.
- 13 additional manuscripts under consideration for publication by peer-review journals.
- 72 total (59 Tempus-authored) poster presentations based on clinical and research data that have been accepted and presented at major scientific conferences.
- 12 oral presentations at scientific meetings such as the ASCO, ASCO Gastrointestinal and Genitourinary Cancer Symposiums, San Antonio Breast Cancer Symposium, and the American Heart Association Scientific Sessions.

We have a similar strategy in neuropsychology, in which we aim to increase the commercial adoption of our nP test for depression as part of the rapidly growing market for pharmacogenomic testing, with a goal to better understand, diagnose and treat neuropsychiatric disorders. As it relates to infectious disease, we started offering COVID-19 testing through our iC test, and are in the midst of validating a pan viral respiratory pathogen test, iD, which is expected to cover a wider range of viruses such as Influenza, Respiratory Syncytial Virus, COVID-19, etc.

Our commercial strategy for other disease areas is expected to follow our strategy in oncology, which is to focus on offering a broad range of molecular diagnostics to the market, that are connected to clinical data, so we can track how molecular results correlate with outcomes and responses, thereby making our tests smarter and more personalized overtime.

Research Testing

A small component of our genomic testing involves testing performed in a research capacity. This type of testing is typically done under an agreed upon contracted arrangement for specific tests at specific prices and volumes. Typical customers in these arrangements are pharmaceutical companies engaged in testing for clinical trials, researchers who need genomic testing to further research activities, or a company marketing products or services of their own who elects to use us as a reference laboratory. In this type of research testing, the agreed upon rate for testing may vary significantly, and in some cases may even be offered as an in-kind service in exchange for other rights we obtain in the contracted relationship.

As it relates to selling our Genomic Products to bio-pharma, we have a dedicated team of sales executives focused on calling on biotech and pharmaceutical companies who use genomic sequencing services predominantly for the research they are conducting, the clinical trials they are running, or as a companion diagnostic to the extent their therapeutic relies on a bio-marker. To this group, we are typically selling retrospective and prospective sample testing services, as well as companion diagnostic development to support the approval and commercialization of therapeutics.

Data

In addition to our field sales force, our Data products rely on a dedicated business development team focused on enterprise sales to pharmaceutical and biotechnology companies in the United States and abroad. Our strategy with each customer is to demonstrate the value proposition of our Platform and de-identified datasets, and to expand the utilization of our Data products across the organization from early-stage research through clinical development to commercialization. Given the broad and differentiated utility of our Platform, we believe we can support our pharmaceutical and biopharmaceutical customers across many applications, including:

- early stage research and development;
- discovery of new targets and mechanisms of acquired resistance;
- clinical trial patient identification and enrollment; and
- Analytic services, including cloud and compute.

We also expect to be able to capture other commercial opportunities from our genomic data, which can be used in combination with clinical outcomes or claims data for multiple applications, including novel target identification, label expansion, and other commercial applications.

As of September 30, 2021, we had approximately 33 sales executives in our Data product line development organization. We divide these individuals by both geography and strategic account to ensure consistency and coordination across our sales efforts.

Algos

We develop Algos in three ways: (i) we may develop them internally based on our robust de-identified dataset; (ii) we may collaborate with a third party to develop Algos together; and (iii) we may license an existing Algo from a third party. Once we clinically validate an Algo, we typically bring it to market through our existing provider network by leveraging our Genomics sales force. For example, our HRD and TO Algos in oncology have been added to our standard requisition forms, online portal, and EHR integrations. Treating clinicians can order these Algos at the same time they place their standard clinical testing orders for our other Genomics products. We believe clinicians find significant value in being able to receive multiple answers from Tempus while only needing to provide one set of biospecimens, thereby reducing the burden on their patients and their staff. At present, we expect our Algos in other disease areas to go to market through our network of EHR integrations and clinical collaborations.

In most instances, we bill Algos to third-party payers just like our other clinical tests. We expect reimbursement will be limited for most Algos at launch and may grow over time as we build additional evidence to support the clinical utility and benefit of each Algo. In addition, we work with pharmaceutical companies from time to time to deploy algorithms that they have developed or are interested in developing with us, typically collecting some amount of fees upfront and on a per test basis every time the algorithm is run.

Competition

The increasing value of using data to inform clinical care and drug development decisions is leading more companies to attempt to develop offerings that are marketed in a manner that makes them appear comparable to ours. As a result, each of our products faces increasing competition from a number of other companies.

Our Genomics products line primarily faces competition from diagnostic companies that profile genes in cancers and other disease areas, based on either single-marker or comprehensive genomic profile testing, using NGS to evaluate either blood or tissue. Our primary competitors for our currently marketed precision oncology tests include Foundation Medicine, Inc., which was acquired by Roche Holdings, Inc., Caris Life Sciences, Guardant Health, Inc., Neogenomics, and ResolutionBio, which was acquired by Agilent, and others. As we expand into other applications such as recurrence monitoring or minimal residual disease, as well as potentially testing for early detection in the future, we anticipate facing competition from a broader universe of companies. Legacy diagnostic laboratories, such as Quest and LabCorp may also pose competitive threats within the market. Competitors for our pharmacogenetic test in neuropsychology include Myriad Genetics, Inc. and Genomind, Inc.

Our Data products primarily face competition from companies that help pharmaceutical and biotechnology companies acquire data to inform drug discovery and development. Our main competitors in this area are Flatiron Health, Inc., IQVIA Holdings Inc., ConcertAI, and others. Our Data products also face competition from CROs, such as Covance, ICON, Syneos, PPD, and others, who provide data and clinical trial matching services to pharmaceutical and biotechnology companies.

Our Algos products face competition from providers that are focused on providing laboratory testing or algorithm-based diagnostics for the disease and application areas in which our Algos are focused. Our TO test competes with liquid or tissue-based diagnostic tests from Roche Holdings, Inc., Caris Life Sciences, Guardant Health, Inc. Illumina, Inc, and others. Our HRD test competes with tests from Myriad Genetics, Inc., Caris Life Sciences, and others. We may also compete with companies developing or commercializing algorithm-based diagnostics using a variety of different data modalities, including digital pathology companies such as PathAI, Inc. and PaigeAI. In cardiology we may compete with companies such as HeartFlow Inc. and Eko Devices, Inc. We expect other competitors to enter this market, including academic medical centers who develop their own Algos and are looking for new ways to commercialize them. We believe we are positioned well against this competition given our broad provider network and our ability to deploy AI solutions at scale through our Platform.

Many of our competitors may have substantially greater financial and other resources than us, including larger research and development staff, or more established marketing and sales forces. Other competitors are in the process of developing novel technologies for the diagnostics and healthcare data markets that may lead to products that rival or replace our products. While we cannot be certain as to how the market will evolve, today we believe we are substantially differentiated from our competitors for many reasons, including the network effects of our products, proprietary technologies, rigorous product development processes and scalable infrastructure, customer experience, and multidisciplinary teams.

For further discussion of the risks we face relating to competition, see the section titled “Risk factors—Risks Related to Our Business and Strategy.”

Payer coverage and reimbursement

Clinical Testing

A majority of the genomic testing we perform is clinical in nature. We typically receive reimbursement for these tests from commercial payers and from government health benefits programs, such as Medicare and Medicaid. In almost all of our arrangements for clinical testing, we take on the obligation (and risk) to bill the patient's insurance for the testing being provided, subject to other laws that may require us to directly bill the healthcare provider in limited circumstances. We also have a small number of "direct pay" arrangements where the provider may agree to pay us a specific amount and take on the billing obligation (and associated risk of payment) for the testing performed for that customer's patients, or where a third-party advocacy group or government agency has arranged for and agreed to pay for testing.

Laboratory tests such as our genomic tests, as with most other healthcare services, are classified for reimbursement purposes under a coding system maintained by the American Medical Association known as current procedure terminology, or CPT, which we use to bill and receive reimbursement for our tests. CPT codes are associated with the particular test that we have provided to the patient, but do not always precisely describe the testing offered.

Once the American Medical Association establishes a CPT code, the Centers for Medicare & Medicaid Services, or CMS, establish payment levels and coverage rules under Medicare (sometimes through national coverage determinations, or NCDs), although it delegates some of that authority to local Medicare administrative contractors, or MACs, who may have local coverage determinations, or LCDs, in place. Private payers establish their rates and coverage rules independently.

For the year ended December 31, 2019 and 2020, we received payment through reimbursement on approximately 50% and 48% of our clinical oncology NGS tests, respectively. We did not receive payment on approximately 50% and 52% of our clinical oncology NGS tests during the same periods, respectively. Our strategy to improve reimbursement is as follows:

- Continue to work with NGS, our local MAC in Chicago, to improve coverage, and the amount they currently pay, for tests, through a reconsideration request for our main assays (xT, xF) and through various appeals when coverage is denied.
- Work with our new MAC, Palmetto, who will cover our tests when performed out of our newest lab in Raleigh, NC, to get the technical assessment of our assays approved and coverage policy in place for reimbursement.
- Work toward FDA approval of our main solid tumor assay, xT, for which we filed a PMA in early 2021, and once approved, work with CMS to apply a national coverage determination that covers our assay.
- Work with commercial payers to both get in network and get our assay approved and reimbursement at a higher rate than it currently is.

At present, we have a team that is dedicated to the above, and if we are successful we would expect our reimbursement per assay to be more in line with other NGS providers who have adopted similar strategies, such as FMI and Guardant.

Algos

Because we expect the Algos we bring to market to provide value to a wide variety of stakeholders in the healthcare ecosystem, we anticipate that the payment we may be able to obtain will vary substantially. Value obtained is likely to depend on the nature of the underlying product or service developed, as well as the disease area and manner in which the product or service is made available. For example, while the current HRD and TO

offerings are point-of-care ordered, we do not expect to be limited only to payment and reimbursement through the typical fee-for-service reimbursement model based solely on point-of-care clinical testing. We may also develop Algo's in combination with life sciences companies in which we are paid directly or through alternative payment structures.

In sum, we expect that reimbursement for our Genomics products and Algos may provide value to, and potentially be paid for by, pharmaceutical companies, health maintenance organizations, managed care organizations, pharmacy benefit managers, large employers, and integrated delivery network health systems, in addition to being reimbursed by government healthcare programs, private insurers and other third-party payers. Those arrangements may take many forms. Pharmaceutical companies have expressed interest in using some of our Algos to better identify, screen, stratify, and enroll patients in clinical trials, payers have expressed interest in Algos that could assist them in value-based care initiatives that reduce spending waste in the healthcare system, and large health systems have expressed interest in certain population health screening Algos that could assist them in providing higher quality care, better outcomes for patients, and/or in reducing costs.

Operations

We currently perform our laboratory tests, including our NGS and anatomic pathology tests in our clinical laboratories in Chicago and Atlanta. We intend to expand these capabilities with a new genomics lab in Raleigh that we plan to operationalize by the end of 2021. Our Chicago and Atlanta laboratories are CAP-accredited and CLIA-certified, and licensed in other states including New York, California, Maryland, Pennsylvania, and Rhode Island.

The scale our laboratories have been able to achieve in the approximately 4 ½ year period since we ran our first clinical test is a direct result of the quality and experience of our laboratory staff, our investment in technologies in the laboratory that assist with automation and workflow improvements, and the ability of our engineering staff to build fit for purpose applications in a rapid development environment to support the laboratory's evolving needs. Our leadership staff in laboratory operations has decades of experience in running high-quality, high-throughput assays and have been instrumental in putting in place the necessary standard operating procedures to perform the volume of testing we do in a repeatable, reliable manner while constantly looking for opportunities to improve and refine our processes. The workflows in our laboratory are designed for high-throughput testing and numerous steps in the process are fully automated or semi-automated using robotics and other advanced workflow technologies. For our xT and xF tests, our laboratory workflows enable us to successfully deliver results over 95% of the time, assuming tissue is received that meets the minimum requirements we have outlined for our assays.

Our investments have allowed us to continuously drive turnaround time downward, to provide results to doctors and their patients in a timeframe that we believe now meets or exceeds many of our competitors who have been operating in the NGS space for longer. As of September 30, 2021, our average turnaround time for our xT assays was 10 days, and our average turnaround time for xF was 9 days.

We believe that the strong foundational infrastructure in our laboratory operations, along with the technology used in our lab and the engineering expertise we have on hand is further differentiated when coupled with the connections we can rapidly deploy with our customers, and the experienced research scientists and doctors we employ, who are able to design and refine our highest volume assays in-house. We believe this unique combination will continue to allow us to rapidly respond to the changing needs of our customers and evolving market conditions. As an example of this, Tempus was able to stand up our COVID testing assays in both Atlanta and Chicago, obtain EUA approvals, make necessary modifications to our laboratory information systems and provide connectivity integrations to our largest customers (who were each running thousands of tests per day for a period of time) efficiently delivering results to them with turn around times and error rates that met or exceeded industry standards, during the peak of the pandemic in 2020 and early 2021.

Our Strategic Collaboration with AstraZeneca

In November 2021, we entered into a Master Services Agreement, or the MSA, with, and issued a warrant to, AstraZeneca AB, or AstraZeneca. Under the MSA, we agreed, on a non-exclusive basis, to provide AstraZeneca with certain of our products and services, including licensed data, sequencing, clinical trial matching, organoid modeling services, algorithm development, and others. In exchange for certain discounted prices, AstraZeneca has committed to spend a minimum of $200 million on such products and services during the term of the MSA. The minimum commitment may increase to $300 million upon the occurrence of any of the following events: (i) at AstraZeneca's election on or before December 31, 2024, (ii) the date that AstraZeneca exercises the warrant issued pursuant to the terms thereof (as described below), or (iii) in the event of an initial public offering, if the average closing price of our common stock exceeds two times the offering price for any 30-day trading period following the one-year anniversary of such initial public offering. The term of the master services agreement will continue through December 31, 2026, unless terminated sooner.

Under the warrant, AstraZeneca has the right to purchase up to $100 million shares of our Class A common stock at an exercise price equal to the price per share at which our common stock is valued in connection with the consummation of this initial public offering. The warrant may be exercised any time following the date that is 180 days following the pricing of our initial public offering. AstraZeneca will be entitled to substantially the same registration rights with respect to the shares under the warrant as those granted to holders of registrable securities pursuant to our Ninth Amended and Restated Investors' Rights Agreement, dated November 19, 2020. The warrant will be automatically cancelled and terminated for no consideration in the event AstraZeneca declines to extend its financial commitment before December 31, 2024. If AstraZeneca exercises the warrant, AstraZeneca will be required to increase its minimum commitment under the MSA to $300 million.

Quality Assurance

We are committed to providing reliable and accurate molecular information to our customers. We have established sophisticated laboratory workflows and automated procedures to ensure accurate specimen identification, timely communication of results, and prompt discovery and correction of errors. We monitor our quality through a variety of methods, including objectively measured performance improvement indicators. Any quality concerns and incidents are subject to risk assessment, root cause analysis, and corrective action plans. Safeguarding protected health information, or PHI, is of primary importance.

We have established a comprehensive quality assurance program for our laboratory. Our quality assurance program includes policies and procedures covering personnel qualifications and training requirements, process and test validation, quality control of reagents and test processes, proficiency testing, routine monitoring, and internal audit. We have implemented policies and procedures to adhere to applicable requirements necessary for federal and state licenses and accreditation for clinical diagnostic laboratories, including policies and procedures related to patient and employee safety, hazardous waste disposal, and general laboratory management.

Supply chain

We have a highly automatic system in place to manage our workflow called LIMS, which also connects to our various supply chain systems through which we ensure materials our ordered in a timely manner, and the logistics of each order are overseen to ensure we are delivering orders, in the shortest time possible, with the highest quality possible.

We maintain significant inventory on hand of both laboratory consumables and other materials to avoid work stoppages and/or material delays. Our systems, processes, and procedures are designed to scale, as evidenced by the fact that we have become one of the largest sequences of cancer patients in the United States in just a few years and implemented COVID-19 testing in May of 2020, and have run approximately 2.3 million tests in the last twelve months ended September 30, 2021.

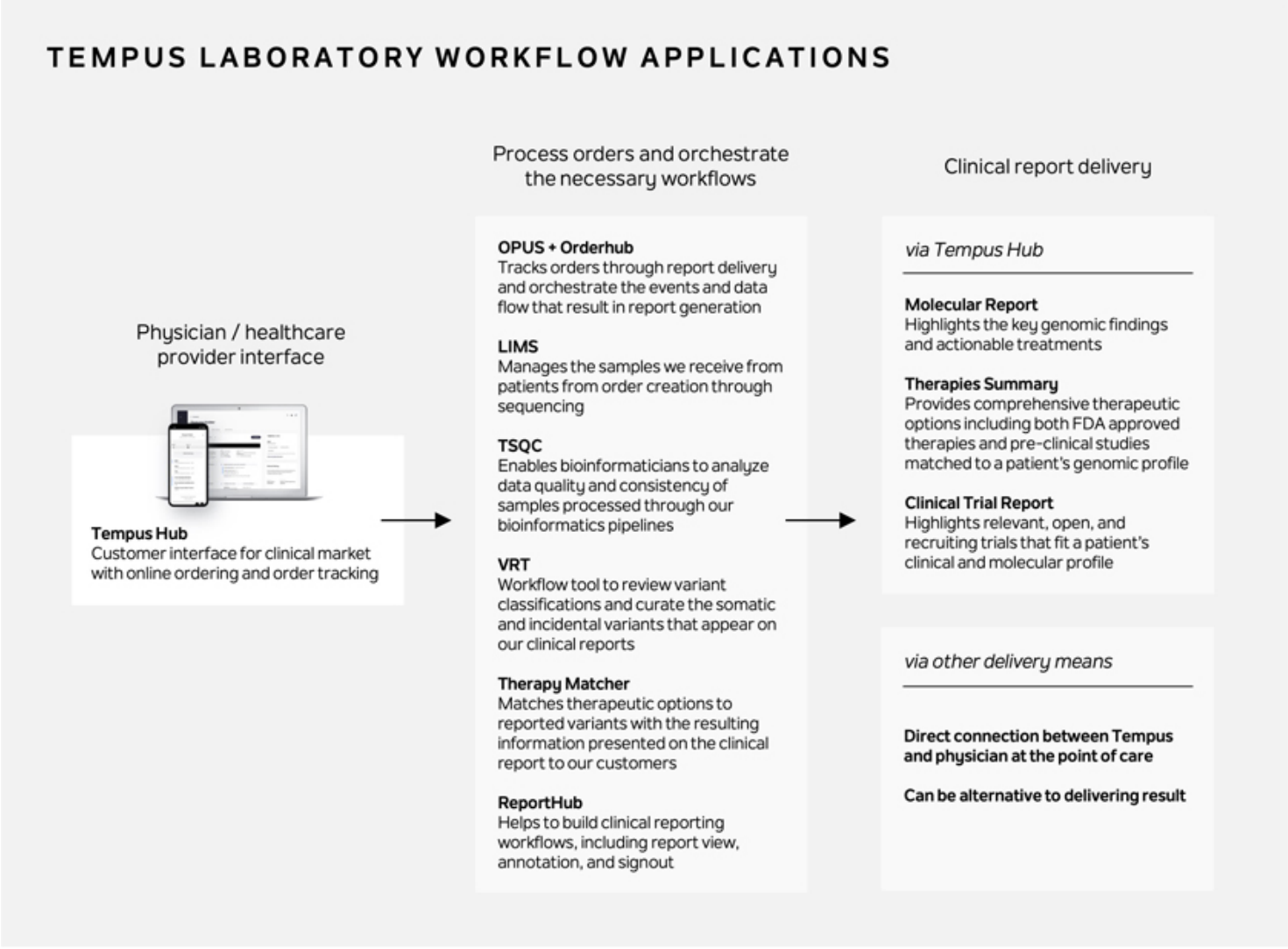
We rely on a limited number of suppliers, or, in some cases, sole suppliers to provide our products and services. Illumina, Inc., is our primary supplier of sequencers and laboratory reagents; however, we purchase laboratory supplies from other companies as well, such as Roche Holdings, Inc., Integrated DNA Technologies, and PerkinsElmer. We rely on standard commercial carriers for the delivery of samples to our laboratories.

In June 2021, we entered into a supply agreement with Illumina to provide products and services that can be used for certain research and clinical activities, including certain sequencers, reagents, and other consumables for use with the Illumina sequencers, as well as service contracts for the maintenance and repair of the sequencers. The supply agreement does not require us to order minimum amounts of hardware, or to use exclusively the Illumina platform for conducting our sequencing. The term of the supply agreement continues for a period of 12 years, unless either we or Illumina terminate the supply agreement for the other's uncured material breach, bankruptcy or insolvency-related events, or in the event a regulatory authority notifies such party that continued performance under the supply agreement would violate applicable laws or regulations. Illumina may terminate the agreement in the event we consummate a change of control transaction with a sequencing products company, and we may terminate the supply agreement for convenience upon 90 days' prior written notice.

In addition to suppliers who provide products supporting our provision of laboratory tests, we have cloud agreements with both AWS and Google. In June 2020, we signed a multi-year strategic partnership with Google that included an agreement through which Tempus procures extensive cloud services from Google. The cloud agreement includes a convertible note that is reduced as we procure services from Google and also contemplates co-innovation projects that we may work on with Google from time to time.

Laboratory Workflow Applications

With respect to the provision of laboratory services, in addition to Hub, our consumer- facing application, we have developed multiple software tools that facilitate back-end processing, workflow, and report generation. Our back-office software stack was custom developed around our workflow, allowing us to automate material components of our laboratory and order generation process. The following diagram represents the software applications supporting our laboratory workflow.



We have also developed a series of tools that allow us to access our connected dataset and our internal workflow tools, as we seek to query our own data and make it available both internally and externally. In an effort to facilitate a connection between our providers and our data, we built an application called *Tempus One,* which is both a physical device and a mobile software application that relays information contained in our oncology reports and supporting database to physicians through voice activated interactions in real time. We believe Tempus One has the potential to create a more efficient workflow for healthcare professionals, reducing the time needed to review and process information, providing more time for them to focus on patient care. Over time, we intend to embed more insights into Tempus One*,* and other similar applications we develop, thereby enhancing the amount of information readily available to our ordering physicians.

Data Structuring Applications

After we generate a clinical report through the provision of laboratory services, or once we obtain data through one of our dedicated connections to providers, we utilize a different suite of proprietary software applications to abstract, structure, and de-identify the resulting data to help augment our existing multimodal dataset and provide additional healthcare services to our customers. Our tools have become highly efficient over time allowing us to abstract data, often between 50-100 discrete data elements per patient case, in approximately an hour (or the cost equivalent), which do both onshore and offshore through dedicated teams we have established to perform the data curation and abstraction. In addition, we have the capability to perform enhanced abstraction, which can take several hours per patient case, allowing us to define a custom set of features over a defined period of time that we want abstracted. Each of our proprietary tools is designed to enhance our customers' experience, either by creating useful information that assists in the treatment of patients, or by creating an efficient back-end infrastructure that allows us to deliver our services more quickly and efficiently.

Information Security

We endeavor to maintain a robust information security program in an effort to protect all of the sensitive data we maintain, including PHI and PII and we take all threats to the availability, integrity and confidentiality of that data with the utmost seriousness. Our security program consists of a layered defense approach starting with appropriate data and system design through architectural principles that include security as a core component at every step of the process. This security by design approach is enhanced with physical security, host and endpoint device management, application security, and infrastructure and cloud security. In each of those areas, we utilize industry-standard third-party tools that are designed to assist our team of security professionals in their various tasks and we work closely with our vendors, including those who provide cloud computing services that make up substantial parts of our infrastructure (e.g., Google and Amazon)**.**

Our security program is operationalized through documented policies, procedures and required training for all staff in the entire company, with special emphasis on key teams in engineering and IT operations who develop, monitor and maintain the applications and systems used in our business. In an effort to ensure that these policies are adhered to and that no new vulnerabilities arise, we conduct regular auditing of a wide swath of our security related measures, including a mix of self-audits, external penetration testing, external application security audits and audits performed by our customers and partners. Our security team is also instrumental in maintaining our ISO 27001 certification and assisting the compliance and legal teams with other legally required audits and provides detailed reports regularly to upper management and the Board on security related matters.

Intellectual Property

Our success depends in part on our ability to obtain and maintain intellectual property and proprietary protection for our products and technology, defend and enforce our intellectual property rights, preserve the confidentiality of our trade secrets, and operate without infringing, misappropriating or otherwise violating valid and enforceable intellectual property and proprietary rights of others. We are actively involved in research and development and therefore seek to protect the investments we have made into the development of our products

and technology by relying on a combination of patents, trademarks, trade secrets, know-how, and license agreements. We also seek to protect our proprietary technology, in part, by requiring our employees, consultants, contractors and other third parties to execute confidentiality agreements and invention assignment agreements and by implementing technological protections for our intellectual property.

As of September 30, 2021, our patent portfolio included owned and in-licensed patents and patent applications, including 16 issued or allowed U.S. patents or pending applications and 59 pending U.S. non-provisional patent applications, 35 pending U.S. provisional patent applications, 30 pending Patent Cooperation Treaty (international) patent applications, and 5 issued foreign patents and 34 pending foreign patent applications. Our issued patents are expected to begin expiring in December 2029, assuming payment of all appropriate maintenance, renewal, annuity or other governmental fees. These patents and applications generally fall into four broad categories:

- applications and patents relating to our Platform, including claims directed to product ordering processes; data processing and multimodal data analytics;
- applications and patents relating to our Genomics business, including claims directed to detecting and monitoring cancer and other diseases by determining genetic variations and other biomarkers in biological samples;
- applications and patents relating to our Data business, including claims directed to analysis of healthcare records and patient outcomes; and
- applications and patents related to our Algos business, including claims directed to machine learning diagnostics and predictions in cancer and cardiology.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file or intend to file, including the United States, the patent term is 20 years from the earliest date of filing a non-provisional patent application. Additionally, a U.S. provisional patent application expires twelve months from its filing date, and its subject matter can only be claimed in an issued patent if, among other things, we timely file a non-provisional patent application making a valid priority claim to that provisional patent application before it expires. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier filed patent. We cannot be sure that patents will be granted with respect to any current pending patent application or with respect to any patent applications filed by us in the future, nor can we be sure that any current or future patents will be commercially useful in protecting our platform, products, services, technologies and processes. In addition, any patents that we may hold, whether owned or licensed, may be challenged, circumvented or invalidated by third parties.

The success of our business strategy also depends in part on our continued ability to protect our branded services, and we own registered trademarks on "TEMPUS" and product related brand names in the United States and worldwide.

We also rely on trade secrets, including know-how, unpatented technology and other proprietary information, to strengthen our competitive position. We seek to protect trade secrets and confidential and unpatented know-how, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, collaborators, manufacturers, consultants, advisors and other third parties. We also seek to enter into confidentiality and invention or patent assignment agreements with our employees and consultants that obligate them to maintain confidentiality and assign their inventions to us.

Our ability to stop third parties from making, using, selling, offering to sell or importing our Platform, services and products depends on the extent to which we have rights under valid and enforceable patents, trade secrets or other intellectual property and proprietary rights that cover these activities. We pursue intellectual

property protection to the extent we believe it would advance our business objectives. Notwithstanding these efforts, there can be no assurance that we will adequately protect our intellectual property or provide any competitive advantage. For more information regarding risks relating to intellectual property, see "Risk Factors—Risks Related to Our Intellectual Property."

Government Regulation

Regulation of Medical Devices in the United States

Our diagnostic products and services are subject to extensive and ongoing regulation by the FDA under the Federal Food, Drug, and Cosmetic Act of 1938 and its implementing regulations, collectively referred to as the FDCA, as well as other federal and state regulatory bodies in the United States. The laws and regulations govern, among other things, product design and development, pre-clinical and clinical testing, manufacturing, packaging, labeling, storage, record keeping and reporting, clearance or approval, marketing, distribution, promotion, import and export and post-marketing surveillance. Failure to comply with applicable requirements may subject a device and/or its manufacturer to a variety of administrative sanctions, such as FDA refusal to approve pending premarket applications, issuance of warning letters, mandatory product recalls, import detentions, civil monetary penalties, and/or judicial sanctions, such as product seizures, injunctions and criminal prosecution.

FDA Premarket Clearance and Approval Requirements

Unless an exemption applies, each medical device commercially distributed in the United States requires either FDA clearance of a 510(k) premarket notification, approval of a petition for premarket approval, or PMA, or grant of a de novo request for classification. During public emergencies, the FDA also may grant emergency use authorizations, or EUA, to allow commercial distribution of devices intended to address the public health emergency. Under the FDCA, medical devices are classified into one of three classes—Class I, Class II or Class III—depending on the degree of risk associated with each medical device and the extent of manufacturer and regulatory control needed to provide reasonable assurance of its safety and effectiveness. Classification of a device is important because the class to which a device is assigned determines, among other things, the necessity and type of FDA review required prior to marketing the device.

Class I devices include those with the lowest risk to the patient and are those for which safety and effectiveness can be reasonably assured by adherence to the FDA's "general controls" for medical devices, which include compliance with the applicable portions of the FDA's Quality System Regulation, or QSR, facility registration and product listing, reporting of adverse medical events and malfunctions through the submission of Medical Device Reports, or MDRs, and appropriate, truthful and non-misleading labeling, advertising, and promotional materials. Some Class I devices also require 510(k) premarket notification clearance as described below.

Class II devices are moderate risk devices subject to the FDA's general controls, and any other "special controls" deemed necessary by the FDA to ensure the safety and effectiveness of the device, such as performance standards, product-specific guidance documents, special labeling requirements, patient registries or post-market surveillance. Premarket review and clearance by the FDA for Class II devices is accomplished through the 510(k) process. The 510(k) submission must demonstrate that the device is "substantially equivalent" to a legally marketed predicate device, which in some cases may require submission of clinical data.

Class III devices include devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices and devices deemed not substantially equivalent to a predicate device following a 510(k) submission. The safety and effectiveness of Class III devices cannot be reasonably assured solely by general or special controls. Submission and FDA approval of a PMA application is required before marketing of a Class III device can proceed. A PMA application is intended to demonstrate that the device is reasonably safe and effective for its intended use and must be supported by extensive data, typically including data from pre-clinical studies and clinical trials.

Emergency Use Authorization

In emergency situations, such as a pandemic, the FDA has the authority to allow unapproved medical products or unapproved uses of cleared or approved medical products to be used in an emergency to diagnose, treat or prevent serious or life-threatening diseases or conditions when there are no adequate, approved, and available alternatives.

Under this authority, the FDA may issue an EUA for an unapproved device if the following four statutory criteria have been met: (1) a serious or life-threatening condition exists; (2) evidence of effectiveness of the device exists; (3) a risk-benefit analysis shows that the benefits of the product outweigh the risks; and (4) no other alternatives exist for diagnosing, preventing or treating the disease or condition. Evidence of effectiveness includes medical devices that ''may be effective'' to prevent, diagnose, or treat the disease or condition identified in a declaration of emergency issued by the Secretary of U.S. HHS. The ''may be effective'' standard for EUAs requires a lower level of evidence than the ''effectiveness'' standard that the FDA uses for product clearances or approvals in non-emergency situations. Once granted, an EUA will remain in effect and generally terminate on the earlier of (1) the determination by the Secretary of U.S. HHS that the public health emergency has ceased or (2) a change in the approval status of the product such that the authorized use(s) of the product are no longer unapproved. After the EUA is no longer valid, the product is no longer considered to be legally marketed and one of the FDA's non-emergency premarket pathways would be necessary to resume or continue distribution of the subject product.

The FDA also may revise or revoke an EUA if the circumstances justifying its issuance no longer exist, the criteria for its issuance are no longer met, or other circumstances make a revision or revocation appropriate to protect the public health or safety.

Clinical Trials

Clinical trials are typically required to support a PMA and are sometimes required to support a 510(k) submission. All clinical investigations of devices to determine safety and effectiveness must be conducted in accordance with the FDA's investigational device exemption, or IDE, regulations which govern investigational device labeling, prohibit promotion of the investigational device, and specify an array of recordkeeping, reporting and monitoring responsibilities of study sponsors and study investigators. If the device presents a ''significant risk'' to human health, the FDA requires the device sponsor to submit an IDE application to the FDA, which must be approved prior to commencing clinical trials. A significant risk device is one that presents a potential for serious risk to the health, safety or welfare of a patient and either is implanted, purported or represented to be used in supporting or sustaining human life, is for a use that is substantially important in diagnosing, curing, mitigating or treating disease or otherwise preventing impairment of human health, or otherwise presents a potential for serious risk to a subject.

An IDE supplement must be submitted to, and approved by, the FDA before a sponsor or investigator may make a change to the investigational plan that may affect its scientific soundness, study plan or the rights, safety or welfare of human subjects. In addition, the clinical trials must be approved by, and conducted under the oversight of, an Institutional Review Board, or IRB, for each clinical site. The IRB is responsible for the initial and continuing review of the IDE and may pose additional requirements for the conduct of the study. If an IDE application is approved by the FDA and one or more IRBs, clinical trials may begin at a specific number of investigational sites with a specific number of patients, as approved by the FDA. If the device is considered a ''non-significant risk,'' IDE submission to FDA is not required. Instead, only approval from the IRB overseeing the investigation at each clinical trial site is required.

Post-market Regulation

After a device is cleared or approved for marketing, numerous and pervasive regulatory requirements continue to apply. These include:

- establishment of registration and device listing with the FDA;

- QSR requirements, which require manufacturers and contract manufacturers, including any third-party manufacturers, to follow stringent design, testing, control, documentation and other quality assurance procedures during all aspects of the design and manufacturing process;
- labeling regulations and FDA prohibitions against the promotion of investigational products, or "off-label" uses of cleared or approved products;
- requirements related to promotional activities;
- clearance or approval of product modifications to 510(k)-cleared devices that could significantly affect safety or effectiveness or that would constitute a major change in intended use of a cleared device;
- medical device reporting regulations, which require that a manufacturer report to the FDA if a device it markets may have caused or contributed to a death or serious injury, or has malfunctioned and the device or a similar device that it markets would be likely to cause or contribute to a death or serious injury, if the malfunction were to recur;
- correction, removal and recall reporting regulations, which require that manufacturers report to the FDA field corrections, product removals or recalls if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FDCA that may present a risk to health;
- the FDA's recall authority, whereby the agency can order device manufacturers to recall from the market a product that is in violation of governing laws and regulations; and
- post-market surveillance activities and regulations, which apply when deemed by the FDA to be necessary to protect the public health or to provide additional safety and effectiveness data for the device.

The FDA has broad regulatory compliance and enforcement powers. If the FDA determines that we failed to comply with applicable regulatory requirements, it can take a variety of compliance or enforcement actions, which may result in any of the following sanctions:

- untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- unanticipated expenditures to address or defend such actions;
- customer notifications for repair, replacement, refunds;
- recall, withdrawal, administrative detention or seizure;
- operating restrictions or partial suspension or total shutdown of production;
- refusal of or delay in granting our requests for 510(k) clearance or PMA approval of new tests or modified tests;
- operating restrictions, partial suspension or total shutdown of production;
- withdrawing 510(k) clearance or PMA approvals that are already granted;
- refusal to grant export approval; or
- criminal prosecution.

Laboratory-Developed Tests (LDTs)

LDTs have generally been considered to be tests that are designed, developed, validated and used within a single laboratory. The FDA takes the position that it has the authority to regulate such tests as medical devices under the FDCA. The FDA has historically exercised enforcement discretion and has not required clearance or approval of LDTs prior to marketing. In addition, the New York Clinical Laboratory Evaluation Program separately approves certain LDTs offered to New York State patients.

On October 3, 2014, the FDA issued two draft guidance documents regarding oversight of LDTs. These draft guidance documents proposed more active review of LDTs. The draft guidance documents have been the subject of considerable controversy, and in November 2016, the FDA announced that it would not be finalizing the 2014 draft guidance documents. On January 13, 2017, the FDA issued a discussion paper which laid out elements of a possible revised future LDT regulatory framework, but did not establish any regulatory requirements.

The FDA's efforts to regulate LDTs have prompted the drafting of legislation governing diagnostic products and services that sought to substantially revise the regulation of both LDTs and in vitro diagnostics, or IVDs. Congress may act to provide further direction to the FDA on the regulation of LDTs.

CLIA and State Laboratory Licensing

Under the Clinical Laboratory Improvement Amendments, or CLIA, a laboratory is any facility that performs laboratory testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease, or the impairment of or assessment of health. CLIA requires that a laboratory hold a certificate applicable to the type of laboratory examinations it performs and that it complies with, among other things, standards covering operations, personnel, facilities administration, quality systems and proficiency testing, which are intended to ensure, among other things, that clinical laboratory testing services are accurate, reliable and timely. We have a current CLIA certificate to perform our tests at our laboratories in Chicago, Illinois, Atlanta, Georgia and Raleigh, North Carolina. To renew our CLIA certificate, we are subject to survey and inspection every two years to assess compliance with program standards.

Laboratories performing high complexity testing are required to meet more stringent requirements than laboratories performing less complex tests. In addition, a laboratory that is certified as "high complexity" under CLIA may develop, manufacture, validate and use LDTs. CLIA requires analytical validation including accuracy, precision, specificity, sensitivity and establishment of a reference range for any LDT used in clinical testing. The regulatory and compliance standards applicable to the testing we perform may change over time and any such changes could have a material effect on our business.

CLIA provides that a state may adopt laboratory regulations that are more stringent than those under federal law, and a number of states have implemented their own more stringent laboratory regulatory requirements. State laws may require that nonresident laboratories, or out-of-state laboratories, maintain an in-state laboratory license to perform tests on samples from patients who reside in that state. As a condition of state licensure, these state laws may require that laboratory personnel meet certain qualifications, specify certain quality control procedures or facility requirements or prescribe record maintenance requirements**.**

Failure to comply with CLIA certification and state clinical laboratory licensure requirements may result in a range of enforcement actions, including certificate or license suspension, limitation, or revocation, directed plan of action, onsite monitoring, civil monetary penalties, criminal sanctions, and revocation of the laboratory's approval to receive Medicare and Medicaid payment for its services, as well as significant adverse publicity.

The College of American Pathologists, or CAP, maintains a clinical laboratory accreditation program. While not required to operate a CLIA-certified laboratory, many private insurers require CAP accreditation as a condition to contracting with clinical laboratories to cover their tests. In addition, some countries outside the United States require CAP accreditation as a condition to permitting clinical laboratories to test samples taken from their citizens. We have obtained CAP accreditation for our Chicago, Illinois and Atlanta, Georgia laboratories, and we expect to apply for CAP accreditation for our Raleigh, North Carolina laboratory. In order to maintain CAP accreditation, we are subject to survey for compliance with CAP standards every two years. Failure to maintain CAP accreditation could have a material adverse effect on the sales of our tests and the results of our operations.

Federal and State Health Care Laws

Federal Physician Self-Referral Prohibition

We are also subject to the federal physician self-referral prohibition, commonly known as the Stark Law, and to comparable state laws. Together these restrictions generally prohibit us from billing a patient or governmental or private payer for certain designated health services, including clinical laboratory services, when the physician ordering the service, or a member of such physician's immediate family, has a financial relationship, such as an ownership or investment interest in or compensation arrangement, with us, unless the relationship meets an applicable exception to the prohibition. Several Stark Law exceptions are relevant to many common financial relationships involving clinical laboratories and referring physicians, including: (1) fair market value compensation for the provision of items or services; (2) payments by physicians to a laboratory for clinical laboratory services; (3) space and equipment rental arrangements that satisfy certain requirements and (4) personal services arrangements that satisfy certain requirements. The laboratory cannot submit claims to the Medicare Part B program for services furnished in violation of the Stark Law, and Medicaid reimbursements may be at risk as well. These prohibitions apply regardless of any intent by the parties to induce or reward referrals or the reasons for the financial relationship and the referral. Penalties for violating the Stark Law include significant civil, criminal and administrative penalties, such as the return of funds received for all prohibited referrals, fines, civil monetary penalties, exclusion from the federal healthcare programs, integrity oversight and reporting obligations, and imprisonment. In addition, knowing violations of the Stark Law may also serve as the basis for liability under the federal False Claims Act, or FCA, which can result in additional civil and criminal penalties.

Federal Anti-Kickback Law

The federal Anti-Kickback Statute, or AKS, makes it a felony for a person or entity, including a clinical laboratory, to knowingly and willfully offer, pay, solicit or receive any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, in order to induce business that is reimbursable under any federal health care program. The government may also assert that a claim that includes items or services resulting from a violation of the AKS constitutes a false or fraudulent claim under the FCA, which is discussed in greater detail below. Additionally, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Although the AKS applies only to items and services reimbursable under any federal health care program, a number of states have passed statutes substantially similar to the AKS that apply to all payers. Penalties for violations of such state laws include imprisonment and significant monetary fines. Federal and state law enforcement authorities scrutinize arrangements between health care providers and potential referral sources to ensure that the arrangements are not designed as a mechanism to induce patient care referrals or induce the purchase or prescribing of particular products or services. Generally, courts have taken a broad interpretation of the scope of the AKS, holding that the statute may be violated if merely one purpose of a payment arrangement is to induce referrals or purchases. In addition to statutory exceptions to the AKS, regulations provide for a number of safe harbors. If an arrangement meets the provisions of an applicable exception or safe harbor, it is deemed not to violate the AKS. An arrangement must fully comply with each element of an applicable exception or safe harbor in order to qualify for protection. Failure to meet the requirements of the safe harbor, however, does not render an arrangement illegal. Rather, the government may evaluate such arrangements on a case-by-case basis, taking into account all facts and circumstances.

Other Health Care Laws

In addition to the requirements discussed above, several other health care fraud and abuse laws could have an effect on our business.

The FCA prohibits, among other things, a person from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment or approval and from making, using, or causing to be made or used, a false record or statement material to a false or fraudulent claim in order to secure payment or retain an overpayment by the federal government. In addition to actions initiated by the government itself, the statute authorizes actions to

be brought on behalf of the federal government by a private party having knowledge of the alleged fraud. Because the complaint is initially filed under seal, the action may be pending for some time before the defendant is even aware of the action. If the government intervenes and is ultimately successful in obtaining redress in the matter or if the plaintiff succeeds in obtaining redress without the government's involvement, then the plaintiff will receive a percentage of the recovery. Finally, the Social Security Act includes its own provisions that prohibit the filing of false claims or submitting false statements in order to obtain payment. Several states have enacted comparable false claims laws which may be broader in scope and apply regardless of payer.

The Social Security Act includes civil monetary penalty provisions that impose penalties against any person or entity that, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent. In addition, a person who offers or provides to a Medicare or Medicaid beneficiary any remuneration, including waivers of co-payments and deductible amounts (or any part thereof), that the person knows or should know is likely to influence the beneficiary's selection of a particular provider, practitioner or supplier of Medicare or Medicaid payable items or services may be liable under the civil monetary penalties statute. Moreover, in certain cases, providers who routinely waive copayments and deductibles for Medicare and Medicaid beneficiaries, for example, in connection with patient assistance programs, can also be held liable under the AKS and FCA. One of the statutory exceptions to the prohibition is non-routine, unadvertised waivers of copayments or deductible amounts based on individualized determinations of financial need or exhaustion of reasonable collection efforts. The Office of Inspector General of the HHS emphasizes, however, that this exception should only be used occasionally to address special financial needs of a particular patient.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created new federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payers, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Like the AKS, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

The Eliminating Kickbacks in Recovery Act of 2018, or EKRA, prohibits knowingly and willfully soliciting or receiving any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, in return for referring a patient or patronage to a laboratory; or paying or offering any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, to induce a referral of an individual to a laboratory or in exchange for an individual using the services of that laboratory. EKRA was enacted to help reduce opioid-related fraud and abuse. However, EKRA defines the term "laboratory" broadly and without reference to any connection to substance use disorder treatment. The EKRA applies to all payers including commercial payers and government payers. Violations of EKRA are subject to significant fines and/or up to ten years in jail, separate and apart from existing AKS regulations and penalties. The law includes a limited number of exceptions, some of which closely align with corresponding AKS exceptions and safe harbors, and others that materially differ. Currently, there is no regulation interpreting or implementing EKRA, nor any guidance released by a federal agency regarding the scope of EKRA.

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, impose obligations on "covered entities," including certain healthcare providers, health plans, and healthcare clearinghouses, as well as their respective "business associates" that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information. Additionally, HITECH created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce HIPAA and seek attorneys' fees and costs associated with pursuing federal civil actions.

The Physician Payments Sunshine Act, enacted as part of the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or the ACA, also imposed annual reporting requirements on manufacturers of certain devices, drugs and biologics for payments and other transfers of value by them during the previous year to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by such physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding their payments and other transfers of value to physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives during the previous year.

Also, many states have laws similar to those listed above that may be broader in scope and may apply regardless of payer.

Efforts to ensure that our internal operations and business arrangements with third parties comply with applicable laws and regulations involve substantial costs. Any action brought against us for violation of these or other laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Additionally, certain of our business practices, including our consulting and advisory board arrangements with physicians and other healthcare providers, a small number of whom may receive stock or restricted stock units as compensation for services provided, may not comply with current or future corporate practice of medicine statutes, regulations, agency guidance or case law. If our operations are found to be in violation of any of the fraud and abuse laws described above or any other laws that apply to us, we may be subject to penalties, including potentially significant criminal, civil and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, contractual damages, reputational harm, integrity oversight and reporting obligations, limitations to the sale of certain products or services, diminished profits and future earnings, and the curtailment or restructuring of our operations.

Data Privacy and Security

We are, or may become, subject to numerous federal, state, local and foreign laws, regulations, standards, and guidance regarding data privacy and security. For example, HIPAA, as mentioned above, imposes privacy, security and breach reporting obligations with respect to individually identifiable health information upon "covered entities" (health plans, health care clearinghouses and certain health care providers), and their respective business associates, individuals or entities that create, received, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HIPAA mandates the reporting of certain breaches of health information to the U.S. Department of Health and Human Services, or HHS, affected individuals and if the breach is large enough, the media. Entities that are found to be in violation of HIPAA, including as the result of a breach of unsecured PHI, a complaint about privacy practices or an audit by HHS, may be subject to significant civil, criminal and administrative fines and penalties and/or additional reporting and oversight obligations if required to enter into a resolution agreement and corrective action plan with HHS to settle allegations of HIPAA non-compliance.

Even when HIPAA does not apply, failing to take appropriate steps to keep consumers' personal information secure may constitute unfair acts or practices in or affecting commerce in violation of Section 5(a) of the Federal Trade Commission Act, 15 U.S.C § 45(a). The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Personally identifiable health information is considered sensitive data that merits stronger safeguards. The FTC's guidance for appropriately securing consumers' personal information is similar to what is required by the HIPAA Security Rule. In addition, certain state laws govern the privacy and security of personal information, including health information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance

efforts. Failure or perceived failure to comply with these laws, where applicable, can result in material adverse effects to our business, including the imposition of significant civil and/or criminal penalties and private litigation.

The California Consumer Privacy Act, or CCPA, which went into effect January 1, 2020, is an example of the increasingly stringent privacy laws at the state level in the United States. The CCPA, among other things, imposes several obligations on covered companies, including requiring specific disclosures related to a business's collection, use and sharing of personal information and requirements to respond to requests related to their personal information (e.g. requests to understand personal information collection practices, to delete personal information, and to opt out of certain disclosures of their information). The CCPA also created a private right of action with statutory damages for certain data breaches, thereby potentially increasing risks associated with a data breach.

Additionally, in November 2020, California voters passed the California Privacy Rights Act of 2020, or CPRA. The CPRA, which is expected to take effect on January 1, 2023 and create additional obligations with respect to certain data relating to consumers, significantly expands the CCPA, including by introducing additional obligations such as data minimization and storage limitations, granting additional rights to consumers, such as correction of personal information and additional opt-out rights, and creates a new entity, the California Privacy Protection Agency, to implement and enforce the law. The CCPA and CPRA may increase our compliance costs and potential liability. In addition to the CCPA, numerous other states' legislatures have passed or are considering similar laws that will require ongoing compliance efforts and investment. For example, Virginia passed its Consumer Data Protection Act, and Colorado passed the Colorado Privacy act, both of which differ from the CPRA and become effective in 2023.

Outside the United States, there are an increasing number of laws and regulations governing the collection, use and processing of personal data. For example, the European Union's General Data Protection Regulation, or EU GDPR applies to any company established in the European Economic Area, or EEA, and to companies established outside the EEA that process personal information in connection with the offering of goods or services to data subjects in the EEA or the monitoring of the behavior of data subjects in the EEA. These regulations are often more restrictive than those in the United States and may restrict transfers of personal data from the EEA to the United States and other countries unless certain requirements are met. The EU GDPR provides that EU member states may make their own further laws and regulations limiting the processing of genetic, biometric or health data, which could limit our ability to use and share personal data or could cause our costs to increase, and harm our business and financial condition. Further, the United Kingdom's decision to leave the European Union has created uncertainty with regard to data protection regulation in the United Kingdom. As of January 1, 2021, we are also subject to the UK General Data Protection Regulation and UK Data Protection Act of 2018, which retains the GDPR in substantially similar form in the United Kingdom's national law. Failure to comply with any of these obligations could expose us to material adverse effects, including significant fines.

For more information regarding risks relating to data privacy and security, see "Risk Factors – Risks related to our highly regulated industry – Our collection, processing, use and disclosure of personally identifiable information, including patient and employee information, is subject to privacy and security regulations, and our failure to comply with those regulations or to adequately secure the information in our possession could result in significant liability or reputational harm."

Health Reform

In March 2010, the ACA became law. This law substantially changed the way health care is financed by both commercial payers and government payers, and significantly impacted our industry. The ACA contains a number of provisions that impacted existing state and federal healthcare programs or result in the development of new programs, including those governing enrollments in state and federal healthcare programs, reimbursement changes and fraud and abuse.

Since its enactment, there have been efforts to repeal all or part of the ACA. For example, on June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and remained open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that other challenges to the ACA will be made in the future. It is unclear how any such challenges and litigation, and the healthcare reform measures of the Biden administration will impact the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, reduced Medicare payments to providers by 2% per fiscal year, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with a temporary suspension from May 1, 2020 through December 31, 2021 due to the COVID-19 pandemic, unless additional Congressional action is taken.

We expect that additional state, federal, and foreign healthcare reform measures will be adopted in the future. It is also possible that additional governmental action will be taken in response to the COVID-19 pandemic.

Coverage and Reimbursement

The availability and extent of reimbursement by governmental and private payers is essential for most patients to be able to afford our current and future diagnostic products. Each payer makes its own decision as to whether to provide coverage for our tests, whether to enter into a contract with us and the reimbursement rate for a test. Coverage determinations by a payer may depend on a number of factors, including but not limited to a payer's determination that a test is appropriate, medically necessary or cost-effective. Negotiating with payers is time-consuming, and payers often insist on their standard form contracts, which may allow payers to terminate coverage on short notice, impose significant obligations on us and create additional regulatory and compliance hurdles for us. Further, when we contract with a payer as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained. Becoming a participating provider can result in higher reimbursement amounts for covered uses of our tests and, potentially, no reimbursement for non-covered uses identified under the payer's policies or the contract.

Although we are a participating provider with a limited number of commercial payers, certain other large, national commercial payers, including Anthem, Aetna and Humana, have issued non-coverage policies that consider tissue and liquid comprehensive genomic profile testing, including certain of our Genomics tests, as experimental or investigational.

In the United States, many significant decisions about reimbursement for new diagnostics are made by the Centers for Medicare & Medicaid Services, or CMS, which makes a national coverage determination, or NCD, as to whether and to what extent a new diagnostic will be covered and reimbursed under Medicare, although it frequently delegates this authority to local Medicare Administrative Contractors, or MACs, which may make a local coverage determination, or LCD, with respect to coverage and reimbursement. Private payers tend to follow Medicare to a substantial degree. It is difficult to predict what CMS or the applicable MACs will decide with respect to reimbursement for novel diagnostic products such as ours. Medicare's NCD for NGS, first established in 2018 and subsequently updated in 2020, states that NGS oncology tests (such as our Tempus xT and Tempus

xF tests), would be covered by Medicare nationally if and when: (1) performed in a CLIA-certified laboratory, (2) ordered by a treating physician, (3) the patient meets certain clinical and treatment criteria, including having recurrent, relapsed, refractory, metastatic, or advanced stages III or IV cancer, (4) the test is approved or cleared by the FDA as a companion in vitro diagnostic for an FDA approved or cleared indication for use in that patient's cancer, and (5) results are provided to the treating physician for management of the patient using a report template to specify treatment options. The NGS NCD also states that each MAC may provide local coverage of other NGS tests for cancer patients only when the test is performed by a CLIA-certified laboratory, ordered by a treating physician and the patient meets the same clinical and treatment criteria required of nationally covered NGS tests under the NGS NCD. An NGS typically test is not covered by Medicare when cancer patients do not have the above-noted indications for cancer under either an NCD or LCD.

National Government Services, Inc., or the Local MAC, is the MAC that makes LCDs for tests conducted at our Chicago laboratory. The Local MAC has issued two LCDs related to genetic testing in cancer, each of which currently require claims to be submitted under a single CPT code that describes the test. Because no CPT code comprehensively describes our NGS oncology tests, we have historically submitted claims using individual codes based on the cancer subtype profiled. On March 25, 2021, the Local MAC instructed us to submit our claims using a different designated CPT code and the Local MAC indicated that such claims would be individually reviewed. Claims we have submitted under this code have since been summarily denied. We have begun the process of appealing these denials, but the outcome of any appeal is uncertain and the appeal process is typically slow and costly. As a result, it is impossible for us to predict when the payments for NGS oncology tests performed for Medicare beneficiaries in our Chicago laboratory after March 25, 2021 will be finally adjudicated or whether we will receive any payment for the claims we have submitted to National Government after March 25, 2021. In addition, on July 23, 2021, the Local MAC issued revised instructions for CPT coding which may be applicable to our NGS oncology tests and further updated those instructions on July 29, 2021. We have sought additional clarification on this guidance from the Local MAC in order to understand its impact on our coding procedures. We are also attempting to assess the impact of this updated guidance on the payments we may receive for Medicare claims submitted to the Local MAC. At present, the outcome is uncertain and it is possible that the Local MAC will deny all claims related to the NGS oncology testing we perform for Medicare beneficiaries in our Chicago laboratory, which as of September 30, 2021 represented approximately one third of our clinical testing volume. While we intend to appeal any future denials of claims that we believe are inappropriate, the outcome of any appeal process is likely to be both lengthy and costly and the result of any such process is uncertain. As a result, beginning in the second quarter of 2021 we estimated the reimbursement rate for tests performed within our contractual allowances with a zero percent expected reimbursement for these tests. Our Atlanta, Georgia laboratory is not subject to any similar LCD.

In addition, pursuant to the regulations of CMS, we cannot bill Medicare directly for tests provided for Medicare beneficiaries in some situations. CMS adopted an exception to its laboratory date of service regulation, and if certain conditions are met, molecular testing laboratories such as us can rely on that exception to bill Medicare directly, instead of seeking payment from the hospital. If this exception is repealed or curtailed by CMS, or its laboratory date of service regulation is otherwise changed to adversely impact our ability to bill Medicare directly, our revenue could be materially reduced.

Some payers have implemented, or are in the process of implementing, laboratory benefit management programs, often using third-party benefit managers to manage these programs. The stated goals of these programs are to help improve the quality of outpatient laboratory services, support evidence-based guidelines for patient care and lower costs. The impact on laboratories, such as us, of active laboratory benefit management by third parties is unclear, and we expect that it would have a negative impact on our revenue in the short term. Payers may resist reimbursement for our tests in favor of less expensive tests, require pre-authorization for our tests, or impose additional pricing pressure on and substantial administrative burden for reimbursement for our tests. We expect to continue to focus substantial resources on increasing adoption of, and coverage and reimbursement for, our current tests and any future tests we may develop. We believe it may take several years to

achieve broad coverage and adequate contracted reimbursement with a majority of payers for our tests. However, we cannot predict whether, under what circumstances, or at what price levels payers will cover and reimburse our tests.

Outside the United States, the reimbursement process and timelines vary significantly. Certain countries, including a number of member states of the European Union, set prices and make reimbursement decisions for diagnostic products, with limited participation from the marketing authorization or CE mark holders, or may take decisions that are unfavorable to the authorization or CE mark holder where they have participated in the process. There can be no assurance that we can achieve acceptable prices and reimbursement decisions.

Legal Proceedings

From time to time, we are involved in various legal proceedings arising from the normal course of business activities. We are not presently a party to any litigation the outcome of which, we believe, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, cash flows or financial condition. Defending such proceedings is costly and can impose a significant burden on management and employees. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

Facilities

Our headquarters is located in Chicago, Illinois, where we lease approximately 180,000 square feet of laboratory and office space pursuant to a lease that expires in February 2029. We also lease an aggregate of approximately 25,000 square feet of laboratory and office space in Atlanta, Georgia pursuant to two leases that expire in September 2024 and September 2025, respectively. Our CLIA-certified laboratories are located in these facilities. We plan to operationalize a new genomics lab in Raleigh, North Carolina by the end of 2021. We also have offices in New York, New York and Redwood City, California. We do not own any real property. While we believe our existing facilities are adequate to meet our current requirements, we expect to expand our facilities as our operations grow over time. We believe we will be able to obtain such additional space on acceptable and commercially reasonable terms.

Employees and Human Capital

As of September 30, 2021, we had a total of 1,570 employees, of which 586 were technical and were engaged in product and engineering, and research and development. As of September 30, 2021, 837 employees were based at our headquarters in Chicago, Illinois, and 69 employees were based in Atlanta, Georgia. None of our employees are represented by a labor union or covered under a collective bargaining agreement, and we have never experienced a work stoppage. We consider our relationship with our employees to be positive.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity and other incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

MANAGEMENT

The following sets forth information, as of September 30, 2021, regarding our current executive officers and directors:

Name	Age	Position
Executive Officers:		
Eric Lefkofsky	52	Chief Executive Officer, Founder and Director
Ryan Fukushima	36	Chief Operating Officer
Erik Phelps	51	Executive Vice President and Chief Administrative and Legal Officer
James Rogers	36	Chief Financial Officer
Non-Employee Directors:		
Peter J. Barris	69	Director
Eric D. Belcher	53	Director
Jennifer A. Doudna, Ph.D.	57	Director
Wayne A.I. Frederick, M.D.	50	Director
Robert Ghenchev	38	Director
Scott Gottlieb, M.D.	49	Director
Theodore J. Leonsis	65	Director
Nadja West, M.D.	60	Director

Executive Officers

Eric Lefkofsky is our Founder and has served as our Chief Executive Officer and a member of our board of directors since our inception. Before founding Tempus, Mr. Lefkofsky co-founded Groupon, Inc. in 2008, where he held various roles, including Executive Chairman (through August 2013), Chief Executive Officer (August 2013 to November 2015), and Chairman of the board of directors (November 2015 to June 2020). He continues to serve as a member of Groupon's board of directors. Mr. Lefkofsky also co-founded Lightbank LLC in 2008, a private venture capital firm specializing in investments in technology companies, and has served as its managing member since inception. Mr. Lefkofsky also co-founded InnerWorkings, Inc., Mediaocean, LLC, and Echo Global Logistics, Inc., and served on each company's board of directors or board of managers. Mr. Lefkofsky holds a bachelor's degree from the University of Michigan and a J.D. from the University of Michigan Law School. We believe that Mr. Lefkofsky is qualified to serve on our board of directors because of his perspective and experience as our Founder and Chief Executive Officer, and his extensive knowledge of the venture capital and technology industries.

Ryan Fukushima has served as our Chief Operating Officer since September 2015. Prior to joining us, Mr. Fukushima was an Entrepreneur-in-Residence and Vice President at Lightbank LLC, a private venture capital firm specializing in investments in technology companies, from February 2014 to September 2015. Mr. Fukushima holds a B.S. from California Polytechnic University and a M.B.A. from the Ross School of Business at the University of Michigan.

Erik Phelps has served as our Executive Vice President and Chief Administrative and Legal Officer since June 2020. Prior to this, Mr. Phelps served as our Executive Vice President and General Counsel from March 2017 to June 2020. Prior to joining us, Mr. Phelps served as the General Counsel at Epic Systems Corporation, a software company that provides electronic health records for medical groups, hospitals and healthcare organizations, from May 2013 to March 2017. Mr. Phelps holds a B.A. from Beloit College and a J.D. from the George Washington University Law School.

James Rogers has served as our Chief Financial Officer since April 2021. Prior to this, Mr. Rogers served as our Vice President of Finance from February 2020 to April 2021, as our Senior Director of Finance from February 2018 to February 2020, and as our Director of Finance from August 2017 to February 2018. Prior to joining us, Mr. Rogers held various finance positions at Groupon from April 2011 to August 2017, including most recently leading financial planning and analysis for its North America business from February 2017 to August 2017 and serving as the financial controller of Asia Pacific operations from January 2015 to January 2017. Mr. Rogers holds a B.B.A. from the University of Notre Dame and an M.S. from Northern Illinois University.

Non-Employee Directors

Peter J. Barris has served as a member of our board of directors since September 2017. Mr. Barris has also served on the boards of directors of Berkshire Grey, Inc. since April 2016, Sprout Social, Inc. since February 2011 and Groupon since January 2008. Mr. Barris joined New Enterprise Associates, Inc., or NEA, a global venture capital fund investing in technology and healthcare, where he specialized in information technology investing, in 1992 and retired at the end of 2019. Prior to his retirement, Mr. Barris held several roles at NEA, including Managing General Partner from 1999 to 2017. After retiring in 2019, Mr. Barris now serves as Chairman of NEA. Mr. Barris holds a B.S. from Northwestern University and an M.B.A. from the Tuck School of Business at Dartmouth University. We believe that Mr. Barris is qualified to serve on our board of directors because of his investment management and financial expertise, and his experience serving on public company boards.

Eric D. Belcher has served as a member of our board of directors since January 2019. Mr. Belcher has served as the Chief Executive Officer of Market Track, LLC (d/b/a Numerator), a data and technology company in the market research industry, since June 2019. Mr. Belcher has also held various positions at InnerWorkings, Inc. since May 2005, including most recently serving as its Chief Executive Officer and President from January 2009 to April 2018. Mr. Belcher served as a member of the board of directors of InnerWorkings, Inc. from January 2009 to December 2018, including as the Chairman of its board of directors from April 2018 to September 2018. Mr. Belcher holds a bachelor's degree from Bucknell University and an M.B.A. from the University of Chicago Booth School of Business. We believe that Mr. Belcher is qualified to serve on our board of directors because of his extensive experience in the technology industry and leading high growth companies.

Jennifer A. Doudna, Ph.D. has served as a member of our board of directors since April 2021. Dr. Doudna has also served on the board of directors of Johnson & Johnson since April 2018. Since July 2002, Dr. Doudna has served as a Professor of Biochemistry & Molecular Biology at the University of California, Berkeley, where she directs the Innovative Genomics Institute, a joint UC Berkeley-UC San Francisco center, holds the Li Ka Shing Chancellor's Professorship in Biomedical and Health, and is the Chair of the Chancellor's Advisory Committee on Biology. Since 2002, Dr. Doudna has served as Principal Investigator at the Doudna Lab at UC Berkeley. Dr. Doudna has founded and served on the Scientific Advisory Boards of Caribou Biosciences, Inc. and Intellia Therapeutics, Inc., each of which are leading CRISPR genome engineering companies, since 2010. She has also been an Investigator with the Howard Hughes Medical Institute since 1997. Dr. Doudna is the recipient of numerous scientific awards in biochemistry and genetics, including the Nobel Prize in Chemistry in 2020. Dr. Doudna holds a bachelor's degree from Pomona College and a Ph.D. from Harvard Medical School. We believe that Dr. Doudna is qualified to serve on our board of directors because of her expertise in scientific research and innovation.

Wayne A.I. Frederick, M.D. has served as a member of our board of directors since October 2020. Dr. Frederick has served on the boards of directors of several other public companies, including serving as a member of the board of directors of Insulet Corp since October 2020, Forma Therapeutics Holdings, Inc. since July 2020, and Humana Inc. since February 2020. He also serves on the boards of directors of privately held companies and charitable organizations. Dr. Frederick is the President of Howard University, having held this position since July 2014, and also serves as the Charles R. Drew Endowed Chair of Surgery at Howard

University's College of Medicine. Dr. Frederick holds a B.S./M.D. dual degree, and an M.B.A. from Howard University. We believe that Dr. Frederick is qualified to serve on our board of directors because of his vast experience in medical research, healthcare academics and business administration, and his service on the boards of multiple public companies.

Robert Ghenchev has served as a member of our board of directors since May 2019 and is currently employed as Senior Partner at Novo Holdings Equity US Inc. which provides consulting services to Novo Holdings A/S. Since January 2018, Mr. Ghenchev has also served as Head of Novo Growth at Novo Holdings A/S. Prior to joining Novo Holdings, Mr. Ghenchev served as a Senior Vice President at Moelis & Company in London where he focused on mergers and acquisitions within the healthcare industry, from April 2010 to January 2018. Mr. Ghenchev also serves on the boards of directors of a European public company and other private companies. Mr. Ghenchev holds a B.A. in Economics and Finance from McGill University and an M.Sc. in Financial Economics from the University of Oxford. We believe that Mr. Ghenchev is qualified to serve on our board of directors because of his expertise in finance and the healthcare industry.

Scott Gottlieb, M.D. has served as a member of our board of directors since October 2019. Dr. Gottlieb has also served on the boards of directors of Illumina, Inc. since February 2020 and Pfizer Inc. since June 2019. Dr. Gottlieb has served as a Special Partner on NEA's healthcare investment team since April 2019, and a Resident Fellow at American Enterprise Institute since April 2021. Prior to that, he served as the 23rd Commissioner of the U.S. Food and Drug Administration from May 2017 to April 2019. Prior to serving as Commissioner, Dr. Gottlieb held several roles in the public and private sectors, including serving as a Venture Partner at NEA from January 2007 to May 2017, and a senior advisor to the Administrator of the Centers for Medicare and Medicaid Services in 2004. He is presently a contributor to CNBC and the CBS News program Face the Nation. Dr. Gottlieb holds a B.A. from Wesleyan University and an M.D. from Mount Sinai School of Medicine. We believe that Dr. Gottlieb is qualified to serve on our board of directors because of his extensive experience as a medical policy expert and public health advocate.

Theodore J. Leonsis has served as a member of our board of directors since January 2019. In November 2011, Mr. Leonsis co-founded Revolution Growth, a private investment firm, and has served as a General Partner thereof since that time. Since 1999, Mr. Leonsis has served as the Founder, Chairman, Majority Owner, and Chief Executive Officer of Monumental Sports & Entertainment, LLC, a sports, entertainment, media, and technology company that owns the NBA's Washington Wizards, the NHL's Washington Capitals, the WNBA's Washington Mystics, the Capital City Go-Go, Wizards District Gaming, Caps Gaming, and the Capital One Arena in Washington, D.C. Mr. Leonsis has served as a director of American Express Co. since July 2010. Mr. Leonsis has also served on the board of directors of Groupon, Inc. since June 2009, including as Chairman of the board of directors from August 2013 to November 2015 and, again, since June 2020. Mr. Leonsis also serves on the boards of directors of several private internet and technology companies, as well as charitable organizations. Mr. Leonsis holds a bachelor's degree from Georgetown University. We believe that Mr. Leonsis is qualified to serve on our board of directors because of his significant operational, investment and financial experience, and his service on the boards of two public companies.

Nadja West, M.D. has served as a member of our board of directors since April 2021. Dr. West has also served on the boards of directors of several other public companies, including serving as a member of the board of directors of Johnson & Johnson since December 2020, Tenet Healthcare Corp since October 2019, and Nucor Corporation since September 2019. From December 2015 to October 2019, Dr. West served as the 44th Surgeon General of the U.S. Army, and the Commanding General of the U.S. Army Medical Command. Dr. West currently serves as Trustee of both the National Recreation Foundation and Mount St. Mary's University, and board member of Americares and The Woodruff Foundation. She was recently appointed an independent member of the NCAA Board of Governors. Dr. West holds a B.S. from the United States Military Academy at West Point, an M.D. from the George Washington University School of Medicine, and an M.S. from National War College. We believe that Dr. West is qualified to serve on our board of directors because of her executive and operational leadership and expertise with strategic planning and healthcare management.

Composition of Our Board of Directors

Our business and affairs are managed under the direction of our board of directors. We currently have directors. Each director is elected to the board of directors for a one-year term, to serve until the election and qualification of a successor director at our annual meeting of stockholders, or until the director's earlier removal, resignation, or death. All of our directors currently serve on the board of directors pursuant to the provisions of a voting agreement between us and several of our stockholders. This agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors. Following the closing of this offering, no stockholder will have any special rights regarding the election or designation of members of our board of directors. Our current directors will continue to serve as directors until their resignation, removal or successor is duly elected.

Lead Independent Director

Eric Lefkofsky serves as both our Chief Executive Officer and as Chairman of our board of directors. Our corporate governance guidelines provide that one of our independent directors may serve as the lead independent director at any time that Mr. Lefkofsky or anyone else who is not an independent director is serving as the chairman of the board of directors. Our board of directors has appointed, effective upon the completion of this offering, to serve as our lead independent director. As lead independent director, will preside at all meetings of the board of directors at which Mr. Lefkofsky is not present, will preside over executive sessions of our independent directors, will serve as a liaison between Mr. Lefkofksy and our independent directors, and will perform such additional duties as our board of directors may otherwise determine and delegate.

Director Independence

Our board of directors has undertaken a review of the independence of each director. Based on information provided by each director concerning his or her background, employment and affiliations, our board of directors has determined that none of our directors, other than Mr. Lefkofsky, has any relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the listing standards of . In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our shares by each non-employee director and the transactions described in the section titled "Certain Relationships and Related Party Transactions."

Committees of Our Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. The composition and responsibilities of each of the committees of our board of directors are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors. Our board of directors may establish other committees as it deems necessary or appropriate from time to time.

Audit Committee

After this offering, our audit committee will consist of , and . Our board of directors has determined that each of satisfies the independence requirements under listing standards and Rule 10A-3(b)(1) of the Exchange Act. The chair of our audit committee will be , who our board of directors has determined is an "audit committee financial expert" within the meaning of SEC regulations. Each member of our audit committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, our board of directors has examined each audit committee member's scope of experience and the nature of their employment in the corporate finance sector.

The principal duties and responsibilities of our audit committee include, among other things:

- selecting a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- helping to ensure the independence and performance of the independent registered public accounting firm;
- helping to maintain and foster an open avenue of communication between management and the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually, that describes its internal quality-control procedures, any material issues with such procedures, and any steps taken to deal with such issues when required by applicable law; and
- approving (or, as permitted, pre-approving) all audit and all permissible non-audit services to be performed by the independent registered public accounting firm.

Our audit committee will operate under a written charter, to be effective prior to the closing of this offering, that satisfies the applicable listing standards of the .

Compensation Committee

After this offering, our compensation committee will consist of and . The chair of our compensation committee will be . Our board of directors has determined that each of and is independent under listing standards and a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act.

The principal duties and responsibilities of our compensation committee include, among other things:

- approving the retention of compensation consultants and outside service providers and advisors;
- reviewing and approving, or recommending that our board of directors approve, the compensation, individual and corporate performance goals and objectives and other terms of employment of our executive officers, including evaluating the performance of our chief executive officer and, with his assistance, that of our other executive officers;
- reviewing and recommending to our board of directors the compensation of our directors;
- administering our equity and non-equity incentive plans;
- reviewing our practices and policies of employee compensation as they relate to risk management and risk-taking incentives;
- reviewing and evaluating succession plans for the executive officers;
- reviewing and approving, or recommending that our board of directors approve, incentive compensation and equity plans; and

- reviewing and establishing general policies relating to compensation and benefits of our employees and reviewing our overall compensation philosophy.

Our compensation committee will operate under a written charter, to be effective prior to the closing of this offering, that satisfies the applicable listing standards of the .

Nominating and Corporate Governance Committee

After this offering, our nominating and corporate governance committee will consist of and . The chair of our nominating and corporate governance committee will be . Our board of directors has determined that each member of the nominating and corporate governance committee is independent under listing standards.

The nominating and corporate governance committee's responsibilities include, among other things:

- identifying, evaluating, and selecting, or recommending that our board of directors approve, nominees for election to our board of directors and its committees;
- approving the retention of director search firms;
- evaluating the performance of our board of directors and of individual directors;
- considering and making recommendations to our board of directors regarding the composition of our board of directors and its committees;
- evaluating the adequacy of our corporate governance practices and reporting; and
- overseeing an annual evaluation of the board's performance.

Our nominating and corporate governance committee will operate under a written charter, to be effective prior to the closing of this offering, that satisfies the applicable listing standards of the .

Code of Conduct

We have adopted a Code of Conduct that applies to all our employees, officers and directors. This includes our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. The full text of our Code of Conduct will be posted on our website at www.tempus.com. We intend to disclose on our website any future amendments of our Code of Conduct or waivers that exempt any principal executive officer, principal financial officer, principal accounting officer or controller, persons performing similar functions or our directors from provisions in the Code of Conduct. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus.

Compensation Committee Interlocks and Insider Participation

None of the members of the compensation committee are currently, or have been at any time, one of our officers or employees. None of our executive officers currently serve, or have served during the last year, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

Non-Employee Director Compensation

The following table sets forth information regarding compensation earned by or paid to our non-employee directors for the year ended December 31, 2020:

Name	Fees Earned or Paid in Cash(1)	Total
Peter J. Barris	$ —	$ —
Eric D. Belcher	—	—
Jennifer A. Doudna, Ph.D.(2)	—	—
Wayne A.I. Frederick, M.D.	18,750	18,750
Robert Ghenchev	—	—
Scott Gottlieb, M.D.	100,000	100,000
Theodore J. Leonsis	—	—
Nadja West, M.D.(3)	—	—

(1) During and as of the year ended December 31, 2020, none of our non-employee directors received or held stock awards under our 2015 Plan, except Mr. Barris, who, as of December 31, 2020, held a restricted stock award of 100,000 shares of our Class A common stock, one fourth of which vest on September 7, 2018, and 1/16 of which vest quarterly thereafter, provided that the recipient remains in continuous service with us through each vesting date, and subject to the earlier to occur of (i) the consummation of this offering and (ii) a change in control of our company.

(2) Dr. Doudna joined our board of directors in April 2021.

(3) Dr. West joined our board of directors in April 2021.

Mr. Lefkofsky, our Chief Executive Officer, Founder and Chairman, is also a member of our board of directors but does not receive any additional compensation for his service as a director. See the section titled “Executive Compensation” for more information regarding the compensation earned by Mr. Lefkofsky.

We intend to adopt a non-employee director compensation policy in connection with this offering on terms to be determined by our board of directors. Under the non-employee director policy, our non-employee directors will be eligible to receive compensation for service on our board of directors and committees of our board of directors.

EXECUTIVE COMPENSATION

Our named executive officers, consisting of our principal executive officer and the next two most highly compensated executive officers, as of December 31, 2020, were:

- Eric Lefkofsky, Chief Executive Officer, Founder and Chairman;
- Erik Phelps, Executive Vice President and Chief Administrative and Legal Officer; and
- Vanessa Rollings, former Chief Financial Officer.

2020 Summary Compensation Table

The following table presents all of the compensation awarded to or earned by or paid to our named executive officers for the year ended December 31, 2020.

Name and Principal Position	Salary	Stock Awards(1)	All Other Compensation	Total
Eric Lefkofsky	$ —	$ —	$ 525(2)	$ —
Chief Executive Officer, Founder and Chairman				
Erik Phelps	546,354	103,250	48,681(2)(3)	698,285
Executive Vice President and Chief Administrative and Legal Officer				
Vanessa Rollings(3)	382,254	103,250	525(2)	486,029
Former Chief Financial Officer				

(1) Amounts reported represents the aggregate grant date fair value of RSUs granted to our executive officer during 2020 under our 2015 Plan, computed in accordance with ASC Topic 718. The assumptions used in calculating the grant date fair value of the stock awards reported in this column are set forth in the notes to our audited consolidated financial statements included elsewhere in this prospectus. This amount does not reflect the actual economic value that may be realized by the executive officer.

(2) Amount shown includes pro-rated parking fees in the amount of $525 earned during 2020 before our office closed in March 2020 due to the COVID-19 pandemic.

(3) Amount shown includes housing stipend in the amount of $48,126 and life insurance premiums paid in the amount of $30.

(4) Ms. Rollings resigned as our Chief Financial Officer, effective April 15, 2021.

Outstanding Equity Awards as of December 31, 2020

The following table sets forth certain information about outstanding equity awards granted to our named executive officers that remain outstanding as of December 31, 2020.

	Stock Awards(1)			
Name	Grant Date	Vesting Commencement Date	Number of Shares or Units of Stock that Have Not Vested (#)	Market Value of Shares or Units of Stock that Have Not Vested(2)
Eric Lefkofsky	—	—	—	$ —
Erik Phelps	May 1, 2017	December 31, 2017	300,000(3)	9,627,000
	March 13, 2018	February 24, 2018	25,000(4)	802,250
	April 17, 2019	February 1, 2019	10,000(4)	320,900
	April 15, 2020	February 1, 2020	12,500(4)	401,125
Vanessa Rollings(5)	October 25, 2018	September 4, 2018	275,000(4)	8,824,750
	April 15, 2020	February 1, 2020	12,500(4)	401,125

(1) All stock awards listed in this table represent RSUs granted pursuant to our 2015 Plan, the terms of which are described below under "—Equity Incentive Plans—2015 Stock Plan."
(2) This column represents the fair market value of a share of our common stock of $32.09 as of December 31, 2020 as determined by our board of directors, multiplied by the amount shown in the column "Stock Awards—Number of Shares or Units of Stock that Have Not Vested."
(3) One fourth of these RSUs vest on December 31, 2017 and 1/12 of the remaining RSUs vest quarterly thereafter, provided that the recipient remains in continuous service with us through each vesting date, and subject to the earlier to occur of (i) the consummation of this offering and (ii) a change in control of our company.
(4) One fourth of these RSUs vest on the one year anniversary of the vesting commencement date and 1/12 of the remaining RSUs vest quarterly thereafter, provided that the recipient remains in continuous service with us through each vesting date, and subject to the earlier to occur of (i) the consummation of this offering and (ii) a change in control of our company.
(5) Ms. Rollings resigned as our Chief Financial Officer, effective April 15, 2021. Pursuant to the terms of Ms. Rollings' separation agreement, which is described below, Ms. Rollings' RSUs will continue to vest through September 4, 2021, such that as of September 4, 2021, 235,730 RSUs subject to the award granted on October 25, 2018 will have satisfied the service-based vesting condition, and 4,688 RSUs subject to the award granted on April 15, 2020 will have satisfied the service-based vesting condition.

We may in the future, on an annual basis or otherwise, grant additional equity awards to our executive officers pursuant to our 2021 Equity Incentive Plan, as amended, or the 2021 Plan, the terms of which are described below under "—Equity Incentive Plans—2021 Equity Incentive Plan."

Employment Arrangements

Prior to the completion of this offering, we will enter into revised employment agreements with each of our named executive officers setting forth the terms and conditions of such executive's employment with us. The employment agreements generally will provide for at-will employment and set forth the executive officer's initial base salary. Each of our named executive officers has also executed our standard form of proprietary information and inventions assignment agreement.

Eric Lefkofsky

Mr. Lefkofsky's employment is at will and may be terminated at any time, with or without cause. We do not currently pay Mr. Lefkofsky a salary. Prior to the completion of this offering, we will enter into an employment agreement with Mr. Lefkofsky.

Erik Phelps

Mr. Phelps's employment is at will and may be terminated at any time, with or without cause. Prior to the completion of this offering, we will enter into an employment agreement with Mr. Phelps.

Vanessa Rollings

In June 2018, we entered into an offer letter with Ms. Rollings, our former Chief Financial Officer. The offer letter provided for Ms. Rollings's at-will employment, base compensation, RSU award and her ability to participate in our employee benefit plans generally. Ms. Rollings's offer letter also provided that if her employment was terminated by us without cause, Ms. Rollings would be entitled to a severance benefit equal to six months of her base salary for the then-current year and six-month additional vesting of her RSU award.

Separation Arrangement

Vanessa Rollings

In connection with the termination of her employment, we entered into a separation and release of claims agreement with Ms. Rollings, effective March 2, 2021. Ms. Rollings's last day of employment was April 15, 2021. The separation agreement provides for Ms. Rollings to receive (i) continuation of her base salary through August 15, 2021 (effective March 2, 2021, her base salary was increased from $385,000 to $400,000), (ii) payment of the company portion of health insurance premiums through August 15, 2021 and (iii) continuation of vesting of her RSU grants through September 4, 2021. Such severance benefits superseded and replaced in their entirety all severance benefits that would otherwise apply under the terms of her offer letter dated June 2018.

Equity Incentive Plans

2021 Equity Incentive Plan

Our board of directors intends to adopt the 2021 Equity Incentive Plan, or the 2021 Plan, that will become effective on the date of the underwriting agreement related to this offering. Our 2021 Plan will come into existence upon its adoption by our board of directors, but no grants will be made under our 2021 Plan prior to its effectiveness. Once our 2021 Plan becomes effective, no further grants will be made under our 2015 Plan.

Types of Awards. Our 2021 Plan provides for the grant of incentive stock options, or ISOs, nonstatutory stock options, or NSOs, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance-based awards and other awards, or collectively, awards. ISOs may be granted only to our employees, including our officers, and the employees of our affiliates. All other awards may be granted to our employees, including our officers, our non-employee directors and consultants and the employees and consultants of our affiliates.

Authorized Shares. The maximum number of shares of our Class A common stock that may be issued under our 2021 Plan is shares of our Class A common stock, which is the sum of: (i) new shares, plus (ii) up to shares of our Class A common stock subject to awards granted under our 2015 Plan that, after the effective date of our 2021 Plan, expire or otherwise terminate without having been exercised in full or are forfeited to or repurchased by us. The number of shares of our Class A common stock reserved for issuance under our 2021 Plan will automatically increase on January 1 of each year, beginning on January 1, 2022, and continuing through and including January 1, 2031, by % of the aggregate number of shares of common stock (both Class A and Class B) outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors prior to the applicable January 1. The maximum number of shares that may be issued upon the exercise of ISOs under our 2021 Plan is shares.

Shares issued under our 2021 Plan will be authorized but unissued or reacquired shares of Class A common stock. Shares subject to awards granted under our 2021 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, will not reduce the number of shares available for issuance under our 2021 Plan. Additionally, shares issued pursuant to awards under our 2021 Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of an award or to satisfy the tax withholding obligations to an award, will become available for future grant under our 2021 Plan.

The maximum number of shares of our Class A common stock subject to stock awards granted under the 2021 Plan or otherwise during any calendar year beginning in 2022 to any non-employee director, taken together with any cash fees paid by us to such non-employee director during such calendar year for service on the board of directors, will not exceed $ in total value (calculating the value of any such stock awards based on the grant date fair value of such stock awards for financial reporting purposes), or, with respect to the calendar year in which a non-employee director is first appointed or elected to our board of directors, $.

Plan Administration. Our board of directors, or a duly authorized committee of our board, may administer our 2021 Plan. Our board of directors has delegated concurrent authority to administer our 2021 Plan to the compensation committee under the terms of the compensation committee's charter. We sometimes refer to the board of directors, or the applicable committee with the power to administer our equity incentive plans, as the administrator. The administrator may also delegate to one or more of our officers the authority to (1) designate employees (other than officers) to receive specified awards, and (2) determine the number of shares subject to such awards.

The administrator has the authority to determine the terms of awards, including recipients, the exercise, purchase or strike price of awards, if any, the number of shares subject to each award, the fair market value of a share of our Class A common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, and the form of consideration, if any, payable upon exercise or settlement of the award and the terms of the award agreements for use under our 2021 Plan.

In addition, subject to the terms of the 2021 Plan, the administrator also has the power to modify outstanding awards under our 2021 Plan, including the authority to reprice any outstanding option or stock appreciation right, cancel and re-grant any outstanding option or stock appreciation right in exchange for new stock awards, cash or other consideration, or take any other action that is treated as a repricing under generally accepted accounting principles, with the consent of any materially adversely affected participant.

Stock Options. ISOs and NSOs are granted pursuant to stock option agreements adopted by the administrator. The administrator determines the exercise price for a stock option, within the terms and conditions of the 2021 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of our Class A common stock on the date of grant. Options granted under the 2021 Plan vest at the rate specified in the stock option agreement as specified in the stock option agreement by the administrator.

The administrator determines the term of stock options granted under the 2021 Plan, up to a maximum of ten years. Unless the terms of an optionholder's stock option agreement provide otherwise, if an optionholder's service relationship with us, or any of our affiliates, ceases for any reason other than disability, death or cause, the optionholder may generally exercise any vested options for a period of three months following the cessation of service. The option term may be extended in the event that either an exercise of the option or an immediate sale of shares acquired upon exercise of the option following such a termination of service is prohibited by applicable securities laws or our insider trading policy. If an optionholder's service relationship with us or any of our affiliates ceases due to disability or death, or an optionholder dies within a certain period following cessation of service, the optionholder or a beneficiary may generally exercise any vested options for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, options generally terminate immediately upon the termination of the individual for cause. In no event may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of our Class A common stock issued upon the exercise of a stock option will be determined by the administrator and may include (1) cash, check, bank draft or money order, (2) a broker-assisted cashless exercise, (3) the tender of shares of Class A common stock previously owned by the optionholder, (4) a net exercise of the option if it is an NSO and (5) other legal consideration approved by the administrator.

Options may not be transferred to third-party financial institutions for value. Unless the administrator provides otherwise, options generally are not transferable except by will, the laws of descent and distribution or pursuant to a domestic relations order. An optionholder may designate a beneficiary, however, who may exercise the option following the optionholder's death.

Tax Limitations on ISOs. The aggregate fair market value, determined at the time of grant, of our Class A common stock with respect to ISOs that are exercisable for the first time by an option holder during any calendar

year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will be treated as NSOs. No ISOs may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our parent or subsidiary corporations, unless (1) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (2) the term of the ISO does not exceed five years from the date of grant.

Restricted Stock Awards. Restricted stock awards are granted pursuant to restricted stock award agreements adopted by the administrator. Restricted stock awards may be granted in consideration for cash, check, bank draft or money order, services rendered to us or our affiliates or any other form of legal consideration. Class A common stock acquired under a restricted stock award may, but need not, be subject to a share repurchase option in our favor in accordance with a vesting schedule to be determined by the administrator. A restricted stock award may be transferred only upon such terms and conditions as set by the administrator. Except as otherwise provided in the applicable award agreement, restricted stock awards that have not vested may be forfeited or repurchased by us upon the participant's cessation of continuous service for any reason.

Restricted Stock Unit Awards. Restricted stock unit awards are granted pursuant to restricted stock unit award agreements adopted by the administrator. Restricted stock unit awards may be granted in consideration for any form of legal consideration. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the administrator or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, restricted stock units that have not vested will be forfeited upon the participant's cessation of continuous service for any reason.

Stock Appreciation Rights. Stock appreciation rights are granted pursuant to stock appreciation right grant agreements adopted by the administrator. The administrator determines the strike price for a stock appreciation right, which generally cannot be less than 100% of the fair market value of our Class A common stock on the date of grant. Upon the exercise of a stock appreciation right, we will pay the participant an amount equal to the product of (1) the excess of the per share fair market value of our Class A common stock on the date of exercise over the strike price, multiplied by (2) the number of shares of our Class A common stock with respect to which the stock appreciation right is exercised. A stock appreciation right granted under the 2021 Plan vests at the rate specified in the stock appreciation right agreement as determined by the administrator.

The administrator determines the term of stock appreciation rights granted under the 2021 Plan, up to a maximum of ten years. Unless the terms of a participant's stock appreciation right agreement provide otherwise, if a participant's service relationship with us or any of our affiliates ceases for any reason other than cause, disability or death, the participant may generally exercise any vested stock appreciation right for a period of three months following the cessation of service. The stock appreciation right term may be further extended in the event that exercise of the stock appreciation right following such a termination of service is prohibited by applicable securities laws. If a participant's service relationship with us, or any of our affiliates, ceases due to disability or death, or a participant dies within a certain period following cessation of service, the participant or a beneficiary may generally exercise any vested stock appreciation right for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, stock appreciation rights generally terminate immediately upon the occurrence of the event giving rise to the termination of the individual for cause. In no event may a stock appreciation right be exercised beyond the expiration of its term.

Performance Awards. Our 2021 Plan permits the grant of performance-based stock and cash awards. The compensation committee can structure such awards so that the stock or cash will be issued or paid pursuant to such award only following the achievement of certain pre-established performance goals during a designated performance period. Performance awards that are settled in cash or other property are not required to be valued in whole or in part by reference to, or otherwise based on, our Class A common stock.

The performance goals may be based on any measure of performance selected by the board of directors. The compensation committee may establish performance goals on a company-wide basis, with respect to one or more business units, divisions, affiliates or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise (i) in the award agreement at the time the award is granted or (ii) in such other document setting forth the performance goals at the time the goals are established, the compensation committee will appropriately make adjustments in the method of calculating the attainment of the performance goals as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by us achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock-based compensation and the award of bonuses under our bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles and (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles.

Other Awards. The administrator may grant other awards based in whole or in part by reference to our Class A common stock. The administrator will set the number of shares under the award and all other terms and conditions of such awards.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2021 Plan; (2) the class and maximum number of shares by which the share reserve may increase automatically each year; (3) the class and maximum number of shares that may be issued upon the exercise of ISOs and (4) the class and number of shares and exercise price, strike price, or purchase price, if applicable, of all outstanding awards.

Corporate Transactions. The following applies to stock awards under the 2021 Plan in the event of a corporate transaction, unless otherwise provided in a participant's stock award agreement or other written agreement with us or one of our affiliates or unless otherwise expressly provided by the administrator at the time of grant. Under the 2021 Plan, a corporate transaction is generally the consummation of (1) a sale or other disposition of all or substantially all of our assets, (2) a sale or other disposition of at least 50% of our outstanding securities, (3) a merger, consolidation or similar transaction following which we are not the surviving corporation or (4) a merger, consolidation or similar transaction following which we are the surviving corporation but the shares of our Class A common stock outstanding immediately prior to such transaction are converted or exchanged into other property by virtue of the transaction.

In the event of a corporate transaction, any stock awards outstanding under the 2021 Plan may be assumed, continued or substituted for by any surviving or acquiring corporation (or its parent company), and any reacquisition or repurchase rights held by us with respect to the stock award may be assigned to the successor (or its parent company). If the surviving or acquiring corporation (or its parent company) does not assume, continue or substitute for such stock awards, then (i) with respect to any such stock awards that are held by participants whose continuous service has not terminated prior to the effective time of the corporate transaction, or current participants, the vesting (and exercisability, if applicable) of such stock awards will be accelerated in full to a date prior to the effective time of the corporate transaction (contingent upon the effectiveness of the corporate transaction), and such stock awards will terminate if not exercised (if applicable) at or prior to the effective time of the corporate transaction, and any reacquisition or repurchase rights held by us with respect to such stock

awards will lapse (contingent upon the effectiveness of the corporate transaction), and (ii) any such stock awards that are held by persons other than current participants will terminate if not exercised (if applicable) prior to the effective time of the corporate transaction, except that any reacquisition or repurchase rights held by us with respect to such stock awards will not terminate and may continue to be exercised notwithstanding the corporate transaction. In addition, the plan administrator may also provide, in its sole discretion, that the holder of a stock award that will terminate upon the occurrence of a corporate transaction if not previously exercised will receive a payment, if any, equal to the excess of the value of the property the participant would have received upon exercise of the stock award over the exercise price otherwise payable in connection with the stock award.

A stock award may be subject to additional acceleration of vesting and exercisability upon or after a change in control as may be provided in an applicable award agreement or other written agreement, but in the absence of such provision, no such acceleration will occur.

Transferability. A participant may not transfer awards under our 2021 Plan other than by will, the laws of descent and distribution or as otherwise provided under our 2021 Plan.

Plan Amendment or Termination. Our board has the authority to amend, suspend or terminate our 2021 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No ISOs may be granted after the tenth anniversary of the date our board adopted our 2021 Plan. No awards may be granted under our 2021 Plan while it is suspended or after it is terminated.

2015 Stock Plan

The 2015 Plan was adopted by our board of directors and approved by our stockholders in September 2015. Our 2015 Plan has been periodically amended, most recently in November 2020. The 2015 Plan provides for the grant of ISOs, NSOs, restricted stock awards, RSUs, and other stock-based awards. Our employees, officers, directors, consultants and advisors are eligible to receive awards under the 2015 Plan; however, ISOs may only be granted to our employees.

Awards. As of , 2021, there were shares of common stock issuable upon the vesting and settlement of RSUs outstanding under the 2015 Plan, there were shares of common stock issuable upon the exercise of stock options outstanding under the 2015 Plan at an exercise price of $ per share, no options to purchase shares of our common stock had been exercised, and shares of common stock were available for future issuance under the 2015 Plan. On and after the effective date of the 2021 Plan described above, we will grant no further stock options or other awards under the 2015 Plan.

Authorized Shares. Subject to certain adjustments as provided in the 2015 Plan, the maximum aggregate number of shares of our Class A common stock that may be issued pursuant to awards under the 2015 Plan will not exceed shares. The maximum number of shares of Class A common stock that may be issued pursuant to the exercise of ISOs under our 2015 Plan is shares. Shares issued under our 2015 Plan will consist of authorized but unissued or reacquired shares of common stock or any combination thereof. Shares subject to awards granted under our 2015 Plan that expire, terminate, are cancelled without having been exercised or settled in full, are forfeited or repurchased for an amount not greater than the recipient's exercise or purchase price, will again become available for future grant under our 2015 Plan. Further, shares of Class A common stock tendered to us by a participant to exercise an award shall be added to shares of Class A common stock available for the grant of awards under the 2015 Plan. Additionally, shares underlying awards that are paid out in cash rather than in shares or withheld or reacquired to satisfy tax withholding obligations related to an award, will not reduce the number of shares available for issuance under our 2015 Plan.

Plan Administration. The 2015 Plan is administered by our board of directors. Our board of directors has broad discretion to administer the 2015 Plan, including the power and authority to determine the eligible

individuals to whom awards will be granted, the number and type of awards to be granted and the terms and conditions of awards. The board may also accelerate the vesting or exercise of any award, reprice or otherwise adjust the exercise price of options or grant a new option in substitution for any option and make all other determinations, perform all other actions with respect to the 2015 Plan or any award thereunder as the board deems advisable to the extent not inconsistent with the provisions of the 2015 Plan or applicable law.

Stock Options. ISOs and NSOs granted under the 2015 Plan are evidenced by award agreements established by our board of directors. Our board of directors determines the exercise price of the stock options, within the terms and conditions of the 2015 Plan, provided that the exercise price of a stock option generally cannot be less than 100% of the fair market value of a share of Class A common stock on the date of grant. Options granted under the 2015 Plan vest at the rate specified in the option agreement as determined by the board. The term of an option may not exceed 10 years. Unless the board provides otherwise, if a participant's service relationship with us, our parent or subsidiary, or collectively, our affiliates, ceases for any reason other than due to the participant's disability or death or a termination for cause, the participant may generally exercise any vested options for a period of three months following the cessation of service. This period may be extended in the event that exercise of the option is prohibited by applicable securities laws. If a participant's service relationship with us or our affiliates ceases due to disability or death, the participant's legal representative or a beneficiary may generally exercise any vested options for a period of 12 months following the cessation of service. In the event that a participant's service relationship with us is terminated for cause, options held by the participant will terminate in their entirety upon the termination date. In no event may an option be exercised beyond the expiration of its term.

Tax Limitations on ISOs. The aggregate fair market value, determined at the time of grant, of an award consisting of ISOs that are exercisable for the first time by a participant during any calendar year under all of our stock plans may not exceed $100,000. Options or portions thereof that exceed such limit will generally be treated as NSOs. No ISO may be granted to any person who, at the time of the grant, owns or is deemed to own shares of common stock possessing more than 10% of our total combined voting power unless (1) the option exercise price is at least 110% of the fair market value of the shares of common stock subject to the option on the date of grant and (2) the term of the ISO does not exceed five years from the date of grant.

Restricted Stock Awards. RSAs may be granted in the form of restricted stock bonuses, which are shares of Class A common stock for which no monetary payment is required, or restricted stock purchase rights, which are shares of Class A common stock for which a purchase price must be paid. Our board of directors determines the terms and conditions of RSAs, including purchase price, if any, vesting and forfeiture terms. In general, during any vesting period, a participant will have all of the rights of a stockholder holding shares of Class A common stock. If determined by the board and provided in an award agreement, dividends distributed prior to vesting will be subject to the same restrictions and risk of forfeiture as the restricted stock with respect to which the distribution was made. Except as otherwise provided in an award agreement, if a participant's service relationship with us ends for any reason, (1) we may repurchase any shares acquired pursuant to a restricted stock purchase right that remains subject to vesting conditions upon a participant's termination and (2) the participant will forfeit any shares under a restricted stock bonus award that have not vested as of the date of termination.

Restricted Stock Unit Awards. An RSU represents the right to receive on a future date or event a share of Class A common stock or an amount of cash in lieu thereof. RSU awards may be granted in consideration for services actually rendered to us or our affiliates or for the benefit of us or our affiliates. An RSU award may be settled in cash or by delivery of stock or other property as deemed appropriate by the board. Additionally, if provided in the award agreement, dividend equivalents may be credited in respect of shares covered by an RSU award. Except as otherwise provided in the applicable award agreement, RSU awards that have not vested will be forfeited once the participant's continuous service ends for any reason.

In general, RSU awards that have been granted under the 2015 Plan are subject to both a multi-year service-based vesting requirement and a "Liquidity Event" vesting requirement. The Liquidity Event requirement will be satisfied on the first to occur of: (1) a change in control (as described below) or (2) the effective date of a

registration statement under the Securities Act of 1933, as amended, or the Securities Act, for the sale of our Class A common stock, or the Liquidity Event Date. The RSU awards vest as follows:

- No RSUs will vest prior to the Liquidity Event Date.
- If the Liquidity Event Date occurs prior to the first anniversary of the vesting start date, then no RSUs will vest on the Liquidity Event Date and thereafter 1/16th of the RSUs will vest for each full three months of continuous service elapsed from the first anniversary of the vesting start date, subject to the participant's continuous service.
- If the Liquidity Event Date occurs on or after the first anniversary of the vesting start date but prior to the second anniversary of the vesting start date, then 1/4th of the RSUs will vest on the Liquidity Event Date and thereafter an additional 1/16th of the RSUs will vest for each full three months of continuous service elapsed from the first anniversary of the vesting start date, subject to the participant's continuous service.
- If the Liquidity Event Date occurs after the second anniversary of the vesting start date then 1/16th of the RSUs will vest on the Liquidity Event Date for each full three months that has elapsed since the vesting start date and thereafter an additional 1/16th of the RSUs will vest for each full three months that occurs from the vesting start date, subject to the participant's continuous service.

We have also granted Performance-Vesting Restricted Stock Unit awards, or PSUs, which include both a Liquidity Event vesting requirement and a performance-vesting condition. Like the RSU awards, the Liquidity Event requirement of the PSUs will be satisfied on the Liquidity Event Date. The performance-vesting condition of the PSUs will be satisfied in full, if, on the Liquidity Event Date, the total enterprise valuation of the Company equals or exceeds $6 billion, subject to certain adjustments as described in the 2015 Plan.

Transferability. Awards are generally not transferable other than by will or the laws of descent and distribution. The board, in its discretion, may allow certain transfers of options as set forth in an award agreement and subject to certain securities law restrictions.

Adjustments. In the event of certain corporate events or changes in our capitalization, the board will make adjustments to one or more of the number and kind of shares that may be delivered under the 2015 Plan or covered by each outstanding award, the ISO share reserve under the 2015 Plan and the exercise or purchase price per share of outstanding awards in order to prevent dilution or enlargement of the participants' rights under the 2015 Plan.

Change in Control. Upon a change in control, without the consent of any participant, the board may provide for any one or more of the following:

- accelerate the time of exercisability, vesting and/or settlement of an award,
- the assumption or substitution of outstanding award by a surviving, continuing, successor or purchasing corporation or other business entity (or any parent thereof); or
- awards to be cancelled, to the extent not vested or exercised before the transaction, in exchange for such cash, stock or other property in an amount equal to the excess, if any, of (1) the fair market value of the consideration paid in the transaction, over (2) any exercise or purchase price payable under such award.

Under the 2015 Plan, a change in control is generally (1) an indirect sale or exchange by our stockholders of securities representing more than 50% of the total combined voting power of then outstanding voting securities entitled to vote generally in the election of directors, (2) a merger or consolidation in which we are a party, (3) the sale, exchange or transfer of all or substantially all our assets, or (4) our complete liquidation or dissolution.

Withholding. We have the right to deduct from any and all payments made under the 2015 Plan, or to require the participant, through payroll withholding, cash payment or otherwise, to satisfy any federal, state, local and foreign taxes that are required to be withheld. We are under no obligation to deliver shares of common stock or to release shares from an escrow or to make any payment in cash until such tax withholding obligations have been satisfied by the participant.

Plan Amendment and Termination. The 2015 Plan will continue in effect until its termination by our board, provided that all awards under the 2015 Plan will be granted, if at all, within ten (10) years from the date the 2015 Plan was adopted by our board. Our board may amend, suspend or terminate the 2015 Plan at any time, provided that without stockholder approval, the 2015 Plan cannot be amended to increase the number of shares authorized, change the class of persons eligible to receive incentive stock options, or effect any other change that would require stockholder approval under any applicable law or listing rule. In general, no amendment, suspension or termination of the 2015 Plan may have a materially adverse effect on any outstanding award without the consent of the participant.

Limitations of Liability and Indemnification Matters

On the closing of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit.

Such limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation that will be in effect on the closing of this offering will authorize us to indemnify our directors, officers, employees, and other agents to the fullest extent permitted by Delaware law. Our amended and restated bylaws that will be in effect on the closing of this offering will provide that we are required to indemnify our directors and officers to the fullest extent permitted by Delaware law and may indemnify our other employees and agents. Our amended and restated bylaws that will be in effect on the closing of this offering will also provide that, on satisfaction of certain conditions, we will advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee, or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers, and other employees as determined by the board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including attorneys' fees, judgments, fines, and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these amended and restated certificate of incorporation and amended and restated bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against

our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted for directors, executive officers, or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Rule 10b5-1 Sales Plans

Our directors and officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our Class A common stock or Class B common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades under parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they do not possess of material nonpublic information, subject to compliance with the terms of our insider trading policy.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Other than compensation arrangements for our directors and executive officers, which are described elsewhere in this prospectus, below we describe transactions since January 1, 2018 to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock at the time of such transaction, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

Series D Convertible Preferred Stock Financing

In March 2018, we sold 8,534,330 shares of our Series D convertible preferred stock at a price per share of $9.3739, for an aggregate purchase price of approximately $80.0 million in private placements to accredited investors. The table below sets forth the number of shares of our Series D convertible preferred stock purchased by our executive officers, directors, holders of more than 5% of our capital stock and their affiliated entities or immediate family members. Each share of Series D convertible preferred stock will automatically convert into shares of our Class A common stock immediately prior to the closing of this offering. The holders of our Series D convertible preferred stock listed below are entitled to specified registration rights. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Participants	Number of Series D Shares Purchased	Aggregate Purchase Price
Innovation Group Investors, L.P. – 2011 Series(1)	533,395	$ 4,999,991.39
New Enterprise Associates 16, L.P.(2)	1,066,791	9,999,992.15
Tempus Series D Investments, LLC(1)	2,133,583	19,999,993.68

(1) Each of Innovation Group Investors, L.P. – 2011 Series and Tempus Series D Investments, LLC is controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman.

(2) Peter J. Barris, a member of our board of directors, served as a Managing General Partner at New Enterprise Associates 16, L.P., or NEA, at the time of this transaction.

Series E Convertible Preferred Stock Financing

From August 2018 through April 2019, we sold an aggregate of 6,630,905 shares of our Series E convertible preferred stock at a price per share of $16.7428, for an aggregate purchase price of approximately $111.0 million in private placements to accredited investors. During this period, we issued a total of 7,517,209 shares of our Series E convertible preferred stock, of which 886,304 shares were repurchased from Tempus Series E Investments, LLC at the original issue price per share, for an aggregate repurchase price of approximately $14.8 million, in order to accommodate the issuance and sale of shares of our Series E convertible preferred stock to additional purchasers. The table below sets forth the number of shares of our Series E convertible preferred stock purchased by our executive officers, directors, holders of more than 5% of our capital stock and their affiliated entities or immediate family members. Each share of Series E convertible preferred stock will automatically convert into shares of our Class A common stock immediately prior to the closing of this offering. The holders of our Series E convertible preferred stock listed below are entitled to specified registration rights. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Participants	Number of Series E Shares Purchased	Aggregate Purchase Price
New Enterprise Associates 16, L.P.(1)	358,362	$ 5,999,983.29
Revolution Growth III, LP(2)	597,271	9,999,988.90
Tempus Series E Investments, LLC(3)	1,134,816(4)	18,999,997.32

(1) Peter J. Barris, a member of our board of directors, served as a Managing General Partner at NEA at the time of this transaction.
(2) Theodore J. Leonsis, a member of our board of directors, is a founder and partner at Revolution Growth..
(3) Tempus Series E Investments, LLC is controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman.
(4) Tempus Series E Investments, LLC purchased an aggregate of 1,134,816 shares of our Series E convertible preferred stock, of which 886,304 shares were repurchased by us in April 2019. See the section titled "—Repurchases of Equity Securities—Redemptions of Preferred Stock" below. . As a result, Tempus Series E Investments, LLC currently owns 248,512 shares of our Series E convertible preferred stock.

Series F Convertible Preferred Stock Financing

From April through July 2019, we sold an aggregate of 8,077,674 shares of our Series F convertible preferred stock at a price per share of $24.7596, for an aggregate purchase price of approximately $200.0 million in private placements to accredited investors. During this period, we issued a total of 8,677,006 shares of our Series F convertible preferred stock, of which an aggregate of 599,332 shares of our Series F convertible preferred stock were repurchased from Tempus Series F Investments, LLC in May and July 2019 at the original issue price per share, for an aggregate repurchase price of approximately $14.8 million, in order to accommodate the issuance and sale of shares of our Series F convertible preferred stock to additional purchasers. The table below sets forth the number of shares of our Series F convertible preferred stock purchased by our executive officers, directors, holders of more than 5% of our capital stock and their affiliated entities or immediate family members. Each share of Series F convertible preferred stock will automatically convert into shares of our Class A common stock in connection with the closing of this offering. The holders of our Series F convertible preferred stock listed below are entitled to specified registration rights. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Participants	Number of Series F Shares Purchased	Aggregate Purchase Price
New Enterprise Associates 16, L.P.(1)	403,883	$ 9,999,981.53
Revolution Growth III, LP(2)	201,941	4,999,978.38
Tempus Series F Investments, LLC(3)	599,332(4)	14,839,220.59

(1) Peter J. Barris, a member of our board of directors, served as a Managing General Partner at NEA at the time of this transaction.
(2) Theodore J. Leonsis, a member of our board of directors, is a founder and partner at Revolution Growth.
(3) Tempus Series F Investments, LLC is controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman.
(4) Tempus Series F Investments, LLC purchased an aggregate of 599,332 shares of our Series F convertible preferred stock, of which 203,521 shares were repurchased by us in May 2019 and the remaining 395,811 shares were repurchased by us in July 2019. See the section titled "—Repurchases of Equity Securities—Redemptions of Preferred Stock" below. As a result, Tempus Series F Investments, LLC is no longer a stockholder of our company.

Series G Convertible Preferred Stock Financing

From February through April 2020, we sold an aggregate of 2,537,290 shares of our Series G convertible preferred stock at a price per share of $38.3524, for an aggregate purchase price of approximately $97.3 million in private placements to accredited investors. During this period, we issued a total of 2,667,660 shares of our Series G convertible preferred stock, of which 130,370 shares of our Series G convertible preferred stock were repurchased from Tempus Series G Investments, LLC at the original issue price per share, for an aggregate repurchase price of approximately $5.0 million, in order to accommodate the issuance and sale of shares of our Series G convertible preferred stock to an additional purchaser. The table below sets forth the number of shares of our Series G convertible preferred stock purchased by our executive officers, directors, holders of more than 5% of our capital stock and their affiliated entities or immediate family members. Each share of Series G convertible preferred stock will automatically convert into shares of our Class A common stock immediately prior to the closing of this offering. The holders of our Series G convertible preferred stock listed below are entitled to specified registration rights. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Participants	Number of Series G Shares Purchased	Aggregate Purchase Price
Innovation Group Investors, L.P. – 2011 Series(1)	130,370	$ 5,000,002.38
New Enterprise Associates 16, L.P.(2)	182,517	6,999,964.99
Novo Holdings A/S (3)	260,739	9,999,966.42
Tempus Series G Investments, LLC(1)	451,378(4)	17,311,429.61

(1) Each of Innovation Group Investors, L.P. – 2011 Series and Tempus Series G Investments, LLC is affiliated with and controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman.
(2) Peter J. Barris, a member of our board of directors, served as a Managing General Partner at NEA at the time of this transaction.
(3) Robert Ghenchev, a member of our board of directors, is the Head of Novo Growth at Novo Holdings A/S.
(4) Tempus Series G Investments, LLC purchased an aggregate of 451,378 shares of our Series G convertible preferred stock, of which 130,370 shares were repurchased by us in April 2020. See the section titled "—Repurchases of Equity Securities—Redemptions of Preferred Stock" below. As a result, Tempus Series G Investments, LLC currently owns 321,008 shares of our Series G convertible preferred stock.

Series G-2 Convertible Preferred Stock Financing

In November 2020 and January 2021, we sold an aggregate of 3,453,139 shares of our Series G-2 convertible preferred stock at a price per share of $57.3069 for an aggregate purchase price of approximately $189.0 million in private placements to accredited investors. During this period, we issued a total of 3,584,015 shares of our Series G-2 convertible preferred stock, of which 130,876 shares of our Series G-2 convertible preferred stock were repurchased from Blue Media, LLC at the original issue price per share, for an aggregate repurchase price of approximately $7.5 million, in order to accommodate the issuance and sale of shares of our Series G-2 convertible preferred stock to additional purchasers. The table below sets forth the number of shares of our Series G-2 convertible preferred stock purchased by our executive officers, directors, holders of more than 5% of our capital stock, and their affiliated entities or immediate family members. Each share of Series G-2 convertible preferred stock will automatically convert into shares of our Class A common stock immediately prior to the closing of this offering. The holders of our Series G-2 convertible preferred stock listed below are entitled to specified registration rights. See the section titled "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Participants	Number of Series G-2 Shares Purchased	Aggregate Purchase Price
Novo Holdings A/S(1)	261,748	$ 14,999,966.47
Blue Media, LLC(2)	130,876(3)	7,500,097.84

(1) Robert Ghenchev, a member of our board of directors, is the Head of Novo Growth at Novo Holdings A/S.
(2) Blue Media, LLC is controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman.
(3) Blue Media, LLC purchased an aggregate of 130,876 shares of our Series G-2 convertible preferred stock, all of which were repurchased by us in January 2021. See the section titled "—Repurchases of Equity Securities—Redemptions of Preferred Stock" below. As a result, Blue Media, LLC is no longer a holder of our Series G-2 convertible preferred stock.

Investor Rights, Voting, and Right of First Refusal and Co-Sale Agreements

In connection with our convertible preferred stock financings, we entered into investor rights, voting, right of first refusal, and co-sale agreements containing registration rights, information rights, voting rights, board representation rights, indemnification provisions and rights of first refusal, among other things, with certain holders of our convertible preferred stock and certain holders of our common stock, including entities affiliated with Eric Lefkofsky and Keeks, LLC.

The covenants included in these stockholder agreements generally will terminate upon the closing of this offering, except with respect to registration rights, as more fully described in the section titled "Description of Capital Stock—Registration Rights." See also the section titled "Principal and Selling Stockholders" for additional information regarding beneficial ownership of our capital stock.

Real Property Leases

From 2016 to 2018, we leased an office space from Lightbank LLC, an entity affiliated with and controlled by Eric Lefkofsky, our Chief Executive Officer, Founder and Chairman. In connection with this, we incurred $0.5 million of rent and other operating expenses in 2018.

In January 2018, we entered into an office lease with a third-party landlord in connection with which Lightbank LLC was allowed to terminate its then-outstanding lease with the landlord. We received $1.5 million from Lightbank LLC to be amortized over the course of the lease, of which $1.0 million remains to be amortized. We currently sublease a portion of this office space to Lightbank LLC, Lefkofsky Family Foundation and 346 Investment Partners, each an entity affiliated with and controlled by Mr. Lefkofsky, on a month-to-month basis. As of September 30, 2021, we have received an aggregate of $0.3 million in sublease income from Lightbank LLC.

Aircraft for Business Travel

We entered into an arm's length arrangement in 2018 pursuant to which we charter for business use an aircraft owned by 346 Investment Partners LLC, an entity affiliated with and controlled by Mr. Lefkofsky, through a third-party aircraft management company, which in turn reimburses 346 Investment Partners LLC at market rates. As of September 30, 2021, we have paid an aggregate of $0.2 million to 346 Investment Partners LLC pursuant to this arrangement.

Agreement with Pathos

In August 2021, we entered into a master agreement with Pathos AI, Inc., or, Pathos, a healthcare company that Mr. Lefkofsky, our Chief Executive Officer, Founder and Chairman, co-founded. Mr. Lefkofsky currently serves as Executive Chairman and a member of Pathos' board of directors. As of the date of this prospectus, we

have a warrant to purchase 23,456,790 shares, or approximately 19% of the current outstanding equity in Pathos, for $.0125 per share. The warrant will automatically exercise upon a change of control (as defined therein) or upon an initial public offering of Pathos' securities. Pursuant to this master agreement, we granted Pathos a limited, non-exclusive, revocable, non-transferable right and license, without right of sublicense, to access and download certain de-identified records from our proprietary database. Pathos in turn agreed to pay us certain license fees depending on the number of de-identified records it elects to license during the term of the master agreement. Pathos also agreed to pay us a subscription fee equal to $400,000 per year for access to our Lens product for the term of the master agreement. The master agreement provides for an initial term of five years, with a subsequent five-year renewal provision unless the agreement is terminated. Pathos may own certain analysis, summaries, reports or other information it creates with, or based upon, the de-identified data it licenses from us, and it may continue to use such information following termination of the agreement. Either party may terminate the agreement after the initial five-year term by prior written notice to the other party. As of , 2021, we have received an aggregate of $ in license fees from Pathos, and we have not exercised the warrant to purchase shares of Pathos common stock.

Equity Grants to Directors and Executive Officers

We have granted RSUs to certain of our directors and executive officers. For more information regarding the stock awards granted to our directors and named executive officers, see the sections titled "Management—Non-Employee Director Compensation" and "Executive Compensation."

Repurchases of Equity Securities

Redemptions of RSUs

In September 2019, we entered into a redemption agreement with Ryan Fukushima, our Chief Operating Officer. Pursuant to the redemption agreement, we repurchased 100,000 vested RSUs from Mr. Fukushima at a purchase price of $9.64 per RSU, for an aggregate repurchase price of approximately $1.0 million.

Redemptions of Common and Preferred Stock

In April 2020, we repurchased an aggregate of 190,639 shares of voting common stock from the Lefkofsky Family Foundation, an organization affiliated with Eric Lefkofsky, for a total purchase price of approximately $7.3 million.

In addition, from April 2019 to January 2021, we repurchased an aggregate of 3,362,835 shares of various series of convertible preferred stock from entities affiliated with and controlled by Eric Lefkofsky at the original issue price for a total purchase price of approximately $51.5 million. Such repurchases were affected in order to accommodate the issuance and sale of convertible preferred stock to additional purchasers.

Acceleration of Vesting for RSUs

In May 2017, we granted 300,000 RSUs to Erik Phelps, our Executive Vice President and Chief Administrative and Legal Officer, pursuant to a restricted stock unit agreement. In April 2021, our board of directors approved a waiver of a vesting condition such that 8,725 of the RSUs held by Mr. Phelps immediately vested and settled for 8,725 shares of our Class A common stock, 873 of the RSUs were cancelled, and 290,402 of the RSUs remain outstanding.

Indemnification Agreements

Our amended and restated certificate of incorporation that will be in effect on the closing of this offering will contain provisions limiting the liability of directors, and our amended and restated bylaws that will be in effect on the closing of this offering will provide that we will indemnify each of our directors and officers to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended

and restated bylaws that will be in effect on the closing of this offering will also provide our board of directors with discretion to indemnify our employees and other agents when determined appropriate by the board. In addition, we have entered into an indemnification agreement with each of our directors and executive officers, which requires us to indemnify them. For more information regarding these agreements, see the section titled "Executive Compensation—Limitations of Liability and Indemnification Matters."

Policies and Procedures for Transactions with Related Persons

Prior to the closing of this offering, we intend to adopt a written policy that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock, and any members of the immediate family of any of the foregoing persons are not permitted to enter into a related person transaction with us without the approval or ratification of our board of directors or our audit committee. Any request for us to enter into a transaction with an executive officer, director, nominee for election as a director, beneficial owner of more than 5% of any class of our common stock, or any member of the immediate family of any of the foregoing persons, in which the amount involved exceeds $120,000 and such person would have a direct or indirect interest, must be presented to our board of directors or our audit committee for review, consideration, and approval. In approving or rejecting any such proposal, our board of directors or our audit committee is to consider the material facts of the transaction, including whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person's interest in the transaction.

PRINCIPAL AND SELLING STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our shares as of , 2021 by:

- each named executive officer;
- each of our directors;
- our directors and executive officers as a group;
- each of the selling stockholders; and
- each other person or entity known by us to own beneficially more than 5% of our Class A common stock and Class B common stock (by number or by voting power).

We have determined beneficial ownership in accordance with the rules and regulations of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares that they beneficially own, subject to applicable community property laws.

Applicable percentage ownership before this offering is based on shares of Class A common stock and shares of Class B common stock outstanding as of , assuming the automatic conversion of all outstanding shares of our convertible preferred stock, other than our Series B preferred stock, into shares of Class A common stock, including the issuance of the Additional Class A Conversion Shares, the conversion of all outstanding shares of our Series B convertible preferred stock into shares of Class B common stock, and the automatic conversion of all outstanding shares of our nonvoting common stock into shares of Class A common stock, each of which will occur immediately prior to the closing of this offering. See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

Applicable percentage ownership after this offering assumes that the underwriters' option to purchase additional shares to cover over-allotments, if any, from the selling stockholders is not exercised is based on (1) shares of Class A common stock and (2) shares of Class B common stock outstanding immediately after the closing of this offering. Applicable percentage ownership after this offering if the underwriters' option to purchase additional shares to cover over-allotments, if any, from the selling stockholders is exercised in full is based on (1) shares of Class A common stock and (2) shares of Class B common stock outstanding immediately after the closing of this offering. Applicable percentage ownership after this offering also excludes any potential purchases in this offering by the persons and entities named in the table below. In computing the number of shares beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares subject to RSUs held by the person that would vest based on service-based vesting conditions within 60 days of , 2021. However, except as described above, we did not deem such shares outstanding for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated, the address for each beneficial owner listed in the table below is c/o Tempus Labs, Inc., 600 West Chicago Avenue, Suite 510 Chicago, Illinois 60654.

Name of Beneficial Owner	Beneficial Ownership Before the Offering: Class A Common Stock Shares	Class A %	Class B Common Stock Shares	Class B %	% of Total Voting Power Before the Offering	Beneficial Ownership After the Offering if Underwriters' Option is Not Exercised: Class A Common Stock Shares	Class A %	Class B Common Stock Shares	Class B %	% of Total Voting Power After the Offering	Number of Shares of Class A Common Stock Being Offered	Beneficial Ownership After the Offering if Underwriters' Option is Exercised in Full: Class A Common Stock Shares	Class A %	Class B Common Stock Shares	Class B %	% of Total Voting Power After the Offering
5% Stockholders:																
Eric Lefkofsky(1)																
Keeks, LLC(2)																
Other Directors and Named Executive Officers:																
Erik Phelps(3)																
Vanessa Rollings(4)																
Peter J. Barris(5)																
Eric D. Belcher																
Jennifer A. Doudna, Ph.D.(6)																
Wayne A.I. Frederick, M.D.(7)																
Robert Ghenchev																
Scott Gottlieb, M.D.(8)																
Theodore J. Leonsis																
Nadja West, M.D.(9)																
All directors and executive officers as a group (12 persons)(10)																
Other Selling Stockholders:																

* Represents beneficial ownership of less than 1%.

† Percentage of total voting power represents voting power with respect to all shares of our Class A and Class B common stock, as a single class. The holders of our Class B common stock are entitled to votes per share, and holders of our Class A common stock are entitled to one vote per share. See the section titled "Description of Capital Stock—Class A Common Stock and Class B Common Stock" for additional information about the voting rights of our Class A and Class B common stock.

(1) Consists of (a) shares of Class A common stock held by Blue Media, LLC, (b) shares of Class A common stock held by Gray Media, LLC, (c) shares of Class A common stock held by Innovation Group Investors, L.P. - Series 3, (d) shares of Class A common stock held by Innovation Group Investors, L.P. - Series 1B, (e) shares of Class A common stock held by Lightbank Investments 1B, LLC, (f) shares of Class A common stock held by Tempus Series A Investments, LLC, (g) shares of Class B common stock held by Tempus Series B Investments, LLC, (h) shares of Class A common stock held by Tempus Series B-1 Investments, LLC, (i) shares of Class A common stock held by Tempus Series B-2 Investments, LLC, (j) shares of Class A common stock held by Tempus Series C Investments, LLC, (k) shares of Class A common stock held by Tempus Series D Investments, LLC, (l) shares of Class A common stock held by Tempus Series E Investments, LLC, (m) shares of Class A common stock held by Tempus Series F Investments, LLC, and (n) shares of Class A common stock held by Tempus Series G Investments, LLC. Mr. Lefkofsky is the controlling shareholder of, and may be deemed to have shared voting, investment and dispositive power with respect to the shares held by, the aforementioned entities. Mr. Lefkofsky also holds RSUs, for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(2) Represents shares of Class A common stock held by Keeks, LLC. To our knowledge, Kimberly Keywell is the controlling shareholder of, and may be deemed to have shared voting, investment and dispositive power with respect to the shares held by, the aforementioned entity.

(3) Represents shares of Class A common stock issuable upon settlement of RSUs held by Mr. Phelps for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(4) Represents shares of Class A common stock issuable upon settlement of RSUs held by Ms. Rollings, for which the service-based vesting condition would be satisfied as of September 4, 2021 pursuant to the terms of Ms. Rollings' separation agreement.

(5) Represents shares of Class A common stock.

(6) Represents shares of Class A common stock issuable upon settlement of RSUs held by Ms. Doudna for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(7) Represents shares of Class A common stock issuable upon settlement of RSUs held by Mr. Frederick for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(8) Represents shares of Class A common stock issuable upon settlement of RSUs held by Mr. Gottlieb for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(9) Represents shares of Class A common stock issuable upon settlement of RSUs held by Ms. West for which the service-based vesting condition would be satisfied within 60 days of , 2021.

(10) Consists of (a) shares of Class A common stock, (b) shares of Class B common stock and (c) shares of Class A common stock issuable upon the settlement of RSUs for which the service-based vesting condition would be satisfied within 60 days of , 2021.

DESCRIPTION OF CAPITAL STOCK

General

The following description of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect on the closing of this offering. Copies of these documents have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of the common stock and convertible preferred stock reflect changes to our capital structure that will be in effect on the closing of this offering.

On the closing of this offering, our amended and restated certificate of incorporation will provide for two classes of common stock: Class A common stock and Class B common stock. In addition, our amended and restated certificate of incorporation that will be in effect on the closing of this offering will authorize shares of undesignated preferred stock, the rights, preferences, and privileges of which may be designated from time to time by our board of directors.

Upon the closing of this offering, our authorized capital stock will consist of shares, all with a par value of $0.0001 per share, of which:

- shares are designated Class A common stock;
- shares are designated Class B common stock; and
- shares are designated preferred stock.

As of , we had outstanding:

- shares of Class A common stock, which assumes (1) the conversion of all outstanding shares of convertible preferred stock, other than Series B preferred stock, into shares of Class A common stock, including the issuance of the Additional Class A Conversion Shares, (2) the conversion of all outstanding shares of nonvoting common stock into shares of Class A common stock, and (3) the issuance of shares of Class A common stock upon settlement of RSUs for which the service-based vesting condition was satisfied on or before the date of the offering and for which the performance-based vesting condition will be satisfied in connection with this offering, which settlement will occur upon the later of (i) the expiration of the lock-up period in connection with this offering and (ii) March 15, 2022;
- shares of Class B common stock, which assumes the conversion of all outstanding shares of convertible Series B preferred stock into shares of Class B common stock.

See “Prospectus Summary—The Offering” for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

Our outstanding capital stock was held by stockholders of record as of . Our board of directors is authorized, without stockholder approval except as required by the listing standards of , to issue additional shares of our capital stock.

Class A Common Stock and Class B Common Stock

Voting Rights

The Class A common stock is entitled to one vote per share on any matter that is submitted to a vote of our stockholders. Holders of our Class B common stock are entitled to votes per share on any matter submitted to our stockholders. Holders of shares of Class B common stock and Class A common stock will vote together as a single class on all matters (including the election of directors) submitted to a vote of stockholders, unless otherwise required by Delaware law or our amended and restated certificate of incorporation.

Under Delaware law, holders of our Class A common stock or Class B common stock would be entitled to vote as a separate class if a proposed amendment to our amended and restated certificate of incorporation would increase or decrease the aggregate number of authorized shares of such class, increase or decrease the par value of the shares of such class, or alter or change the powers, preferences, or special rights of the shares of such class so as to affect them adversely. While the holders of our Class A common stock have waived their right to vote as a separate class as to amendments to our amended and restated certificate of incorporation that would increase or decrease the aggregate number of authorized shares of Class A common stock, they are entitled to the other class protections provided under Delaware law. As a result, in these limited instances, the holders of a majority of the Class A common stock could defeat any amendment to our amended and restated certificate of incorporation. For example, if a proposed amendment of our amended and restated certificate of incorporation provided for the Class A common stock to rank junior to the Class B common stock with respect to (1) any dividend or distribution, (2) the distribution of proceeds were we to be acquired or (3) any other right, Delaware law would require the vote of the Class A common stock. In this instance, the holders of a majority of Class A common stock could defeat that amendment to our amended and restated certificate of incorporation.

Our amended and restated certificate of incorporation that will be in effect on the closing of this offering will not provide for cumulative voting for the election of directors.

Economic Rights

Except as otherwise will be expressly provided in our amended and restated certificate of incorporation that will be in effect on the closing of this offering or required by applicable law, all shares of Class A common stock and Class B common stock will have the same rights and privileges and rank equally, share ratably and be identical in all respects for all matters, including those described below.

Dividends and Distributions. Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of Class A common stock and Class B common stock will be entitled to share equally, identically, and ratably, on a per share basis, with respect to any dividend or distribution of cash or property paid or distributed by the company, unless different treatment of the shares of the affected class is approved by the affirmative vote of the holders of a majority of the outstanding shares of such affected class, voting separately as a class. See the section titled “Dividend Policy” for additional information.

Liquidation Rights. On our liquidation, dissolution, or winding-up, the holders of Class A common stock and Class B common stock will be entitled to share equally, identically, and ratably in all assets remaining after the payment of any liabilities, liquidation preferences, and accrued or declared but unpaid dividends, if any, with respect to any outstanding preferred stock, unless a different treatment is approved by the affirmative vote of the holders of a majority of the outstanding shares of such affected class, voting separately as a class.

Change of Control Transactions. The holders of Class A common stock and Class B common stock will be treated equally and identically with respect to shares of Class A common stock or Class B common stock owned by them, unless different treatment of the shares of each class is approved by the affirmative vote of the holders of a majority of the outstanding shares of the class treated differently, voting separately as a class, on (a) the closing of the sale, transfer, or other disposition of all or substantially all of our assets, (b) the consummation of a merger, reorganization, consolidation, or share transfer which results in our voting securities outstanding immediately before the transaction (or the voting securities issued with respect to our voting securities outstanding immediately before the transaction) representing less than a majority of the combined voting power of the voting securities of the company or the surviving or acquiring entity or (c) the closing of the transfer (whether by merger, consolidation, or otherwise), in one transaction or a series of related transactions, to a person or group of affiliated persons of securities of the company if, after closing, the transferee person or group would hold 50% or more of the outstanding voting power of the company (or the surviving or acquiring entity). However, consideration to be paid or received by a holder of common stock in connection with any such assets

sale, merger, reorganization, consolidation, or share transfer under any employment, consulting, severance, or other arrangement will be disregarded for the purposes of determining whether holders of common stock are treated equally and identically.

Subdivisions and Combinations. If we subdivide or combine in any manner outstanding shares of Class A common stock or Class B common stock, the outstanding shares of the other classes will be subdivided or combined in the same manner.

No Preemptive or Similar Rights

Our Class A common stock and Class B common stock are not entitled to preemptive rights, and are not subject to conversion, redemption or sinking fund provisions, except for the conversion provisions with respect to the Class B common stock described below.

Conversion

Each share of Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. After the closing of this offering, on any transfer of shares of Class B common stock, whether or not for value, each such transferred share will automatically convert into one share of Class A common stock, except for certain transfers detailed below and further described in our amended and restated certificate of incorporation that will be in effect on the closing of this offering.

Any holder's shares of Class B common stock will convert automatically into Class A common stock, on a one-to-one basis, upon certain circumstances, including: (1) the sale or transfer of such shares of Class B common stock, other than to a "controlled entity," which is any person or entity which, directly or directly, is controlled by, or is under common control with, the holder of such shares of Class B common stock; (2) the twenty-year anniversary of the filing of the certificate of amendment to our ninth amended and restated certificate of incorporation, which is March 15, 2041; (3) the termination of Mr. Lefkofsky's employment or service with us as an executive officer and member of our board of directors; and (4) the date that Mr. Lefkofsky and his controlled entities hold, in the aggregate, fewer than shares of our capital stock (as adjusted for stock splits, stock dividends, combinations, subdivisions and recapitalizations).

Once transferred and converted into Class A common stock, the Class B common stock may not be reissued.

Fully Paid and Non-Assessable

In connection with this offering, our legal counsel will opine that the shares of our Class A common stock to be issued under this offering will be fully paid and non-assessable.

Convertible Promissory Note

In June 2020, in connection with our entry into an agreement for use of Google LLC's, or Google's, Google Cloud Platform, we issued Google a convertible promissory note, or the Note, in the original principal amount of $330 million. In November 2020, in connection with our Series G-2 convertible preferred stock financing, we issued Google $80 million of our Series G-2 preferred stock in partial satisfaction of the outstanding principal amount under the Note, and we amended and restated the terms of the Note. Under the amended and restated Note, or the Amended Note, the outstanding principal amount accrues interest at the rate set forth therein, and the principal amount is automatically reduced each year based on a formula taking into account the aggregate value of the Google Cloud Platform services used by us. As of , 2021, the total amount outstanding under the Amended Note was $ million. The outstanding principal and accrued interest under the Note, or the Outstanding Amount, is due and payable on the earlier of (1) March 22, 2026, which is the maturity date of the Amended Note, (2) the occurrence and continuance of an event of default and (3) the occurrence of an acceleration event, which includes any termination by us of our Google Cloud Platform agreement. If the

Amended Note is outstanding at the maturity date, Google may, at its option, convert the then outstanding principal amount and interest accrued under the Amended Note into a number of shares of our Class A common stock equal to the quotient obtained by dividing (1) the Outstanding Amount on the maturity date, by (2) the average of the last trading price on each trading day during the twenty day period ending immediately prior to the maturity date. We generally may not prepay the Outstanding Amount, except that we may, at our option, prepay the Outstanding Amount in an amount such that the principal amount remaining outstanding after such repayment is $150 million.

Preferred Stock

As of , there were shares of our convertible preferred stock outstanding. Immediately prior to the closing of this offering, each outstanding share of our convertible preferred, other than our Series B convertible preferred stock, will convert into one share of our Class A common stock, and each outstanding share of our Series B convertible preferred stock will convert into one share of our Class B common stock. In addition, immediately prior to the closing of this offering, we expect to issue additional shares of Class A common stock upon the conversion of all of our outstanding shares of our preferred stock, pursuant to provisions of our certificate of incorporation as currently in effect, assuming an initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover page of this prospectus, which we refer to as the Additional Class A Conversion Shares. See "Prospectus Summary—The Offering" for additional information.

Under our amended and restated certificate of incorporation that will be in effect on the closing of this offering, our board of directors may, without further action by our stockholders (except as noted below), fix the rights, preferences, privileges, and restrictions of up to an aggregate of shares of preferred stock in one or more series and authorize their issuance. Notwithstanding the foregoing, so long as any shares of Class B common stock remain outstanding, no shares of preferred stock with voting rights equal or superior to those of the Class B common stock may be issued without the approval of the holders of a majority of the outstanding shares of Class B common stock. These rights, preferences, and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of our Class A common stock or Class B common stock. Any issuance of our preferred stock could adversely affect the voting power of holders of our Class A common stock or Class B common stock, and the likelihood that such holders would receive dividend payments and payments on liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring, or preventing a change of control or other corporate action. On the closing of this offering, no shares of preferred stock will be outstanding. We have no present plan to issue any shares of preferred stock.

Options

As of , we had outstanding options under the 2015 Plan.

Restricted Stock Units (RSUs)

As of , we had outstanding RSUs under the 2015 Plan.

Registration Rights

Stockholder Registration Rights

We are party to an investor rights agreement that provides that certain holders of our convertible preferred stock, including certain holders of at least 5% of our capital stock and entities affiliated with certain of our directors, have certain registration rights, as set forth below. This investor rights agreement was entered into in

November 2020. The registration of shares of our Class A common stock (including shares of Class A common stock issuable upon conversion of Class B common stock, along with all Additional Class A Conversion Shares) by the exercise of registration rights described below would enable the holders to sell these shares without restriction under the Securities Act when the applicable registration statement is declared effective. We will pay the registration expenses, other than underwriting discounts and commissions, of the shares registered by the demand, piggyback, and Form S-3 registrations described below.

Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include. The demand, piggyback, and Form S-3 registration rights described below will expire five years after the effective date of the registration statement, of which this prospectus forms a part, or with respect to any particular stockholder, such time after the effective date of the registration statement that such stockholder (a) holds less than 1% of our outstanding common stock (including shares issuable on conversion of outstanding convertible preferred stock) and (b) can sell all of its shares under Rule 144 of the Securities Act, or Rule 144, during any 90-day period.

See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

Demand Registration Rights

The holders of an aggregate of shares of our Class A common stock and Class B common stock (assuming no exercise of the underwriters' option to purchase additional shares from selling stockholders to cover over-allotments, if any, in this offering and assuming the issuance of the Additional Class A Conversion Shares) will be entitled to certain demand registration rights. At any time beginning six months after the effective date of this registration statement, the holders of a majority of these shares may, on not more than two occasions, request that we register all or a portion of their shares. Such request for registration must cover shares with an anticipated aggregate offering price, net of underwriting discounts and commissions, of at least $15.0 million.

Piggyback Registration Rights

In connection with this offering, the holders of an aggregate of shares of our Class A common stock and Class B common stock (assuming no exercise of the underwriters' option to purchase additional shares from selling stockholders to cover over-allotments, if any, in this offering and assuming the issuance of the Additional Class A Conversion Shares) were entitled to, and the necessary percentage of holders waived, their rights to notice of this offering and to include their shares of registrable securities in this offering. After this offering, in the event that we propose to, subject to limited exceptions, register any of our securities under the Securities Act, either for our own account or for the account of other security holders, the holders of these shares will be entitled to certain piggyback registration rights allowing the holder to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to a demand registration or a registration statement on Forms S-4 or S-8, the holders of these shares are entitled to notice of the registration and have the right to include their shares in the registration, subject to limitations that the underwriters may impose on the number of shares included in the offering.

Form S-3 Registration Rights

The holders of an aggregate of at least 20% of the then outstanding shares of Class A common stock and Class B common stock (assuming no exercise of the underwriters' option to purchase additional shares from selling stockholders to cover over-allotments, if any, in this offering and assuming the issuance of the Additional Class A Conversion Shares) will be entitled to certain Form S-3 registration rights. The holders of an aggregate of at least 20% of these shares can make a request that we register their shares on Form S-3 if we are qualified to

file a registration statement on Form S-3 and if the reasonably anticipated aggregate gross proceeds of the shares offered would equal or exceed $1.0 million. We will not be required to effect more than two registrations on Form S-3 within any 12-month period.

Anti-Takeover Provisions

Certificate of Incorporation and Bylaws to Be in Effect on the Closing of this Offering

Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the voting power of our shares of common stock will be able to elect all of our directors. Our amended and restated certificate of incorporation and amended and restated bylaws to be effective on the closing of this offering will provide for stockholder actions at a duly called meeting of stockholders or, so long as any shares of Class B common stock remain outstanding, by written consent. A special meeting of stockholders may be called by a majority of our board of directors, the chair of our board of directors, our chief executive officer, or, so long as any shares of Class B common stock remain outstanding, by our secretary upon written consent of our stockholders entitled to cast at least a majority of the votes at such meeting. Our amended and restated bylaws to be effective on the closing of this offering will establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors.

Our amended and restated certificate of incorporation to be effective on the closing of this offering will further provide for a dual-class common stock structure, which provides Eric Lefkofsky, our Chief Executive Officer, Founder, and Chairman, who will beneficially own 100% of our outstanding Class B common stock, with control over all matters requiring stockholder approval, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets. Additionally, so long as any shares of Class B common stock remain outstanding, a majority vote of the outstanding Class B common stock is required to (1) amend, alter, or repeal any provision of the certificate of incorporation or bylaws in a manner that impacts the rights of the holders of the Class B common stock, (2) reclassify any outstanding shares of Class A common stock into shares having (a) dividend or liquidation rights that are senior to the Class B common stock or (b) the right to more than one vote per share, (3) issue any shares of preferred stock having voting rights equal or superior to those of the Class B common stock, and (4) issue any additional shares of Class B common stock or other securities convertible into Class B common stock (except for the issuance of Class B common stock issuable upon a dividend under certain circumstances).

The foregoing provisions will make it more difficult for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated convertible preferred stock makes it possible for our board of directors to issue convertible preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions, including the dual-class structure of our common stock, are intended to preserve our existing control structure after the closing of this offering, facilitate our continued product innovation and the risk-taking that it requires, permit us to continue to prioritize our long-term goals rather than short-term results, enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

When we have a class of voting stock that is either listed on a national securities exchange or held of record by more than 2,000 stockholders, we will be subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, subject to certain exceptions.

Choice of Forum

Our amended and restated certificate of incorporation to be effective on the closing of this offering will provide that the Court of Chancery of the State of Delaware be the exclusive forum for actions or proceedings brought under Delaware statutory or common law: (1) any derivative claim or cause of action brought on our behalf; (2) any claim or cause of action asserting a breach of fiduciary duty; (3) any claim or cause of action against us arising under the Delaware General Corporation Law; (4) any claim or cause of action arising under or seeking to interpret our amended and restated certificate of incorporation or our amended and restated bylaws; or (5) any claim or cause of action against us that is governed by the internal affairs doctrine. The provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause or causes of action arising under the Securities Act, including all causes of action asserted against any defendant to such complaint. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering. Investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

Limitations of Liability and Indemnification

See the section titled “Executive Compensation—Limitations of Liability and Indemnification Matters.”

Exchange Listing

Our Class A common stock is currently not listed on any securities exchange. We intend to apply to have our Class A common stock approved for listing on under the symbol “TIME.”

Transfer Agent and Registrar

On the closing of this offering, the transfer agent and registrar for our Class A common stock and Class B common stock will be . The transfer agent’s address is .

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our Class A common stock. Future sales of substantial amounts of our Class A common stock or Class B common stock, including shares issued on the settlement of outstanding RSUs, in the public market after this offering, or the possibility of these sales or issuances occurring, could adversely affect the prevailing market price for our Class A common stock or impair our ability to raise equity capital.

Based on our shares outstanding as of , on the closing of this offering, a total of shares of Class A common stock and shares of Class B common stock will be outstanding, assuming the automatic conversion of (1) all of our outstanding shares of convertible preferred stock, other than our Series B convertible preferred stock, into an aggregate of shares of Class A common stock, including the Additional Class A Conversion Shares, (2) all of our outstanding shares of Series B convertible preferred stock into an aggregate of shares of Class B common stock and (3) all of our outstanding shares of nonvoting common stock into shares of Class A common stock. Of these shares, all of the Class A common stock sold in this offering by us, plus any shares sold by the selling stockholders on exercise of the underwriters' option to purchase additional Class A common stock to cover over-allotments, if any, will be freely tradable in the public market without restriction or further registration under the Securities Act, unless these shares are held by "affiliates," as that term is defined in Rule 144. See "Prospectus Summary—The Offering" for a description of the Additional Class A Conversion Shares, as the number of Additional Class A Conversion Shares that will be issued depends on the initial public offering price of our Class A common stock.

The remaining shares of Class A common stock and Class B common stock will be, and shares of Class A common stock issued on settlement of RSUs will be on issuance, "restricted securities," as that term is defined in Rule 144. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below. Restricted securities may also be sold outside of the United States to non-U.S. persons in accordance with Rule 904 of Regulation S.

Subject to the lock-up agreements described below and the provisions of Rule 144 or Regulation S under the Securities Act, as well as our insider trading policy, these restricted securities will be available for sale in the public market after the date of this prospectus.

As a result of the lock-up agreements and market standoff agreements described below and subject to the provisions of Rules 144 or 701, these restricted securities will be available for sale in the public market as follows:

Earliest Date Available for Sale in the Public Market	Number of Shares of Class A Common Stock

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements of Section 13 or Section 15(d) of the Exchange Act for at least 90 days, an eligible stockholder is entitled to sell such shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. To be an eligible stockholder under Rule 144, such stockholder must not be deemed to have been one of our affiliates for purposes of the Securities Act at any time during the 90 days preceding a sale and must have beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell such shares without complying with any of the requirements of Rule 144, subject to the expiration of the lock-up agreements described below.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell shares on expiration of the lock-up agreements described below, subject, in the case of restricted securities, to such shares having been beneficially owned for at least six months. Beginning 90 days after the date of this prospectus, within any three-month period, such stockholders may sell a number of shares that does not exceed the greater of:

- 1% of the number of shares of Class A common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average weekly trading volume of our Class A common stock on the during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 under the Securities Act, or Rule 701, generally allows a stockholder who was issued shares under a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding 90 days, to sell these shares in reliance on Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required by that rule to wait until 90 days after the date of this prospectus before selling those shares under Rule 701, subject to the expiration of the lock-up agreements described below.

Form S-8 Registration Statements

We intend to file one or more registration statements on Form S-8 under the Securities Act with the SEC to register the offer and sale of shares of our Class A common stock that are issuable under the 2015 Plan and the 2021 Plan. These registration statements will become effective immediately on filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described below, and Rule 144 limitations applicable to affiliates.

Lock-Up Arrangements

We, all of our directors, executive officers, the selling stockholders and the holders of substantially all of our common stock and securities exercisable for or convertible into our common stock outstanding immediately on the closing of this offering, have agreed, or will agree, with the underwriters that, until days after the date of this prospectus, or the restricted period, subject to certain exceptions, we and they will not, without the prior written consent of , offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of any of our shares of common stock, any options or warrants to purchase any of our shares of common stock or any securities convertible into or exchangeable for or that represent the right to receive shares of our common stock; provided that . These agreements are described in the section titled “Underwriting.” may release any of the securities subject to these lock-up agreements at any time, subject to applicable notice requirements.

In addition to the restrictions contained in the lock-up agreements described above, we have entered into agreements with substantially all of our security holders that contain market stand-off provisions imposing restrictions on the ability of such security holders to offer, sell or transfer our equity securities for a period of days following the date of this prospectus.

Registration Rights

Upon the closing of this offering, the holders of shares of our Class A common stock and of all shares of our Class B common stock, or their transferees, will be entitled to certain rights with respect to the registration of the offer and sale of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately on the effectiveness of the registration. See the section titled "Description of Capital Stock—Registration Rights" for additional information.

Rule 10b5-1 Plans

After this offering, certain of our employees, including our executive officers, and/or directors may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Exchange Act. Sales under these trading plans would not be permitted until the expiration of the lock-up agreements relating to the offering described above.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF NON-U.S. HOLDERS OF OUR CLASS A COMMON STOCK

The following summary describes certain material U.S. federal income tax consequences of the acquisition, ownership, and disposition of our Class A common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion is not a complete analysis of all potential U.S. federal income tax consequences relating thereto, and does not address foreign, state, and local tax consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances, nor does it address U.S. federal tax consequences (such as gift and estate taxes) other than income taxes. This discussion is limited to Non-U.S. Holders that hold our Class A common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the alternative minimum tax, the special tax accounting rules under Section 451(b) of the Code and the Medicare contribution tax on net investment income. Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Code, such as financial institutions, insurance companies, tax-exempt organizations, broker-dealers, and traders in securities, U.S. expatriates, "controlled foreign corporations," "passive foreign investment companies," corporations that accumulate earnings to avoid U.S. federal income tax, corporations organized outside of the United States, any state thereof or the District of Columbia that are nonetheless treated as U.S. taxpayers for U.S. federal income tax purposes, persons that hold our Class A common stock as part of a "straddle," "hedge," "conversion transaction," "synthetic security," or integrated investment or other risk reduction strategy, persons who acquire our Class A common stock through the exercise of an option or otherwise as compensation, "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds, partnerships, and other pass-through entities or arrangements and investors in such pass-through entities or arrangements. Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local, and other tax consequences that may be relevant to them. Furthermore, the discussion below is based upon the provisions of the Code, and Treasury Regulations, rulings, and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked, or modified, perhaps retroactively, so as to result in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions.

This discussion is for informational purposes only and is not tax advice. Persons considering the purchase of our Class A common stock pursuant to this offering should consult their own tax advisors concerning the U.S. federal income, estate, and other tax consequences of acquiring, owning, and disposing of our Class A common stock in light of their particular situations as well as any consequences arising under the laws of any other taxing jurisdiction, including any state, local, or foreign tax consequences.

For the purposes of this discussion, a "Non-U.S. Holder" is, for U.S. federal income tax purposes, a beneficial owner of Class A common stock that is neither a U.S. Holder, nor a partnership (or other entity treated as a partnership for U.S. federal income tax purposes regardless of its place of organization or formation). A "U.S. Holder" means a beneficial owner of our Class A common stock that is for U.S. federal income tax purposes any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation or other entity treated as a corporation for U.S. federal income tax purposes created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if it (1) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

Distributions

Distributions, if any, made on our Class A common stock to a Non-U.S. Holder to the extent made out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles) generally will constitute dividends for U.S. tax purposes and will be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty, subject to the discussions below regarding effectively connected income, backup withholding, and foreign accounts. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide us with a properly executed IRS Form W-8BEN (in the case of individuals) or IRS Form W-8BEN-E (in the case of entities), or other appropriate form, certifying the Non-U.S. Holder's entitlement to benefits under that treaty. This certification must be provided to us and/or our paying agent prior to the payment of dividends and must be updated periodically. In the case of a Non-U.S. Holder that is an entity, Treasury Regulations and the relevant tax treaty provide rules to determine whether, for purposes of determining the applicability of a tax treaty, dividends will be treated as paid to the entity or to those holding an interest in that entity. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to such agent. The holder's agent will then be required to provide certification to us and/or our paying agent, either directly or through other intermediaries. If a Non-U.S. Holder is eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty and such Non-U.S. Holder does not timely file the required certification, such Non-U.S. Holder may be able to obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment or fixed base that such holder maintains in the United States) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to such agent). In general, such effectively connected dividends will be subject to U.S. federal income tax, on a net income basis at the regular rates applicable to U.S. Holders. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional "branch profits tax," which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments. Non-U.S. Holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

To the extent distributions on our Class A common stock, if any, exceed our current and accumulated earnings and profits, they will first reduce the Non-U.S. Holder's adjusted basis in our Class A common stock, but not below zero, and then will be treated as gain to the extent of any excess amount distributed, and taxed in the same manner as gain realized from a sale or other disposition of Class A common stock as described in the next section.

Gain on Disposition of Our Class A Common Stock

Subject to the discussions below regarding backup withholding and foreign accounts, a Non-U.S. Holder generally will not be subject to U.S. federal income tax with respect to gain realized on a sale or other taxable disposition of our Class A common stock unless (a) the gain is effectively connected with a trade or business of such holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment or fixed base that such holder maintains in the United States), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for 183 or more days in the taxable year of the disposition and certain other conditions are met, or (c) we are or have been a "United States real property holding corporation" within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or such holder's holding period in our Class A common stock. In general, we would be a United States real property holding corporation if our interests in U.S. real property comprise (by fair market value) at least half of our worldwide real property interests and our other assets used or held for use in a trade or

business. We believe that we are not, and do not anticipate becoming, a United States real property holding corporation. Even if we are treated as a United States real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our Class A common stock will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly, and constructively, no more than 5% of our Class A common stock at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period and (2) our Class A common stock is regularly traded on an established securities market, as defined in applicable Treasury Regulations. There can be no assurance that our Class A common stock will qualify as regularly traded on an established securities market. If a Non-U.S. Holder's gain on disposition of our Class A common stock is taxable because we are a United States real property holding corporation and such Non-U.S. Holder's ownership of our Class A common stock exceeds 5%, such Non-U.S. Holder will be taxed on such disposition generally in the manner as gain that is effectively connected with the conduct of a U.S. trade or business (subject to the provisions under an applicable income tax treaty), except that the branch profits tax generally will not apply to a corporate Non-U.S. Holder.

Non-U.S. Holders described in (a) above will be required to pay tax on the net gain derived from the sale at regular U.S. federal income tax rates applicable to U.S. Holders, and corporate Non-U.S. Holders described in (a) above may be subject to the additional branch profits tax on such gain at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. Gain described in (b) above will be subject to U.S. federal income tax at a flat 30% rate, which gain may be offset by certain U.S.-source capital losses (even though a Non-U.S. Holder is not considered a resident of the United States), provided that the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

Information Reporting Requirements and Backup Withholding

Generally, we must report information to the IRS with respect to any distributions we pay on our Class A common stock (even if the payments are exempt from withholding), including the amount of any such distributions, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such distributions are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder who provides a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E, or IRS Form W-ECI, or otherwise establishes an exemption. Notwithstanding the foregoing, backup withholding may apply if the payor has actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

U.S. information reporting and backup withholding requirements generally will apply to the proceeds of a disposition of our Class A common stock effected by or through a U.S. office of any broker, U.S. or foreign, except that information reporting and such requirements may be avoided if the holder provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E or otherwise meets documentary evidence requirements for establishing non-U.S. person status or otherwise establishes an exemption. Generally, U.S. information reporting and backup withholding requirements will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the United States through a non-U.S. office of a non-U.S. broker. Information reporting and backup withholding requirements may, however, apply to a payment of disposition proceeds if the broker has actual knowledge, or reason to know, that the holder is, in fact, a U.S. person. For information reporting purposes, certain brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be credited against the tax liability of persons subject to backup withholding, provided that the required information is timely furnished to the IRS.

Foreign Accounts

Sections 1471 through 1474 of the Code (commonly referred to as FATCA) impose a U.S. federal withholding tax of 30% on certain payments to a foreign financial institution (as specifically defined by applicable rules) unless such institution enters into an agreement with the U.S. government to withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). FATCA also generally imposes a federal withholding tax of 30% on certain payments to a non-financial foreign entity unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity. An intergovernmental agreement between the United States and an applicable foreign country may modify those requirements. The withholding tax described above will not apply if the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from the rules.

FATCA withholding currently applies to payments of dividends, if any, on our Class A common stock and, subject to the proposed Treasury Regulations described in this paragraph, generally also would apply to payments of gross proceeds from the sale or other disposition of our Class A common stock. The U.S. Treasury Department released proposed regulations which, if finalized in their present form, would eliminate the federal withholding tax of 30% applicable to the gross proceeds of a disposition of our Class A common stock. In its preamble to such proposed regulations, the U.S. Treasury Department stated that taxpayers may generally rely on the proposed regulations until final regulations are issued. Non-U.S. holders are encouraged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in our Class A common stock.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING, AND DISPOSING OF OUR CLASS A COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY RECENT OR PROPOSED CHANGE IN APPLICABLE LAW FROM ALL FEDERAL, STATE, ESTATE, AND GIFT TAX PERSPECTIVES.

UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and J.P. Morgan Securities LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares of Class A common stock indicated below:

Name	Number of Shares
Morgan Stanley & Co. LLC	
J.P. Morgan Securities LLC	
Allen & Company LLC	
BofA Securities, Inc.	
Cowen and Company, LLC	
Total:	

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of Class A common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of Class A common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of Class A common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

The underwriters initially propose to offer part of the shares of Class A common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers at a price that represents a concession not in excess of $ per share under the initial public offering price. After the initial offering of the shares of Class A common stock, the offering price and other selling terms may from time to time be varied by the representatives.

The selling stockholders identified in this prospectus have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of Class A common stock at the initial public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the shares of Class A common stock offered by this prospectus. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of Class A common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of Class A common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total initial public offering price, underwriting discounts and commissions, and proceeds before expenses to us and the selling stockholders. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional shares of Class A common stock.

	Per Share	Total No Exercise	Total Full Exercise
Initial public offering price	$	$	$
Underwriting discounts and commissions to be paid by:			
Us	$	$	$
The selling stockholders	$	$	$
Proceeds, before expenses, to us	$	$	$
Proceeds, before expenses, to selling stockholders	$	$	$

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately $ million. We have agreed to reimburse the underwriters for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority up to $.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of Class A common stock offered by them. We intend to apply to list our Class A common stock on the under the trading symbol "TIME."

We and all directors and officers and the holders of substantially all of our outstanding stock and stock options will agree that, subject to certain conditions, without the prior written consent of the representatives on behalf of the underwriters, we and they will not, and will not publicly disclose an intention to, during the period ending on and including the th day after the date of this prospectus, referred to as the restricted period:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock;
- file any registration statement with the Securities and Exchange Commission, or the SEC, relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock,

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person will agree that, without the prior written consent of the representatives on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to:

- the sale of shares to the underwriters;
- the issuance by the company of shares of common stock upon the exercise of an option or a warrant or the conversion of a security outstanding on the date of this prospectus of which the underwriters have been advised in writing;
- transactions by any person other than us relating to shares of common stock or other securities acquired in open market transactions after the completion of the offering of the shares; provided that no filing under Section 16(a) of the Exchange Act is required or voluntarily made in connection with subsequent sales of the common stock or other securities acquired in such open market transactions; or
- the establishment of a trading plan on behalf of a shareholder, officer or director of the company pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided

that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the company regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

Morgan Stanley & Co. LLC and J.P. Morgan Securities LLC, in their joint discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time, subject to applicable notice requirements.

In order to facilitate the offering of the Class A common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the Class A common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the over-allotment option. The underwriters can close out a covered short sale by exercising the over-allotment option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the over-allotment option. The underwriters may also sell shares in excess of the over-allotment option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the Class A common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of Class A common stock in the open market to stabilize the price of the Class A common stock. These activities may raise or maintain the market price of the Class A common stock above independent market levels or prevent or retard a decline in the market price of the Class A common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time. Any such stabilization activities will be conducted in accordance with Regulation M.

We, the selling stockholders and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of Class A common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their

respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Pricing of the Offering

Prior to this offering, there has been no public market for our Class A common stock. The initial public offering price will be determined by negotiations between us and the representatives. Among the factors to be considered in determining the initial public offering price are our future prospects and those of our industry in general, our sales, earnings and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area, each a Member State, no securities have been offered or will be offered pursuant to the offering to the public in that Member State prior to the publication of a prospectus in relation to the securities which has been approved by the competent authority in that Member State or, where appropriate, approved in another Member State and notified to the competent authority in that Member State, all in accordance with the Prospectus Regulation, except that offers of securities may be made to the public in that Member State at any time under the following exemptions under the Prospectus Regulation:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Regulation;

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the representatives; or

(c) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require us or any of our representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the representatives and us that it is a "qualified investor" as defined in the Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Article 5 of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged, and agreed that the shares acquired by it in the offer have not been acquired on a nondiscretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Member State means the communication in any form and by means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase shares, the expression "Prospectus Regulation" means Regulation (EU) 2017/1129 (as amended).

United Kingdom

In relation to the United Kingdom, no securities have been offered or will be offered pursuant to this offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the securities

that either (i) has been approved by the Financial Conduct Authority, or (ii) is to be treated as if it had been approved by the Financial Conduct Authority in accordance with the transitional provision in Regulation 74 of the Prospectus (Amendment etc.) (EU Exit) Regulations 2019, except that offers of securities may be made to the public in the United Kingdom at any time under the following exemptions under the UK Prospectus Regulation:

(a) to any legal entity which is a qualified investor as defined in Article 2 of the UK Prospectus Regulation;

(b) to fewer than 150 natural or legal persons (other than qualified investors as defined in Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the Representative for any such offer; or

(c) in any other circumstances falling within section 86 of the Financial Services and Markets Act 2000, as amended, or the FMSA,

provided that no such offer of shares shall require the issuer or any underwriter to publish a prospectus pursuant to section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "UK Prospectus Regulation" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or FSMA, received by it in connection with the issue or sale of the shares of our Class A common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our Class A common stock in, from or otherwise involving the United Kingdom.

Canada

The shares of Class A common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares of Class A common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the

underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Japan

No registration pursuant to Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended), or the FIEL, has been made or will be made with respect to the solicitation of the application for the acquisition of the shares of Class A common stock.

Accordingly, the shares of Class A common stock have not been, directly or indirectly, offered or sold and will not be, directly or indirectly, offered or sold in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements, and otherwise in compliance with, the FIEL and the other applicable laws and regulations of Japan.

For Qualified Institutional Investors ("QII")

Please note that the solicitation for newly issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of Class A common stock constitutes either a "QII only private placement" or a "QII only secondary distribution" (each as described in Paragraph 1, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of Class A common stock. The shares of Class A common stock may only be transferred to QIIs.

For Non-QII Investors

Please note that the solicitation for newly issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of Class A common stock constitutes either a "small number private placement" or a "small number private secondary distribution" (each as is described in Paragraph 4, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of Class A common stock. The shares of Class A common stock may only be transferred en bloc without subdivision to a single investor.

Hong Kong

Shares of our Class A common stock may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) ("Companies (Winding Up and Miscellaneous Provisions) Ordinance") or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) ("Securities and Futures Ordinance"), or (ii) to "professional investors" as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation or document relating to shares of our Class A common stock may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares of our Class A common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares of our Class A common stock may not be circulated or distributed, nor may the shares of our Class A common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA")) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where shares of our Class A common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for six months after that corporation has acquired shares of our Class A common stock under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer in that corporation's securities pursuant to Section 275(1A) of the SFA, (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore ("Regulation 32").

Where shares of our Class A common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that trust has acquired shares of our Class A common stock under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than S$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32.

Solely for purposes of the notification requirements under Section 309B(1)(c) of the Securities and Futures Act, Chapter 289 of Singapore, the shares of our Class A common stock are "prescribed capital markets products" (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

LEGAL MATTERS

The validity of the shares of Class A common stock being offered by this prospectus will be passed upon for us by Cooley LLP, Chicago, Illinois. Certain legal matters in connection with this offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California.

EXPERTS

The financial statements as of December 31, 2020 and 2019, and for each of the two years in the period ended December 31, 2020, included in this prospectus, have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of Class A common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all the information set forth in the registration statement, some of which is contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. For further information with respect to us and our Class A common stock, we refer you to the registration statement, including the exhibits filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The SEC maintains an internet website that contains reports and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

On the closing of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements, and other information with the SEC. These reports, proxy statements, and other information will be available at www.sec.gov.

We also maintain a website at www.tempus.com. Information contained in, or accessible through, our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is only as an inactive textual reference.

Tempus Labs, Inc.
Financial Statements
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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Tempus Labs, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Tempus Labs, Inc. and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of operations and comprehensive loss, of redeemable convertible preferred stock, common stock and stockholders' deficit, and of cash flows for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Chicago, Illinois
September 1, 2021, except for the effects of the revision discussed in Note 1 to the consolidated financial statements, as to which the date is October 28, 2021

We have served as the Company's auditor since 2019.

Tempus Labs, Inc.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)

	December 31, 2019	December 31, 2020	September 30, 2021 (unaudited)
Assets			
Current Assets			
Cash and cash equivalents	$ 227,599	$ 513,436	$344,945
Accounts receivable, net of allowances of $0, $478 and $478 at December 31, 2019 and 2020 and September 30, 2021, respectively	31,888	87,259	74,388
Inventory	8,279	37,557	21,998
Prepaid expenses and other current assets	8,466	11,478	11,235
Deferred offering costs		—	2,039
Total current assets	$ 276,232	$ 649,730	$ 454,605
Property and equipment, net	36,065	38,435	35,999
Goodwill	15,986	15,992	15,982
Intangible assets, net	41,330	44,459	36,978
Investments and other assets	57	2,522	7,003
Restricted cash	501	780	780
Total Assets	$ 370,171	$ 751,918	$ 551,347
Liabilities, Convertible redeemable preferred stock, and Stockholders' deficit			
Current Liabilities			
Accounts payable	13,415	53,571	37,617
Accrued expenses	7,704	20,178	34,885
Deferred revenue	5,570	6,965	15,416
Current maturities of accrued data licensing fees	9,000	9,000	9,000
Current portion of deferred rent	1,268	1,320	1,416
Current portion of accrued dividends	5,625	5,625	4,219
Current maturities of capital lease obligations	1,151	723	431
Other current liabilities	—	4,000	—
Total current liabilities	43,733	101,382	$ 102,984
Capital lease obligations, less current maturities	1,441	724	395
Contingent consideration	3,380	10,271	7,365
Minimum accrued data licensing fees, less current maturities	14,917	19,554	11,043
Convertible promissory note	—	250,000	243,420
Deferred rent, less current portion	12,954	13,594	13,499
Other long-term liabilities	4,000	10,221	21,428
Total Liabilities	$ 80,425	$ 405,746	$ 400,134
Commitments and contingencies (Note 6)			
Convertible redeemable preferred stock, $0.001 par value, 55,088,384, 64,760,746 and 64,760,746 shares authorized at December 31, 2019 and 2020 and September 30, 2021, respectively; 55,088,384, 60,921,767 and 61,078,813 shares issued and outstanding at December 31, 2019 and 2020 and September 30, 2021, respectively; aggregate liquidation preference of $554,286, $871,530 and $903,786 at December 31, 2019 and 2020 and September 30, 2021 respectively.	544,161	859,156	890,535

	December 31, 2019	December 31, 2020	September 30, 2021 (unaudited)
Stockholders' deficit			
Voting Common Stock, $0.001 par value, 167,035,011, 187,075,184 and 187,075,184 shares authorized at December 31, 2019 and 2020 and September 30, 2021, respectively; 58,558,600, 58,367,961 and 58,367,961 shares issued and outstanding at December 31, 2019 and 2020 and September 30, 2021.	$ 6	$ 6	$ 6
Non-voting Common Stock, $0.001 par value, 54,446,627 and 63,946,620 and 63,946,620 shares authorized at December 31, 2019 and 2020 and September 30, 2021, respectively; 4,595,000, 4,595,000 and 4,612,450 shares issued and outstanding at December 31, 2019 and 2020 and September 30, 2021, respectively.	0	0	0
Additional Paid-In Capital	3,431	—	—
Accumulated Other Comprehensive Income (Loss)	1	(1)	14
Accumulated deficit	(257,853)	(512,989)	(739,342)
Total Stockholders' deficit	$ (254,415)	$ (512,984)	$ (739,322)
Total Liabilities, Convertible redeemable preferred stock, and Stockholders' deficit	$ 370,171	$ 751,918	$ 551,347

The accompanying notes are an integral part of these consolidated financial statements.

Tempus Labs, Inc.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(in thousands, except share and per share amounts)

	December 31, 2019	December 31, 2020	Nine Months Ended September 30, 2020	Nine Months Ended September 30, 2021
			(unaudited)	
Net revenue				
Genomics	$ 27,890	$ 151,911	$73,224	$ 154,514
Data and other	34,167	36,093	13,928	30,029
Total net revenue	62,057	188,004	$ 87,152	$ 184,543
Cost and operating expenses				
Cost of revenues, genomics	39,685	152,198	80,416	129,283
Cost of revenues, data and other	6,330	7,092	5,028	7,948
Technology research and development	25,608	45,861	32,800	49,543
Research and development	31,253	45,415	32,308	42,526
Selling, general and administrative	78,962	130,892	88,006	144,158
Total cost and operating expenses	181,838	381,458	238,558	373,458
Loss from operations	(119,781)	(193,454)	$ (151,406)	$ (188,915)
Interest income	4,860	1,495	1,224	510
Interest expense	(28)	(18,929)	(5,528)	(11,351)
Other expense, net	(2)	(466)	(2)	(1)
Loss before provision for income taxes	(114,951)	(211,354)	$ (155,712)	$ (199,757)
Provision for (benefit from) income taxes	—	—	—	—
Earnings (losses) from equity method investments	—	1,500	—	(454)
Net Loss	$ (114,951)	$ (209,854)	$ (155,712)	$ (200,211)
Accretion of convertible preferred stock to redemption value	(7,303)	(7,381)	(3,203)	(106)
Dividends on Series A, B, B-1, B-2, C, D, E, F and G preferred shares	(23,640)	(34,420)	(25,523)	(26,595)
Cumulative Undeclared Dividends on Series C preferred shares	(2,250)	(2,250)	(1,893)	(2,004)
Net loss available to common shareholders, basic and diluted	$ (148,144)	$ (253,905)	(186,331)	(228,916)
Net loss per share attributable to common shareholders, basic and diluted	$ (2.41)	$ (4.05)	$ (2.97)	$ (3.64)
Weighted-average shares outstanding used to compute net loss per share, basic and diluted	61,347	62,706	62,697	62,973
Comprehensive (Loss) Income				
Net loss	$ (114,951)	$ (209,854)	$ (155,712)	$ (200,211)
Foreign currency translation adjustment	1	(2)	8	15
Comprehensive loss	$ (114,950)	$ (209,856)	$ (155,704)	$ (200,196)

The accompanying notes are an integral part of these consolidated financial statements.

Tempus Labs, Inc.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands, except share and per share amounts)

			Nine Months Ended (Unaudited)	
	2019	2020	September 30, 2020	September 30, 2021
Operating activities				
Net loss	$ (114,951)	$ (209,854)	$ (155,712)	$ (200,211)
Adjustments to reconcile net loss to net cash used in operating activities				
Depreciation and amortization	$ 15,020	$ 23,052	$ 17,039	$ 18,151
Provision for bad debt expense	—	478	478	—
Stock compensation expense	529	399	299	559
(Income) Loss from equity-method investments	—	(1,500)	—	454
Loss on extinguishment of convertible promissory notes	—	8,889	—	—
Minimum accretion expense	211	535	234	431
Change in assets and liabilities				
Accounts receivable	(13,367)	(55,844)	(20,437)	12,871
Inventory	(3,468)	(29,278)	(24,322)	15,559
Prepaid expenses and other current assets	(6,833)	(3,012)	(2,977)	243
Investments and other assets	(3,610)	(14,077)	(14,521)	1,022
Accounts payable	(41)	38,132	18,035	(21,263)
Deferred revenue	3,477	1,395	(1,391)	8,451
Accrued data licensing fees	(3,162)	4,103	4,164	(8,999)
Accrued expenses & other	9,084	30,021	17,539	24,503
Net cash used in operating activities	$ (117,111)	$ (206,562)	$ (161,572)	$ (148,229)
Investing activities				
Purchases of property and equipment	$ (17,035)	$ (13,416)	$ (11,461)	$ (9,445)
Investment in unconsolidated subsidiary	—	—	—	(5,957)
Acquisition of a business, net of cash (Note 3)	(25,994)	—	—	—
Cash paid for escrow related to AKESOgen purchase (Note 3)	—	—	—	(4,000)
Net cash used in investing activities	$ (43,029)	$ (13,416)	$ (11,461)	$ (19,402)
Financing activities				
Issuance of Series F Preferred Stock, net of offering costs	192,697	—	—	—
Issuance of Series G Preferred Stock, net of offering costs	—	94,108	94,108	—
Issuance of Series G-2 Preferred Stock, net of offering costs	—	95,823	—	8,894
Issuance (Redemption) of Common Shares	10,200	(7,311)	(7,311)	—
Dividends paid	(5,286)	(5,625)	(5,625)	(5,625)
Issuance of convertible promissory note	—	330,000	330,000	—
Payments on capital lease obligation	(919)	(888)	(749)	(663)
Payment of contingent consideration	—	—	—	(3,380)
Payment of deferred offering costs	—	—	—	(111)
Net cash provided by (used in) financing activities	$ 196,692	$ 506,107	$ 410,423	$ (885)
Effect of foreign exchange rates on cash	$ (8)	$ (13)	$ 14	$ 25

			Nine Months Ended (Unaudited)	
	2019	2020	September 30, 2020	September 30, 2021
Net increase (decrease) in Cash, Cash Equivalents and Restricted Cash	$ 36,544	$ 286,116	$ 237,404	$ (168,491)
Cash and cash equivalents and restricted cash, beginning of period	$ 191,556	$ 228,100	$ 228,100	$ 514,216
Cash and cash equivalents and restricted cash, end of period	$ 228,100	$ 514,216	$ 465,504	$ 345,725
Cash, Cash Equivalents and Restricted Cash are Comprised of:				
Cash and cash equivalents	$ 227,599	$ 513,436	$ 464,725	$ 344,945
Restricted cash and cash equivalents	501	780	779	780
Total cash, cash equivalents and restricted cash	$ 228,100	$ 514,216	$ 465,504	$ 345,725
Supplemental disclosure of cash flow information				
Cash paid during the year for interest	$ 39	$ 2,053	$ 12	$ 62
Cash paid for income taxes	$ —	$ 8	$ 9	$ 13
Supplemental disclosure of noncash investing and financing activities				
Redemption of convertible promissory note	$ —	$ —	$ —	$ 6,580
Accretion of convertible preferred stock to redemption value	$ 7,303	$ 7,381	$ 3,203	$ 106
Dividends payable	$ 5,625	$ 5,625	$ 4,219	$ 4,219
Purchases of property and equipment, accrued but not paid	$ 3,014	$ 2,032	$ 1,907	$ 821
Deferred offering costs, accrued but not yet paid	$ —	$ —	$ —	$ 1,928
Series G-2 issuance cost included in accounts payable	$ —	$ 4,000	$ —	$ —
Extinguishment of debt through conversion of convertible promissory note to Series G-2 preferred stock	$ —	$ 80,000	$ —	$ —

The accompanying notes are an integral part of these consolidated financial statements.

Tempus Labs, Inc.
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK, COMMON STOCK AND STOCKHOLDERS' DEFICIT
(in thousands, except share and per share amounts)

	Redeemable Convertible Preferred Stock		Voting Common Stock		Non-voting Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Deficit
	Units	Amount	Units	Amount	Units	Amount				
Balance at January 1, 2019	47,010,710	$326,146	57,500,000	$ 6	4,595,000	$ 0	$ 5	$ (119,613)	$ —	$ (119,601)
Issuance of Series F Preferred Stock, net of stock issuance costs of $7,303	8,077,674	192,697	—	—	—	—	—	—	—	—
Stock compensation related to RSU	—	—	—	—	—	—	3,421	—	—	3,421
Common stock issued	—	—	1,058,600	0	—	—	10,200	—	—	10,200
Accretion of convertible preferred stock to redemption value	—	7,303	—	—	—	—	(7,303)	—	—	(7,303)
Reclassification of Cash Settled RSUs		—	—	—	—	—	(2,892)	—	—	(2,892)
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	1	1
Dividends	—	18,015	—	—	—	—	—	(23,640)	—	(23,640)
Net loss	—	—	—	—	—	—	—	(114,600)	—	(114,600)
Balance at December 31, 2019	55,088,384	$544,161	58,558,600	$ 6	4,595,000	$ 0	$ 3,431	$ (257,853)	$ 1	$ (254,415)
Issuance of Series G Preferred Stock, net of stock issuance costs of $3,203	2,537,290	94,108	—	—	—	—	—	—	—	—
Issuance of Series G-2 Preferred Stock, net of stock issuance costs of $4,177	3,296,093	184,711	—	—	—	—	—	—	—	—
Stock compensation related to RSU			—	—	—	—	399	—	—	399
Accretion of convertible preferred stock to redemption value	—	7,381	—	—	—	—	(3,830)	(3,551)	—	(7,381)
Redemption of Common Shares	—	—	(190,639)	(0)	—	—	—	(7,311)	—	(7,311)
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	(2)	(2)
Dividends	—	28,795	—	—	—	—	—	(34,420)	—	(34,420)
Net loss	—	—	—	—	—	—	—	(209,854)	—	(209,854)
Balance at December 31, 2020	60,921,767	$859,156	58,367,961	$ 6	4,595,000	$ 0	(0)	$ (512,989)	$ (1)	$ (512,984)

	Redeemable Convertible Preferred Stock		Voting Common Stock		Non-voting Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Deficit
	Units	Amount	Units	Amount	Units	Amount				
Balance at December 31, 2019	55,088,384	$544,161	58,558,600	$ 6	4,595,000	$ 0	$ 3,431	$ (257,853)	$ 1	$ (254,415)
Issuance of Series G Preferred Stock, net of issuance costs of $3,203	2,537,290	94,108	—	—	—	—	—	—	—	—
Stock compensation related to RSU	—	—	—	—	—	—	299	—	—	299
Accretion of convertible preferred stock to redemption value	—	3,203	—	—	—	—	(3,203)	—	—	(3,203)
Redemption of Common Shares	—	—	(190,639)	0	—	—	(427)	(6,884)	—	(7,311)
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	8	8
Dividends	—	21,203	—	—	—	—	(100)	(25,423)	—	(25,523)
Net loss	—	—	—	—	—	—	—	(155,712)	—	(155,712)
Balance at September 30, 2020 (Unaudited)	57,625,674	$662,675	58,367,961	$ 6	4,595,000	$ 0	$ —	$ (445,872)	$ 9	$ (445,857)

	Redeemable Convertible Preferred Stock		Voting Common Stock		Non-voting Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Deficit
	Units	Amount	Units	Amount	Units	Amount				
Balance at December 31, 2020	60,921,767	$859,156	58,367,961	$ 6	4,595,000	$ 0	$ —	$ (512,989)	$ (1)	$ (512,984)
Issuance of Series G-2 Preferred Stock, net of issuance costs of $106	157,046	8,894	—	—	—	—	—	—	—	—
Stock compensation related to RSU	—	—	—	—	—	—	559	—	—	559
Accretion of convertible preferred stock to redemption value	—	106	—	—	—	—	(106)	—	—	(106)
Settlement of Common Shares	—	—	—	—	17,450	0	—	—	—	0
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	15	15
Dividends	—	22,379	—	—	—	—	(453)	(26,142)	—	(26,595)
Net loss	—	—	—	—	—	—	—	(200,211)	—	(200,211)
Balance at September 30, 2021 (Unaudited)	61,078,813	$890,535	58,367,961	$ 6	4,612,450	$ 0	$ —	$ (739,342)	$ 14	$ (739,322)

The accompanying notes are an integral part of these consolidated financial statements.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS

Company Information

Tempus Labs, Inc., together with the subsidiaries through which it conducts business (the "Company"), is a healthcare technology company focused on bringing artificial intelligence and machine learning to healthcare in order to improve the care of patients across multiple diseases. The Company combines the results of laboratory tests with other multi-modal datasets to improve patient care by supporting all parties in the healthcare ecosystem, including: physicians, researchers, payors, and pharmaceutical companies. The Company derives revenue from selling comprehensive genetic testing to physicians and large academic research institutions, licensing data to third parties, and matching patients to clinical trials.

The Company, based in Chicago, Illinois, was founded by Eric P. Lefkofsky, the Company's CEO and Executive Chairman, and evolved from a business Mr. Lefkofsky founded called Bioin. Bioin originally was established as a limited liability company. Effective September 21, 2015, Bioin converted its legal form to a corporation organized and existing under the General Corporation Law of the State of Delaware. Bioin subsequently changed its legal name to Tempus Health, Inc. in September 2015 and, ultimately, to Tempus Labs, Inc. in October 2016.

Revision of Previously Issued Financial Statements

As of December 31, 2020, the Company identified an error related to the classification of interest payable on its Convertible Promissory Note. The Company had previously classified the interest payable as current within accrued liabilities, however, the Company has concluded that proper presentation of the interest payable is in non-current liabilities as the interest is due upon maturity of the Note on March 22, 2026. As such, $7,987 of interest payable as of December 31, 2020 was corrected to present these amounts in other non-current liabilities. Accrued expenses decreased to $20,178 from $28,165 as of December 31, 2020. Other long-term liabilities increased to $10,221 from $2,234 as of December 31, 2020. The Company evaluated the errors and concluded the revision was not material to the prior period financial statements and had no impact on the Company's consolidated statements of operations and comprehensive loss, or the consolidated statements of cash flows or the consolidated statements of redeemable convertible preferred stock, common stock and stockholders' deficit.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Basis of Presentation

The consolidated financial statements include the accounts of Tempus Labs, Inc. and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. The consolidated financial statements and accompanying notes were prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and include the assets, liabilities, revenue and expenses of all wholly owned subsidiaries. Investments in unconsolidated entities in which the Company does not have a controlling financial interest but has the ability to exercise significant influence, are accounted for under the equity method of accounting. Investments in unconsolidated entities in which the Company is not able to exercise significant influence are accounted for under the cost method of accounting.

Emerging Growth Company

The Company is an "emerging growth company" as defined in Section 2(a) of the Securities Act of 1933, as amended, (the "Securities Act"), as modified by the Jumpstart our Business Startups Act of 2012, (the "JOBS Act"), and it may take advantage of certain exemptions from various reporting requirements that are applicable to

other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Exchange Act) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. The Company has elected not to opt out of such extended transition period which means that when a standard is issued or revised and it has different application dates for public or private companies, the Company, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of the Company's consolidated financial statements with another public company which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

Unaudited Interim Consolidated Financial Information

The accompanying interim consolidated balance sheet as of September 30, 2021, the consolidated statements of operations, comprehensive income (loss), redeemable convertible preferred stock, common stock and stockholders' deficit, and cash flows for the nine months ended September 30, 2020 and 2021, and the related footnote disclosures are unaudited. These unaudited interim consolidated financial statements have been prepared in accordance with GAAP. In management's opinion, the unaudited interim consolidated financial statements include all adjustments necessary to state fairly the Company's financial position as of September 30, 2021 and its results of operations and cash flows for the nine months ended September 30, 2020 and 2021. The financial data and the other information disclosed in the notes to these consolidated financial statements related to the nine month periods are unaudited. The results of operations for the nine months ended September 30, 2021 are not necessarily indicative of the results expected for the year ending December 31, 2021 or any other future period.

Use of Estimates

The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts and classifications of assets and liabilities, revenue and expenses, and the related disclosures of contingent assets and liabilities in the consolidated financial statements and accompanying notes. The most significant estimates are related to revenue, accounts receivable, stock-based compensation, contingent liabilities and the useful lives of property, equipment and intangible assets. Actual results could differ from those estimates.

COVID-19

The COVID-19 global pandemic continues to impact daily life in the United States and abroad. While the negative impacts of the business in 2020 and for the nine months ended September 30, 2021 were minimal, if there are additional disruptions for an extended period, it could have a material impact on the Company's results. In addition, our agreement with CVS, which accounted for 24.0% and 34.8% of our revenue for the year ended

December 31, 2020 and the nine months ended September 30, 2021, respectively, expired in July 2021 and was renegotiated in November 2021. As a result, we will continue to process samples under the renegotiated agreement. Revenue from COVID-19 testing accounted for $89.5 million, or 47.6%, of total revenue in the year ended December 31, 2020, and $84.9 million, or 46.0%, of total revenue in the nine months ended September 30, 2021.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly-liquid investments with an original maturity of three months or less from the date of purchase to be cash equivalents. Cash equivalents are stated at fair value. Restricted cash primarily represents amounts that the Company is unable to access for operational purposes pursuant to a letter of credit with a financial institution in connection with an equipment lease. The Company had $0.5 million and $0.8 million of restricted cash as of December 31, 2019 and 2020, respectively. The Company had $0.8 million of restricted cash as of September 30, 2021.

Accounts Receivable and Allowances

Accounts receivable primarily represents the net cash due from the Company's customers, including payors, pharmaceutical companies, and research institutions. Payments of accounts receivable are allocated to the specific invoices identified on the remittance advice. Accounts receivables are reported at their gross outstanding balance reduced by an allowance for doubtful accounts. The allowance for doubtful accounts is based on historical loss experience and any specific risks identified in collection matters. An allowance for doubtful accounts was not material as of December 31, 2019 and 2020, and as of September 30, 2021.

Concentration of Credit Risk

Financial instruments that potentially expose the Company to concentrations of credit risk are primarily cash, restricted cash and accounts receivable. The Company maintains cash balances that may exceed the insured limits by the Federal Deposit Insurance Corporation. The Company has not experienced any losses on its deposits of cash.

The Company has credit risk regarding trade accounts receivable as the Company generally does not require collateral, and a limited number of customers have accounted for a large part of the Company's revenue and accounts receivable to date. Allowances are maintained for potential credit losses. As of December 31, 2019, two customers accounted for approximately 14.8% and 17.7% of the Company's total revenue and 19.4% and 12.6% of the Company's accounts receivable, respectively. One additional customer did not account for more than 10% of the Company's total revenue; however, accounted for 12.5% of accounts receivable.

Revenue from one customer accounted for approximately 16.6% of the Company's total revenues for the year ended December 31, 2020. The amount due from this customer is approximately $14.8 million or 17.0% of accounts receivable as of December 31, 2020.

Revenue from two customers accounted for approximately 15.6% and 12.6% of the Company's total revenues for the nine months ended September 30, 2020, respectively. Revenue from one contract accounted for approximately 34.8% of the Company's revenues for the nine months ended September 30, 2021. The amount due from this customer is approximately $12.5 million or 16.8% of accounts receivable as of September 30, 2021.

The Company also has concentration risk around revenue generated from COVID-19 testing. Revenue from COVID-19 testing was $89.5 million and $84.9 million or 47.6% and 46.0% of the Company's total revenues for the year ended December 31, 2020 and the nine months ended September 30, 2021, respectively.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Inventories

Inventories, consisting of supplies and consumables used in the lab, are accounted for using the first-in, first-out method of accounting and are valued at the lower of cost or net realizable value. The Company periodically reviews inventory for excess or obsolescence and writes-down obsolete or otherwise un-usable inventory to its estimated net realizable value. Amounts written-down due to obsolete inventory are charged to cost of revenues. As of December 31, 2019, the Company had approximately $7.9 million of inventory and $0.4 million of inventory in process in the labs. As of December 31, 2020, the Company had approximately $37.0 million of inventory and $0.6 million of inventory in process in the labs. As of September 30, 2021, the Company had approximately $21.2 million of inventory and $0.8 million of inventory in process in the labs.

The Company relies on a sole supplier for certain laboratory materials and equipment. Purchases from this supplier accounted for approximately 14% and 23% of total vendor payments for the year ended December 31, 2019 and 2020, respectively, and approximately 21% and 24% of total vendor payments for the nine months ended September 30, 2020 and 2021, respectively. Amounts due to this vendor approximated $4.1 million and $5.3 million at December 31, 2019 and 2020 respectively, and approximated $1.0 million at September 30, 2021.

Prepaid expenses and Other Current Assets

Prepaid assets are recorded when paid and consistent primarily of prepayments for insurance, medical, software subscriptions, cloud storage service, and other receivables. Prepaid expenses are amortized into expense over the related service period. The Company had $8.5 million, $11.5 million and $11.2 million at December 31, 2019 and 2020, and September 30, 2021, respectively.

Long-Lived Assets

Property and Equipment and Intangibles

Property and equipment are stated at cost and assets under capital leases are stated at the lesser of the present value of minimum lease payments or their fair market value. Depreciation is recognized using the straight-line method over the estimated useful lives of the related assets. Generally, the useful lives are three years for equipment and seven years for furniture and fixtures. Leasehold improvements are amortized on a straight-line basis over the lesser of the term of the lease or the estimated useful life of the asset. Intangibles, other than indefinite-lived intangibles, are amortized using the straight-line method, which approximates the pattern of usage, over their economic life, generally five to seven years. Assets to be disposed of, if any, are separately presented in the consolidated balance sheet and reported at the lower of the carrying amount or fair value, less costs to sell, and are no longer depreciated. See Note 4, “Balance Sheet Components” for additional information about these assets.

Impairment of Long-Lived Assets

The Company evaluates long-lived assets, including property and equipment, and intangible assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of the asset may not be fully recoverable. Recoverability is measured by a comparison of the carrying amount to the net undiscounted cash flows expected to be generated by the asset group. If such assets are impaired, the impairment to be recognized is measured by the amount by which the carrying amount of a long-lived asset exceeds its fair value. Any loss would be recognized in loss from operations in the period in which the determination is made. There were no impairment charges recognized related to long-lived assets during the years ended December 31, 2019, and 2020, nor during the nine months ended during September 30, 2020 and 2021.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Goodwill

Goodwill consists of the excess purchase price over the fair value of net assets acquired in business combinations. The Company conducts a test for the impairment of goodwill on at least an annual basis as of October 1st or sooner if indicators of impairment arise. The Company first assesses qualitative factors to determine whether it is more likely than not that goodwill is impaired. As part of the qualitative assessment, the Company evaluates factors including macroeconomic conditions, industry and market considerations, cost factors and overall financial performance of its single reporting unit.

If the Company concludes that it is more-likely-than-not that its single reporting unit is impaired or if the Company elects not to perform the optional qualitative assessment, a quantitative assessment is performed. For the quantitative assessment, the fair value of the Company's reporting unit is compared with the carrying amount of net assets, including goodwill, related to the reporting unit. The Company recognizes an impairment charge for the amount, if any, by which the carrying amount of a reporting unit exceeds the fair value of the reporting unit. Goodwill of $15.6 million was recorded in connection with the acquisition of AKESOgen in December 2019 and the Company recorded no impairment loss during the year ended December 31, 2020, or the nine months ended September 30, 2021.

Convertible Note

The Company's outstanding promissory note (see Note10) is accounted for in accordance with ASC 470-20. The Company determined the embedded conversion options, redemption features, and acceleration of repayment upon default are not required to be separately accounted for as derivatives under ASC 815 because they were either determined to be clearly and closely related to the host instrument or the Company has concluded that no value would be associated with the related feature based on the circumstances associated with the note's issuance.

Revenue Recognition

The Company derives revenue from selling lab services ("Genomics") to physicians, academic research institutions, and other parties. The Company also derives revenue from the commercialization of data generated in the lab ("Data and other") through the licensing of de-identified datasets to third parties and from matching patients to clinical trials enrolled in its clinical trial network. The majority of the Company's revenue is generated in North America.

The Company accounts for revenue in accordance with ASC Topic 606, *Revenue From Contracts With Customers*. The Company commences revenue recognition when control of these products is transferred to customers in an amount that reflects the consideration the Company expects to be entitled to in exchange for such products. This principle is achieved by applying the five-step approach.

(i) we account for a contract when it has approval and commitment from both parties, (ii) the rights of the parties are identified, (iii) payment terms are identified, (iv) the contract has commercial substance and (v) collectability of consideration is probable. Revenues and any contract assets are not recognized until such time that the required conditions are met.

Disaggregation of Revenue

The Company provides disaggregation of revenue based on Genomics and Data on the consolidated statements of operations and comprehensive loss, as it believes these best depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Genomics

The Company generally recognizes revenue for its Genomics product offering when it has met its performance obligation relating to an order. The Company has determined its sole performance obligation to be the delivery of the testing results to the ordering party. The Company receives payments from Medicare, Medicaid, and commercial insurance for clinical orders and directly from research institutions, pharmaceutical companies or other third parties for direct bill orders. The Company recognized Genomics revenue of $27.9 million and $151.9 million for the years ended December 31, 2019 and 2020, respectively. The Company recognized Genomics revenue of $73.2 million and $154.5 million for the nine months ended September 30, 2020 and 2021, respectively.

For clinical orders from Medicare, Medicaid, and commercial insurance, the Company determines transaction price by reducing the standard charge by the estimated effects of any variable consideration, such as contractual allowance and implicit price concessions. The Company estimates the contractual allowances and implicit price concessions based on historical collections in relation to established rates, as well as known current or anticipated reimbursement trends not reflected in the historical data. The Company monitors the estimated amount to be collected at each reporting period based on actual cash collections in order to assess whether a revision to the estimate is required. Payment is typically due after the claim has been processed by the payor, generally 30-120 days from date of service. While management believes that the estimates are accurate, actual results could differ and the potential impact on the financial statements could be significant. The Company recognized revenue for clinical orders of $25.4 million and $104.1 million for the years ended December 31, 2019 and 2020, respectively. The Company recognized revenue for clinical orders of $54.3 million and $123.1 million for the nine months ended September 30, 2020 and 2021, respectively.

For direct bill orders from research institutions, pharmaceutical companies, or other third parties, the Company determines the transaction prices based on established contractual rates with the customer, net of any applicable discounts. Payment is typically due between 30 and 60 days following the date of invoice. The Company recognized Genomics revenue for direct bill orders of $2.5 million and $48.0 million for the years ended December 31, 2019 and 2020, respectively. The Company recognized Genomics revenue for direct bill orders of $19.0 million and $31.4 million for the nine months ended September 30, 2020 and 2021, respectively.

Data and other

Data and other revenue primarily represents data licensing and clinical trial matching services that the Company provides to pharmaceutical and biotechnology companies. The Company's arrangements with these customers often have terms that span multiple years. However, these contracts generally also include customer opt-in or early termination clauses after twelve months without contractual penalty. The customer's option to renew is generally not viewed as a material right, and as a result, the Company's contract period for these agreements is generally considered less than one year. The Company determines the transaction price based on established contractual rates with the customer, net of any applicable discounts. The Company recognizes revenue for its Data and other product offering when it has met its performance obligation under the terms of the agreement with the customer. A description of the Company's two product offerings are as follows:

Insights

The Company's Insights product consists primarily of licensing de-identified records. Each Insights contract is unique and may include multiple promises, including the delivery of licensed de-identified records, including refreshes, analytical services or access to the Company's enhanced Lens application. The Company evaluates each contract to determine which performance obligations are capable of being distinct and separately identifiable from other promises in the contract and, therefore, represent distinct performance obligations. The

transaction price is allocated to the distinct performance obligations and revenue is recognized once the performance obligation has been fulfilled.

The Company has determined that the delivery of de-identified records and, when applicable, analytical services and access to our enhanced Lens application are separate and distinct performance obligations. For data deliveries, revenue is recognized upon delivery of the data to the customer, and the Company accounts for individual licensed data records as a right to use license. Analytical services typically involve data analysis and research performed on behalf of the customer by the Company. The resulting delivery of data, or a report addressing a series of questions and analytical results, is considered a separate performance obligation. For analytical services or access to Lens, revenue is recognized as the services are provided or over the period to which access is granted. For the periods presented, revenue from analytical services and access to Lens are not material.

Therapies

The Company's Therapies product consists primarily of matching patients to clinical trial sponsors of a potential match. To the extent the contract requires, the Company may also assist in opening the clinical trial site and enrolling the patient in the clinical trial. The Company has determined that, depending on the type of agreement, the performance obligation of these contracts is the delivery of a notification or the enrollment of a patient in a clinical trial. As such, revenue is recognized upon one of the following: delivery of a notification to the physician alerting them to a clinical trial match, or once a patient is enrolled in a trial. Concurrently, the customer, which is the clinical trial sponsor, also receives notification from the Company to establish the performance obligations delivered or fulfilled for the billing period.

For Insights and Therapies arrangements, pricing is fixed and the Company may be compensated through a combination of an upfront payment and performance-based, non-refundable payments due upon completion of the stated performance obligation(s). Payment is generally due 60 to 90 days after the date of service. The Company has no significant obligations for refunds, warranties, or similar obligations for Data and other product offerings. The Company has elected the practical expedient, which allows the Company to not disclose remaining performance obligations for contracts with original terms of twelve months or less. Cancelable contracted revenue is not considered a remaining performance obligation. The Company recognized Data and other revenue from pharmaceutical companies, non-for-profits, and researchers of $34.2 million and $36.1 million for the years ended December 31, 2019 and 2020, respectively, and $13.9 million and $30.0 million for the nine months ended September 30, 2020 and 2021, respectively.

Contract Assets

Timing of revenue recognition may differ from the timing of invoicing to customers. Certain performance obligations may require payment before delivery of the service to the customer. The Company recognizes contract assets when we have an unconditional right to payment, and when revenues earned on a contract exceeds the billings. Contract assets are presented under accounts receivable, net. Accounts receivable as of December 31, 2019 and 2020 and September 30, 2021 included contract assets of $5.5 million, $39.6 million, and $21.9 million respectively.

Deferred Revenue

Deferred revenue consists of billings or cash received for services in advance of revenue recognition and is recognized as revenue when all the Company's revenue recognition criteria are met. The deferred revenue

balance is influenced primarily by upfront contractual payments from our Data product offering and timing of delivery of our de-identified licensed data and clinical test results. The portion of deferred revenue that is anticipated to be recognized as revenue during the succeeding twelve-month period is recorded as deferred revenue, current and any remaining portion is recorded as deferred revenue, non-current. As of December 31, 2020 and September 30, 2021, all deferred revenue recorded is expected to be recognized in the next twelve months.

Cost of Revenues, Genomics

Cost of revenues for Genomics consists of personnel lab expenses, including salaries, bonuses, employee benefits, amortization of intangible assets, cost of laboratory supplies and consumables, third-party administration fees associated with COVID-19 testing, depreciation of laboratory equipment, shipping costs and certain allocated overhead expenses. Costs associated with performing the Company's tests are recorded as the tests are processed at the time of report delivery.

Cost of Revenues, Data and other

Cost of revenues for Data and other includes data acquisition and royalty fees, and personnel costs related to our delivery of our data services and platform, and certain allocated overhead expenses. Costs associated with performing data services are recorded as incurred.

Research and Development

Research and development expenses include costs incurred to develop new assays and products, and include salaries and benefits of the Company's scientific and laboratory research and development teams, amortization of intangible assets, inventory costs, overhead costs, validation costs, contract services and other related costs**.** Research and development costs are expensed as incurred.

Technology research and development

Technology research and development expense primarily includes personnel costs incurred related to the research and development of the Company's technology platform and applications and the research and development of new products which the Company hopes to bring to the market. Technology research and development costs are expensed as incurred.

401(k) Plan

The Company has a 401(k) tax deferred savings plan under which eligible employees may elect to have a portion of their salary deferred and contributed to the plan. Employer matching contributions are determined by the Company and are discretionary. During the years ended December 31, 2019 and 2020 and the nine months ended September 30, 2020 and 2021, the Company did not match any employee contributions.

Income Taxes

Income taxes are provided for the tax effects of transactions reported in the consolidated financial statements and consist of taxes currently due plus deferred taxes. Deferred taxes are recognized based on differences between the basis of assets and liabilities for financial reporting and income tax purposes and are measured using enacted rates. The differences relate primarily to timing of deductibility of certain expenses and

the estimated future effects of net operating loss carryforwards. Deferred tax assets and liabilities represent the future tax consequences of those differences, which will either be taxable or deductible when the assets and liabilities are recovered or settled. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment.

Companies are required to assess whether a valuation allowance should be recorded against their deferred tax assets ("DTAs") based on the consideration of all available evidence, using a "more likely than not" realization standard. The four sources of taxable income that must be considered in determining whether DTAs will be realized are, (1) future reversals of existing taxable temporary differences (i.e., offset of gross deferred tax assets against gross deferred tax liabilities); (2) taxable income in prior carryback years, if carryback is permitted under the tax law; (3) tax planning strategies and (4) future taxable income exclusive of reversing temporary differences and carry forwards.

In assessing whether a valuation allowance is required, significant weight is given to evidence that can be objectively verified. The Company has evaluated its DTAs in each reporting period, including an assessment of its cumulative income or loss, to determine if a valuation allowance was required. After a review of the four sources of taxable income described above, the Company established a valuation allowance against the Company's net deferred tax assets due to uncertainty surrounding the Company's ability to generate future taxable income to realize these assets.

As of December 31, 2020, the Company had federal and state net operating loss ("NOL") carry forwards of approximately $380.9 and $262.4 million, respectively, which may be available to offset future taxable income. The NOLs will begin to expire in 2037.

The Company evaluates tax positions under an approach for recognition and measurement of uncertain tax positions. The Company recognizes tax liabilities when the Company believes that certain positions may not be fully sustained upon review by tax authorities. Benefits from tax positions are measured at the largest amount of benefit that is more likely than not of being realized upon settlement. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences impact income tax expense in the period in which such determination is made. Interest and penalties, if any, related to accrue liabilities for potential tax assessments are included in income tax expense.

The Company has concluded that as of December 31, 2019 and 2020, and September 30, 2021, there are no uncertain positions taken or expected to be taken that would require recognition of a liability in the financial statements.

The Company is subject to routine audits by taxing jurisdictions. As of December 31, 2020, the Company was not under audit in any jurisdiction. As of September 30, 2021, the Company was not under audit in any jurisdiction.

Net Loss Per Share Attributable to Common Stockholders

Basic and diluted net loss per share attributable to common stockholders is presented in conformity with the two-class method required for participating securities. The Company considers all series of its redeemable convertible preferred stock to be participating securities. Under the two-class method, the net loss attributable to common stockholders is not allocated to the redeemable convertible preferred stock as the holders of its redeemable convertible preferred stock do not have a contractual obligation to share in the Company's losses. Net income is attributed to common stockholders and participating securities based on their participation rights.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share attributable to common stockholders adjusts basic earnings per share for the potentially dilutive impact of stock options and redeemable convertible preferred stock. As the Company has reported losses for all periods presented, all potentially dilutive securities are antidilutive and accordingly, basic net loss per share equals diluted net loss per share.

Deferred Offering Costs

Deferred offering costs consist primarily of accounting, legal, and other fees related to the Company's proposed IPO. The deferred offering costs will be recorded against IPO proceeds upon the consummation of the IPO. If the IPO is abandoned, deferred offering costs will be expensed in the period the IPO is abandoned. There were no deferred offering costs as of December 31, 2019 or 2020. The Company had $2.0 million of deferred offering costs as of September 30, 2021.

Stock-Based Compensation

Compensation expense relating to share-based payments is recognized in operations using a fair value measurement method. Under the fair value method, the estimated fair value of awards is charged to operations on a straight-line basis over the requisite service period, which is generally the vesting period. See Note 9 for further information on stock-based compensation.

Fair Value Measurements

Fair value is defined under GAAP as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or a liability.

To increase the comparability of fair value measures, the following hierarchy prioritizes the inputs in valuation methodologies used to measure fair value:

Level 1—Measurements that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2—Measurements that include other inputs that are directly or indirectly observable in the marketplace.

Level 3—Measurements derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Fair value measurements are discussed further in Note 13.

It is the Company's policy, in general, to measure nonfinancial assets and liabilities at fair value on a nonrecurring basis. These items are not measured at fair value on an ongoing basis but are subject to fair value

adjustments in certain circumstances (such as evidence of impairment) which, if material, are disclosed in the accompanying notes to these consolidated financial statements.

Segment Information

The Company operates as one operating segment. The Company's chief operating decision maker ("CODM") is its chief executive officer, who reviews financial information for purposes of making operating decisions, assessing financial performance and allocating resources. The Company's CODM evaluates financial information on a consolidated basis.

Classification and Accretion of Convertible Preferred Stock

The Company's Series A, B, B-1, B-2, C, D, E, F, G and G-2 convertible preferred stock are classified outside of stockholders' equity (deficit) because the holders of such shares have liquidation rights in the event of a deemed liquidation that, in certain situations, is not solely within the control of the Company.

Foreign Currency

Assets and liabilities of the Company's foreign subsidiaries are translated into U.S. dollars (USD) using period-end exchange rates while revenues and expenses are translated at the average exchange rate for the period presented. Gains or losses from balance sheet translation are the only component of accumulated other comprehensive loss in the consolidated balance sheet.

Recently Adopted Accounting Standards

The Company adopted the guidance in ASC Topic 606, *Revenue from Contracts with Customers ("Topic 606")*, on January 1, 2019. Topic 606 is a comprehensive new revenue recognition model that requires a company to recognize revenue to depict the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. The Company adopted Topic 606 using the modified retrospective method and applied Topic 606 to all contracts on the date of adoption. Beginning on January 1, 2019, results are presented in accordance with the revised policies, while prior period amounts are not adjusted and continue to be reported in accordance with our historical policies. The adoption of Topic 606 did not impact our presentation of revenue on a gross or net basis. As such, no adjustments were made to the Company's opening accumulated deficit due to the cumulative impact of adopting Topic 606.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment.* ASU 2018-04 simplifies how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. The guidance is effective for the fiscal year beginning May 1, 2023 with early adoption permitted. The Company early adopted the guidance as of January 1, 2020 using a prospective transition method. Adoption of this guidance did not have a material impact to the Company's consolidated financial statements and related disclosures.

In July 2017, the FASB issued ASU 2017-11, Earnings Per Share (Topic 260), *Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815)*. The amendments in Part I of the Update change the reclassification analysis of certain equity-linked financial instruments (or embedded features) with down-round features. The amendments in Part II of the update re-characterize the indefinite deferral of certain provisions of Topic 480 that now are presented as pending content in the ASC, to a scope exception. The amendments in Part I of this update was effective for the Company on January 1, 2020 (the date it was effective

for private companies). The amendments in Part II of the update did not require any transition guidance because those amendments did not have an accounting effect. The adoption did not have a material effect on the Company's consolidated financial statements as of the date of adoption.

Recently Issued Accounting Pronouncements Not Yet Adopted

As an emerging growth company, the Company is provided the option to adopt new or revised accounting guidance either (1) within the same periods as those otherwise applicable to public business entities or (2) within the same time periods as private companies, including early adoption when permissible.

The Company has elected to adopt new or revised accounting guidance within the same time period as private companies, as indicated below.

The FASB issued ASU 2016-02, *Leases*, (Topic 842) (ASU 2016-02), in February 2016. ASU 2016-02 will require lessees to recognize, at commencement date, a lease liability representing the lessee's obligation to make payments arising from the lease and a right-of-use asset representing the lessee's right to use or control the use of a specific asset for the lease term. Under the new guidance, lessor accounting is largely unchanged. ASU 2016-02 is effective for annual financial statements of private companies issued for fiscal years beginning after December 15, 2020, and should be applied using a modified retrospective approach, as specified in ASU 2019-10. As long as the Company is an emerging growth company, the current effective date of adoption is 2022 for calendar year-end private companies. Early adoption is permitted. While the Company continues to assess the effects of adoption, it currently believes the most significant effects relate to the recognition, on the consolidated balance sheet, of right-of-use assets and lease liabilities related to operating leases. The Company is evaluating the full effects that adoption of ASU 2016-02 will have on its financial position, results of operations, and disclosures.

The FASB issued ASU 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract*, In August 2018. ASU 2018-15 requires a customer in a cloud computing arrangement that is a service contract to follow the internal-use software guidance in ASC 350-40 to determine which implementation costs to defer and recognize as an asset. The guidance is effective for the fiscal year beginning January 1, 2021, and interim periods within annual periods beginning after December 15, 2021. Early adoption is permitted. The Company is currently evaluating the effect that this guidance will have on the consolidated financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU No. 2016-13"). ASU No. 2016-13 requires the measurement and recognition of expected credit losses for financial assets that are held at amortized cost, including trade receivables. ASU No. 2016-13 replaces the previous incurred loss impairment model with an expected loss model which requires the use of forward-looking information to calculate credit loss estimates. The guidance is effective for the Company beginning January 1, 2023, with early adoption permitted. The Company is currently evaluating the effect that this guidance will have on the consolidated financial statements and related disclosures. The adoption of the standard is not expected to materially impact the Company's financial statements.

In November 2018, the FASB issued ASU 2018-18, Collaborative Arrangements (Topic 808*): Clarifying the Interaction between Topic 808 and Topic 606*. This ASU provides guidance that clarifies when certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer, and amends ASC 808 to refer to the unit-of-account guidance in ASC 606. The

guidance specifically precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. January 1, 2021, and interim periods within annual periods beginning after December 15, 2021. Early adoption is permitted. The Company is currently evaluating the effect that this guidance will have on the consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes* ("ASU No. 2019-12"), which simplifies the accounting for income taxes by eliminating certain exceptions to the guidance in ASC 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. It clarifies that single-member limited liability companies and similar disregarded entities that are not subject to income tax are not required to recognize an allocation of consolidated income tax expense in their separate financial statements, but they could elect to do so. The guidance is effective for the Company beginning January 1, 2022. Early adoption is permitted. The Company is currently evaluating the effect that this guidance will have on the consolidated financial statements and related disclosures.

3. BUSINESS COMBINATIONS

AKESOgen

On December 9, 2019, in accordance with a stock purchase agreement, Tempus Labs Inc. purchased 100% of the issued and outstanding shares of capital stock of AKESOgen for $30.3 million, with an adjustment for working capital. In accordance with the terms of the agreement, $4.0 million of the consideration was held back and is payable 18 months after the acquisition date, which was subsequently paid in July 2021. The purpose of the acquisition was to expand the Company's testing capabilities (inherited risk of cancer testing, microbiome profiling, whole-genome genotyping, and epigenomic methylation profiling) and leverage AKESOgen's customer relationships to drive growth. Goodwill of $15.6 million represents the excess of the purchase price over the estimated fair value assigned to tangible and identifiable intangible assets acquired and liabilities assumed and represents the future economic benefits expected to arise from other intangible assets acquired that do not qualify for separate recognition, including expected future market opportunities from expanded testing capabilities and assembled workforce. The transaction also included a contingent consideration arrangement to transfer shares of non-voting common stock to the former owners with an acquisition date fair value of $3.4 million, which the company recognized under long-term liabilities. The consideration will be paid out based on AKESOgen's 2020 revenue, with a maximum payout of 726,979 shares of non-voting common stock. Because the value of the Company's stock at the date of issuance is unknown, the Company cannot disclose the value of the shares. The contingent consideration is classified as a Level 3 measurement for which fair value is derived from inputs that are unobservable and significant to the overall fair value measurement. On May 19, 2021, the Company entered into a settlement agreement with the former owners of AKESOgen related to the contingent consideration, whereby $7.5 million was paid in cash and 145,466 shares of non-voting common stock will be paid out on the third anniversary of the Closing date. See Note 13 for more information on fair value measurements.

The Company incurred an insignificant amount of transaction costs related to the acquisition, which were recorded as operating expenses in the consolidated statement of operations.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The aggregate acquisition-date fair value of the consideration for the AKESOgen acquisition totaled $33.7 million, which consisted of the following (in thousands):

Cash	30,289
Contingent Consideration	3,380
Total Purchase Consideration	$ **33,669**

The following table summarizes the allocation of the aggregate acquisition price of the AKESOgen acquisition (in thousands):

Cash	$ 296
Net Working Capital	(77)
PP&E	2,789
Other net assets	(2,280)
Fair value of identifiable net assets acquired	$ 728
Goodwill & Intangible Assets	
Customer relationships	17,300
Goodwill	15,641
Net Intangible Assets	$32,941
Total Acquisition Price	$**33,669**

As the acquisition of AKESOgen was a stock purchase, the related goodwill created as a result of the acquisition is not deductible for tax purposes. The Customer relationships were established with a seven year remaining useful life, and the property, plant and equipment has a two year average remaining useful life.

The following unaudited pro forma information shows the results of the AKESOgen's operations as though the acquisition had occurred as of the beginning of the comparable period, January 1, 2018, (in thousands):

	For the Year Ended December 31, 2019
Revenues	$ 10,909
Net loss applicable to common shares	(1,394)

The pro forma results have been prepared for comparative purposes only and are not necessarily indicative of the actual results of operations had the acquisition taken place as of the beginning of the periods presented, or the results that may occur in the future. The results were prepared utilizing the actual results of the business and there were no pro forma adjustments.

As of December 31, 2019, AKESOgen contributed $0.7 million in net revenue and $1.0 million of net loss to the consolidated Tempus results for the year ended December 31, 2019.

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4. BALANCE SHEET COMPONENTS

Property and Equipment, net

The following summarizes property and equipment, net as of December 31, 2019 and 2020 and September 30, 2021 (in thousands):

	December 31,		September 30,
	2019	2020	2021
Equipment	$ 26,056	$ 38,217	$ 44,748
Leasehold improvements	20,272	23,352	24,314
Furniture and fixtures	5,543	5,751	6,492
Total property and equipment, gross	51,871	67,320	75,554
Less: accumulated depreciation	(15,806)	(28,885)	(39,555)
Property and equipment, net	$ 36,065	$ 38,435	$ 35,999

Previously disclosed amounts of $10,876 and $11,532 related to Leasehold improvements obtained through tenant improvement allowance, and the related deferred rent liability, presented in the supplemental disclosure of noncash investing and financing activities within the Statement of Cash Flows for the years ended December 31, 2019 and 2020, respectively, have been omitted as the amounts are not noncash items and were appropriately reflected in the Statement of Cash Flows.

Depreciation expense on property and equipment is classified as follows in the accompanying consolidated statements of operations for the years ended December 31, 2019 and 2020 and the nine months ended September 30, 2020 and 2021 (in thousands):

	December 31,		September 30,	
	2019	2020	2020	2021
Cost of revenue, genomics	$ 3,553	$ 7,206	$ 5,253	$ 5,854
Selling, general and administrative costs	4,543	5,885	4,317	4,816
Total Depreciation	$ 8,096	$ 13,091	$ 9,570	$ 10,670

Accrued Expenses

Accrued expenses consist of the following:

	December 31,		September 30,
	2019	2020	2021
Accrued compensation and employee benefits	$4,457	$ 8,690	$ 10,773
Accrued Expenses	3,001	11,318	23,979
Other	246	170	133
Total Accrued Expenses	$7,704	$20,178	$ 34,885

Investments and Other Assets

Investments and other assets include amounts due from related parties (Note 14), and an equity method investment.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

On June 21, 2021, the Company contributed $5.9 million in cash for a minority interest in a research platform in service of advancing data-driven medicine in psychiatry. The Company concurrently entered a Commercial partnership agreement with the investee for the purpose of furthering the commercialization efforts of the associated research platform.

Consistent with purchase obligations disclosed in Note 6, *Commitments and Contingencies,* the commercial partnership agreement includes committed payments for access to the data and additional payments contingent on the commercialization of such data. The annual license fee commitment is not materially significant.

5. GOODWILL AND INTANGIBLES

Goodwill represents the excess of the purchase price in a business combination over the fair value of net tangible and intangible assets acquired. As disclosed in Note 2, Goodwill is tested for impairment at least annually as of October 1st. The changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2020 were as follows (in thousands):

Balance as of December 31, 2018	**$ 340**
Acquisition of AKESOgen	15,641
Foreign exchange rate adjustment	5
Balance as of December 31, 2019	**$ 15,986**
Foreign exchange rate adjustment	6
Balance as of December 31, 2020	**$ 15,992**

There was no goodwill impairment for the years ended December 31, 2019 and 2020, and for the nine months ended September 30, 2020 and 2021.

Intangible assets are initially recorded at their acquisition cost, or fair value if acquired as part of a business combination and amortized over their estimated useful lives. Intangible assets consist of a website domain, customer relationships acquired as part of a business combination, and licensed data acquired by entering into research collaboration agreements. In each license arrangement, the other party provides the Company with specified data, which currently is used primarily for research and development purposes but may also be licensed to third parties. The asset represents the Company's right to use these datasets. The Company also recognizes a liability for the associated minimum payments that are presented within accrued data licensing fees. During 2020, the gross amount of intangible assets increased $13.1 million resulting from the extension of a research collaboration agreement. The amendment extended the minimum length of the contract from five years to seven years.

The following table summarizes intangible assets as of December 31, 2019 and 2020 (in thousands):

	2019			2020		
	Gross Amount	Accumulated Amortization	Net	Gross Amount	Accumulated Amortization	Net
Customer Relationships	$ 17,300	$ —	$ 17,300	$ 17,300	$ 2,471	$ 14,829
Licensed Data	37,483	13,472	24,011	50,586	20,975	29,611
Website domain	19	—	19	19	—	19
	$ 54,802	$ 13,472	$ 41,330	$ 67,905	$ 23,446	$ 44,459

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table summarizes intangible assets as of September 30, 2020 and 2021 (in thousands):

	2020			2021		
	Gross Amount	Accumulated Amortization	Net	Gross Amount	Accumulated Amortization	Net
Customer Relationships	$ 17,300	$ 1,854	$ 15,446	$ 17,300	$ 4,325	$ 12,975
Licensed Data	50,586	19,099	31,487	50,586	26,602	23,984
Website domain	19	—	19	19	—	19
	$ 67,905	$ 20,953	$ 46,952	$ 67,905	$ 30,927	$ 36,978

Amortization of intangible assets is recognized using the straight-line method over their estimated useful lives, which range from five to seven years. Amortization expense was $6.9 million and $9.9 million for the years ended December 31, 2019 and 2020, respectively, and $7.5 million and $7.5 million for the nine months ended September 30, 2020 and 2021, and is recorded in cost of revenues, technology research and development or research and development, depending on use of the asset. The weighted average life of our intangibles is approximately seven years. As of December 31, 2020, the estimated future amortization expense related to intangible assets is as follows (in thousands):

2021	$ 9,974
2022	9,974
2023	9,974
2024	9,574
2025	2,472
Thereafter	2,472
Total	$ 44,440

6. COMMITMENTS AND CONTINGENCIES

Leases

The Company has entered into various non-cancelable operating lease agreements with lease expirations between 2021 and 2029. Rent expenses under operating leases was $3.3 million and $6.2 million for the years ended December 31, 2019 and 2020, respectively.

The Company leases its headquarters located in Chicago, Illinois (“600 West Chicago”). Our lease agreement for 600 West Chicago extends through May 2029 and includes rent escalations of 2.5% per year. The 600 West Chicago lease represents $37.0 million of the estimated future payments under operating leases shown in the table below. The Company accounts for the 600 West Chicago lease as an operating lease and recognizes rent expense on a straight-line basis, taking into account rent escalations and lease incentives.

The Company has also acquired portions of its equipment under capital lease agreements, with expirations between 2021 and 2023.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

As of December 31, 2020, the future payments under operating and capital leases for each of the next five years and thereafter are as follows (in thousands):

	Capital Leases	Operating Leases
2021	$ 796	$ 6,260
2022	454	6,519
2023	311	6,795
2024	—	6,914
2025	—	6,270
Thereafter	—	16,504
Total minimum lease payments	$1,561	$ 49,262
Less: Amount representing interest	114	
Present value of net minimum capital lease payments	1,447	
Less: Current portion of capital lease obligations	723	
Total long-term capital lease obligations	$ 724	

Purchase Obligations

The Company has entered into non-cancelable arrangements with third parties, primarily related to data licenses and cloud computing services. Where applicable, the Company calculates its obligation based on termination fees that can be paid to exit the contract. The data license agreements include committed payments for access to the data and additional payments contingent on the commercialization of such data. For the years ended December 31, 2019 and 2020, the Company recognized data licensing and cloud computing expenses of $15.2 million and $27.1 million, respectively, related to non-cancelable arrangements. For the nine months ended September 30, 2021, the Company recognized $23.3 million, related to non-cancelable arrangements.

As of December 31, 2020, future payments under these contractual obligations were as follows (in thousands):

2021	$ 37,750
2022	18,917
2023	21,250
2024	26,250
2025	23,750
Thereafter	6,500
Total purchase obligations	$ 134,417
Less: Amount representing interest	1,416
Present value of net minimum purchase obligations	$ 133,001
Less: Current portion of purchase obligations	37,129
Total long-term purchase obligations	$ 95,872

As of September 30, 2021, future payments under these contractual obligations were as follows (in thousands):

2021	$ 26,427
2022	31,752
2023	23,730
2024	29,730
2025	28,730
Thereafter	19,710
Total purchase obligations	$ 160,079
Less: Amount representing interest	1,609
Present value of net minimum purchase obligations	$ 158,470
Less: Current portion of purchase obligations	29,260
Total long-term purchase obligations	$ 129,210

Legal Matters

From time to time in the normal course of business, the Company may be subject to various legal matters such as threatened or pending claims or proceedings. As of December 31, 2019, the Company was involved in litigation regarding the Company's hiring of an employee with a non-compete agreement with their former employer. This matter was resolved without any financial impact to the Company. The Company had no outstanding litigation as of December 31, 2020, or for the nine months ended September 30, 2021.

7. STOCKHOLDERS' EQUITY

Common Stock

The Company has authorized two classes of common stock, voting and non-voting. In March 2021, the Company amended its certificate of incorporation to bifurcate the voting common stock into two classes, Class A common stock and Class B common stock. Following the amendment, the Company has authorized 181,700,285 shares of Class A common stock, 5,374,899 shares of Class B common stock, and 63,946,620 shares of non-voting common stock.

As of December 31, 2020, the rights of the holders of voting and non-voting common stock are identical, except with respect to voting. Each share of voting common stock is entitled to one vote per share and the non-voting common stock has no voting rights, except as required by law. Shares of non-voting common stock automatically convert into shares of voting common stock immediately upon the closing of an initial public offering ("IPO"). Voting and non-voting common stock are collectively referred to as "Common Stock" throughout the notes to these consolidated financial statements unless otherwise noted.

Following the amended certificate of incorporation in March 2021, the rights of the holders of Class A common stock, Class B common stock and non-voting common stock remain identical, except with respect to voting. Each share of Class A common stock is entitled to one vote per share and each share of Class B common stock is entitled to fifteen votes per share. Non-voting shares of common stock do not have voting rights.

Each share of Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. Upon the closing of the initial public offering, on any transfer of shares of Class B common stock, whether or not for value, each such transferred share will automatically convert into one share of Class A common stock, except for certain transfers detailed below and further described in the Company's amended and restated certificate of incorporation that will be in effect on the closing of this offering.

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Any holder's shares of Class B common stock will convert automatically into Class A common stock, on a one-to-one basis, upon certain circumstances, including: (1) the sale or transfer of such shares of Class B common stock, other than to a "controlled entity," which is any person or entity which, directly or indirectly, is controlled by, or is under common control with, the holder of such shares of Class B common stock; (2) the twenty-year anniversary of the filing of the certificate of amendment to the Company's ninth amended and restated certificate of incorporation, which is March 15, 2041; (3) the termination of Mr. Lefkofsky's employment or service with the Company as an executive officer and member of the board of directors; and (4) the date that Mr. Lefkofsky and his controlled entities hold, in the aggregate, fewer than shares of the Company's capital stock (as adjusted for stock splits, stock dividends, combinations, subdivisions and recapitalizations).

Once transferred and converted into Class A common stock, the Class B common stock may not be reissued.

The Company issues stock-based awards to its employees in the form of stock options, restricted stock units, performance stock units and restricted stock, all of which have the potential to increase the outstanding shares of common stock in the future (see Note 9, Stock-Based Compensation).

Upon any liquidation, dissolution or winding up of the Company, the remaining assets of the Company would first be distributed to the holders of Series G-2 Preferred Stock, Series G Preferred Stock, Series F Preferred Stock, followed by distributions to the holders of Series E Preferred Stock, Series D Preferred Stock, Series C Preferred Stock, Series B-2 Preferred Stock, Series B-1 Preferred Stock, Series B Preferred Stock, and Series A Preferred Stock. After distribution to the preferred stockholders, the remaining assets of the Company would be distributed to the holders of shares of Series C Preferred Stock and Common Stock, pro rata based on the number of shares then held by each holder, treating all Series C Preferred Stock as if they had been converted into Common Stock.

8. REDEEMABLE CONVERTIBLE PREFERRED STOCK

In April 2020, the Company authorized and issued 2,537,290 shares of Series G Preferred Stock ("Series G Preferred"). In November 2020, the Company authorized 7,135,072 shares and issued 3,296,093 shares of Series G-2 Preferred stock ("Series G-2 Preferred"). In January 2021, the Company issued 287,922 shares of Series G-2 Preferred Stock for aggregate proceeds of $16.5 million. In conjunction with this issuance, the Company redeemed 130,876 shares of Series G-2 Preferred Stock from a related party in exchange for $7.5 million. Each share has a par value of $.0001. The Company used the proceeds from such issuances for working capital and general corporate purposes.

Redeemable convertible preferred stock outstanding as of December 31, 2019 and 2020, and as of September 30, 2020 and 2021, consisted of the following (in thousands, except share amounts):

		As of December 31, 2019			
		Shares			
Series Preferred	Year Issued	Authorized	Outstanding	Liquidation Amount	Carrying Value
Series A	2015	10,000,000	10,000,000	$ 10,500	$ 10,000
Series B	2016	5,374,899	5,374,899	10,500	10,000
Series B-1	2016	2,500,000	2,500,000	10,500	10,000
Series B-2	2017	4,191,173	4,191,173	31,500	30,000
Series C	2017	9,779,403	9,779,403	76,249	70,124
Series D	2018	8,534,330	8,534,330	87,626	86,626
Series E	2018	6,630,905	6,630,905	120,100	120,100
Series F	2019	8,077,674	8,077,674	207,311	207,311
Total convertible preferred stock		55,088,384	55,088,384	$ 554,286	$ 544,161

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Series Preferred	Year Issued	As of December 31, 2020			
		Shares		Liquidation Amount	Carrying Value
		Authorized	Outstanding		
Series A	2015	10,000,000	10,000,000	$ 10,500	$ 10,000
Series B	2016	5,374,899	5,374,899	10,500	10,000
Series B-1	2016	2,500,000	2,500,000	10,500	10,000
Series B-2	2017	4,191,173	4,191,173	31,500	30,000
Series C	2017	9,779,403	9,779,403	78,777	70,403
Series D	2018	8,534,330	8,534,330	91,623	90,623
Series E	2018	6,630,905	6,630,905	127,306	127,306
Series F	2019	8,077,674	8,077,674	219,749	219,749
Series G	2020	2,537,290	2,537,290	102,186	102,186
Series G-2*	2020	7,135,072	3,296,093	188,889	188,889
Total convertible preferred stock		64,760,746	60,921,767	$ 871,530	$ 859,156

* Excludes amounts related to the conversion of convertible note

Series Preferred	Year Issued	As of September 30, 2020			
		Shares		Liquidation Amount	Carrying Value
		Authorized	Outstanding		
Series A	2015	10,000,000	10,000,000	$ 10,374	10,000
Series B	2016	5,374,899	5,374,899	10,374	10,000
Series B-1	2016	2,500,000	2,500,000	10,374	10,000
Series B-2	2017	4,191,173	4,191,173	31,123	30,000
Series C	2017	9,779,403	9,779,403	77,744	70,000
Series D	2018	8,534,330	8,534,330	90,362	89,844
Series E	2018	6,630,905	6,630,905	125,490	125,490
Series F	2019	8,077,674	8,077,674	216,623	216,623
Series G	2020	2,537,290	2,537,290	100,718	100,718
Total convertible preferred stock		57,625,674	57,625,674	$ 673,182	662,675

Series Preferred	Year Issued	As of September 30, 2021			
		Shares		Liquidation Amount	Carrying Value
		Authorized	Outstanding		
Series A	2015	10,000,000	10,000,000	$ 10,374	$ 10,000
Series B	2016	5,374,899	5,374,899	10,374	10,000
Series B-1	2016	2,500,000	2,500,000	10,374	10,000
Series B-2	2017	4,191,173	4,191,173	31,122	30,000
Series C	2017	9,779,403	9,779,403	80,383	70,000
Series D	2018	8,534,330	8,534,330	94,535	93,911
Series E	2018	6,630,905	6,630,905	133,014	133,014
Series F	2019	8,077,674	8,077,674	229,611	229,611
Series G	2020	2,537,290	2,537,290	106,110	106,110
Series G-2*	2020/2021	7,135,072	3,453,139	197,889	197,889
Total convertible preferred stock		64,760,746	61,078,813	$ 903,786	$ 890,535

* Excludes amounts related to the conversion of convertible note

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Stock issuance costs that reduced the initial value of preferred stock were fully accreted in the period of the Series issuance. As of December 31, 2019 and 2020, and as of September 30, 2021, all cumulative dividends have been paid and/or accrued.

The Series A Preferred, Series B Preferred, Series B-1 Preferred, Series B-2 Preferred, Series C Preferred, Series D Preferred, Series E Preferred, Series F Preferred, Series G Preferred, and Series G-2 Preferred, collectively, are referenced below as the "Series Preferred." The rights, preferences, privileges, restrictions and other matters relating to the Series Preferred are as follows:

Dividends

Except for the holders of Series G-2 Preferred, the holders of Series Preferred are entitled to dividends at a rate of 5% or 6% of the original issue price (subject to adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series), depending on the series each holder participated in and/or the holders' election to receive cash dividends annually or to accrue.

The dividends are cumulative and accrued from the date of issue while the shares are redeemable at the option of the holders. Any cash payments are subject to approval by the Board.

Voting Rights

With the exception of the Series B Preferred stockholders, Preferred stockholders are entitled to the number of votes equal to the product obtained by multiplying the number of shares of voting common stock into which their shares could be converted. Series B Preferred stockholders are entitled to the number of votes equal to the product obtained by multiplying the number of shares of voting common stock into which their shares could be converted by ten.

Following the amendment of the certificate of incorporation in March 2021, Series B Preferred stockholders are entitled to a number of votes equal to the product obtained by multiplying the number of shares of Class B common stock into which their shares could be converted by fifteen.

Liquidation Preference

Holders of Series Preferred are entitled to receive, upon a liquidation event, the amount that would have been received if all shares of Series Preferred had been converted into voting common stock immediately prior to such liquidation event. If, upon the liquidation event, the assets of the Company are insufficient to fully pay the amounts owed to Series Preferred stockholders, the holders of Series Preferred will have preferential payment over other preferred holders in the following order: Series G-2, Series G, Series F, Series E, Series D, Series C, Series B-2, Series B-1, Series B, Series A.

Redemption

Each outstanding share of Series G-2 Preferred, Series G Preferred , Series F Preferred, Series E Preferred, and Series D Preferred shall be redeemed by the Company at a price equal to the original issuance price per share, plus any accruing dividends accrued but unpaid thereon whether or not declared, together with any other dividends declared but unpaid, in one cash payment not more than sixty days after the receipt by the Company, at any time during the period commencing on the date that is seven years from the original issue date of the Series G-2 Preferred shares and ending sixty days thereafter, of written notice from the holders of each preferred series, voting as separate class, requesting redemption of all shares of the preferred series. Upon receipt of a redemption

request, the Company shall apply all of its assets to such redemption, and to no other corporate purpose, except to the extent prohibited by Delaware law governing distributions to stockholders.

Conversion

Each share of Series Preferred shall be convertible, at the option of the holder, at any time, into such number of fully paid and non-assessable shares of voting common stock. Each share of Series Preferred shall automatically be converted into shares of voting common stock upon either (i) the closing of a public offering at an offering price of $68.7683 resulting in at least $100,000,000 of gross proceeds to the company or (ii) the date and time, of the occurrence of an event, specified by vote or written consent of the holders of the outstanding shares of each individual series of preferred shares. There were no shares of voting common stock issued as a result of conversion for the periods ended December 31, 2020 and September 30, 2021.

9. STOCK-BASED COMPENSATION

Stock Plan

In 2015, the Company adopted the Tempus Labs, Inc. 2015 Stock Plan as amended and restated on March 16, 2018 (the Plan), under which up to 12,615,570 shares of common stock were authorized to be issued to employees, consultants, and directors of the Company. The Plan was subsequently amended and restated to increase the shares authorized to be issued to 14,115,750 on October 15, 2019. The Plan was again amended and restated on June 24, 2020 and November 16, 2020 to increase the shares authorized to be issued to 20,115,750 and 22,115,750, respectively.

The Plan provides for awards in the form of stock options, restricted stock awards, restricted stock unit awards, and performance stock units. The maximum contractual term of awards issued under the Plan is seven years. The Plan is administered by the Board of Directors of the Company, who determine the number of awards to be issued. As of December 31, 2019 and 2020, 2,346,229 and 8,572,503 shares, respectively, were available for future issuance under the Plan.

The Company recognized stock-based compensation expense of $3.4 million, $0.4 million, and $0.6 million in the years ended December 31, 2019 and 2020, and for the nine months ended September 30, 2021, respectively, within Selling, general and administrative expense. The Company accounts for forfeitures as they occur.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Restricted Stock Units

The restricted stock units ("RSUs") granted under the Plan are subject to two vesting conditions. The first is a time-based component. The majority of the awards are eligible to vest over a four-year period, with 25% of the awards being eligible to vest after one year and the remaining awards becoming eligible to vest on a quarterly basis thereafter. The second vesting condition is the occurrence of a liquidity event, as defined in the grant agreement. The fair value of each RSU is estimated on the date of grant using the 409a value of a non-voting share of common stock on such date. The table below summarizes restricted stock unit activity under the Plan for the year ended December 31, 2020:

	Restricted Stock Units	Weighted - Average Grant Date Fair Value
Unvested at December 31, 2019	6,964,521	$ 2.61
Granted	2,388,676	9.06
Forfeited	(614,950)	5.52
Redeemed	—	
Unvested at December 31, 2020	8,738,247	$ 4.17

There were no restricted stock units that vested during the years ended December 31, 2019 and 2020. As of December 31, 2020, there was $36.5 million of unrecognized stock compensation expense relating to RSUs. Because of the liquidity event requirement, the Company cannot estimate the weighted-average period over which this expense will be recognized.

During the nine months ended September 30, 2021, the Company granted 1,923,925 of Restricted Stock Units. As of September 30, 2021, there was $100.9 million of unrecognized stock compensation expense relating to RSUs.

Performance Stock Units

The performance stock units ("PSUs") granted under the Plan are subject to two vesting conditions. The first is the achievement of a revenue target before December 31, 2021 while remaining employed. The second vesting condition is the occurrence of a liquidity event, as defined in the grant agreement. The fair value of each PSU is estimated on the date of grant using the 409a value of a non-voting share of common stock on such date. The table below summarizes performance stock unit activity under the Plan for the year ended December 31, 2020:

	Performance Stock Units	Weighted - Average Grant Date Fair Value
Unvested at December 31, 2019	—	$ —
Granted	200,000	8.26
Forfeited	—	—
Unvested at December 31, 2020	200,000	$ 8.26

There were no PSUs that vested during the years ended December 31, 2019 and 2020. As of December 31, 2020, there was $1.7 million of unrecognized stock compensation expense relating to PSUs. Because of the liquidity event requirement, the Company cannot estimate the weighted-average period over which this expense will be recognized should the performance condition be met.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

During the nine months ended September 30, 2021, the Company granted 6,000,000 of Performance Stock Units. As of September 30, 2021, there was $247.4 million of unrecognized stock compensation expense relating to PSUs.

Stock Options

Options granted pursuant to the Plan vest on varying schedules, based upon individual agreements. The fair value of each option granted is estimated on the date of grant using the Black-Scholes option-pricing model. The estimated life for the stock options was based on the term of the agreement. The risk-free interest rate is based on the rate for a U.S. government security with the same estimated life at the time of the option grant and the stock purchase rights.

	Number of Options	Exercise Price Ranges	Weighted - Average Exercise Price
Outstanding—December 31, 2019	210,000	$ 0.85	$ 0.85
Granted	—	—	—
Exercised	—	—	—
Forfeited	—	—	—
Outstanding—December 31, 2020	210,000	$ 0.85	$ 0.85
Options exercisable—December 31, 2020	210,000	$ 0.85	$ 0.85

The outstanding stock options were fully expensed prior to 2019. As such, no stock compensation expense relating to stock options was recorded in the year ended December 31, 2019 or December 31, 2020 and there is no unrecognized expense relating to stock options.

Restricted Stock Awards

The Company has previously granted restricted stock awards to employees. Compensation expense on those awards was recognized on a straight-line basis over the requisite service periods of the awards, typically three to four years.

	Restricted	Unrestricted	Total	Weighted - Average Grant Date Fair value
Balance at December 31, 2019	550,000	3,700,000	4,250,000	$ 0.42
Vesting of restricted stock into unrestricted	(550,000)	550,000	—	0.46
Balance at December 31, 2020	—	4,250,000	4,250,000	$ 0.42

Total compensation expense for vesting of restricted stock into unrestricted stock was approximately $0.5 million and $0.4 million for the years ended December 31, 2019 and 2020, respectively. As of December 31, 2020, there was no unrecognized compensation cost related to non-vested restricted stock awards.

10. CONVERTIBLE PROMISSORY NOTES

On June 22, 2020, in connection with our entry into an agreement for use of Google LLC's, or Google's, Google Cloud Platform, we issued Google a convertible promissory note, or the Note, in the original principal amount of $330.0 million. On November 19, 2020, in connection with our Series G-2 convertible preferred stock financing, we issued Google $80 million of our Series G-2 preferred stock, at a 10% discount to the purchase price per share in such financing, in partial satisfaction of the outstanding principal amount under the Note, and we amended and restated the terms of the Note.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The amended and restated Note, or the Amended Note, has a principal amount of $250.0 million, and bears interest at the rate set forth therein. The principal amount is automatically reduced each year based on a formula taking into account the aggregate value of the Google Cloud Platform services used by us. As of September 30, 2021, the value of the note was $234.4 million, which consisted of $246.6 million gross principal, net of $3.2 million aggregate unapplied principal reduction. The Company accounts for the principal reductions as an offset to our cloud and compute spend within selling, general and administrative in its Consolidated Statements of Operations and Comprehensive Loss. The outstanding principal and accrued interest under the Amended Note, or the Outstanding Amount, is due and payable on the earlier of (1) March 22, 2026, which is the maturity date of the Amended Note, (2) upon the occurrence and during the continuance of an event of default, and (3) upon the occurrence of an acceleration event, which includes any termination by us of our Google Cloud Platform agreement. We generally may not prepay the Outstanding Amount, except that we may, at our option, prepay the Outstanding Amount in an amount such that the principal amount remaining outstanding after such repayment is $150.0 million.

If the Amended Note is outstanding at the maturity date, Google may, at its option, convert the then outstanding principal amount and interest accrued under the Amended Note into a number of shares of our Class A common stock equal to the quotient obtained by dividing (1) the Outstanding Amount on the maturity date, by (2) the average of the last trading price on each trading day during the twenty day period ending immediately prior to the maturity date.

The Company concluded that one of the conversion features meets the definition of an embedded derivative that is required to be accounted for as a separate unit of accounting. The fair value of the embedded derivative is not material and was therefore not bifurcated. As such, upon issuance of the Note the Company recorded a promissory note of $330.0 million. The Company recognized interest expense of $10.0 million and $11.4 million during the year ended December 31, 2020, and nine months ended September 30, 2021, respectively.

The Company accounted for the conversion of the $80.0 million as a debt extinguishment and recognized a loss on extinguishment of debt of $8.9 million within Interest Expense in the consolidated statement of operations and comprehensive loss during the year ended December 31, 2020. The loss on extinguishment of debt was calculated as the difference between (i) the fair value of shares of Series G-2 issued and (ii) the carrying value of the Notes that were converted.

11. NET LOSS PER SHARE ATTRIBUTABLE TO COMMON STOCKHOLDERS

Basic net loss per share is calculated by dividing the net loss by the weighted average number of outstanding shares of Common Stock each period. Diluted net loss per share is calculated by giving effect to all potential dilutive Common Stock equivalents, which includes stock options, RSUs, RSAs, PSUs, and preferred stock. Because the Company incurred net losses each period, the basic and diluted calculations are the same.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table presents the calculation for basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		Nine Months Ended September 30,	
	2019	2020	2020	2021
			(unaudited)	
Numerator:				
Net loss	$(114,951)	$(209,854)	(155,712)	(200,211)
Accretion of convertible preferred stock to redemption value	(7,303)	(7,381)	(3,203)	(106)
Dividends on Series A, B, B-1, B-2, C, D, E, F and G preferred shares	(23,640)	(34,420)	(25,523)	(26,595)
Cumulative Undeclared Dividends on Series C preferred shares	(2,250)	(2,250)	(1,893)	(2,004)
Net loss attributable to common stockholders	$(148,144)	$(253,905)	(186,331)	(228,916)
Denominator:				
Weighted-average common shares outstanding, basic and diluted	61,347	62,706	62,697	62,973
Net loss per share attributable to common stockholders, basic and diluted	$ (2.41)	$ (4.05)	$ (2.97)	$ (3.64)

The following outstanding shares of common stock equivalents were excluded from the calculation of diluted net loss per share for each period, as the impact of including them would have been anti-dilutive. As disclosed in Note 9, the Company's RSUs include a triggering liquidation performance condition prior to vesting. As disclosed in Note 10, the Company's Convertible Promissory Note will be converted to shares at the holders option, based on the amount outstanding at the maturity date, which is subject to reduction based on services used by us prior to the maturity date. As such, these are treated as contingently issuable shares and will be excluded from potential dilutive impact until the triggering liquidation performance condition is satisfied.

	As of December 31,		As of September 30,	
	2019	2020	2020	2021
Shares associated with contingent consideration	—	—	—	145,466
Stock options outstanding	210,000	210,000	210,000	210,000
Convertible preferred stock	55,088,384	60,921,767	57,625,674	61,078,813
Total potentially dilutive shares	55,298,384	61,131,767	57,835,674	61,434,279

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12. INCOME TAXES

Deferred income taxes consist of the following as of December 31, 2019 and 2020 (in thousands):

	December 31, 2019	December 31, 2020
Deferred Income Tax Assets:		
Charitable Contribution Carryforwards	$ 8	$ 9
Accrued Compensation	53	289
Net Operating Loss Carryforwards	53,619	98,895
Deferred Rent	3,735	3,974
Stock Compensation	42	43
Deferred Revenue	422	807
IRC §163(j) Interest Expense Limitation Carryover	—	2,675
Deferred Payroll Taxes	—	1,197
Other	5	126
	$ 57,884	$ 108,015
Less Valuation Allowance	(51,237)	(102,981)
	$ 6,647	$ 5,034
Deferred Income Tax Liabilities		
Excess of Tax Basis over Book Basis Fixed Assets	(2,713)	(1,594)
Excess of Book Basis over Tax Basis Intangibles	(3,934)	(3,440)
	$ (6,647)	$ (5,034)
Net Deferred Income Tax Asset (Liability)	$ —	$ —

The provision for income taxes consists of the following as of December 31, 2019 and 2020 (in thousands):

	December 31, 2019	December 31, 2020
Current tax expense (benefit)		
Federal	$ —	$ —
State	—	—
Total	$ —	$ —
Deferred tax expense (benefit)		
Federal	(24,062)	(40,710)
State	(4,537)	(10,520)
Total	(28,599)	(51,230)
Change in valuation allowance	28,599	51,230
Total income tax expense (benefit)	$ —	$ —

The components of income before income taxes as follows (in thousands):

	December 31, 2019	December 31, 2020
Domestic	$ (114,816)	$ (209,891)
Foreign	(135)	37

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A reconciliation of the difference between the federal statutory rate and the effective income tax rate as a percentage of income before taxes for the years ended December 31, 2019 and 2020:

	December 31,	
	2019	2020
Federal Statutory Tax Rate	21.00%	21.00%
State Statutory Tax Rate	5.14%	5.43%
Permanent Differences	(0.21%)	(2.16%)
Other	(1.04%)	0.14%
Change in Valuation Allowance	(24.89%)	(24.41%)
Total	0.00%	0.00%

Net change in valuation allowance as follows (in thousands):

	December 31,	
	2019	2020
Valuation Allowance, beginning of year	$ 27,386	$ 51,237
Charges	28,599	51,230
Purchase accounting adjustments	(4,748)	514
Valuation Allowance, end of year	$ 51,237	$ 102,981

The Company's income tax benefit as recorded in the financial statements differs from the benefit computed by applying statutory tax rates to net loss before income taxes due to permanent differences related to the deductibility of certain expenses and the valuation allowance. There is no current income tax benefit for the years ended December 31, 2019 or 2020.

As of December 31, 2020, the Company had federal net operating loss ("NOL") carry forwards of $380.9 million and state NOL carry forwards of approximately $262.4 million, which may be available to offset future taxable income. The federal NOLs will begin to expire in 2037 and the state NOLs will begin to expire in 2028. A full valuation allowance has been recorded against the NOL carry forwards.

The Company files income tax returns in the U.S. federal jurisdiction and various state jurisdictions. Due to its operating loss carryforwards, the U.S. federal statute of limitations remains open for tax year 2016 and onward and the Company continues to be subject to examination by the Internal Revenue Service for tax years 2016 and later. The resolutions of any examinations are not expected to be material to these financial statements. As of December 31, 2020, and 2019, there are no penalties or accrued interest recorded in the consolidated financial statements. The calculation of the Company's tax obligations involves dealing with uncertainties in the application of complex tax laws and regulations. ASC 740, Income Taxes, provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits. The Company has assessed its income tax positions and recorded tax benefits for all years subject to examination, based upon its evaluation of the facts, circumstances and information available at each period end. For those tax positions where the Company has determined there is a greater than 50% likelihood that a tax benefit will be sustained, the Company has recorded the largest amount of tax benefit that may potentially be realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is determined there is less than 50% likelihood that a tax benefit will be sustained, no tax benefit has been recognized. The Company had no uncertain tax positions during the years ended December 31, 2020 and 2019.

The Company recognizes interest and, if applicable, penalties for any uncertain tax positions. Interest and penalties are recorded as a component of income tax expense. In the years ended December 31, 2020 and 2019, the Company did not have any accrued interest or penalties associated with any unrecognized tax benefits.

The Company does not provide for U.S. income taxes on unremitted earnings of foreign subsidiaries. Unremitted earnings of foreign subsidiaries were immaterial on December 31, 2019 and 2020.

For the Nine Months Ended September 30, 2020 and 2021

Accounting for income taxes for interim periods generally requires the provision for income taxes to be determined by applying an estimate of the annual effective tax rate for the full fiscal year to income or loss before income taxes, adjusted for discrete items, if any, for the reporting period. The Company updates its estimate of the annual effective tax rate each quarter and makes a cumulative adjustment in such period.

There is no current income tax expense (benefit) for the nine months ended September 30, 2020 and 2021.

Due to the Company's history of losses in the United States, a full valuation allowance on all of the Company's deferred tax assets, including net operating loss carryforwards and other book versus tax differences, was maintained.

13. FAIR VALUE MEASUREMENTS

The carrying amounts of financial instruments, including cash, accounts receivable, capital lease obligations, minimum royalties, accounts payable, and accrued expenses approximate fair value due to the short maturity of these instruments. The carrying amounts of the related party receivable, capital lease obligations, and minimum royalties approximate fair value because the interest rates used fluctuate with market interest rates or the fixed rates are based on current rates offered to the Company for debt with similar terms and maturities.

The valuation methodologies used for the Company's assets and liabilities measured at fair value and their classification in the valuation hierarchy are summarized below:

Contingent consideration—The Company is subject to a contingent consideration arrangement to transfer non-voting shares of common stock to the former owners of a business acquired in December 2019. See Note 3, Business Combinations, for further discussion of that acquisition.

Liabilities for contingent consideration are measured at fair value each reporting period, with the acquisition date fair value included as part of the consideration transferred in the related business combination and subsequent changes in fair value recorded in earnings within operating expense on the consolidated statements of operations and comprehensive loss. The Company used a risk-neutral simulation model and option pricing framework to value the contingent consideration. We classify the contingent consideration liabilities as Level 3 due to the lack of relevant observable market data over fair value inputs such as probability-weighting of payment outcomes.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table summarizes liabilities that are measured at fair value on a recurring basis as of December 31, 2019 and 2020 and September 30, 2021 (in thousands):

		Fair Value Measurement at Reporting Date Using		
	December 31, 2019	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities				
Contingent consideration	$ 3,380	$ —	$ —	$ 3,380

		Fair Value Measurement at Reporting Date Using		
	December 31, 2020	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities				
Contingent consideration	$ 10,271	$ —	$ —	$ 10,271

		Fair Value Measurement at Reporting Date Using		
	September 30, 2021	Quoted Prices in Active Market for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities				
Contingent consideration	$ 7,365	$ —	$ —	$ 7,365

The following table provides a reconciliation of the beginning and ending balances for the liabilities measured at fair value using significant unobservable inputs (Level 3) (in thousands):

	Contingent Consideration
Balance at December 31, 2019	$ 3,380
Change in fair value	6,891
Balance at December 31, 2020	$ 10,271

	Contingent Consideration
Balance at December 31, 2020	$ 10,271
Settlement paid in Cash	(7,500)
Change in fair value	4,594
Balance at September 30, 2021	$ 7,365

For the year ended December 31, 2020, the Company recognized expense of $6.9 million in selling, general and administrative expense due to the change in fair value determined by Level 3 valuation techniques. No such expense or benefit was recorded for the year ended December 31, 2019.

For the nine months ended September 30, 2021, the Company recognized expense of $4.6 million in selling, general and administrative expense due to the change in the fair value determined by Level 3 valuation techniques.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

14. RELATED PARTIES

In 2018, the Company received $1.5 million from a related party for assuming an office lease from such party. The Company is amortizing this amount over the course of its lease with the building. The Company had a remaining related liability of $1.3 million and $1.1 million for the years ended December 31, 2019 and 2020, respectively, and $1.0 million for the nine months ended September 30, 2021, respectively. The liability is included on the balance sheet in deferred rent, less current portion. See Note 6, Commitments and Contingencies, for additional information on the Company's operating leases. The Company subleases a portion of office space to this related party on a month-to-month basis. Sublease income received from the related party was insignificant for the years ended December 31, 2019 and 2020.

As of December 31, 2020 the amount due to related parties was $1.3 million, and as of September 30, 2021 the amount due to was $0.1 million. As of December 31, 2020 the amount due from related parties was $0.1 million, and as of September 30, 2021 the amount due from was $0.1 million.

During 2020, the Company reimbursed payroll related costs of $0.8 million to a related party for contracted engineers. As of December 31, 2020, there were no amounts due to this related party. For the nine months ended September 30, 2020 the Company reimbursed payroll related costs of $0.7 million to a related party for contracted engineers. As of September 30, 2021, there were no amounts due to this related party.

Strategic Investment

On August 19, 2021, the Company entered into a related party arrangement with Pathos, Inc. for the purpose of furthering the commercialization efforts of drug development. Tempus received a warrant to purchase 23,456,790 shares, or approximately 19% of the current outstanding equity in Pathos, for $.0125 per share. The warrant will automatically exercise upon a change of control (as defined therein) or upon an initial public offering of Pathos' securities. The Company also has an optional exercise election window during the last 10 days of the 20 year term of the warrant agreement. Pursuant to this master agreement, the Company granted Pathos a limited, non- exclusive, revocable, non-transferable right and license, without right of sublicense, to access and download certain de-identified records from the Company's proprietary database. Pathos in turn agreed to certain license fees depending on the number of de-identified records it elects to license during the term of the master agreement. Pathos also agreed to pay the Company a subscription fee equal to $0.4 million per year for access to our Lens product. The master agreement provides for an initial term of five years, with a subsequent five-year renewal provision unless the agreement is terminated. Either party may terminate the agreement after the initial five-year term by prior written notice to the other party.

15. SUBSEQUENT EVENTS

The Company evaluated subsequent events through December 3, 2021.

In November 2021, the Company entered into a Master Services Agreement (the "MSA") with, and issued a warrant to, AstraZeneca AB ("AstraZeneca"). Under the MSA, the Company agreed, on a non-exclusive basis, to provide AstraZeneca with certain of the Company's products and services, including licensed data, sequencing, clinical trial matching, organoid modeling services, algorithm development, and others. In exchange for certain discounted prices, AstraZeneca has committed to spend a minimum of $200 million on such products and services during the term of the MSA. The minimum commitment may increase to $300 million upon the occurrence of any of the following events: (i) at AstraZeneca's election on or before December 31, 2024, (ii) the date that AstraZeneca exercises the warrant issued pursuant to the terms thereof (as described below), or (iii) in the event of an initial public offering, if the average closing price of the Company's common stock exceeds two times the offering price for any 30-day trading period following the one-year anniversary of such initial public offering. The term of the master services agreement will continue through December 31, 2026, unless terminated sooner.

Tempus Labs, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Under the warrant, AstraZeneca has the right to purchase up to $100 million shares of the Company's Class A common stock at an exercise price equal to the price per share at which the Company's common stock is valued in connection with the consummation of this initial public offering. The warrant may be exercised any time following the date that is 180 days following the pricing of the Company's initial public offering. AstraZeneca will be entitled to substantially the same registration rights with respect to the shares under the warrant as those granted to holders of registrable securities pursuant to the Company's Ninth Amended and Restated Investors' Rights Agreement, dated November 19, 2020. The warrant will be automatically cancelled and terminated for no consideration in the event AstraZeneca declines to extend its financial commitment before December 31, 2024. If AstraZeneca exercises the warrant, AstraZeneca will be required to increase its minimum commitment under the MSA to $300 million.

Shares

Class A Common Stock

TEMPUS

MORGAN STANLEY *J.P. MORGAN* *ALLEN & COMPANY LLC*

BofA SECURITIES *COWEN*

Through and including , 2021 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

, 2021.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Unless otherwise indicated, all references to "Tempus," the "company," "we," "our," "us" or similar terms refer to Tempus Labs, Inc. and its subsidiaries.

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses to be paid by us, other than underwriting discounts and commissions, in connection with this offering. All amounts shown are estimates except for the SEC registration fee, the FINRA filing fee and the exchange listing fee.

SEC registration fee	$ *
FINRA filing fee	*
Exchange listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees	*
Miscellaneous	*
Total	$ *

*Tobe completed by amendment.

Item 14. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act. Our amended and restated certificate of incorporation that will be in effect on the closing of this offering permits indemnification of our directors, officers, employees, and other agents to the maximum extent permitted by the Delaware General Corporation Law, and our amended and restated bylaws that will be in effect on the closing of this offering provide that we will indemnify our directors and executive officers and permit us to indemnify our other officers, employees, and other agents, in each case to the maximum extent permitted by the Delaware General Corporation Law.

We have entered into indemnification agreements with our directors and executive officers, whereby we have agreed to indemnify our directors and executive officers to the fullest extent permitted by law, including indemnification against expenses and liabilities incurred in legal proceedings to which the director or executive officer was, or is threatened to be made, a party by reason of the fact that such director or executive officer is or was a director, executive officer, employee, or agent of Tempus Labs, Inc., provided that such director or executive officer acted in good faith and in a manner that the director or executive officer reasonably believed to be in, or not opposed to, the best interest of Tempus Labs, Inc. At present, there is no pending litigation or proceeding involving a director or executive officer of Tempus Labs, Inc. regarding which indemnification is sought, nor is the registrant aware of any threatened litigation that may result in claims for indemnification.

We maintain insurance policies that indemnify our directors and officers against various liabilities arising under the Securities Act and the Securities Exchange Act of 1934, as amended, that might be incurred by any director or officer in his capacity as such.

The underwriters are obligated, under certain circumstances, under the underwriting agreement to be filed as Exhibit 1.1 hereto, to indemnify us and our officers and directors against liabilities under the Securities Act.

Item 15. Recent Sales of Unregistered Securities.

The following sets forth information regarding all unregistered securities sold since January 1, 2018:

(1) We have granted, under our 2015 Plan, RSUs representing shares of our Class A common stock to our employees, consultants, and directors, having a fair market value ranging from $ to $ per share.

(2) We have granted, under our 2015 Plan, PSUs representing shares of our Class A common stock to our employees, consultants, and directors, having a fair market value ranging from $ to $ per share.

(3) We have granted, under our 2015 Plan, RSAs representing shares of our Class A common stock to our employees and consultants, having a fair market value ranging from $ to $ per share.

(4) We have granted, under our 2015 Plan, an option to purchase 210,000 shares of our Class A common stock to Revolution Growth Management Company, Inc., having an exercise price of $0.8542 per share.

(5) In July 2019, we issued and sold an aggregate of 1,058,600 shares of our voting common stock at a price per share of $9.64, for an aggregate purchase price of approximately $10.2 million, in private placements to two accredited investors.

(6) In March 2018, we issued and sold an aggregate of 8,534,330 shares of our Series D convertible preferred stock at a price per share of $9.3739, for an aggregate purchase price of approximately $80.0 million, in private placements to 16 accredited investors.

(7) From August 2018 through April 2019, we issued and sold an aggregate of 6,630,905 shares of our Series E convertible preferred stock at a price per share of $16.7428, for an aggregate purchase price of approximately $111.0 million, in private placements to 17 accredited investors, exclusive of the 886,304 shares repurchased by us in April 2019 at the original issue price per share, for an aggregate repurchase price of approximately $14.8 million.

(8) From April through July 2019, we issued and sold an aggregate of 8,077,674 shares of our Series F convertible preferred stock at a price per share of $24.7596, for an aggregate purchase price of approximately $200.0 million, in private placements to 22 accredited investors, exclusive of the 203,521 shares and the 395,811 shares repurchased by us in May and July 2019, respectively, at the original issue price per share, for an aggregate repurchase price of approximately $14.8 million.

(9) From February through April 2020, we issued and sold an aggregate of 2,537,290 shares of our Series G convertible preferred stock at a price per share of $38.3524, for an aggregate purchase price of approximately $97.3 million, in private placements to 20 accredited investors, exclusive of 130,370 shares repurchased by us in April 2020 at the original issue price per share, for an aggregate repurchase price of approximately $5.0 million.

(10) In November 2020 and January 2021, we issued and sold an aggregate of 3,453,139 shares of our Series G-2 convertible preferred stock at a price per share of $57.3069, for an aggregate purchase price of approximately $189.0 million, in private placements to 15 accredited investors, exclusive of the 130,876 shares repurchased by us in January 2021 at the original issue price per share, for an aggregate repurchase price of approximately $7.5 million.

(11) In June 2020, in connection with our entry into an agreement for use of Google LLC's, or Google's, Google Cloud Platform, we issued Google a convertible promissory note, or the Note, in the original principal amount of $330 million. In November 2020, in connection with our Series G-2 convertible preferred stock financing, we issued Google $80 million of our Series G-2 preferred stock in partial satisfaction of the outstanding principal amount under the Note, and we amended and restated the terms of the Note. For more information regarding the Note, see the section titled "Description of Capital Stock—Convertible Promissory Note."

(12) In December 2018, we issued an aggregate of 95,000 shares of our nonvoting common stock to certain stockholders of HealthSeq Asia Pte Ltd., or HealthSeq, in exchange for an aggregate of 60,000,000 ordinary shares of HealthSeq held by such stockholders, pursuant to a stock purchase agreement.

(13) In connection with our purchase of all of the outstanding shares of AKESOgen, Inc., we expect to issue on or around December 9, 2022 of 145,466 shares of Class A common stock to former stockholders of AKESOgen, Inc.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Unless otherwise specified above, we believe these transactions were exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act (and Regulation D or Regulation S promulgated thereunder) or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or under benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed on the share certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

See the Exhibit Index on the page immediately preceding the signature page for a list of exhibits filed as part of this registration statement on Form S-1, which Exhibit Index is incorporated herein by reference.

(b) Financial Statement Schedules.

All financial statement schedules are omitted because the information required to be set forth therein is not applicable or is shown in the consolidated financial statements or the notes thereto.

Item 17. Undertakings.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers, and controlling persons of the registrant under the foregoing provisions or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance on Rule 430A and contained in a form of prospectus filed by the registrant under Rule 424(b)(1) or (4) or 497(h) under the Securities Act will be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus will be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time will be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Exhibit Number	Description
1.1*	Form of Underwriting Agreement.
3.1**	Ninth Amended and Restated Certificate of Incorporation of Tempus Labs, Inc., as amended, as currently in effect.
3.2*	Form of Amended and Restated Certificate of Incorporation of Tempus Labs, Inc., to be in effect on the closing of the offering.
3.3**	Amended and Restated Bylaws of Tempus Labs, Inc., as currently in effect.
3.4*	Form of Amended and Restated Bylaws of Tempus Labs, Inc., to be in effect on the closing of the offering.
4.1*	Form of Class A Common Stock Certificate.
4.2	Warrant to Purchase Class A Common Stock of Tempus Labs, Inc. dated November 17, 2021 (included in Exhibit 10.16).
5.1*	Opinion of Cooley LLP.
10.1**	Ninth Amended and Restated Investor Rights Agreement, dated November 19, 2020.
10.2+**	Tempus Labs, Inc. Third Amended and Restated 2015 Stock Plan, as amended.
10.3+**	Forms of Grant Notices and Award Agreements under the Tempus Labs, Inc. Third Amended and Restated 2015 Stock Plan, as amended.
10.4+*	Tempus Labs, Inc. 2021 Equity Incentive Plan.
10.5+*	Forms of Grant Notice, Stock Option Agreement and Notice of Exercise under the Tempus Labs, Inc. 2021 Equity Incentive Plan.
10.6+*	Forms of Restricted Stock Unit Grant Notice and Award Agreement under the Tempus Labs, Inc. 2021 Equity Incentive Plan.
10.7+*	Form of Indemnity Agreement entered into by and between Tempus Labs, Inc. and each director and executive officer.
10.8+*	Employment Agreement, by and between Tempus Labs, Inc. and Eric Lefkofsky, dated , 2021.
10.9+*	Employment Agreement, by and between Tempus Labs, Inc. and Erik Phelps, dated , 2021.
10.10+*	Employment Agreement, by and between Tempus Labs, Inc. and Ryan Fukushima, dated , 2021.
10.11+*	Employment Agreement, by and between Tempus Labs, Inc. and James Rogers, dated , 2021.
10.12**	Agreement of Lease, by and between Tempus Labs, Inc. and EQC 600 West Chicago Property LLC, dated January 18, 2018, as amended.
10.13†**	Supply Agreement, by and between Tempus Labs, Inc. and Illumina, Inc., dated June 29, 2021.
10.14†**	Amended and Restated Convertible Promissory Note, by and between Tempus Labs, Inc. and Google LLC, dated November 19, 2020.
10.15†**	Master Agreement, by and between Tempus Labs, Inc. and Pathos AI, Inc., dated August 19, 2021.

Exhibit Number	Description
10.16†	Master Services Agreement, by and between Tempus Labs, Inc. and AstraZeneca AB, dated November 17, 2021.
21.1**	List of Subsidiaries of Tempus Labs, Inc.
23.1*	Consent of PricewaterhouseCoopers, LLP, independent registered public accounting firm.
23.2*	Consent of Cooley LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included on page II-7).

* To be submitted by amendment.
** Previously submitted.
+ Indicates management contract or compensatory plan.
† Certain portions of this exhibit (indicated by asterisks) have been omitted because they are not material and would likely cause competitive harm to Tempus Labs, Inc. if publicly disclosed.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Chicago, Illinois, on , 2021.

TEMPUS LABS, INC.

By: _____
Name: Eric Lefkofsky
Title: Chief Executive Officer, Founder and Chairman

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Eric Lefkofsky and James Rogers, and each one of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in their name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective on filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
Eric Lefkofsky	Chief Executive Officer, Founder and Chairman (*Principal Executive Officer*)	, 2021
James Rogers	Chief Financial Officer (*Principal Financial Officer*)	, 2021
Ryan Bartolucci	Chief Accounting Officer (*Principal Accounting Officer*)	, 2021
Peter J. Barris	Director	, 2021
Eric D. Belcher	Director	, 2021
Jennifer A. Doudna, Ph.D.	Director	, 2021
Wayne A.I. Frederick, M.D.	Director	, 2021

Signature	Title	Date
Robert Ghenchev	Director	, 2021
Scott Gottlieb, M.D.	Director	, 2021
Theodore J. Leonsis	Director	, 2021
Nadja West, M.D.	Director	, 2021

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE TEMPUS LABS, INC. HAS DETERMINED THE INFORMATION (I) IS NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO TEMPUS LABS, INC. IF PUBLICLY DISCLOSED.

CONFIDENTIAL
EXECUTION COPY

MASTER SERVICES AGREEMENT

Dated as of November 17, 2021

by and between

ASTRAZENECA AB

and

TEMPUS LABS, INC.

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This Master Services Agreement (this "**Agreement**"), dated as of November 17, 2021 (the "**Effective Date**"), i s entered into by and between AstraZeneca AB, a company incorporated in Sweden under No. 556011-7482, whose registered office is at SE-151 86 Södertälje and with offices at SE-432 83 Mölndal, Sweden ("**AstraZeneca**") and Tempus Labs, Inc., a Delaware corporation, located at 600 W Chicago Ave, Suite 510, Chicago, Illinois, 60654 ("**Tempus**" and together with AstraZeneca, the "**Parties**", and each a "**Party**").

WHEREAS, AstraZeneca and Tempus are, as at the Effective Date, parties to certain agreements including a master services agreement dated 16 December 2018 ("**Existing MSA**"); and

WHEREAS, AstraZeneca and Tempus desire to expand their existing relationship and enter into a strategic collaboration in which, among other things, Tempus would provide to AstraZeneca certain oncology data and associated services, on terms set out herein, with the goal of accelerating discovery, development, and delivery of certain AstraZeneca precision therapies and with the general objective of furthering AstraZeneca's data-driven drug discovery and development capabilities;

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Tempus and AstraZeneca agree as follows:

1. Definitions and Interpretation.

1.1 In this Agreement, unless otherwise stated or the context requires otherwise, the following definitions shall apply:

"**Acceptance Period**" has the meaning given in Section 3.4.

"**Affiliate**" means, with respect to a Person, any Person that directly, or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such first Person. As used in this definition, "control" and, with correlative meanings, the terms "controlled by" and "under common control with" mean (i) the power to direct the management or policies of a Person, whether through ownership of voting securities or by contract relating to voting rights or corporate governance, resolution, regulation or otherwise; or (ii) to own more than 50% of the outstanding voting securities or other ownership interest of such Person.

"**Applicable Law**" means all applicable laws, rules and regulations and any applicable policies of any Regulatory Authorities in effect from time to time, including FDA's standards for the design, conduct, performance, monitoring, auditing, recording, analysis, and reporting of clinical trials, including those standards contained in United States Code of Federal Regulations Title 21, Parts 50, 54, 56 and 312, and all comparable standards of the EMA and any other applicable Regulatory Authority.

"**AstraZeneca Core IP**" means **[***]**.

"**AstraZeneca Group**" means AstraZeneca and its Affiliates.

"**AstraZeneca Indemnified Parties**" has the meaning given in Section 22.2.

"**AstraZeneca IP**" means Intellectual Property Rights owned or controlled by AstraZeneca or its Affiliates.

"**AstraZeneca Materials**" has the meaning given in Section 13.1(a).

"**AstraZeneca Project Inventions**" means **[***]**.

"**Business Day**" means a day, other than a Saturday, Sunday or public holiday in Illinois, United States or England, when banks are open for business.

"**Change of Control**" means, with respect to a Party: (a) an acquisition, reorganization, merger, or consolidation of such Party by or with a third party in which the holders of the voting securities of such Party outstanding immediately before such transaction cease to beneficially own at least fifty percent (50%) of the combined voting power of the surviving entity, directly or indirectly, immediately after such transaction, (b) a transaction or series of related transactions in which a third party, together with its Affiliates (if applicable), becomes the beneficial owner of fifty percent (50%) or more of the combined voting power of the outstanding securities of such Party, or (c) the sale or other transfer to a third party of all or substantially all of such Party's assets.

"**Change Order**" has the meaning given in Section 3.5(a).

"**Clinical Data**" means **[***]**.

"**Clinical Data Only Record**" means **[***]**.

"**Clinical De-Identified Record**" means **[***]**.

"**Clinical Professional Services Agreement**" has the meaning given in Section 3.2(e).

"**Confidential Information**" has the meaning given in Section 24.1.

"**Convicted Individual**" or "**Convicted Entity**" means an individual or entity, as applicable, who has been convicted of a criminal offense that falls within the scope of 21 U.S.C. §335a (a) or 42 U.S.C. §1320a – 7(a).

"**Covered Entity**" has the meaning given to it in 45 CFR Section 160.103.

"**Data Privacy Law**" means any and all Applicable Law that relates to collection, acquisition, access, retention, use, storage, transfer, disclosure, or protection of data or information such as Personal Data, including law or regulation pertaining to data protection, confidentiality, security or privacy, such as HIPAA and GDPR.

"**[***]**" **[***]**.

"**Debarred Entity**" means a corporation, partnership or association that has been debarred by the FDA pursuant to 21 U.S.C. §335a (a) or (b) and 21 CFR Section 312.70 from submitting or assisting in the submission of any abbreviated drug application, or an employee, partner, shareholder, member, subsidiary or affiliate of a Debarred Entity.

"**Debarred Individual**" means an individual who has been debarred by the FDA pursuant to 21 U.S.C. §335a (a) or (b) and 21 CFR Section 312.70 from providing services in any capacity to a person that has an approved or pending drug product application, or an employer, employee or partner of a Debarred Individual.

"**[***]**" **[***].**

"**Defaulting Party**" has the meaning given in Section 16.5.

"**Deliverables**" means **[***]**.

"**Delivery Workstream**" means **[***].**

"**Development Workstream**" means **[***]**.

"**Discloser**" has the meaning given in Section 24.1.

"**Discovery Workstream**" means **[***]**.

"**EMA**" means the European Medicines Agency or any successor agency thereto.

"**[***]**" means **[***]**.

"**Excluded Individual**" or "**Excluded Entity**" means an individual or entity, as applicable, who has been excluded, debarred or is otherwise ineligible to participate in: A) federal health care programs such as Medicare or Medicaid by the Office of the Inspector General (OIG) of the U.S. Department of Health and Human Services (HHS); or B) federal procurement and non-procurement programs, including those produced by the U.S. General Services Administration (GSA).

"**Existing Statement of Work**" means a statement of work under the Existing MSA or the Clinical Professional Services Agreement as identified in **Exhibit F**.

"**FDA**" means the United States Food and Drug Administration or any successor agency thereto.

"**Financial Commitment**" has the meaning given in **Exhibit E**.

"**Financial Commitment Period**" **[***].**

"**Force Majeure Event**" has the meaning given in Section 27.

"**FTE**" means a full time equivalent employee **[***]**.

"**GDPR**" means the General Data Protection Regulation (EU) 2016/679).

"**Good Clinical Practice**" means the then-current applicable standards for good clinical practices as promulgated under Applicable Law, which include (i) Directive 2001/20/EC and Directive 2005/28/EC as well as ICH-GCP and any other guidelines for good clinical practice for trials on medicinal products on human subjects; and (ii) the United States Code of Federal Regulations Title 21, Parts 50 (Protection of Human Subjects), 56 (Institutional Review Boards) and 312 (Investigational New Drug Application).

"**Good Industry Practice**" means the degree of skill, care and diligence which would reasonably and ordinarily be expected from a leading, skilled and experienced professional company engaged in works or services similar to the Services or Deliverables in the same or similar circumstances.

"**HIPAA**" means Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Public Health ("HITECH") Act, and their implementing regulations, including but not limited to, the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, Subparts A and E, the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. Parts 160 and 164, Subparts A and C, and the Notification of Breach of Unsecured Protected Health Information requirements at 45 C.F.R. Part 164, Subpart D, as amended from time to time.

"**ICF**" means an informed consent form or equivalent document used in connection with the collection of human biological samples and associated data that are used to derive Licensed Data.

"**ICF Subcommittee**" has the meaning given in Section 7.4.

"**Impacted Party**" has the meaning given in Section 27.

"**Improvement Plan**" has the meaning given in Section 9.3.

"**Indemnified Party**" has the meaning given in Section 22.3(a).

"**Indemnifying Party**" has the meaning given in Section 22.3(a).

"**Indirect Taxes**" means value added taxes, sales taxes or other similar taxes required by

Applicable Law to be disclosed as a separate item on the relevant Indirect Tax invoice.

"**Intellectual Property Rights**" means patents, copyrights, design rights, trade marks, service marks, trade secrets, Know-How, database rights and other rights in the nature of intellectual property rights (whether registered or not) and all applications for the same which may now or in the future subsist anywhere in the world, including the right to sue for and recover damages for past infringements.

"**JSC**" has the meaning given in Section 6.1.

"**JSC Subcommittee**" has the meaning given in Section 6.1.

"**Know-How**" means any and all technology, information and data that is of a technical, scientific, business, or other nature, including know-how, improvements, inventions, discoveries, techniques, trade secrets, specifications, instructions, processes, designs, formulae, methods, ideas, algorithms, computer programs, apparatuses, protocols, expertise and skills, in each case whether patentable or not.

"**Liabilities**" has the meaning given in Section 22.1.

"**Licensed Data**" means **[***]**.

"**Licensed Data Term**" means, with respect to given Licensed Data described in a given Statement of Work, the license term in respect of such Licensed Data specified in such Statement of Work.

"**Matched Clinical-Molecular De-Identified Records**" means **[***]**.

"**Materials**" means any document, information, data or other material (in whatever form) including software, firmware, documented methodology, process and procedure (including any reports, specifications, business rules and requirements, user manuals, user guides, operations manuals, training materials and instruction), and any other output (in whatever form).

"**MC Extension Option**" has the meaning given in **Exhibit E**.

"**Molecular Data**" means**[***]**.

"**Notice**" has the meaning given in Section 25.

"**Notice of Election**" has the meaning given in Section 22.3(a).

"**Notified Body**" means an entity or body designated, licensed, authorized or approved by the applicable government agency, department or other authority to assess and certify the conformity of a medical device with the requirements of Applicable Law, including legislation governing medical devices and with applicable harmonised standards.

"**Other User Results**" has the meaning given in Section 5.1.

"**Paid or Payable**" has the meaning given in **Exhibit E**.

"**Person**" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision, department or agency of a government.

"**Personal Data**" means information in any format about an identifiable individual, including, name, address, phone number, e-mail address, account number(s), identification number(s), any other actual or assigned attribute identifiable to an individual and any information that when used separately or in combination with other information could identify an individual. Personal Data

includes “personal data” as defined in the GDPR and its national implementations, and “protected health information” as defined under HIPAA.

“**Policies and Standards**” means all policies, procedures and standards adopted by AstraZeneca or any member of the AstraZeneca Group that are (i) relevant to Tempus’ activities under the Agreement, including the Services, and (ii) not inconsistent with this Agreement.

“**Press Release**” has the meaning given in Section 24.6.

“**Project Invention**” means **[***]**.

“**Qualifying Agreement**” means this **[***].**

“**Recipient**” has the meaning given in Section 24.1.

“**Record**” **[***]**.

“**Regulatory Approval**” means, with respect to a product, any and all clearances, premarket notifications, approvals, licenses, registrations, certifications and authorizations from Regulatory Authorities and declarations of conformity or other documents issued or to be issued by or on behalf of the manufacturer or study sponsor, necessary for the development, testing, clinical investigation, use, marketing or sale of such product in the applicable country or regulatory jurisdiction.

“**Regulatory Authority**” means any applicable supra-national, federal, national, regional, state, provincial or local regulatory agencies, departments, bureaus, commissions, councils, or other governmental authority anywhere in the world including FDA, the EMA and any Notified Body, and any of the foregoing bodies responsible for the administration, implementation and enforcement of Data Privacy Law.

“**Representing Party**” has the meaning given in Section 18.1.

“**Services**” **[***]**.

“**Specifications**” **[***]**.

“**Statement of Work**” means a statement of work entered into by the Parties for the provision of Services by Tempus.

“**Supplier Expectations**” has the meaning given in Section 9.1.

“**Tax Authority**” has the meaning given in Section 12.4.

“**Tax Deduction**” has the meaning given in Section 12.1.

“**Tempus Data Science Team**” has the meaning given in Section 5.1.

“**Tempus Indemnified Parties**” has the meaning given in Section 22.1.

“**Tempus Materials**” has the meaning given in Section 13.2(a).

"**Tempus Project Inventions**" means **[***].**

"**Term**" means the duration of this Agreement as under Section 16.1.

"**Third Party IP**" means any Intellectual Property Rights owned by a third party.

"**Third Party Materials**" means any Materials owned by, or in which the Intellectual Property Rights are owned by, a third party.

"**Warrant**" means the warrant agreement executed between the Parties on November 17, 2021.

"**Workstreams**" **[***]**.

1.2 In this Agreement, unless otherwise stated or the context requires otherwise, the following rules of interpretation apply:

(a) the recitals and Exhibits, and any and all Statements of Work agreed under Section 3.2, form part of this Agreement and references to this Agreement include them;

(b) references to recitals, Sections and Exhibits are to recitals and Sections of, and Exhibits to this Agreement and references in an Exhibit to a Section, part or paragraph are to Sections, parts or paragraphs of that Exhibit;

(c) references to this Agreement or any other document are to this Agreement or that document as in force for the time being and as amended from time to time in accordance with this Agreement or that document (as the case may be);

(d) references to the singular include the plural and vice versa;

(e) "or" shall be interpreted in the inclusive sense ("and/or"); and

(f) a reference to a statute, statutory provision or subordinate legislation (as so defined) shall be construed as including a reference to that statute, provision or subordinate legislation as in force at the date of this Agreement and as from time to time modified or consolidated, superseded, re-enacted or replaced after the date of this Agreement.

1.3 The headings and contents table in this Agreement are for convenience only and do not affect the interpretation of this Agreement.

1.4 In this Agreement the words "other", "includes", "including" and "in particular" do not limit the generality of any preceding words and any words which follow them shall not be construed as being limited in scope to the same class as the preceding words where a wider construction is possible.

1.5 Where in this Agreement a matter is subject to a Party's consent or agreement, such consent or agreement shall be at such Party's sole discretion unless expressly stated otherwise.

1.6 In the event of an inconsistency between the documents which form part of this Agreement, except where expressly provided in the relevant Exhibit, those documents shall apply in the following order of precedence, from highest to lowest priority, to the extent of the inconsistency:

(a) the main body of this Agreement;

(b) the Exhibits;

(c) a Statement of Work; and

(d) any other document incorporated by reference into this Agreement, except that any quality agreement entered into by AstraZeneca and Tempus shall prevail as to quality matters and any pharmacovigilance agreement entered into by AstraZeneca and Tempus shall prevail as to pharmacovigilance matters.

1.7 If a provision of an Exhibit, Statement of Work, or any other document incorporated by reference into this Agreement is:

(a) expressly stated to take precedence over a document listed in Section 1.6;

(b) expressly references the applicable provision(s) over which it takes precedence; and

(c) in the case of a Statement of Work, such reference is expressly set out in the designated part of the Statement of Work,

then, notwithstanding Section 1.6, the provision of such Exhibit, Statement of Work or other document incorporated by reference into this Agreement, will prevail to the extent of any conflict or inconsistency.

2. Licensed Data.

2.1 **[***]**.

3. Services and Deliverables.

3.1 General.

(a) Tempus shall provide to AstraZeneca the Services and Deliverables set out in one or more Statements of Work to be agreed between the Parties as set out under Section 3.2. Each Statement of Work shall be deemed accepted only if signed by authorized signatories of the Parties.

(b) Tempus shall provide the Services and Deliverables:

(i) in accordance with the terms and subject to the conditions set forth in the respective Statement of Work (including any applicable Specifications therein) and this Agreement;

(ii) in accordance with the key performance indicators applicable to the given Service or Deliverable that may be stated in a Statement Work;

(iii) using personnel of required skill, experience, and qualifications;

(iv) in a workmanlike, and professional manner; and

(v) in accordance with Good Industry Practice.

3.2 Statements of Work.

(a) Each Statement of Work shall be agreed in the following manner:

(i) AstraZeneca shall either prepare or shall ask Tempus to prepare a draft Statement of Work for the Services required by AstraZeneca.

(ii) If AstraZeneca asks Tempus to prepare a draft Statement of Work, within **[***]** of AstraZeneca's request, Tempus shall notify AstraZeneca of any additional information it reasonably requires in order to prepare a Statement of Work, and within **[***]** of receipt of the required information from AstraZeneca Tempus shall provide AstraZeneca with the draft Statement of Work requested. **[***]**.

(iii) If Tempus is to provide to AstraZeneca:

(1) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties;

(2) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties;

(3) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties, **[***]**;

(4) **[***]**;

(5) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties;

(6) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties;

(7) **[***]**, the applicable Statement of Work shall be materially based on a form to be agreed between the Parties; and

(8) any combination of Services as provided under items (1) to (7), above, or other new services that may be provided by Tempus from time to time and as may be requested by AstraZeneca, in a form to be agreed between the Parties;

(iv) **[***]**; and

(v) both Parties shall sign the draft Statement of Work when it is agreed.

(b) Notwithstanding the terms of Section 3.2(a), each Statement of Work shall, at a minimum, contain terms relating to the following:

(i) Descriptions of the relevant Services to be provided by Tempus;

(ii) Descriptions of the relevant Deliverables to be provided by Tempus;

(iii) **[***]**;

(iv) **[***]**;

(v) **[***]**;

(vi) **[***]**; and

(vii) **[***]**.

(c) Once a Statement of Work has been agreed and signed in accordance with Section 3.2, no amendment shall be made to it except in accordance with Section 3.5.

(d) For clarity, each Statement of Work shall be part of this Agreement and shall not form a separate contract to it.

(e) **[***]**.

(f) **[***]**.

3.3 Existing Statements of Work.

(a) Each Existing Statement of Work shall, on and from the Effective Date, be deemed to be a Statement of Work for the purposes of this Agreement and Tempus acknowledges that:

(i) throughout this Agreement, where reference is made to a Statement of Work, such reference shall apply mutatis mutandis to each Existing Statement of Work;

(ii) throughout the Existing Statement of Work, any reference to a master agreement (however named) shall be a reference to this Agreement;

(iii) the services and or deliverables provided by Tempus under each Existing Statement of Work on and from the Effective Date shall be subject to the terms of this Agreement; and

(iv) **[***]**.

3.4 **Acceptance**. On delivery of a Deliverable, Tempus shall simultaneously contact the AstraZeneca team responsible for the work in writing (e.g., by email) to alert them to the fact of such Deliverable, which notice shall be provided to the AstraZeneca contact(s) as identified in the applicable Statement of Work (i.e. this does not require a formal Notice under Section 25). AstraZeneca shall have **[***]**. Notwithstanding the above, **[***]**.

3.5 Change Control.

(a) Either Party may propose changes to a Statement of Work, including changes to Services, Deliverables or any Specifications but no proposed changes shall come into effect until a relevant order for such change ("**Change Order**") has been signed by both Parties. A Change Order shall be a document setting out the proposed changes and the effect those changes will have on:

(i) the Deliverables or Services to be provided under a Statement of Work;

(ii) **[***]**; or

(iii) any other terms of the relevant Statement of Work, including **[***]**.

(b) If AstraZeneca wishes to make a change to the scope or execution of any Deliverables or Services it shall prepare a draft Change Order, or shall notify Tempus, providing as much detail as is reasonably necessary to enable Tempus to prepare the draft Change Order and Tempus shall within **[***]** of receiving AstraZeneca's request provide a draft Change Order to AstraZeneca.

(c) **[***]**.

(d) On agreement to a Change Order, the Parties shall promptly sign it and that Change Order shall amend the relevant Statement of Work and where Tempus is required to take any action as a result of such Change Order, including **[***]**, it will use **[***]** to effect such change expeditiously. **[***]**.

3.6 **[***]**.

3.7 **[***]**.

3.8 Because AstraZeneca depends on the timely delivery of the Services, Deliverables and Licensed Data provided hereunder, time is of the essence with respect to Tempus' performance under this Agreement, including any Statement of Work.

3.9 For the sake of clarity, nothing in this Agreement shall be construed to prevent AstraZeneca from itself performing or from acquiring services or deliverables from third parties that are similar to or identical to the Services or Deliverables.

3.10 AstraZeneca may (but shall not be required to) **[***]**.

4. Tempus Obligations.

Tempus shall:

4.1 provide, at AstraZeneca's reasonable request, **[***]**;

4.2 ensure that the Services and Deliverables are provided in accordance with the Statement of Work, including any applicable Specifications;

4.3 comply with the terms of this Agreement and applicable Statement of Work in its provision of the Services and development and provision of Deliverables, and shall cause its

Affiliates and its and their respective subcontractors, employees and representatives to comply with:

(a) Good Clinical Practice (to the extent applicable);

(b) the Policies and Standards; and

(c) Applicable Law;

4.4 maintain complete and accurate records relating to (a) the provision of the Services under this Agreement, including **[***]**, and (b) the Licensed Data as made available to AstraZeneca (including, **[***]**), in each case in a format to the reasonable satisfaction of AstraZeneca, for the Term **[***]**. Tempus shall comply and will assist AstraZeneca in complying with all Applicable Laws with respect to retention of all records relating to the Services performed in connection with this Agreement. Tempus shall also retain records as may be reasonably directed in writing by AstraZeneca in order to comply with applicable AstraZeneca records retention requirements;

4.5 upon AstraZeneca's written request and subject to Tempus's reasonable policies and procedures (e.g., related to security and confidentiality), allow AstraZeneca or AstraZeneca's representative to inspect and make copies of such records and interview Tempus representatives in connection with the provision of the Services; provided that AstraZeneca provides Tempus with reasonable advance written notice of the planned inspection;

4.6 enter into all agreements or mechanisms as reasonably requested by AstraZeneca to ensure compliance with Data Privacy Law;

4.7 be responsible for maintaining and tracking **[***]**; and

4.8 **[***]**.

5. Tempus FTE Commitment.

5.1 To support AstraZeneca's advancement of the Workstreams, Tempus will **[***]** (the "**Dedicated AZ Team**"). Tempus will also **[***] "Services" [***]**. Tempus will use Tempus Materials and the Licensed Data to provide the **[***]**.

5.2 **[***]** if:

(a) **[***]**; or

(b) **[***]**.

6. Governance.

6.1 No later than **[***]**, the Parties will establish a Joint Steering Committee ("**JSC**") across all Workstreams to review and coordinate the activities of the Parties under this Agreement.

(a) The JSC will consist of **[***]** representatives: **[***]**. At the invitation of the JSC as necessary, other representatives of Tempus or AstraZeneca may attend JSC meetings as non-voting representatives.

(b) In the event that any representative named in Section (a) is unable to carry out their duties on the JSC, then the Party of the affected representative shall promptly nominate a replacement, to the reasonable satisfaction of other Party, to carry out the duties of the affected representative for such period as the affected representative is unable to perform.

(c) Tempus will assign a program manager to assist the JSC with project management activities, **[***]**. AstraZeneca may appoint a lead member to manage the activities of the JSC and prioritize activities.

(d) The JSC will meet quarterly, or more frequently as needed, at a mutually agreeable time and place or by video or telephone conference. A quorum of the JSC will be **[***]** of the members, **[***]**. Each Party will bear its own personnel and travel costs and expenses relating to JSC meetings.

(e) The JSC will provide a forum for discussing and coordinating **[***]**. The JSC will also consider and attempt to resolve in good faith any conflict between Tempus and AstraZeneca.

(f) The Parties' representatives on the JSC will collectively have **[***]**.

(g) The JSC will not have the power to amend or modify the Agreement except as mutually agreed by the Parties, as evidenced by a written amendment to the Agreement that is signed by an authorized representative of each Party. **[***]**, the Parties will discuss in good faith the terms associated with such additional activities, which must be documented in a fully executed amendment to this Agreement.

(h) The JSC shall have the power to appoint and direct subcommittees (each, a "**JSC Subcommittee**"). Unless otherwise agreed by the JSC: (i) each JSC Subcommittee shall consist of no fewer than **[***]**. Each Party shall bear its own personnel and travel costs and expenses relating to JSC Subcommittee meetings. JSC Subcommittees shall meet at a mutually agreeable time and place or by video or telephone conference.

6.2 Where the JSC is referred any matter under this Agreement (including under Sections 3.2(a)(iv), 3.4, 3.5(d), and 14.1(d), or under any Statement of Work) and the JSC is unable to resolve such relevant referred matter within **[***]** (or such longer period as is agreed in writing by the JSC) from when it receives such referral, then **[***]**.

7. Privacy and Data Protection.

7.1 Each Party shall comply with its respective obligations under Data Privacy Laws.

7.2 To the extent that AstraZeneca has provided its permission to disapply the terms of Section 18.2(b), Tempus agrees to an amendment to this Agreement as reasonably proposed by AstraZeneca, and enter into any and all agreements and measures as reasonably required by AstraZeneca to maintain compliance with Applicable Law.

7.3 Tempus and AstraZeneca shall cooperate in good faith to ensure that the highest ethical standards are upheld in the obtaining of human biological samples, associated data and the consents with respect thereto, in relation to activities contemplated by this Agreement.

7.4 In connection with the foregoing, no later than **[***]**, the JSC will establish and appoint a JSC Subcommittee (the "**ICF Subcommittee**"), the principal responsibilities of which shall be to:

(a) perform the activities set out in Sections 7.3 to 7.7;

(b) generally assist the Parties to uphold the highest ethical standards as described in Section 7.3; and

(c) perform such other activities as may be delegated to the ICF Subcommittee by the JSC from time to time.

7.5 The first ICF Subcommittee meeting shall be no later than **[***]**, with subsequent meetings scheduled as mutually agreed upon by ICF Subcommittee representatives, but in no event later than **[***]**, unless otherwise agreed upon by the JSC.

7.6 At such meetings the ICF Subcommittee shall review the ICF(s) created or used by Tempus or third parties in light of (a) changes to Applicable Law, associated practices and standards, or third party uses of the data that is the subject of such ICF(s); or (b) other relevant factors.

7.7 Promptly, and in any event within **[***]**, after each meeting, the ICF Subcommittee shall prepare and circulate to the Parties recommendations regarding changes to the ICF(s) and associated practices (if any) for consideration. Each Party shall consider such recommendations in good faith and, if such recommendations are agreed to be implemented, promptly do such things as are reasonably necessary to implement such recommendations. The ICF Subcommittee shall oversee the implementation of any such changes to the ICF(s) and associated practices.

8. Cybersecurity.

8.1 Each Party shall comply with its respective obligations in the Cybersecurity Requirements Exhibit as attached in **Exhibit D**.

9. Expectations of Third Parties.

9.1 Tempus recognizes AstraZeneca's commitment to work only with suppliers and partners who embrace the standards of ethical behavior consistent with AstraZeneca's Expectations of Third Parties Handbook, a copy of which can be found on www.astrazeneca.com or by clicking the "Resources" tab on https://www.astrazeneca.com/sustainability.html, as amended from time to time, and in particular those principles in the Section "Anti-Bribery and Anti-Corruption" as amended from time to time ("**Supplier Expectations**").

9.2 Tempus represents, warrants and covenants that it: (i) will perform this Agreement and operate its business in compliance with all Applicable Laws, (ii) has read and received AstraZeneca's Code of Ethics, which can be found on www.astrazeneca.com or by clicking the

"Resources" tab on https://www.astrazeneca.com/sustainability.html and will perform this Agreement consistent with AstraZeneca's Code of Ethics, (iii) shall ensure that it has, and shall procure that all relevant Tempus personnel providing Services have, received and shall comply with AstraZeneca's Principles on Data and AI, which can be found at https://www.astrazeneca.com/sustainability/ethics-and-transparency/data-and-ai-ethics.html , and shall cooperate with AstraZeneca in good faith to ensure continued compliance with AstraZeneca's Principles on Data and AI for the Term, (iv) will perform this Agreement and operate its business to ethical standards consistent with those set out in the Supplier Expectations, (v) will not take any action that will cause AstraZeneca to be in breach of any Applicable Laws for the prevention of fraud, bribery and corruption, racketeering, money laundering, terrorism, product security or product safety, including the US Foreign Corrupt Practices Act and the UK Bribery Act, (vi) will not offer, pay, request or accept any bribe, inducement, kickback or facilitation payment, and will not make or cause another to make any offer or payment to any individual or entity for the purpose of influencing a decision for the benefit of AstraZeneca, (vii) shall, without limiting the foregoing, promptly, and in any event within 60 days of the Effective Date, implement policies with respect to human rights and modern slavery, and any other internal policies as may be required, so as to establish and maintain compliance with the standards required in respect thereof by the Supplier Expectations and AstraZeneca's Code of Ethics, and (viii) will use reasonable efforts to cause its Affiliates and its and their subcontractors performing activities under this Agreement, including the provision of Services, to operate their business in compliance with all Applicable Laws and in a manner consistent with the Supplier Expectations.

9.3 In the event that Tempus fails to meet or maintain such ethical standards, **[***]**.

9.4 **[***]**.

10. Regulatory Matters.

10.1 AstraZeneca shall have sole control over any regulatory filings with respect to results obtained by AstraZeneca from the receipt of Services, or use of the Licensed Data or any Deliverable.

10.2 Without limiting Tempus' ability to fulfill its obligations under Applicable Law, and unless otherwise mutually agreed in a Statement of Work, AstraZeneca shall be responsible for any and all written and oral contact with any Regulatory Authority with respect to the Services and Deliverables, including the submission of all reports or notices required by Applicable Law. Tempus shall not initiate or participate in any communications with any Regulatory Authority to the extent concerning the Services or any Deliverable unless required by Applicable Law or requested to do so by, and then only after prior consultation with, AstraZeneca (to the extent such consultation is permitted under Applicable Law). To the extent not prohibited by Applicable Law, Tempus shall provide AstraZeneca with a copy of all correspondence with any Regulatory Authority to the extent relating to this Agreement, or the Services, the Licensed Data or any Deliverables.

10.3 **[***]**.

10.4 To the extent not prohibited by Applicable Law, **[***].**

11. Payment and Invoicing.

11.1 Subject to the terms of this Agreement (including the applicable Statement of Work), AstraZeneca shall pay to Tempus the invoiced fees as set out in each Statement of Work. No fees or costs other than the relevant fees under this Agreement shall be payable by AstraZeneca. **[***]**.

11.2 No payment for Services will be made unless a purchase order is issued by AstraZeneca. Invoices must reference a corresponding purchase order number. If an Affiliate issues a purchase order under this Agreement, then the "**Party**" for purposes of such purchase order will be the Affiliate, and the Affiliate will be deemed substituted in the place of AstraZeneca solely for the purposes of such purchase order.

11.3 AstraZeneca will pay all invoices **[***]** from receipt of a valid and undisputed invoice.

11.4 Tempus agrees to participate in the electronic transaction program for purchase orders. AstraZeneca will indicate the electronic transaction program applicable to Tempus for each purchase order, details of which can be found on www.astrazeneca.com on the "Supplier Information" tab or by going to https://www.astrazeneca.com/az-suppliers.html, as amended from time to time. Participation in the electronic transaction program includes the preparation and regular maintenance of electronic catalogues to support a high-quality ordering process and accepting the electronic transmission of purchase orders from AstraZeneca. Tempus agrees to provide the required data and to designate a representative to assist in ensuring implementation and maintenance of the electronic transaction program.

11.5 Tempus agrees to submit all invoices and any corresponding credit notes to AstraZeneca electronically through the electronic transaction program designated by AstraZeneca, details of which can be found on www.astrazeneca.com on the "Supplier Information" tab or by going to https://www.astrazeneca.com/az-suppliers.html, as amended from time to time. AstraZeneca will indicate the electronic transaction program applicable to Tempus for each invoice. Tempus should only submit invoices through the electronic transaction program and only valid invoices or credit notes submitted through the electronic transaction program will be considered received by AstraZeneca. The electronic transaction program will allow Tempus to either (i) transmit invoices and credit notes electronically; or (ii) create those invoices or credit notes within the electronic transaction program. AstraZeneca may reasonably reject any invoice or credit note that does not meet at least the following relevant standards. The relevant standard for an invoice is one that:

(a) complies with local law, the European standard and any of the syntaxes published in Commission Implementing Decision (EU) 2017/1870;

(b) documents the different goods and services within the invoice;

(c) contains the full details of the AstraZeneca party, including legal name, address and when applicable the indirect tax ID number; and

(d) is raised by Tempus, in all circumstances, unless AstraZeneca and Tempus mutually agree in writing a self-invoicing scheme.

11.6 Credit notes should be used to amend incorrect invoices and should inform of the error being corrected and invoices affected.

11.7 If an invoice is disputed, AstraZeneca shall notify Tempus in writing not later than **[***]** from the date of receipt of such disputed invoice specifying the reasons for disputing the invoice. AstraZeneca and Tempus will discuss such disputed invoice in good faith within **[***]** after Tempus acknowledges the invoice has been disputed, whereby Tempus shall provide all evidence as may be reasonably necessary to verify such disputed invoice. Tempus may invoice for any Services that are not disputed while working to correct the disputed invoice.

11.8 If either Party fails to pay any amount due under this agreement within **[***]** after payment is due, then such paying Party shall pay interest thereon at no more than an annual rate equal to the lesser of (i) **[***]**. "Reference Rate" means **[***]**.

11.9 **[***]**.

12. Tax.

12.1 Deductions and Withholdings. If a deduction or withholding for or on account of tax ("**Tax Deduction**") is required by law to be made by AstraZeneca, AstraZeneca shall deduct or withhold from the payments any taxes that it is required by Applicable Law to deduct or withhold. AstraZeneca shall not be required to make an increased payment to Tempus where a Tax Deduction is required. AstraZeneca shall cooperate reasonably with Tempus to reduce or recover the Tax Deduction (e.g., by completing prescribed forms) provided that AstraZeneca shall not apply a reduced rate of Tax Deduction unless Tempus has provided evidence, in a form satisfactory to AstraZeneca of authorization to do so.

12.2 Indirect Taxes. All payments under this Agreement are stated exclusive of any Indirect Tax. Accordingly, if any Indirect Tax is chargeable on the recipient of a payment in respect of such payment, the party making such payment shall pay an additional amount equal to such Indirect Tax at the applicable rate in respect of such payment, on the due date of the payment to which such Indirect Tax relates. The Parties shall promptly issue appropriate Indirect Tax invoices in respect of all goods and services supplied under this Agreement consistent with applicable Indirect Tax requirements, and to the extent an invoice is not initially issued in an appropriate form, they shall cooperate to provide such information or assistance as may be necessary to enable the issuance of such invoice consistent with Indirect Tax requirements.

12.3 Anti-Tax Evasion. Each of AstraZeneca and Tempus represents, warrants and undertakes that it shall not commit a tax evasion facilitation offence under Part 3 of the UK Criminal Finances Act 2017 in connection with or otherwise attributable to this Agreement or the transactions contemplated hereby.

12.4 Each Party shall promptly report to the other Party any apparent breach of Section 12.3 and shall (i) answer, in reasonable detail, any written or oral inquiry from the other Party related to its compliance with Section 12.3, (ii) facilitate the interview of employees of such Party by the

other Party (or any agent of such Party) at any reasonable time specified by the inquiring Party related to such Party's compliance with Section 12.3, and (iii) co-operate with the inquiring Party or any government, state or municipality or any local, state, federal or other fiscal, revenue, customs or excise authority, body or official anywhere in the world ("**Tax Authority") in relation to any investigation relating to the matters referred to in Section 12.3, in all cases, as reasonably required to enable that other Party to comply with its undertaking in Section 12.3.**

13. Intellectual Property.

13.1 AstraZeneca Materials.

(a) "**AstraZeneca Materials**" means **[***]**.

(b) AstraZeneca is and will remain the owner of all Intellectual Property Rights in the AstraZeneca Materials. Ownership of all Third Party Materials and of all Intellectual Property Rights therein, is and will remain with the respective owners thereof, subject to any express licenses or sublicenses granted to Tempus pursuant to or in accordance with this Agreement.

(c) Unless agreed to otherwise in a Statement of Work, Tempus will promptly return to AstraZeneca all AstraZeneca Materials in its possession upon the termination or expiration of this Agreement or the relevant Statement of Work, under Section 16.8(b).

13.2 Tempus Materials.

(a) "**Tempus Materials**" means **[***]**.

(b) Tempus is and will remain the owner of all Intellectual Property Rights in the Tempus Materials and Licensed Data. Ownership of all Third Party Materials and of all Intellectual Property Rights therein, is and will remain with the respective owners thereof, subject to any express licenses or sublicenses granted to AstraZeneca pursuant to or in accordance with this Agreement.

(c) **[***]**.

(d) Should Tempus use any Third Party Materials or Third Party IP in the provision of Services, **[***]** all necessary rights to use such Third Party Materials and Third Party IP.

(e) Without limiting Tempus' other obligations or AstraZeneca's rights and remedies, if Tempus becomes aware of any actual or threatened claim or risk of infringement or misappropriation of any Third Party IP or Third Party Materials arising out of the provision of the Services or Licensed Data to AstraZeneca under this Agreement, **[***]**.

13.3 Rights in Project Inventions.

(a) Subject to Section 13.2(b), AstraZeneca shall own all AstraZeneca Project Inventions **[***]**.

(b) Tempus shall own all Tempus Project Inventions and Intellectual Property Rights therein. **[***]**.

(c) If a Project Invention constitutes AstraZeneca Core IP and (but for the exclusion of **[***].**

(d) **[***]**.

(e) Each Party shall do and execute, or arrange for the doing and executing of, each necessary act, document and thing that the other Party may consider necessary or desirable to perfect the right, title and interest of such other Party in and to the relevant Project Inventions and Intellectual Property Rights therein, free and clear of all encumbrances and liens of any kind, as may be required to give effect to the other provisions of this Section 13.3.

(f) Notwithstanding anything to the contrary herein, Licensed Data shall always remain subject to the license terms set forth in **Exhibit B**.

13.4 Restrictions. AstraZeneca agrees not to disclose, sell, sublicense or otherwise transfer or make available all or any portion of the Tempus Materials to, or use the Tempus Materials to provide services to, any third party (other than an AstraZeneca Affiliate) without the prior written consent of Tempus, other than as specifically provided for in a license granted to such Tempus Materials either pursuant to Sections 13.2 or 13.3, above, or in a Statement of Work or as otherwise permitted by this Agreement. Otherwise, nothing contained in this Agreement shall directly or indirectly be construed to assign or grant to AstraZeneca any right, title or interest in or to the trademarks, copyrights, patents or trade secrets of Tempus or any ownership rights in or to the Tempus Materials. AstraZeneca shall not cause or permit the reverse engineering, reverse assembly, or reverse compilation of, or otherwise attempt to derive source code from, the Tempus Materials.

14. Error/Delay in Performance of the Services.

14.1 In the event of an error or delay by Tempus in the performance of the Services, whereby such error or delay renders the Services or Deliverables (in whole or in part) unacceptable to AstraZeneca, then without limiting any other right or remedy of AstraZeneca:

(a) AstraZeneca shall promptly notify Tempus in writing, detailing the issues and areas of concern.

(b) Tempus shall, within **[***]** of notifying AstraZeneca, provide to AstraZeneca a proposed formal action plan to remedy such error or delay.

(c) The Parties shall discuss such action plan in good faith and within **[***]** of delivery of the action plan both Parties will meet to discuss progress.

(d) In the event such errors or delays (as the case may be) continue, in AstraZeneca's sole discretion, AstraZeneca shall have the right to escalate the matter to JSC for consideration.

14.2 Notwithstanding Section 14.1 above and without limiting any other right or remedy available to AstraZeneca, in the event of a notified error or delay in the performance of the Services, AstraZeneca may:

(a) **[***]**

(b) **[***]**.

15. Exclusivity.

The scope and duration of any exclusivity for AstraZeneca with respect to the provision of Services, access to Licensed Data or any other subject matter may be agreed in each Statement of Work, including (as applicable) any specific restrictions on the activities of Tempus and its Affiliates with respect to third parties, any restrictions on Tempus providing services or deliverables to such third parties that are the same as, or similar to, the Services or Deliverables (as applicable) under such Statement of Work for a specified period of time. Except to the extent expressly specified in a Statement of Work, the Services and Licensed Data are not subject to exclusivity obligations under this Agreement.

16. Term, Termination, and Survival.

16.1 This Agreement shall commence as of the Effective Date and shall continue thereafter through December 31, 2026, unless sooner terminated pursuant to this Section 16 (the "**Term**").

16.2 Each Statement of Work shall commence on the date of execution, and continue in accordance with its terms, unless sooner terminated pursuant to the Sections of this Agreement, or the terms of such Statement of Work. For the avoidance of doubt, expiry of this Agreement shall not itself cause the termination of any then-existing Statements of Work.

16.3 AstraZeneca, **[***]**. For clarity, AstraZeneca shall remain responsible for the Financial Commitment notwithstanding the termination of any Statement of Work pursuant to this Section.

16.4 Termination of a Statement of Work alone will not result in the termination of this Agreement or the termination of any other Statement of Work. Upon the termination of this Agreement for any reason (but excluding its expiration), all Statements of Work then in effect will automatically terminate and Tempus will cease performing the Services, unless AstraZeneca requests that Tempus complete one or more of the Services. In such case, and provided the Agreement has not been terminated due to AstraZeneca's uncured material breach, the rights and obligations of the Parties under this Agreement will continue in effect with respect to such Services until completion.

16.5 Either Party may terminate this Agreement, effective upon written notice to the other Party (the "**Defaulting Party**"), if the Defaulting Party:

(a) materially breaches this Agreement, and such breach is incapable of cure, or with respect to a material breach capable of cure, the Defaulting Party does not cure such breach within thirty (30) days after receipt of written notice of such breach;

(b) becomes insolvent or admits its inability to pay its debts generally as they become due;

(c) becomes subject, voluntarily or involuntarily, to any proceeding under any domestic or foreign bankruptcy or insolvency law, which is not fully stayed within seven (7) Business Days or is not dismissed or vacated within forty-five (45) days after filing;

(d) is dissolved or liquidated or takes any corporate action for such purpose;

(e) makes a general assignment for the benefit of creditors; or

(f) has a receiver, trustee, custodian, or similar agent appointed by order of any court of competent jurisdiction to take charge of or sell any material portion of its property or business.

16.6 Without limiting any other right or remedy of AstraZeneca, AstraZeneca may terminate this Agreement, effective upon written notice to Tempus:

(a) **[***]**;

(b) **[***]**;

(c) for convenience at any time, provided that where at the effective date of the termination of this Agreement AstraZeneca has not fulfilled its Financial Commitment in accordance with **Exhibit E**, then AstraZeneca will be liable to pay Tempus the balance of its unfulfilled Financial Commitment, i.e., the unfulfilled portion of two hundred million dollars ($200,000,000) if the MC Extension Option has not been exercised, or three hundred million dollars ($300,000,000) if the MC Extension Option has been exercised;

(d) (i) Tempus or one of Tempus' employees is convicted of a crime involving pharmaceutical counterfeiting, diversion or illegal trade, (ii) there is sufficient evidence of Tempus' involvement in counterfeiting, diversion or illegal trade, and the involvement was either knowing or the result of a failure to establish necessary preventative controls, or (iii) there is a publicly announced investigation by a Regulatory Authority relating to any suspected or actual violation of Applicable Laws relating to anti-corruption or anti-bribery by Tempus or any Affiliates, consultants, agents, representatives or sub-contractors of Tempus or its Affiliates connected with this Agreement; or

(i) Tempus is prevented or restricted by Applicable Law (including as a result of a court order or action of a Regulatory Authority) from providing all or a material part of the Services or Licensed Data in the form contemplated under this Agreement and Tempus does not remedy the same within thirty (30) days of the commencement of such prevention or restriction.

16.7 Without limiting any other right or remedy of AstraZeneca, AstraZeneca may terminate this Agreement (in whole or in part, with respect to any Statement of Work), effective upon (a) Tempus' failure to perform an obligation under this Agreement or Statement of Work (whether or not a repudiatory breach) that has been, or substantially similar failures have been, repeated sufficiently often to have a materially adverse impact on the use or enjoyment of the Services or Deliverables (including material detriment to the quality of Services or Deliverables or Licensed Data as provided in **Exhibit B**) or the business of AstraZeneca; (b) Tempus failing to remedy such breach within **[***]**; and (c) AstraZeneca having previously informed Tempus that if the failure or a substantially similar failure is repeated AstraZeneca may wish to terminate this Agreement.

16.8 Upon expiration or termination of this Agreement or Statement of Work for any reason, Tempus shall promptly (and in the case of a Statement of Work, to the extent applicable to such Statement of Work):

(a) deliver to AstraZeneca all documents, work product, and other materials and Deliverables, whether or not complete, prepared by or on behalf of Tempus in the course of performing the Services for which AstraZeneca has paid;

(b) at AstraZeneca's direction, return to AstraZeneca or permanently erase/destroy all AstraZeneca Materials;

(c) remove any Tempus-owned property, equipment, or materials located at AstraZeneca's locations;

(d) at AstraZeneca's direction, deliver to AstraZeneca or permanently erase/destroy, all of AstraZeneca's Confidential Information, including any and all documents and tangible materials (and any copies) containing, reflecting, incorporating, or based on AstraZeneca's Confidential Information, except that Tempus shall be permitted to retain such copies of such Confidential Information as are reasonably required for the sole purpose of performing any obligations under this Agreement that survive expiry or termination of this Agreement or for archival purposes. Notwithstanding the foregoing, Tempus shall also be permitted to retain such additional copies of or any computer records or files containing such Confidential Information that have been created solely by Tempus' automatic archiving and back-up procedures, to the extent created and retained in a manner consistent with Tempus' standard archiving and back-up procedures, but not for any other use or purpose;

(e) provide reasonable cooperation and assistance to AstraZeneca upon AstraZeneca's written request in transitioning the Services to an alternate service provider;

(f) on a pro rata basis, repay all fees and expenses paid in advance for any Services, Deliverables, Licensed Data or other elements that have not been provided;

(g) certify (through an authorized officer of Tempus) in writing to AstraZeneca that it has complied with the requirements of this Section 16.8; and

(h) provide all transition and exit assistance as provided in the relevant Statement of Work.

16.9 Upon expiration or termination of this Agreement or Statement of Work for any reason, AstraZeneca shall promptly (and in the case of a Statement of Work, to the extent applicable to such Statement of Work):

(a) at Tempus' direction, return to Tempus or permanently erase/destroy all Tempus Materials (including Licensed Data) except that AstraZeneca shall be permitted to retain such copies of such Tempus Materials as are reasonably required for the sole purpose of performing any obligations or exercising rights (including exploiting Deliverables and AstraZeneca Project Inventions, and with respect to Licensed Data under Exhibit B) under this Agreement that survive expiry or termination of this Agreement or for archival purposes. Notwithstanding the foregoing, AstraZeneca shall also be permitted to retain such additional copies of or any

computer records or files containing such Tempus Materials that have been created solely by AstraZeneca's automatic archiving and back-up procedures, to the extent created and retained in a manner consistent with AstraZeneca's standard archiving and back-up procedures, but not for any other use or purpose. For clarity, nothing in the foregoing shall operate to terminate, limit or otherwise affect the rights and licenses with respect to Licensed Data that are granted under Exhibit B;

(b) remove any AstraZeneca-owned property, equipment, or materials located at Tempus' locations;

(c) At Tempus' direction, deliver to Tempus or permanently erase/destroy, all of Tempus' Confidential Information, including any and all documents and tangible materials (and any copies) containing, reflecting, incorporating, or based on Tempus' Confidential Information except that AstraZeneca shall be permitted to retain such copies of such Confidential Information as are reasonably required for the sole purpose of performing any obligations or exercising rights (including exploiting Deliverables and AstraZeneca Project Inventions, and with respect to Licensed Data under Exhibit B) under this Agreement that survive expiry or termination of this Agreement or for archival purposes. Notwithstanding the foregoing, AstraZeneca shall also be permitted to retain such additional copies of or any computer records or files containing such Confidential Information that have been created solely by AstraZeneca's automatic archiving and back-up procedures, to the extent created and retained in a manner consistent with AstraZeneca's standard archiving and back-up procedures, but not for any other use or purpose. For clarity, nothing in the foregoing shall operate to terminate, limit or otherwise affect the rights and licenses with respect to Licensed Data that are granted under Exhibit B; and

(d) certify (through an authorized officer of AstraZeneca) in writing to Tempus that it has complied with the requirements of this Section 16.9; and

(e) upon the later of (i) expiry or termination of this Agreement, and (ii) the last to expire or terminate Statement of Work, the following shall survive: Sections 1, 7.1, 8, 10, 13, 15, 16, 17, 19.1, 19.3, 22, 23, 24, 25, 26, 27, 28, 29, 30.1, 30.2, 30.3, 30.4, paragraphs 1, 2 and 4 of Exhibit B, and Exhibit D.

17. Independent Contractor.

17.1 Each Party expressly understands and agrees that the other is an independent contractor in the performance of each and every part of this Agreement and nothing in this Agreement operates or may be construed as constituting the Parties as partners, joint venturers, principals, joint employers, agents or employees of or with the other. Each Party is solely responsible for all of its employees and agents and its labor costs and expenses arising in connection therewith. AstraZeneca shall have the right to inspect the work of Tempus as it progresses solely for the purpose of determining whether the work is completed according to the applicable Statement of Work.

17.2 Tempus has no authority to commit, act for or on behalf of AstraZeneca, or to bind AstraZeneca to any obligation or liability.

17.3 Tempus shall not be eligible for and shall not receive any employee benefits from AstraZeneca and shall be solely responsible for the payment of all taxes, FICA, federal and state unemployment insurance contributions, state disability premiums, and all similar taxes and fees relating to the fees earned by Tempus hereunder.

18. Representations and Warranties.

18.1 Each Party (the "**Representing Party**") represents and warrants to the other that as of the Effective Date:

(a) the Representing Party has the requisite power and full authority to enter into this Agreement, and the Representing Party's execution, delivery of, and performance under, this Agreement have been duly authorized by the Representing Party and do not, and shall not, violate or conflict with any Applicable Law to the Representing Party, that the Representing Party has full legal power to extend the rights and undertake the responsibilities ascribed to such Party in this Agreement;

(b) the Representing Party is duly licensed, authorized and qualified to do business and is in good standing in every jurisdiction in which a license, authorization or qualification is required for the ownership or leasing of its assets or the transaction of business of the character transacted by it; and

(c) neither the Representing Party nor any of its employees or contractors: (A) have been convicted of a criminal offense related to healthcare; (B) are listed on the U.S. Department of Health and Human Services Office of Inspector General's List of Excluded Individuals/Entities, or are otherwise currently excluded, suspended or debarred from participating in any federal healthcare program; (C) are under investigation (civil or criminal) by any federal or state enforcement, regulatory, administrative or licensing agency; or (D) are currently listed on the U.S. General Services Administration List of Parties Excluded from the Federal Procurement and Non-Procurement Programs.

18.2 Tempus represents and warrants, and undertakes, that:

(a) it shall dedicate all appropriate resources to fulfilling its obligations under this Agreement and shall ensure it is not, and will not be, a party to any agreement or under any condition that would in any way prevent, or impede, its ability to provide the Services, without first obtaining the prior written permission of AstraZeneca;

(b) unless otherwise expressly agreed in a Statement of Work, any Licensed Data provided or made available to AstraZeneca by Tempus shall not contain any Personal Data:

(i) that can be used to directly identify any natural persons;

(ii) **[***]**;

(iii) **[***]**;

(iv) **[***]**

(v) **[***]**,

without the prior written consent of AstraZeneca.

(c) there is no claim or litigation pending or claim that was previously asserted in writing against Tempus or any of its Affiliates (and Tempus has no knowledge of any claim, whether or not pending or asserted), and to Tempus' knowledge, no such claim will be made during the Term, by any Person alleging that (i) Tempus Materials or Tempus' Intellectual Property Rights are invalid or unenforceable or (ii) the possession, collection, acquisition, access, retention, storage, transfer, disclosure, protection, or other use or exploitation of any Licensed Data, Services, or Tempus Materials violates, infringes, constitutes misappropriation or otherwise conflicts or interferes with, or would violate, infringe or otherwise conflict or interfere with, any Intellectual Property Rights or proprietary right of any Person;

(d) it and its employees and subcontractors have all of the necessary qualifications, consents (including from the individuals from whom the Licensed Data is derived, to the extent necessary under Applicable Law), licenses, permits or registrations to license the Licensed Data and perform the Services, in accordance with the terms and conditions of this Agreement, and at all times during the Term, all such qualifications, licenses, permits or registrations shall be current and in good standing;

(e) Tempus has obtained all necessary rights, consents, authorizations or permissions to (i) create, process, and provide all Licensed Data (including in relation to the creation of De-Identified Information from any Protected Health Information, as such terms are defined under HIPAA) to AstraZeneca for use, disclosure and any other purpose contemplated by the terms of this Agreement and has done so in accordance with all Applicable Law (including having ensured that all appropriate notices to the subjects of such Licensed Data have been provided) and (ii) Tempus' rights to De-Identified Information included in the Licensed Data are perpetual and non-terminable;

(f) Tempus is the owner of, or otherwise has all of the rights necessary to use, all materials and information (including the Tempus Materials) that it provides to AstraZeneca under this Agreement and that it uses to provide the Services (including Deliverables);

(g) it has never been, is not currently, and, during the Term, shall not become a Debarred Individual or Debarred Entity, an Excluded Individual or Excluded Entity or a Convicted Individual or Convicted Entity;

(h) that no Debarred Individual, Debarred Entity, Excluded Individual, Excluded Entity, Convicted Individual or Convicted Entity has performed or rendered, or will perform or render, any services or assistance relating to activities taken pursuant to this Agreement. Tempus further warrants and represents that Tempus has no knowledge of any circumstances which may affect the accuracy of the foregoing representations and warranties including FDA OIG/HHS investigations of, or debarment or exclusion (as applicable) proceedings against Tempus or any person or entity performing services or rendering assistance relating to activities taken pursuant to this Agreement, and Tempus will immediately notify AstraZeneca if Tempus becomes aware of any such circumstances during the Term;

(i) it shall not engage in any activity under this Agreement that would result in AstraZeneca being considered a Covered Entity or Business Associate (as defined under HIPAA);

(j) it shall ensure that all Protected Health Information (as defined under HIPAA), extracts thereof or other data related thereto contained in Licensed Data have been de-identified in accordance with a methodology set forth under HIPAA and other Applicable Law, including HIPAA, and that no Deliverable shall include data or information that has not been so de-identified or that otherwise permits the identification of the individuals or patients from whose data the Deliverable is derived. At AstraZeneca's request Tempus shall certify its compliance with the foregoing to AstraZeneca annually in writing, including by providing a summary of all applicable expert certifications. Tempus shall notify AstraZeneca upon the expiration or revision of any such certifications. For the avoidance of doubt, Tempus's failure to comply with this Section shall be deemed a material breach of this Agreement;

(k) **[***]**; and

(l) **[***]** every calendar year beginning from **[***]** and lasting until **[***]**. AstraZeneca acknowledges that **[***]**.

18.3 If any AstraZeneca Materials or other information provided or made available to Tempus under this Agreement include any Protected Health Information as that term is defined under the HIPAA, AstraZeneca agrees that it is solely AstraZeneca's responsibility to ensure that AstraZeneca has obtained all necessary rights, consents or permissions to provide such information to Tempus for use in accordance with the terms of this Agreement and done so in accordance with all Applicable Law.

18.4 EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES ANY, AND EACH PARTY HEREBY SPECIFICALLY DISCLAIMS ANY, REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, REGARDING ITS ACTIVITIES CONTEMPLATED BY THIS AGREEMENT, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT AND IMPLIED WARRANTIES ARISING FROM COURSE OF DEALING OR COURSE OF PERFORMANCE.

19. Remedies.

19.1 If Tempus breaches any provision of this Agreement, AstraZeneca shall, in addition to any damages to which it is entitled, be entitled to seek immediate injunctive relief against Tempus prohibiting further actions inconsistent with Tempus' obligations under this Agreement. Each Party acknowledges that its threatened or actual breach of its respective obligations under Sections 7.1, 7.2, 8 or 24 may cause irreparable harm to the other Party such that compensation in damages may not be adequate and such other Party is entitled to seek injunctive relief (without limiting any other right or remedy available to it) for such a threatened or actual breach.

19.2 Without limiting any other right or remedy available to AstraZeneca, if any Services or Deliverables are not provided in accordance with this Agreement or any Statement of Work in any respect, Tempus agrees to, **[***]**.

19.3 All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either Party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any other agreement between the Parties, or otherwise.

20. Compliance with Applicable Law.

20.1 Each Party represents, warrants and undertakes that it shall comply with, all Applicable Law in the performance of its obligations under this Agreement. Without limiting the foregoing, Tempus has and shall maintain in effect all the licenses, permissions, authorizations, consents, and permits that it needs to carry out its obligations under this Agreement.

20.2 Tempus and AstraZeneca agree that the funds provided hereunder are not being given in exchange for any explicit or implicit agreement to purchase, prescribe, recommend, influence or provide favorable formulary status for any of AstraZeneca's products. This Agreement is not for the purpose of promoting any product, service, or company. AstraZeneca shall not, and shall ensure that the AstraZeneca Affiliates do not, offer any inducements to Tempus, any of their Affiliates, their volunteers, or any health care providers relating to this Agreement.

20.3 Any physician licensed to practice in the U.S. and any U.S. teaching hospital is a "Covered Recipient." A "Payment or Transfer of Value" is any payment or transfer of value as defined in the U.S. Physician Payment Sunshine Act (42 USC 1320a-7h(e)) and implementing regulations (42 CFR 403.900 et seq.), and includes compensation, reimbursement for expenses, meals, travel, medical journal reprints, study drug study supplies and medical writing and publications assistance. Tempus acknowledges and agrees that any direct or indirect Payments or Transfers of Value to Covered Recipients are subject to transparency reporting requirements, including disclosure on AstraZeneca's website. Tempus shall not knowingly make any indirect or direct Payment or Transfer of Value to a Covered Recipient on behalf of AstraZeneca in connection with this Agreement. Tempus and AstraZeneca acknowledge and agree that none of the licenses to Licensed Data and the Services described in the Statements of Work executed prior to the Effective Date or contemplated by this Agreement will give rise to or constitute a reportable Payment or Transfer of Value.

20.4 Tempus and AstraZeneca and their respective Affiliates, representatives, agents and employees shall comply with the U.S. Foreign Corrupt Practices Act, as amended, the UK Bribery Act of 2010, and any other applicable anti-corruption laws for the prevention of fraud, racketeering, money laundering or terrorism, and shall not knowingly taken any action that will, or would reasonably be expected to, cause the other Party or its Affiliates to be in violation of any such laws or policies.

20.5 The Parties mutually acknowledge and agree that (i) any rights granted and Services to be provided by Tempus to AstraZeneca under this Agreement do not reflect remuneration in exchange for data in a manner that constitutes a prohibited sale of PHI (as defined by HIPAA) under HIPAA; and (ii) any fees to be paid by AstraZeneca or any of its Affiliate hereunder or in any Statement of Work are intended to reflect the fair market value of the rights and Services to be received and do not reflect remuneration in exchange for data in a manner that constitutes a prohibited sale of PHI under HIPAA.

21. Insurance.

Tempus shall maintain during the Term insurance coverage of the types and in the amounts typically carried by Tempus of the types of Services and Deliverables within this Agreement. Tempus shall provide to AstraZeneca upon written request certificates of insurance evidencing its insurance coverage and limits.

22. Indemnification.

22.1 AstraZeneca shall indemnify, defend and hold harmless Tempus and its officers, directors, shareholders, employees, agents, successors and assigns (collectively, the "**Tempus Indemnified Parties**"), from any and all liabilities, judgments, costs, losses, fines, penalties, damages and expenses (including reasonable attorneys' fees and court costs) (collectively, "**Liabilities**"), in connection with any claim, suit, action, investigation, or other proceeding brought or threatened by a third party (including a Regulatory Authority) against any of the Tempus Indemnified Parties, and relating to, based upon or arising out of or in connection with **[***]**.

22.2 Tempus shall indemnify, defend and hold harmless AstraZeneca and its officers, directors, shareholders, employees, agents, successors and assigns (collectively, the "**AstraZeneca Indemnified Parties**"), from any and all Liabilities in connection with any claim, suit, action, investigation or other proceeding brought or threatened by a third party (including a Regulatory Authority) against any of the AstraZeneca Indemnified Parties, and relating to, based upon or arising out of or in connection **[***]**.

22.3 With respect to indemnification claims, the following procedures shall apply:

(a) Promptly after receipt by a Party (the "**Indemnified Party**") of notice of the commencement or threatened commencement of any action or proceeding involving a claim for which such Indemnified Party will seek indemnification pursuant to this Section 22, such Indemnified Party shall notify the other Party (the "**Indemnifying Party**") of such claim in writing. No failure to so notify an Indemnifying Party shall relieve it of its obligations under this Agreement except to the extent that it can demonstrate damages or prejudice attributable to such failure. Within ten (10) Business Days following receipt of written notice from the Indemnified Party relating to any claim, but not later than fifteen (15) days before the date on which any response to a complaint or summons is due, the Indemnifying Party shall notify the Indemnified Party in writing if the Indemnifying Party elects to assume control of the defense and settlement of that claim (a "**Notice of Election**").

(b) If the Indemnifying Party delivers a Notice of Election relating to any claim within the required notice period, the Indemnifying Party shall be entitled to have sole control over the defense and settlement of such claim; provided that (A) the Indemnified Party shall be entitled to participate in the defense of such claim and to employ counsel at its own expense to assist in the handling of such claim, and (B) the Indemnifying Party shall obtain the prior written approval of the Indemnified Party before entering into any settlement of such claim or ceasing to defend against such claim. The Indemnifying Party shall not be required to indemnify the Indemnified Party for any amount paid or payable by the Indemnified Party in the settlement of any claim for

which the Indemnifying Party has delivered a timely Notice of Election if such amount was agreed to without the written consent of the Indemnifying Party.

(c) If the Indemnifying Party does not deliver a Notice of Election relating to any claim within the required notice period, the Indemnified Party shall have the right to defend the claim in such manner as it may deem appropriate, at the cost and expense of the Indemnifying Party. The Indemnifying Party shall promptly reimburse the Indemnified Party for all such costs and expenses including but not limited to any and all reasonable counsel fees.

23. Disclaimers; Limitation of Liability.

IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR ANY LOST REVENUES OR PROFITS, OR OTHER INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE SERVICES PERFORMED UNDER THIS AGREEMENT, EVEN IF THAT PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING LIMITATIONS, DISCLAIMERS AND EXCLUSIONS DO NOT APPLY TO ANY BREACH OF SECTION 13, THE REPRESENTATIONS AND WARRANTIES MADE BY EACH PARTY IN SECTION 18, BREACH OF CONFIDENTIALITY OBLIGATIONS AS SPECIFIED IN SECTION 24, PAYMENT OBLIGATIONS IN SECTION 11, AND EACH PARTY'S INDEMNIFICATION OBLIGATIONS SET FORTH IN SECTION 22. The Parties agree that the disclaimers, exclusions and limitations of liability in this Agreement are an essential basis of the bargain between the Parties and, absent any of such disclaimers, exclusions or limitations of liability, the provisions of this Agreement, including the economic terms, would be substantially different.

24. Confidentiality.

24.1 "**Confidential Information**" means the non-public information that is exchanged between the Parties, provided that such information is: (i) identified as confidential at the time of disclosure by the disclosing Party ("**Discloser**"), or (ii) disclosed under circumstances that would indicate to a reasonable person that the information should be treated as confidential by the Party receiving such information ("**Recipient**"). Without limitation, the terms and conditions of this Agreement, the nature of the discussions and the relationship between the Parties, and the terms of any commercial transaction between the Parties, including pricing for any deliverable or service of Tempus, shall be considered Confidential Information of each Party (and each Party shall be deemed the Discloser and Recipient thereof). Confidential Information shall not include information that is (a) part of or becomes part of the public domain (other than by disclosure by the Recipient in violation of this Agreement); (b) previously known to the Recipient without an obligation of confidentiality; (c) independently developed by the Recipient outside this Agreement; or (d) rightfully obtained by the Recipient from third parties without an obligation of confidentiality. Without limiting the license set forth in Section 13.3(f), all Project Inventions (including all Deliverables) shall be the Confidential Information of AstraZeneca and AstraZeneca shall be deemed the Discloser and Tempus the Recipient in respect thereof. Without limiting the license set forth in Section 13.2(c), all Tempus Materials shall be the Confidential Information of Tempus and Tempus shall be deemed the Discloser and AstraZeneca the Recipient in respect thereof.

24.2 For the Term of this Agreement and for **[***]**, each Party agrees that it shall: (i) take reasonable measures to protect the Confidential Information of the other Party by using the same degree of care, but no less than a reasonable degree of care, to prevent the unauthorized use, dissemination or publication of the Confidential Information of the other Party as the Recipient uses to protect its own confidential information of a like nature, (ii) limit disclosure to those persons within Recipient's organization with a need to know and who have previously agreed in writing, prior to receipt of Confidential Information of the other Party either as a condition of their employment or in order to obtain the Confidential Information, to obligations similar to the provisions hereof, (iii) not copy, reverse engineer, disassemble, create any works from, or decompile any prototypes, software or other tangible objects which embody the Confidential Information of the other Party or which are provided to the Party hereunder, and (iv) not use the Confidential Information of the other Party for any purpose other than to perform or receive (as applicable) the Services or Deliverables hereunder.

24.3 AstraZeneca may disclose Confidential Information of Tempus, **[***]** to the extent such disclosure is:

(a) made to a Regulatory Authority as required in connection with any filing, application or request for Regulatory Approval, if such Confidential Information is marked as confidential and proprietary; or

(b) made to a patent authority as may be reasonably necessary or useful for the purposes of obtaining or enforcing a patent.

24.4 **[***]**.

24.5 Each Party may disclose Confidential Information of the other Party, including Licensed Data to the extent in response to a valid order of a court of competent jurisdiction or other Regulatory Authority of competent jurisdiction or, if in the reasonable opinion of the receiving Party's legal counsel, such disclosure is otherwise required by Applicable Law, including by reason of filing with securities regulators; provided, however, that the receiving Party shall first have given notice to the disclosing Party and given the disclosing Party a reasonable opportunity to quash such order or to obtain a protective order or confidential treatment requiring that the Confidential Information and documents that are the subject of such order be held in confidence by such court or agency or, if disclosed, be used only for the purposes for which the order was issued; and provided further that the Confidential Information disclosed in response to such court or governmental order shall be limited to that information which is legally required to be disclosed in response to such court or governmental order.

24.6 Neither Tempus nor AstraZeneca have the right to make public statements regarding the existence of this Agreement, its terms and conditions or the services being supplied without the consent of the other Party. Neither Party may use the other Party's name or mark for any purpose unless a Party has consent in writing. After the execution of this Agreement, the Parties will negotiate in good faith the issuance of a joint press release ("**Press Release**") on a mutually agreed upon date. Each Party will have the right to approve the Press Release in advance. Any Press Release will require approval of both Parties and, for AstraZeneca, will require approval from AstraZeneca's Corporate Affairs department. The restriction on the Parties' ability to make

public statements regarding the existence of this Agreement and its terms and use of the other Party's name or mark shall not apply to the extent that a Party is otherwise required to make such disclosure pursuant to (i) any requirement under Applicable Law (including U.S. securities laws), or (ii) in connection with enforcing its rights under this Agreement.

25. Notices.

All notices, requests, consents, claims, demands, waivers, and other communications under this Agreement (each, a "**Notice**") must be in writing and addressed to the other Party at its address set forth below (or to such other address that the receiving Party may designate from time to time in accordance with this Section 25). Unless otherwise agreed herein, all Notices must be delivered by personal delivery, nationally recognized overnight courier, or certified or registered mail (in each case, return receipt requested, postage prepaid). Except as otherwise provided in this Agreement, a Notice is effective only (a) on receipt by the receiving Party; and (b) if the Party giving the Notice has complied with the requirements of this Section 25.

Notice to AstraZeneca:	AstraZeneca AB SE-432 86 Mölndal Sweden Attn: Legal Department with a copy to: Email: legalnotices@astrazeneca.com Attn: Legal Department
Notice to Tempus:	Tempus Labs, Inc. 600 W. Chicago Ave., Suite 510 Chicago, IL 60654 United States of America Attn: Chief Executive Officer with a copy to: Tempus Labs, Inc. 600 W. Chicago Ave., Suite 510 Chicago, IL 60654 United States of America Attn: General Counsel

26. Assignment.

Tempus shall not assign, transfer, delegate, or subcontract any of its rights or obligations under this Agreement without the prior written consent of AstraZeneca, except in the case of an assignment or transfer of this Agreement in its entirety that is effected in conjunction with the transfer by sale, merger, or otherwise of all or substantially all of Tempus' assets, provided that

(a) Tempus provides written notice in relation to such proposed assignment or transfer, and (b) the successor organization assumes this Agreement and agrees to be bound by all of its existing terms in an assumption agreement entered into directly with AstraZeneca. Any such purported assignment, transfer or delegation in violation of this Section 26 shall be null and void. No assignment, transfer or delegation shall relieve Tempus of any of its obligations hereunder. AstraZeneca may at any time assign or transfer any or all of its rights or obligations under this Agreement without Tempus' prior written consent; if the successor organization assumes this Agreement and agrees to be bound by all of its terms, including all remaining Financial Commitment.

27. Force Majeure.

Neither Party shall be liable or responsible to the other Party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such Party's (the "**Impacted Party**") failure or delay is caused by or results from the following force majeure events (each a "**Force Majeure Event**"): (a) acts of God; (b) flood, fire, earthquake, or explosion; (c) pandemic, or epidemic (d) war, invasion, hostilities (whether war is declared or not), terrorist threats or acts, riot or other civil unrest; (e) government order, law, or action; (f) embargoes or blockades in effect on or after the date of this Agreement; (g) national or regional emergency; and (h) strikes, labor stoppages or slowdowns or other industrial disturbances; (i) shortage of adequate power or transportation facilities; and (j) other similar events beyond the reasonable control of the Impacted Party. Notwithstanding the foregoing, Tempus' financial inability to perform, changes in cost or availability of materials, components or services, market conditions, or Tempus actions or contract disputes will not excuse performance by Tempus under this Section 27.

The Impacted Party shall give notice within two (2) days of the Force Majeure Event to the other Party, stating the period of time the occurrence is expected to continue. The Impacted Party shall use diligent efforts to end the failure or delay and ensure the effects of such Force Majeure Event are minimized. The Impacted Party shall resume the performance of its obligations as soon as reasonably practicable after the removal of the cause. In the event that the Impacted Party's failure or delay remains uncured for a period of thirty (30) consecutive days following written notice given by it under this Section 27, the other Party may thereafter terminate this Agreement upon thirty (30) days' written notice, subject to the provisions of 16.8.

If Tempus is prevented from, or delayed, in performing fully any of its obligations under this Agreement by a Force Majeure Event, with respect to those parts of the Services, Deliverables, Licensed Data and any other elements not received by AstraZeneca or in respect of which AstraZeneca is not able to receive the full benefit (for example, if full use of certain Licensed Data or Deliverables is dependent upon the receipt of Services that are so prevented or delayed), without limiting any other right or remedy, AstraZeneca (a) may suspend payment normally due to Tempus in respect of such affected Services, Deliverables, Licensed Data or other elements, until such time as Tempus has given written notice to AstraZeneca that it is able to resume performance in accordance with this Agreement; and (b) if AstraZeneca has paid for such affected Services, Deliverables, Licensed Data or other elements in advance of such time as performance was so prevented or delayed, AstraZeneca may (at its option) on notice to Tempus

require a refund from Tempus of such advance payment or reallocation of such advance payment to other Services, Deliverables, Licensed Data or other elements, the specification of which shall be agreed between the Parties by way of a new or amended Statement of Work.

28. Audit Rights.

28.1 For the Term **[***]**, Tempus shall for the purpose of auditing and monitoring its performance of this Agreement grant (or procure the grant) to AstraZeneca, Affiliates of AstraZeneca, any auditors of any of them and any Regulatory Authority the right of access to any premises of Tempus, its Affiliates or any sub-contractors used in connection with this Agreement, together with a right to access personnel, systems, processes and records (including financial records) that relate to this Agreement, subject to Tempus' reasonable processes and procedures (e.g., regarding security and confidentiality). Audits may be undertaken once a year for each audit type, except that there shall be no such limitation to the number of audits per year to the extent an audit is undertaken as a result of an alleged breach of any of the provisions in this Agreement or a re-audit is required. Audits shall normally be agreed in advance, however, in the event of an alleged breach of this Agreement audits may be conducted unannounced. To the extent that any audit under this Section 28.1 or any other provision of this Agreement by AstraZeneca requires access and review of any commercially or strategically sensitive information relating to the business of Tempus, its Affiliates or any sub-contractors, such activity shall be carried out by non-Affiliate third party professional advisors appointed by AstraZeneca, and such professional advisors shall only report back to AstraZeneca such information as is directly relevant to informing AstraZeneca on compliance with the particular provisions that are the subject of the audit.

28.2 Tempus shall provide or procure all cooperation and assistance during normal working hours reasonably required by AstraZeneca for the purposes of an audit. AstraZeneca shall procure that any auditor enters into a confidentiality agreement equivalent to Section 24 in all material respects. AstraZeneca shall instruct any auditor or other person given access in respect of an audit to cause the minimum amount of disruption to the business of Tempus, its Affiliates and sub-contractors and to comply with relevant building and security regulations.

28.3 Tempus acknowledges that AstraZeneca has policies and procedures in place to monitor and review performance by its third party partners and contractors. Tempus shall cooperate with AstraZeneca in relation to such monitoring and review, and shall supply all information relating to this Agreement reasonably required by AstraZeneca (or to its non-Affiliate third party professional advisors, in the case of commercially or strategically sensitive information relating to the business of Tempus, its Affiliates or any sub-contractors).

28.4 Each Party shall bear its own costs of an audit or rendering assistance under this Section 28. Any report generated in connection with any such audit conducted in relation to Section 7.1, shall be the property of Tempus. However, Tempus agrees that AstraZeneca shall be entitled to review any such audit report and all supporting documents in relation to the audit.

29. Monitoring.

AstraZeneca has policies and procedures in place to monitor and review performance by its third party contractors. Tempus shall cooperate with AstraZeneca in relation to such monitoring and review and shall supply all information relating to this Agreement reasonably required by AstraZeneca (or to its non-Affiliate third party professional advisors, in the case of commercially or strategically sensitive information relating to the business of Tempus or any subcontractors).

30. Miscellaneous.

30.1 This Agreement constitutes the entire Agreement of the Parties with respect to the subject matter and supersedes all prior and contemporaneous agreements and understandings with respect thereto, including the Existing MSA and all associated statements of work, which shall be terminated as of the Effective Date, provided, however that any Existing Statements of Work identified in **Exhibit F** shall continue under the terms of this Agreement.

30.2 This Agreement may only be amended by a writing signed by both Parties.

30.3 The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement. In the event that any provision of this Agreement is determined to be invalid, unenforceable, or otherwise illegal, such provision shall be deemed restated, in accordance with Applicable Law, to reflect as nearly as possible the original intentions of the Parties, and the remainder of the Agreement shall continue in full force and effect.

30.4 This Agreement and all related documents including all Exhibits attached hereto, and all matters arising out of or relating to this Agreement, whether sounding in contract, tort, or statute are governed by, and construed in accordance with, the laws of the State of Delaware, United States of America. Each Party irrevocably and unconditionally agrees that it will not commence any action, litigation, or proceeding of any kind whatsoever against the other Party in any way arising from or relating to this Agreement, including all exhibits, Exhibits, attachments, and appendices attached to this Agreement, and all contemplated transactions, including contract, equity, tort, fraud, and statutory claims, in any forum other than the courts of the State of Delaware, and any appellate court from any thereof. Each Party agrees that a final judgment in any such action, litigation, or proceeding is conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law.

30.5 This Agreement and any Statements of Work may be executed in counterparts each of which shall be deemed an original and which together shall constitute one and the same Agreement. Signatures transmitted by facsimile or scanned into .PDF (or similar) format and transmitted via electronic mail, and electronic signatures (whether digital or encrypted) shall all constitute original signatures.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed as of the Effective Date by their respective officers thereunto duly authorized.

ASTRAZENECA AB

By */s/ Yvonne Bertlin*
Name: Yvonne Bertlin
Title: CFO

TEMPUS LABS, INC.

By */s/ Jim Rogers*
Name: Jim Rogers
Title: Chief Financial Officer

EXHIBIT A

FORM STATEMENT OF WORK

[*NOT USED.*]

EXHIBIT B

TERMS AND CONDITIONS FOR LICENSED DATA

1. License Grant to Licensed Data.

Subject to the terms and conditions of this Agreement (including paragraph 4 below), Tempus hereby grants to AstraZeneca a **[***]**. AstraZeneca shall ensure that any Publication by AstraZeneca of results obtained by AstraZeneca from the use of Licensed Data (or the Licensed Data itself, subject to all applicable non-disclosure obligations) shall be subject to appropriate attribution to Tempus with respect to the use and involvement of the Licensed Data obtained from Tempus (or its licensors) and any mutually agreed proprietary rights and disclaimer language with respect to the Licensed Data.

2. Definitions.

2.1 "**Authorized Users**" means **[***]**. Additionally, each Authorized User shall be authorized by AstraZeneca pursuant to its rigorous data access controls, and AstraZeneca shall bear responsibility for the actions or inactions any Authorized Users that would, if performed by AstraZeneca, constitute a breach of this Agreement. AstraZeneca shall use reasonable endeavors to ensure each Authorized User shall be trained on the use of the Licensed Data and shall be made aware of the obligations of this Agreement, including the restrictions set forth in paragraph 3. **[***]**.

2.2 "**AZ Library**" has the meaning given under paragraph 3.1.

2.3 "**Permitted Uses**" means, with respect to certain **[***]**.

3. AZ Library

3.1 Tempus will provide AstraZeneca and its Authorized Users with access to a specific library of Licensed Data (the "**AZ Library**") under the terms of this paragraph 3.

3.2 **[***]**:

(a) AstraZeneca will either (i) subscribe to up to **[***]** (each, **[***]**.

(b) The gross license fees for the baseline AZ Library is **[***]**.

(c) As part of its license to the AZ Library, AstraZeneca will download into its environments (including those operated by permitted sublicensees) up to **[***]**.

(d) If AstraZeneca wants to license more than **[***]**, it will pay **[***]** as long as it licenses the records for a **[***]** period. If AstraZeneca wants to license more than **[***]**, it will pay **[***]**, as long as it licenses the records for a **[***]** period. **[***]**.

(e) In Q4 2021, AstraZeneca will get an updated download for **[***]** and **[***]**.

(f) **[***]**.

(g) All Licensed Data will be curated by Tempus in accordance with the then current standards and using best practices of Tempus consistently applied for its data licensees. AstraZeneca may request **[***]**.

(h) In addition, **[***]**.

(i) **[***]**.

3.3 **[***]**:

(a) AstraZeneca will also get access to **[***]**.

(b) AstraZeneca will be allowed to select **[***]**.

(c) **[***]**.

(d) **[***]**, it will pay the per Record license fee defined in paragraph 3.2(d) above.

(e) **[***]** is subject to all terms that apply to Licensed Data, in addition to the specific limitations described in this paragraph 3.3.

4. Licensed Data Restrictions

4.1 AstraZeneca shall not and shall ensure that AstraZeneca Affiliates and Authorized Users do not, attempt to re-identify the Licensed Data as to patient and shall use best efforts, including by establishing a related internal governance procedure, to ensure that the Licensed Data is not intentionally or inadvertently re-identified. AstraZeneca shall not, and shall not permit any third party to, and shall ensure that no AstraZeneca Affiliate or Authorized User under its control shall contact any individuals whose information is included in the Licensed Data.

4.2 AstraZeneca shall not, and shall ensure that AstraZeneca Affiliates and Authorized Users shall not, remove or alter any correct notice of confidentiality, copyright, trademark, logo or other notice of ownership, origin, or confidentiality in any report, other document or copies of the Licensed Data provided to AstraZeneca by or on behalf of Tempus.

4.3 Each Party will not and shall ensure that their Affiliates and its and their Authorized Users do not, attempt to gain unauthorized access to any other systems or data of the other Party, to the other Party's accounts of third parties, or to the other Party's services for which each Party has not engaged the other.

4.4 AstraZeneca will not, and shall ensure that the AstraZeneca Affiliates do not, access or use the Tempus Materials or Licensed Data for any purposes not (a) permitted by this Agreement or (b) reasonably incidental or necessary in connection with the purposes permitted by this Agreement.

4.5 AstraZeneca will not and shall ensure that AstraZeneca Affiliates and its and their Authorized Users do not re-sell the Licensed Data, or sublicense the Licensed Data on a standalone basis for any remuneration.

4.6 AstraZeneca will not and shall ensure that AstraZeneca Affiliates and its and their Authorized Users do not transfer Licensed Data (or access to Licensed Data) to any third party not otherwise specifically authorized herein, without prior written permission from Tempus.

4.7 Tempus shall not include **[***]**.

4.8 AstraZeneca understands that Tempus (and any of its licensors of Licensed Data) does not endorse any Research, report or Publication and AstraZeneca will not attempt to indicate or imply any such endorsement.

4.9 Each Party shall alert the other via the governance process in Section 6 if it believes that AstraZeneca has breached any of the restrictions applicable to Licensed Data. The Parties shall discuss any such concerns raised by Tempus promptly with the objective of resolving such concerns, and if Tempus has reasonably demonstrated that a breach has occurred, then AstraZeneca will work diligently to cure such breach as soon as possible. The matter will be escalated to the JSC if necessary. If Tempus' concerns remain unresolved **[***]** after the date of escalation to the JSC, then Tempus may **[***]**:

o **[***]**

o **[***]** within **[***]** of the applicable due date and following at least two written notices from Tempus requesting payment.

5. Security Incident Reporting.

Each Party shall comply with its respective obligations with respect to reporting security incidents as set out in the Cybersecurity Requirements Exhibit as set out in **Exhibit D**.

6. Non-Exclusivity.

Subject to the terms of this Agreement and unless otherwise specified in the applicable Statement of Work, Tempus shall not be prevented from (a) making available services or licenses the same or substantially similar to the services and licenses provided hereunder, (b) making available, or other Tempus licenses from using, custom data sets that are the same or similar to the Licensed Data, so long as none of the foregoing include use of AstraZeneca's Confidential Information or Intellectual Property Rights.

7. No Other Representation or Warranties. Except as expressly provided in this Agreement (including each Statement of Work):

7.1 Tempus hereby disclaims any and all express, implied, statutory, and other warranties and representation or every kind, including without limitation the implied warranties of fitness for a particular purpose, quiet enjoyment, quality of information, and title with respect to the Licensed Data.

7.2 Tempus makes no representations or warranties about the suitability or accuracy of the Licensed Data. Tempus uses all data provided to Tempus by third parties that has been de-identified to create the Licensed Data "as is" and is not and shall not be held responsible for the

accuracy or completeness of such data and Tempus expressly disclaims any liability for clinical, operational, business or any other decisions made by AstraZeneca or its Affiliates or Authorized Users on the basis of the Licensed Data.

7.3 All technology rights and services are licensed by Tempus and are provided “as is,” “where-is” and “with all faults.”

EXHIBIT C

DATA PROTECTION OBLIGATIONS

[*NOT USED.*]

EXHIBIT D

CYBERSECURITY REQUIREMENTS EXHIBIT

1. **SECURITY MEASURES AND ACTIONS**

1.1 In performing its obligations and exercising its rights under this Agreement, the Supplier warrants, represents and covenants that it and each other Supplier Party will comply with the Agreed Standards and, where expressly agreed, be certified in relation to such Agreed Standards.

2. **NOTIFICATION OF AND REMEDIATION OF SECURITY INCIDENTS**

2.1 **Notification**

The Supplier will notify, in writing in accordance with paragraph 2.2, AstraZeneca and any affected Service Recipient about any Security Incident affecting or which may affect any Service Recipient's IT Infrastructure and Data or facilities owned, leased or of, used by or provided for use by any Supplier Party: (a) subject to paragraph 2.1.1 below, without undue delay and in any event within 48 hours after the Supplier becomes aware of or suspects that a Security Incident has occurred; or (b) immediately if the affected Service Recipient(s) or Supplier Party is subject to a requirement to notify an applicable Regulator, individual or third party under one or more Applicable Laws in a shorter timeframe that is tied to awareness of the Security Incident by Supplier.

2.1.1 The notification will include the following information:

2.1.1.1 the categories and nature of Data affected;

2.1.1.2 an indication of the root cause of the incident;

2.1.1.3 the duration of the Security Incident;

2.1.1.4 the sites, IT Infrastructure and Data (including Customer Information) affected and territories involved;

2.1.1.5 information concerning the nature and impact of the Security Incident;

2.1.1.6 the measures which have been taken or which are proposed to be taken to address the Security Incident and to mitigate its possible adverse effects; and

2.1.1.7 details of any reporting obligations to Regulators, which shall not name or disclose AstraZeneca without AstraZeneca's written consent.

2.2 Where the Supplier is required to notify AstraZeneca and any other Service Recipient under this paragraph 2, such notification will be, in the first instance, sent by e-mail to the following e-mail address: **[***]** and immediately followed up by telephone to **[***]** (or such other e-mail address or telephone number notified by AstraZeneca to the Supplier in writing from time to time).

2.3 The Supplier will promptly:

2.3.1 assist AstraZeneca and any other affected Service Recipient in documenting any Security Incidents;

2.3.1.1 take measures to promptly address Security Incidents, including, where appropriate, taking measures to mitigate and minimise their possible adverse effects and future risks which may (in consultation with AstraZeneca prior to doing so and at AstraZeneca's option) include taking down any environments, systems, components (or part thereof) that have been impacted by the relevant Security Incident and which contain AstraZeneca's Information; or used to deliver Services to AstraZeneca; and

2.3.1.2 where expressly required by AstraZeneca, assist AstraZeneca and any other affected Service Recipient in reporting and responding to investigations or other communications from Regulators and their representatives.

2.4 **Remediation plan**

2.4.1 If at any time: (a) a Security Incident has occurred; (b) there is a reasonably likely risk to security of the IT Infrastructure and Data in the future that may negatively impact this Agreement, the Services or any Service Recipient; or (c) an audit undertaken by or on behalf of AstraZeneca, the Supplier or a third party identifies a Security Issue, the Supplier will promptly propose a rectification plan to remedy the Security Issue. All rectification plans will (unless otherwise agreed in writing by AstraZeneca) require the Supplier (and any relevant Supplier Party) to, at the Supplier's cost, deploy such resources and take such actions that are reasonably necessary to rectify the relevant Security Issue or any vulnerabilities or underlying issues arising or ensure that the Security Measures are being met. The Supplier will give AstraZeneca reasonable opportunity to comment on the proposed rectification plan and will amend any proposed rectification plan to reflect all of AstraZeneca's reasonable comments and additional steps that AstraZeneca may reasonably require and then, at the Supplier's cost, implement the amended rectification plan as soon as possible.

3. **ADDITIONAL PROVISIONS RELATING TO CONFIDENTIALITY AND ANNOUNCEMENTS IN RESPECT OF SECURITY INCIDENTS**

The Supplier will not and will procure that all Supplier Parties will not, without AstraZeneca's prior written consent, make or permit any announcement or public communication in respect of a Security Incident or issue any information to any third party (or otherwise permit the publication of information) about any Security Incident which relates to this Agreement or to a Service Recipient unless: (a) instructed to do so by AstraZeneca (in a form approved by AstraZeneca); or (b) compelled to do so by Applicable Law or a Regulator (and in such case the Supplier will notify AstraZeneca in writing of its obligation to do so unless prevented by Applicable Law in which case it will notify AstraZeneca as soon as it is able to).

4. **ADDITIONAL PROVISION RELATING TO LIABILITY**

4.1 Notwithstanding any other provision in this Agreement, the Supplier's liability under or in connection with this CSRE shall be unlimited.

5. **AUDIT RIGHTS AND INFORMATION SHARING**

5.1 AstraZeneca may audit Supplier and the other Supplier Parties to verify compliance with this CSRE. Such audit will typically comprise a security assessment form that the Supplier will

need to populate and share relevant details so as to demonstrate its compliance with the technical and security measures agreed under this CSRE. However, in the event of a suspected breach or in case of a mandate from a Regulator or to verify the cyber security controls in place, AstraZeneca shall have the right to carry out a physical audit of Supplier's premises to access the IT Infrastructure, subject to Supplier's reasonable policies and procedures (e.g., regarding security and confidentiality). Supplier shall reasonably cooperate with AstraZeneca in relation to such audit, including allowing reasonable access to the Supplier Parties' IT Infrastructure and providing such information as AstraZeneca reasonably requires.

5.2 AstraZeneca shall not conduct such audits more than once per year unless there has been a suspected breach or if there is a regulatory requirement. AstraZeneca shall bear the cost of the audit limited to the professional fees, except where the audit reveals any material breach or discrepancy in which case Supplier shall bear such costs.

ANNEX 1

DEFINITIONS AND INTERPRETATION

1. DEFINITIONS

For the purpose of this CSRE the following definitions apply:

Part I "**Agreed Standards**" means one or more of the following, as mutually agreed by the Parties: (a) ISO/IEC 27001:2013 (Information security management systems: Requirements); (b) ISO/IEC 27017; (c) Service Organization Control 2 ("**SOC 2**"); (d) Control Objectives for Information and Related Technologies (COBIT) by ISACA; (e) any other applicable ISO standards relevant to the Services; (f) adherence to a recognised industry cybersecurity framework e.g. NIST CSF (g) any standards that the Parties agree in writing from time to time that the Supplier shall comply with; and (h) where personal health or health information is to be processed as part of the Services, The **Security** Standards for the Protection of Electronic Protected Health Information (the Security Rule);

"**Customer Information**" means all Data (including drug information, processes, procedures or know-how) of AstraZeneca or of AstraZeneca's Affiliates (including AstraZeneca's and its' Affiliates' suppliers, customers or other relationships) and whether given or conveyed to the Supplier or its Affiliates by or on behalf of AstraZeneca or its Affiliates or which the Supplier or its Affiliates are able to access, transmit or otherwise process as a result of performing the Services or accessing the Service Recipients' IT Infrastructure and Data or which is otherwise received by the Supplier in the performance of this Agreement or the Services and, for the avoidance of doubt, which includes AstraZeneca's and its Affiliates' Confidential Information;

"**Data**" means data including personal data or personally identifiable data, personal health or health information and other data, including information, records, studies, diagrams, charts, plans, methodologies, processes, documents, databases, papers, materials or specifications (and irrespective of whether such data is business critical data, comprises confidential information or trade secrets or otherwise);

"**IT Infrastructure**" means information technology system(s) comprising any or all of the following, each to the extent storing or processing Data: programs, business processing system, electronic operations system, communications networks, hosted applications and connectivity to the internet/the computer, telecommunication facilities (including networks, network devices, cables and routers), hardware, mobile devices, peripherals, software, hardware, equipment and databases and whether on premise, cloud or otherwise;

"**Loss of Data**" means the accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access to Data;

"**Regulator**" means all governmental, statutory or regulatory bodies and any other competent authorities or entities in any jurisdiction having responsibility for the

regulation or governance of the Customer, any other Service Recipient, the Supplier, any other Supplier Party, this Agreement, the Services or the activities which are comprised in all or some of the Services or the use or application of the output from any part of the Services;

"**Security Incident**" means: (a) any information security incident or any event or incident having an actual adverse effect on any element of the security of the IT Infrastructure of any Service Recipient or any Supplier Party; (b) any reasonably suspected event or incident or "near miss" incident; (c) any event or incident involving any breach of security leading to a Loss of Data; or (d) any event or incident which involves the compromise of confidentiality, integrity or availability of information of Data, including:

(i) a data security incident; (ii) a cyber attack; (iii) a disaster; (iv) a discovery or reasonable suspicion that there is a vulnerability in any technological measure used to protect any Customer Information or other Data that has previously been subject to any such event, which may result in exploitation or exposure of that Customer Information or other Data; (v) any material defect or vulnerability with the reasonably likely potential to impact the ongoing resilience, security or integrity of the IT Systems; (vi) any other unauthorised use of or access to any part of an IT Infrastructure or Data (including Customer Information); or (vii) any damage, destruction, corruption or alteration of any Customer Information or other Data;

"**Security Issue**" means any: (a) material security vulnerabilities or inadequacies in security; or (b) that the security measures are not being met; (c) discovery or reasonable suspicion that there is a material vulnerability in any technological measure used to protect any Data, which is reasonably likely to result in exploitation or exposure of that Data; or (d) any material defect or vulnerability with the potential to impact the ongoing resilience, security or integrity of systems processing (including Processing) Data;

"**Service Recipient**" means AstraZeneca or AstraZeneca's Affiliates, as the context permits;

"**Services**" will be given the meaning set out in the Agreement above or below or, where none is set out, will mean the services performed or to be performed under this Agreement; and

"**Supplier Party**" means the Supplier together with: (a) any of the Supplier's Affiliates; (b) any authorised sub-contractors; or (c) any authorised Sub-Processors, that are engaged in the provision of or delivery of the Services or otherwise in the performance of this Agreement, as permitted by this Agreement and "**Supplier Party**" means any of them and such terms shall include the employees and other personnel of such entities.

2. ORDER OF PRECEDENCE

In the event of a conflict between this CSRE and the Agreement, the provisions which provide AstraZeneca and its Affiliates with the higher level of protection and contractual coverage shall prevail.

EXHIBIT E

FINANCIAL TERMS

1. **Fees.**

(a) **[***]**.

[***].

(b) **[***]**.

(c) **[***]**.

(d) *Financial Commitment*. In consideration of the Licensed Data, Services, and other activities to be carried out by Tempus under this Agreement, and subject to the terms of this Exhibit, AstraZeneca has committed to the following total financial commitment (the "Financial Commitment"), all calculated based on actual fees Paid or Payable to Tempus (not pre-discount fees):

	2021(Q4)	2022	2023	2024	2025	2026	Total Financial Commitment
Financial Commitment ($M)*	[***]	[***]	[***]	[***]	[***]	[***]	$300*

* The last $100,000,000 of the Financial Commitment only applies if AstraZeneca exercises the MC Extension Option described below.

For purposes of the Financial Commitment, "Paid or Payable" means that either the amount has been paid to Tempus or the amount is payable but not yet paid with respect to a Deliverable or Service that Tempus has agreed to deliver within the applicable calendar year pursuant to a Statement of Work.

[***].

[***].

[***].

[***]:

o **[***];**

o **[***];**

o **[***];**

o **[***];**

o **[***];**

o **[***].**

It is agreed and acknowledged that the Financial Commitment is for a total amount of $200,000,000, unless and until AstraZeneca exercises its option to extend the Financial Commitment for an additional $100,000,000 (the "MC Extension Option"). The exercise period for the MC Extension Option will be from the Effective Date to the earlier of (i) December 31, 2024 or (ii) the date that AstraZeneca exercises the Warrant. AstraZeneca will exercise the MC Extension Option either via a written notice to Tempus or by exercising the Warrant. If AstraZeneca has not already exercised the MC Extension Option or the Warrant, Tempus will notify AstraZeneca in writing between 90 and 30 days prior to December 31, 2024 that the deadline to exercise the MC Extension Option is approaching.

(e) **[***]**.

(f) *Invoices*. All invoices will be due and payable in accordance with the terms of the Agreement.

EXHIBIT F

QUALIFYING AGREEMENTS AND EXISTING STATEMENTS OF WORK

1. The Qualifying Agreements.

1.1 This Agreement.

1.2 The Existing MSA.

1.3 The Clinical Professional Services Agreement between AstraZeneca Pharmaceuticals LP and Tempus Labs, Inc., dated March 17, 2021, including all Existing Statements of Work under this agreement.

2. Existing Statements of Work Moved to this Agreement and Continuing.

2.1 The Existing Statements of Work specified below, including any amendments thereto, along with their respective estimated spend, either Paid or Payable, from AstraZeneca to Tempus as of the Effective Date, will become Statements of Work under this Agreement from the Effective Date.

Existing Statement of Work	Estimated Spend
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

[***].

[***].

2.2 No fewer than once every quarter, the Parties shall review any estimated spend associated with each respective Existing Statement of Work and to the extent any changes have occurred, reconcile such changes the Financial Commitment as of the relevant time of review, including, to the extent required, amending this Agreement.

3. Existing Statements of Work that are terminated and replaced by this Agreement.

Existing Statement of Work	Estimated Spend
[***]	[***]
[***]	[***]

EXHIBIT G

DATA FIELDS TYPICALLY CURATED

Tempus obtains the following data fields, when and to the extent available from the associated clinical records provided to Tempus. Fill rate of clinical data will be based on its availability in the clinical records that Tempus receives when sequencing these patients, which are typically the patient's most recent progress note as well as applicable pathology reports.

[***]	[***]
[***]	[***]
	[***]
	[***]
	[***]
[***]	[***]
	[***]
	[***]
	[***]
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[***]	[***]
	[***]
	[***]
	[***]
	[***]
	[***]

THIS WARRANT AND THE UNDERLYING SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"). THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT AS TO SUCH SECURITIES UNDER THE ACT OR AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED OR UNLESS SOLD PURSUANT TO RULE 144 UNDER THE ACT.

TEMPUS LABS, INC.

WARRANT TO PURCHASE CLASS A COMMON STOCK

November 17, 2021

THIS CERTIFIES THAT, for value received, **ASTRAZENECA AB**, a company incorporated in Sweden under No. 556011-7482, whose registered office is at SE-151 86 Södertälje and with offices at SE-432 83 Mölndal, Sweden, or such Person's assigns (the "**Holder**"), is entitled to subscribe for and purchase from **TEMPUS LABS, INC.**, a Delaware corporation (the "**Company**"), the Exercise Shares at the Exercise Price (each subject to adjustment as provided herein).

1. DEFINITIONS. As used herein, the following terms shall have the following respective meanings:

(a) "***Affiliate***" shall mean, with respect to a Person, any Person that directly, or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such first Person. "**Control**" and, with correlative meanings, the terms "**controlled by**" and "**under common control with**" mean: (i) the power to direct the management or policies of a Person, whether through ownership of voting securities or by contract relating to voting rights or corporate governance, resolution, regulation or otherwise; or (ii) to own more than 50% of the outstanding voting securities or other ownership interest of such Person.

(b) "***Aggregate Exercise Price***" shall mean the aggregate Exercise Price payable in connection with the exercise in full of this Warrant.

(c) "***Business Day***" means a day other than Saturday, Sunday or any other day on which commercial banks located in New York City are authorized or obligated by applicable laws to close.

(d) "***Change of Control***" shall mean (i) any consolidation or merger of the Company with or into any other corporation or other Person, or any other corporate reorganization, other than any such consolidation, merger or reorganization in which the stockholders of the Company immediately prior to such consolidation, merger or reorganization, continue to hold at least a majority of the voting power of the surviving entity in substantially the same proportions (or, if the surviving entity is a wholly owned subsidiary, its parent) immediately after such consolidation, merger or reorganization; (ii) any transaction or series of related transactions to which the Company is a party in which the stockholders of the Company transfer shares in excess of fifty percent (50%) of the Company's then-outstanding combined voting power; provided, that a Change of Control shall not include any transaction or series of transactions principally for bona fide equity financing purposes in which cash is received by the Company or any successor or indebtedness of the Company is cancelled or converted or a combination thereof; or (iii) a sale, lease, exclusive license or other disposition of all or substantially all of the assets of the Company.

(e) "***Collaboration Agreement***" shall mean that certain Master Services Agreement dated as of November 17, 2021 by and between the Holder and the Company.

(f) "***Collaboration Expiration Date***" shall mean December 31, 2026.

(g) "***Commission***" shall mean the Securities and Exchange Commission.

(h) "***Common Stock***" shall mean the Company's Class A Common Stock, par value $0.0001 per share.

(i) "***De-SPAC Transaction***" shall mean the completion by the Company of a business combination, merger, consolidation or share exchange with a special purpose acquisition company or its subsidiary in which the Common Stock (or substantively similar securities) of the surviving or parent entity is listed on the New York Stock Exchange or the Nasdaq Stock Market.

(j) "***De-SPAC Price***" shall mean the price per share at which the Company's Common Stock is valued in connection with the consummation of a De-SPAC Transaction.

(k) "***Equity Securities***" means the Company's preferred stock or any securities conferring the right to purchase the Company's preferred stock or securities convertible into, or exchangeable for (with or without additional consideration), the Company's preferred stock, except any security granted, issued and/or sold by the Company to any director, officer, employee or consultant of the Company in such capacity for the primary purpose of soliciting or retaining their services.

(l) "***Equity Financing Price***" means, with respect to the Last Equity Financing, the lowest price per share of the Equity Securities sold to the investors acquiring Equity Securities in such Last Equity Financing, excluding any discounts applicable to any debt securities converted in connection with such Last Equity Financing.

(m) "***Exercise Period***" shall mean the period (i) commencing on the earlier of (A) the trading day following the date that is one hundred eighty (180) days following the date that the Company consummates an IPO or a De-SPAC Transaction, (B) immediately prior to the closing of a Change of Control prior to the consummation of an IPO and a De-SPAC Transaction, and (C) December 31, 2022, and (ii) ending on the Collaboration Expiration Date, unless sooner terminated as provided below.

(n) "***Exercise Price***" shall mean (i) in the event the Company consummates an IPO on or prior to December 31, 2022, the IPO Price per Exercise Share, (ii) in the event the Company consummates a De-SPAC Transaction on or prior to December 31, 2022, the De-SPAC Price, and (iii) in the event the Company consummates a Change of Control on or prior to December 31, 2022 or if the Company does not consummate an IPO or a De-SPAC Transaction on or prior to December 31, 2022, the Equity Financing Price per Exercise Share, in each case subject to adjustment as set forth herein.

(o) "***Exercise Shares***" shall mean a number of shares of Common Stock issuable upon exercise of this Warrant equal to the product of (i) $100,000,000 divided by (ii) the Exercise Price; provided, that if the foregoing calculation would result in the issuance of a fractional share, the number of Exercise Shares shall be rounded up to the nearest whole number of shares.

(p) "***HSR Act***" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended from time to time, and the rules and regulations promulgated thereunder, or any successor statute, rules and regulations thereto.

(q) "***IPO***" shall mean an initial public offering of securities of the Company registered under the Act.

(r) "***IPO Price***" shall mean the offering price per share of the shares of Common Stock sold to the public in the IPO.

(s) "***Last Equity Financing***" means the most recent sale or issuance (in one transaction or a series of related transactions) by the Company of its Equity Securities as of the date of delivery by Holder of an Exercise Notice to the Company.

(t) "***Person***" shall mean an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision, department or agency of a government.

2. EXERCISE OF WARRANT.

2.1 Exercise. The rights represented by this Warrant may be exercised in whole or in part at any time (i) during the Exercise Period, or (ii) pursuant to Section 8.2 or 8.3 hereof, by delivery of the following to the Company at its address set forth on the signature page hereto (or at such other address as it may designate by notice in writing to the Holder):

(a) an executed Notice of Exercise in the form attached hereto as **EXHIBIT A**;

(b) subject to Section 2.2, payment of the Exercise Price in cash or by check or wire transfer; and

(c) this Warrant.

2.2 Net Issue Exercise.

(a) Notwithstanding Section 2.1(b) above, this Warrant may be exercised by the Holder, in whole or in part, without the payment by the Holder of any cash by the surrender of this Warrant to the Company, together with a duly executed Notice of Exercise in the form attached hereto as Exhibit A, and instructing the Company to withhold and cancel a number of Exercise Shares requested to be exercised having an aggregate Fair Market Value equal to the total Exercise Price, as determined below (a "**Net Issue Exercise**"). The Company agrees that the number of Exercise Shares set forth in the formula below shall be deemed to be issued to the Holder as the record holder of such Warrant Shares as of the close of business on the date on which this Warrant shall have been surrendered as aforesaid. Upon such exercise, the Company shall issue to Holder a number of Exercise Shares computed as of the date of surrender of this Warrant to the Company using the following formula:

$$X = \frac{Y(A-B)}{A}$$

Where X = the number of Exercise Shares to be issued to Holder under this Section 2.2;

Y = the number of Exercise Shares to be the subject of the Net Issue Exercise;

A = the Fair Market Value (as defined below) of one Exercise Share at the date of such calculation; and

B = the Exercise Price.

(b) For purposes of Section 2.2(a), "***Fair Market Value***" of one Exercise Share as of any date shall be calculated as follows: (i) if the Warrant is exercised other than in connection with a Change of Control and the Common Stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market, the Fair Market Value of an Exercise Share shall be the closing price of a share of Common Stock reported for the trading day immediately preceding the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company, (ii) if the Warrant is exercised in connection with a Change of Control, the Fair Market Value of an Exercise Share shall be the purchase price per share of Common Stock to be paid by the purchaser in such Change of Control, and (iii) in all other cases, the Fair Market Value of an Exercise Share shall be the fair market value per Exercise Share on the date such notice was received by the Company as reasonably determined in good faith by the Board of Directors of the Company.

2.3 Mechanics of Exercise. Upon the exercise of the rights represented by this Warrant, a certificate or certificates for the Exercise Shares so purchased, registered in the name of the Holder or Persons affiliated with the Holder, if the Holder so designates, shall be issued and delivered to the Holder within a reasonable time (but no later than fifteen (15) days) after the rights represented by this Warrant shall have been so exercised. In the event that this Warrant is being exercised for less than all of the then-current number of Exercise Shares purchasable hereunder, the Company shall, concurrently with the issuance by the Company of the number of Exercise Shares for which this Warrant is then being exercised, issue a new Warrant exercisable for the remaining number of Exercise Shares purchasable hereunder. The Person in whose name any certificate or certificates for Exercise Shares are to be issued upon exercise of this Warrant shall be deemed to have become the holder of record of such shares on the date on which this Warrant was surrendered and payment of the Exercise Price was made, irrespective of the date of delivery of such certificate or certificates, except that, if the date of such surrender and payment is a date when the stock transfer books of the Company are closed, such Person shall be deemed to have become the holder of such shares at the close of business on the next succeeding date on which the stock transfer books are open.

3. COVENANTS OF THE COMPANY.

3.1 Covenants as to Exercise Shares. The Company covenants and agrees that all Exercise Shares that may be issued upon the exercise of the rights represented by this Warrant will, upon issuance, be validly issued and outstanding, fully paid and nonassessable, and free from all taxes, liens and charges with respect to the issuance thereof. The Company further covenants and agrees that the Company will at all times during the Exercise Period have authorized and reserved a sufficient number of shares of the series of equity securities comprising the Exercise Shares to provide for the exercise of the rights represented by this Warrant. The issuance of the Exercise Shares will not be subject to any preemptive rights that have not been properly complied with.

3.2 Notices of Record Date. In the event of any taking by the Company of a record of the holders of any class and/or series of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, the Company shall mail to the Holder, at least ten days prior to the date specified herein, a notice specifying the date on which any such record is to be taken for the purpose of such dividend or distribution.

3.3 Registration Rights. Upon the earlier of (i) the date that the Company consummates an IPO or a De-SPAC Transaction, and (ii) December 31, 2022, the Company covenants and agrees to grant to the Holder substantially the same registration rights with respect to the Exercise Shares as those granted to holders of Registrable Securities (as defined in the Ninth Amended and Restated Investors' Rights Agreement, dated November 19, 2020, by and among the Company and the stockholders of the Company party thereto (as the same may be amended and/or restated from time to time, the "**Rights Agreement**")) in accordance with, and subject to the limitations set forth in, Section 2 of the Rights Agreement, and the Company shall include the Holder in all notices sent by the Company pursuant to Section 2 of the Rights Agreement. For purposes of determining the Holder's participation rights in connection with the registration of any Registrable Securities in accordance with the Rights Agreement (i) the Holder shall be deemed to be an "**Investor**" and a "**Holder**" under the Rights Agreement for all purposes under Section 2 of the Rights Agreement and (ii) all of the Exercise Shares shall constitute Registrable Securities under the Rights Agreement and shall be deemed to be held by the Holder for purposes of determining the Holder's participation rights, whether or not the Holder has exercised its purchase rights under this Warrant with respect to any of the Exercise Shares.

3.4 Diligence Cooperation. At any time, and from time to time, prior to the Company consummating an IPO or a De-SPAC Transaction, if the Holder has determined in good faith that it is contemplating exercising the Warrant in whole or in part, upon written request from the Holder to the Company, the Company shall provide such documents, records and other diligence materials reasonably requested by the Holder to allow the Holder to conduct limited due diligence on the Company reasonably necessary to determine the value of the Exercise Shares, to confirm that the Company is in good standing and to ascertain its corporate structure and capitalization; provided, that following such written request, the Holder shall enter into a customary confidentiality agreement with the Company prior to the Company providing such diligence materials to the Holder.

3.5 Antitrust Approval. If any clearance is required under the HSR Act or such other applicable laws for the exercise of this Warrant and the purchase of the Exercise Shares (any such clearance, an "***Antitrust Approval***"), the Company and the Holder shall cooperate in good faith to as promptly as practicable (i) file with the U.S. Federal Trade Commission and the United States Department of Justice the premerger notification and report form, if any, required as a result of the purchase of the Exercise Shares, and shall include any supplemental information requested in connection therewith, pursuant to the HSR Act and (ii) make such other filings as are necessary or advisable in other jurisdictions in order to comply with all applicable laws relating to competition, merger control or antitrust and shall promptly provide any supplemental information requested by applicable governmental authorities relating thereto. The Company and the Holder shall work together and shall furnish to one another such necessary information and reasonable assistance as such other parties may request in connection with its preparation of any filing or submission which is necessary under the HSR Act or such other applicable laws.

4. REPRESENTATIONS OF HOLDER.

4.1 Acquisition of Warrant for Personal Account. The Holder represents and warrants that it is acquiring this Warrant and the Exercise Shares solely for its account for investment and not with a view to or for sale or distribution of said Warrant or Exercise Shares or any part thereof. The Holder also represents that the entire legal and beneficial interests of this Warrant and Exercise Shares the Holder is acquiring is being acquired for, and will be held for, its account only.

4.2 Securities Are Not Registered.

(a) The Holder understands that this Warrant and the Exercise Shares have not been registered under the Securities Act of 1933, as amended (the "Act") on the basis that no distribution or public offering of the stock of the Company is to be effected. The Holder realizes that the basis for the exemption may not be present if, notwithstanding its representations, the Holder has a present intention of acquiring the securities for a fixed or determinable period in the future, selling (in connection with a distribution or otherwise), granting any participation in, or otherwise distributing the securities. The Holder has no such present intention.

(b) The Holder recognizes that this Warrant and the Exercise Shares must be held indefinitely unless they are subsequently registered under the Act or an exemption from such registration is available. Other than as set forth in Section 3.3, the Holder recognizes that the Company has no obligation to register this Warrant or the Exercise Shares of the Company, or to comply with any exemption from such registration.

(c) The Holder is aware that neither this Warrant nor the Exercise Shares may be sold pursuant to Rule 144 adopted under the Act unless certain conditions are met, including, among other things, the existence of a public market for the shares, the availability of certain current public information about the Company, the resale following the required holding period under Rule 144 and the number of shares being sold during any three month period not exceeding specified limitations. Holder is aware that the conditions for resale set forth in Rule 144 have not been satisfied and that the Company presently has no plans to satisfy these conditions in the foreseeable future.

4.3 Disposition of Warrant and Exercise Shares.

(a) The Holder further agrees not to make any disposition of all or any part of this Warrant or Exercise Shares in any event, other than to an Affiliate of the Holder, unless and until:

(i) The Company shall have received a letter secured by the Holder from the Commission stating that no action will be recommended to the Commission with respect to the proposed disposition;

(ii) There is then in effect a registration statement under the Act covering such proposed disposition and such disposition is made in accordance with said registration statement; or

(iii) The Holder shall have notified the Company of the proposed disposition and shall have furnished the Company with a detailed statement of the circumstances surrounding the proposed disposition, and if reasonably requested by the Company, the Holder shall have furnished the Company with an opinion of counsel, reasonably satisfactory to the Company, for the Holder to the effect that such disposition will not require registration of such Warrant or Exercise Shares under the Act or any applicable state securities laws. The Company agrees that it will not require an opinion of counsel with respect to transactions under Rule 144 of the Act, except in unusual circumstances, and will not require an opinion of counsel with respect to any transfer to an Affiliate of Holder.

(b) The Holder understands and agrees that all certificates evidencing the shares to be issued to the Holder may bear the following legend:

THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "***ACT***"). THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT AS TO THE SECURITIES UNDER THE ACT OR AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED OR UNLESS SOLD PURSUANT TO RULE 144 UNDER THE ACT.

4.4 Accredited Investor Status. The Holder is an "accredited investor" as defined in Regulation D promulgated under the Act.

5. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF EXERCISE SHARES.

5.1 Changes in Securities. In the event of changes in the series of equity securities of the Company comprising the Exercise Shares by reason of stock dividends, splits, recapitalizations, reclassifications, combinations or exchanges of such shares of equity securities, the number and class and/or series of Exercise Shares available under this Warrant in the aggregate and the Exercise Price shall be correspondingly adjusted to give the Holder of this Warrant, on exercise for the same Aggregate Exercise Price, the total number and class and/or series of shares as the Holder would have owned had this Warrant been exercised prior to the event and had the Holder continued to hold such shares until after the event requiring adjustment. The form of this Warrant need not be changed because of any adjustment in the number of Exercise Shares subject to this Warrant.

5.2 Organic Changes. In the event of, at any time during the Exercise Period, any capital reorganization of the capital stock of the Company (other than (a) a change in par value or from par value to no par value or no par value to par value or as a result of a stock dividend or subdivision, split-up or combination of shares, or (b) a Change in Control) (an "***Organic Change***"), then, as a condition of such Organic Change, lawful and adequate provisions shall be made by the Company whereby the Holder hereof shall thereafter have the right to purchase and receive (in lieu of the Exercise Shares of the Company immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby) such shares of stock, securities or other assets or property as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Exercise Shares equal to the number of shares of such stock immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby, and the Exercise Price shall be appropriately adjusted so that the Aggregate Exercise Price after such Organic Change shall be equal to the Aggregate Exercise Price immediately prior to such Organic Change.

6. FRACTIONAL SHARES. No fractional shares shall be issued upon the exercise of this Warrant as a consequence of any adjustment pursuant hereto. All Exercise Shares (including fractions) to be issued upon exercise of this Warrant shall be aggregated for purposes of determining whether the exercise would result in the issuance of any fractional share. If, after aggregation, the exercise would result in the issuance of a fractional share, the Company shall, in lieu of issuance of any fractional share, pay the Holder otherwise entitled to such fraction a sum in cash equal to the product resulting from multiplying the then current fair market value of one Exercise Share by such fraction.

7. [RESERVED].

8. EXERCISE UPON IPO; VOLUNTARY EXERCISE AT EXPIRATION; TERMINATION AND CANCELLATION; COLLABORATION AGREEMENT.

8.1 [Reserved].

8.2 Voluntary Exercise Upon IPO or De-SPAC Transaction.

(a) In the event (i) the Company consummates an IPO or De-SPAC Transaction prior to December 31, 2024 and prior to the consummation of a Change of Control, and (ii) the average of the closing price of shares of Common Stock during any period of 30 consecutive trading days commencing on any date following the first anniversary of the date on which the Company consummates the IPO or De-SPAC Transaction equals or exceeds two (2) times the IPO Price or De-SPAC Price (the "***Relevant Period***"), then, the Company shall deliver written notice to the Holder of such event.

(b) Notwithstanding anything in this Warrant to the contrary, effective as of the last trading day of the Relevant Period, provided that if the closing price of shares of Common Stock on such day is less than two (2) times the IPO Price or De-SPAC Price, then this provision shall not be effective until the first trading day thereafter on which the closing price of shares of Common Stock equals or exceeds two (2) times the IPO Price or De-SPAC Price (such trading day, the "***Relevant Trading Day***"), the Holder may, at its sole option, elect to either:

(i) Net Issue Exercise this Warrant, in whole or in part, pursuant to Section 2.2 above, and solely in such event, the number of Exercise Shares issued to the Holder as a result of such Net Issue Exercise shall thereafter be immediately repurchased by the Company from the Holder at a purchase price per share, payable in cash, equal to the closing price of shares of Common Stock on the Relevant Trading Day, and any portion of this Warrant that is not exercised shall remain outstanding subject to the terms hereof; or

(ii) continue to hold this Warrant and exercise it in Holder's sole discretion in accordance with Section 2.1 or 2.2 above;

provided, however, that in either case, effective as of the Relevant Trading Day, the Holder shall be obligated to exercise the MC Extension Option (as defined in and pursuant to the Collaboration Agreement) pursuant to the terms of the Collaboration Agreement.

8.3 Voluntary Exercise at Expiration. Notwithstanding anything in this Warrant to the contrary, if as of the conclusion of the Exercise Period, the Holder has exercised the MC Extension Option and this Warrant remains outstanding, then the Company shall send a written notice to the Holder of the conclusion of the Exercise Period, and the Holder shall have fifteen (15) Business Days following receipt of such written notice to exercise the Warrant.

8.4 Voluntary Early Termination or Cancellation. Notwithstanding anything in this Warrant to the contrary, at any time prior to the consummation of an IPO or De-SPAC Transaction, the Holder may, in its sole discretion, terminate and cancel this Warrant and all of the Holder's and the Company's obligations hereunder in their entirety (but not partially) (such event, a "***Voluntary Early Termination***"), and such Voluntary Early Termination shall not otherwise affect the Holder's right to decide in its sole discretion whether to exercise the MC Extension Option pursuant to the Collaboration Agreement.

8.5 Automatic Early Termination or Cancellation. Notwithstanding anything in this Warrant to the contrary, if the Holder has not exercised the MC Extension Option on or before December 31, 2024 in accordance with the Collaboration Agreement such that the Holder is not obligated

to commit the final $100,000,000 in funding pursuant to the terms of the Collaboration Agreement, then this Warrant shall automatically be cancelled and terminated for no consideration.

8.6 Collaboration Agreement. Notwithstanding anything in this Warrant to the contrary, the Holder hereby agrees that in the event that the Holder has exercised this Warrant in whole or in part at any time pursuant to the terms set forth herein, the Holder shall be deemed to have exercised the MC Extension Option pursuant to the terms of the Collaboration Agreement.

9. MARKET STAND-OFF AGREEMENT. Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock or any other equity securities under the Act on a registration statement on Form S-1 in connection with the IPO, and ending on the date specified by the Company (as determined by the holders of capital stock of the Company representing a majority of the voting power of all then-outstanding shares of capital stock of the Company) and the managing underwriter (which period may exceed 180 days), (a) lend, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right, or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering, or (b) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (a) or (b) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 9 shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement and shall be applicable to the Holder only if all executive officers and directors of the Company are subject to the same restrictions. The underwriters in connection with such registration are intended third-party beneficiaries of this Section 9 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 9 or that are necessary to give further effect thereto.

10. NO STOCKHOLDER RIGHTS. This Warrant in and of itself shall not entitle the Holder to vote or receive dividends or other distributions with respect to, or be deemed the holder of, the Exercise Shares or any other securities of the Company that may at any time be issuable upon the exercise hereof for any purpose, nor shall anything contained herein be construed to confer upon the Holder, as such, any of the rights of a stockholder of the Company or any right to vote for the election of directors or upon any other matter submitted to the stockholders of the Company at any meeting thereof, or to give or withhold consent to any corporate action (whether upon any recapitalization, issuance or reclassification of equity securities, consolidation, merger, conveyance or otherwise) or to receive notice of meetings, or to receive purchase or subscription rights or otherwise, until the Warrant shall have been exercised as provided herein. For clarity, this Section 10 shall be construed as limiting the rights of the Holder only with respect to the Warrant, the Exercise Shares and other securities of the Company that may at any time be issuable upon the exercise hereof for any purpose, and shall not be construed as limiting the rights of the Holder with respect to any other securities of the Company.

11. TRANSFER OF WARRANT. This Warrant is not transferable, in whole or in part, by the Holder (other than to an Affiliate of the Holder) without the prior written consent of the Company, and any attempted assignment without such consent shall be void. A change in control of the Holder, for example by merger, sale of stock or sale of assets, shall not be deemed to be an assignment under this Warrant. Subject to the foregoing restrictions, applicable laws and the restriction on transfer set forth on the first page of this Warrant, in connection with any transfer of this Warrant, the Holder shall deliver this

Warrant and the form of assignment attached hereto as **EXHIBIT B** to the Company, and the transferee shall sign an investment representation letter in form and substance satisfactory to the Company.

12. LOST, STOLEN, MUTILATED OR DESTROYED WARRANT. If this Warrant is lost, stolen, mutilated or destroyed, the Company may, on such terms as to indemnity or otherwise as it may reasonably impose (which shall, in the case of a mutilated Warrant, include the surrender thereof), issue a new Warrant of like denomination and tenor as this Warrant so lost, stolen, mutilated or destroyed. Any such new Warrant shall constitute an original contractual obligation of the Company, whether or not the allegedly lost, stolen, mutilated or destroyed Warrant shall be at any time enforceable by anyone.

13. CUMULATIVE REMEDIES. The rights and remedies provided in this Warrant are cumulative and are not exclusive of, and are in addition to and not in substitution for, any other rights or remedies available at law, in equity or otherwise.

14. EQUITABLE RELIEF. Each of the Company and the Holder acknowledges that a breach or threatened breach by such party of any of its obligations under this Warrant would give rise to irreparable harm to the other party hereto for which monetary damages would not be an adequate remedy and hereby agrees that in the event of a breach or a threatened breach by such party of any such obligations, the other party hereto shall, in addition to any and all other rights and remedies that may be available to it in respect of such breach, be entitled to equitable relief, including a restraining order, an injunction, specific performance and any other relief that may be available from a court of competent jurisdiction.

15. NOTICES, ETC. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (a) upon personal delivery to the party to be notified, (b) when sent by electronic transmission or facsimile if sent during normal business hours of the recipient, if not, then on the next business day, (c) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to each of the Company and the Holder at the address listed on their respective signature pages hereto or at such other address as the Company or Holder may designate by ten days' advance written notice to the other party.

16. SUCCESSOR AND ASSIGNS. This Warrant and the rights evidenced hereby shall be binding upon and shall inure to the benefit of the parties hereto and the successors of the Company and the successors and permitted assigns of the Holder. Such successors and/or permitted assigns of the Holder shall be deemed to be a Holder for all purposes hereunder.

17. NO THIRD-PARTY BENEFICIARIES. This Warrant is for the sole benefit of the Company and the Holder and their respective successors and, in the case of the Holder, permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other Person any legal or equitable right, benefit or remedy of any nature whatsoever, under or by reason of this Warrant.

18. HEADINGS. The headings in this Warrant are for reference only and shall not affect the interpretation of this Warrant.

19. AMENDMENT AND MODIFICATION; WAIVER. Except as otherwise provided herein, this Warrant may only be amended, modified or supplemented by an agreement in writing signed by each party hereto. No waiver by the Company or the Holder of any of the provisions hereof shall be effective unless explicitly set forth in writing and signed by the party so waiving. No waiver by any party shall operate or be construed as a waiver in respect of any failure, breach or default not expressly identified by

such written waiver, whether of a similar or different character, and whether occurring before or after that waiver. No failure to exercise, or delay in exercising, any rights, remedy, power or privilege arising from this Warrant shall operate or be construed as a waiver thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

20. SEVERABILITY. If any term or provision of this Warrant is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Warrant or invalidate or render unenforceable such term or provision in any other jurisdiction.

21. ACCEPTANCE. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

22. GOVERNING LAW. This Warrant and all rights, obligations and liabilities hereunder shall be governed by and construed under the laws of the State of Delaware as applied to agreements among Delaware residents, made and to be performed entirely within the State of Delaware without giving effect to conflicts of laws principles.

23. COUNTERPARTS. This Warrant may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act or other applicable law) or other transmission method and any counterpart so delivered will be deemed to have been duly and validly delivered and be valid and effective for all purposes.

[*Signature Page Follows***]**

IN WITNESS WHEREOF, the parties have caused this Warrant to be executed as of the date first written above.

TEMPUS LABS, INC.

By: */s/ Jim Rogers*
Name: Jim Rogers
Title: Chief Financial Officer

Address:

600 West Chicago Ave.
Suite 510
Chicago, Illinois 60654

ASTRAZENECA AB

By: */s/ Yvonne Bertlin*
Name: Yvonne Bertlin
Title: CFO

Address:

SE-432 83 Mölndal
Sweden

EXHIBIT A

NOTICE OF EXERCISE

TO: TEMPUS LABS, INC.

(1) The undersigned hereby elects to purchase _____ shares of Class A Common Stock (the "***Exercise Shares***") of Tempus Labs, Inc. (the "***Company***") pursuant to the terms of the attached Warrant, and tenders herewith payment of the exercise price in full.

(2) Please issue a certificate or certificates representing said Exercise Shares, if applicable, in the name of the undersigned or in such other name as is specified below:

_____

(Name)

(3) Please issue a new Warrant for the unexercised portion of the attached Warrant in the name of the undersigned or in such other name as is specified below:

_____

(Name)

(4) The undersigned represents that (i) the aforesaid Exercise Shares are being acquired for the account of the undersigned for investment and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or reselling such shares; (ii) the undersigned is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision regarding its investment in the Company; (iii) the undersigned is experienced in making investments of this type and has such knowledge and background in financial and business matters that the undersigned is capable of evaluating the merits and risks of this investment and protecting the undersigned's own interests; (iv) the undersigned understands that Exercise Shares issuable upon exercise of this Warrant have not been registered under the Securities Act of 1933, as amended (the "***Act***"), by reason of a specific exemption from the registration provisions of the Act, which exemption depends upon, among other things, the bona fide nature of the investment intent as expressed herein, and, because such securities have not been registered under the Act, they must be held indefinitely unless subsequently registered under the Act or an exemption from such registration is available; (v) the undersigned is aware that the aforesaid Exercise Shares may not be sold pursuant to Rule 144 adopted under the Act unless certain conditions are met and until the undersigned has held the shares for the number of years prescribed by Rule 144, that the conditions for use of the Rule may include the availability of current information to the public about the Company and the Company has not made such information available and has no present plans to do so; and (vi) the undersigned agrees not to make any disposition of all or any part of the aforesaid shares of Exercise Shares unless and until there is then in effect a registration statement under the Act covering such proposed disposition and such disposition is made in accordance with said registration statement, or, if reasonably requested by the Company, the undersigned has provided the Company with an opinion of counsel satisfactory to the Company, stating that such registration is not required, subject to any exceptions set forth in the attached Warrant.

(5) The undersigned acknowledges and agrees that, if requested by the Company, the undersigned shall execute and deliver any applicable securityholders' agreement, investor rights agreement, voting agreement, drag along agreement, right of first refusal and co-sale agreement or similar agreement (or a joinder to any existing agreement) that the Company and/or the holders of its securities

may enter into or that otherwise that may be in effect from time to time (and which may contain, among other provisions, additional restrictions on transfer).

(Date)	(Signature)
	(Print name)

EXHIBIT B

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

E-Mail: _____
(Please Print)

Assignee's
Signature: _____

Dated: _____, 20__

Holder's
Name:

Holder's
Signature: _____

Holder's
Address: _____

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of this Warrant, without alteration or enlargement or any change whatever. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.

NOTE: As a condition to the assignment of this Warrant, if requested by the Company, the assignee of this Warrant shall execute and deliver any applicable securityholders' agreement, investor rights agreement, voting agreement, drag along agreement, right of first refusal and co-sale agreement or similar agreement (or a joinder to any existing agreement) that the Company and/or the holders of its securities may enter into or that otherwise that may be in effect from time to time (and which may contain, among other provisions, additional restrictions on transfer).

NOTE: The assignee of this Warrant agrees to be bound by all the terms and obligations of this Warrant as if assignee were the original Holder party thereto.