Tempus Introduces Loop, an AI-Powered Target Discovery and Validation Platform

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The new, proprietary target discovery platform integrates RWD, human biological modeling, and CRISPR screens to accelerate novel target identification

CHICAGO--(BUSINESS WIRE)--Apr. 28, 2025-- Tempus AI, Inc. (NASDAQ: TEM), a technology company leading the adoption of AI to advance precision medicine and patient care, today announced Tempus Loop, a new oncology-focused platform for target discovery and validation. Loop is Tempus' proprietary approach to novel target identification that integrates real-world patient data (RWD) with human-derived biological models and CRISPR-screens, all leveraging AI to rapidly uncover insights for pre-clinical therapeutic development.

One of the biggest industry challenges has been translating promising preclinical experiments into treatments that can benefit patients. Conventional approaches in target discovery and validation rely on cell lines or animal models, which may not be reliable representations of human tumors. Loop's approach is uniquely powerful because it leverages Tempus' rich RWD to identify patient subpopulations with similar clinical, pathologic, and molecular patterns, followed by use of systems biological approaches to help reveal novel target genes and multimodal signatures. These signatures allow Tempus to seamlessly map patient subcohorts to relevant patient-derived organoids (PDOs), which the company has been expanding for years. By ensuring continuity between RWD and PDOs, Tempus can validate targets using high-throughput functional screens in models that more closely reflect patient attributes. This seamless integration—RWD to PDO and back—can help to enable rapid hypothesis generation and testing in the most relevant disease models, accelerating target discovery and validation.

Tempus has already deployed its Loop platform to prioritize drug targets in patient subpopulations with severe unmet needs for a large pharmaceutical company. By incorporating a lab-in-the-loop strategy, its biological modeling and functional screening capabilities were able to confirm and validate these targets within a year, a significant acceleration of the standard discovery timeline.

"Novel target discovery continues to be a major challenge in oncology. Despite increased spending in R&D, we still have a 90% failure rate for preclinical assets to become real-world medicines," said Kate Sasser, PhD, Chief Scientific Officer at Tempus. "With Loop, we have integrated vast multimodal patient data, which includes outcome data, with more relevant human biological models and high-throughput functional screens, all wrapped with AI tooling, to ultimately help find new patient cohorts of interest and unique and clinically relevant targets. We've been very encouraged with this platform, speeding up the timelines for our drug discovery customers, while also increasing confidence in the clinical relevance of these targets."

For more information, visit here.

About Tempus

Tempus is a technology company advancing precision medicine through the practical application of artificial intelligence in healthcare. With one of the world's largest libraries of multimodal data, and an operating system to make that data accessible and useful, Tempus provides AI-enabled precision medicine solutions to physicians to deliver personalized patient care and in parallel facilitates discovery, development and delivery of optimal therapeutics. The goal is for each patient to benefit from the treatment of others who came before by providing physicians with tools that learn as the company gathers more data. For more information, visit tempus.com.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended, about Tempus and Tempus' industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this press release are forward-looking statements, including, but not limited to, statements regarding the potential impact of real-world data and biological modeling solutions in therapeutic research and discovery, 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," "going to," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "will," or "would" or the negative of these words or other similar terms or expressions. Tempus cautions you that the foregoing may not include all of the forward-looking statements made in this press release.

You should not rely on forward-looking statements as predictions of future events. Tempus has based the forward-looking statements contained in this press release primarily on its current expectations and projections about future events and trends that it believes may affect Tempus' business, financial condition, results of operations and prospects. These forward-looking statements are subject to risks and uncertainties related to: Tempus' financial performance; the ability to attract and retain customers and partners; managing Tempus' growth and future expenses; competition and new market entrants; compliance with new laws, regulations and executive actions, including any evolving regulations in the artificial intelligence space; the ability to maintain, protect and enhance Tempus' intellectual property; the ability to attract and retain qualified team members and key personnel; the ability to repay or refinance outstanding debt, or to access additional financing; future acquisitions, divestitures or investments; the potential adverse impact of climate change, natural disasters, health epidemics, macroeconomic conditions, and war or other armed conflict, as well as risks, uncertainties, and other factors described in the section titled "Risk Factors" in Tempus' Quarterly Report on Form 10-K for the fiscal year ended December 31, 2024 filed with the Securities and Exchange Commission ("SEC") as well as in other filings Tempus may make with the SEC in the future. In addition, any forward-looking statements contained in this press release are based on assumptions that Tempus believes to be reasonable as of this date. Tempus undertakes no obligation to update any forward-looking statements to reflect events or circumstances after the date of this press release or to reflect new information or the occurrence of unanticipated events, except as required by law.

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Erin Carron
media@tempus.com

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