

# Modulus Therapeutics Secures Funding for Cell Therapy Design Platform, Adds Alana Welm and Raphael Gottardo to Advisory Board



Modulus Therapeutics Utilizes Gene Editing and Machine Learning to Converge on Optimized Immune Cell Therapies

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**Modulus Therapeutics**, an artificial-intelligence powered cell therapy design company, announced it completed an oversubscribed \$3.5 million Seed round. The round was led by **Madrona Venture Group**, with participation from **KdT Ventures**, and the **Allen Institute for AI (AI2)**. Modulus also announced the formation of their Scientific Advisory Board with founding members **Alana Welm** and **Raphael Gottardo**.

The new funding will be used to expand development of Modulus' Convergent Design™ platform that combines key technology components, including gene editing, machine learning, multi-omics, and high-throughput *in vivo* screening to bring an intelligent, unbiased approach to immune cell therapy design.

"Modulus has an ambitious goal and an innovative platform combining modern machine learning, synthetic biology, and cutting-edge lab automation to treat tumors and eradicate cancer," said **Chris Picardo**, Investor at Madrona Venture Group. "Their method unlocks true high throughput screening for cancer-fighting immune cells and creates a massive new dataset that is perfectly suited for AI. We are excited to work with them as they build out their team and capabilities."

Modulus is first focused on developing therapies based on natural killer (NK) cells for the treatment of metastatic breast cancer, building on recent momentum in deploying these cells against solid tumors. Despite the rapid growth of the cell therapy market, the design of these cells is still largely a bespoke, craftsman-like process limited by human understanding of biology.

"High throughput discovery approaches in cell types such as natural killer cells have lagged behind those in other cell types," said Alana Welm, Scientific Advisor. "We're really excited about the therapeutic prospects of exploring the different ways that these cells can be engineered."

Modulus was founded in 2020 by bioengineer **Max Darnell, Ph.D.** and bioinformatician **Bryce Daines, Ph.D.**, who met as Entrepreneurs-in-Residence at AI2, a research institute created by Microsoft co-founder Paul Allen. The founders set out to invent a platform for systematic and repeatable discovery of next-generation cell therapies to unleash the potential of the immune system against solid tumors.

"The AI2 Incubator's mission is to help founders launch AI companies that have the potential to change the world," said **Bryan Hale**, Managing Director at the AI2 Incubator. "By harnessing cutting edge AI to seek out life-saving treatments for solid tumors, Modulus has the potential for a truly big impact."

While much of the Cell Therapy industry remains focused on problems such as taking existing therapeutic cells and turning them against new targets, Modulus takes a broader approach. Rather than focusing on a single feature, such as targeting, Convergent Design™ enables simultaneous improvement along multiple axes of therapeutic importance converging on optimized cell designs.

"Modulus is the only company we've seen which is focused on engineering the chassis of these cells." said **Rima Chakrabarti**, MD, Principal at KdT Ventures. "By modulating the innate cellular machinery, Modulus can optimize not only for therapeutic efficacy but for improved manufacturability and storage as well, bringing us closer to curative, off-the-shelf immune cell therapies."

Modulus has reengineered the concept of Cell Therapy Discovery by dramatically increasing the number of candidate cells that can be tested simultaneously and using machine learning to interpret the results. As a result, Modulus can learn how entire networks of genes impact a cell's function, not just one gene at a time.

"By combining high-throughput screening with machine learning, to interpret and predict genetic interactions, we get a multiplier on our experimental throughput that dwarfs previous approaches," said Bryce Daines, Ph.D., co-founder of Modulus. "Repeated over cell types and diseases the result is a flywheel of discovery."

"When combined, these technologies provide a path for discovering the enhancements that cells need to accomplish a complex therapeutic task, like fighting a solid tumor," said Max Darnell, Ph.D., co-founder of Modulus. "Current cell therapy design is like trying to find your way out of the woods without a GPS. This platform gives us the tools to navigate the cell's design space systematically and effectively."

For more information about Modulus, please visit <https://www.modulustherapeutics.com/> or follow them on [Twitter](#), [LinkedIn](#), [Facebook](#) and [Instagram](#).

Alana Welm is Senior Director of Basic Science at the Huntsman Comprehensive Cancer Center, Full Professor in the Department of Oncological Sciences at the University of Utah, and an Investigator at the Huntsman Cancer Institute. Welm's laboratory studies breast cancer metastasis.

Dr. Raphael Gottardo is Scientific Director, Translational Data Science Integrated Research Center, Professor, and J. Orin Eson Foundation Endowed Chair at Fred Hutch. Dr. Gottardo is a

computational biologist and expert in the rapidly evolving field of data science as it is applied to cancer and related diseases.

Modulus is engineering next-generation immune cell therapies, starting with Natural Killer cells rationally designed for the treatment of solid tumors. Modulus' Convergent Design™ platform combines genetic engineering, machine learning, and high-throughput *in vivo* screening to systematically converge on optimized cell designs. Modulus is committed to the discovery of cell therapies to treat a broad set of patient populations not currently served by existing treatments and will use its platform to enable partners and develop an internal pipeline of therapeutics.

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## Company Website

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## Tags

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**ARTIFICIAL INTELLIGENCE**

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**NATURAL KILLER CELLS**

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