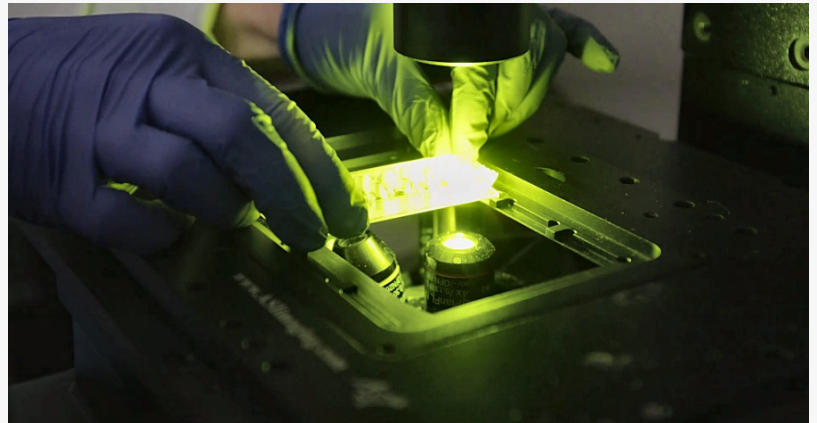


Frontier Bio Wins Phase 1 of \$7M NIH Challenge for AI-Powered Blood-Brain Barrier Testing

NeuroTraX-AI targets the blood-brain barrier, a central hurdle in brain medicine and drug safety, as U.S. regulators shift toward human-based testing

HAYWARD, CA, UNITED STATES, July 21, 2026 /EINPresswire.com/ -- [Frontier Bio](#), a biotechnology company engineering advanced human tissues, has been named a Phase 1 winner of the [Complement-ARIE](#) New Approach Methodologies (NAMs) Reduction to Practice Challenge, a national competition run by the NIH Common Fund in collaboration with the FDA and

EPA, and administered through the NASA Tournament Lab. The Phase 1 win comes with a cash award and advances Frontier Bio, one of up to 20 winning teams, into the subsequent phases of the multi-year competition, which carries a total prize pool of \$7 million.



Microscopy at Frontier Bio's Hayward, California lab. The company's NeuroTraX-AI platform models the human blood-brain barrier and quantifies barrier disruption with AI.

The challenge advances NAMs, human-based laboratory and computational methods that reduce reliance on animal testing while improving the accuracy of early drug development.

The win lands as U.S. regulators move toward the human-based testing that Frontier Bio builds. The FDA's 2025 roadmap, enabled by the FDA Modernization Act 2.0, lays out a plan to phase out animal-testing requirements in favor of human-based and computational methods. Bringing a single drug to market costs an estimated \$2.6 billion and takes more than a decade, and fewer than one in ten central nervous system drug candidates that reach clinical trials make it to patients, in large part because the blood-brain barrier blocks about 98% of small-molecule drugs and nearly all biologics.

Frontier Bio's winning platform, NeuroTraX-AI, pairs a scalable, human-cell-based microphysiological system that recreates the neurovascular unit with an artificial intelligence layer that quantifies blood-brain-barrier disruption from standard, label-free microscope images. It measures how drugs, cell therapies, and injury affect the human barrier, whether an agent



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Eric Bennett, CEO of Frontier Bio

crosses it, disrupts it, or leaves it intact. The result is quantitative, spatially resolved data for faster, lower-cost testing.

“Predicting how the human brain responds to a therapeutic is one of the most expensive unsolved problems in drug development, and animal models consistently fail to bridge that gap,” said Eric Bennett, CEO of Frontier Bio. “We are building NeuroTraX-AI into the scalable, human-based alternative developers need, right as regulators are calling for one.”

Next, Frontier Bio is expanding NeuroTraX-AI's training

library, scaling throughput, and pursuing pilot partnerships with drug and cell therapy developers, moving from a working prototype toward a commercial platform.

About Frontier Bio

Frontier Bio is a tissue engineering company based in Hayward, California, building living human tissues that make medicine safer and less dependent on animal models. Its work spans implantable tissues for regenerative medicine and a commercial platform of human tissue models used for drug and therapy testing and research.

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