STANFORD
CENTER FOR PRECISION
MENTAL HEALTH

2025

ANNUAL REPORT

Changing the future of mental health care together

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Message from the Director

A revolution in mental health is underway at Stanford.

Seven years ago, the Stanford Center for Precision Mental Health was founded on a bold conviction: that mental illness could finally be approached with the same biological precision that transformed cancer and cardiovascular care. Our goal was audacious—to cut the burden of disorders like major depression in half within our lifetime.

Today, that vision is no longer theoretical. It is active, measurable, and accelerating.

In the past year alone, our teams have:

- Defined and validated six brain-based biotypes of depression tied to underlying circuit dysfunction, doubling the likelihood of successful treatment for many patients.
- Launched the world's first Precision Psychiatry Clinic, bringing neuroimaging and computational neuroscience directly into patient care and making personalized treatment a reality for people with depression and related conditions.
- United neuroscience, psychiatry, data science, and artificial intelligence at our fifth annual symposium, a turning point in how mental health will be diagnosed and treated in the decade ahead.

Our focus begins with depression because of the urgent public need. Yet we are deliberately expanding our work to encompass anxiety, broader mood disorders, PTSD, ADHD, and related conditions. Across these disorders, we are developing and testing neuroscience-based models designed from the outset for clinical translation, connecting lab to clinic in real-world settings and making neuroscience deeply personal.

An exciting new direction for the Center is harnessing the power of AI to amplify precision mental health. Advances in brain imaging, computational neuroscience, digital assessments, and large-scale models are enabling us to define mental health conditions in terms of underlying brain circuitry, cognition, and behavior. These tools allow us to turn complex data into real-time, actionable insights—bringing new precision, clarity, and impact to the care we are able to deliver.

Our fifth annual symposium, "Bridging Psychiatry, Neuroscience & AI," showcased this momentum. We brought together leaders from across Stanford and beyond—scientists, clinicians, engineers, educators, philanthropists, and partners from health systems and industry—to explore how these innovations are reshaping psychiatry. The message was clear: precision mental health is no longer a distant aspiration; it is becoming the new standard of care.

A major new initiative now underway is the creation of a dedicated physical home for precision mental health. Construction is currently underway on the new Biomedical Sciences Building, where our Center will have a purpose-built home that brings together imaging, computational and digital tools, and personalized treatments under one roof. This new environment will enable us to accelerate the translation of science into real-world solutions by an order of magnitude, so that many more people can benefit, much sooner.

None of this progress would be possible without extraordinary partnership and philanthropy. I share my personal gratitude for the transformational support of the Vincent V.C. Woo Foundation, whose endowment of my professorship as the Vincent V.C. Woo Professor of Psychiatry and Behavioral Sciences has provided a pivotal catalyst for realizing our mission, to move discoveries into practice on a much shorter timeline.

As we look ahead, we are energized by the collaborations, discoveries, and clinical innovations that continue to redefine how we understand and treat the human brain. We invite you to explore the symposium recordings, learn more about becoming a Center Research Member, participate in one of our studies, and connect with the Stanford Precision Psychiatry Clinic.

Please also mark your calendars for our 6th Annual Symposium on September 25, 2026. We look forward to building this next chapter together.

Warm regards,

Leanne M. Williams, PhD
Director, Stanford Center for Precision Mental Health
The Vincent V.C. Woo Professor

Institutional Leadership: A Stanford-Wide Commitment to Precision Mental Health

The Stanford Center for Precision Mental Health is sustained by extraordinary leadership spanning academic psychiatry, the School of Medicine, and Stanford Health Care. This alignment uniquely positions Stanford to lead the global transformation of mental health care.

Department of Psychiatry & Behavioral Sciences

As our home department, the Department of Psychiatry and Behavioral Sciences provides the ethical, cultural, and academic foundation for our Center's work. Chair Dr. Laura Roberts has been a steadfast partner in cultivating the environment in which precision mental health can thrive.

"Leadership requires the ability to articulate a clear, meaningful vision and to support others to engage in and critically reflect on that vision - and enable the actions needed to accomplish it."

— ***Laura Roberts, MD, MA***, *Katharine Dexter McCormick and Stanley McCormick Memorial Professor and Chair of Psychiatry and Behavioral Sciences*

Stanford University School of Medicine

From the Center's inception, Dean Lloyd Minor has been a driving force behind its institutional rise and physical realization. His leadership has fostered the preeminence of our work, including the creation of our new dedicated home in the Neurobiology building at 1215 Welch Road.

"From the very first conversations, it was clear that this initiative would have enormous impact because of the quality of people at Stanford and its reach far beyond our campus… We are now seeing the same degree of rigor and data-driven science for approaching complex conditions such as depression that we have seen in other aspects of medicine."

"The best impact is yet to come."

— ***Lloyd B. Minor, MD***, *Carl and Elizabeth Naumann Dean of the School of Medicine; Vice President for Medical Affairs, Stanford University; Professor of Otolaryngology–Head and Neck Surgery*

Stanford Health Care

As President and CEO of Stanford Health Care, David Entwistle anchors precision mental health in clinical reality and scale. His leadership ensures that innovations emerging from our Center can be integrated into patient care across the health system.

"We now have the computational horsepower to apply AI to data that could never be tapped before… This is how precision medicine becomes precision health—how we become proactive, not reactive."

"This work enables preeminent clinical care."

— ***David Entwistle***, *President and Chief Executive Officer, Stanford Health Care*

Stanford MEDICINE Center for Precision Mental Health

Stanford MEDICINE School of Medicine
Major Laboratories and Clinical Translational Neuroscience Incubator
Department of Psychiatry and Behavioral Sciences

5th Annual Symposium on Precision Mental Health

Bridging Psychiatry, Neuroscience & AI

Stanford, September 26, 2025

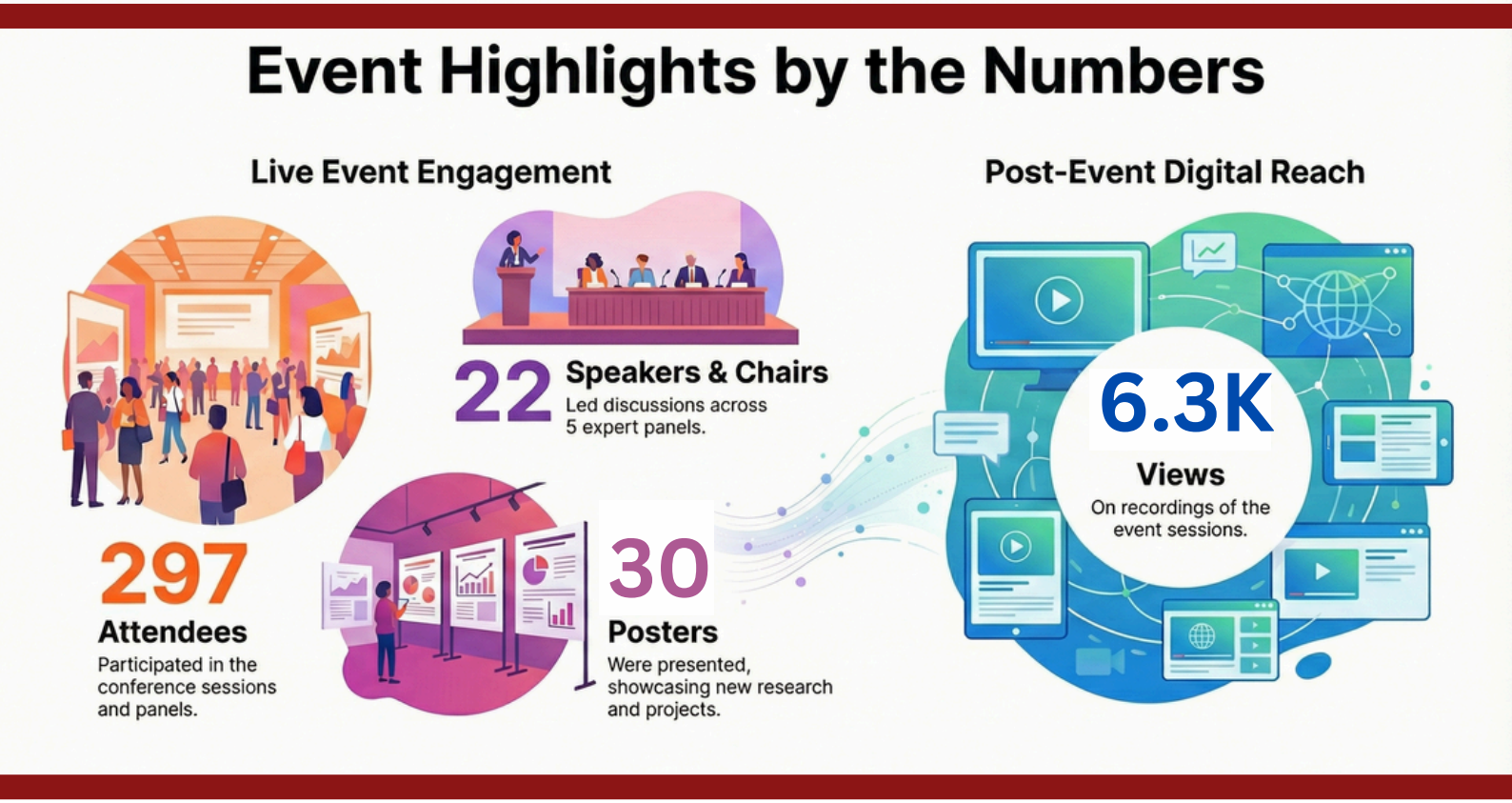
The symposium once again brought the Stanford community together with experts and innovators from across academia and industry.

With a fully in-person format, the event provided countless opportunities for meaningful exchange during talks, panels, and informal conversations at the poster session.

Speakers and panelists stayed engaged throughout the day, fueling lively discussion and connection.

Watch the symposium highlight reel showcasing the ideas, people, and momentum that made this year's event such a success.

For a deeper look at the conversations, full session recordings are available on our website via the YouTube playlist.



Forbes

INNOVATION > AI

Precision Mental Health Gets Precisely Boosted Via Innovative Uses Of Advanced AI And LLMs

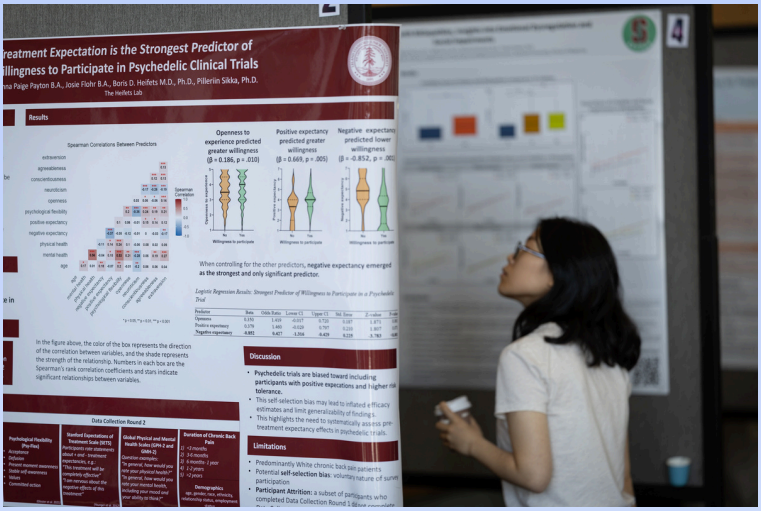
By Lance Eliot, Contributor. ⓘ Dr. Lance B. Eliot is a world-renowned AI scientist and consultant.

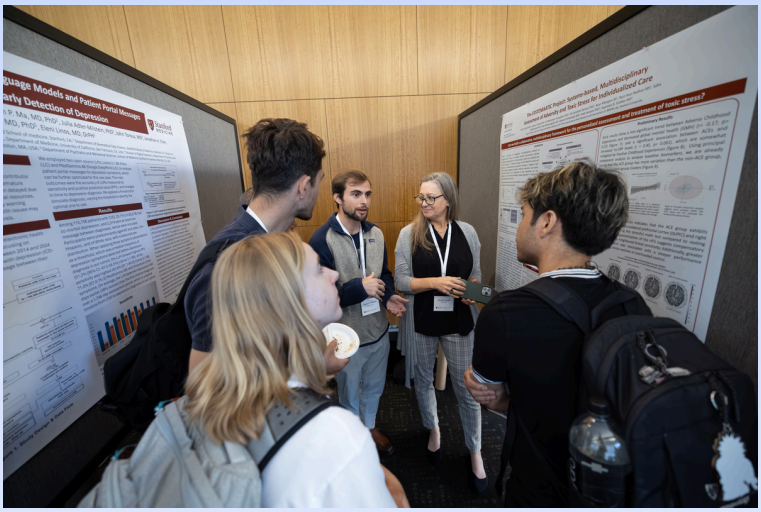
Published Sep 30, 2025, 03:15am EDT

A Forbes article by Dr. Lance Eliot, *"Precision Mental Health Gets Precisely Boosted Via Innovative Uses Of Advanced AI And LLMs"* (Sept 30, 2025), spotlighted our symposium. The piece described how researchers at Stanford are integrating artificial intelligence and large language models to personalize psychiatric care, from brain-circuit biotyping and AI-guided treatment matching to human-centered digital twin models and multi-modal sensing. The article emphasized how these technologies are transforming mental health research and clinical practice toward a new era of precision psychiatry.

Eliot, L. (2025, September 30). Precision Mental Health Gets Precisely Boosted Via Innovative Uses Of Advanced AI And LLMs. *Forbes*. https://www.forbes.com/sites/lanceeliot/2025/09/30/precision-mental-health-gets-precisely-boosted-via-innovative-uses-of-advanced-ai-and-llms/

POSTER & NETWORKING SESSION





OUTSTANDING POSTER AWARDS!

Jeesung Ahn, PhD
Williams PanLab

Developing Clinically Interpretable Neuroimaging Biotypes in Psychiatry

Dan McCalley, PhD
Padula BRAVE lab

A Step Toward Precision Transcranial Magnetic Stimulation for Alcohol Use Disorder: an fMRI-Based, Data-Driven Approach to Guide Future TMS Trials for AUD

Alexander Palmer, BS
Boris Heifets Lab

Neurophysiological Correlates of Psychedelic Experience are Retained During General Anesthesia

Watch the Outstanding Poster Award ceremony here.

A new hub for discovery and collaboration

We're thrilled to share that the Center for Precision Mental Health will soon have its own dedicated home in the new Biomedical Research Building at 1215 Welch Rd, with construction already underway!

Opening in 2028, the Center will be located at the heart of the Stanford Medicine campus. This flagship research hub is the first of its kind globally, dedicated to transforming mental health care through precision medicine. It will function as a true "one-stop destination," bringing together state-of-the-art resources under one roof for both research and clinical translation. By uniting advanced brain imaging, computational tools, and personalized treatments, the new home will accelerate the translation of science into practical, real-world solutions — potentially 50× faster, so that more people can benefit, sooner.

The New Center for Precision Mental Health will include:

MRI / Neuroimaging Suite
High-resolution, functional MRI capabilities to map brain circuitry and identify "biotypes" linked to mental health conditions.

Neuroscience Assessment Labs
Facilities for in-depth behavioral, neurocognitive, EEG, and physiological testing, plus phlebotomy space.

High-Performance Computational Center
Dedicated infrastructure for large-scale data storage, cloud-based platforms, and machine learning pipelines for effective biotype assessment.

Precision Psychiatry Clinic
A translational clinic designed to bring neuroscience-guided treatment directly into outpatient care, including biotype-based treatment trials and personalized interventions.

Treatment Lab
A designated space for delivering advanced, circuit-guided interventions, from targeted pharmacotherapy, neuromodulation, to fast-acting therapeutics.

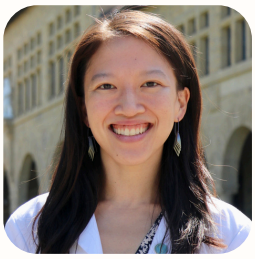
Watch the special announcement at the 5th annual symposium here.

Image credits: ZGF Architects

Stanford | Precision Psychiatry Clinic

Laura Hack, MD, PhD

Teddy Akiki, MD



Erica Ma, MS, PA-C

Science Driven
fMRI-based biotypes guide treatment selection beyond trial-and-error

Evidence-Based
Care tailored through validated neuroscience findings

Patient-Centered
Excellence in psychiatry, delivered in a welcoming, wellness-inspired space

The Stanford Precision Psychiatry Clinic provides consultations to guide personalized treatment planning for psychiatric conditions.

We use the latest neuroscientific discoveries, grounding mental health challenges in objective, actionable measures, helping reduce stigma.

Our comprehensive multidimensional assessments use the Stanford EtCere Image Processing System, a biotyping system pioneered by the Stanford Center for Precision Mental Health. We integrate functional MRI with cognitive-emotional behavioral tests and detailed clinical information to provide new insights into mental illness, generating individualized biotype-guided treatment recommendations.

Biotype-Informed Treatment Approach

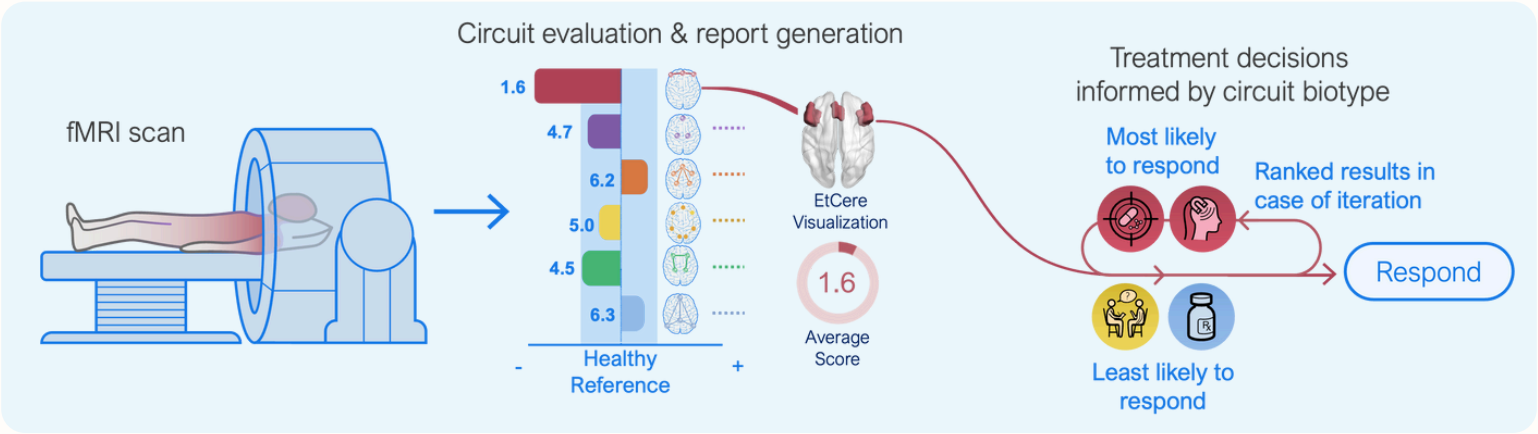


Figure adapted from our Ahn et al. Biological Psychiatry paper describing the precision-based clinical approach.

Ahn J, Foland-Ross L, Akiki TJ, Boyar L, Wydler I, Bostian C, Zhang X, Yang HJ, Ellsay A, Ma E, Rajasekharan D ... Williams LM. Developing Clinically Interpretable Neuroimaging Biotypes in Psychiatry. *Biological Psychiatry*. 2025.

Tozzi L, Zhang X, Pines A, Olmsted AM, Zhai ES, Anene ET, Chesnut M, Holt-Gosselin B, Chang S, Stetz PC, Ramirez CA ... Williams LM. Personalized brain circuit scores identify clinically distinct biotypes in depression and anxiety. *Nature Medicine*. 2024.

Goldstein-Piekarski AN, Ball TM, Samara Z, Staveland BR, Keller AS, Fleming SL, Grisanzio KA, Holt-Gosselin B, Stetz P, Ma J, Williams LM. Mapping neural circuit biotypes to symptoms and behavioral dimensions of depression and anxiety. *Biological Psychiatry*. 2022.

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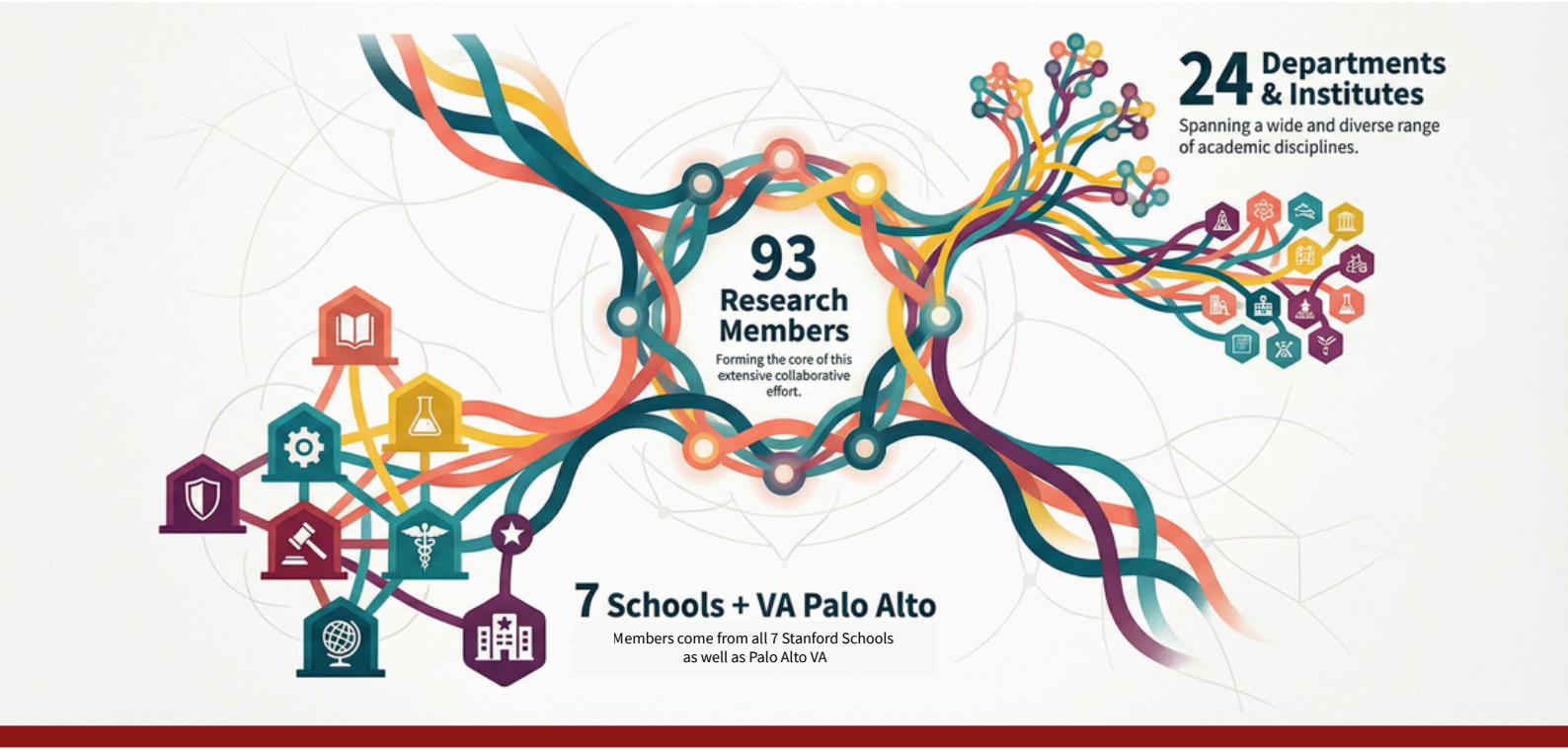
Our Interdisciplinary Research Network



Join Us – Become a Member!

Whether you're a Stanford clinician, faculty member, or postdoc, we welcome your involvement in advancing the science and practice of precision mental health and shaping its future!

Center membership benefits include:

- **participation in** PMH scientific meetings and translational working groups
- **access to** our curated biobanks and datasets
- **opportunities for** collaboration and pilot funding
- **inclusion in** our member directory and research spotlight features
- **early invitations to** PMH-sponsored events and training opportunities

Eligibility open to Stanford-affiliated faculty, senior scientific staff, and SHC/LP clinicians.

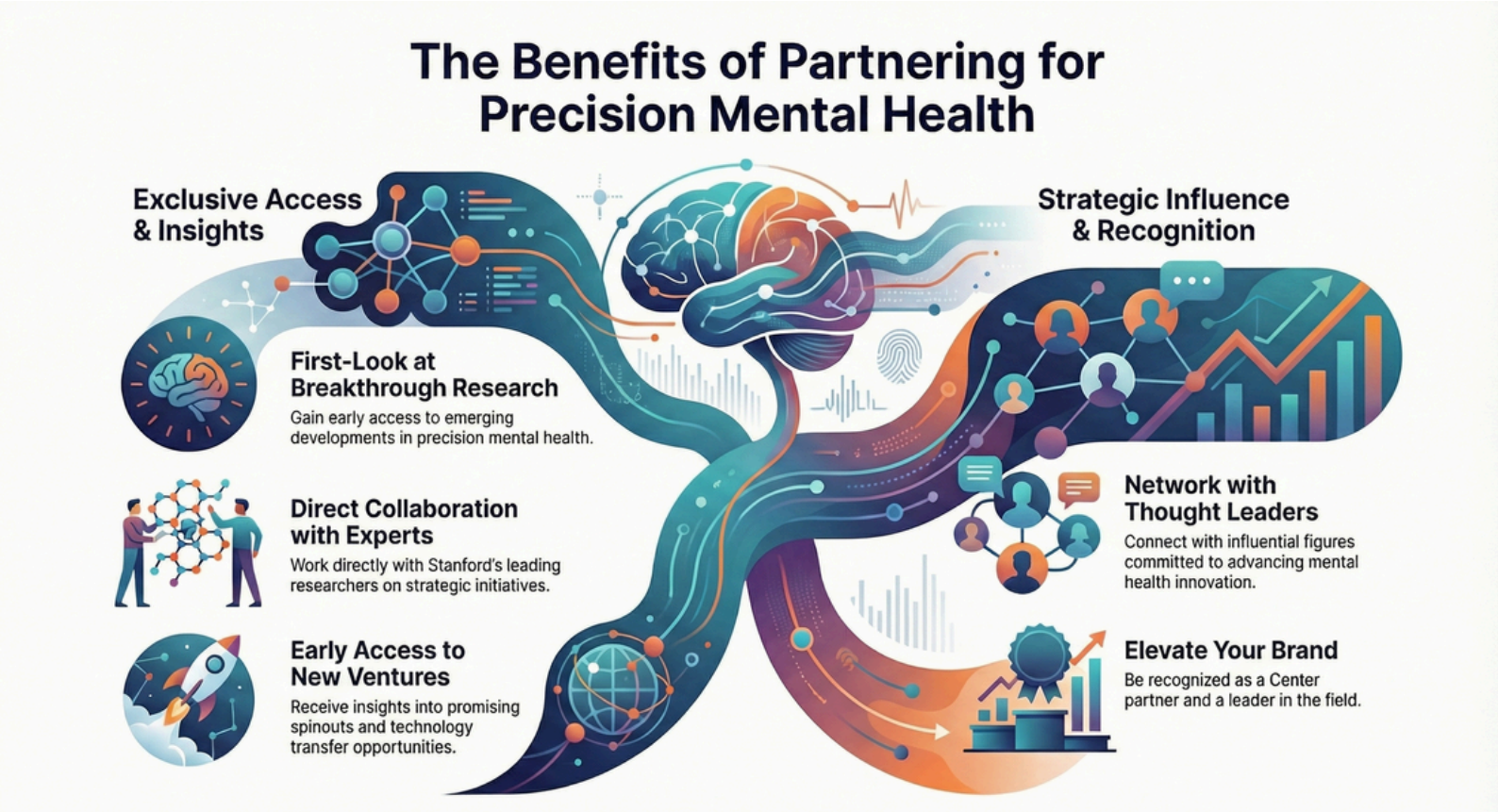
Corporate Members Program

The Stanford Center for Precision Mental Health advances precision diagnostics and therapeutics by integrating cutting-edge imaging, big data, AI, and neuroscience-based tools. To expand the reach and impact of this work, the Center's Corporate Members Program builds strong partnerships between academia and industry. Through this program, industry collaborators contribute practical insights, help shape real-world applications, and support innovation. Membership fees provide vital unrestricted funding that fuels the Center's research and operations.

ACTIVE CORPORATE MEMBERS

Boehringer Ingelheim

etcere



Program Requirements

The Stanford Center for Precision Mental Health Corporate Members Program is governed by the Stanford University Policies for Industry Affiliates Programs.

For more information, please visit our website or reach out to us at precisionmentalhealth@stanford.edu.

Precision Mental Health Center Leadership Team

Faculty Leadership

Leanne Williams, PhD
Director

Ruth O'Hara, PhD
Co-Director

Alan Schatzberg, MD
Associate Director

Program Leadership

Lara Foland-Ross, PhD
Associate Director of Precision Mental Health Research Programs

Laura Hack, MD, PhD
Associate Director of Novel & Precision Neurotherapeutics Program

Teddy Akiki, MD
Associate Director of Computational Neuroscience and AI-Driven Clinical Translation

Xue Zhang, PhD
Associate Director of Personalized Neuroimaging and Clinical Phenotyping

Neir Eshel, MD, PhD
Associate Director of Translational Neuroscience

Stanford Center for Precision Mental Health Symposium Planning Committee

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Ruth O'Hara, PhD, *Co-Director*
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Stanford MEDICINE Center for Precision Mental Health

6th Annual Symposium on Precision Mental Health

SEPTEMBER 25, 2026

Registration and full program released in early 2026!

We look forward to seeing you next year.

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