Precision Psychiatry, Personalized Neuroscience & the Future of Mental Health Treatment

The Stanford Center for Precision Mental Health and Wellness and Stanford’s Major Laboratories and Clinical Translational Neuroscience Incubator presented the 3rd Annual Precision Mental Health & Wellness Symposium on Tuesday, October 24.

We had over 180 attendees and a widely attended Happy Hour Poster Session with over 25 poster presentations. The symposium explored a precision approach to psychiatry in which neuroscience insights about the human brain are translated into real world clinical care enabling clinicians to help improve the quality of individual lives.

Topics addressed fell under three strategic themes of research: Translational and Novel Therapeutics, Novel Approaches to Stratified/Precision Mental Health, and Precision Mental Health & Clinical Translational Neuroscience.
We would like to personally thank our expert speakers, poster presenters, attendees and affiliates for joining us for a day of lively discussions and captivating advancements in precision mental health research. The success of this event would not have been possible without the participation, engagement, thoughtful questions and inspiring conversations of all those who joined.

Attendees heard how mental health is being reconceptualized as brain health, leveraging novel insights from neuroscience. Learning about new approaches to understanding individual experiences of disorders such as depression by understanding the brain, how we are starting to personalize treatments and exciting new directions in rapid acting therapeutics.

These new discoveries provide hope for the future of mental health treatment.

See pages 3-4 for links to the recordings. To see more photos of our event, visit our website here.
RECORDINGS

OPENING PLENARY
Helen Mayberg, M.D.
Professor, Neurology, Neurosurgery, Psychiatry
Mount Sinai, Icahn School of Medicine
‘The Evolution of Imaging Biomarkers to Guide Major Depression Treatment’

DEANS’ REMARKS
Lloyd Minor, M.D.
Dean, School of Medicine
Stanford University
Remarks

KEYNOTE
Carolyn Rodriguez, M.D., Ph.D.
Professor, Psychiatry & Behavioral Sciences
Stanford University
‘Future of Translational Therapeutics Novel Mechanisms’
**RISING STAR**
Xue Zhang, Ph.D.
Postdoctoral Scholar, Psychiatry & Behavioral Sciences
*Stanford University*

‘Personalized Imaging with Novel Therapeutics’

**RISING STAR**
Leonardo Tozzi, M.D., Ph.D.
Director of Computational Neuroscience & Neuroimaging Program
*Stanford PMHW*

‘Personalized Brain Circuit Scores Linking Biotypes, Symptoms, Behavior and Treatment Outcomes’

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**DIRECTORS PANEL**
Leanne Williams, Ph.D.
Director
*Stanford Center for Precision Mental Health & Wellness*

‘Vision for the Future’

**PANEL DISCUSSION**
Ruth O’Hara, Ph.D.
Co-Director
*Stanford Center for Precision Mental Health & Wellness*

Panel Discussion Including All Speakers
Stanford Medicine study reveals why we value things more when they cost us more

*It may not be smart, but we value something more if we’ve put a lot of sweat into it. Neuroscientists may have figured out the biochemical basis of why.*

By Bruce Goldman, senior science writer in the Stanford Medicine Office of Communications

Highlighting the findings in a recent publication, ‘**Striatal dopamine integrates cost, benefit, and motivation,**’ the Stanford article describes the connection between what economists call “sunk costs” and its affects on our behavior in ways that can be irrational.

“We make fallacious decisions based on what we’ve invested in something, even if the probability of actually gaining an objective advantage from it is zero,” said assistant professor of psychiatry and behavioral science **Neir Eshel, MD, PhD.** “And it’s not just us. This has been shown in animals across the animal kingdom.”

A few years ago, Eshel, his then-postdoctoral adviser **Rob Malenka, MD, PhD,** the Nancy Friend Pritzker Professor in Psychiatry and Behavioral Sciences, and some Stanford Medicine colleagues began conducting experiments to learn more about wanting versus liking and what, if any, role dopamine secretion in the brain plays in each of these states.

To learn more about the possible neural mechanism for the longstanding psychological observation that we value rewards more if we worked harder for them, click the link here.

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### Novel Screening Tool and Recovery Program May Help Reduce Mental Health Problems After Trauma

Two new studies address an American College of Surgeons guideline for trauma centers to screen and address mental health.

By Dan Hamilton and Sheila Lai

**Key Takeaways:**
- A new mental health screening tool accurately predicts mental health outcomes for hospitalized trauma patients.
- To be sustainable, mental health screening and recovery programs should be tailored to each trauma center, with the engagement of all stakeholders, a related study finds.
- Studies shed light on the need for trauma centers to provide injured patients with mental health resources, such as online education, support, and referrals to mental healthcare providers when needed.

A novel screening tool helps to identify hospitalized trauma patients at high risk for later mental health problems, and an emotional recovery program for trauma patients is feasible, according to two studies published in the *Journal of the American College of Surgeons (JACS).*

At least one in five Americans hospitalized after traumatic injury develops posttraumatic stress disorder (PTSD), depression, and/or other psychiatric disorders. However, most U.S. trauma centers report not routinely screening trauma patients for mental health problems, a 2022 survey found. Last year, the American College of Surgeons Committee on Trauma began requiring ACS-verified trauma centers to routinely screen trauma patients for mental health risks and to refer affected patients to mental healthcare practitioners.

“Early responses to trauma do not accurately predict who will develop mental health problems,” said **Eve Carlson, PhD,** a clinical psychologist researcher with the National Center for PTSD and lead author of a study published in *JACS* that described the development and initial performance of a novel mental health risk screen for hospitalized patients.

Click here to read more.
Dr. Gen Shinozaki receives the Wayne Katon Research Award

Gen Shinozaki, MD, FACLP, Associate Professor of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, is the recipient of the Academy of Consultation-Liaison Psychiatry (ACLP) Wayne Katon Research Award. Dr. Shinozaki was selected by the Academy’s Research and Evidence-Based Practice Committee. He was presented with his award by Chris Celano, MD, FACLP (pictured right).

In addition to the award, Dr. Shinozaki gave his award plenary lecture at the ACLP Annual Meeting in Austin, Texas last month (pictured below). The talk was widely attended, reaching record-breaking attendance with over 1,400 in the audience. Shinozaki shared his work on EEG detection of delirium and epigenetic investigations. He acknowledged the contributions of his mentees in addition to thanking his mentors that have helped guide him through his research career.

Dr. Shinozaki expressed his excitement and drive to continue his research endeavors, helping patients with delirium. Click below to learn more.
The 2nd edition of Research.com ranking of top female scientists in the United States is based on metrics acquired from a wide range of bibliometric sources including OpenAlex and CrossRef on 21-12-2022. Position in the ranking is based on a scientist’s general H-index.

Congratulations to This Year’s Named Stanford Female Scientists!

Zhenan Bao, PhD
Chemical Engineering

Helena C. Kraemer, PhD
Psychiatry & Behavioral Sciences

Daphne Koller, PhD
Computer Science

Carolyn R. Bertozzi, PhD
Chemistry

Cornelia Weyand, MD, PhD
Med-Immunology & Rheumatology

Carol Dweck, PhD
Psychology

Uta Franke, MD
Genetics and Pediatrics

Risa Wechsler, PhD
Physics

Fei-Fei Li, PhD
Computer Science

Edith Sullivan, PhD
Psychiatry & Behavioral Sciences

Marcia Stefanick, PhD
Med-Stanford Prevention Res. Ctr

Helen Blau, PhD
Microbiology & Immunology
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REIMAGINE MENTAL HEALTH

Stanford Center for Precision Mental Health and Wellness
Prenatal and childhood exposure to organophosphate pesticides and functional brain imaging in young adults.

Striatal dopamine integrates cost, benefit, and motivation.

Addressing Access to Care in Diverse Older Adult Populations Using Information and Communication Technologies.


The Development of a Novel Suicide Postvention Healing Model for Muslim Communities in the United States of America.

Prospective association of occupational and leisure-time physical activity with orthostatic blood pressure changes in older adults.

Dorsomedial and preoptic hypothalamic circuits control torpor.

Adjunctive tonic motor activation enables opioid reduction for refractory restless legs syndrome: a prospective, open-label, single-arm clinical trial.

Genomic data resources of the Brain Somatic Mosaicism Network for neuropsychiatric diseases.

The murine meninges acquire lymphoid tissue properties and harbour autoreactive B cells during chronic Trypanosoma brucei infection.
An Explainable Geometric-Weighted Graph Attention Network for Identifying Functional Networks Associated with Gait Impairement.

Association between self-reported falling risk and risk of hospitalization for patients with chronic obstructive pulmonary disease.

The Negative Effects of Travel on Student Athletes Through Sleep and Circadian Disruption.

Addressing Access to Care in Diverse Older Adult Populations Using Information and Communication Technologies.

Brain Volume in Fetal Alcohol Spectrum Disorders Over a 20-Year Span.

Effectiveness of Prefrontal Transcranial Magnetic Stimulation for Depression in Older US Military Veterans.

Patient Engagement and Provider Effectiveness of a Novel Sleep Telehealth Platform and Remote Monitoring Assessment in the US Military: Pilot Study Providing Evidence-Based Sleep Treatment Recommendations.

Once-nightly sodium oxybate (FT218) improved symptoms of disrupted nighttime sleep in people with narcolepsy: a plain language summary.

The 8th International RASopathies Symposium: Expanding research and care practice through global collaboration and advocacy.

Eurycoma longifolia (Tongkat Ali) enhances wakefulness during active periods but facilitates sleep during resting periods in C57BL/6 mice.

Cognitive and Emotional Responses to COPD Exacerbations and Patterns of Care Seeking.