Psychiatry Grand Rounds

WCM Department of Psychiatry
Psychology CE Announcement
Samuel W. Perry III, MD Scholar Grand Rounds

Precision Psychiatry: Tailoring Depression Treatment with Brain Circuit Biotypes

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Vincent V.C. Woo Professor
Psychiatry and Behavioral Sciences
Stanford School of Medicine

Live Online, Live In-person
Wednesday, February 26th, 2025
11:00am – 12:00pm
https://weillcornell.zoom.us/j/92812036154
Meeting ID: 928 1203 6154
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1 CE credit available to WCM Department of Psychiatry full time and voluntary faculty Psychologists, Social Workers and LMHCs, who sign in with their full name, attend the entire lecture and complete a survey which will be emailed following the completion of the lecture. Note you can join no later than 10 minutes after the start of time and must stay for the entire duration of the event for CE eligibility. The CE survey must be completed within 30 days of the lecture. Please contact wcmpsychiatryce@med.cornell.edu for additional CE information

Speaker

Leanne Williams, PhD, is the inaugural Vincent V.C. Woo Professor of Psychiatry and Behavioral Sciences and Associate Chair of Translational Neuroscience at Stanford University School of Medicine. She is the founding director of the Stanford Center for Precision Mental Health and Wellness and the Stanford PanLab for Personalized and Translational Neuroscience. Additionally, she serves as Director of the Precision Medicine Core at the Palo Alto VA Mental Illness Research, Education, and Clinical Center. Before joining Stanford, Dr. Williams was Professor of Cognitive Neuropsychiatry and Director of the Brain Dynamics Center at Sydney Medical School. She earned her PhD with a British Council Scholarship for study at Oxford University. Dr. Williams is a pioneer in precision neuroscience for psychiatry, developing a taxonomy of biotypes for depression and anxiety and an advanced image processing system to quantify them. Her research focuses on using biotypes to enable more individualized diagnoses and personalized treatments, spanning pharmacotherapy, behavioral interventions, novel selective medicines, neuromodulation, and exploratory therapeutics. She integrates neuroimaging, behavioral, and clinical measures across studies and employs computational approaches to refine precision mental health strategies. Her work is supported by the National Institutes of Health, and she has contributed over 395 scientific papers to the field. She is also the author of the first book on Precision Psychiatry.

Financial Disclosure: Dr. Williams has no relevant financial relationship(s) with ineligible companies to disclose and DOES NOT INTEND to discuss off-label or investigational use of products or services.

Abstract

Major depressive disorder remains a public health crisis. The burden of depression has the greatest impact on young people in their most productive years, and all too often the consequences are fatal. In this presentation, I explore the emerging field of precision psychiatry a promising approach to addressing this urgent need. I focus on brain circuit biomarkers utilized to stratify the heterogeneity of major depression and personalize treatment approaches. This approach conceptualizes depression as a disorder of brain circuit function. It draws on parallel with advances in cardiology and oncology. I present a series of studies using standardized fMRI protocols to assess brain circuits in both task-free states and during cognitive and emotional tasks, which distinguish different biotypes of depression. The standardized fMRi system quantifies brain activation and connectivity for individual patients relatively to healthy reference datasets. I present related results from trials using neuroimaging to understand which biotypes respond to different types of treatment and why. The treatments span standard antidepressants, behavioral therapy neuromodulation, and emerging novel approaches including psychedelics. Results from trials using neuroimaging to understand which types of depression respond to different types of intervention and why will be presented. I will highlight opportunities for translating these results into clinical care.

Learning Objectives

1. Explain at least one large-scale neural circuit that defines biotypes of depression.
2. Describe how biotypes can inform personalized treatment decisions, including selecting between currently available pharmacotherapy options and choosing among different medications.
3. Discuss one approach for using functional MRI (fMRI) to stratify patients based on their biotype to enhance transcranial magnetic stimulation (TMS) outcomes.

References

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