

Psychiatry Grand Rounds

WCM Department of Psychiatry

Psychology CE Announcement



**Weill Cornell
Medicine**
Psychiatry

AI FOR PRECISION PSYCHIATRY: HYPE, HOPE, AND HETEROGENEITY

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11 AM - 12 PM



Live Online

ABSTRACT

Psychiatry can be viewed as decision making under partial observation: clinicians rarely observe the latent mechanisms that drive individual trajectories, and both patients and the data used to model them are heterogeneous in ways that can limit generalization across settings. This talk aims to distinguish artificial intelligence and machine learning (AI/ML) approaches most likely to support precision psychiatry in the near term from those that, while promising, remain research grade. We review methods for identifying clinically meaningful dimensions and subtypes that can improve prognosis, stratify treatment response, and inform treatment selection, including neurostimulation. We then examine why reinforcement learning (RL) for dynamic treatment regimes, despite being conceptually well matched to longitudinal care, is constrained by typical psychiatric data regimes. Finally, because clinical data are multimodal, incomplete, and uneven, we discuss adaptive routing approaches that learn how to weight available modalities on a per-patient basis, improving robustness and interpretability under nonrandom missing data. Throughout, we emphasize that better state representation and measurement modeling are prerequisites for credible AI-based improvement of treatment optimization.

SPEAKER

Logan Grosenick, PhD, is an Assistant Professor of Neuroscience who develops AI and neuroengineering approaches that bridge algorithms and experiments to explain why patients differ and how treatments can be more precisely tailored. His lab's work spans multimodal prediction, representation learning, graph methods, and reinforcement learning, alongside large-scale brain and behavior studies aimed at precision psychiatry. He received his PhD in Neurosciences at Stanford University with Karl Deisseroth, MD, PhD, and completed postdoctoral training in Statistics at Columbia University with Liam Paninski, PhD. He serves as the inaugural AI Editor for JAMA Psychiatry and is a Consulting Editor for JAMA+ AI.

LEARNING OBJECTIVES

1. Describe how clinically meaningful dimensions and subtypes can be derived from multimodal psychiatric data, and explain how these representations may inform prognosis and treatment stratification.
2. Explain the limitations of reinforcement learning approaches to dynamic treatment regimes in psychiatry, including the impact of confounding, limited action coverage, partial observability, and challenges in off-policy evaluation.
3. Identify and apply practical strategies for addressing clinical data heterogeneity, including multimodal missingness and variability in measurement quality.

REFERENCES

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