

CEH SEMINAR: DR. SHAN LIU

## Data Analytic Models and Insights in Adaptive Treatment of Chronic Depression

HOST: DR. SANJAY MEHROTRA

Evidence-based healthcare modeling research is increasingly in demand due to excessive costs and the desire to improve quality of care in the U.S. Our goal is to identify optimal strategies to improve population health outcomes under limited resources, while accounting for patients' heterogeneity in disease progression and population dynamics. This talk will feature research at the UW Healthcare Analytics Lab using advanced analytics to tackle one urgent problem facing Americans today—depression. Mitigating depression has become a national health priority as it affects 1 out of 10 adults in the U.S. We design predictive and optimization models aiming to adaptively monitor and treat chronically depressed patients. Prognostic-based monitoring that stratifies patients' disease risk and adaptively allocates treatment resources to high-risk patients may improve overall health outcomes. Our objective is to translate data into solutions regarding who should be monitored and treated at the appropriate time, and study how cost-effective these adaptive strategies could be.

### BIOGRAPHY

Shan Liu is an associate professor of Industrial & Systems Engineering at the University of Washington. She received her Ph.D. in Management Science & Engineering from Stanford University, a S.M. in Technology and Policy from MIT, and a B.S. in Electrical Engineering from The University of Texas at Austin. Her research focuses on the design and evaluation of healthcare interventions to improve patients' health and enable cost-effective care delivery. She develops methods in sequential decision making, decision analytics, and systems modeling to optimize healthcare systems in areas such as hepatitis C, mental health, influenza, COVID-19, trauma, and HIV. She has received multiple grants from the National Science Foundation and National Institutes of Health. She is an associate editor for Healthcare Management Science, and currently serving as secretary to the INFORMS Health Applications Society.



**Shan Liu**

Associate Professor, Industrial and Systems Engineering  
Adjunct Associate Professor, Radiology  
University of Washington

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 Virtual  
[RSVP](#)