

From: [Blanco, Rochelle](#)
Subject: CAPS Methods Core Town Hall next Tues.: Anna Hotton, PhD -- Understanding Socio-Structural Drivers of HIV Transmission Using Epidemiology and Systems Science -- Tues., Jan. 11th, 11-12:30 on Zoom
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CAPS Town Hall & CAPS Methods Core present:

Anna Hotton, PhD



Understanding Socio-Structural Drivers of HIV Transmission Using Epidemiology and Systems Science

**Tues., Jan. 11th, 2022
11:00am – 12:30pm**

[Register Here](#)

Interventions to optimally increase engagement in HIV prevention and care continuums will likely need to be combined with those that address more distal **social determinants of health** that disproportionately affect those at greatest risk of HIV. However, such interventions are likely to be resource intensive, logistically and ethically challenging, and require large sample sizes and lengthy follow-up for effects to be observed. Gaps thus remain in our understanding of which types and combinations of interventions would have the most impact in given contexts. Further, traditional epidemiologic and statistical approaches have limitations when attempting to quantify relationships among highly correlated, complex, and dynamic exposures and outcomes.

Agent-based models can be used to investigate the complex processes by which socio-structural factors influence HIV outcomes at the population level and offer a virtual platform on which to conduct a series of counterfactual experiments to evaluate candidate interventions. In this presentation, I discuss **integration of methods from epidemiology and agent-based modeling to better understand the impact of social determinants of health on HIV prevention and care engagement**. I will present methods for combining data from multiple empirical sources to create a realistic and granular synthetic agent population that reflects local epidemic characteristics. I then discuss examples of how the model can be used to study the relationships among **social determinants of health, psychosocial mediators, and HIV prevention and care continuum outcomes** and compare outcomes under various intervention scenarios. **Implications for future intervention development and implementation science** will also be discussed.

Anna Hotton is a Research Assistant Professor in the Department of Medicine at the University of Chicago and Director of Epidemiology at the Chicago Center for HIV Elimination. As an epidemiologist with training in complex study design and quantitative methods, Dr. Hotton has developed a diverse portfolio of interdisciplinary research aimed at understanding the psychosocial impact of, contextual, and structural drivers of infectious diseases among populations experiencing health inequities. Her research applies methods from epidemiology and systems science for understanding the impact of socio-structural stressors on infectious disease transmission and evaluation of public health interventions and involves collaborations across multiple academic, community based, and public health institutions in Chicago. This work includes several applied epidemiology and agent-based modeling investigations of infectious disease dynamics and prevention interventions, including models of HIV, syphilis, and COVID-19. Dr. Hotton received her PhD in Epidemiology from the University of Illinois at Chicago School of Public Health.



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(pronouns: she/her/hers) : <https://lgbt.ucsf.edu/pronounsmatter>

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