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Computer Science Seminar Series, 2010

National Capital Region

Application of Agent-Based Computational Modeling to Behavioral Epidemiology

Speaker: Dr. Ross A. Hammond
Economic Studies Program, The Brookings Institution

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1:00PM- 2:00PM, NVC 325

Abstract

Agent-based computational modeling (ABM) is a relatively new simulation technique for the study of complex systems and design of policy interventions for such systems. The technique offers particular advantages because of its ability to capture heterogeneity, adaptive behavior, and feedback dynamics between multiple levels of aggregation. ABM has been extensively used in the social sciences, but has only recently been applied in public health. I will give a brief introduction to the approach, and an overview of recent and ongoing applications from my work in public health and epidemiology.

Biography

Ross A. Hammond is a Senior Fellow in Economics Studies at The Brookings Institution, where he is a member of the Center on Social and Economic Dynamics. His primary area of expertise is modeling complex dynamics of social, economic, political, and public health systems using mathematical and agent-based computational methods. His current research topics include: obesity, behavioral epidemiology, corruption and anti-corruption policies, ethnocentrism and inter-group relations, and the dynamics of trust. Hammond received his B.A. from Williams College and his Ph.D. from the University of Michigan. He has authored or co-authored numerous scholarly publications, on a wide range of topics, in journals such as Proceedings of the National Academy of Sciences, Journal of Conflict Resolution, Evolution, Theoretical Population Biology, Preventing Chronic Disease, PLOS_One, and Complexity. Hammond has previously been the Okun-Model Fellow in Economic Studies at the Brookings Institution, an NSF IGERT Fellow at the Center for the Study of Complex Systems at the University of Michigan, a visiting scholar at the Santa Fe Institute, and a Consultant at PricewaterhouseCoopers LLP.