

*The NIH Behavioral and Social Sciences Research Lecture Series,
Sponsored by OBSSR/OD/NIH,
Presents a special mini-symposium*

**Harnessing Systems Science Methodologies to Inform Public Policy:
System Dynamics Modeling For Obesity Policy in the Envision Network**

July 15, 2011 2:00-4:00 pm
Neurosciences Center, Conference Room A



Alice Ammerman, DrPH, RD Dr. Ammerman is a Professor in the Department of Nutrition, Gillings School of Global Public Health and Director of the Center for Health Promotion and Disease Prevention at UNC-Chapel Hill. She has over 20 years of experience conducting nutrition and physical activity research aimed at obesity and chronic disease risk prevention among underserved populations in a wide variety of community-based settings, including community health centers, health departments, schools, and faith-based organizations. She is Co-PI of the Center of Excellence for Training and Research Translation, charged with identifying evidence-based obesity programs and policies for translation, training, and dissemination through an interactive website. Dr. Ammerman has strong research and practice collaborations across the state employing community-based participatory research (CBPR). Recent research addresses the interface between sustainable local food systems and public health including food access and social entrepreneurship as an approach to health disparities. She currently serves on the statewide NC Sustainable Local Food Advisory Council and was a member of the recent national IOM Task Force addressing policy to prevent early childhood obesity.



Dr. Hazhir Rahmandad is an assistant professor of Industrial and Systems Engineering at Virginia Tech. Dr. Rahmandad received his Ph.D. in System Dynamics from the Massachusetts Institute of Technology and has been teaching dynamic modeling at Virginia Tech since 2006. He has published in diverse journals including Management Science, Epidemiology and Infection, Organization Science, and System Dynamics Review among others and his research has been funded by NSF, NIH, FAA, and private sector firms. Building on his modeling expertise, Dr. Rahmandad has studied multiple public health problems, including building individual and population level models of obesity dynamics, comparing different modeling methodologies in application to disease transmission, modeling the dynamics of different risk factors leading to construction falls, and building agent-based models to inform polio eradication strategy. In another set of projects he has built detailed system dynamics models of complex organizational processes. He has modeled how organizations learn in the presence of delays between taking action and observing the results and has shown through qualitative, archival, and quantitative data the learning challenges in such contexts. His other firm level research include optimizing pricing and openness strategies for software firms and understanding tradeoffs in building long vs. short term organizational capabilities. In a third line of research Dr. Rahmandad has contributed to expanding the system dynamics modeling toolbox. Specifically he has conducted research on finding optimal policies in system dynamics models and finding the equilibriums of differential games in these models. Furthermore, his ongoing research in developing and applying advanced model validation and parameter estimation methods for system dynamics models of population health directly inform the crucial model validation step which is part of any simulation based analysis. Dr. Rahmandad has a track record of documenting all his research models and publicly sharing them through his website and by building simulation based learning environments or microworlds to increase the impact of his research.



Dr. Laura K. Brennan is Founder and CEO of Transtria LLC, a certified, woman-owned, small public health research and consulting company in St. Louis, Missouri with a vision of uniting people, places, and policies to revolutionize public health. She is also an assistant professor of Behavioral Science and Health Education in the Department of Community Health at Saint Louis University School of Public Health. Dr. Brennan has led multiple projects at the national, state, and local levels with practitioners, researchers, providers, community members, and advocacy groups related to designing, planning, implementing, or evaluating research- and practice-based efforts to address social, economic, and environmental influences on behaviors and health. Dr. Brennan has published 19 peer-reviewed articles studying behaviors and health; she is lead author on *Promoting Healthy Equity: A Resource to Help Communities Address Social Determinants of Health* (publication of the Centers for Disease Control and Prevention); she is a co-author on *Tailoring Health Messages: Customizing Communication with Computer Technology*; and she is a co-author on *Local Government Actions to Prevent Childhood Obesity* (publication of the Institute of Medicine). She is President of the board for the Missouri Family Health Council.



Dr. Peter Hovmand is the founding director of the Social System Design Lab at the Brown School of Social Work, Washington University in St. Louis where he uses system dynamics to understand and evaluate community level interventions. He has a background in electrical engineering, mathematics, and philosophy, and received his doctorate in social work and community psychology from Michigan State University. His research focuses on developing and using participatory group model building (GMB) techniques to involve community members in the creation of models to understand the role of social determinants, implementation and scale-up of interventions, and development of community prevention strategies. Application areas include childhood obesity, mental health, domestic violence, child welfare, household economic security, household economic security, and the implementation and scale-up of health interventions. His philosophical interests focus on ordinary language philosophy, feminist theory, epistemology, and philosophy of mathematics. Dr. Hovmand has conducted GMB research and workshops in both domestic and international settings, including rural and urban India, Mongolia, United Kingdom, and China. He teaches graduate courses on system dynamics and group model building.

For more information about *CompMod* and the Envision networks, which are part of the National Collaborative on Childhood Obesity Research (NCCOR) please visit:

<http://www.nccor.org/envision/>