

## CURRICULUM VITAE

### **Ross A. Hammond**

Senior Fellow, Economic Studies Program  
Director, Center on Social Dynamics & Policy  
The Brookings Institution  
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**PRIMARY RESEARCH INTEREST:** Modeling complex dynamics in social, economic, and public health systems using mathematical and computational methods

**CURRENT RESEARCH TOPICS:** Obesity etiology and prevention, tobacco control, implementation science, food systems and food security, developmental and neurobiological approaches to food choice, social norms and social contagion, early childhood literacy, health disparities, behavioral epidemiology, decision-making, crime, corruption, segregation

### **PROFESSIONAL EXPERIENCE**

- Director, Center on Social Dynamics and Policy, The Brookings Institution, (2010-present)
- Senior Fellow, The Brookings Institution, Economic Studies Program, (2010 – present)
- Associate Professor (adjunct), Harvard School of Public Health, Nutrition Department (2014-present)
- External Professor, The Santa Fe Institute (2014-present)
- Associate Visiting Professor, University of Michigan School of Public Health, Epidemiology Department (summers 2013-2016)
- Senior Scholar, Brown School, Washington University (2012-present)
- Public Health Advisor, Division of Cancer Control & Population Sciences, National Cancer Institute and Office of Behavioral & Social Science Research, National Institutes of Health (2013-present)
- Advisory Special Government Employee, Center for Tobacco Products, Food and Drug Administration (2014-present)

- Research Associate, Centre for Applied Macroeconomic Analysis, Australian National University (2013-present)
- Fellow, The Brookings Institution, Economic Studies Program (2006-2009)
- NSF IGERT fellow, Center for the Study of Complex Systems, University of Michigan (2003–2005)
- Research Modeler, The Brookings Institution, Washington D.C. (2000-2001)
- Consultant, PricewaterhouseCoopers LLP, Arlington, VA (1999-2000)

#### AWARDS, PROFESSIONAL SOCIETIES, AND MEMBERSHIPS

- Appointed member, Food and Nutrition Board of the National Academy of Sciences (2017 – present)
- Appointed HHS Advisory Council member for National Institute on Minority Health and Health Disparities, NIH (2015 - present)
- Appointed Commissioner, *Lancet* Commission on Obesity (2015 - present)
- Editorial Board, *Behavioral Science and Public Policy* (2013 - present)
- Editorial Board, *Childhood Obesity* (2010-present)
- Appointed Committee Member, National Academy of Science/Institute of Medicine Committee *Evaluating Approaches to Assessing Prevalence and Trends in Obesity* (2015-2016)
- Appointed Committee Member, National Academy of Science/Institute of Medicine Committee *Framework for Assessing the Health, Environmental, and Social Effects of the Food System* (2013-2015)
- Member, Paradigm II Research Workgroup on complex systems approaches to understanding breast cancer causation and prevention (2014-2016)
- Steering committee, National Collaborative on Childhood Obesity Research Envision project CompMod network (2009-2015)
- Member, NIH/USDA/RWJF National Collaborative on Childhood Obesity Research (2009-2015)
- Founding Member, NIH Office of Behavioral and Social Science Network

on Inequality, Complexity, and Health (NICH) (2010-2015)

- Member, NIH MIDAS (Models of Infectious Disease Agent Study) Network (2006-2011)
- Okun-Model Early-Career Fellowship in Economics (2006-7)
- NSF IGERT IDEAS Fellow, Center for the Study of Complex Systems, University of Michigan (January 2003 – August 2005)

## EDUCATION

UNIVERSITY OF MICHIGAN  
Ann Arbor, Michigan  
September 2001-August 2006

Ph.D., Department of Political Science. Fields of Specialization:  
Comparative Politics, Political Economy and Development, Methodology,  
and Complex Systems. Dissertation Chair: Robert Axelrod

WILLIAMS COLLEGE  
Williamstown, Massachusetts  
September 1995-June 1999

B.A. (with Honors). Double-major in Economics and Political Science with  
honors thesis on dynamics of corruption.

## PEER-REVIEWED PUBLICATIONS

Economos C and **Hammond RA**. “Designing effective and sustainable multi-faceted interventions for obesity prevention and healthy communities”. *Obesity* 25(7):1155-1156 (2017).

Luke D, **Hammond RA**, Combs T, Sorg A, Kasman M, Mack-Crane W, Ribisl KM, and Henriksen L. “Tobacco Town: Using computational modeling to study effects of policies designed to reduce tobacco retailer density” *American Journal of Public Health* 107(5): 740-746 (2017).

**Hammond RA**, Osgood N, and Wolfson M. “Using Complex Systems Simulation Modeling to Understand Health Inequality” in Kaplan, ed. *Growing Inequality: Bridging Complex Systems, Population Health, and Health Disparities*, Westphalia Press (2017).

Fleischer NL, Liese AD, **Hammond RA**, Coleman-Jensen A, Gundersen C, Hirschman J, Frongillo EA, Ma X, Mehta N, and Jones SJ. “Using systems science to gain insight into childhood food security in the United States: Report of an expert mapping workshop”. *J Hunger & Envi Nutr.* 12(1):1-23 (2017).

Reedy J, Krebs-Smith S, **Hammond RA**, and Hennessy E. “Advancing the science of dietary patterns research: developing a framework and leveraging a complex systems approach” *Journal of the Academy of Nutrition and Dietetics* 117(7):1019-1022 (2017).

Kumanyika S, Kasman M, Whitt-Glover MC, Mack-Crane A, Kaplan G, and **Hammond RA**. “A Prototype for Identifying Policy-Relevant Reasons for Gender Differences in Physical Activity” in Kaplan, ed. *Growing Inequality: Bridging Complex Systems, Population Health, and Health Disparities*, Westphalia Press (2017).

Vodovotz Y, Xia A, Read E, Bassaganya-Riera J, Hafler D, Sontag E, Wang J, Tsang J, Day J, Kleinstein S, Butte A, Altman M, **Hammond RA**, Sealfon S. “Solving Immunology?” *Trends in Immunology* 38(2):116-127 (2016).

Gillman MW and **Hammond RA**. “Precision Treatment and Precision Prevention: Integrating ‘Below and Above the Skin’” *JAMA Pediatrics* 170(1):9-10 (2016).

Hennessy E, Ornstein J, Economos C, Bloom-Herzog J, Lynskey V, Coffield E, and **Hammond RA**. “Designing an agent-based model for childhood obesity interventions: A case study of ChildObesity180”. *Preventing Chronic Disease* 13:150414 (2016).

Ornstein J and **Hammond RA**. “The Burglary Boost: A Note on Detecting Contagion Using the Knox Test”. *Journal of Quantitative Criminology* 33(1):65-75 (2016).

**Hammond RA**. “Considerations and Best Practices in Agent-based Modeling to Inform Policy”. In *Assessment of Agent-based Models to Inform Tobacco Policy*: Institute of Medicine, National Academy of Sciences Press (2015).

Hawkes C, Smith T, Jewell J, Wardle J, **Hammond RA**, Friel S, Throw AM, Kain J. “Smart Food Policies for Obesity Prevention”. *The Lancet* 385:9985, pp. 2410-2421 (2015).

Huang TTK, Cawley JH, Ashe M, Costa SA, Frerichs LM, Zwicker L, Rivera JA, Levy D, **Hammond RA**, Lambert E, Kumanyika S. “Mobilisation of Public Support for Policy Actions to Prevent Obesity” *The Lancet* 385:9985, pp. 2422-2431 (2015).

Shoham D, **Hammond RA**, Rahmandad H, Wang Y, and Hovmand P. “Modeling social norms and social influence in obesity” *Curr Epidem Reports* 2(1):71-79 (2015).

**Hammond RA**. “Complex Adaptive Systems” in Neff, R (ed) *Introduction to the US Food System: Public Health, Environment, and Equity*, Jossey-Bass. (2014)

**Hammond RA** and Ornstein J. “A model of social influence on body weight”. *Ann N Y Acad Sci* 1331:34-42 (2014)

Bruch EB, **Hammond RA**, Todd PM. “Co-evolution of decision-making and social environments” in *Emerging Trends in the Social and Behavioral Sciences* (eds.) Robert Scott and Stephen Kosslyn, Hoboken, NJ: John Wiley and Sons (2014).

Hall K, **Hammond RA**, Rahmandad H. “Dynamic interplay between homeostatic, hedonic, and cognitive feedback circuits regulating body weight”. *American Journal of Public Health* 104(7):1169-1175 (2014).

Ip E, Shoham D, **Hammond RA**, Huang TTK, Wang Y, Rahmandad H, and Mabry PL. “Reconciling Statistical and Systems Science Approaches to Public Health” *Health Ed & Behav.* 30(1S):123-131 (2013).

Brown JR, Elliott D, Gordon T, and **Hammond RA**. “A Review of the Pension Benefit Guaranty Corporation Pension Insurance Modeling System” (2013). Available at SSRN: <http://ssrn.com/abstract=2329987>

**Hammond RA**, Ornstein JT, Fellows LK, Dube L, Levitan R, and Dagher A. “A model of food reward learning with dynamic reward exposure” *Front. Comput. Neurosci.* 6:82 (2012).

**Hammond RA** and Dube L. “A Systems Science Perspective and Transdisciplinary Models for Food and Nutrition Security” *Proceedings of the National Academy of Sciences* 109(31):12356-12363 (2012).

Nader PR, Huang TTK, Gahagan S, Kumanyika S, **Hammond RA**, and Christoffel KK. “Next Steps in Obesity Prevention: Altering Early Life Systems to Support Healthy Parents, Infants, and Toddlers” *Childhood Obesity* 8(3):195-204 (2012).

Gulden TR and **Hammond RA**. “Beyond Zipf: An Agent-Based Understanding of City Size Distributions” In Heppenstall AJ, Crooks AT, See LM, Batty M eds. *Agent-Based Models of Geographical Systems*. New York: Springer (2012).

Huang TTK, Grim B, and **Hammond RA**. “A systems-based typological framework for understanding the sustainability, scalability, and reach of childhood obesity interventions” *Children’s Health Care* 40:253-266 (2011).

Mabry PL, **Hammond RA**, Huang T, and Ip EH. “Computational and statistical models: A comparison for policy modeling of childhood obesity.” In Salerno JJ, et al. (eds) *Social Computing, behavioral-cultural modeling and prediction (SBP) 4<sup>th</sup> International Conference Proceedings* (p. 87), New York: Springer.

Epstein JM, Pankajakshan R, and **Hammond RA**. “Combining Computational Fluid Dynamics and Agent-Based Modeling: A New Approach to Evacuation Planning” *PLOS\_One* 6(5):e20139 (2011).

**Hammond RA**. “Social influence and obesity” *Current Opinion in Endocrinology, Diabetes & Obesity* 17(5):467-471 (2010).

**Hammond RA** and Levine R. “The Economic Impact of Obesity in the United States” *Diabetes, Metabolic Syndrome, and Obesity: Targets and Therapy* 3:1-11 (2010).

**Hammond RA**. “A Complex Systems Approach to Understanding and Combating the Obesity Epidemic”. In *Obesity Prevention: The Role of Brain and Society in Individual Behavior*, L. Dube et al, eds. Amsterdam: Elsevier (2010).

Klemens B, Epstein JM, **Hammond RA**, Raifman M. “Empirical Performance of a Decentralized Civil Violence Model” *Brookings Center on Social and Economic Dynamics Paper* 56 (2010)

Lempel H, **Hammond RA**, and Epstein JM. “Economic Cost and Health Care Workforce Effects of School Closures in the U.S.” *PLOS Currents: Influenza* (2009).

**Hammond RA**. “Complex Systems Modeling for Obesity Research”. *Preventing Chronic Disease* 6(3) (2009).

Epstein JM, Parker J, Cummings D, and **Hammond RA**. “Coupled Contagion Dynamics of Fear and Disease: Mathematical and Computational Explorations” *PLOS\_One* 3(12):e3995 (2008).

Dube L, Bechara A, Bockenholt U, Ansari A, Dagher A, Daniel M, DeSarbo W, Fellows LK, **Hammond RA**, Huang TTK, et al. “Brain-to-Society Systems Models of Individual Choice” *Marketing Letters* 19:323-336 (2008).

Shultz T, Hartshorn M, and **Hammond RA**. “Stages in the Evolution of Ethnocentrism” In B.C. Love, K. McRae, & V.M. Sloutsky (Eds). *Proceedings of the 30<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 1244-1259) (2008).

Epstein JM, Parker J, Cummings D, and **Hammond RA**. “Mathematical and Computational Explorations of Coupled Contagion Dynamics” In *Proceedings of the 26th International Conference of the System Dynamics Society*, Curran Associates. (2008)

**Hammond RA** and Epstein J. “Exploring Price-Independent Mechanisms in the Obesity Epidemic” *Center on Social and Economic Dynamics Paper* 48 (2007).

**Hammond RA**. “Vision 2030: Securing Growth Momentum for the Future” *Proc. Vision 2030 Global Forum on Sustainable Development* (2007).

Epstein JM, Parker J, Cummings D, and **Hammond RA**. “Coupled Contagion Dynamics” *Santa Fe Institute Working Paper 07-12-48* (2007)

**Hammond RA**. “Migration and Ethnocentrism” in *Models of Social Dynamics: Corruption, Migration, and Prejudice* University of Michigan UMI No. AAI3253279 (2006).

**Hammond RA**. “Endogenous Transition Dynamics in Corruption” in *Models of Social Dynamics: Corruption, Migration, and Prejudice* University of Michigan UMI No. AAI3253279 (2006).

**Hammond RA**. “Inter-group Contact: Movement, In-group favoritism, and Individual Reciprocity” in *Models of Social Dynamics: Corruption, Migration, and Prejudice* University of Michigan UMI No. AAI3253279 (2006).

**Hammond RA** and Axelrod R. “The Evolution of Ethnocentrism” *Journal of Conflict Resolution* 50: 926-936 (2006).

**Hammond RA** and Axelrod R. “Evolution of Contingent Altruism When Cooperation is Expensive” *Theoretical Population Biology* 69(3), 333-338 (2006).

Axelrod R, **Hammond RA**, and Grafen A. “Altruism via kin-selection strategies that rely on arbitrary tags with which they co-evolve” *Evolution* 58(8), 1833-1838 (2004).

Epstein JM and **Hammond RA** “Non-explanatory equilibria: An extremely simple game with (mostly) unattainable fixed points” *Complexity* 7(4), 18-22 (2002).

Axtell R, Epstein JM, Dean JS, Gumerman GJ, Swedlund AC, Harbuser J, Chakravarty S, **Hammond RA**, Parker J, Parker M. “Population growth and collapse in a multiagent model of the Kayenta Anasazi in Long House Valley” *Proceedings of the National Academy of Sciences* 99(3), 7275-7279 (2002).

Epstein JM and **Hammond RA**. “Non-explanatory equilibria” *Santa Fe Institute Working Paper 01-08-043* (2001)

**Hammond RA**. “Endogenous Dynamics of Corruption”. *Brookings Institution Center on Social and Economic Dynamics Paper 19* (1999) – revised 2008

#### ARTICLES CURRENTLY UNDER REVIEW and WORKING PAPERS

“Development and testing of a survey to assess knowledge, engagement, and social network characteristics of community stakeholders involved in childhood obesity prevention” (under review, 2017)

“Estimating the Lifetime, Societal Costs of Obesity in the United States” (under review, 2017)

“Soft systems methods for the study of non-communicable diseases” (under review, 2017)

“Spatial clustering and the effectiveness of epidemic interventions” (2014)

#### POLICY BRIEFS AND OP-EDs

Friedman A, Mack-Crane A, and **Hammond RA**. “Cyber-enabled Competitive Data Theft: A Framework for Modeling Long-Run Cybersecurity Consequences” (2013). Available at <http://www.brookings.edu/research/papers/2013/12/06-cyberenabled-competitive-data-theft-cybersecurity>

**Hammond RA**. “Obesity, Prevention, and Health Care Costs”. *Brookings Campaign 2012*. Brookings Press (2012).

**Hammond RA**. “Systemic Risk in the Financial System: Insights from Network Science”. *Briefing Paper #12, Pew Financial Reform Project* (2009).

Graham C, Young P, and **Hammond RA**. “Obesity and the Influence of Others” Op-Ed *The Washington Post* August 21, 2007 (2007).

#### SELECTED PRINT MEDIA COVERAGE

“Indigenous obesity symposium held in Rotorua” *New Zealand Herald* May 2, 2017

“New Lifetime Estimate of Obesity Costs” *The Fiscal Times* May 15, 2015

“American economy has a weight problem as costs of obesity mount” *Dallas News* March 11, 2015

“Obesity Is Complicated and Needs New Approach, Scientists Say” *Live Science* Feb 19, 2015

“Global Progress Against Obesity ‘Unacceptably Slow’” *Reuters* Feb 18, 2015

“Obesity experts call for stricter rules on junk food ads targeted at children” *The Guardian* Feb 18, 2015

“Obesity is a health care ‘time bomb,’ warn Lancet authors” *Toronto Star* Feb 18, 2015

“Can the U.S. Prevent a Deadly Ebola Outbreak?” *The Fiscal Times* Oct 9, 2014

“How the CDC Would Combat an Ebola Outbreak, However Unlikely” *Newsweek* Oct 7, 2014

“How Fear of Ebola Could Impact the US Economy” *ABC News* Oct 3, 2014



“Working group tackles public health and health inequality” *Medical Xpress* Oct 1, 2014

“Researcher to talk on world’s growing obesity epidemic” *Santa Fe New Mexican* Feb 12 2014

“Flu-conomics” *Reuters* January 21<sup>st</sup>, 2013

“Roberts Saves Obamacare: Now the Real Work of Reform Begins” *Huffington Post* July 3<sup>rd</sup>, 2012

“Obesity: Food for thought” *The Economist* May 19<sup>th</sup> 2012

“What is the worsening obesity epidemic costing us?” *The New Republic* July 14, 2011

“How Obesity Spreads In Social Networks” *Scientific American* May 5, 2011

“Obesity costs US 216 billion dollars” *AFP* Sept 14, 2010

“People: In the Tanks” *National Journal* Sept 4, 2010

“The Scouting Report Web Chat: Flu Contagion in Schools” *Politico webchat* October 21, 2009

“Swine Flu School Closings Could Cost Billions,” *The Associated Press* September 30, 2009.

“High cost to close schools for swine flu,” *UPI* September 30, 2009.

“Swine flu fear catching fast in weak world economy”, Adam Geller. *The Associated Press* April 28, 2009.

“Swine flu: An Investor’s Overview”, David Bogoslaw. *Business Week* April 28, 2009.

“Born Prejudiced”, Mark Buchanan. *The New Scientist* March 17, 2007.

*The Social Atom*, Mark Buchanan. Bloomsbury, USA May, 2007.

“We’re Prejudiced, now what?”, Robert Burton. *Salon* October 31, 2007

“Life with the Artificial Anasazi,” Jared Diamond. *Nature* 419(6907), 2002.

“Seeing Around Corners,” Jonathan Rauch. *The Atlantic Monthly* April 2002.

#### SELECTED BROADCAST MEDIA COVERAGE

BBC America, PBS Newshour, NPR “Diane Rehm Show”, NPR “Marketplace”, NPR “The Takeaway”, Fox Business, Al Hurrah, The Joel Riley Morning Show, MSNBC, regional NBC, CBS, and ABC affiliates

### RECENT MAJOR CONSULTANCIES AND SELECTED PRESENTATIONS

“Applications of Complex Systems Modeling in Food Systems and Public Health: Progress and Potential” invited presentation at Tufts University Friedman School of Nutrition Science and Policy Friedman Seminar Series. (April 2017)

“Toward precision prevention: design of effective strategies for healthy communities”, invited presentation at Crawford School of Public Policy, Australian National University (April 2017).

Consultant to Drexel University, project on food and transport policy in Latin American Cities funded by Wellcome Trust UK (2017-present)

“Current State of Early Childhood Obesity Research” *National Collaborative on Childhood Obesity Research* (NCCOR) Panel briefing for leadership. (March 2017)

“Policy-oriented Models in Tobacco and Obesity” Presentation at *10<sup>th</sup> Annual Multiscale Modeling Consortium*. Interagency Modeling and Analysis Group Multiscale Modeling Consortium, NIH (March 2017)

Invited content expert on obesity etiology and prevention in the planning of a Pathways to (P2P) workshop on Advancing Research Methods for Evaluation of Natural Experiments in Obesity Prevention and Control. (January 2017)

“Uses of Agent-based Modeling to Inform Policy and Science in Chronic Disease--Brief Overview” Presentation at public workshop, *Committee on the Development of Guiding Principles for the Inclusion of Chronic Disease Endpoints in Future Dietary Reference Intakes*, National Academy of Sciences. (January 2017)

“Thinking about Communities as the Locus of Change: Novel Approaches and Costs” Presentation to *Roundtable on Obesity Solutions Workshop*, National Academy of Sciences. (January 2017)

“Applications of Complex Systems to Population Health” Presentation at Massachusetts General Hospital/Harvard Medical School Disparities Research Unit. (December 2016)

“Applications of complex systems modeling in public health: Progress and Potential” Presentation at *University of Michigan’s Center for the Study of Complex Systems*. (October 2016)

“Obesity and a Complex Systems Approach to Solutions” Lecture on obesity and a complex systems approach to solutions to medical and healthcare professionals, faculty, policy-makers and students. Healthspottr and Santa Fe Institute Discussion on Obesity Work. (October 2016)

“System Science and Complex Models” Faculty speaker at intensive course focused on concepts, methods, key issues, and new applications needed to conduct and implement translational and transdisciplinary research and interventions addressing health disparities, National Institute of Health’s Health Disparities Research Institute. (August 2016)

“Applying Systems Science Methods: Building Agent-based Models” Presentation at *International Congress on Obesity* Satellite on Obesity Prevention in Vancouver. (May 2016)

“Applications of Complex Systems Science in Nutrition: Public Health, Dietary Patterns, Food Systems, and Precision Prevention” Presentation at Presidential Symposium, American Society of Nutrition, *Experimental Biology* 2016. (April 2016)

“Applying Complex Systems Models to Population Health and Health Behavior” Presentation at University of California San Francisco. (February 2016)

“Complex Systems Approaches in Public Health: Progress, Potential, and Application to Health Disparities” Invited INSPRD talk at National Institute on Minority Health and Health Disparities, National Institute of Health. (January 2016)

“A framework for assessing food system effects” Briefing to the Board on Agriculture and Natural Resources, *National Academy of Sciences*. (December 2015)

“A framework for assessing food system effects” Briefing to USDA National Agriculture Research Economics Extension and Education Advisory Board. (December 2015)

“Advances in individual-based modeling approaches” Presentation at NIH workshop *Complex Systems Science and Autoimmune Diseases*. (October 2015)

“Deconstructing Complexity in Developmental Origins of Health and Disease” Presentation at Harvard Medical School. (October 2015)

“Assessing the Effects of the Food System: A Systems Approach” Executive briefing at National Institute of Food & Agriculture (NIFA), United State Department of Agriculture. (October 2015)

“Complex Systems Science – Helping to Solve the Puzzle” Presentation at workshop on *Complex Systems Science and Immunology*, NIAID, National Institutes of Health. (October 2015)

“COMPACT (Childhood Obesity Modeling for Prevention and Community Transformation): Developing and Applying Complex Systems Models to Obesity Prevention” Co-hosted workshop at the Santa Fe Institute. (October 2015)

“Complex Systems Modeling for Prevention, Dissemination, and Implementation Research in Public Health” Keynote presentation at Washington University Siteman Cancer Center and Center for Dissemination and Implementation. (September 2015)

“A Complexity Lens and Complex Systems Modeling for Public Health” Presentation at *Workshop on Complexity*, Nanyang Technological University, Singapore. (July 2015)

“Agent-based modeling in public health” Presentation at Singapore Management University, Singapore. (July 2015)

“Applying Agent-based Modeling to Understand Co-evolving Biology and Environmental Exposure” Presentation at Canadian Institute for Advanced Research, meeting on *Child and Brain Development*. (June 2015)

“New applications of complex systems modeling to population health: obesity and tobacco control” Presentation at Crawford School of Public Policy, Australian National University. (May 2015)

“Why do we need models (for population health) and how have they been used” Lecture at Institute of Medicine of the National Academies of Sciences, *Roundtable on Population Health Improvement*. (April 2015)

“A Framework for Assessing the Effects of the Food System” Briefing for Office of Science and Technology Policy/President’s Council of Advisors on Science and Technology, White House. (March 2015)

“Complex Systems Science and Obesity Research” Lecture at *Obesity Research Task Force*, National Institutes of Health. (March 2015)

Consultant to Institute of Medicine committee *Assessment of Agent-Based Tobacco Models*. 2014-2015

“Changing Health Behavior: Towards A Complex Systems Approach” *Behavioral Science & Policy* launch event, University of Southern California. (February 2015)

“Applying computational modeling as a policy tool in public health” at *New York City Department of Health*. (December 2014)

“Systems Science Models to Inform Policy: Brief thoughts” *Academy Health Webinar*. (November 2014)

“Potential for Agent-based Modeling and Complex Systems Science to inform Health behavior theory” *National Cancer Institute* workshop on Health Behavior (October 2014).

“Modeling Social Influence on BMI” *Johns Hopkins Global Obesity Center* workshop on Network Science and Obesity. (October 2014)

“Systems Science for Population Health” *Harvard Medical School*. (September 2014)

“Agent-based Modeling and Chronic Disease Control” *National Association of Chronic Disease Directors* (NACDD), Science, Epidemiology and Evaluation Committee. (August 2014).

“Complex Systems Science for Behavioral Science and Intervention Design” Presentation at *Workshop on Innovative Study Designs and Methods for Developing, Testing and Implementing Behavioral Interventions to Improve Health* National Heart, Lung, and Blood Institute, National Institutes of Health. (April 2014)

“Agent-based modeling and the neurobiology of obesity: a model of food reward learning with dynamic reward exposure” Presentation at *Complex Systems, Health Disparities & Population Health: Building Bridges*, National Institutes of Health. (February 2014)

“Agent-based Modeling and Public Health: Progress and Potential” Invited colloquium at the *Santa Fe Institute*. (February 2014)

“Considerations in Design and Execution of Computational Simulation Modeling for Policy” Presentation at Food and Drug Administration workshop, *Modeling and Statistical Methods for the Regulatory Assessment of Tobacco Products*. (December 2013)

“Reward learning, neurobiology, and obesity” *The Obesity Society* ‘Key presentation’ at Annual meeting. (November 2013)

Judge for *American Journal of Preventive Medicine* Childhood Obesity Challenge. (2012-2013)

Consultant to Tufts University, ChildObesity180 project, 2013-present

Consultant to Institute of Medicine committee *Accelerating Progress on Obesity Prevention* 2011 – 2012.

Consultant to The American Legacy Foundation *Schroeder Institute for Tobacco Research* 2013

“Systems Modeling: Opportunities and Challenges” *National Cancer Institute Workshop: Big D.A.T.A. (Data And Theory Advancement)*. (September 2013)

“Complex Systems Modeling Approaches for Public Health” *National Human Genome Research Institute Social and Behavioral Research Branch Seminar*. (August 2013)

“Bringing the Pieces Together: A Systems Approach to Research, Policy, and Action” Closing presentation at Institute of Medicine Public Workshop *Creating Equal Opportunities for a Healthy Weight*. (June 2013)

“Tobacco Town: A Retail Density Policy Laboratory” *State and Community Tobacco Control Research Tobacco Control Meeting*. (May 2013)

“Modeling Public Health using Complex Systems Approaches” *Australian National University Crawford School of Public Policy*. (April 2013)

“Agent-based modeling in Public Health: Promise and Potential” *American Academy of Health Behavior Annual Scientific Meeting*. (March 2013)

Keynote presentation: “A Systems Approach to Managing Chronic Illness”, NIH/ANA *National Nursing Research Roundtable*. (March 2013)

“Agent-based modeling and tobacco policy” *NIH Tobacco Policy Modeling Workshop*. (January 2013)

“Harnessing Systems Science to Advance Behavioral Science and Intervention Design in Public Health” *National Cancer Institute Behavior Research Program Speaker Series* webinar. (January 2013)

“A model of food reward learning with dynamic reward exposure” invited seminar at *Johns Hopkins Global Obesity Center*. (December 2012)

“New Approaches to Understanding and Managing Complex Policy Challenges in Public Health”, presentation at *NIH Obesity Policy Research Grantees Meeting*, NCI. (December 2012)

“Systems Science Approaches, Physical Activity, and Disease Prevention” Presentation at *NIH Office of Disease Prevention Workshop*. (December 2012)

NSF inaugural workshop *Building New Theories of Human Behavior*. Invited participant. (October 2012)

“Systems Modeling, Diet, and Activity Patterns” Presentation at *United Nations Food and Agricultural Organization*. (May 2012).

Consultant to Institute of Medicine on End of Life Care project. 2011-2012.

“Complex Systems Modeling and Public Health: Progress and Potential” Presentation at *Oxford University*. (June 2012)

Consultant to The World Bank, Latin American Public Sector Development division. 2009 – 2011

“Combating Complex Public Health Challenges through Community Intervention”  
Keynote presentation at *Live Well Omaha Summit*, Omaha NE. (November 2011)

“Complex Systems Modeling and Health-focused Policy & Design” Presentation at  
National Collaborative on Childhood Obesity Research *Green Health Workshop*. (October 2011)

“Social Influence, the Brain, and Obesity: Applying Agent-based Computational Modeling” presentation at *Harvard Medical School Postgraduate Nutrition Symposium* (July 2011)

Consultant to the Asian Development Bank. 2009 - 2011

“Assessing the Costs and Complex Drivers of the Obesity Epidemic” Presentation at  
*Attorney’s General Education Program Public Policy Conference*, Washington DC. (April 2011)

“Complex Systems Modeling and Obesity” Presentation at *Second Canadian National Obesity Summit*, Montreal QC. (April 2011)

“Corruption Dynamics, Anti-corruption policies, and Public Perceptions” Presentation at  
*The World Bank*, Latin America Public Sector Development division, Washington DC. (February 2011)

## TEACHING

Faculty (co-lead)/curriculum design, graduate course NUT212 “Systems Science in Public Health” *Harvard School of Public Health* 2013-2016.

Faculty (co-lead)/curriculum design, double-length graduate course EPID793 “Complex Systems Modeling for Public Health Research” supported by NIH R25 award, *University of Michigan School of Public Health GSS* 2015-present.

Faculty (lead)/curriculum design, graduate course EPID793 “Complex Systems Modeling for Public Health Research” *University of Michigan School of Public Health GSS* 2013-2014.

Guest instructor, National Institute of Minority Health and Health Disparities course *Translational Health Disparities* (2015)

Faculty (lead)/curriculum design, Short Course on Systems Science Dynamic Modeling, *National Cancer Institute* 2013.

Faculty (lead)/curriculum design, “Intensive Introduction to Agent-based Modeling”, NIH/CDC *Institute on Systems Science and Health* 2012.

Visiting Instructor, *Modeling Public Health: Complexity, Flexibility, Systems and Agent-based Thinking*, Department of Public Health, NIH FAES Graduate School, 2012-present.

Guest Instructor, Agent-based Modeling, NIH/CDC *Institute on Systems Science and Health* 2011.

Guest Instructor, *Quantitative Methods* graduate seminar, University of Maryland School of Public Policy, 2010-2015

*Recent mentorees:* Judy Maro (currently at Harvard Medical School), Aurite Werman (currently at Federal Reserve), Devon Payne-Sturges (currently at University of Maryland), David Broniatowski (currently at George Washington University), Erin Hennessy (currently at Tufts University), Ivana Stankov (currently at Drexel University), Madeleine Balchan (currently at Washington University in St Louis), Matthew Raifman (currently at Johns Hopkins), Joseph Ornstein (currently at University of Michigan), Ruth Levine (currently at Stanford Law School), Natalie McGarry (currently at The Advisory Board)

#### CURRENT AND RECENT RESEARCH GRANTS

National Institutes of Health / National Cancer Institute. R01: *Mis-implementation in Cancer Prevention and Control*, with Washington University.

Wellcome Trust UK. *What makes cities healthy, equitable and environmentally sustainable? Lessons from Latin America*, with Drexel University.

National Institutes of Health. UG3/U01: *Common and distinct early environmental influences on cardiometabolic and respiratory health: Mechanisms and methods*, with Harvard Medical School.

New York City Department of Health and Mental Hygiene: *Applying Tobacco Town to tobacco use in New York City*.

Clearway Minnesota: *Agent-Based Modeling to Measure the Impact of Menthol and Retailer Density Policies in Minnesota*, with Washington University and University of Minnesota.

Forward Fund: *Complex Systems Approaches to Childhood Literacy*

National Institutes of Health. R25: *Dynamic Systems Science Modeling for Public Health*, with University of Michigan.



National Institutes of Health. R01: *Systems Science to Guide Whole-of-Community Childhood Obesity Interventions*, with Harvard Medical School

National Institutes of Health. R21: *A Retail Policy Laboratory: Modeling Impact of Retailer Reduction on Tobacco Use*, with Washington University.

National Institutes of Health. U01: *Maximizing state & local policies to restrict tobacco marketing at point of sale*, with Washington University.

National Institutes of Health. R01: *Place Characteristics & disparities in HIV in IDUs: A multilevel analysis of NHBS*, with Emory University.

National Bureau of Economic Research / Social Security Administration. *Review of the PBGC Funding Models*, with Univ of Illinois.

National Institutes of Health. U01: *Multi-level Modular Agent-based Modeling for the Study of Childhood Obesity*, with McGill University. Part of NCCOR project ENVISION.

National Academy of Sciences Keck Futures Initiative Grant. *Humans as Explicit Players in Ecosystems: Using Bioenergetic Food-web Dynamics and Individual-Based Modeling Approaches to Explore Persistence and Stability in Complex Ecological Networks*, with Santa Fe Institute.

The Urban Institute/Justice Grants Administration of DC Metropolitan Government. *Modeling Crime as a Contagion*.

Washington University/Brookings Academic Venture Fund Award. *Integrated Childhood Obesity Modeling*

Gates Foundation *Gaming Model for Public Health Awareness* with Univ of Southern California.

National Institutes of Health. U54 (Modeling of Infectious Disease Agent Study Centers of Excellence): *Computational Models of Infectious Disease Threats*, via University of Pittsburgh School of Public Health/Johns Hopkins University.

CDC/NIH RFA-TP-08-001 *Preparedness and Emergency Response Research Centers: A PHS Approach*, with University of Pittsburgh School of Public Health

DHS University Center of Excellence Grant: *Preparedness And Catastrophic Event Response (PACER)*, with Johns Hopkins University Medical School.

National Science Foundation. *Collaborative Research: Modeling Interaction Between Individual Behavior, Social Networks And Public Policy To Support Public Health Epidemiology*.

MAJOR COMPUTER LANGUAGES AND SOFTWARE

Java, C++, ASCAPE, RePAST, NetLOGO, Pascal, Vensim, Mathematica

FOREIGN LANGUAGE TRAINING

French and Latin

PERSONAL

Citizenship: United States