

CURRICULUM VITAE

Ross A. Hammond

Senior Fellow, Economic Studies Program
Director, Center on Social Dynamics and Policy
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PRIMARY RESEARCH INTEREST: Modeling complex dynamics of social, economic, political, and public health systems using mathematical and agent-based computational methods

PROFESSIONAL EXPERIENCE

- Director, Center on Social Dynamics and Policy, The Brookings Institution, 2010-present
- Senior Fellow, The Brookings Institution, Economic Studies Program, 2010 – 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)
- Visiting Scholar, The Santa Fe Institute, Santa Fe, NM (2005)
- Research Modeler, The Brookings Institution, Washington D.C. (2000-2001)
- Consultant, PricewaterhouseCoopers LLP, Arlington, VA (1999-2000)

AWARDS, PROFESSIONAL SOCIETIES, AND MEMBERSHIPS

- Editorial Board, *Childhood Obesity* (2010-present)
- Steering committee, NIH/RWJF Envision CompMod network (2009-present)
- Member, NIH/USDA/RWJF National Collaborative on Childhood Obesity

Research (2009-present)

- Member, NIH Office of Behavioral and Social Science Network on Inequality, Complexity, and Health (NICH) (2010-present)
- 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)
- Member, The American Political Science Association (2004-present)

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

“A Systems Science Perspective and Transdisciplinary Models for Food and Nutrition Security” (with Dube, L.) *Proceedings of the National Academy of Sciences* (In press, June 2012).

“Next Steps in Obesity Prevention: Altering Early Life Systems to Support Healthy Parents, Infants, and Toddlers” (with Nader, P et al.). *Childhood Obesity* (In press, 2012)

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

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

“Combining Computational Fluid Dynamics and Agent-Based Modeling: A New Approach to Evacuation Planning” with Epstein JM and Pankajakshan R. *PLOS_One* 6(5):e20139 (2011).

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

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

“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).

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

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

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

“Coupled Contagion Dynamics of Fear and Disease: Mathematical and Computational Explorations” with Cummings, D. Epstein, J.M., and Parker, J. *PLOS_One* 3(12):e3995 (2008).

“Brain-to-Society Systems Models of Individual Choice” with Dube, L., Bechara, A., Bockenholt, U., Ansari, A., et al. *Marketing Letters* 19:323-336 (2008).

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

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

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

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

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

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

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

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

“The Evolution of Ethnocentrism” with Axelrod, Robert. *Journal of Conflict Resolution* 50: 926-936 (2006).

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

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

“Population growth and collapse in a multiagent model of the Kayenta Anasazi in Long House Valley” with Axtell, Robert, Epstein, Joshua M., Dean, Jeffrey, et al. *Proceedings of the National Academy of Sciences* 99(3), 7275-7279 (2002).

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

“Non-explanatory equilibria” with Epstein, J.M. *Santa Fe Institute Working Paper 01-08-043* (2001)

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

POLICY BRIEFS AND OP-EDs

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

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

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

SELECTED PRINT MEDIA COVERAGE

“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, NPR “The Takeaway”, NPR “Marketplace”, Fox Business, Al Hurrah, MSNBC, regional NBC, CBS, and ABC affiliates

RECENT MAJOR CONFERENCE PRESENTATIONS

“Agent-Based Computational Modeling, Public Health, and Obesity”, Harvard School of Public Health, Department of Nutrition seminar (April 2012)

“Complex Policy Problems: Systems Approaches and Systems Tools”, Institute of Medicine closed expert panel meeting (March 2012)

“ABM and Public Health: Introduction, Overview, Examples”, NIH FAES Graduate School guest lecture (February 2012)

“The Promise of Systems Science for Public Health and Social Policy”, public panel discussion, Washington University St Louis (December 2011)

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

“Agent-based Computational Modeling and Public Health”, at Department of Preventive Medicine, University of Southern California (November 2011)

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

“Agent-based Computational Modeling and Public Health”, *Grand Rounds Lecture* at Univ of Nebraska Medical Center, College of Public Health (October 2011)

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

“Agent-based Modeling, Introduction and Tutorial” at *NIH Institute on Systems Science and Health* (July 2011)

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

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

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

“Agent-Based Modeling of Obesity: Capturing Social/Environmental Influences in a Multi-Level Framework” at *Modeling Health Systems Workshop*, OECD/EU/EEC, Paris (Dec 2010)

“Individual-Based Computational Modeling, Cognitive Science, and Public Health” at *Mind, Technology, and Society* symposium, UC Merced (Oct 2010)

“Complex Systems Modeling for Obesity – Novel Approaches” at *National Collaborative on Childhood Obesity Research* (NCCOR) briefing for leadership (July 2010)

“Agent-Based Computational Modeling and Public Health” at *IBM Almaden Institute* (San Jose, April 2010)

“Agent-Based Computational Modeling in Epidemiology” at *The World Health Organization*, SE Asia meeting (India, March 2010)

“Modeling Complexity and Change over the Lifecourse” at *Bridging Life Course and Complex Systems Approaches to Population Health and Health Disparities* (NIH, OBSSR, University of Michigan, SFI), September 2009

“Agent-Based Modeling as an Example of Upstream Modeling” at *National Cancer Institute CISNET Annual Meeting* (Washington DC), November 2008

“Coupled Contagion Dynamics of Fear and Disease” at *International Conference of the System Dynamics Society* (Athens, Greece), July 2008

“Agent-Based Computational Modeling of Complex Social Dynamics” at *Frontiers of Statistical, Mathematical, and Computational Science Symposium* (Washington DC), May 2008

“Obesity and Complexity” at United States Department of Agriculture, April 2008.

“Agent-Based Models and Smoking” at *Mathematical Modeling in Tobacco Control* (National Cancer Institute and Univ of Michigan School of Public Health), May 2008

“Agent-based modeling and behavioral realism in social and public health models” at *Wharton Invitational Choice Symposium* (Philadelphia, PA), June 2007

CURRENT AND RECENT RESEARCH GRANTS

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*.

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

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

National Institutes of Health. U54 (Modeling of Infectious Disease Agent Study Centers of Excellence): *Computational Models of Infectious Disease Threats*, with 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, Mathematica

FOREIGN LANGUAGE TRAINING

French and Latin

PERSONAL

Citizenship: United States