

Lada Adamic

Associate Professor, School of Information & Center for the Study of Complex Systems
University of Michigan

Research interests: structure and dynamics of social and information networks, with a particular emphasis on information diffusion, expertise sharing, and online communities

D. Lazer *et al.* "Computational Social Science." *Science* **323**, 5915 (2009).

J. Leskovec, L. A. Adamic, and B. A. Huberman. "The dynamics of viral marketing." *ACM Transactions on the Web* **1**, 1 (2007).

Kristen Ardani

Solar Technology Markets and Policy Analyst
National Renewable Energy Laboratory

Research interests: energy policy, barriers to market acceleration of renewable energy technologies, balance of system cost analysis for solar technology deployment

K. Ardani and R. Margolis. "2010 Solar Technologies Market Report. Energy Efficiency & Renewable Energy (EERE)." NREL Report BK-5200-51847 (2010).

Carrie Armel

Research Associate, Behavior & Energy Cluster, Precourt Institute for Energy Efficiency
Stanford University

Research interests: the diverse ways in which an understanding of human behavior can lead to improvements in energy efficiency

Ankur Asthana

Analyst
Solar Mosaic

Research interests: solar financing/lending, crowd-funding

Ad Lucem objective: looking forward to learning about various approaches to modeling the solar PV market across different segments (residential, commercial, utility) and latest innovations in non-hardware balance of system cost reductions.

Aimee Gotway Bailey

AAAS Science & Technology Fellow, Solar Energy Technologies Program
U.S. Department of Energy

Research interests: technology evolution as it relates to investing in research and development portfolios of advanced energy technologies and identifying effective policies for a low-carbon economy

A.G. Bailey, *et al.* "Forecasting Technological Innovation." CSECS 2012: International Workshop on Complex Sciences in the Engineering of Computing Systems, Munich, Germany (2012).

Galin Barbose

Staff Research Associate, Electricity Markets and Policy Group
Lawrence Berkeley National Laboratory

G. N. Barbose, *et al.* "Tracking the Sun IV: An Historical Summary of the Installed Cost of Photovoltaics in the United States from 1998 to 2010." LBNL-5047E (2011).

R. Wiser, G. Barbose and E. Holt. "Supporting Solar Power in Renewables Portfolio Standards: Experience from the United States." LBNL-3984E (2010).

Chris Barrett

Professor, Virginia Bioinformatics Institute, Computer Science
Director Network Dynamics and Simulation Science Laboratory
Virginia Tech

Research interests: network dynamics and simulation science

M .E. Halloran, *et al.* "Modeling targeted layered containment of an influenza pandemic in the United States." *Proceedings of the National Academy of Sciences* **105** (2008).

Severin Borenstein

Professor, Business Administration and Public Policy, Economic Analysis and Policy Group
University of California, Berkeley

Research interests: economics of renewable energy, economic policies for reducing greenhouse gases, equity and efficiency effects of electricity pricing, and competitive dynamics in the airline industry

S. Borenstein. "The Market Value and Cost of Solar Photovoltaic Electricity Production." Center for the Study of Energy Markets Working Paper #176, University of California Energy Institute (2008).

Antonia Bouchard

Arizona State Director
SmartPower

Jonathan Burbaum

Program Director
ARPA-E, U.S. Department of Energy

Research interests: advanced biotechnology applications for biofuels and the production of biologically-based chemical feedstocks

Adam Cohen

SunShot Fellow
U.S. Department of Energy

Research interests: using numerical models to build predictive tools of innovation diffusion

Easan Drury

Energy Analyst, Energy Forecasting and Modeling Group, Strategic Energy Analysis Center
National Renewable Energy Laboratory

Research interests: modeling the evolution of rooftop and utility-scale PV markets, and valuing renewable energy and energy storage resources

- E. Drury, et al. "Transformation of Southern California's Residential Photovoltaics Market through Third-party Ownership." *Energy Policy* **42** (2012).
- E. Drury, P. Denholm, and R. Margolis. "The Impact of Different Economic Performance Metrics on the Perceived Value of Solar Photovoltaics." NREL Report TP-6A20-52197 (2011).
- E. Drury, P. Denholm, and R. Margolis, "Modeling the U.S. Rooftop Photovoltaics Market." NREL Report CP-6A2-47823 (2010); Conference Paper for the American Solar Energy Society, Phoenix, Arizona, 2010.
- P. Denholm, E. Drury, and R. Margolis. "The Solar Deployment Systems (SolarDS) Model: Documentation and Sample Results." NREL Report TP-6A2-45832 (2009).

Ad Lucem objective: I would like to better understand how models can be used to infer customer priorities and concerns, and if complex customer behavior naturally leads to large uncertainty in solar market forecasts.

Barbara Farhar

Senior Research Associate, Renewable and Sustainable Energy Institute
University of Colorado Boulder

Research interests: relevance of behavioral analysis to energy policy, strategic planning for federal research, public opinion about energy and environmental policy, energy efficiency R&D planning, and technology transfer

B. C. Farhar, *et al.* "Community Response to Concentrating Solar Power in the San Luis Valley." NREL Report SR-550-48041 (2010).

B. C. Farhar. "Advancing a Market for Zero-Energy Homes." *Solar Today* **22** (2008).

Kenneth Gillingham

Assistant Professor, Economics, School of Forestry & Environmental Studies
Yale University

Research interests: energy economics and policy, diffusion of new energy technologies

B. Bollinger and K. Gillingham. "Peer Effects in the Diffusion of Solar Photovoltaic Panels." *Marketing Science* (under review).

A. van Benthem, K. Gillingham, and J. Sweeney. "Learning-by-Doing and the Optimal Solar Policy in California." *Energy Journal* **29**, 3 (2008).

K. Gillingham, R. G. Newell, and W. A. Pizer. "Modeling Endogenous Technological Change for Climate Policy Analysis." *Energy Economics* **30**, 6 (2008).

K. Gillingham. "Economic Efficiency of Solar Hot Water Policy in New Zealand." *Energy Policy* **37**, 9 (2009).

K. Gillingham and J. Sweeney. "Market Failure and the Structure of Externalities." In *Harnessing Renewable Energy*, A. Jorge Padilla and Richard Schmalensee (eds.), RFF Press (2010).

Ad Lucem objective: I would hope to learn more about the SunShot Initiative (of which Yale is a partner), and hear about what other experts in the field are thinking.

Tamara Gishri

Regional Program Manager
California Center for Sustainable Energy

Mark Hartney

Program Director
ARPA-E, U.S. Department of Energy

Roger Hill

Principal Member of the Technical Staff
Sandia National Laboratories

Research interests: project engineering, electrical engineering

Ad Lucem objective: understanding of the science in social sciences and ways to use it in a regulatory and policy environment

Benjamin Ho

Assistant Professor, Economics
Vassar College

Research interests: applied microeconomic theory, behavioral and experimental economics, environmental and energy economics, political economy, economics of education

W. Cecyl Hobbs

Vice President, Business Development and Strategy
Activate Networks

Josh Huneycutt

Market transformer, Solar Energy Technologies Program
U.S. Department of Energy

Dan Kammen

Professor in the Energy and Resources Group
University of California, Berkeley

Research interests: the science, engineering, management, and dissemination of renewable energy systems; health and environmental impacts of energy generation and use; rural resource management, including issues of gender and ethnicity; international R&D policy, climate change; and energy forecasting and risk analysis

C. E. Casillas and D. M. Kammen. "The Energy-Poverty-Climate Nexus." *Science* **330** (2010).

M. Wei, S. Patadia, and D. M. Kammen. "Putting renewables and energy efficiency to work: How many jobs can the clean energy industry generate in the US?" *Energy Policy* **38**, 2 (2010).

R. Duke and D. M. Kammen. "The Economics of Energy Market Transformation Programs." *The Energy Journal* **20**, 4 (1999).

Danny Kennedy

Founder
Sungevity

Phil Larochelle

Fellow, ARPA-E, U.S. Department of Energy

Research interests: renewable energy integration

Ad Lucem objective: improved understanding of technology evolution; how to effectively invest in energy R&D; improved understanding of customer decision making and market dynamics in preparation for possible ARPA-E workshop

Scott Litzelman

Support Contractor
ARPA-E, U.S. Department of Energy

Loren Lutzenhiser

Professor, Urban Studies and Planning
Portland State University

Research interests: social dynamics of technology choice and use; energy and behavior; urban sustainability

L. Lutzenhiser. "The Evolution of Electricity Efficiency Policy, the Importance of Behavior and Implications for Climate Change Intervention." In *Current Affairs: Perspectives on Energy Policy*, D. Reeve, D. N. Dewees, and B. Karney (eds.), University of Toronto Press (2010).

E. Shove, L. Lutzenhiser and H. Chappells (eds.). "Comfort in a Lower Carbon Society." Special issue of *Buildings Research and Information* (2008).

L. Lutzenhiser. "Marketing Household Energy Conservation: The Message and the Reality." In *New Tools for Environmental Protection: Education, Information, and Voluntary Measures*, P. C. Stern and T. Dietz (eds.), National Academy Press (2002).

L. Lutzenhiser, C. Harris and M. Olsen. "Energy, Society and Environment" In *Handbook of Environmental Sociology*, R. Dunlap and W. Michaelson (eds.), Greenwood Press (2001).

L. Lutzenhiser. "Social and Behavioral Aspects of Energy Use." *Annual Review of Energy and the Environment* **18** (1993).

Ad Lucem objective: greater knowledge of solar market issues and of physicists' and engineers' understandings and views of social phenomena

Charles Macal

Director, Center for Complex Adaptive Agent Systems Simulation, Decision and Information Sciences Division
Argonne National Laboratory

Research interests: modeling energy and consumer markets, agent-based modeling and simulation

E. Drury, *et al.* "The Transformation of Southern California's Residential Photovoltaics Market through Third-Party Ownership." *Energy Policy* **42** (2012).

C. Macal, *et al.* "A Behavior-Based Agent Model for Assessing Market Adoption of Solar Photovoltaics." BECC Conference, Washington DC (2011).

Ad Lucem objective: I would like to see the field of market adoption of energy technologies put on a firm scientific footing, recognized by DOE, and resourced as an area of scientific and analytical applied research essential to understanding energy futures. I would like to meet new collaborators and establish new collegial relationships.

Robert Margolis

Senior Analyst, Technology Systems and Sustainability Analysis Group, Strategic Energy Analysis Center
National Renewable Energy Laboratory

Research interests: science and technology policy; research, development, and demonstration policy; energy technology; environmental policy

Andrew McAllister

Director of Programs
California Center for Sustainable Energy

Christina Nichols

Market Transformer
Contractor to U.S. Department of Energy

Jonathan Ozik

Computational Social Scientist, Center for Complex Adaptive Agent Systems Simulation
Decision and Information Sciences Division
Argonne National Laboratory

Research interests: agent-based modeling, complex adaptive systems, social systems

E. Drury, *et al.* "The Transformation of Southern California's Residential Photovoltaics Market through Third-Party Ownership." *Energy Policy* **42** (2012).

Ad Lucem objective: I hope to get a better understanding of work currently being done in this area and to look for possible collaboration opportunities.

Douglas Powell

Graduate Student Researcher
MIT

Research interests: finding ways to improve solar cell economics through material processing steps

Varun Rai

Assistant Professor, Public Affairs
University of Texas at Austin

Research interests: technological change and energy, energy and development, climate change policy

V. Rai, "Solar PV Adoption in the U.S. Residential Sector: Decision-Making & Behavior Change," BECC Conference, Washington DC (2011).

Ramamoorthy Ramesh

SunShot Director
U.S. Department of Energy

Martha Russell

Executive Director, Media X
Stanford University

Research interests: innovation ecosystems using data-driven visualization methods for systems analysis and is promoting the development of new media metrics for the persuasive impact of interactive, place-based and social media

M. G. Russell, *et al.* "Semantic Analysis of Energy-Related Conversations in Social Media: A Twitter Case Study." International Conference on Persuasive Technology (2011).

Russell Thomas

Ph.D. Candidate, Computational Social Science
George Mason University

Research interests:

- computational social science, with emphasis on innovation (market + technology evolution), resilience of socio-technical systems, and incentive-based collaboration for managing risk and innovation
- modeling, simulation, and visualization using Java, MASON platform for agent-based modeling, Mathematica, NetLogo, and other tools
- extensive experience in competitive analysis, industry analysis, market analysis, business model analysis

R. C. Thomas and J.S. Gero. "Patterns of social influence in networks of social cognitive agents." Collective Intelligence 2012, Cambridge, Massachusetts (2012).

R. Thomas. "Formal methods for modeling socio-technical innovation between adversaries." International Conference on Information Technology - New Generations, Las Vegas, Nevada (2012).

R. Thomas and C. Metgher. "Modeling Innovation Arms Races in Socio-technical Networks." Sunbelt Social Networks Conference (poster). St. Pete Beach, Florida (2011).

R. Thomas. "Total Cost of Security – A method for managing risks and incentives across the extended enterprise." Cyber Security and Information Intelligence Research Workshop. Oak Ridge, Tennessee (2009).

R. Thomas. "Beyond Solyndra: a social network analysis of D.o.E. co-investment relationships in 'clean technology' ventures." Working Paper (2012).

Ad Lucem objective:

- participate in a cross-discipline and cross-sector collaboration process on a set of vexing research problems
- contribute ideas and lessons learned from my experience and education
- get ideas that might be useful for my dissertation
- meet potential collaborators, sponsors, or mentors

Christian Schneider

Postdoctoral researcher, Human, Mobility, and Networks Lab
MIT

Research interests: physics, complex networks, mobile phone data, diffusion processes and social networks

C. M. Schneider, *et al.* "Mitigation of malicious attacks on networks." *Proceedings of the National Academy of Sciences* **108** (2011).

C. M. Schneider, *et al.* "Suppressing epidemics with a limited amount of immunization units." *Phys. Rev. E* **84**, 061911 (2011).

Ad Lucem objective: I am convinced that my theoretical works are applicable for the DOE workshop agenda and will help to solve the challenges society is facing. Therefore, it is crucial to meet people from different fields with diverse expertise and exchange ideas to work most successful.

Jessika Trancik

Assistant Professor, Engineering Systems
MIT

Research interests: accelerating the discovery and scaling of new energy technologies

J. McNerney, J. D. Farmer, S. Redner, and J. E. Trancik, "Role of Design Complexity in Technology Improvement." *Proceedings of the National Academy of Sciences* **108** (2011).

Rachel Tronstein

Deputy SunShot Program Manager
U.S. Department of Energy

Daniel Villa

Mechanical Analyst
Sandia National Laboratories

Edward Vine

Staff Scientist, Energy Analysis and Environmental Impacts
Lawrence Berkeley National Laboratory

Research interests: evaluation of energy efficiency programs (including behavior change programs and market transformation programs)

J. H. Reed, G. Jordan, and E. Vine. "Impact Evaluation Framework for Technology Deployment Programs." U.S. Department of Energy, Energy Efficiency and Renewable Energy, Washington, DC (2007).

E. Vine, R. Prael, S. Meyers, and I. Turiel. "An Approach for Evaluating the Market Effects of Energy Efficiency Programs." *Energy Efficiency* **3** (2010).

Ad Lucem objective: Learn how other people are planning to design, implement and evaluate the SunShot Initiative.

Yevgeniy Vorobeychik

Senior Member of Technical Staff, Scalable Modeling and Analysis
Sandia National Laboratories

Research interests: computational game theory, computational mechanism design, behavioral economics, complex systems, multiagent systems, artificial intelligence

- Y. Vorobeychik, J. R. Mayo, R. C. Armstrong and J. R. Ruthruff. "Non-cooperatively Optimized Tolerance: Decentralized strategic optimization in complex systems." *Physical Review Letters* **107**, 10 (2011).
- Y. Vorobeychik, D. M. Reeves and M. P. Wellman. "Constrained automated mechanism design for infinite games of incomplete information." *Journal of Autonomous Agents and Multiagent Systems* (2011), to appear.
- Y. Vorobeychik and Y. Engel. "Average-case analysis of VCG with approximate resource allocation algorithms." *Decision Support Systems* **51**, 3 (2011).
- S. Judd, M. Kearns and Y. Vorobeychik. "Behavioral conflict and fairness in social networks." Seventh International Workshop on Internet and Network Economics (2011).
- S. Judd, M. Kearns and Y. Vorobeychik. "Behavioral Dynamics and Influence in Networked Coloring and Consensus." *Proceedings of the National Academy of Sciences* **107**, 34 (2010).
- Y. Vorobeychik. "Probabilistic analysis of simulation-based games." *ACM Transactions on Modeling and Computer Simulation* **20**, 3 (2010).
- Y. Vorobeychik and M. P. Wellman. "Stochastic search methods for Nash equilibrium approximation in simulation-based games." Seventh International Conference on Autonomous Agents and Multiagent Systems (2008).

Ad Lucem objective: Exchange ideas with fellow researchers about how to leverage computation to shape solar market transformation strategies.

Ryan Wiser

Staff Scientist, Electricity Markets and Policy
Lawrence Berkeley National Laboratory

Research interests: planning, design, and evaluation of renewable energy policies, and on the costs, benefits, and market potential of renewable electricity sources

- B. Hoen, R. Wiser, P. Cappers and M. Thayer. "An Analysis of the Effects of Residential Photovoltaic Energy Systems on Home Sales Prices in California." Report LBNL-4476E (2011).