



ITIF ENERGY INNOVATION POLICY AND MANAGEMENT BOOT CAMP

MAY 19–24, 2019



SUPPORTED BY THE ALFRED P. SLOAN FOUNDATION & SPITZER TRUST

ABOUT ITIF

The Information Technology and Innovation Foundation is ranked by the University of Pennsylvania as the world's leading think tank for science and technology policy, and one of the top 50 U.S. think tanks overall.



As technological innovation transforms the global economy and society, policymakers often lack the specialized knowledge and informed perspective necessary to evaluate and respond to fast-moving issues and circumstances. What should they do to capitalize on new opportunities, overcome challenges, and avoid potential pitfalls? ITIF exists to provide answers and point the way forward.

Founded in 2006, ITIF is an independent 501(c)(3) nonprofit, nonpartisan research and educational institute—a think tank—whose mission is to formulate, evaluate, and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress. ITIF's goal is to provide policymakers around the world with high-quality information, analysis, and recommendations they can trust. To that end, ITIF adheres to a high standard of research integrity with an internal code of ethics grounded in analytical rigor, policy pragmatism, and independence from external direction or bias.

ABOUT THE ITIF'S CLEAN ENERGY PROJECT

ITIF's Clean Energy Innovation Policy Project seeks to accelerate the transition of the domestic and global energy systems to low-carbon resources by providing nonpartisan analysis of public policy, generating new public policy proposals, and convening members of the analytical and policymaking communities. The central goal of the project is to deepen the analytic case for clean energy innovation policy. The energy transition will not be achieved without significant, sustained innovation in technology, institutions, and business models, supported by carefully designed public policy and appropriate public investment.

Our work can be found at: <https://itif.org/issues/energy-climate>.

ITIF THANKS THE ALFRED P. SLOAN FOUNDATION AND THE SPITZER TRUST FOR THEIR GENEROUS SUPPORT OF OUR ENERGY INNOVATION POLICY AND MANAGEMENT BOOT CAMP.



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PROGRAM AT A GLANCE

WIFI NETWORK AT ITIF:

Username: ITIF-Guest
Password: 1101*guestT

RESIDENCE INN DOWNTOWN

Front Desk: 202.898.1100

IMPORTANT EVENT CONTACTS

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Rachel Trello, rtrello@itif.org | 301.944.4197

WHATSAPP GROUP NAME

2019 ITIF ENERGY INNOVATION BOOTCAMP



AGENDA

Sunday, May 19

6:00 PM - 8:00 PM	WELCOME DINNER AND RECEPTION The Residence Inn Downtown 1199 Vermont Avenue NW, Washington, DC Washington-Jefferson Room	DAVID HART Senior Fellow, Information Technology and Innovation Foundation COLIN CUNLIFF Senior Policy Analyst, Information Technology and Innovation Foundation
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Monday, May 20

6:30 AM	BREAKFAST Hearth Room, The Residence Inn Downtown, 1199 Vermont Avenue NW, Washington, DC.	
8:30 AM	WALK TO MEETING SPACE Participants meet in the first floor lobby of the Residence Inn and walk to ITIF, located at 1101 K St., NW.	
9:00 AM - 10:30 AM	SESSION 1: POWER SECTOR INNOVATION INVESTMENTS ITIF Suite, 610A Edison Conference Room	ASAF NAGLER Senior Director, Government Relations, ABB BARBARA TYRAN Executive Director, Government & External Relations, Electric Power Research Institute (EPRI)
10:30 AM - 11:00 AM	BREAK	
11:00 AM - 12:00 PM	SESSION 2: STARTUPS, INCUMBENTS, AND ENERGY INNOVATION ITIF Suite, 610A Edison Conference Room	JONATHAN SILVER Managing Director, Tax Equity Advisors

Monday, May 20 continued

12:00 PM - 2:00 PM	LUNCH ITIF Suite, 610A, Edison Conference Room	
2:00 PM - 3:30 PM	SESSION 3: ARPA-E AND CORPORATE STRATEGIC INVESTING ITIF Suite, 610A Edison Conference Room	JOSEPH KING Program Director, ARPA-E ELLEN WILLIAMS Distinguished University Professor, University of Maryland
3:30 PM - 4:00 PM	BREAK	
4:00 PM - 5:30 PM	PEER ADVISING SESSION 1 FTI Suite, B1	
5:30 PM	ADJOURN	
6:30 PM	WALK TO DINNER Participants meet in the lobby of the Residence Inn to walk to Hill Country Barbecue.	
7:00 PM - 8:30 PM	DINNER AT HILL COUNTRY BARBECUE 410 7th St., NW.	

Tuesday, May 21

6:30 AM	BREAKFAST Hearth Room, The Residence Inn Downtown, 1199 Vermont Avenue NW, Washington, DC.	
8:30 AM	WALK TO MEETING SPACE Participants meet in the first floor lobby of the Residence Inn and walk to American Association for the Advancement of Science (AAAS) Building, located at 1200 New York Avenue, NW.	
9:00 AM - 10:30 AM	SESSION 4: THE WHITE HOUSE Abelson-Haskins Room Second Floor AAAS Building	KEI KOIZUMI Visiting Scholar, AAAS NATE HULTMAN Director, Center for Global Sustainability, University of Maryland



AGENDA

Tuesday, May 21

10:30 AM	WALK TO MEETING SPACE Participants walk to ITIF, located at 1101 K St., NW.	
11:00 AM - 1:00 PM	PEER ADVISING SESSION 2 & LUNCH FTI Suite, B1	
1:00 PM	TRAVEL TO RAYBURN HOUSE OFFICE BUILDING	
1:30 PM - 2:30 PM	SESSION 5: THE HOUSE OF REPRESENTATIVES Rayburn House Office Building Room 2321	ADAM ROSENBERG Staff Director, Energy Subcommittee Committee on Science, Space, and Technology
2:30 PM	PARTICIPANTS WALK TO SENATE	
3:00 PM - 4:00 PM	SESSION 6: SENATE Dirksen Senate Office Building Room TBA	JOHN RIVARD Oak Ridge National Laboratory Legislative Fellow, Office of Senator Lamar Alexander
4:00 PM	GROUP PHOTO Sessions then adjourn for the day and participants return to the hotel at their leisure.	
6:15 PM	TRAVEL TO ATLANTIC COUNCIL Participants meet in the lobby of the Residence Inn and head to dinner at the Atlantic Council located at 1030 15th Street, NW.	
6:30 PM - 8:30 PM	DINNER: ENERGY & FOREIGN POLICY Atlantic Council Center for Global Energy Policy 1030 15th Street, NW, 12th Floor Washington, DC 20005	ROBERT ATKINSON President and Founder, Information Technology and Innovation Foundation JOE BRYAN Senior Fellow, Global Energy Center, Atlantic Council JENNIFER GORDON Deputy Director, Global Energy Center, Atlantic Council ROBERT ICHORD Senior Fellow, Global Energy Center, Atlantic Council

Wednesday, May 22

6:30 AM	BREAKFAST Hearth Room, The Residence Inn Downtown, 1199 Vermont Avenue NW, Washington, DC.	
8:30 AM	WALK TO ITIF MEETING SPACE Participants meet in the first floor lobby of the Residence Inn and walk to ITIF, located at 1101 K St., NW.	
9:00 AM - 10:30 AM	SESSION 7: EXECUTIVE AGENCIES ITIF Suite, 610A Edison Conference Room	ROBERT IVESTER Director, Federal Energy Management Program U.S. Department of Energy DOROTHY ROBYN Senior Fellow, Institute for Sustainable Energy Boston University
10:30 AM	TRAVEL TO WILLKIE FARR & GALLAGHER	
11:00 AM - 12:30 PM	SESSION 8: FEDERAL REGULATORS Willkie, Farr & Gallagher 1875 K St., NW, Suite 100	NORMAN BAY Partner, Willkie, Farr & Gallagher PETER FOX-PENNER Director, Institute for Sustainable Energy, Boston University
12:30 PM	ADJOURN No scheduled group activities or meals. Participants are free to explore DC at their leisure.	



AGENDA

Thursday, May 23

6:30 AM	BREAKFAST Hearth Room, The Residence Inn Downtown, 1199 Vermont Avenue NW, Washington, DC.	
8:30 AM	WALK TO MEETING SPACE Participants meet in the first floor lobby of the Residence Inn and walk to ITIF, located at 1101 K St., NW.	
9:00 AM - 10:30 AM	SESSION 9: STATES AND CITIES FTI Suite, B1	RYAN OPSAL Energy Policy Manager, Maryland Energy Administration BILL UPDIKE Principal, Integral Group
10:30 AM - 11:00 AM	BREAK	
11:00 AM - 12:30 PM	SESSION 10: MEDIA ITIF Suite, 610A Edison Conference Room	STEVEN MUFSON Reporter, <i>Washington Post</i> CHRISTA MARSHALL Editor, <i>E&E News</i>
12:30 PM - 2:00 PM	LUNCH ITIF Suite, 610A, Edison Conference Room	
2:00 PM - 3:30 PM	SESSION 11: ADVOCACY AND RESEARCH ORGANIZATIONS ITIF Suite, 610A Edison Conference Room	JUDI GREENWALD Principal, Greenwald Consulting SAM THERNSTROM Founder and CEO, Energy Innovation Reform Project
3:30 PM - 3:45 PM	BREAK	
3:45 PM - 5:15 PM	PEER ADVISING SESSION 3 FTI Suite, B1	
5:15 PM	WALK TO WOODWARD TABLE FOR HAPPY HOUR AND DINNER 1426 H St. NW, Washington, DC 20005	
5:30 PM - 6:30 PM	HAPPY HOUR WITH MEMBERS OF DC ENERGY POLICY COMMUNITY Woodward Table	

Thursday, May 23 continued

6:30 PM - 8:30 PM	DINNER: THE 2020 ELECTION Woodward Table	ANNA GREENBERG Managing Partner, GQR
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Friday, May 24

6:30 AM	BREAKFAST Hearth Room, The Residence Inn Downtown, 1199 Vermont Avenue NW, Washington, DC.	
9:00 AM - 10:30 AM	SESSION 12: WRITING FOR POLICY AUDIENCES Washington-Jefferson Room The Residence Inn	DANIEL SAREWITZ Editor, <i>Issues in Science and Technology</i> BRAD WIBLE Senior Commentary Editor, <i>Science</i>
10:30 AM - 11:00 AM	BREAK Participants given time to check out of the hotel.	
11:00 AM - 12:30 PM	CLOSING THOUGHTS Washington-Jefferson Room The Residence Inn	DAVID HART Senior Fellow, Information Technology and Innovation Foundation COLIN CUNLIFF Senior Policy Analyst, Information Technology and Innovation Foundation
12:30 PM	LUNCH Washington-Jefferson Room The Residence Inn	
2:00 PM	ADJOURN	

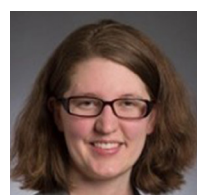
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EMILY BEAGLE

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Emily Beagle is the CLIR Postdoctoral Fellow in Data Curation for Energy Economics at the University of Texas at Austin. She works jointly with UT Libraries and the Webber Energy Group to integrate and manage large datasets for energy systems research. Her research background includes the use of experimental combustion techniques, technoeconomic assessment, and lifecycle analysis to evaluate the feasibility of bioenergy and other renewable energy projects. Her research interests include renewable energy deployment and integration with the grid, and energy policy for emission reductions. Emily was born and raised in Wyoming and holds B.S. degrees in energy systems engineering and mechanical engineering, and an M.S. and Ph.D. in mechanical engineering from the University of Wyoming.



CASEY CANFIELD

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Casey Canfield is an assistant professor in Engineering Management & Systems Engineering at Missouri S&T. Her research is focused on quantifying the human part of complex systems to improve decision-making. She has a Ph.D. in engineering and public policy from Carnegie Mellon University, where she published research on how to communicate electricity information, improve stakeholder engagement in the City of Pittsburgh, and quantify people's ability to detect phishing emails for risk analysis. After completing her Ph.D., Casey spent a year and a half as a Science and Technology Policy Fellow in the U.S. Department of Energy's Solar Energy Technologies Office, where she designed and managed programs to increase innovation in the energy sector.



TRAVIS CARLESS

Stanton Nuclear Security Postdoctoral Fellow
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Travis Carless is a Stanton Nuclear Security Postdoctoral Fellow at the RAND Corporation and a President's Postdoctoral Fellow at Carnegie Mellon University. He received a Ph.D. in Engineering and Public Policy at Carnegie Mellon University in May 2018 and is a 2015 National Science Foundation Graduate Research Fellow. His research is centered on risk, life-cycle assessments, and nuclear energy and policy. Prior to pursuing doctoral studies, Trevor served as a functional design engineer at Westinghouse Electric Company in the AP1000 Nuclear Application Programs group. He received his M.S. in industrial engineering from the University of Pittsburgh and a B.S. in computer and systems engineering from Rensselaer Polytechnic Institute.



GABE CHAN

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Gabe Chan is an assistant professor at the Humphrey School of Public Affairs in Science, Technology, and Environmental Policy at the University of Minnesota. Gabe's research and engagement covers energy and environmental policy, with a focus on the causes and consequences of technological innovation for climate change mitigation. Gabe's work has covered community solar, research and development policy, and international climate policy, among other topics. He is a recipient of the 2019 McKnight Land-Grant Professorship, faculty associate of the UMN Institute on the Environment, and affiliate faculty member at the UMN Law School. Gabe holds a Ph.D. in public policy from Harvard University and undergraduate degrees from M.I.T. in earth, atmospheric, and planetary science, and political science. In 2007 and 2009 Gabe worked at the U.S. Department of Energy's Office of Climate Change Technology and Policy.

PARTICIPANT BIOS



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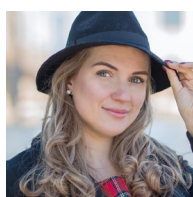
Stacia Dreyer is an environmental social scientist interested in the human dimensions of environmental issues. As an assistant research professor in the School for the Future of Innovation in Society at Arizona State University, she works on projects related to the food-energy-water nexus, renewable energy, and other environmental and sustainability issues. She received an interdisciplinary Ph.D. in Environmental Psychology and Behavioral Economics with the Sustainability Solutions Initiative at the University of Maine in 2014. After receiving her Ph.D., she completed three years of postdoctoral training in the School of Marine and Environmental Affairs at the University of Washington. Stacia has numerous publications exploring the human dimensions of marine renewable energy, most recently publishing, "Fish, finances, and feasibility: Concerns about tidal energy development in the United States" in *Energy Research & Social Science*.



ANNA GOLDSTEIN

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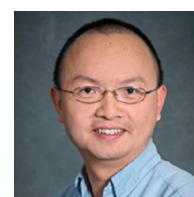
Anna Goldstein is a senior research fellow at University of Massachusetts Amherst. Her research focuses on science and technology policy applied to clean energy, including the effectiveness of energy-related R&D efforts of governments, universities, and corporations, research management, decision-making for R&D portfolios, and organizational strategies for mission-oriented science funding. She served as a postdoctoral research scientist at the Carnegie Institution of Science, following a fellowship in the Science, Technology & Public Policy program through the Belfer Center for Science and International Affairs at Harvard Kennedy School. Anna received her Ph.D. in 2014 in chemistry with an emphasis in nanoscale science and engineering from the University of California, Berkeley.



ANNA EBERS

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Anna Ebers is a Science and Technology Policy Fellow at the Solar Energy Technologies Office, U.S. Department of Energy. Since joining SETO in 2018, she has been supporting the management of the office's social science portfolio, contributing to quarterly solar industry update reports, and assisting with other projects that aim to reduce the soft costs of solar power. Anna has been recognized as a fellow at Clean Energy Leadership Institute, the Fund for American Studies, and Property and Environmental Research Center. Previously, Anna completed four years of postdoctoral work at the School of Public Policy at the University of Maryland, College Park, and at the University of St. Gallen in Switzerland. With the focus on investor behavior and policy analysis, her research has appeared in *Energy Policy*, *Renewable Energy*, and *Biomass and Bioenergy*. Anna received her Ph.D. from Syracuse University.

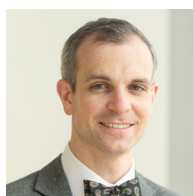


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Gang He is an assistant professor of energy policy in the Department of Technology and Society at Stony Brook University, as well as a guest faculty member in the China Energy Group at Lawrence Berkeley National Laboratory. His work focuses on energy modeling, energy economics and energy and climate change policy. He also studies other issues related to global climate change and the development of lower-carbon energy sources. He worked for Stanford University's Program on Energy and Sustainable Development from 2008 to 2010 and was a Cynthia Helms Fellow at World Resources Institute in 2008. He received his Ph.D. in energy and resources at University of California, Berkeley. He also holds an M.A. from Columbia University on climate and society and a B.S. from Peking University in geography.

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John Helveston is an assistant professor in the Engineering Management and Systems Engineering Department at George Washington University. His research focuses on understanding the factors that shape technological change, with a particular focus on transitioning to more sustainable and energy-saving technologies. He studies consumer preferences and market demand for new technologies as well as relationships between innovation, industry structure, and technology policy. He is an expert on China's rapidly emerging electric vehicle industry and a scholar of innovation in China. He applies an interdisciplinary approach to research, with expertise in discrete choice modeling and conjoint analysis as well as interview-based case studies. He has conducted extensive fieldwork in China, collaborating with colleagues at Beijing Normal University and China's State Information Center on past projects. John holds a Ph.D. and M.S. in Engineering and Public Policy from Carnegie Mellon University and a B.S. in engineering science and mechanics from Virginia Tech.



STEVEN HOFFENSON

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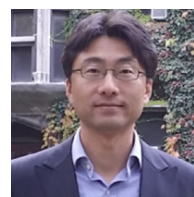
Steven Hoffenson is an assistant professor in the School of Systems and Enterprises at Stevens Institute of Technology in Hoboken, New Jersey. His research looks into the ways that people design products and policies, drawing from different disciplines to understand product development and strategic decision-making as a multi-stakeholder system that accounts for how designers' choices interact with those of consumers, corporate leaders, and policy-makers. Dr. Hoffenson holds a B.S. in mechanical engineering from the University of Maryland and an M.S.E. and Ph.D. in mechanical engineering from the University of Michigan. Prior to joining Stevens, he served as a Congressional Fellow sponsored by the American Association for the Advancement of Science (AAAS) in 2014—2015, during which he worked in the Office of Senator Edward Markey on energy, transportation, nuclear, and science policy issues.



NOAH KITTNER

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Noah Kittner is a senior researcher in the Group for Sustainability and Technology at ETH Zürich. He holds a Ph.D. in energy and resources from UC Berkeley, where he studied energy systems engineering, science, and policy. His work with the Renewable and Appropriate Energy Lab (RAEL) has appeared in leading journals ranging from *Nature Energy* to *Environmental Science* and *Technology and Ecological Economics*. Previously, he was a Fulbright Fellow at the Joint Graduate School of Energy and Environment in Bangkok, Thailand and has worked extensively on a Thai Solar PV Roadmap project with colleagues at Chulalongkorn University. He received his B.S. in environmental science from the University of North Carolina at Chapel Hill.



YOUNGBOK RYU

Management Faculty
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Yongbok Ryu joined the management faculty at New Mexico Tech in 2017. At NMT, he teaches economics, management, and policy courses. He is also taking an active role in promoting entrepreneurship on campus by championing the state-wide Studio G program and advising the student entrepreneurship club. Before coming to NMT, he was an assistant policy researcher at RAND Corporation and a Christine Mirzayan Science and Technology Policy Fellow at the National Academies of Sciences, Engineering, and Medicine. He received a Ph.D. in policy analysis (Technology and Innovation Policy) from Pardee RAND Graduate School.

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BEIA SPILLER

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Beia Spiller is a lead senior economist at the Environmental Defense Fund. She has been at EDF since 2013, after serving as a postdoctoral researcher at Resources for the Future. She received her Ph.D. from the Department of Economics at Duke University, her Masters in public policy from Universidad Torcuato di Tella in Argentina, and her B.A. in Environmental Policy from UC San Diego. Her primary field is energy and environmental economics. Beia's work includes research and advocacy on electricity pricing and regulation, including stakeholder involvement in electric regulatory proceedings in New York, with the goal of achieving more cost-reflective residential electricity tariffs and payment structures for distributed energy resources. She has also published on economic impacts of shale gas, public and private transportation issues, gasoline taxes, energy policies, emissions modeling, distributed energy resources, ex-post policy analysis, and health impacts of air pollution.



BJARNE STEFFEN

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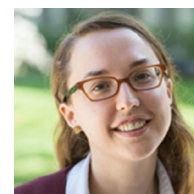
Bjarne is a visiting scholar at MIT's Center for Energy and Environmental Policy Research, and a senior researcher and lecturer with ETH Zurich in Switzerland. His research addresses policies related to low-carbon innovation in the energy sector. He is particularly interested in the role of financial actors (e.g., investors and banks) in the ongoing sustainable energy transition, and the role of the state in the finance and energy sectors more generally. To this end, he works at the intersection of economics, political science, and innovation studies. Before joining ETH Zurich, Bjarne worked as Principal in the Boston Consulting Group's energy and infrastructure practices, and was project manager for the Strategic Infrastructure Initiative at the World Economic Forum, Geneva. He studied economics at University of Mannheim and the University of California at Berkeley, and holds a Ph.D. in energy economics from University of Duisburg-Essen.



KELLY STEVENS

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Kelly Stevens is an assistant professor in the School of Public Administration, and a Renewable, Intelligent and Sustainable Energy Systems (RISES) research cluster member at the University of Central Florida. Prior to joining UCF, Stevens completed her Ph.D. in public administration at the Maxwell School at Syracuse University. Kelly's research interests broadly include energy and environmental policy, environmental management, and science and technology policy. She first became interested in energy and environmental issues while pursuing her master's degree in meteorology at Florida State University, where she later graduated with a second master's in public administration. Kelly worked as a meteorologist for the State of Florida in the Department of Environmental Protection, Division of Air Resource Management, for five years.



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Leah Stokes is a public policy and political science scholar who works on environmental and energy policy. She is an assistant professor in the Department of Political Science and is affiliated with the Bren School of Environmental Science & Management and the Environmental Studies Department at UCSB. Her forthcoming book studies interest groups' role in changing US states' energy policy. Other ongoing projects include examining protests against energy infrastructure, political staff in Congress, environmentalists' electoral participation, violence against environmental activists, and effective water conservation policy in California. Her research has been published in the *American Journal of Political Science*, *American Political Science Review*, *British Journal of Political Science*, *Energy Policy*, *Nature Energy*, *Global Environmental Politics*, and *Environmental Science & Technology*. She also has published articles in *The New York Times*, *The Washington Post*, *The Los Angeles Times*, CNN, and Vox.

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Kavita Surana is assistant research professor at the Center for Global Sustainability, School of Public Policy, University of Maryland. Her research focuses on public policies for energy technology innovation and economic development. She previously held research positions at the Belfer Center for Science and International Affairs at the Harvard Kennedy School of Government and has consulted for public and private organizations, including the World Bank and ICF International. Kavita's research builds on experiences developing innovative solar energy technologies at the Micro and Nanotechnology Innovation Center (Minatec) of the French Alternative Energies and Atomic Energy Commission (CEA). She holds a Ph.D. in materials science and engineering from Grenoble Institute of Technology (INP-Grenoble), France, her M.S. in materials for energy storage and conversion at Paul Sabatier University, Toulouse, France and a B.S. in physics from St. Stephen's College, Delhi University, India.



LEE WHITE

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Lee White is a postdoctoral researcher at the Ohio State University's School of Environment and Natural Resources. She is currently involved in projects examining drivers of electric vs. conventional vehicle adoption, predictors of trust in autonomous vehicles, factors that impact household acceptance of demand-side response, and the extent to which demand-side response measures may exacerbate energy poverty. Prior to joining OSU, Lee earned her Ph.D. in urban planning and development at the University of Southern California's Sol Price School of Public Policy. She holds a bachelor of applied science in energy management from the University of Otago. Lee has published on drivers of residential solar adoption, predictors of intent to adopt electric vehicles, and spillover effects from food waste reduction to increases in household energy efficiency.



TIAN TANG

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Tian Tang is an assistant professor at the Askew School of Public Administration and Policy of the Florida State University. Her research studies how energy and technology policies promote the innovation of clean energy and smart city technologies. Her work evaluates the effectiveness of such policies and highlights the importance of intergovernmental and cross-sectoral collaboration in the implementation of these policies. Her research has been published in the *Journal of Policy Analysis and Management*, *Environmental Research Letters*, *Energy Policy*, and *Government Information Quarterly*, among other outlets. She was awarded the "40 for 40 Fellow" by the Association of Public Policy Analysis and Management in 2018. Tian received her Ph.D. in public administration from the Maxwell School of Syracuse University in 2016. She was selected as a Giorgio Ruffolo Fellow to conduct her research on renewable energy technology innovation at Harvard University's Sustainability Science Program in 2014-2015.

SPEAKER BIOS



ROBERT ATKINSON

President and Founder
Information Technology and Innovation Foundation

Rob Atkinson is one of the country's foremost thinkers on innovation economics. With an extensive background in technology policy, he has conducted ground-breaking research projects on technology and innovation, is a valued adviser to state and national policy makers, and a popular speaker on innovation policy nationally and internationally. A sought-after speaker and valued adviser to policymakers around the world, Atkinson's most recent book, *Big is Beautiful: Debunking the Mythology of Small Business* was released March 2018.

As founder and president of the Information Technology and Innovation Foundation (ITIF), recognized as the world's top think tank for science and technology policy, Rob leads a prolific team of policy analysts and fellows that is successfully shaping the debate and setting the agenda on a host of critical issues at the intersection of technological innovation and public policy.



NORMAN BAY

Partner
Willkie, Farr & Gallagher

Norman C. Bay is a partner at Willkie, Farr & Gallagher LLP in Washington, DC, where he heads the Energy Regulatory and Enforcement Group. Norman advises clients on a range of energy market regulation issues, including those relating to policy, rates, terms, and conditions of service, and mergers and acquisitions. He also focuses on enforcement and compliance and infrastructure development in the energy sector.

As a past Chairman of the Federal Energy Regulatory Commission (FERC), Norman has significant experience with all aspects of FERC's jurisdiction over the U.S. wholesale natural gas and electricity markets, as well as natural gas and oil pipelines. As a former director of enforcement at FERC, he has a deep understanding of FERC's enforcement jurisdiction and priorities, as well as the new anti-manipulation rules of the Commodities Futures Trading Commission (CFTC).



JOE BRYAN

Senior Fellow
Global Energy Center
Atlantic Council

Joe Bryan is a senior fellow with the Atlantic Council's Global Energy Center. He is also principal at Muswell Orange, LLC, a clean energy consulting firm. Joe previously served as deputy assistant secretary of the Navy for energy where he was responsible for policies relating to the department's installation and operational energy programs. He was a proponent for improving energy efficiency and expanding the use of renewable energy to extend the operational reach of the force and reduce risks associated with logistics support. He also led efforts to improve energy resiliency, promote investments in energy efficiency and distributed generation, and rethink mobility on Navy and Marine Corps installations. Prior to his appointment, Joe led investigations for the Senate Armed Services Committee, including inquiries into counterfeit electronic parts in the defense supply chain, cyber intrusions into U.S. Department of Defense contractors, and the treatment of detainees in U.S. military custody. He also served on the professional staffs of the Senate's Select Committee on Intelligence and Permanent Subcommittee on Investigations where he participated in the investigation into Enron's manipulation of energy markets. Joe has consulted on energy policy in Namibia and South America, and began his career working on electricity restructuring and state-level policies to encourage the growth of clean energy markets.



PETER FOX-PENNER

Director, Institute for Sustainable Energy
Boston University

Peter Fox-Penner is a professor of practice in the Questrom School of Business and the director of Boston University's Institute for Sustainable Energy. His research and writing interests are in the areas of electric power strategy, regulation, and governance; energy and climate policy; and the relationships between public and private economic activity, including corporate social responsibility. He is the author of *Smart Power*, a book widely credited with foreseeing the future transformation of the power industry. He serves as chief strategy advisor to Energy Impact Partners, as a board member of Lighting Retrofit, Inc., and as an advisor to EOS Energy Storage.

From 1996 through 2015, Peter was a principal specializing in energy and regulated industry matters at The Brattle Group, where he was the firm's longest-serving Chairman. During this period his work was quoted as authoritative in a Supreme Court decision and he participated extensively in litigation involving Enron and the California electricity crisis. Before joining Brattle, Peter served as Principal Deputy Assistant Secretary at the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) and a Senior Advisor in the White House Office of Science and Technology Policy (OSTP).

SPEAKER BIOS



JENNIFER GORDON

Deputy Director
Global Energy Center
Atlantic Council

Jennifer Gordon is the deputy director of the Global Energy Center (GEC) at the Atlantic Council, where she has oversight over the Center's research and publications, including its reports, issue briefs, and *EnergySource* blog. From 2016 to 2018, Jennifer was a senior energy policy analyst at National Journal's Network Science Initiative, where she focused on clean energy policy and the intersection of energy with food and agricultural policy. Jennifer has served as a CIA political analyst and has also worked as a freelance writer and TV commentator. Jennifer earned her Ph.D. in 2014 from Harvard's History Department and Center for Middle Eastern Studies, after completing a dissertation on early Shia political thought.



ANNA GREENBERG

Managing Partner
GQR

Anna Greenberg has over 20 years of experience polling in the political, non-profit and academic sectors. She joined GQR in 2001 after teaching public opinion and survey research methodology at Harvard University's John F. Kennedy School of Government.

Anna has been the lead pollster in many successful campaigns, including those of Governor Michelle Lujan Grisham, Governor Tom Wolf, Governor Ned Lamont, Congresswoman Lizzie Pannill Fletcher, Congresswoman Kim Schrier, Congressman Dean Phillips, Mayor Jenny Durkan and Mayor Jim Kenney. She worked with former Congresswoman Gabrielle Giffords in her races for Congress and continues to provide strategic advice to her organization on gun violence prevention. In 2014, Greenberg won the "Pollster of the Year" award from the AAPC for her work with Mayor Bill de Blasio's campaign for mayor of New York City.



JUDI GREENWALD

Principal
Greenwald Consulting LLC.

Judi Greenwald is the Principal of Greenwald Consulting LLC and a fellow at Princeton University's Andlinger Center for Energy & the Environment, with over 35 years of energy and environmental policy experience.

Until January 2017, she was Deputy Director for Climate, Environment, and Energy Efficiency at USDOE's Energy Policy and Systems Analysis Office, and the Senior Climate Advisor to the Energy Secretary. As a Vice President at the Center for Climate and Energy Solutions (formerly the Pew Center on Global Climate Change), she oversaw analysis and advancement of technology, business, state, regional and federal innovative solutions in transportation, electric power, buildings, and industry. Judi co-founded the National Enhanced Oil Recovery Initiative; advised state and regional climate initiatives; served on the advisory council of the Electric Power Research Institute, National Academy of Sciences panels studying vehicles and fuels, the White House Climate Change Task Force, the U.S. Congress Energy and Commerce Committee staff (working on the 1990 Clean Air Act Amendments and the 1992 Energy Policy Act); the U.S. Nuclear Regulatory Commission; and the Environmental Protection Agency.



NATE HULTMAN

Director, Center for Global Sustainability
University of Maryland

Nathan Hultman is director of the Center for Global Sustainability and Associate Professor at the University of Maryland School of Public Policy. He is also associate director of the Joint Global Change Research Institute, a collaboration between the University of Maryland and the Pacific Northwest National Laboratory.

From 2014-2016, Hultman worked at the White House on the Obama Administration's climate and energy policy team. During this time, he helped develop the US 2025 climate target, worked on U.S. bilateral engagements with China, India, Brazil and others, and participated in the international climate negotiations in Lima and Paris. His research focuses on national climate target-setting and assessment, U.S. emissions mitigation policy, energy technology transitions in emerging economies and international climate policy. He has participated in the UN climate process since the Kyoto meeting, and is a contributing author to the IPCC Fifth Assessment Report and Special Report on Renewable Energy. He teaches courses on climate change policy and energy policy.

Hultman is also a nonresident senior fellow at the Brookings Institution, and was formerly a visiting fellow at the University of Oxford, assistant professor at Georgetown University, Fulbright fellow and NASA Earth Systems Science Fellow in climate sciences. He holds an M.S. and Ph.D. in energy & resources from the University of California, Berkeley.

SPEAKER BIOS



ROBERT ICHORD
Senior Fellow
Global Energy Center
Atlantic Council

Bob Ichord is a senior fellow at the Atlantic Council's Global Energy Center where he is authoring a policy series on power sector transformation in developing countries and providing technical guidance to the Council's Task Force on US Nuclear Leadership. He joined to the Atlantic Council after almost forty years of U.S. Government service in advancing U.S. international energy interests. He retired in January 2016 from the U.S. Department of State, where he served as deputy assistant secretary for energy transformation in the Energy Resources Bureau from 2011 to 2015.

At the State Department, he helped launch the new Energy Resources Bureau established by Secretary Clinton and worked to further U.S. foreign policy interests in energy security, sustainable development, and global climate change. Prior to working for the State Department, Bob worked for the Agency for International Development (USAID) in the Europe and Eurasia Bureau as Chief of Energy and Infrastructure.



ROBERT IVESTER
Director, Federal Energy Management Program
U.S. Department of Energy

Robert Ivester serves as the Director of the Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy. FEMP oversees the implementation of policy and actions that result in energy efficiency improvements, renewable energy adoption, and reduction in energy and water use in federal government operations.

Prior to this position, Rob served in the Advanced Manufacturing Office (AMO) for six years. During that time, AMO launched five Manufacturing USA Institutes, the Critical Materials Hub, and hundreds of R&D and technical assistance projects across the nation. He also worked at the National Institute of Standards and Technology for over 16 years, leading and performing research in advanced manufacturing.

Rob has been an instructor for the Johns Hopkins University Engineering for Professionals program for graduate-level studies in manufacturing engineering since 2001. He is a SME Fellow and a Fellow of the American Society of Mechanical Engineers. He received his doctorate in engineering from the University of Massachusetts at Amherst.



JOSEPH KING
Program Director
Advanced Research Projects Agency – Energy (ARPA-E)

Joseph King serves as a program director at the Advanced Research Projects Agency – Energy (ARPA-E) where he is also an AAAS fellow. His focus at ARPA-E includes oil and gas efficiencies, thermoelectric conversion, and next generation battery technology. Prior to joining ARPA-E, Joseph served at DuPont for 13 years in various capacities.

Joseph earned both his Ph.D. in physical organic chemistry and his B.S. in chemistry from the University of California, Berkeley. He completed his postdoctoral study at the Max-Planck Institut für Kohlenforschung.



KEI KOIZUMI
Senior Advisor
American Association for the Advancement of Science (AAAS)

Kei Koizumi is a Senior Advisor in Science Policy at the American Association for the Advancement of Science (AAAS). He is working to establish the AAAS Center for Scientific Evidence in Public Issues (EPI Center); to make AAAS a more-effective force for science advocacy; and to connect science, the public, and public policy.

He joined AAAS in February 2017 after 8 years as Assistant Director for Federal Research and Development and Senior Advisor for the National Science and Technology Council at the White House Office of Science and Technology Policy (OSTP). There he was responsible for leading OSTP engagement on federal R&D budgets, appropriations, and policies and for S&T policy coordination. Before joining OSTP, he served as the director of the R&D Budget and Policy Program at the AAAS. He received his M.A. from the Center for International Science, Technology, and Public Policy program at the George Washington University and received a B.A. in political science and economics from Boston University.

SPEAKER BIOS



CHRISTA MARSHALL

Editor
E&E News

Christa Marshall is deputy energy editor at *E&E News*. She joined *E&E News* in 2008, covering everything from climate adaptation to the Keystone XL pipeline fight. Her credits include interviews of Microsoft Corp. co-founder Bill Gates, former Vice President Al Gore, and other climate and energy leaders. Christa was previously a reporter at *Greenwire*, covering the Department of Energy, energy technologies, and science policy as well as a reporter and assistant deputy editor at *Climatewire*. A graduate of Columbia University's Graduate School of Journalism, she formerly worked for *The Denver Post* and NPR.



STEVEN MUFSON

Reporter
Washington Post

Steven Mufson covers the business of climate change for the *Washington Post*. He joined the Post in 1989 and has also covered economic policy, China, diplomacy, energy and the White House. Earlier, he spent six years working for the *Wall Street Journal* in New York, London and Johannesburg. Steven has shared or won awards from Sigma Delta Chi, the American Geophysical Union, the Association of Food Journalists, and the Alicia Patterson Foundation. He is the author of *Keystone XL: Down the Line and Fighting Years*; *Black Resistance and the Struggle for a New South Africa*.



ASAF NAGLER

Senior Director of Government Relations
ABB

Asaf Nagler works at the intersection of government, technology, energy, and entrepreneurship and is currently senior director of government relations at ABB, a global leader in electrification and automation technology. At ABB, Asaf leads federal and state policy and market development activities across a range of issues and technologies, from electric vehicles and smart grid to robotics and workforce development.

Prior to ABB, Asaf founded two start-ups. The first received two DOE SunShot Awards to crowd-source and analyze generation data from distributed solar PV to help utilities integrate solar onto their grids. The second assisted renewable generation asset owners obtain over \$100 million in federal funds for capital investments made in new or incremental renewable generation. Asaf also served as chief of staff to the U.S. Under Secretary of Energy where he oversaw \$37 billion in Recovery Act investments in clean energy and managed \$8 billion in annual energy programs including energy efficiency, renewable energy, electric grid, nuclear and fossil energy, and nuclear clean-up. Asaf has served as well as an attorney and researcher in the White House and on the 2008 Obama Campaign. Asaf was a civil litigation attorney and graduated from the George Washington University Law School.

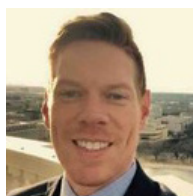


RYAN OPSAL

Energy Policy Manager
Maryland Energy Administration

Ryan Opsal is the Energy Policy Manager for Regulatory Affairs and Data Analysis at the Maryland Energy Administration, where he works on policy issues related to clean energy, energy storage, electric vehicles, renewable portfolio standards, and rate design. In this role, he represents the State of Maryland in grid modernization and climate mitigation working groups. Ryan holds a Ph.D. in international relations from Florida International University, where he has served as adjunct professor for the past seven years.

SPEAKER BIOS



JOHN RIVARD

Oak Ridge National Laboratory Legislative Fellow
Office of Senator Lamar Alexander

John Rivard is a legislative fellow in the office of Senator Lamar Alexander (R-TN) where he works on a variety of science-related issues. He previously served as the director of DARPA programs at the Oak Ridge National Laboratory where he was responsible for leading and developing DARPA funded R&D projects and teams. John received his Ph.D. in materials science and engineering from the University of Cincinnati.



ADAM ROSENBERG

Staff Director
Energy Subcommittee
House Committee on Science, Space, and Technology
United States House of Representatives

Adam Rosenberg is the staff director for the Energy Subcommittee of the House Committee on Science, Space, and Technology, which he joined in April 2013. He previously served as a professional staff member on the Committee from mid-2007 through 2010, where he primarily focused on the DOE Office of Science, renewables, nuclear energy, and overall DOE management issues. From mid-2003 through 2004, Adam was an American Association for the Advancement of Science (AAAS) Congressional Fellow on the Democratic staff of the Senate Energy and Natural Resources Committee, where he worked on improving the direction for advanced scientific computing research, support for the physical sciences, overall U.S. competitiveness in high technology industries, the Department of Commerce's Advanced Technology Program, and a variety of other issues.

Adam holds a B.S. in applied & engineering physics from Cornell University and a Ph.D. in plasma physics from Princeton University, where he studied magnetohydrodynamic instabilities and interactions between radio frequency waves and energetic ions in a large magnetic fusion experiment at the Princeton Plasma Physics Laboratory.

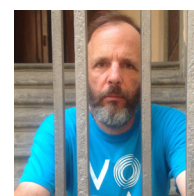


DOROTHY ROBYN

Senior Fellow, Institute for Sustainable Energy
Boston University

Dorothy Robyn is a public policy expert who writes and consults on energy, transportation and telecommunications policy. She is a Non-Resident Senior Fellow with Boston University's Institute for Sustainable Energy. Dorothy served in the Obama Administration as the Deputy Under Secretary for Installations & Environment in the Department of Defense, where she had DoD-wide oversight of U.S. military bases around the world (2009-2012), and as Commissioner of Public Buildings at the U.S. General Services Administration (2012-2014).

From 1993-2001, she was a special assistant to the president for economic policy on the staff of the White House National Economic Council, where she coordinated policy issues related to aviation and transportation, aerospace, defense, telecommunications, and science and technology. Her role in preventing the destruction of the Iridium satellite system following its 1999 bankruptcy is recounted in John Bloom's award-winning 2016 book, *Eccentric Orbits: the Iridium Story*. Dorothy previously was an assistant professor at Harvard's Kennedy School of Government; a principal with The Brattle Group; and a guest scholar at the Brookings Institution.



DANIEL SAREWITZ

Editor
Issues in Science and Technology

Daniel Sarewitz is Professor of Science and Society, and co-director and co-founder of the Consortium for Science, Policy, and Outcomes (CSPO), at Arizona State University. He is interested in relationships among knowledge, technology, uncertainty, disagreement, policy, and social outcomes. Among his recent activities is a project on harmonies between science and religion that he ran in collaboration with the writer Lee Gutkind. "Saving Science," his analysis of the multiple challenges facing the scientific enterprise, appeared in *The New Atlantis* in August 2016. He is editor of *Issues in Science and Technology*, and was a regular columnist for *Nature* from 2009-2017. From 1989-1993 he worked on R&D policy issues for the U.S. House of Representatives Committee on Science, Space, and Technology. He holds a Ph.D. in geological sciences from Cornell University.

SPEAKER BIOS

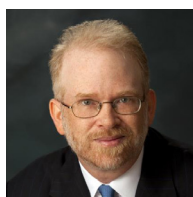


JONATHAN SILVER

Managing Director
Tax Equity Advisors

Jonathan Silver is the managing partner of Tax Equity Advisors LLC., an advisory firm managing investments for major corporations in large-scale solar power projects, and serves on the boards of the British utility National Grid, hydrogen fuel cell manufacturer Plug Power, and Intellihot, a leading player in tankless water heating. He is a board member of non-profits Resources for the Future and American Forests. Jonathan co-founded Core Capital Partners, a leading venture firm, and was chief operating officer of Tiger Management, one of the country's largest and most successful hedge funds.

Jonathan led the federal government's \$40 billion clean energy investment fund, the Department of Energy's Loan Program Office, during the Obama Administration. In addition to his work at the Department of Energy, he has served as senior advisor to three U.S. Cabinet Secretaries: Commerce, Interior and Treasury.



SAM THERNSTROM

Founder and CEO
Energy Innovation Reform Project

Sam Thernstrom is the founder and chief executive officer of the Energy Innovation Reform Project (EIRP), a nonprofit organization working to promote the development of advanced energy technologies and practices that will improve the affordability, reliability, safety and security of American energy supplies and our energy economy. He is also founder and executive director of the Innovation Reform Action Project, a 501c4 nonprofit organization working to advance pragmatic solutions to clean energy challenges, and a senior fellow at the Center for the National Interest.

Previously, he was senior climate policy advisor to the Clean Air Task Force (2010-12), director of communications at the White House Council on Environmental Quality (2001-03), and resident fellow at the American Enterprise Institute for Public Policy Research (2003-2010). He also served as senior policy advisor to the Bipartisan Policy Commission's Geoengineering Task Force (2010-11), speechwriter to George E. Pataki, Governor of New York (1999-2000), and press secretary at the New York State Department of Environmental Conservation (1996-1999).



BARBARA TYRAN

Executive Director, Government & External Relations
Electric Power Research Institute (EPRI)

Barbara Tyran is executive director, government & external relations, in EPRI's Washington DC office where she serves as the principal liaison between EPRI executive management, and Congress, the Administration, the national trade associations, the national leadership of the state public utility commissions, state legislators and regulators, and the Washington energy community.

Barbara joined EPRI in 1998 after serving for several years as manager of federal government affairs for Kansas City Power & Light and Empire District Electric Company. She was also a Washington Representative for DTE Energy. Barbara previously served as a management consultant, initially with Booz Allen & Hamilton, and subsequently, with Pace Global, where she was engaged with energy-related clients in both the private and public sectors. In recognition of her electricity industry expertise and knowledge, she was appointed in 2005 by the Secretary of Commerce to the Industry Trade Advisory Committee on Energy and Energy Services, and was elected Chair from 2010-2018. In 2014, she was General Chair of the IEEE Power & Energy Society General Meeting Local Organizing Committee, hosting 3000 delegates from over 50 nations.



BILL UPDIKE

Principal, Sustainability
Integral Group

Bill Updike has been a passionate advocate for climate, green building and environmental policy for decades, and is recognized as a leader in green building, urban sustainable development, and climate policy and planning. He currently serves as a principal with the deep green engineering and sustainability consulting company, Integral Group. Prior to joining Integral Group, Bill spearheaded green building and climate policy for the city government in Washington, DC, managed projects for a renewable energy company, managed construction for a deep green design/build firm, and served as a sales rep for a green building supply company. In the early part of his career, Bill worked as an environmental journalist for two national magazines.

Bill's extensive work on green building, energy, and climate mitigation and adaptation has earned him multiple awards including a Living Building Challenge Hero Award (from the International Living Future Institute) and a BOLD Award at Greenbuild in 2015.

SPEAKER BIOS

STAFF BIOS



BRAD WIBLE

Senior Commentary Editor
Science

Brad Wible is Senior Editor at *Science* magazine, primarily responsible for policy commentary. Prior to *Science*, he worked in university administration and communications at the Kellogg School of Management, and in research and education policy and planning at the American Association for the Advancement of Science (AAAS). He was a AAAS Science and Technology Policy Fellow in the Office of Behavioral and Social Sciences Research at the National Institutes of Health, and a AAAS Mass Media Science and Engineering Fellow at the Los Angeles Times. He earned a Ph.D. in neuroscience from Northwestern University, and did postdoctoral work at the University of Oregon.



ELLEN WILLIAMS

Distinguished University Professor
University of Maryland

Ellen Williams is Distinguished University Professor in the Department of Physics at the University of Maryland – College Park. Her lab explores the special consequences of fluctuations that arise at the nanoscale with applications that include the control of nanoscale materials fabrication, electromigration, electrical noise in nanoelectronic devices, and flexible electronics. Ellen served as Director of the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) from 2014 until early 2017. Prior to joining ARPA-E, she was chief scientist at BP and founded and directed the University of Maryland Materials Research Science and Engineering Center.

Ellen has an extensive publication record and has received numerous awards for her work, including the David Turnbull Award from the Materials Research Society and the David Adler Lectureship Award from the American Physical Society. She was elected to the National Academy of Sciences in 2005 and the American Academy of Arts and Sciences in 2003. She earned her Ph.D. from the California Institute of Technology.



DAVID HART

Senior Fellow
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David M. Hart is a senior fellow at the Information Technology and Innovation Foundation (ITIF) and professor of public policy and director of the Center for Science, Technology, and Innovation Policy at George Mason University's Schar School of Policy and Government. He is also a former member of ITIF's board. Hart's work at ITIF focuses on clean energy innovation.

In 2011 and 2012, Hart served as assistant director for innovation policy at the White House Office of Science and Technology Policy, where he focused on advanced manufacturing issues and contributed to the National Strategic Plan for Advanced Manufacturing and the reports of the Advanced Manufacturing Partnership. Hart served as senior associate dean of the George Mason School of Public Policy during the 2014 and 2015 academic years. He co-chairs the Innovation Policy Forum at the National Academies of Science, Engineering, and Medicine. He earned his Ph.D. in political science from MIT in 1995.



COLIN CUNLIFF

Senior Policy Analyst
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Colin Cunliff is a senior policy analyst at the Information Technology and Innovation Foundation where focuses on clean energy innovation. He previously worked at the U.S. Department of Energy (DOE) Office of Energy Policy and Systems Analysis as a AAAS Science & Technology Policy Fellow, with a portfolio focused on energy sector resilience and emissions mitigation. Prior to that, he was the American Institute of Physics / American Association for the Advancement of Science (AIP/AAAS) Congressional Fellow in the office of Senator Dianne Feinstein, where he served as a staff science adviser on energy, climate and transportation. He holds a Ph.D. in physics from the University of California, Davis.



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