

DAVID M. HART
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Professor Emeritus, George Mason University

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SELECTED CURRENT AFFILIATIONS

Senior Fellow for Climate and Energy, Council on Foreign Relations.

Lifetime Fellow, American Association for the Advancement of Science.

Sole Proprietor, David M. Hart Policy Advisors.

ACADEMIC POSITIONS

Professor Emeritus, George Mason University, 2025-

Professor of Public Policy, George Mason University, 2010-2025.

Associate Professor of Public Policy, George Mason University, 2004-2010.

Associate Professor, Kennedy School of Government, Harvard University, 1998-2004.

Assistant Professor, Kennedy School of Government, Harvard University, 1994-1998.

ACADEMIC ADMINISTRATION AND GOVERNMENT SERVICE

Senior Associate Dean, School of Public Policy/School of Policy, Government, and International Affairs; George Mason University, 2013-2015.

Assistant Director for Innovation Policy, Office of Science and Technology Policy, Executive Office of the President, 2011-2012.

EDUCATION

Ph.D., Department of Political Science, M.I.T., 1995.

B.A. with University Honors, Science in Society Program, Wesleyan University, 1983.

RESEARCH AND WRITING

A. Books and Monographs.

Energizing America: A Roadmap to Launch a National Energy Innovation Mission (with Varun Sivaram, Colin Cunliff, Julio Friedmann, and David Sandalow), Columbia University Center for Global Energy Policy, 2020.

Unlocking Energy Innovation (with Richard K. Lester), (MIT Press, 2012). [Honorable Mention, 2011 American Publishers Award for Professional and Scholarly Excellence (PROSE Award) in the Business, Finance & Management category.]

The Emergence of Entrepreneurship Policy: Governance, Start-Ups, and Growth in the U.S. Knowledge Economy (edited volume) (Cambridge University Press, 2003).

Forged Consensus: Science, Technology, and Economic Policy in the United States, 1921-1953 (Princeton University Press, 1998). [Excerpted in Albert H. Teich, et al., eds., *AAAS Science and Technology Policy Yearbook 1999* (American Association for the Advancement of Science, 1999), 293-304.]

B. Peer Reviewed Articles

“Recent Legislation in the United States: Consequences for the US and Global Energy and Climate Innovation Systems,” *Environmental Research Letters*, 10.1088/1748-9326/acf148 (2023).

“International Trade in Future Avoided Emissions: The Case of Battery Electric Vehicles and the United States,” (with Hyeseon Na), *Journal of Environmental Management* 344:118660 (2023), <https://doi.org/10.1016/j.jenvman.2023.118660>.

“Beyond the Technology Pork Barrel? An Assessment of the Obama Administration's Energy Demonstration Projects,” *Energy Policy* 119:367-376 (2018).

“An Agent, Not a Mole: Assessing the White House Office of Science and Technology Policy,” *Science and Public Policy* 41:411-418 (2014).

“Founder Nativity, Founding Team Formation, and Firm Performance in the U.S. High-Tech Sector,” *International Entrepreneurship and Management Journal* 10:1-22 (2014).

“High-Technology Immigrant Entrepreneurship in the U.S.” (with Zoltan J. Acs), *Economic Development Quarterly* 25:116-129 (2011).

“Making, Breaking, and (Partially) Remaking Markets: State Regulation and Photovoltaic Electricity in New Jersey,” *Energy Policy* 38:6662-6673 (2010).

“International Cooperation To Manage High-Skill Migration: The Case of U.S.-India Relations”

- (with Ted Davis), *Review of Policy Research* 27:509-526 (2010).
- “Accounting for Change in National Systems of Innovation,” *Research Policy* 38:647-654 (2009).
- “The Politics of “Entrepreneurial” Economic Development Policy in the U.S. States,” *Review of Policy Research* 25:149-168 (2008).
- “Red, White, and ‘Big Blue’: IBM and the Business-Government Interface in the U.S., 1956-2000,” *Enterprise and Society* 8:1-34 (2007).
- “Understanding Immigration in a National Systems of Innovation Framework,” *Science and Public Policy* 34:45-53 (2007).
- "Managing the Global Talent Pool: Sovereignty, Treaty, and Intergovernmental Networks," *Technology in Society* 28:421-434 (2006).
- “The Political Development of William C. Norris and Control Data Corporation, 1957-1986,” *Enterprise & Society* 6:197-223 (2005).
- “Business Is Not an Interest Group (And, By the Way, There’s No Such Thing as ‘Business’): On Companies in American National Politics,” *Annual Review of Political Science* 7:47-67 (2004).
- “Political Representation Among Dominant Firms: Revisiting the Olsonian Hypothesis,” *Business and Politics* 5:261-286 (2003).
- “Private Technological Capabilities as Products of National Innovation Systems: Four Ways of Looking at the State,” *Science and Public Policy* 29:181-188 (2002).
- “Why Do Some Firms Give? Why Do Some Firms Give a Lot? High-Tech PACs, 1978-1996,” *Journal of Politics* 63:1230-1249 (2001).
- “Antitrust and Technological Innovation in the U.S.: Ideas, Institutions, Decisions, and Outcomes, 1890-2000,” *Research Policy* 30:923-936 (2001).
- “IBM in American Politics, 1970-1999,” *Business and Economic History* 28(2):49-60 (1999).
- "Herbert Hoover's Last Laugh: The Enduring Significance of the 'Associative State' in the United States," *Journal of Policy History* 10:419-444 (1998).
- "Scientific Elites and the Making of U.S. Policy for Climate Change Research, 1957-1974," *Social Studies of Science* 23:643-680 (1993) (with David Victor).

C. Selected Other Publications (Book Chapters, Non-Academic Articles, Reports, etc.)

- “Sustainable Aviation Fuel: Policy Recommendations to Enable a Low-carbon Fuel Mix,” (contributor), Center for Climate and Energy Solutions, December 2024.
- “Policy Recommendations to Unlock the Value of Long-Duration Energy Storage,” (contributor), Center for Climate and Energy Solutions, December 2024.
- “To Boost Energy Innovation, Strengthen Policies That Pull Technologies Into the Market” *Issues in Science and Technology*, Fall 2024, 91-94.
- “Clean Hydrogen: Demand-Side Support Policy Recommendations” (contributor), Center for Climate and Energy Solutions, November 2024.
- “Engineered Carbon Removal: Markets and Finance Policy Recommendations” (contributor), Center for Climate and Energy Solutions, September 2024.
- “U.S. State and Regional Energy Innovation Index” (with Chad Smith), Information Technology and Innovation Foundation, May 28, 2024.
- “Forging the Future: Insights on a U.S. Industrial Strategy for Energy,” (with Tanya Das and Natalie Tham), Bipartisan Policy Center, February 29, 2024.
- “The Defense Production Act: National Security as a Potential Driver of Domestic Manufacturing Investment,” Bipartisan Policy Center, February 29, 2024.
- “Sematech: A Public-Private Partnership for Spurring Domestic Manufacturing,” Bipartisan Policy Center, February 29, 2024.
- “Federal Tax Policy: Targeted Incentives for Manufacturing in the Post World War II Era,” Bipartisan Policy Center, February 29, 2024.
- “Diversify, Domesticate, and Disrupt: Strengthening America’s Nascent Effort To Build a Resilient And Robust Solar PV Supply Chain,” Energy Innovation Reform Project, U.S.-Korea Energy Series--Working Paper No. 1, October 2023.
- “Accelerating Clean Regional Economies: A Great Lakes Investment Strategy” (contributor), RMI, September 26, 2023.
- “Decarbonizing the Chemical Industry: Policy Insights from a Case Study of PVC,” Information Technology and Innovation Foundation, October 3, 2022.
- “Pathways to Decarbonize the PVC Value Chain,” George Mason University Center for Energy Science and Policy (with Ron Whitfield and Francis Brown), September 2022.
- “Climate Innovation Policy from Glasgow to Pittsburgh” (with Hoyu Chong), *Nature Energy* 7:776–778 (September 12, 2022).

- “Further Energizing Innovation in Fiscal Year 2023,” (with Hoyu Chong) Information Technology and Innovation Foundation, May 13, 2022.
- “Active Carbon Management: Critical Tools in the Climate Toolbox,” (with Stefan Koester) Information Technology and Innovation Foundation, April 18, 2022
- “The 2021 Global Energy Innovation Index: National Contributions to the Global Clean Energy Innovation System” (with Chad Smith), Information Technology and Innovation Foundation, October 18, 2021.
- “The Bipartisan Infrastructure Bill Could Reshape DOE’s RD&D Portfolio Over the Next 5 Years – in a Good Way” (with Linh Nguyen), Information Technology and Innovation Foundation, September 23, 2021.
- “Unworkable Solution: Carbon Border Adjustment Mechanisms and Global Climate Innovation” (with Stefan Koester and Grace Sly), Information Technology and Innovation Foundation, September 20, 2021.
- “Clean and Competitive: Opportunities for U.S. Manufacturing Leadership in the Global Low-Carbon Economy” (with Peter Fox-Penner, Henry C. Kelly, and others), Information Technology and Innovation Foundation/Boston University Institute for Sustainable Energy/Fraunhofer USA Center for Manufacturing Innovation,” June 21, 2021.
- “Energizing Innovation: Update with President’s Budget Request” (with Linh Nguyen), Information Technology and Innovation Foundation, June 2021.
- “Building Back Cleaner With Industrial Decarbonization Demonstration Projects,” Information Technology and Innovation Foundation, March 8, 2021.
- “The Impact of China’s Production Surge on Innovation in the Global Solar Photovoltaics Industry,” Information Technology and Innovation Foundation, October 5, 2020.
- “Gene Editing for the Climate: Biological Solutions for Curbing Greenhouse Emissions,” (with Val Giddings and Rob Rozansky), Information Technology and Innovation Foundation, September 14, 2020.
- “More and Better: Building and Managing a Federal Energy Demonstration Project Portfolio” (with Robert Rozansky), Information Technology and Innovation Foundation, May 18, 2020.
- “Mind the Gap: A Design for a New Energy Technology Commercialization Foundation” (with Jetta L. Wong), Information Technology and Innovation Foundation, May 11, 2020.
- “A National Energy Storage Initiative,” The Day One Project, January 23, 2020.
- “Energy Innovation: The Forgotten Side of Paris,” in *Climate Change Strategies 2020* (UN

Clean Technology Centre and Network), December, 2019.

“Less Certain than Death: Using Tax Incentives to Drive Clean Energy Innovation” (with Elizabeth Noll), Information Technology and Innovation Foundation, December 2, 2019.

“The Global Energy Innovation Index: National Contributions to the Global Clean Energy Innovation System,” (with Colin Cunliff), Information Technology and Innovation Foundation, August 26, 2019.

“Two Tools for Two Jobs: Carbon Taxes and Energy Technology Tax Incentives,” ITIF briefing, July 3, 2019.

“Energy Storage RD&D in the Fiscal Year 2020 Budget Proposal,” ITIF briefing, March 27, 2019.

“Clean Energy Based Regional Economic Development: Multiple Tracks for State and Local Policies in a Federal System,” Information Technology and Innovation Foundation, February 25, 2019.

“Making “Beyond Lithium” a Reality: Fostering Innovation in Long-Duration Grid Storage,” Information Technology and Innovation Foundation, November 28, 2018.

“The Need for Continued Innovation in Solar, Wind, and Energy Storage,” (with John Dabiri and Varun Sivaram) *Joule* 2(9): 1639-1642 (2018).

“When Does Environmental Regulation Stimulate Technological Innovation?” Information Technology and Innovation Foundation, July 23, 2018.

“Manufacturing USA at DOE: Supporting Energy Innovation” (with Peter L. Singer), Information Technology and Innovation Foundation, May 16, 2018.

“Federal Energy RD&D: Building on Momentum in Fiscal 2019” (with Colin Cunliff), Information Technology and Innovation Foundation, April 23, 2018.

“Energy Storage for the Grid: Policy Options for Sustaining Innovation” MIT Energy Initiative working paper (with William B. Bonvillian and Nathaniel Austin), April 2018.

“ARPA-E: Versatile Catalyst for U.S. Energy Innovation,” (with Michael Kearney), Information Technology and Innovation Foundation, November 15, 2017.

“Across the ‘Second Valley of Death’: Designing Successful Energy Demonstration Projects,” Information Technology and Innovation Foundation, July 26, 2017.

“Bad Blueprint: Why Trump Should Ignore the Heritage Plan to Gut Federal Investment” (with Stephen Ezell and Robert D. Atkinson), Information Technology and Innovation Foundation, February 27, 2017.

- “Clean Energy Innovation: Priorities for the Trump Administration and the 115th Congress,” (with Varun Sivaram, Teryn Norris, and Colin McCormick), Information Technology and Innovation Foundation, December 13, 2016.
- “Rescuing the Low-Carbon Energy Transition from Magical Thinking,” Information Technology and Innovation Foundation, October 27, 2016.
- “America’s Advanced Industries: New Trends,” (with Mark Muro and Sid Kulkarni), Brookings Institution, Metropolitan Policy Program, August 4, 2016.
- “Deployment of Grid-Scale Batteries in the United States,” prepared for DOE EPISA-50, June 2016.
- “Deployment of Solar Photovoltaic Generation Capacity in the United States,” prepared for DOE EPISA-50, June 2016.
- “Enhancing the Usefulness of Science of Science and Innovation Policy (SciSIP) Research,” (with Jeffrey Alexander and Christopher T. Hill), prepared for National Science Foundation SciSIP program, April 2016.
- “The Demography of U.S. Innovation” (with Adams Nager, Stephen Ezell, and Robert D. Atkinson), Information Technology and Innovation Foundation, February 2016.
- “Closing the Energy-Demonstration Gap” (with Richard K. Lester), *Issues in Science and Technology*, Winter 2015, 48-54.
- “Why America Needs a National Network for Manufacturing Innovation” (with Robert D. Atkinson and Stephen Ezell), Information Technology and Innovation Foundation, December 2012.
- “The Future of Manufacturing – The United States Stirs,” *Innovations*, Summer 2012, 25-34.
- “Framework Conditions for High-Potential Entrepreneurship: A Theoretical Structure and Its Implications,” in Martin Andersson, *et al.*, eds., *Innovation and Growth* (Oxford University Press, 2012), 317-332.
- “Making, Breaking, and Remaking Markets: State Regulation, Entrepreneurship, and Photovoltaic Electricity in New Jersey,” in Rolf Wustenhagen and Robert Wuebker, eds., *Handbook of Research on Energy Entrepreneurship* (Edward Elgar, 2011), 305-325.
- “The Social Context for High-Potential Entrepreneurship in the U.S.: An Historical-Institutional Perspective,” in Chikako Usui, ed., *Comparative Entrepreneurship Initiatives* (Palgrave Macmillan, 2011).
- “The Northern Virginia Clean Energy Economy: A Preliminary Inventory,” George Mason University, School of Public Policy, Center for Science and Technology Policy, May 2011.

- “Immigration and High-Impact, High-Tech Entrepreneurship,” (with Zoltan J. Acs), Brookings Institution, February 2011.
- “Talent for a Knowledge- Based and Innovation-Oriented Economy: Hong Kong’s Challenges and Opportunities” (with Fangmeng Tian), in Douglas B. Fuller, ed., *Innovation Policy and the Limits of Laissez-Faire: Hong Kong’s Policy in Comparative Perspective* (Palgrave Macmillan, 2010), 21-38.
- “Introduction to the Special Issue,” *Review of Policy Research* 27:387-388 (2010).
- “Political Theory of the Firm,” in David Coen and Graham Wilson, eds. *Oxford Handbook of Business and Government* (Oxford University Press, 2010), 173-190.
- “Governing the Global Knowledge Economy: Mind the Gap!,” *Global Studies Review*, Summer 2010.
- “High-Technology Immigrant Entrepreneurship in the U.S.” Office of Advocacy, U.S. Small Business Administration. July, 2009.
- “Brain Gain,” *Princeton Encyclopedia of the World Economy* (Princeton University Press, 2008).
- “U.S. Politics, Economy, and Technology, *Blackwell Companion to the Philosophy of Technology* (Blackwell, 2007).
- “Governing the Global Knowledge Economy,” *FLAD Newsletter*, December 2006, 14-15.
- “Global Flows of Talent: Benchmarking the U.S.,” Information Technology and Innovation Foundation policy brief, November 17, 2006.
- “From Brain Drain to Mutual Gain: New Opportunities to Share the Benefits of High-Skill Migration,” *Issues in Science and Technology*, Fall, 2006, 53-62.
- “Political Economy of Science and Technology,” *Encyclopedia of Science, Technology, and Ethics* (Macmillan, 2005).
- “Bush-Kerry: More of the Change?” *The Scientist*, October 25, 2004.
- “Corporate Technological Capabilities and the State: A Dynamic Historical Interaction,” in Kenneth Lipartito and David B. Sicilia, eds., *Constructing Corporate America: Historical Perspectives on Big Business, Society, and Politics* (Oxford University Press, 2004).
- “Entrepreneurship Policy: What It Is and Where It Came From,” in David M. Hart, ed., *The Emergence of Entrepreneurship Policy* (Cambridge University Press, 2003).
- “Knowledge, Power, and Entrepreneurs: A First Pass at the Politics of Entrepreneurship Policy,”

in David M. Hart, ed., *The Emergence of Entrepreneurship Policy* (Cambridge University Press, 2003).

"High-Tech Learns to Play the Washington Game, or the Political Education of Bill Gates and Other Nerds," in Allan J. Cigler and Burdett Loomis, eds., *Interest Group Politics*, 6th ed. (CQ Press, 2002), 293-312.

"New Economy, Old Politics: The Evolving Role of the High-Tech Industry in U.S. Politics," in John D. Donahue and Joseph S. Nye, Jr., eds., *Governance in a World of Bigger, Better Markets* (Brookings Institution Press, 2001), 235-265.

"Government Organization: Implications for Science and Technology Policy," in John de la Mothe, ed., *Science, Technology, and Governance* (Pinter, 2001).

"Research, Innovation, and Politics," *Nature* 407:561-562 (5 October 2000).

"Technology Policy in the First Clinton Administration," in *Triumphs and Tragedies of the Modern Presidency: Seventy-Six Case Studies in Presidential Leadership* (Washington: Center for the Study of the Presidency, 2000).

"Commentario: Ciencia – La Frontiera Sin Fin," *Redes* 7(14):143-146 (1999).

"Antitrust and Technological Innovation," *Issues in Science and Technology*, Winter, 1998-99, 75-82.

"U.S. Technology Policy: New Tools for New Times," *NIRA Review*, Summer, 1998, 3-6.

"Managing Technology Policy at the White House," in Lewis M. Branscomb and James H. Keller, eds., *Investing in Innovation* (MIT Press, 1998), 438-461.

"Investing in Innovation," Competitiveness Policy Council, April 24, 1997 (with Lewis Branscomb, Richard Florida, James Keller, and Darin Boville).

"Facilitating Technological Change in Developing Country Energy Systems: Lessons from Development Experience," in Henry Lee, ed., *Shaping National Responses to Climate Change: A Post-Rio Guide* (Island Press, 1995) (with Vicki Norberg-Bohm), 261-288.

Guest editor, special issue on "Science, Technology, and Individual Responsibility," *Technology in Society*, volume 8, number 4 (1986).

D. Work in progress and unpublished working papers.

"Immigrant Entrepreneurship and Internationalization and Globalization of Successful U.S. High-Tech Start-Ups." GMU School of Public Policy Research Paper No. 2011-15. April 2011.

- “Alignment and Misalignment of Technology Push and Regulatory Pull: Federal RD&D Support for SO₂ and NO_x Emissions Control Technology for Coal-Fired Power Plants, 1970-2000” (with Kadri Kallas). MIT Industrial Performance Center Working Paper 10-002. April 2010.
- “Don’t Worry About the Government? The LEED-NC ‘Green Building’ Rating System and Energy Efficiency in U.S. Commercial Buildings.” MIT Industrial Performance Center Energy Innovation Project Working Paper 09-001. March 2009.
- “Governing the Global Knowledge Economy” (with Dieter Ernst). Atlanta Conference on Science and Technology Policy, October, 2007; IDEFF Lisbon Conference, June 2008.
- “Managing Complexity Within Complexity: IBM and the U.S.-Japan Semiconductor Trade Arrangement.” Unpublished case study. 2002.

E. Book reviews.

- Martin Junginger, Wilfried van Stark, and Andre Faaij, eds. *Technological Learning in the Energy Sector*, in *Science and Public Policy* 40:275-276 (2013).
- John Sibley Butler, Alfonso Morales, and David L. Torres, eds., *An American Story: Mexican American Entrepreneurship and Wealth Creation*, in *Journal of Planning Education and Research*, 31:223-224 (2011).
- Jagdish Bhagwati and Alan S. Blinder, *Offshoring of American Jobs: What Response from U.S. Economic Policy?* in *Issues in Science and Technology*, Spring 2010, 91-93.
- Goran Marklund, Nicholas S. Vonortas, and Charles W. Wessner, eds., *The Innovation Imperative in Papers in Regional Science*, 89:881-882 (2010).
- Sumon Gupta and Tope Omoniyi, eds. *The Cultures of Economic Migration: International Perspectives* in *Journal of International Migration and Integration* 9:429-430 (2008).
- Alan P. Rudy *et al.*, *Universities in the Age of Corporate Science*, in *Enterprise and Society* 9:400-402 (2008).
- David Nye, *Technology Matters* in *American Scientist*, November-December 2006.
- Frank Dobbin, ed., *The New Economic Sociology* in *Enterprise & Society* 6(3):495-497 (2005).
- Nelly Oudshorn, *The Male Pill* in *Step Forward*, Fall, 2005.
- Johann-Peter Murmann, *Knowledge and Competitive Advantage* in *Step Forward*, Fall, 2004.
- Louis Galambos and Eric John Abrahamson, *Anytime Anywhere: Entrepreneurship and the Creation of a Wireless World* in *American Historical Review*, 108:1115-1116 (2003).

Guy Stever, *In War and Peace: My Life in Science and Technology* in *Chemical and Engineering News*, March 24, 2003, 37-38.

Daniel S. Greenberg, *Science, Politics, and Money: Political Success and Ethical Erosion* in *Issues in Science and Technology*, Spring, 2002, 89-93.

Alfred D. Chandler, *Inventing the Electronic Century: The Epic Story of the Computer and Consumer Electronics Industries* in *American Scientist*, January-February, 2002, 92-93.

James D. Savage, *Funding Science in America: Congress, Universities, and the Politics of the Academic Pork Barrel* in *American Political Science Review* 94:465 (2000).

William E. Leuchtenburg, *The FDR Years: On Roosevelt and His Legacy* in *Journal of Policy History* 11:94-96 (1999).

David Plotke, *Building a Democratic Political Order: Reshaping American Liberalism in the 1930s and 1940s* in *Clio* (newsletter of APSA Politics and History Section), vol. 7, no. 1 (Fall/Winter, 1996), 23.

Kim McQuaid, *Uneasy Partners: Big Business in American Politics, 1945-1990* in *Business History Review* 69:589-590 (1995).

Alan Brinkley, *The End of Reform: New Deal Liberalism in Recession and War* (New York: Knopf, 1995) in *Clio*, vol. 5, no. 2 (Spring/Summer, 1995), 10.

F. Selected op-eds and blog posts

“Climate Diplomacy: Watch What Countries Do, Not What They Say,” cfr.org, November 18, 2024.

"Energy Trade: A New World Is Being Born But Will Need Help to Grow Up," *Real Clear Energy*, November 6, 2024.

“Can U.S. Tech Giants Deliver on the Promise of Nuclear Power?,” cfr.org, October 22, 2024.

“Putting FESI on a Maximum Impact Path,” Federation of American Scientists, August 7, 2024.

“New DOE Foundation Should Think Big,” *Real Clear Energy*, May 10, 2024.

“Clean Manufacturing Could Strengthen DoD's Industrial Strategy,” *Industry Week*, April 16, 2024.

“Time to Bring Geothermal Energy in from the Cold,” *Real Clear Energy*, March 11, 2024.

“Long-Duration Energy Storage Is a Decarbonization Linchpin” (with Hannah Boyles and Ed

- Rightor), *ITIF Innovation Files*, June 14, 2023.
- “Jumpstarting FESI: Seeking Bold New Ideas for a New Energy Innovation Foundation,” *ITIF Innovation Files*, May 31, 2023.
- “Why Young Researchers Are Vital to Climate and Innovation Policy and How to Support Them,” (with Alejandro Nuñez-Jimenez), *ITIF Innovation Files*, April 5, 2023.
- “Comments to DOE’s Office of Technology Transitions Regarding the Foundation for Energy Security and Innovation (FESI),” *ITIF Innovation Files*, March 23, 2023.
- “FESI for Regions: How the Foundation for Energy Security and Innovation Can Contribute to Place-Based Energy Innovation,” *ITIF Innovation Files*, March 17, 2023.
- “Petrochemicals Without Fossil Fuels: A National Climate-Tech Initiative” (with Henry C. Kelly), *ITIF Innovation Files*, March 3, 2023.
- “Midterm Outlook for Energy Innovation Policy” (with Stefan Koester), *ITIF Innovation Files*, October 6, 2022.
- “Can U.S. Leadership Bridge the Clean Energy Global Demonstration Gap?,” (with Nicholas Montoni and Hannah Boyles), *Third Way*, September 21, 2022.
- “The Foundation for Energy Security and Innovation: A Flexible New Tool to Build the Economy, Strengthen Science, and Fight Climate Change” (with Kerry C. Duggan), *ITIF Innovation Files*, August 2, 2022.
- “First of Its Kind: Making DOE’s New Office of Clean Energy Demonstration a Success” (with other members of the NGO working group), *ITIF Innovation Files*, April 18, 2022.
- “Innovation Uptake: The Final Frontier for Energy Policy,” *Real Clear Energy*, January 20, 2022.
- “One Year Later, A Glass Half Full: Energy Innovation Under the Biden Administration,” *ITIF Innovation Files*, January 14, 2022
- “Don’t Add Carbon Tariffs to the Growing List of Global Trade Tensions” (with Stefan Koester), *Real Clear Energy*, November 1, 2021.
- “Building a US Clean Manufacturing Strategy to Counter China and Tackle Climate Change” (with Stefan Koester), *Utility Dive*, June 29, 2021.
- “Biden’s Budget: Why Investing in Innovation Is Crucial to Reach US Climate Goals,” *The Conversation*, May 26, 2021.
- “A Clean Energy ‘Moon Shot’ Is Sitting on the Launch Pad, and Congress Can Supply the Fuel. Here’s How” (with Colin Cunliff and Linh Nguyen), *ITIF Innovation Files*, May 17,

2021.

“A Foundation for DOE: An Idea Whose Time Has Come” (with Jetta Wong), *ITIF Innovation Files*, May 6, 2021.

“The United States Must Lead the World in Climate Innovation,” *ITIF Innovation Files*, April 21, 2021.

“Time for a Serious U.S. Electric Vehicle Manufacturing Strategy,” *Industry Week*, November 13, 2020.

“How a Government-Linked Foundation Could Speed the Spread of New Clean-Energy Technologies,” *The Conversation*, October 7, 2020.

“Gene Editing: The New Frontier for Climate Innovation” (with Val Giddings and Robert Rozansky), *Real Clear Science*, October 2, 2020.

“Oases in the Valley of Death,” *Nature Energy*, September 21, 2020.

“Capitalizing on Federal R&D Investment With a New Energy-Tech Foundation” (with Jetta L. Wong), *Real Clear Energy*, July 16, 2020.

“Failing Toward Success: The Mothballing of Petra Nova Carbon Capture Demonstration Project Is a Teachable Moment,” (with Robert Rozansky) *ITIF Innovation Files*, August 14, 2020.

“Toward a Clean Recovery: Rebooting the Federal Energy Demonstration Portfolio” (with Robert Rozansky), *Utility Dive*, June 17, 2020.

“Between the Green New Deal and Business-as-Almost-Usual: A Clean Energy Stimulus That Suits the Circumstances,” *ITIF Innovation Files*, April 15, 2020.

“How Oil Tariffs Can Unite Strange Political Bedfellows,” *The Hill*, April 2, 2020.

“Shut Out the Political Noise and Pass a Strong Climate-Tech Bill,” *Morning Consult*, February 28, 2020.

“Driving Cleaner Energy Through the Tax Code,” *Ithaca (NY) Journal*, December 21, 2019.

“Pay Attention to the Other Paris Climate Agreement,” *ITIF Innovation Files*, November 27, 2019.

“Why a Measured Transition to Electric Vehicles Would Benefit the US,” *The Conversation*, November 26, 2019. Reprinted in *Chicago Tribune*, November 26, 2019.

“How to Tell If a Candidate Has a Serious Climate Plan,” *Inside Sources*, June 17, 2019. Reprinted in *Palm Beach Post* and *South Florida SunSentinel*, June 19, 2019.

“Declare Cold War on Global Warming,” *Inside Sources*, April 23, 2019.

“Congress: Do Your Job. Leave the Green New Deal to the Presidential Candidates,” *Morning Consult*, March 27, 2019.

“The Green New Deal’s Achilles Heel,” *Industry Week*, February 12, 2019.

“Clean Energy Innovation Policy: A 10-Point Action Plan for the 116th Congress,” *Innovation Files* blog post, January 16, 2019.

“Action on Climate and Energy: Beyond Partisan Talking Points,” *The Hill*, January 13, 2019.

“Lessons To Learn from the Carbon Tax Backlash,” *Real Clear Policy*, December 21, 2018.

“Long-Duration Energy Storage R&D: An Opportunity for American Climate Leadership,” (with Spencer Nelson), *Utility Dive*, December 14, 2018.

“To Keep Clean Energy Manufacturing Booming, Sustain PowerAmerica and Manufacturing USA at DOE,” *Energy Central*, August 24, 2018.

“Fuel Economy Freeze Will Leave U.S. Auto Industry in the Dust,” *Detroit Free Press*, August 10, 2018.

“A Better Approach at the EPA: Use Regulation to Drive Innovation?,” *Morning Consult*, August 3, 2018.

“Accelerating Energy Innovation with DOE Lab Vouchers for Business” (with Stephen Ezell), *Crain’s Cleveland Business*, July 2, 2018.

“DOE Research, Development, and Demonstration Funding: Keep on Growin’,” (with Colin Cunliff) *Utility Dive*, April 13, 2018.

“To Build a Battery Industry, New York Needs Help from Washington,” *Syracuse.com*, February 6, 2018.

“A Department of Energy Foundation: An Idea Whose Time Has Come” (with Stephen Ezell), *The Hill*, December 19, 2017.

“From NIMBY to PIMBY on Wind Farms,” *Lincoln (NE) Journal Star*, October 25, 2017.

“Energy Dominance Is Un-American,” *Morning Consult*, July 6, 2017.

“We Can Cut Carbon Emissions, Trump or No Trump,” *Richmond Times Dispatch*, May 26, 2017.

“Alternative Energy Is Now Mainstream,” *Washington Examiner*, April 24, 2017.

“Why Secretary Perry’s Flip-Flop on Agency He Now Leads Is a Good Thing,” *The Hill*, March 2, 2017.

“It’s Time for America’s Own Paris Agreement,” *Austin American-Statesman*, March 1, 2017.

“Focus, Reform, and Invest: An Energy Innovation Agenda for the Trump Administration and the 115th Congress,” *Morning Consult*, December 13, 2016.

“Carbon Tariff Trade War or Innovation Race?,” *Europe’s World*, December 12, 2016.

“Clean Energy Innovation: A Way to Crack America’s Frozen Climate Debate?,” *Morning Consult*, October 27, 2016

“Advanced Industries: A New Mental Model for a New Economy,” *Industry Week*, August 15, 2016.

“Trump’s Plan for Manufacturing: Extreme, Unbalanced,” *St. Louis Post-Dispatch*, July 14, 2016.

G. Selected presentations

“ARPA-E: Accomplishments and Opportunities,” National Academies consensus committee to evaluate ARPA-E, December 16, 2024

“Regional Energy Innovation Index,” Department of Energy Office of Technology Transitions, September 30, 2024

“A Foundation for the National Institutes of Standards and Technology,” U.S. Senate, Capitol Visitors Center, June 24, 2024.

“Innovations in Clean Energy,” Clean Energy Transition Conference, Washington, D.C., June 12, 2024.

“Green Industrial Policy,” ISI Karlsruhe, November 30, 2023; Canadian Institute for Advanced Research Innovation conference on Innovation Equity and the Future of Prosperity, Washington, DC, November 3, 2023.

Roundtable on IRA Implementation, Association for Public Policy and Management Fall Research Conference, Atlanta, November 11, 2023.

“The Foundation for Energy Security and Innovation” Breakthrough Energy, April 9, 2024; National Academies Research Data Summit, October 11, 2023; Geothermal Rising Conference, October 4, 2023; Capital Region BioHealth Forum, September 19, 2023; East Tennessee Economic Council, August 11, 2023; Business Council for a Sustainable Environment Federal Policy Committee, May 30, 2023; climatetech.org, April 20, 2023;

Gridwise Alliance, March 8, 2023; ITIF, February 28, 2023; Clean Energy for America, February 1, 2023; SustainabiliD GameChangers, January 17, 2023; DOE Market Analysis Community of Practice, September 15, 2022; Cleantech San Diego, October 20, 2022; Association of University Research Parks, November 9, 2022; SustainabiliD GameChangers, November 29, 2022; December 20, 2022; January 17, 2023; Clean Energy for America, February 1, 2023; ITIF, February 28, 2023; Gridwise Alliance, March 8, 2023; climatetech.org, April 20, 2023.

“The Future of Advanced Manufacturing,” Prince William County Department of Economic Development, June 16, 2023.

“U.S. Industrial Strategy: Where It Came From, Where It’s Going, and Emerging Research Opportunities,” Plenary Session, Industry Studies Conference, Columbus OH, June 1, 2023.

“Innovation and Government,” National Defense University, April 3, 2023.

“The Future of Manufacturing in the United States and Germany, ITIF, March 29, 2023.

Fireside Chat with Arati Prabhakar, assistant to the president for science and technology policy, ARPA-E Summit, Washington DC, March 22, 2023.

“Federal Climate and Energy Innovation Policy,” Second World Energy Storage Conference, June 25, 2021; Federation of American Scientists, February 14, 2022; Breakthrough Institute Fellows, July 15, 2022; South Korea Science and Technology Policy Institute, November 1, 2022; Infineon Corporation, November 15, 2022; Saudi Aramco Management Development Seminar, March 14, 2023.

“Regional Clean Energy- Based Economic Development (CEBED): A View from the United States,” BIXPO/KENTECH symposium, Gwangju, South Korea, November 2, 2022.

“Decarbonizing Chemical Production: Innovation Strategies,” Information Technology and Innovation Foundation, October 13, 2022.

“Harnessing New Technologies for Green Growth,” Ralph O’Connor Sustainable Energy Institute, Johns Hopkins University, April 5, 2022.

“A Systems Approach to Anthropogenic Climate Change” organized by the George Mason University Sustainability Council, March 30, 2022.

“Carbon-Free Technologies Needed for A Net-Zero Future” National Clean Energy Week, September 21, 2021.

“Clean and Competitive: Opportunities for U.S. Manufacturing in the Global Low-Carbon Economy” Georgia Tech Manufacturing Institute, September 20, 2021

“Energy Demonstration Projects” Energy Communities Alliance, May 4, 2021.

“Clean Energy, Decarbonization, and Climate Action,” George Mason University Institute for a Sustainable Earth, April 16, 2021.

“Industrial Decarbonization: RD&D Opportunities,” Congressional briefing co-hosted by ITIF and Boston University’s Institute for Sustainable Energy, April 14, 2021.

“America and the Paris Agreement: What Next?,” German Council on Foreign Relations, February 12, 2021.

“Bio-Manufacturing: Opportunities to Contribute to Climate Change Mitigation,” Boston University Institute for Sustainable Energy and Fraunhofer USA Center on Manufacturing Innovation, February 10, 2021.

The U.S. Innovation Ecosystem,” CSIS, October 23, 2020.

“Demonstration Projects,” Carbon Free Technology Initiative of the Edison Electric Institute, September 11, 2020.

“Federal Energy R&D Investments,” Carbon Free Technology Initiative of the Edison Electric Institute, September 24, 2020.

“Clean Energy Innovation Policy,” Breakthrough Institute, Breakthrough Generation Fellows, June 16, 2020.

“Federal Energy RD&D budgets,” Energy Futures Initiative, June 9, 2020.

“Demonstration Project Management at DOE,” American Energy Innovation Council advisory group on scaling innovation, April 22, 2020.

“Staying Alive in the Valley of Death,” National Association of State Energy Officials, NASEO annual conference, Arlington, VA, February 7, 2020.

Resources for the Future, Climate Policy boot camp for Congressional staff, Washington, DC, January 17, 2020.

National Academies panel on “Science and Innovation Leadership for the 21st Century,” Washington, DC, October 24, 2019.

“The Fourth Industrial Revolution: Whose Opportunity? Whose Threat?,” plenary session, Atlanta Conference on Science and Innovation Policy, Atlanta, GA, October 14, 2019.

“Innovation Mercantilism in Clean Energy,” Atlanta Conference on Science and Innovation Policy, Atlanta, GA, October 14, 2019.

“Energy and U.S.-China Competition,” Center for the National Interest, Washington, DC, July 31, 2019.

- “Energy Innovation,” testimony to Senate Energy and Natural Resources Committee, Washington, DC, July 25, 2019.
- “Energy in America: Economic and Social Opportunity,” Center for Strategic and International Studies, Washington, DC, June 25, 2019.
- “Stranded Assets in the Transition from ICEVs to EVs? Prospects for Labor Displacement in the Auto Manufacturing Industry” at the Industry Studies Conference, Nashville, TN, May 31, 2019.
- “An Innovation Agenda for Deep Decarbonization,” University of Maryland, Clark School of Engineering, College Park, MD, April 22, 2019.
- “Rescuing the Low-Carbon Energy Transition from Magical Thinking,” AAAS Science and Technology Policy fellows and Clean Energy Leadership Institute, Washington, DC, March 21, 2019.
- “Engineering a Clean Energy Transition,” Johns Hopkins University “Green New Deal Dialogue,” Washington, DC, March 14, 2019.
- “Losing Power? The State of the Global Race for Batteries to Power Electric Vehicles and Modernize the Grid,” Information Technology and Innovation Foundation, Washington, DC, November 7, 2018.
- “Science, Technology, and Innovation Policy in the United States,” Science and Technology Policy Institute, Sejong, Korea, October 10, 2018; Institute of Science and Development, Chinese Academy of Sciences, Beijing, October 19, 2018.
- “Energy Storage for the Grid: Policy Options for Sustaining Innovation,” Industry Studies Association, Seattle WA, May 31, 2018; Hong Kong University of Science and Technology, Hong Kong, October 11, 2018; Guangzhou Institute for Energy Conversion, Chinese Academy of Sciences, October 15, 2018; Sun Yat-Sen University, Guangzhou, October 16, 2018; Institute for Engineering Thermophysics, Chinese Academy of Sciences, Beijing, October 17, 2018; State Grid Energy Research Institute, Beijing., October 18, 2018.
- Fireside chat interview of Georgia Tech president Bud Peterson, ARPA-E summit, Washington, DC, March 13, 2018.
- “Environmental Regulation and Technological Innovation,” American Association for the Advancement of Science Annual Meeting, Austin, Texas, February 16, 2018.
- “The Role of U.S. States and Regions in Clean Energy Innovation, Mowat Centre, University of Toronto, “Confederation of Tomorrow 2.0” conference, December 11, 2017.
- “Securing Advanced Manufacturing in the United States: The Role of Manufacturing USA,”

- National Intelligence Science and Technology Committee (NISTC), October 19, 2017.
- “The Role of the Federal Government in Clean Energy Innovation,” Global America Business Institute/American Council on Renewable Energy, Washington, DC, July 20, 2017.
- “The Future of the Paris Agreement and Global Climate Change Cooperation Without U.S. Leadership,” Brookings Institution, June 6, 2017
- “Rescuing the Low-Carbon Energy Transition from Magical Thinking,” Bipartisan Policy Council, Washington, D.C., December 8, 2016; Texas Environmental Law Journal Annual Symposium, Austin, TX, March 24, 2017.
- “Science and Technology Policy for an Aging Society,” AAAS Annual Meeting, Boston, MA, February 20, 2017.
- “Beyond the Headlines: Science, Technology, and Innovation Policy and the 2016 U.S. Elections,” University of Manchester (UK), June 22, 2016.
- “Enhancing the Usefulness of Science of Science and Innovation Policy (SciSIP) Research,” Executive Office of the President, June 15, 2016.
- “Collaborative Regional Strategies to Accelerate America’s Advanced Industries,” Industry Studies Conference, Minneapolis, MN, May 25, 2016.
- “Understanding Science, Technology, and Innovation Policy in the U.S.,” SRI International Poland project, Arlington, VA, May 31, 2016; Pujiang Innovation Forum, Shanghai, October 26, 2014.
- “Coordination and Management of Government Science and Technology Investment in the U.S.” and “Prioritization Processes: How Governments Allocate Resources under Budgetary Constraints,” Joint IGCC-CASTED Dialogue on Comparing U.S. and Chinese Approaches to Science and Technology Budgetary and Resource Allocations, Beijing, October 22-23, 2014
- “Assessing the White House Office of Science and Technology Policy,” Ajou University, Suwon, Korea, October 30, 2014; Korean Institute for Advanced Science and Technology, October 27, 2014; Tsinghua University and Chinese Academy of Sciences Institute for Policy and Management, October 21, 2014; University of Cambridge, June 26, 2014; U.K. Government Office of Science, London, June 25, 2014; University of Waterloo, Canada, May 21, 2014; University of Maryland, September 19, 2013; University of California, San Diego, August 1, 2013; University of Maryland, April 2, 2013; George Mason University, March 7, 2013; White House Office of Science and Technology Policy, January 17, 2013.
- “National Network for Manufacturing Innovation and U.S. Manufacturing Policy,” Vinnova Annual Conference, Stockholm, November 27, 2013; Cisco Guanghua Leadership Program, October 22, 2013; Greater Phoenix Economic Development Council, April 22, 2013; EDA University Center Directors, March 19, 2013; National Public Radio “On

- Point,” February 25, 2013; American Society for Mechanical Engineers, Industrial Advisory Board, December 6, 2012; National Nanotechnology Coordination Office, September 27, 2012.
- “Unlocking Energy Innovation,” Clarkson University, March 3, 2013; American Clean Skies Foundation, April 19, 2012; Bipartisan Policy Center, February 7, 2012; George Mason University, November 16, 2011; MIT, November 10, 2011; Nanyang Technological University, Singapore, October 12, 2010.
- “Delegation and Divergent Interests: Global Universities, Global Corporations, and National Strategies for Migration Policy,” ICES Workshop on Internationalization and Competitiveness, George Mason University, March 1, 2013.
- “High-Tech Immigrant Entrepreneurship in the U.S.,” George Mason University, Institute for Immigration Research, April 24, 2013; Georgetown University, Institute for the Study of International Migration, May 13, 2011; Brookings Institution, February 7, 2011; National University of Singapore, October 13, 2010; AEGIS-DIME conference (keynote presentation), Athens, Greece, April 29, 2010; Seoul National University, January 7, 2009.
- “National Innovation and Competitiveness Strategy,” roundtable participant, AAAS Science and Technology Policy Forum, Washington, D.C., May 6, 2011.
- “Business Politics After the Global Financial Crisis,” American Political Science Association Annual Meeting, Washington DC, September 4, 2010.
- “American Economic Crises in Historical Perspective,” plenary session, Policy History Conference, Columbus, OH, June 4, 2010.
- “Regulation and Innovation in ICTs,” International Risk Governance Council, Scientific and Technical Committee, Washington, DC, June 30, 2009.
- “Talent for a Knowledge- Based and Innovation-Oriented Economy: Hong Kong’s Challenges and Opportunities,” Savantas Policy Institute, Hong Kong, January 9, 2009.
- “Global High-Skill Labor Markets,” Sloan Industry Studies Conference, Boston, May 1, 2008.
- “International Mobility of Human Resources,” Organization for Economic Cooperation and Development, Paris, February 19, 2008.
- “Global Flows of Talent,” National Institute of Science and Technology Policy, MEXT, Tokyo, January 18, 2007
- “What Are Interests, and Are They Special?,” Robert Wood Johnson Health Policy Fellows Synergy Conference, June 16, 2006; June 22, 2005.
- “National Strategy for Education and Innovation,” SUNY/CFR conference on “The Evolving Global Talent Pool,” New York City, June 16, 2005.

“Research and Innovation Policy in the U.S.,” University of Cambridge (UK), January 20, 2005; January 27, 2004.

“The Emergence of Entrepreneurship Policy,” George Mason University Entrepreneurship Conference, November 12, 2004; Diebold Conference on Entrepreneurship, London, April 27, 2004; University of Sussex, January 29, 2004.

“The Political Education of the U.S. High-Tech Industry,” Illinois Institute of Technology, December 16, 2003; George Washington University, December 4, 2003; Northeastern University, November 14, 2002; Georgetown University, December 13, 2002.

“Agenda-setting and Resource Allocation in the Think Tank ‘Industry’: The Case of the ‘Internet Revolution’,” American Political Science Association, Philadelphia, September 1, 2003.

“India and Technological Innovation,” Harvard University, May 7, 2003.

“Star Dust and Shoe Leather: The Globalization of Businesses’ Public Policy Capacities,” New England Political Science Association, Providence, May 1, 2003.

“The Future of U.S. Science and Technology Policy,” Office of Personnel Management, August 21, 2002.

“Roundtable: Corporations as Political Actors,” Midwest Political Science Association, Chicago, April 28, 2002.

Visiting Faculty, Great Issues Forum, Public Policy Program, Denver University, January 2002.

“Entrepreneurship and Public Policy,” US-China (NSF-CNSF) Joint Science Policy Seminar, Washington, D.C., March 20, 2002; Association for Public Policy and Management, Washington, D.C., November 2, 2001.

“New Frontiers of Biomedical Research, 1945-1980,” National Library of Medicine, National Institutes of Health, October 29, 2001.

“The Ecology of High-Tech Business Interests in Washington, D.C.: Assembly Rules and Resource Partitioning,” Midwest Political Science Association, April 10, 2001.

“Antitrust and Technological Innovation: Microsoft and Beyond,” George Washington University, March 21, 2001.

“Technology, the Corporation, and the State,” Seminar on New Directions in Business History, Kennedy School of Government, March 1, 2001.

“Technology Policy and the New Economy in the Next American Administration,” Industry Canada, Ottawa, October 11, 2000.

- “The Context for International R&D Cooperation,” US-China (NSF-CNSF) Joint Science Policy Seminar, Beijing, October 25, 1999.
- “Globalization and Corporate Political Power: A Hypothesis,” KSG Visions of Governance Project, Bretton Woods, New Hampshire, July 12, 1999.
- “Government-University-Industry Relations,” Portuguese-American Postgraduate Society Forum, MIT, October 24, 1998.
- “Internationalization and Privatization: Implications for Science and Technology Policy,” Colloquium in Honor of Professor Eugene B. Skolnikoff, MIT, May 15, 1998.
- “The ‘Historical Turn’ in Political Science and the History of American Science and Technology Policy,” University of California, Los Angeles, March 7, 1998.
- “U.S. Technology Policy,” Brookings Institution, May 14, 1998.
- "Institutional Interference Patterns: Technology and Industrial Policy Since the 1920s," American Political Science Association, August 28, 1997.
- "A Confusion of Means and Ends: The Debate Over the Federal Role in Organizing, Managing and Funding the Nation's Science and Technology," Columbia University, September 21, 1996.
- "Bush, Science, Technology, and Economic Policy in the Late 1940s," Annual Meeting of the American Association for the Advancement of Science, February 21, 1995.
- "The Disappearance of 'Technological Unemployment' from the American Economic Policy Debate, 1937-1946," New England Political Science Association, April 3, 1993.
- "National Innovation Systems: An Appraisal," International Workshop for Rising Scholars and Practitioners in Science and Technology Policy, Honolulu, Hawaii, January 7-9, 1993.

TEACHING

Courses Taught:

American Politics	Science, Technology, and Public Policy
Business as a Political Actor	Technology, Science, and Innovation:
Electoral and Advocacy Politics	Governance and Institutions
Governance and Policy Processes	Technology, Politics, and the Human Future
Govt. & Intl. Politics Honors Seminar	Theory and Practice in Public Policy
International Migration and Public Policy	U.S. Immigration Policy
Lobbying and Interest Representation	U.S. National Institutions and the Policy
Mobilizing for Political Action	Process

Completed Ph.D. dissertations (chair):

Khan, M. Salar, Absorptive Capacity and Economic Growth How Does Absorptive Capacity Affect Economic Growth In Low- And Middle-Income Countries?" (June 2022).

Sandler, Ken, "The Impact of Sierra Club's Beyond Coal Program on Proposed New Coal-Fired Power Plants at the Turn of the 21st Century (Enviro. Science and Policy, August 2020).

Hicks, Joel, "Behavioral Interventions in Energy Consumption (February 2020).

Sarkissian, Alfred, "Three Essays on Pharmaceutical Innovation" (December 2017).

Novak, Justin, "Use of Knowledge Commons in Open Innovation Systems: The Case of Free and Open Software" (December 2016).

Tingle, Anthony, "Essays on the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs" (December 2016).

Cohen, Marty, "Testing Theories of Innovation Diffusion: Analysis of Physicians' Adoption of Electronic Health Records" (July 2015).

Sklarew, Jennifer, "Shock to the System: How Catastrophic Events And Institutional Relationships Impact Japanese Energy Policymaking, Resilience, And Innovation" (July 2015).

Kallas, Kadri. "Innovation in the Services Sector: Towards a New Typological Theory." (July 2014).

Davis, Ted. "High-Skill Migration as a Positive-Sum Relationship for Tradable Services: The Case of India and the United States." (December 2013).

Gutierrez, Juan Julio. "Plant-Level Innovation Patterns in a Globalized World: A Latin American Perspective." (December 2013).

Zelnio, Ryan J. "A Complexity Approach to Evaluating National Scientific Systems through International Collaboration." (May 2013).

Tian, Fangmeng, "Emigration of Chinese Scientists and Its Impacts on National Research Performance From A Sending Country Perspective." (February 2012).

May, Kyle, "Internet-Disseminated Medical Information: A Study of Three Policy Tools," (December 2008).

Current dissertation and doctoral field committee service:

Beasley, Steve (field, chair)

Paterson, Andrew (dissertation, chair)

Safi, Iqbal (dissertation, member)

Supakienmongol, Sasi (dissertation, chair)

GRANTS, CONTRACTS, AND FELLOWSHIPS

2024

Center for Climate and Energy Solutions (\$57,488)
Sloan Foundation, Energy and Environment Program (\$159,488).

2023

RMI (\$20,000)

2022

Subgrant, Spitzer Trust through Information Technology and Innovation Foundation (\$72,967).

2021

Breakthrough Energy (\$499,141)

Subgrant, Alfred P. Sloan Foundation through Information Technology and Innovation Foundation (\$43,552).

Information Technology and Innovation Foundation (\$48,335)

2020

Subgrant, Spitzer Trust through Information Technology and Innovation Foundation (\$287,797).

Subgrant, Spitzer Trust through Information Technology and Innovation Foundation (\$37,510).

2019

Subgrant, Smith-Richardson Foundation through Information Technology and Innovation Foundation (\$24,750).

2018

Subgrant, Spitzer Trust through Information Technology and Innovation Foundation (\$256,692).

2017

Subgrant, Spitzer Trust through Information Technology and Innovation Foundation (\$208,432).

Science of Science and Innovation Policy Program, National Science Foundation (\$49,256)

Subcontract, U.S. Department of Energy Sunshot Program, through SRI International (\$67,797).

2016

Office of Energy Policy and Strategic Analysis, U.S. Department of Energy (\$54,145)

2015

Science of Science and Innovation Policy Program, National Science Foundation (\$98,736).

2014

Subgrant, Smith Richardson Foundation, through Information Technology and Innovation Foundation (\$43,947).

2009

Subgrant extension, Doris Duke Charitable Foundation, through MIT Industrial Performance Center (\$51,015)

2008

Domestic Policy Program, Research Grant, Smith-Richardson Foundation (\$122,683.)

2008

Subgrant, Doris Duke Charitable Foundation, through MIT Industrial Performance Center (\$104,742)

2008

Faculty Research Grant, Center for Global Studies, George Mason University (\$2,500)

2007

Research Contract for Use of Large Data Bases, Office of Advocacy, U.S. Small Business Administration (\$97,870)

2005

Multidisciplinary Entrepreneurship Research Grant, Kauffman Foundation (\$29,850)

1995

Herbert Hoover Presidential Library Association Scholar

1993-94

Doctoral Research Fellowship, Industrial Performance Center, M.I.T.

1993

American Politics Dissertation Travel Grant, Political Science Department, M.I.T.

1991-93

Predocctoral Fellowship, Center for Science and International Affairs, Kennedy School of Government, Harvard University.

PROFESSIONAL SERVICE

Lifetime Fellow, American Association for the Advancement of Science, Class of 2022.

Senior Fellow for Climate and Energy, Council on Foreign Relations, 2024-

Member, Expert Review Committee, Energy and Environment Program, Alfred P. Sloan Foundation, 2025

Chair, Babbage Prize Committee, Industry Studies Association, 2024-25.

Member, Public Policy Ph.D. Program Admissions Committee, Schar School, 2019-2024.

Senior Fellow, Center for Clean Energy Innovation, Information Technology and Innovation Foundation, 2016-2024.

Member, AI and Public Policy Faculty Search Committee, 2023-2024.

Member, Faculty Task Force on Faculty Annual Evaluations, 2023.

Member, Promotion and Tenure Committee, Schar School, 2016-2023.

Coordinator, NGO working group on the DOE Office of Clean Energy Demonstrations, 2022-2023.

Coordinator, Industry Studies Association industrial policy webinar, 2020-2023.

Director, Center for Clean Energy Innovation, Information Technology and Innovation Foundation, 2016-2022.

Co-chair, Innovation Policy Forum, National Academies of Science, Engineering, and Medicine, 2015-2022.

Member, Board of Directors, Industry Studies Association, 2018-2022.

Member, Governing Board, *Journal of Science Policy and Governance*, 2019-2022

Member, Technology Policy Search Committee (postdoc and faculty), Schar School, 2021-2022.

Panel Organizer, “Petrochemicals Without the Petro,” March 16, 2023; “From R&D to RDD&D: The U.S. Department of Energy Retools for a New Era,” March 15, 2023; “Mission Critical: Accelerating Innovation at COP 27,” October 27, 2022; “Decarbonizing Chemical Production: Innovation Strategies,” October 13, 2022; “Demo! Scalable and Replicable Demonstration Projects to Accelerate Decarbonization Worldwide,” (at the 2022 Global Clean Energy Action Forum), September 23, 2022; “Accelerating More Equitable EV Adoption Through Technological, Business Model, and Policy Innovation,” July 26, 2022; “Further Energizing Innovation: Federal Energy RD&D in FY23 and Beyond RD&D,” May 17, 2022; “Active Carbon Management: Critical Tools in the Climate Toolbox,” May 3, 2022; “Rejuvenating Global Energy Innovation to Deliver on Glasgow,” January 13, 2022; “Earth, Wind, and Fire: Why Spurring Further Innovation in Renewables Matters,” December 7, 2021; “Taking Charge: Batteries for Electric Vehicles,” December 1, 2021; “The Next Wave of Climate Solutions: Accelerating Innovation Now to Scale Up in the ’30s & ’40s” (at COP 26, Glasgow), November 4, 2021; “National Grades for the UN Climate Summit: Who Contributes the Most to Global Energy Innovation?,” October 19, 2021; “Carbon Border Adjustment Mechanisms and Climate-Tech Innovation: A Happy Coupling?,” September 21, 2021; “How to Make U.S. Manufacturing Clean and Competitive in the Global Low-Carbon Economy,” June 24, 2021; “Energizing Innovation: Federal Energy RD&D in FY22 and Beyond,” May 19, 2021; “A Foundation for DOE: An Idea Whose Time Has Come,” May 11, 2021; “Battery

Manufacturing Powers Up: Transatlantic Catch-Up and Cooperation,” November 18, 2020; “Gene Editing for the Climate,” September 15, 2020; “Growth With the Right Balance: The Future of the Federal Energy RD&D Budget,” September 10, 2020; “More and Better: Building and Managing a Federal Energy Demonstration Project Portfolio,” ITIF, May 20, 2020; “Mind the Gap: A Design for a New Energy Technology Commercialization Foundation,” ITIF, May 13, 2020; “Less Certain than Death: Using Tax Incentives to Drive Clean Energy Innovation,” ITIF, December 18, 2019; “China’s Impact on the Solar Industry: Lessons for the Future of Clean Energy,” ITIF, October 30, 2019; “Taking the Fight to Clean Energy: What the Military’s Investment in Energy Innovation for the Warfighter Means for the Rest of Us,” ITIF, March 5, 2019; “An Innovation Agenda for a Low-Carbon Energy Future: Bridging Gaps in the Federal Energy RD&D Portfolio,” ITIF, November 28, 2018; “Losing Power? The State of the Global Race for Batteries to Power Electric Vehicles and Modernize the Grid,” ITIF, November 7, 2018; “New Ideas for Strengthening Partnerships at DOE National Labs,” House Rayburn Building, June 27, 2018; “Manufacturing USA at DOE: Charting Progress, Seeking Stability,” ITIF, May 16, 2018; “Sustaining Innovation in Energy Storage,” ITIF, April 26, 2018; “ARPA-E: Versatile Catalyst for Innovation,” ITIF, November 15, 2017; “Crossing the ‘Valley of Death’: How to Design and Run Successful Clean-Energy Demonstration Projects,” Information Technology and Innovation Foundation, July 26, 2017; “Cracking a Frozen Debate: Where’s the Political Consensus on Clean Energy Policy?,” House Rayburn Building, April 27, 2016; “Clean Energy Innovation: Priorities for the Trump Administration and the 115th Congress,” Information Technology and Innovation Foundation, December 13, 2016; “The Production-Innovation-Location Connection,” Industry Studies Association, May 30, 2013; “New Directions in Renewable Energy Policy,” Association for Public Policy and Management, November 5, 2009; “International Migration and Development,” Sloan Industry Studies Conference, May 1, 2008; “The Not So Silent Majority: Business Lobbying in Washington, D.C.,” Midwest Political Science Association, April 21, 2001; “Regimes and Orders in American Political Development,” American Political Science Association, August 28, 1997.

Workshop organizer, “Energy and Climate-Tech Innovation Policy ‘Boot Camp’ for Early Career Researchers,” Washington, DC, June 2-7, 2024; “How Can the Foundation for Energy Security and Innovation Accelerate Geothermal Innovation,” Geothermal Rising Conference, Reno, NV, October 2, 2023; “Decarbonizing the PVC Value Chain,” August 2, 2022; “Climate-Tech Policy ‘Boot Camp’ for Early Career Researchers,” Washington DC, June 5-10, 2022; “Widening the Lens on Innovation for Clean Manufacturing” workshop series with Boston University Institute for Sustainable Energy and Fraunhofer USA Center on Manufacturing Innovation, January-February, 2021; “Federal Clean Energy Innovation,” National Academies of Science, Engineering, and Medicine (member of planning committee), July 27-August 7, 2020; “Should There Be a DOE Foundation? What Should It Do?,” Oakland, CA, January 31, 2020, and Washington, DC, November 12, 2019; “Energy Innovation Policy and Management Boot Camp for Early Career Scholars,” Washington DC, May 19-24, 2019; Bipartisan Congressional staff visit to the Bay area, October 29-31, 2018; “The Innovation Gap in Energy Storage,” MIT, December 8, 2017; “Enhancing the Usefulness of Science of Science and Innovation Policy (SciSIP) Research,” George Mason University, December 7, 2015; “Immigration Policy: Highly Skilled Workers and U.S. Competitiveness and Innovation,” Brookings Institution,

February 2011; “Innovation Policy in a Global Economy” (with Swedish Center of Excellence in Science and Innovation Studies), George Mason University, November 2009; “Governing the Global Knowledge Economy,” George Mason University, February 2008.

Conference Organizer, “Entrepreneurship and Public Policy,” Kennedy School of Government, April 10-11, 2001 (sponsored by National Commission on Entrepreneurship and Ewing Marion Kauffman Foundation); “The Politics of Economic Inequality in the Twentieth Century,” Kennedy School of Government, Harvard University, September 28, 1996; “Where Are We in American Political Development? Contemporary Politics in Historical Perspective,” Kennedy School of Government, Harvard University, October 14, 1995.

Commentator/Moderator, “Effective Policy Design for Carbon Removal,” APPAM fall research conference, November 23, 2024; “Green Industrial Policies,” APPAM fall research conference, November 23, 2024; “Transforming the U.S. Department of Energy,” Nuclear Innovation Alliance, January 19, 2023; “Power and Decarbonization Through Cross-Disciplinary Perspectives,” APPAM fall research conference, November 17, 2022; “Innovation Cooperation: Global Approaches to Enhancing National Policies and Measuring Progress,” International Energy Agency seminar at Global Clean Energy Action Forum, September 23, 2022; “Harnessing New Technologies for Green Growth,” Ralph O’Connor Sustainable Energy Institute, Johns Hopkins University, April 5, 2022. “The Past and Future of Innovation Policy: The Bush Report at 75 Years,” APPAM fall research conference, November 11, 2020; “Running to Stand Still: Rapidly Emerging Technologies and the Challenge of Requisite Knowledge in Public Agencies,” APPAM fall research conference, Denver, November 9, 2019; “Accelerating Energy-Climate Innovation,” AAAS Annual Meeting, February 11, 2016; “From Science to Marketplace: The Federal Role in Innovation,” Bipartisan Policy Center, February 3, 2016; “Science, Technology, and Innovation Outlook,” Organization for Economic and Development, October 24, 2012; “Advanced Manufacturing Partnership,” Information Technology and Innovation Foundation, September 20, 2012; “The Immigrant Workforce and the Future of U.S. Immigration Policy,” Brookings Institution, July 31, 2012; “New Sentinels of Progress,” Society for the Social Studies of Science, October 30, 2009; “The New Deal and Liberalism Across the Wartime Divide,” Policy History Conference, June 1, 2006; “American Business and Party Politics,” American Political Science Association, September 3, 2005; “Interest Groups and Representation,” American Political Science Association, September 1, 2004; “Dilemmas of Business and Government,” Policy History Conference, May 21, 2004; “Ideology, Interests, and Party Representation,” Midwest Political Science Association, April 18, 2004; “Strategies for Legislative Advocacy,” American Political Science Association, September 1, 2003; “Public Policy at War,” Policy History Conference, June 2, 2002; “Comparing the Trajectories of Science Policy in the United States and Japan in the Next Century,” American Political Science Association, Atlanta, Sept. 3, 1999; “Elitism and Democracy in the Regulatory State,” Organization of American Historians, Toronto, April 24, 1999.

Expert Committee, MPP Program Proposal Review, Indian Institute of Technology – Delhi, 2021.

Member, Technical Review Panel, National Renewable Energy Laboratory's Solar Futures study, 2020-21.

Member, Planning Committee for Workshop on Federal Clean Energy Innovation, National Academies of Science, Engineering, and Medicine, 2020.

Director, Center for Science, Technology, and Innovation Policy, George Mason University, 2009-2020.

Member, Editorial Advisory Board, *Science and Public Policy*, 2004-2019.

Member, Program Committee, Industry Studies Conference, 2015-2018.

Non-Resident Senior Fellow, Metropolitan Policy Program, Brookings Institution, 2015-2018.

Steering Committee, "Securing Advanced Manufacturing in the United States: The Role of Manufacturing USA," National Academies of Science, Engineering, and Medicine, 2017.

Participant, Aspen Institute Clean Energy Innovation Forum, 2017

Member, Program Committee, Technology Transfer Society Annual Meeting, 2017.

Member, Board of Directors, Information Technology and Innovation Foundation, 2006-2011, 2012-2017.

External Reviewer, Manufacturing Extension Partnership, 2016.

External Examiner, M.Phil. in Technology Policy, Judge Business School, University of Cambridge, 2014-2016.

Coordinator, Technology, Science and Innovation Policy Research Workshop, 2005-2014.

Faculty Advisor, Graduate Student Conf. on Science and Technology in Society, 2004-2013.

Co-director, Center for Energy Science and Policy, George Mason University, 2010-2013

Chair, Public Policy Process Search committee, 2013-2014

Member, Ph.D. Program committee, 2010-2013

Chair, SPP Executive Education Planning Task Force, 2012.

Assistant Director for Innovation Policy, Office of Science and Technology Policy, Executive Office of the President, 2011-2012.

Faculty Associate, Center for Global Studies, George Mason University, 2010–2011.

Faculty sponsor, Earth Week Community Fair, George Mason University, 2011.

Member, Expert Advisory Board, Accelerating Energy Innovation project, International Energy Agency, 2010-2011.

Member, SPP Search Committee, 2008-2009, 2010-2011.

Member, Dean's Advisory Committees on the ICP Program and Innovation and Entrepreneurship area of emphasis, George Mason University, 2011.

Participant, "Towards a New Diaspora Agenda" research project, World Bank Institute, 2011.

Guest Editor, *Review of Policy Research*, special issue on Governance of the Global Knowledge Economy, volume 27, issue 4, July 2010.

Member, Editorial Board, *Review of Policy Research*, 2007-2010.

Member, SPP Curriculum Committee, 2006-2010.

Consultant, Green Energy and Green Entrepreneurship Project, Corporate Research Board, 2010.

Track Director – Globalization, Atlanta Conference on Science, Technology, and Innovation Policy, 2009.

Coordinator, SPP Faculty Brown Bag Series, 2007-2009.

Faculty Advisor, *New Voices in Public Policy* (student journal), 2006-2009.

Member, Expert Advisory Group, Project on Energy Innovation from the Bottom Up (Clean Air Task Force/Arizona State University), 2009.

Faculty Advisor, SPP Writing Workshop, 2007-2008.

Consultant, MacArthur Foundation, International Peace and Security Program, 2007-2008.

Chair, SPP Search Committee, 2006-2008.

Member, Governing Council, Politics and History Section, American Political Science Association, 2005-2007.

Member, Schattschneider Award Committee, American Political Science Association, 2006.

Chair, Don K. Price Award Committee, American Political Science Association, 2004-2005.

Faculty Chair, Political Advocacy Methodological Area of Concentration, 1997-2004.

Member, MPP Admissions Committee, 1995-2004.

Contributing Editor, "Evaluation of DOE's Technology Partnership Programs," Department of Energy, 2004.

Member, Academic Advisory Board, Center on Science, Policy and Outcomes, 1998-2002.

Member, Whitehead Institute Task Force on Genetics and Public Policy, 1994-2002.

Coordinator, Boston-area Workshop on American Political Development, 1994-1998.

Rapporteur, "Government's Role in Technology Innovation," Department of Energy, Washington, D.C., February 11, 2002.

Section Chair, Politics and History, New England Political Science Association, 2001.

Consultant, National Research Council panel on GPRA, 2000.

Chair, Policy Analysis Exercise Awards Committee, 1999-2000, 2002.

Member, Junior Politics Search Committee, 1997-1998.

Member, Senior/Junior History Search Committee, 1998-2000.

Member, Nominations Committee, APSA Politics and History Section, 1995-1996.

Member, Policy Analysis Exercise Awards Committee, 1995, 1997, 2001.

Staff, "International Relationships of M.I.T. in a Technologically Competitive World," M.I.T. faculty study group, May, 1991.

Peer reviewer (manuscripts, articles, reports, proposals, promotions – various dates):

Academic Medicine

American Journal of Political Science

American Political Science Review

Army Research Office

Bipartisan Policy Council

Boston University

Breakthrough Energy

Business and Politics

Cambridge University Press

Carnegie-Mellon University

Canadian Journal of Higher Education

Carnegie-Mellon University

Center for Global Studies, George Mason University

Clarkson University

Columbia University

Comparative Policy Studies

Comparative Technology Transfer and Society
Environment and Planning C
Environmental Research Letters
Florida State University
George Washington University
Georgia Institute of Technology
Historical Studies in the Physical Sciences
Hong Kong University of Science and Technology
International Organization
Joule
Journal of Environmental Management
Journal of Policy History
Journal of Politics
MIT Press
National Academy of Engineering
National Science Board
National Science Foundation
Nature Energy
Nuclear Innovation Alliance
Pacific Affairs
Political Research Quarterly
Research Policy
Review of Policy Research
Routledge Press
Science
Science and Public Policy
Singapore Economic Review
Sloan Foundation
Small Business Economics
Smith-Richardson Foundation
Social Studies of Science
Studies in American Political Development
University of Cambridge
Yale University Press

OTHER PROFESSIONAL EXPERIENCE

Conference Director, International Student Pugwash, 1984-1986.

- Organized and raised funds for international student conference on science, technology, and society; edited and published proceedings in peer-reviewed journal.

Research Assistant, ICF, Inc., 1983-84.

- Supported Department of Energy Headquarters High-Level Nuclear Waste Repository Siting Program.