

BIO – William B. Bonvillian

Current and Recent Work Experience:

William B. Bonvillian, is a Lecturer at the Massachusetts Institute of Technology, teaching innovation and science policy courses in the Science Technology and Society and Political Science Departments. He is also Senior Director, for Special Projects, at MIT's Office of Digital Learning leading research projects on workforce education. Previously, from 2006-2017, he was Director of MIT's Washington Office, reporting to MIT's President. In this position, he worked to support MIT's strong and historic relations with federal R&D agencies, and its role on national science policy. He assisted with major MIT technology policy initiatives on energy technology, the "convergence" of life, engineering and physical sciences, advanced manufacturing and online higher education. Prior to MIT, he served for seventeen years as a senior policy advisor in the U.S. Senate where his legislative efforts included science and technology policy and innovation issues. He worked extensively on legislation creating the Department of Homeland Security, on national Intelligence reform, on climate change, on Defense and life science R&D, and on national competitiveness and innovation, including legislation leading to the America Competes Act in 2007.

Prior Teaching, University Lectures, Committees Awards:

Prior Teaching: He has also taught on the adjunct faculty at Johns Hopkins' School of Advanced International Studies on energy technology policy, and at Georgetown, and George Washington on science and technology policy.

Lectures: He has lectured and given speeches before numerous organizations on science, technology and innovation questions, including the 2012 annual Alan Bromley Memorial Lecture at the University of Ottawa, and invited lectures and talks at Cambridge University's Babbage Conference and Institute for Manufacturing, Stanford University Duke University, University of Toronto, Georgia Tech, the University of North Carolina, Universidade de Campinas in Brazil, Universidad Central de Caribe in Puerto Rico, Industrial College of the Armed Forces, Cornell University, the National Graduate Research Institute for Policy Studies (GRIPS) in Tokyo, American University in Cairo, Carleton College, Rochester Institute of Technology, and Southern Illinois University.

Committees: He is on the National Academies of Sciences' standing committee for its Innovation Policy Forum, served for seven years on the Board on Science Education of the Academies, and on six other Academies' Committees. He has chaired the American Association for the Advancement of Science (AAAS) Committee on Science, Engineering and Public Policy for four years, is on the Polaris Council for the Government Accountability Office's Science and Technology Assessment and Analysis program, is a member of the Babbage Forum at Cambridge University (UK), serves on the Board of the Information Technology and Innovation Foundation (ITIF), serves on the Advisory Council of the Mystic Seaport Museum, and served on the Governor of Connecticut's Transportation Finance Panel.

Awards: He was the recipient of the IEEE Distinguished Public Service Award in 2007 and was elected a Fellow by the American Association for the Advancement of Science in 2011 for "socially distinguished" efforts "on behalf of the advancement of science and its applications."

Workforce Education and Advanced Manufacturing Efforts:

In recent years, he has worked extensively on workforce education issues, evaluating programs nationwide and leading MIT research projects. He has also worked advanced manufacturing innovation issues, speaking and writing extensively on these topics. He was an advisor to MIT's noted "Production in the Innovation Economy" study of manufacturing from 2011-14, and a participant for two MIT presidents in the President's Advanced Manufacturing Partnership on its major 2012 and 2014 reports that helped lead to the advanced manufacturing institutes and related legislation and policies. He has served on three National Academies Committees studying the advanced manufacturing institutes, in 2017-18, 2018-19 and 2020-21.

Books:

His book (with Prof. Sanjay Sarma of MIT) *Workforce Education, A New Roadmap* was released by MIT Press in 2021, <https://mitpress.mit.edu/books/workforce-education>, and his book (with Peter L. Singer) *Advanced Manufacturing - The New American Innovation Policies*, was published by MIT Press in 2018, <https://mitpress.mit.edu/books/advanced-manufacturing>. His book (with Distinguished Prof. Charles Weiss of Georgetown), *Technological Innovation in Legacy Sectors*, concerns the challenge of innovating in legacy economic sectors, was published in the fall of 2015 by Oxford University Press and is summarized at: <https://global.oup.com/academic/product/technological-innovation-in-legacy-sectors-9780199374519?cc=us&lang=en&>. His book, with Prof. Weiss, entitled *Structuring an Energy Technology Revolution*, was published by MIT Press in 2009 and is summarized at: <https://mitpress.mit.edu/books/structuring-energy-technology-revolution>. In addition, he co-edited and (with Richard Van Atta and Patrick Windham) and contributed chapters to *The DARPA Model for Transformative Technologies* released by Open Book Publishers in 2020, <https://www.openbookpublishers.com/product/1079>.

Book Chapters:

His book chapters include: “A Summary of the DARPA Model,” Essay 1 in *Visions of DARPA – Embracing Risk, Transforming Technology* (Iain Mansfield and Sir Geoffrey Owen, editors) (London, UK: Policy Forum 2020); “The Rise of Advanced Manufacturing in the United States,” chapter 11 in the OECD book *The Next Production Revolution, Implications for Governments and Business* (Alistair Nolan, editor, Paris: OECD May 2017); “Applying Innovation Policy to the U.S. Energy Challenge,” chapter 11 in *Delivering Energy Policy in the EU and US* (Raphael Heffron and Gavin Little, eds., Edinburgh Univ. Press 2016); “The Problem of Political Design in Federal Innovation Organization” in the Stanford Univ. Press book *The Science of Science Policy* (spring 2011); “The Connected Science Model for Innovation” in the National Academy book *21st Century Innovation Systems for the U.S. and Japan* (May 2009) and “The Once and Future DARPA” in the book *Blindside* (Brookings Press, Francis Fukuyama, ed., 2007).

Articles:

His articles in recent years include: in *Science*: “Advanced Manufacturing Policies and Paradigms for Innovation”, (December 6, 2013); “Two Revolutions in Learning” (with S. Singer), (March 22, 2013); in *Science and Public Policy*: “New Model Innovation Agencies – An Overview” in (July 2014), v.41 n.4, 425-437; in the *Journal of Technology Transfer*: “ARPA-E and DARPA: Applying the DARPA model to energy innovation” (with R. Van Atta), (Oct. 2011); in *Nature*: “A New Strategy for Energy Innovation” (with J. Alic, D. Sarewitz, and C. Weiss), (July 15, 2010); in *Environment*: “Stimulating a Revolution in Sustainable Energy Technology” (with C. Weiss, July/Aug. 2009); in *Innovations*: “Reinventing American Manufacturing: the Role of Innovation” (special manufacturing issue Summer 2012), “Complex, Established ‘Legacy’ Sectors: The Technology Revolutions that do Not Happen” (with C. Weiss, Spring 2011); “Taking Covered Wagons East: A New Innovation Theory for Energy and Other Established Sectors” (with C. Weiss, special energy issue Fall 2009); in *Annals of Science and Technology Policy*, “Advanced Manufacturing: A New Policy Challenge” (March 2017); in *Technology Analysis and Strategic Management*: “Legacy sectors: barriers to global innovation in agriculture and energy” (with C. Weiss), v. 25, no. 10 (Nov. 2013), 1189-1208; in *MIT Energy Initiative Working Papers*: “Energy Storage for the Grid – Policy Options for Sustaining Innovation” (with D. Hart and N. Austin), , April 2018 ;in *American Interest*: “What Economists Don’t Know About Manufacturing” (with P. Singer), March 2018. “ARPA-E on the Chopping Block” (online feature (March 30, 2017), “All that DARPA Can Be” (Sept./Oct. 2015); “The Innovation State” (July/Aug. 2009); “Power Play – The DARPA Model and U.S. Energy Policy”, (Nov./Dec. 2006) (reprinted in the book *Blindside* – above); in *Issues in Science and Technology*: “America Needs a New Workforce Education System” (with Sanjay Sarma), March 9, 2021; “Fixing an Imperfect Labor Market Information System” (with Sanjay Sarma), Fall 2018 (Special “Future of Work” Issue); “The Quest for Quality Jobs” (with Sanjay Sarma), Fall 2018 (Special “Future of Work” Issue); “Donald Trump Voters and American Manufacturing (Summer 2016);

“Forum: DOD’s Role in Energy Innovation” (Winter 2015) 10-14; “The Online Challenge to Higher Education” (with S. Singer, Summer 2013); “Time for Climate Plan B” (Winter 2011); “Stimulating Innovation in Energy Technology” (with C. Weiss, Fall 2009); “The Politics of Jobs” (Summer 2007); “Meeting the New Challenge to U.S. Economic Competitiveness” (2004); “Organizing Science and Technology for Homeland Security”, (with K.V. Sharp, 2002); in *Bridges*: “Will the Search for New Energy Technologies Require a New R&D Mission Agency?” (2007); in *Technology in Society*: “Science at a Crossroads” (2002), and reprinted in the *FASEB Journal*; in *ITIF reports*: “Emerging Industrial Policy Approaches in the United States,” October 20, 2021; “‘Innovation Orchards’: Helping Start-Ups Scale,” (with Peter S. Singer) (March 2017); in *Industrial and Corporate Change* (Oxford Univ. Press): “DARPA and its ARPA-E and IARPA Clones: a unique innovation organization model,” v. 18, no. 1, Oct.1, 2018; *MIT Work of the Future Research Brief* “Applying New Education Technologies to Workforce Education” (with Sanjay Sarma), Oct. 14, 2020; in *OECD Forum Network*: “Can Online Education ‘Retool’ the Post-Pandemic Workforce” (with Sanjay Sarma), June 11, 2021; *Day One*: “Ensuring Manufacturing USA Reaches its Potential,” August 2021; Restoring U.S. Leadership in Manufacturing,” Jan. 23, 2020.

Previous Work and Education:

Prior to his work in the Senate, he was a partner at a large national law firm. Early in his career, he served as the Deputy Assistant Secretary and Director of Congressional Affairs at the U.S. Department of Transportation, working on major transportation deregulation legislation. He received a B.A. from Columbia University with honors, an M.A.R. from Yale Divinity School in religion; and a J.D. from Columbia Law School, where he also served on the Board of Editors of the *Columbia Law Review*. Following law school, he served as a law clerk to Hon. Jack Weinstein, a Federal judge in New York. He has been a member of the Connecticut Bar, the District of Columbia Bar and the U.S. Supreme Court Bar.

https://en.wikipedia.org/wiki/William_Boone_Bonvillian