

Improving Higher Education's Responsiveness to STEM Workforce Needs: Identifying Analytical Tools and Regional Best Practices

Committee

Richard F. Celeste

Co-Chair

Richard Celeste is a President Emeritus of Colorado College. Mr. Celeste served two terms as Governor of Ohio, from 1982 to 1990, and previously as Lieutenant Governor of Ohio. He also served as managing partner of Celeste and Sabety Ltd., an economic development consultancy, and director of the U.S. Peace Corps. Mr. Celeste is a member of the Council on Foreign Relations, a lifetime National Associate of the National Academies, and is an advisory board member of the Institute of International Education. He formerly served on the boards of the North American Advisory Board for BP Oil, the Secretary of Energy's Advisory Board, Navistar International, Republic Engineered Steels, the Carnegie Corporation of New York, the Leadership Institute of the University of Southern California, the American Council on Education and The National Association of Independent Colleges and Universities. He also Co-Chaired the Pacific Council's International Policy Task Force for Study on India. Mr. Celeste earned his B.A. in History from Yale University and studied as a Rhodes Scholar at Oxford University.

Teresa A. Sullivan

Co-Chair

Terry Sullivan is the eighth President of the University of Virginia (UVA). President Sullivan is a respected scholar in labor force demography. The author or coauthor of six books and many scholarly articles, her most recent research has focused on measuring productivity in higher education. President Sullivan came to UVA from the University of Michigan, where she was provost and executive vice president for academic affairs. Prior to her work at Michigan, Ms. Sullivan was executive vice chancellor for academic affairs for the University of Texas System, a position she held from 2002 until May 2006. She served as faculty member at the University of Texas at Austin from 1981 to 2006.

President Sullivan is a Fellow of the American Association for the Advancement of Science. She serves as Vice Chair of the Council of Presidents for the Association of Governing Boards of Universities and Colleges and as a member of the Advisory Board for the Northern Virginia Technology Council, the trade association of the technology industry in Northern Virginia. She serves as the Association of American Universities (AAU) representative on the American Council on Education (ACE) Board of Directors, and as a member of the Higher Education Advisory Committee that provides guidance for implementation of the Virginia Higher Education Opportunity Act of 2011. In 2013, the Governor appointed her to the Innovation and Entrepreneurship Investment Authority. President Sullivan is a graduate of Michigan State University's James Madison College, and earned her doctoral degree in sociology from the University of Chicago.

Rita R. Colwell

Member

Rita Colwell (NAS) is Distinguished University Professor both at the University of Maryland at College Park and at Johns Hopkins University Bloomberg School of Public Health, Senior Advisor and Chairman Emeritus, Canon US Life Sciences, Inc., and President and CEO of CosmosID, Inc. Her interests are focused on global infectious diseases, water, and health, and she is currently developing an international network to address emerging infectious diseases and water issues, including safe drinking water for both the developed and developing world. Dr. Colwell served as the 11th Director of the National Science Foundation, 1998-2004. In her capacity as NSF Director, she served as Co-chair of the Committee on Science of the National Science and Technology Council. One of her major interests include K-12 science and mathematics education, graduate science and engineering education and the increased participation of women and minorities in science and engineering. Dr. Colwell has held many advisory positions in the U.S. Government, nonprofit science policy organizations, and private foundations, as well as in the international scientific research community. She is a nationally-respected scientist and educator, and has authored or co-authored 17 books and more than 750 scientific publications. She produced the award-winning film, *Invisible Seas*, and has served on editorial boards of numerous scientific journals. Before going to NSF, Dr. Colwell was President of the University of Maryland Biotechnology Institute and Professor of Microbiology and Biotechnology at the University Maryland. She was also a member of the National Science Board from 1984 to 1990. Dr. Colwell has previously served as Chairman of the Board of Governors of the American Academy of Microbiology and also as President of the American Association for the Advancement of Science, the Washington Academy of Sciences, the American Society for Microbiology, the Sigma Xi National Science Honorary Society, and the International Union of Microbiological Societies. Dr. Colwell is a member of the National Academy of Sciences, the Royal Swedish Academy of Sciences, Stockholm, the Royal Society of Canada, and the American Academy of Arts and Sciences, and the American Philosophical Society. She is Immediate Past-President of the American Institute of Biological Sciences (AIBS).

Brian K. Fitzgerald

Member

Brian Fitzgerald is the Business-Higher Education Forum's Chief Executive Officer, developing long-term strategy for the membership organization. Under Dr. Fitzgerald's leadership, BHEF's National Higher Education and Workforce Initiative (HEWI) has emerged as the organization's signature enterprise. Through the collaboration of its business and academic members, the HEWI includes regional projects focused on strategic business-higher education partnerships in regions across the country, as well as a national that disseminate the learning from the projects and scale effective practices. The initiative deploys a model of strategic business engagement in higher education to address our members' high-skill, high-priority workforce needs. Prior to joining BHEF, Dr. Fitzgerald served as staff director for the federal Advisory Committee on Student Financial Assistance, which advises Congress on higher education and student aid policy. Dr. Fitzgerald has written extensively on policies to improve college access and success. He also served as an adjunct associate professor of government at American University, teaching advanced studies courses on the politics of education. In the private sector, Dr. Fitzgerald held senior project management positions for large-scale education research projects for federal agencies. Earlier in his career, he served as assistant dean and as a lecturer in education at Bates College in Lewiston, Maine. Dr. Fitzgerald earned his master's degree and doctorate from the Harvard Graduate School of Education, where he also served on the alumni council for four years and as chairman. He currently serves on the Dean's Leadership Council. He received his bachelor's degree from the Massachusetts College of Liberal Arts, which named him Distinguished Alumnus and awarded him an honorary doctorate in public service.

Elsa M. Garmire

Member

Elsa Garmire (NAE) is Sydney E Junkins Professor of Engineering Sciences at Dartmouth College, Hanover New Hampshire. Professor Garmire served as Dean of the Thayer School of Engineering at Dartmouth College from 1995 - 1997. Professor Garmire has been elected member of the National Academy of Engineering and the American Academy of Arts and Sciences. She is a fellow of the Institute of Electrical and Electronic Engineers, the Optical Society of America, the American Physical Society, and the Society of Women Engineers. She received the Society of Women Engineers Achievement Award (their highest award), has been a Fulbright Scholar and was elected an honorary member of Phi Beta Kappa. Garmire's research has focused on lasers and optics, including optoelectronics, nonlinear optics, optical devices, fiber optics, quantum electronics, device fabrication and semiconductors. Garmire has advised government policy-makers through service on advisory boards and panels for DOE, the Air Force, the National Science Foundation, and through the public affairs committees of the American Physical Society and the American Institute of Physics. Most recently, she has served on the Committee on Science, Engineering and Public Policy of the National Academies. Prior to coming to Dartmouth, Garmire was William Hogue Professor of Electrical Engineering, Professor of Physics, and Director of the Center for Laser Studies, at the University of Southern California. Garmire received her A.B. in Physics at Harvard and her PhD in Physics at M.I.T. and served on the research staff at Caltech for nine years.

William E. Kirwan

Member

William Kirwan, Chancellor of the University System of Maryland, is a nationally recognized authority on critical issues shaping the higher education landscape. He served as president of Ohio State University for four years and president of the University of Maryland, College Park for ten years. Prior to his presidency, he was a member of the University of Maryland faculty for twenty-four years. A respected academic leader, Dr. Kirwan is a sought-after speaker on a wide range of topics, including diversity, access and affordability, cost containment, innovation, higher education's economic impact, academic transformation, and financial aid. Currently, Dr. Kirwan chairs the National Research Council Board of Higher Education and Workforce, chairs the College Board Advocacy & Policy Center Advisory Committee, and co-chairs the Knight Commission on Intercollegiate Athletics. He also serves on the Business-Higher Education Forum. In Maryland, Dr. Kirwan is a member of the boards of the Maryland Chamber of Commerce, Greater Baltimore Committee, Economic Alliance of Greater Baltimore, and the Maryland Business Roundtable for Education. In 2013, the U.S. Senate Education Committee named Dr. Kirwan co-chair (with Vanderbilt University Chancellor Nicholas Zeppos) of its new Task Force on Government Regulation of Higher Education and the Association of Governing Board of Universities and Colleges (AGB) appointed Chancellor Kirwan to its newly formed National Commission on College and University Board Governance. In 2012, the Maryland Chamber of Commerce presented Dr. Kirwan with its second annual Maryland Public Service Award. In 2010, Dr. Kirwan was appointed to the National Advisory Committee on Institutional Quality and Integrity and was also named chair of the College Board Advocacy and Policy Center Advisory Committee. Dr. Kirwan received his bachelor's degree in mathematics from the University of Kentucky and his master's and doctoral degrees in mathematics from Rutgers, The State University of New Jersey, in 1962 and 1964 respectively.

Susan Lavrakas

Member

Susan Lavrakas is a consultant to the Aerospace Industries Association (AIA) on STEM education and workforce matters. She served as the Director of Workforce for the AIA from 2011 to January 2015. In that role, she led AIA's STEM education and workforce development activities. Lavrakas has more than 40 years' experience in national security affairs. Having studied political science and international affairs, she started her career at the Central Intelligence Agency. She did graduate studies at the University of Southern California, conducted research at the RAND Corporation, and was recruited into the defense industry by the Northrop Grumman Corporation, where she was employed for nearly two decades. From 2003–2011 Lavrakas worked in Government Relations at BAE Systems. Lavrakas chaired the AIA Industrial Base and Workforce Committee from 2007 and was also a member of the AIA Workforce Steering Committee from its founding in 2009 until she joined the AIA staff in 2011. She simultaneously served as Vice President for Legislative Liaison of the STEM Workforce Division of the National Defense Industrial Association. Lavrakas is a member of the Board of Directors of the National Girls Collaborative, the STEM Equity Pipeline National Advisory Board of the National Alliance for Partnerships in Equity, the Board of Trustees of the Center for Excellence in Education, the Board of Directors of the Arts Council of Fairfax County (Virginia), the Board of Directors of the National Coalition for Aviation and Space Education, and the Education Committee at the Wolf Trap Foundation.

Nicole Smith

Member

Nicole Smith is a Research Professor and Senior Economist at the Georgetown University Center on Education and the Workforce where she leads the Center's econometric and methodological work. Dr. Smith has developed a framework for restructuring long-term occupational and educational projections. This framework forms the underlying methodology for Help Wanted, a report that projects education demand for occupations in the U.S. economy through 2020. She is part of a team of economists working on a project to map, forecast and monitor human capital development and career pathways.

Dr. Smith was born in Trinidad and Tobago and graduated with honors in Economics and Mathematics from the University of the West Indies (U.W.I.), St. Augustine campus. She was the recipient of the Sir Arthur Lewis Memorial Prize for outstanding research at the Master's level at the U.W.I. and is co-recipient of the 2007 Arrow Prize for Junior Economists for educational mobility research. She received her Ph.D. in Economics from American University in Washington, D.C.

Prior to joining the Center, Dr. Smith was a faculty member in Economics at Gettysburg College in Pennsylvania, and the University of the West Indies, St. Augustine Campus. Dr. Smith taught Classical and Modern Econometrics, introductory and advanced level courses in Microeconomics, Macroeconomics, Statistics, Mathematics for Economists, and Latin American Economic Development. Her previous macroeconomic research focused on the political economy of exchange rates and exchange rate volatility in the Commonwealth Caribbean, the motivation for her M.S. thesis and a joint-publication at the Inter-American Development Bank. Her current research investigates the role of education and socioeconomic factors in intergenerational mobility. She is a co-author of "The Inheritance of Educational Inequality: International Comparisons and Fifty-Year Trends," published in 2007 by the B.E. Journal of Economic Analysis & Policy.

Mary Wright

Member

Mary Wright is the Director of Building Economic Opportunity at Jobs for the Future (JFF) and directs JFF initiatives that help low-skilled adults move into and through postsecondary education and on to careers that pay family-sustaining wages. One such initiative is Credentials That Work, which seeks to utilize innovations in the collection and use of real-time labor market information to better align investments in education and training with the needs of the economy. Ms. Wright has more than 20 years of experience in municipal finance, government affairs, and workforce development. Before joining JFF, she served as director at The Conference Board in New York City, driving its work in workforce readiness, business, and education partnerships, as well as improving the employment outcomes for people with disabilities through research and convenings. During her tenure at TCB, she also served on the boards of three Boston-area nonprofits that support educational opportunities for underrepresented youth, housing options for low-income families, and the arts. Ms. Wright has an MBA in public/nonprofit management from Columbia University and a Bachelor's degree in urban affairs from Connecticut College.