The National Academies of SCIENCES • ENGINEERING • MEDICINE

COMMITTEE ON NATIONAL STATISTICS

Workshop on the Implications of Convergence for How the National Center for Science And Engineering Statistics Measures the Science and Engineering Workforce

OCTOBER 22-23, 2020

SPEAKER BIOS

GARY ANDERSON is a Senior Economist in the Research and Development Statistics Program at the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF). At NCSES, he works with business R&D and innovation data. Dr. Anderson works extensively with the Business Enterprise Research and Development Survey, Annual Business Survey, and, along with a team of researchers, conducts research on the measurement of business innovation using machine learning and other data science techniques. Much of his work focuses on novel uses of business microdata and has contributed to international efforts to explore the structure, distribution and concentration of business R&D. Prior to joining NCSES, Dr. Anderson was a Senior Economist in the Director's Office at the National institute of Standards and Technology (NIST). Dr Anderson formulated and led strategic planning and economic impact analysis on standards, technology infrastructure, and technology transfer. He also served as Senior Economist with NIST's Advanced Technology Program. Dr. Anderson holds a PhD in economics from the University of Maryland.

JOSEPH DESIMONE is Professor in the Department of Radiology, the Department of Chemical Engineering, and (by courtesy) the Graduate School of Business at Stanford University. He is co-founder and board chair of Carbon, an innovative 3D printing company, valued at almost \$2.5 billion. He is also Chancellor's Eminent Professor of Chemistry Emeritus at the University of North Carolina at Chapel Hill. He made scientific breakthroughs in areas including green chemistry, medical devices, and nanotechnology, also co-founding several companies based on his research. He is the author of over 350 scientific publications and a named inventor on over 200 issued patents. In recognition of his entrepreneurial success at Carbon, Dr. DeSimone was recently recognized as the 2019 EY Entrepreneur of the Year U.S. National Overall winner. He is one of only 25 individuals elected to all three U.S. National Academies (Sciences, Medicine, and Engineering) and former chair of the National Academies Committee on Key Challenge Areas for Convergence and Health. Dr. DeSimone has a PhD in chemistry from Virginia Polytechnic Institute and State University.

BARBARA ENTWISLE (*steering committee chair*) is Kenan Distinguished Professor of Sociology and fellow of the Carolina Population Center (CPC) at the University of North Carolina, Chapel Hill. She also holds adjunct and affiliate faculty positions in geography and the

environment, energy, and ecology. Prior to this, Dr. Entwisle served as vice-chancellor for research at UNC-Chapel Hill, leading a campus-wide research program with nearly one billion dollars in annual research expenditures; overseeing 10 research development, support, and compliance offices; and managing 15 pan-university research centers and institutes, including the CPC. Her research efforts focus on two main areas—population/environment interactions and migration and the life course. She has served on several committees of the National Academies of Sciences, Engineering, andMedicine, including as chair of the Standing Committee on the Future of Major NSF-Funded Social Science Surveys, and as a member of the Board on Research Data and Information and the Committee on Population. Dr. Entwisle has a PhD in sociology from Brown University.

MARYANN FELDMAN is the Heninger Distinguished Professor in the Department of Public Policy at the University of North Carolina, an Adjunct Professor of Finance at Kenan-Flagler Business School, and a Research Director at UNC Kenan Institute of Private Enterprise. From 2014-2017, Dr. Feldman held a joint appointment at the National Science Foundation as the Science of Science and Innovation Policy (SciSIP) Program Director and chaired an inter-agency working group on Science Policy. Her research and teaching interests focus on the areas of innovation, the commercialization of academic research and the factors that promote technological change and economic growth. Dr. Feldman was the winner of the 2013 Global Award for Entrepreneurship Research for her contributions to the study of the geography of innovation and the role of entrepreneurial activity in the formation of regional industry clusters. Currently, Dr. Feldman is researching the industrial genesis of the Research Triangle region. The project follows the development of the regional economy over a 50 year time period using a unique database of 3200 entrepreneurial ventures and attempts to understand the institutional dynamics that created a vibrant regional economy. Her research approach is being replicated in other entrepreneurially active regions including: Sophia Antipolis, France; Austin, TX; and Chatanooga, TN. Dr. Feldman is an editor of the journal, Research Policy. She has a PhD in Economics and Management from Carnegie Mellon University.

DAN GALLAHAN is the director of the Division of Cancer Biology at the National Cancer Institute (NCI), at the National Institues of Health. He established the division's efforts in cancer systems biology, the latest of which is the Cancer Systems Biology Consortium. Prior to that, he also had an NCI intramural career in the Laboratory of Tumor Immunology and Biology. His experience outside the government includes serving as director of molecular biology and development for a small bio-tech company. He is a molecular and cancer biologist with expertise in the fields of breast cancer, technology development and science administration. His primary focus is the integration of multiple approaches, tools, and data sets to understanding the complexity of cancer. Dr. Gallahan received his doctoral training in Molecular Biology and Biochemistry from the University of Maryland.

KARA HALL (*steering committee member*) is a health scientist, director of the Science of Team Science (SciTS) Team, and director of the theories initiative in the Health Behaviors Research Branch at the National Cancer Institute (NCI). Dr. Hall has focused on advancing the SciTS field

by developing new metrics, measures, and models for understanding and evaluating transdisciplinary research, collaboration, and training. She aims to facilitate team science programs and projects by advancing organizational supports e.g., tenure and promotion policies, using innovative grant mechanisms, and developing tools to support scientists engaging in and studying team science. Dr. Hall served as co-chair for a trans-agency subcommittee on collaboration and team science of the Federal Networking and Information Technology Research and Development Program in the National Science and Technology Council in the Executive Office of the President. She has a PhD in psychology from the University of Rhode Island.

BRIAN HARRIS-KOJETIN is the director of the Committee of National Statistics. He joined CNSTAT as Deputy Director in 2015 from the Office of Management and Budget (OMB), where he served as a senior statistician in the Statistical and Science Policy Office. He chaired the Federal Committee on Statistical Methodology and was the lead at OMB on issues related to standards for statistical surveys, survey nonresponse, survey respondent incentives, and the Confidential Information Protection and Statistical Efficiency Act of 2002. He also served as the desk officer for the Bureau of Labor Statistics and the demographic programs of the U.S. Census Bureau. Prior to joining OMB in 2001, he was the senior project leader of Research Standards and Practices at the Arbitron Company. He also previously served as a research psychologist in the Office of Survey Methods Research at the Bureau of Labor Statistics. He is a fellow of the American Statistical Association (ASA). Dr. Harris-Kojetin has a PhD in social psychology with a minor in statistics from the University of Minnesota.

JAMES BRITT HOLBROOK (steering committee member) is Associate Professor in the Department of Humanities at New Jersey Institute of Technology. Dr. Holbrook has held teaching positions at Emory University, Georgia State University, and Georgia Tech and was previously Research Assistant Professor in the Department of Philosophy and Religion Studies at the University of North Texas, where he also served as assistant director of the Center for the Study of Interdisciplinarity (CSID). His teaching and research explore the value of knowledge and his work focuses on knowledge institutions (the university and science and technology funding agencies, in particular), the evaluation of knowledge (to include not only scholarly outputs, but also broader societal impacts), and the role knowledge users ought to play in answering the question of the value of knowledge (moving beyond coproduction of knowledge to explore the question of who should count as a 'peer'). Dr. Holbrook has a PhD in philosophy from Emory University.

BENJAMIN JONES is the Gordon and Llura Gund Family Professor of Entrepreneurship, a Professor of Strategy, and the faculty director of the Kellogg Innovation and Entrepreneurship Initiative. An economist by training, Dr. Jones studies the sources of economic growth in advanced economies, with an emphasis on innovation, entrepreneurship, and scientific progress. He also studies global economic development, including the roles of education, climate, and national leadership in explaining the wealth and poverty of nations. His research has appeared in journals such as *Science*, the *Quarterly Journal of Economics* and the *American Economic Review*, and has been profiled in media outlets such as the *Wall Street Journal*, the

Economist, and *The New Yorker*. A former Rhodes Scholar, Dr. Jones served in 2010-2011 as the senior economist for macroeconomics for the White House Council of Economic Advisers and earlier served in the U.S. Department of the Treasury. Dr. Jones is a non-resident senior fellow of the Brookings Institution, a research associate of the National Bureau of Economic Research, and a member of the Council on Foreign Relations. He has a PhD in Economics from the Massachusetts Institute of Technology.

GRAHAM KALTON is a nonresident senior statistical fellow and former chairman of the board of directors of Westat. He is also a research professor in the Joint Program in Survey Methodology at the University of Maryland. He is an internationally known survey statistician and methodologist who has conducted research on many aspects of survey methodology and has been a consultant on a number of Federal statistical programs. Dr. Kalton is a Fellow of the American Statistical Association, a Fellow of the American Association for the Advancement of Science, an elected Member of the International Statistical Institute, and a National Associate of the National Academy of Sciences. He is a recipient of the Jerzy Neyman medal from the Polish Statistical Association, the Morris Hansen Lecture Award, and the Waksberg Award. Dr. Kalton has served as a member and as Chair of Statistics Canada's Advisory Committee on Statistical Methods, the Committee for National Statistics of the National Academies, the Board of Scientific Counselors for the National Center for Health Statistics, and the Federal Economic Statistics Advisory Committee. He has a PhD is survey statistics from the University of Southampton, United Kingdom.

PRAMOD P. KHARGONEKAR (*steering committee member*) is vice-chancellor for research and Distinguished Professor of Electrical Engineering and Computer Science at the University of California, Irvine. He is an expert in control and systems theory, and applications to manufacturing, renewable energy, and biomedical engineering. Dr. Khargonekar is particularly interested in understanding and improving processes that connect research to innovation. He has served on the faculty at the University of Florida, University of Minnesota, University of Michigan, and University of California, Irvine. In 2012-13, he served as deputy director of technology at the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) and in 2013 the National Science Foundation (NSF) appointed him to serve as assistant director for the Directorate of Engineering, a position he held until June 2016. At NSF, Dr. Khargonekar promoted efforts to address science, technology, engineering, and mathematics issues at all educational levels, with an emphasis on improving opportunities and outcomes for women and underrepresented minorities in engineering. He has a PhD in electrical engineering from the University of Florida.

JULIE THOMPSON KLEIN (*steering committee member*) is Professor of Humanities (emerita) in the English Department and former faculty fellow for interdisciplinary development in the Division of Research at Wayne State University, and International Research Affiliate in the Transdisciplikarity Lab at the ETH-Zurich Federal Institute of Technology in Switzerland. Dr. Klein is past-president of the Association for Integrative Studies (AIS) and former editor of the AIS journal, Issues in Integrative Studies. She has authored or edited several books,

including: Oxford Handbook on Interdisciplinarity; Interdisciplinarity: History, Theory, and Practice; Interdisciplinary Studies Today; Crossing Boundaries: Knowledge, Disciplinarities, and Interdisciplinarities; Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society; Mapping Interdisciplinary Studies; and Humanities, Culture, and Interdisciplinarity: The Changing American Academy. In addition to helping numerous colleges and universities develop interdisciplinary programs, Dr. Klein was a member of the Association of American Colleges and Universities' first national Task Force on Interdisciplinary Studies. She has a PhD in English from the University of Oregon.

MICHÈLE LAMONT is Professor of Sociology and of African and African American Studies and the Robert I. Goldman Professor of European Studies at Harvard University. She is also the director of the Weatherhead Center for International Affairs at Harvard University. A cultural and comparative sociologist, Lamont is the author or coauthor of a dozen books and edited volumes and over one hundred articles and chapters on a range of topics including culture and inequality, racism and stigma, academia and knowledge, social change and successful societies, and qualitative methods. Dr. Lamont served as the 108th President of the American Sociological Association in 2016-2017 and she chaired the Council for European Studies from 2006-2009. She is also the recipient of a 1996 John Simon Guggenheim Fellowship, the 2014 Gutenberg research award, and the 2017 Erasmus prize (for her contributions to the social sciences in Europe and the rest of the world). She is also the recipient of honorary doctorates from five countries (Canada, France, the Netherlands, Sweden, and the UK). An Andrew Carnegie Fellow for 2019-2021, she spent 2019-2020 on sabbatical at the Russell Sage Foundation. Dr. Lamont has a PhD in sociology from the Université de Paris.

JULIA LANE is a Professor at the New York University (NYU) Wagner Graduate School of Public Service and the NYU Center for Urban Science and Progress. She is also NYU Provostial Fellow for Innovation Analytics. Previous to this, Dr. Lane was a Senior Managing Economist and Institute Fellow at American Institutes for Research. She also held positions at the National Science Foundation, The Urban Institute, The World Bank, American University and NORC at the University at Chicago. In these positions, Dr. Lane has led many initiatives, including cofounding the Institute for Research and Innovation in Science (IRIS) at the University of Michigan and STAR METRICS programs at the National Science Foundation. She also initiated and led the creation and permanent establishment of the Longitudinal Employer-Household Dynamics Program at the U.S. Census Bureau. Dr. Lane has published over 80 articles in leading economics journals, and authored or edited ten books. She is an elected fellow of the American Association for the Advancement of Science, the International Statistical Institute, and a fellow of the American Statistical Association. She is the recipient of the 2014 Julius Shiskin award, the 2014 Roger Herriot award, and the 2017 Warren E. Miller Award. She received her PhD in Economics from the University of Missouri.

BETHANY LAURSEN is assistant dean of the Michigan State University (MSU) graduate school and principal consultant at Laursen Evaluation & Design. She is a scholar-practitioner of integration and implementation sciences (I2S), an emerging discipline that improves research

impact on complex, socio-environmental problems. After practicing as an interdisciplinary environmental scholar and educator for 10 years, she switched fields to study and facilitate interdisciplinarity itself. Her specialties are integrative and evaluative reasoning and tools that help us do such reasoning better. Drawing on her work as an experiential educator and facilitator, she is expanding her work into non-cognitive ways of knowing. Dr. Laursen is a member of the Toolbox Dialogue Initiative, a research and facilitation project based at MSU that promotes communication in cross-disciplinary teams using philosophical dialogue. She has a PhD in Community Sustainability from Michigan State University.

ERIN LEAHEY is professor and director of Sociology at the University of Arizona. Her main research interests are scientific practice, scientific careers, and innovation. She also researches inequality in science and scientific careers, particularly along gender lines. Recently, she has conducted investigations of knowledge that spans domains – both subfields and fields. She is developing measures of universities' commitment to interdisciplinarity, and assessing both the drivers of commitment levels, and the consequences of them for scientific research output and university prestige. She is also examining whether and how large, secondary datasets serve as hubs that help scholars from multiple disciplines coalesce. Dr. Leahey won an award from Cambridge Scientific Abstracts for creative use of its data to develop measures of two theoretical constructs relevant to scientific careers: the extent of specialization and subfield integration. She has a PhD in Sociology from the University of North Carolina, Chapel Hill.

ARTHUR LUPIA heads the Directorate for Social, Behavioral, and Economic Sciences at the National Science Foundation. He is also the Gerald R Ford Distinguished University Professor and Hal R Varian Collegiate Professor of Political Science at the University of Michigan. He has held a range of scientific leadership positions including Principal Investigator of the American National Election Studies, and has worked with many groups to improve decision-making and the communication of scientific facts. He has served on the boards of organizations dedicated to increasing the social value of scientific research including the Center for Open Science, the National Academies' Advisory Board on the Behavioral and Social Sciences and Education, and the American Association for the Advancement of Science's Leshner Leadership Institute. He has served as Chair of the AAAS Section on Social, Economic, and Political Sciences, President of the Midwest Political Science Association, and a range of leadership positions at the American Political Science Association including Treasurer and Chair of the Task Force on Public Engagement. Dr. Lupia received multiple honors including the Ithiel de Sola Pool Award from the American Political Science Association, and National Academy of Sciences' Award for Initiatives in Research. He is an elected member of the American Academy of Arts and Sciences, a Fellow of the American Association for the Advancement of Science. He has been a Guggenheim Fellow and is one of the inaugural Andrew Carnegie Fellows. Dr. Lupia has a PhD in social science from the California Institute of Technology.

DANIEL MCFARLAND is professor of education and, by courtesy, of sociology and of organizational behavior at the Graduate School of Business, at Stanford University. He studies the social and organizational dynamics of educational systems like schools, classrooms and

universities. He conducted studies on classroom organization and interaction; on the formation of adolescent relationships, social structures, and identities; on interdisciplinary collaboration and intellectual innovation; and on relational sociology. His broad research interests resulted in a variety of interdisciplinary collaborations with linguists and computer scientists. This in turn has led to studies of big data and methodological advances in social networks and language modeling. He is the recipient of the Gould Award from the American Journal of Sociology (2013-14) and of the Friedrich Wilhelm Bessel Award from the Alexander von Humboldt Foundation (2014-17). Dr. McFarland has a PhD in Sociology from the University of Chicago.

JASON OWEN-SMITH (*steering committee member*) is research professor in the Institute for Social Research Survey Research Center and professor of sociology at the University of Michigan. He is also co-founder and executive director of the Institute for Research on Innovation and Science, which collects, curates, and shares data to help understand, explain, and eventually improve the public value of investments in academic research. Dr. Owen-Smith works on projects that examine the dynamics of high-technology industries, the public value of the research university, and the network organization of surgical care. He seeks to understand how organizations, institutions, and networks can maintain the status quo while generating novelty through social transformations, scientific discoveries, and technological breakthroughs. He is the author of the book *Research Universities and the Public Good: Discovery for an Uncertain Future*. Dr. Owen-Smith has a PhD in sociology from the University of Arizona.

ISMAEL RAFOLS is a senior researcher at the Centre for Science and Technology Studies (CWTS) at Leiden University in the Netherlands, and associate faculty in the Science Policy Research Unit at the University of Sussex. He is also a member of the Science, Technology & Innovation Studies Group. Before CWTS, he worked at the University of Sussex and INGENIO, a joint research center of the Spanish National Research Council and the Universitat Politècnica de València. In between academic positions, he has worked on international cooperation in Oxfam and the City Council of Barcelona. He currently works on science policy, developing novel approaches to S&T indicators, using mixed-methods for informing evaluation, foresight and research strategies. Ismael has been involved in initiatives on 'responsible metrics', such as the Leiden Manifesto, the EC Expert Group on Open Science Indicators, on or discussions on biases against research in 'peripheral' topics and regions. Previously, he had developed indicators and mapping methods for the evaluation of interdisciplinary research, e.g. in emergent fields such as bio and nanotechnology. He received a PhD in biophysics from Tohoku University in Japan.

EMILDA RIVERS is the director of the National Center for Science and Engineering Statistics (NCSES). Prior to her appointment as NCSES director, she was the NCSES deputy director. She previously led the center's largest program area: the Human Resources Statistics Program. She has extensive experience in the federal statistical service as a mathematical statistician working on establishment and demographic surveys, including at the U.S. Census Bureau and U.S. Energy Information Administration. During these years of service, she has often used her statistical and methodological expertise to design and implement projects that provide previously

missing data critical to decision making. In 2017, she was named by Forbes as one of 25 Women Leading Data and Analytics in the U.S. Government. She has a Master of Science degree from the University of Maryland, College Park.

NORA CATE SCHAEFFER is Sewell Bascom Professor of Sociology, emerita, at the University of Wisconsin. She is former faculty director of the Survey Center and interim associate vice chancellor for research in the social sciences at the University of Wisconsin. She was also a professor at the Summer Institute of the Survey Research Center at the University of Michigan and through the University of Michigan-University of Maryland Joint Program in Survey Methodology. Her teaching and research focuses on survey research methods, particularly instrument design and survey measurement and on interaction in the survey interview. Dr. Schaeffer was elected to a three-year presidential term (vice president, president, and past president) of the American Association for Public Opinion Research, beginning in May 2018. She is a Fellow of the American Statistical Association and a Fellow of the Midwest Association for Public Opinion Research. She has served on numerous advisory committees and boards that advised federal agencies on data collection methods. She has a PhD in sociology from the University of Chicago.

PETER SCHIFFER is Frederick W. Beinecke Professor of Applied Physics at Yale University and senior fellow at the Association of American Universities. He also served as the inaugural vice provost for research at Yale University, a post created in 2017 to bring a new level of strategic attention to Yale's science and research enterprise. Dr. Schiffer is an international leader in experimental condensed matter physics, specializing in the study of magnetic systems. Prior to joining Yale University, he served as vice chancellor for research at the University of Illinois at Urbana-Champaign, and as associate vice president for research and director of strategic initiatives at Pennsylvania State University. He undertook postdoctoral work at AT&T Bell Laboratories, conducting seminal research in emerging areas of the study of magnetism, before launching his faculty career at the University of Notre Dame. He is a Fellow of the American Physical Society and the recipient of numerous academic honors including an Alfred P. Sloan Research Fellowship, a Presidential Early Career Award from the Army Research Office, and a National Science Foundation Early Career Development Award. He has a PhD in physics from Stanford University.

JOSHUA SCHNELL is senior advisor at the Institute for Scientific Information within the Web of Science Group, at Clarivate Analytics, advising on science planning, the evaluation of R&D, and science and technology policy. Prior to this, he oversaw a team responsible for conducting program evaluations of research and training programs and developing technology for data-driven science management. Before joining ISI, he directed the analytics group at a science management start-up, worked in research administration at Northwestern University, and was a Science and Technology Policy Graduate Fellow at the National Academies of Sciences, Engineering, and Medicine. He holds a PhD from Northwestern University.

JOLENE SMYTH (*steering committee member*) is associate professor and director of the Bureau of Sociological Research at the University of Nebraska-Lincoln. Her research focuses on survey methodology and gender. Dr. Smyth believes strongly in the importance of high quality data to improve science and policy, and the methodology research questions she pursues are largely shaped by changes occurring in the survey industry that raise important questions about data quality. Dr. Smyth's recent work focuses on improving the National Science Foundation's science and engineering surveys. She is co-author of the book Internet, Phone, Mail, and Mixed-mode Surveys: The Tailored Design Method and she serves on the editorial board of Public Opinion Quarterly. In 2017, she was co-recipient of the Warren J. Mitofsky Innovator's Award from the American Association for Public Opinion Research. She has a PhD in sociology from Washington State University.

DANIEL STOKOLS is Chancellor's Professor Emeritus in the School of Social Ecology at the University of California, Irvine (UCI). He was founding dean of the School of Social Ecology, and also served as director of the social ecology program. His research focuses on the study of people's transactions with their social and physical environments, and spans the fields of social ecology, environmental psychology, urban planning, epidemiology, and public health. Dr. Stokols also does research on the 'science of team science' and investigates factors that affect the collaborative success of transdisciplinary research and training programs. He is the recipient of the Career Award from the Environmental Design Research Association, UCI's Lauds & Laurels Faculty Achievement Award, Newman-Proshansky Career Award from the American Psychological Association's Division of Environmental, Population, and Conservation Psychology, the International Network for the Science of Team Science Career Recognition Award, and the School of Social Ecology Founders Award. Dr. Stokols served as a team science evaluation consultant for the National Academies Keck Futures Initiative and on the Committee on the Science of Team Science. He has a PhD in Social Psychology from the University of North Carolina at Chapel Hill.

LORA WEISS is senior vice president for research at The Pennsylvania State University, where she oversees the research work of eleven academic colleges, seven university-wide interdisciplinary research institutes, a university affiliated research laboratory for the Department of Defense, and offices for sponsored programs, research protections, industry partnerships, technology transfer, innovation, and commercialization. Prior to her current position, Weiss spent 13 years at Georgia Tech, where most recently, she was the interim director of the Georgia Tech Research Institute. She also worked at the Penn State Applied Research Laboratory. Her research is in the areas of robotics and unmanned systems. She was on the technical advisory board of the National Robotics Technology Consortium, the executive board of the National Defense Industrial Association Undersea Warfare Division, and supported the Center for New American Security's Future Foundry Task Force. Dr. Weiss was named Regents' Researcher by the University System of Georgia. She is the recipient of the AUVSI Foundation Award for Academic Champion, and Georgia's Women in Technology Woman of the Year Award for Medium-Sized Businesses, and a Letter of Commendation from the Chief of Naval Operations Strategic Studies Group. She received her PhD in acoustics from Penn State.

ANDREW ZUKERBERG is the Chief of the Cross Sectional Surveys Branch at the National Center for Education Statistics (NCES) within the U.S. Department of Education. Prior to joining NCES, he managed qualitative and quantitative research studies at Gallup. He also served as a Branch Chief at the U.S. Census Bureau, where he managed large scale data collections. Previously, he conducted product development research at Microsoft, where the methods and results of one of his studies were highlighted as a company-wide best practice. Throughout his career, Mr. Zukerberg's research focus has been on reducing non-sampling errors in surveys and improving response rates. He has an M.S. in survey methodology from the Joint Program in Survey Methodology at the University of Maryland.