

Harnessing Novel Data Sources and Technologies for the Study of Social Determinants of Health (SDOH) in Heart, Lung, Blood, and Sleep (HLBS) Disorders



NIH

National Heart, Lung,
and Blood Institute

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National Institutes of Health

NHLBI Workshop: September 29-30, 2020



Harnessing Novel Data Sources and Technologies (SDOH)

Workshop Objectives

- 1) Review the use of digital technology to enhance and create novel data sources (i.e., sensors, geospatial mapping, social media).
- 2) Determine how to leverage digital technology and novel data sources in the study of social determinants of health.
- 3) Determine the influence of the digital divide and unintended consequences of novel technologies widening health disparities by geography, race/ethnicity, etc.
- 4) Discuss implementation strategies to enhance the use of novel data sources by the research community to advance the science of social determinants of health research.

Day 1: Tuesday, September 29, 2020 (9:00 AM – 5:00 PM EDT)

Day 2: Wednesday, September 30, 2020 (9:00 AM—12:45 PM EDT)

Welcome and Opening Remarks:

Dr. Gary Gibbons, Director, NHLBI, OD

Workshop Chair:

Garth Graham, MD, MPH, FACP, FACC - Vice President, Chief Community Health Officer, CVS Health

Gary H. Gibbons, M.D., is Director of the National Heart, Lung, and Blood Institute (NHLBI) at the National Institutes of Health (NIH), where he oversees the third largest institute at the NIH, with an annual budget of more than \$3 billion and a staff of 917 federal employees. Prior to being named director of the NHLBI, Gibbons served as a member of the National Heart, Lung, and Blood Advisory Council (NHLBAC) from 2009-2012. He was also a member of the NHLBI Board of Extramural Experts (BEE), a working group of the NHLBAC. Before joining the NHLBI, Gibbons served as the founding director of the Cardiovascular Research Institute, chairperson of the Department of Physiology, and professor of physiology and medicine at the Morehouse School of Medicine, in Atlanta. Dr. Gibbons directed NIH-funded research in the fields of vascular biology, genomic medicine, and the pathogenesis of vascular diseases. During his tenure, the Cardiovascular Research Institute emerged as a center of excellence, leading the way in discoveries related to the cardiovascular health of minority populations. Gibbons received several patents for innovations derived from his research in the fields of vascular biology and the pathogenesis of vascular diseases. Gibbons earned his undergraduate degree from Princeton University in Princeton, N.J., and graduated *magna cum laude* from Harvard Medical School in Boston. He completed his residency and cardiology fellowship at the Harvard-affiliated Brigham and Women's Hospital in Boston. Prior to joining the Morehouse School of Medicine in 1999, Gibbons was a member of the faculty at Stanford University in Stanford, Calif., from 1990-1996, and at Harvard Medical School from 1996-1999. Throughout his career, Gibbons has received numerous honors, including election to the Institute of Medicine of the National Academies of Sciences; selection as a Robert Wood Johnson Foundation Minority Faculty Development Awardee; selection as a Pew Foundation Biomedical Scholar; and recognition as an Established Investigator of the American Heart Association (AHA).



WORKSHOP CHAIR:

Garth Graham, MD, MPH, FACP, FACC - *Vice President, Chief Community Health Officer, CVS Health*

Dr. Garth Graham, M.D., MPH, FACP, FACC, is a leading authority on social determinants of health and health equity. As the Vice President of Community Health for CVS Health, Dr. Graham leads the enterprise-wide community and social determinants of health (SDoH) strategy, working closely with CVS Health's many businesses, to ensure differentiated, measurable and scalable approaches to addressing community health in communities across the country. Additionally, he leads public health partnerships and cardiovascular initiatives for CVS Health. Dr. Graham joined CVS Health through the Aetna acquisition, where he was President of the Aetna Foundation since 2014. A cardiologist and professor of medicine, Dr. Graham is passionate about the opportunity to improve local health through cross-sector collaboration. Dr. Graham previously served as Deputy Assistant Secretary at the U.S. Department of Health and Human Services under both the Obama and Bush Administrations, where he also ran the Office of Minority Health. He directed the development of the federal government's first National Health Disparities Plan released under the Obama administration. Dr. Graham was also the assistant dean for health policy at the University of Florida School of Medicine, where he led several research initiatives looking at how to improve outcomes and readmission rates in cardiac patients in underserved populations. He contributes to several boards including the National Heart, Lung, and Blood Institute Advisory Council, the Institute of Medicine Board on Population Health, Board of the National Quality Forum, the American Heart Association/American Stroke Association National Quality Oversight Committee, the American College of Cardiology/American Heart Association Task Force on Clinical Data Standards, the Harvard Medical School Diversity Fund (chair) and was named by the President to the U.S. Federal Coordinating Council on Comparative Effectiveness Research many others. Dr. Graham has been featured in media outlets including *Fortune*, *USA Today*, *The Hill*, *The Chicago Tribune*, *Essence*, *U.S. News & World Report*, *Quartz* and *Ebony*. Dr. Graham holds a medical degree from Yale School of Medicine, an MPH from Yale School of Public Health and a bachelor of science in biology from Florida International University. He completed clinical training at Massachusetts General Hospital and Johns Hopkins where he trained in cardiology and interventional cardiology. He holds three board certifications including internal medicine, cardiology and interventional cardiology.



KEYNOTE SPEAKER:

Mark Savage, JD, is Director of Health Policy at CDHI, where he leads health policy strategy and development and data governance for the Center and its programs to advance interoperability, electronic health information exchange, delivery reform, and access for patients, providers and consumers nationwide. Mr. Savage serves on numerous multi-stakeholder policy committees under the Office of the National Coordinator for Health IT; serves on the board of directors of Manifest MedEx, one of the nation's largest nonprofit health information exchanges combining claims and clinical patient records; recently co-chaired the National Quality Forum's Interoperability Committee; and has provided Congressional testimony and numerous presentations on various health IT issues. Prior to joining UCSF's Center for Digital Health Innovation, he was Director of Health IT Policy and Programs at the National Partnership for Women & Families, where he oversaw strategy and work to advance electronic health information access and exchange as the backbone for patient access and engagement, delivery reform and shared care planning, patient-generated health data and social determinants of health, and health equity. His team also led the Consumer Partnership for eHealth, a coalition of more than 50 leading consumer, patient and labor organizations working to advance patient-centered health IT. Mr. Savage graduated from Stanford Law School and the University of California, Berkeley.



Dr. Abhinav Sharma, Assistant Professor, Department of Medicine, Divisions of Cardiology and Experimental Medicine. His research group focuses on two major themes: 1) Cardiovascular outcomes and therapy optimization in patients with diabetes and heart failure; 2) Use of digital health to streamline follow-up and therapy selection in patients with heart failure. His research aims to develop new tools to leverage novel biomarkers, digital data, and electronic health records to conduct clinical studies, optimize patient data collection, and enhance knowledge translation.



Dr. Marie Lynn Miranda, a distinguished scholar in the field of children's environmental health, has been elected the Charles and Jill Fischer Provost of the University of Notre Dame in Indiana. A professor of statistics at Rice University in Houston, Texas, Dr. Miranda was the university's Howard R. Hughes Provost from 2015 to 2019. Before accepting the appointment at Rice, Miranda served for four years on the faculty of the University of Michigan's School of Natural Resources and Environment, where she also served as the Samuel A. Graham Dean of the school. Professor Miranda also held appointments in the department of pediatrics and the department of obstetrics and gynecology. Earlier, she taught at Duke University in Durham, North Carolina, for 21 years. Dr. Miranda is a graduate of Duke University, where she double majored in mathematics and economics. She holds a master's degree and a Ph.D. in economics from Harvard University. She specializes in research on environmental health, especially how the environment shapes health and well-being among children. She is a leader in the evolving field of geospatial health informatics and has studied, for example, the impact of racial residential segregation on health.



Peter James, ScD, Assistant Professor, Harvard Medical School, is trained in environmental health and epidemiology. Peter has focused his research on estimating the influence of geographic contextual factors, including exposure to nature, the built environment, the food environment, air pollution, light pollution, noise, and socioeconomic factors, on health behaviors and chronic disease. He has almost a decade of experience working with large prospective cohort studies, including the Nurses' Health Studies, the Framingham Heart Study, and the Southern Community Cohort Study, where he has aided in the creation of many geographic-based variables and linked them to health data. More recently, he is developing methodologies to assess real-time, high spatio-temporal resolution objective measures of location and behavior by linking smartphone-based global positioning systems (GPS) and wearable device accelerometry data to understand how contextual factors influence health behaviors.



Dr. Lorna Thorpe is a leading expert in population health surveillance and performing population-based studies. Her current research focuses on the intersection between epidemiology and policy, particularly with respect to chronic disease prevention and management and improving modern forms of public health surveillance. She is co-principal investigator of the NYU-CUNY Prevention Research Center funded by the Centers for Disease Control and Prevention, a center aimed at reducing cardiovascular disease disparities through evaluation of innovative community-clinical linkage initiatives in low-income communities. She also serves as principal investigator of the New York City Health and Nutrition Examination Survey (NYC HANES 2013). Dr. Thorpe is on the board of directors for the American College of Epidemiology (ACE) and chairs the ACE Policy Committee. She serves as chair of the steering committee for the CDC-funded Prevention Research Center Network. She has served on Institute of Medicine committees and as an advisor to the CDC on population health surveillance issues. Dr. Thorpe completed her PhD in epidemiology at the University of Illinois at Chicago, MPH. at University of Michigan, and BA at Johns Hopkins University. Prior to completing her PhD, she lived and worked in China and Indonesia for over five years, focusing on designing and evaluating family planning and HIV/AIDS program.



Sarah DeSilvey, DNP, APRN – C, SDoH Clinical Informatics Director, The Gravity Project, Northwestern Medical Center, balances her full-time practice as a rural Vermont family nurse practitioner with regional and national work in health policy and the social determinants of health. She received her BA in Liberal Studies from St Johns College, Santa Fe in 1997 and then spent 11 years organic farming in Western Montana. In 2008, she came home to Vermont and entered the University of Vermont's Master's Entry Program in Nursing. Her thesis was the implementation of valid food insecurity screening in inpatient pediatrics. In 2020, she earned her Doctor of Nursing Practice Degree at Yale University, School of Nursing. Locally, she leads her rural hospital Northwestern Medical Center through outpatient quality improvement and process integration. She has been faculty at the University of Vermont (UVM) since gaining her masters. She taught pediatric nursing for many years until she recently moved to the Department of Pediatrics at UVM's Larner College of Medicine to focus on health policy. Dr. DeSilvey is a national advisor on addressing the social determinants of health in clinical practice. Recently her work has broadened and she is part of a national group of content and IT experts who focus on developing medical vocabularies and informatics so one can accurately and specifically assess and address the social determinants.



Dr. Paula Gardiner is an Associate Professor in the Department of Family Medicine at Boston University School of Medicine. Her passion is studying and teaching clinicians how to facilitate and implement medical group visits or shared medical appointments. She completed a three year Clinical Research Fellowship in Complementary and Alternative Medicine Research and Faculty Development at Harvard Medical School. She received her MPH from Harvard School of Public Health. Additionally, she has been awarded a five year NIH K award grant focusing on CAM use, stress, and dietary supplement in the inner city underserved medical patients. Her research concentration is patient-oriented research regarding chronic pain and evidenced based integrative medicine access in low income patients. Her research focuses on innovative technologies such as Embodied Conversational Agents and Our Whole Lives; a Holistic online toolkit that teaches mind body techniques. Dr. Gardiner lectures nationally and internationally. She is a certified meditation and mindful self-compassion teacher.



Meagan Khau, serves as the Director of the Data and Policy Analytics Group at the Centers for Medicare & Medicaid Services Office of Minority Health. Meagan oversees the development and implementation of initiatives and data analyses to support collaborations to improve data collection, analysis, and reporting of characteristics associated with health disparities. Prior to joining CMS OMH, Meagan was the Deputy Director of the Division of Pharmacy in the Center for the Medicaid and CHIP Services, managing the operations of the Medicaid Drug Rebate Program, supporting system developments, ensuring program compliance, and implementing new policies and regulations. Meagan received her Master of Health Administration from the University of Southern California and B.A. in Sociology from the University of California, Irvine.



Jennifer Covich Bordenick has focused on quality and innovative technology solutions to transform healthcare for over 20 years. As CEO, she provides leadership for research, education and advocacy components of eHealth Initiative and Foundation (eHI). Convening senior executives from every group in healthcare to discuss, identify, and share best practices that transform the delivery of healthcare. Focus areas: improving health and wellness through innovative solutions; interoperability; privacy concerns; artificial intelligence; payment models to support innovative care; and tech tools for chronic care. She As part of her work with the Foundation, she led grants with California Health Care Foundation, Commonwealth Fund, Aetna Foundation and Bristol Meyers Squibb Foundation. Jennifer is co-chair of the Federal HIT Policy Committee's Strategy and Innovation Workgroup; member of the HL7 Board of Directors; and a member of the Diabetes Collaborative Stakeholder Panel. Jennifer is a faculty member for the MHA and MHIA graduate programs at George Washington University. Prior to joining eHI, Jennifer headed up the strategic marketing at OpenNetworks, Inc., focusing on security solutions for the healthcare industry. She led healthcare industry relations at MicroStrategy, Inc., focusing on data-mining solutions for the pharmaceutical and healthcare industry. She spent four years at the National Committee for Quality Assurance as Director of Policy and Product Development, helping develop national quality standards for healthcare organizations.



Dr. Santosh Kumar joined the Department in Fall 2006 after completing his PhD at The Ohio State University, where his dissertation was selected for the Presidential Fellowship award. In 2010, he was selected as one of America's ten most brilliant scientists under the age of 38 (called the "Brilliant Ten") by Popular Science magazine, becoming the first person in the Mid-South region to receive this honor. At the University of Memphis, he received an Early Career Research Award in 2008, the Faudree Professorship in 2011, and Distinguished Research Award in 2013. In 2015, he was promoted to full professor and named Tennessee's first chair of excellence in Computer Science. Dr. Kumar's research focusses on mobile health (or mHealth). He and his students have developed computational models to infer human health and behavior such as stress, conversation, smoking, craving, brushing, flossing, and cocaine use from wearable sensor data. Dr. Kumar leads several large multidisciplinary projects in mHealth funded by both National Institutes of Health (NIH) and National Science Foundation (NSF). As a leading expert on mobile health, Dr. Kumar is frequently invited to chair national meetings on mobile health and speak at national and international meetings in both computing and health. In 2013, he was invited to speak at the White House on the future of biosensors. In 2015, he was invited by NSF to speak about his career to aspiring investigators in smart health as a role model scientist.



Wendy Nilsen, PhD – National Science Foundation, Division of Information and Intelligent Systems, a seasoned cross-discipline research leader with a passion for identifying and exploring the intersection of unique concepts and industries to effectively bridge multidisciplinary environments. Known for her ability to plan and execute high-impact research strategies, she leverages complex technological, scientific, and human concepts to facilitate creative research and development initiatives. Over the course of her career, Dr. Nilsen championed the expansion of funding avenues and review / applicant pool diversity through interagency partnerships, spearheaded the development of dynamic scientific and policy communities focused on smart health initiatives and innovations, and pioneered a multidisciplinary new field, mHealth, integrating technology, psychology, and health to explore their confluence and practical implications.



David R. Wilson, Ph.D., was appointed as the first Director of the Tribal Health Research Office (THRO) in January 2017. In this leadership role, Dr. Wilson brings together representatives from the NIH ICOs to leverage trans-NIH resources and build collaborations through the research portfolio to address tribal health concerns. He works to build a unified NIH presence with which to engage and ensure input from tribal leaders across the nation, and aims to expand training opportunities for American Indian and Alaska Native communities. Dr. Wilson comes to the NIH Office of the Director from the Department of Health and Human Services Office of Minority Health where he served as Public Health Advisor and the American Indian/Alaska Native Policy Lead. Dr. Wilson graduated with a Ph.D. in molecular and cellular biology from Arizona State University. His commitment to encouraging underrepresented minorities to pursue careers in science began when he was a graduate student and Regent's scholar working with high school and community college students in the Four Corners area. Dr. Wilson completed a three-year post-doc, and served as a senior research scientist at the National Institute on Aging. He also serves as an adjunct professor at the Johns Hopkins School of Public Health at the Center for American Indian Health.



Mr. Matt Quinn is the Science Director for the Army's Telehealth & Advanced Technology Research Center (TATRC). Prior, he served as Senior Advisor for Health Technology at the Health Resources & Services Administration (HRSA). Previously, Mr. Quinn was the East Coast Managing Director for Intel's Healthcare and Life Sciences business and Director of Healthcare Initiatives for the Federal Communications Commission (FCC). He led efforts at NIST and AHRQ to improve the usability and accessibility of health IT and to realize the value of health IT in emerging models of care delivery. Before joining government, Mr. Quinn was the Healthcare Industry Manager for Teradata, a big data analytics firm. He was recognized with the FedHealthIT100 award for driving change and advancement in the Federal Health IT ecosystem and received the HHS Distinguished Service Award, the highest honor granted by the department. He earned an engineering degree from the United States Military Academy at West Point and an MBA from Colorado State University.



Dr. Stacy Lindau is NowPow's founder and Chief Innovation Officer, a practicing physician and tenured professor at the University of Chicago. Stacy earned her medical degree from Brown University and a master's degree in public policy from the University of Chicago where she was a Harris Child and Family Fellow. She was a Robert Wood Johnson Foundation Clinical Scholar (and served on the National Advisory Committee) and is an Aspen Institute Health Innovation Fellow and member of the Aspen Global Leadership Network. She has a BA from the University of Michigan Honors College in secondary education and political science and worked in broadcast journalism at Dow Jones and Company's Wall Street Journal TV. Dr. Lindau is also president of MAPSCorps, a nonprofit community asset mapping organization that has employed more than 1,000 youth in 4 U.S. cities.



Taylor Justice, MBA, is President and Co-Founder of Unite Us, U.S. Army veteran, graduated from the United States Military Academy at West Point in 2006. He was commissioned as a Second Lieutenant in the US Army as an Infantry Officer and later received an honorable medical discharge from active duty. An entrepreneur at heart, in 2009 Taylor co-founded HigherEchelon, Inc., a government consulting company. Mr. Justice then co-founded Unite Us in 2013 while enrolled at Columbia Business School, where he earned his MBA in 2014. Mr. Justice is leading Unite Us on its mission to launch coordinated care networks across all 50 states. A key architect of Unite Us' network in North Carolina, he led the Unite Us team and supported their partners in creating NCCARE360, considered by some to be the most innovative statewide healthcare transformation endeavor in the country. Driven by the belief that health begins in communities, Mr. Justice advocates for national infrastructure that connects health and human service providers: a public utility to better support those in need.



Dr. Jennifer (Jen) DeVoe is a practicing family physician and health services researcher based in Portland, Oregon and Chair of the Oregon Health & Science University (OHSU) Department of Family Medicine. She led the development of a unique community laboratory, linking together electronic health record (EHR) data from over 400 community health centers across multiple states. She and her team pioneered the use of EHR data in research, studying health care utilization by uninsured and underinsured populations, which has garnered her national attention, particularly relating to the Affordable Care Act. Dr. DeVoe holds joint appointments in the OHSU Department of Medical Informatics and Clinical Epidemiology, the OHSU-PSU School of Public Health, and at the Kaiser Permanente Northwest Center for Health Research. She was elected to the National Academy of Medicine in 2014.



Dr. Charles Jonassaint is a practicing clinical health psychologist focusing on the implementation of behavioral intervention technologies in low-resource settings. He has clinical expertise in chronic disease self-management and cognitive behavioral therapy and has had extensive experience working with underrepresented and underserved patients. He completed his graduate training at Duke University and medical psychology residency at the Duke University Medical Center. He went on to do a clinical research fellowship at Johns Hopkins University School of Medicine, as well as, a Masters in Epidemiology at the Johns Hopkins Bloomberg School of Public Health. Charles is also the co-inventor of two mobile apps for assessing patient-reported outcomes, innovations that are specifically designed to meet the needs of underserved populations. He is the co-inventor of an SCD specific self-management app called SMART: The Sickle Cell Disease Mobile Application to Record Symptoms via Technology. Dr. Jonassaint is a practicing clinical health psychologist with an MHS in cardiovascular epidemiology. His current clinical practice is with adolescents and adults with sickle cell disease.



Andrew Hamilton, MS, BS, is a Masters prepared Nurse Informaticist with 17 years of experience in both in-patient nursing care and outpatient community health as well as nursing administration. As the Chief Informatics Officer at AllianceChicago, Mr. Hamilton is responsible for developing clinical decision support and National Clinical Performance Measures and integrating them into the organization's HIT platform. He leads Alliance Chicago's efforts related to developing health IT support for promoting interoperability, Patient Centered Medical Homes, Population Health Management and Care Coordination. Recently, Mr. Hamilton launched, designed, and led the development of an innovative Enterprise Data Warehouse program to support quality reporting, research, and care coordination. Mr. Hamilton is the co-chair of the Chicago Area PCOR-net Informatics Working Group and HHS UDS Modernization efforts. Mr. Hamilton is also a member of several local, state, and national working groups related to health IT and performance measurement and SDOHs. In addition, he is an adjunct faculty at Loyola University School of Nursing and the University of Illinois at Chicago School of Nursing. Prior to working for the Alliance, Mr. Hamilton was a Pediatric Critical Care nurse and a member of a large academic hospital Health IT team supporting the implementation of clinical information systems. He has also served as the Director of Patient Care Services for Howard Brown Health Center, a FQHC community health center. Mr. Hamilton holds a BS in Nursing and MS in Nursing Business and Health Systems Administration with a focus on Nursing Informatics from the University Of Michigan School Of Nursing. He is a Fellow of the third class of the Health Innovators Fellowship and a member of the Aspen Global Leadership Network.

