The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Accelerating Progress in Traumatic Brain Injury Research and Care

Day 4: April 1, 2021

WORKSHOP SPEAKER AND MODERATOR BIOGRAPHIES

Donald Berwick, M.D., MPP, FRCP (London) (NAM) ***(Committee Chair)*** is president emeritus and senior fellow at the Institute for Healthcare Improvement and former administrator of the Centers for Medicare & Medicaid Services. A pediatrician by background, Dr. Berwick has served on the faculty of the Harvard Medical School and Harvard School of Public Health, and on the staffs of Boston's Children's Hospital Medical Center, Massachusetts General Hospital, and the Brigham and Women's Hospital. He has also served as vice-chair of the U.S. Preventive Services Task Force, the first "independent member" of the American Hospital Association Board of Trustees, and chair of the National Advisory Council of the Agency for Healthcare Research and Quality. He served two terms on the Institute of Medicine's (IOM's) Governing Council, was a member of the IOM's Global Health Board and served on President Clinton's Advisory Commission on Consumer Protection and Quality in the Healthcare Industry. Recognized as a leading authority on health care quality and improvement, Dr. Berwick has received numerous awards for his contributions. In 2005, he was appointed "Honorary Knight Commander of the British Empire" by Her Majesty, Queen Elizabeth II, in recognition of his work with the British National Health Service. Dr. Berwick is the author or co-author of over 160 scientific articles and six books.

SOCIAL DETERMINANTS OF HEALTH

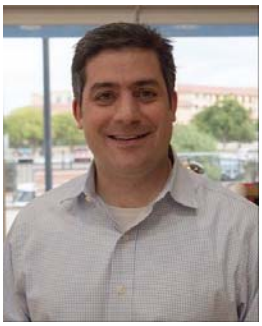
Michael McCrea, Ph.D. ***(Committee Member)*** is Tenured Professor, Eminent Scholar, and Vice Chair of Research in the Department of Neurosurgery at the Medical College of Wisconsin (MCW), where he also serves as Co-Director for the MCW Center for Neurotrauma Research (CNTR). He earned his doctoral degree from the University of Wisconsin-Milwaukee, then completed his internship training in neuropsychology at Vanderbilt University School of Medicine, followed by a postdoctoral fellowship in clinical neuropsychology a Northwestern University Medical School. Dr. McCrea is past President of both the American Academy of Clinical Neuropsychology (AACN) and the American Psychological Association's (APA) Society for Clinical Neuropsychology (SCN). He has been an active researcher in the neurosciences, with hundreds of scientific publications, book chapters, and national and international lectures on the topic of traumatic brain injury (TBI). Dr. McCrea has led several large, multi-center studies on the effects of TBI and concussion. He currently is co-PI on the NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium and several other large-scale studies investigating the acute and chronic effects of TBI in various populations at risk. He is also a key investigator on the TRACK-TBI and TBI Endpoint Development (TED) studies. Dr. McCrea has served on several national and international expert panels related to research and clinical care for TBI over the past two decades.

Julia Iyasere, M.D., M.B.A. is Executive Director of the Dalio Center for Health Justice at New York-Presbyterian. In this role, she leads the Center's efforts to address longstanding health disparities due to race, socio-economic differences, limited access to care, and other complex factors that impact the wellbeing of our communities disproportionately. Established in 2020, the Dalio Center for Health Justice works collaboratively with representatives from NYP, Weill Cornell Medicine, and Columbia Vagelos College of Physicians and Surgeons to be a leader in the understanding and improving of health equity, and to drive action that results in measurable improvements in health outcomes for all. Dr. Iyasere is also an Assistant Professor of Medicine at Columbia University Irving Medical Center. She received her dual M.D./M.B.A in 2008 from Columbia University. After completing her residency in Internal Medicine at Columbia, Dr. Iyasere stayed for a year as Chief Resident before joining the Division of General Medicine at Columbia in 2012.

Paul Perrin, Ph.D. is an Associate Professor of Psychology and Physical Medicine and Rehabilitation at Virginia Commonwealth University. He is jointly appointed as a Research Psychologist and Co-Director of the Polytrauma Rehabilitation Center TBI Model Systems Program at the Central Virginia Veterans Affairs Health Care System. His is passionate about developing evidence-based psychosocial interventions to help individuals with traumatic neurological injuries and their families adjust to disability. In particular, he tries to figure out how to bring these interventions to underserved and hard to-reach populations in the US and internationally.

LESSONS FROM IMPLEMENTATION SCIENCE

Frederick Korley, M.D., Ph.D. ***(Committee Member)*** is an Associate Professor of Emergency Medicine at the University of Michigan. He received his medical and emergency medicine education at Northwestern University School of Medicine (2003), and doctoral training in clinical investigation at the Johns Hopkins University School of Public Health with election into Phi Beta Kappa (2013). His research work is focused on the development of diagnostics and therapeutics for traumatic brain injury (TBI). Dr. Korley holds two patents for biofluid-based biomarkers for diagnosing traumatic brain injury and prognosticating TBI outcome. He is a co-investigator of the largest observational study of TBI in the US (the Transforming Research and Clinical Knowledge in TBI, TRACK-TBI). In collaboration with colleagues in engineering, Dr. Korley is developing a credit card sized microfluidic device for point-of-care measurement of TBI bioflud biomarkers. He is also a national principal investigator of two federally funded multi-center studies run by the Strategies to Innovate Emergency Clinical Care Trials (SIREN) network, that are investigating the use of biofluid-based biomarkers for 1) subject selection in clinical trials; 2) monitoring individual patient response to promising neuroprotective agents. In addition, he is a national principal investigator of an NINDS funded phase II adaptive design multi-center clinical trial that is investigating the optimal treatment parameters of hyperbaric oxygen for treating severe TBI.



Joe McCannon is co-founder and faculty at the Billions Institute, where he was CEO from 2014-2017. He was recently Executive in Residence at the Rustandy Center at UChicago-Booth, and he teaches graduate-level courses at the Penn School of Social Policy and Practice and the Harvard T.H. Chan School of Public Health. He was previously a dedicated contractor to the Bill and Melinda Gates Foundation (2013-2015) and an appointee in the Obama Administration, serving as Senior Advisor to the Administrator at the Centers for Medicare and Medicaid Services (CMS) in the U.S. Department of Health and Human Services (HHS). There he rolled out major pieces of the Affordable Care Act and was part of the founding leadership team at the Center for Medicare and Medicaid Innovation (CMMI), directing its Learning and Diffusion Group. Before this, he was Vice President and faculty on large-scale improvement at the Institute for Healthcare Improvement (IHI), leading the organization's major domestic initiative to improve patient safety, the 100,000 Lives Campaign, and starting its work in Africa. He has supported large-scale transformation in several nations, including Canada, Denmark, England, Japan and South Africa, and consulted on the topic for a number of organizations, including the World Health Organization and Community Solutions (100,000 Homes Campaign). He has also served on committees of the President's Council of Advisors on Science and Technology and the National Academies of Sciences, Engineering and Medicine. He started his career in the publishing industry with roles at Fast Company, The Atlantic Monthly, and Outside magazine. He is a graduate of Harvard University and was a Reuters Fellow at Stanford University.

Rinad Beidas, Ph.D. is an Associate Professor of Psychiatry; Medical Ethics and Health Policy; and Medicine at the Perelman School of Medicine at the University of Pennsylvania. She is the Founder and Director of the Penn Implementation Science Center at the Leonard Davis Institute. Major scientific discoveries have produced scores of evidence-based practices (EBPs) to improve health and mental health. Unfortunately, many of these EBPs never make their way into routine health care delivery. Implementation science is the study of methods to promote the systematic uptake of EBPs into routine care with the broad goal of ensuring that scientific discoveries realize their potential and improve people's lives. Her research program is designed to improve the quality of health and mental health services through implementation science. To conduct this work, Beidas collaborates closely with key stakeholders, including patients, clinicians, health system leaders, payers, and policymakers, to develop natural laboratories in which to answer questions of interest. These labs span diverse health care settings, including community mental health clinics in Philadelphia, the network of Penn Medicine clinics and hospitals serving individuals with cancer, health centers providing HIV care, and the Mental Health Research Network, a national practice-based research network of 14 healthcare systems. Broadly, her work entails three primary foci that draw upon the methods of implementation science: (a) understanding the context in which individuals will implement EBPs; (b) developing implementation approaches that target the factors that may accelerate or hinder implementation; and (c) conducting pragmatic trials to test these implementation approaches. She has published over 150 articles in this area, serves as MPI on two NIH Centers on behavioral economics and implementation science, and mental health, and has a strong record of NIH-funded implementation research serving as MPI or PI of nine NIH grants totaling approximately 23 million dollars. She is deeply committed to training the next generation of implementation scientists and mentors graduate students, postdoctoral fellows, and junior faculty through a variety of mechanisms including a T32 at the intersection of implementation science and mental health.

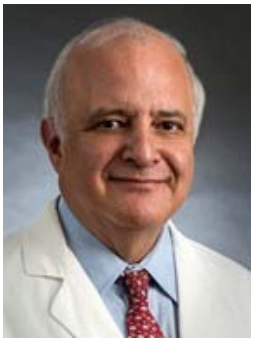
ACHIEVING A VISION OF IMPROVED TBI CARE AND RESEARCH: REFLECTIONS ON ACTIONS FOR ADVANCING TBI SYSTEMS

Susan Margulies, Ph.D. (NAE, NAM) ***(Committee Member)*** is the Chair of the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University, and the Georgia Research Alliance Eminent Scholar in Injury Biomechanics. She received her BSE in Mechanical and Aerospace Engineering at Princeton and PhD in Bioengineering from the University of Pennsylvania, and was a post-doctoral fellow at Mayo. With over 30 years of experience in the areas of traumatic brain injury research and pulmonary biomechanics, Dr. Margulies has secured over $35 million in federal, private, and industry funding to discover injury mechanisms on the macro and micro scales, and translate basic research findings to improve clinical outcomes. Dr. Margulies is a Fellow of the American Society of Mechanical Engineers, Biomedical Engineering Society, and American Institute for Medical and Biological Engineering, and a Member of the National Academy of Engineering and National Academy of Medicine.

David Cifu, M.D. is an internationally-recognized academic leader and innovator who specializes in initiating, developing, fostering and leading small and large-scale collaborations across the research, clinical, education and philanthropic arenas to create knowledge, add value and build opportunities. He is the Associate Dean for Innovation and System Integration in the Virginia Commonwealth University (VCU) School of Medicine, and the Chairman and Herman J. Flax, MD Endowed Professor (tenured) of the Department of PM&R at VCU-School of Medicine in Richmond, Virginia. He is also Chief of PM&R Services for the VCU Health System and Founding Director of the VCU-Center for Rehabilitation Sciences and Engineering (CERSE). He is the Senior TBI Specialist for the U.S. Department of Veterans Affairs. He has been funded on 49 research grants for over $246 million, including currently serving as Principal Investigator of the VA/DoD $112.2 million Long-term Impact of Military relevant Brain Injury Consortium (LIMBIC) since 2013. In his more than 30 years as an academic physiatrist, he has delivered more than 580 regional, national and international lectures, published more than 230 scientific articles and co-authored or edited 40 books and book chapters. He is the Editor-in-Chief of the premiere line of texts in the field of PM&R, "Braddom's Physical Medicine and Rehabilitation," including the 5th Edition Textbook (2015), 1st Edition Handbook (2017) and the 6th Edition textbook (2021).

John D. Corrigan, Ph.D. is a Professor in the Department of Physical Medicine and Rehabilitation at Ohio State University and Director of the Ohio Valley Center for Brain Injury Prevention and Rehabilitation. He is Editor-in-Chief of the Journal of Head Trauma Rehabilitation. Dr. Corrigan has been the PI and co-PI of the Ohio Regional Traumatic Brain Injury Model System since 1997 and chaired the Executive Committee of the TBI Model Systems Project Directors from 2007-2017. He is the Director of the Ohio Brain Injury Program, which is the designated lead agency in the state of Ohio for policy and planning related to living with brain injury. Dr. Corrigan is a member of the Board of Directors of the Brain Injury Association of America and has previously served national organizations, including CARF, the Injury

Control Center at CDC, the Veterans Administration and the U.S. Department of Defense, Defense Health Board. He has more than 175 peer reviewed publications and has received many awards for his service and research in brain injury rehabilitation, including the Brain Injury Association of America's William Fields Caveness Award, the 2007 Robert L. Moody Prize and the Gold Key Award from the American Congress of Rehabilitation Medicine.



Ramon Diaz-Arrastia, M.D., Ph.D. is Presidential Professor of Neurology and Director of Clinical Traumatic Brain Injury (TBI) Research at Penn, a position that he assumed in July, 2016. Dr. Diaz-Arrastia received his M.D. and Ph.D. degrees at Baylor College of Medicine in 1988, and after an internship Beth Israel Hospital and the Harvard Medical School, he trained in neurology at Columbia-Presbyterian Medical Center. He was on the faculty at the University of Texas Southwestern from 1993 to 2011, where he rose through the ranks from Assistant to Full Professor of Neurology. From 2011 to 2016 he was Professor of Neurology at the Uniformed Services University of the Health Sciences (USUHS), and Director of Clinical Research at the Center for Neuroscience and Regenerative Medicine, a federal intramural research program focused on TBI at USUHS and the National Institutes of Health. His research for the past 25 years has focused on understanding the molecular and cellular mechanisms of neuronal injury and neuroregeneration, with the goal of developing novel diagnostic and therapeutic strategies. He has been Principal Investigator on multiple local and national clinical studies in TBI, Alzheimer's disease, epilepsy, and HIV-related neurological disorders, although for the past several years his focus has been on TBI. He is the Scientific PI for the Brain Oxygen Optimization in Severe TBI (BOOST) Phase 3 trial, recently funded by NINDS as one of the first clinical trials conducted by SIREN (Strategies to Innovate Emergency Clinical Trials Network). He is also currently co-PI of TRACK-TBI (Transforming Research and Clinical Knowledge in Traumatic Brain Injury), a multi-institutional observational study designed to develop precision medicine tools, including neuroimaging and biomarkers, to improve the design of the next generation of clinical trials in brain injury. He has served on national and international committees related to TBI clinical research and practice, convened by the NIH, DoD, and the IOM.

David Okonkwo, M.D. is Professor of Neurological Surgery and Director of the Neurotrauma Clinical Trials Center (NCTC) in the School of Medicine at the University of Pittsburgh. He serves as Director of the Scoliosis and Spinal Deformity Program at UPMC. Dr. Okonkwo is also a member of the Medical Staff for the Pittsburgh Steelers. His research endeavors involve developing biomarkers, advanced neuroimaging modalities and novel therapeutic interventions for brain and spinal cord injury. In 2018, Dr. Okonkwo joined the Executive Management Group of UPMC Enterprises, assisting in the venture capitalization and commercialization of biotech start-ups in Pittsburgh and beyond. Dr. Okonkwo completed his medical and doctoral education through the M.D./Ph.D. program of the Medical College of Virginia of Virginia Commonwealth University.

Jeffrey Upperman, M.D. is Chair of the Department of Pediatric Surgery and Surgeon-in-Chief, Monroe Carell Jr. Children's Hospital at Vanderbilt University. He previously served as a tenured professor of Surgery and Trauma medical director at the University of Southern California (USC) Keck School of Medicine and Children's Hospital Los Angeles. Dr. Upperman graduated from Stanford University with a bachelor's degree in human biology and a master's degree in sociology. He earned a medical degree from New Jersey Medical School. He did his internship and residency at University Hospital in New Jersey and completed a fellowship in pediatric surgery at Children's Hospital of Pittsburgh. Upperman is also a retired lieutenant colonel in the United States Army Medical Corps, having served as chief of Surgery during operation Iraqi Freedom 2 in 2004. He is a member of the Scientific Advisory Council of the American Red Cross and has served as a member of the pediatrics study section in the Eunice Shriver National Institute of Child Health and Development

CLOSING REMARKS

Ellen J. MacKenzie, Ph.D., M.Sc. (NAM) ***(Committee Member)*** is the 11th dean of the Johns Hopkins Bloomberg School of Public Health. A leading expert in injury prevention and health services and outcomes research, Dean MacKenzie was named a Bloomberg Distinguished Professor in 2017, recognizing her interdisciplinary work in trauma care and rehabilitation. She founded the Major Extremity Trauma Research Consortium (METRC), a national network of more than 50 civilian and military trauma centers. In 2018, she was elected to the National Academy of Medicine. Before becoming dean, MacKenzie held key leadership positions at the Bloomberg School including Chair of the Department of Health Policy and Management, Director of the Center for Injury Research and Policy and Senior Associate Dean for Academic Affairs. She has joint appointments in the Department of Biostatistics and the School of Medicine's departments of Orthopaedics, Physical Medicine Rehabilitation and Emergency Medicine. The Centers for Disease Control and Prevention named Dean MacKenzie one of 20 leaders and visionaries who have had a transformative effect on the field of violence and injury prevention in the past 20 years. Dean MacKenzie received a BA in Mathematics from Douglass College – Rutgers University and a Master of Science and Doctor of Philosophy from the Department of Biostatistics at the Bloomberg School.