FORUM ON TRAUMATIC BRAIN INJURY

Approaches to Address Unmet Research Needs in Traumatic Brain Injury Among Older Adults: A Workshop

October 21, 2024 | 9:00 AM – 5:00pm ET

ATTENDEE PACKET

A WORKSHOP

NATIONAL ACADEMIES | *Sciences Engineering Medicine*

October 21 · 9AM – 5PM ET

Approaches to Address Unmet Research Needs in Traumatic Brain Injury Among Older Adults

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Workshop Agenda

Convened by the Forum on Traumatic Brain Injury, the Forum on Neuroscience and Nervous System Disorders & the Forum on Aging, Disability, and Independence

MONDAY, OCTOBER 21, 2024

Statement of Task (SOT)

A planning committee of the National Academies of Sciences, Engineering, and Medicine will organize and conduct a one-day public workshop to explore unmet research needs in traumatic brain injury (TBI) among adults 65 years and older. Invited presentations and discussions may be designed to:

- Discuss what is known about the incidence of TBI among older adults and reasons behind the dearth of research in this age group.
- Explore critical research gaps regarding post-TBI recovery in older adults, including the existence of diverse clinical phenotypes with different symptom trajectories, comorbidities, and polypharmacy.
- Consider approaches to address the under-representation of older adults in clinical research and datasets for TBI.
- Discuss how to translate emerging clinical research into more robust guidance for TBI treatment and management among older adults.

SESSION I   INTRODUCTION

Objectives
- Highlight the unique challenges of managing TBI in older adults, including factors related to diverse clinical phenotypes, the physiology of natural brain aging, polypharmacy, and co-morbidities.
- Consider unmet research needs from the first-person lived experience perspective of TBI survivors and advocates.
- Overview what is known about TBI incidence and prevalence in older adults and discuss opportunities to improve data capture and data sharing in population surveillance.

9:00am   Welcome and Introductory Remarks
Kristine Yaffe, MD - University of California, San Francisco
David Reuben, MD - University of California, Los Angeles

9:15pm   Why TBI in Older Adults Has Unique Considerations
Kristen Dams-O'Connor, PhD - Icahn School of Medicine at Mt. Sinai

9:35am   Q&A

9:45am   TBI Recovery and Advocacy – Perspectives on Unmet Needs from Lived Experiences
Cindy Daniel - National Concussion Management Center

10:00am   **Q&A**

10:10am   **Knowledge Gaps in the Neuroepidemiology of Geriatric TBI**
Jeremiah Kinsman, PhD - National Highway Traffic Safety Administration
Dana Waltzman, PhD - Centers for Disease Control and Prevention

10:25am   **Discussion/Q&A**

10:35am   **Break**

SESSION II   **PERSPECTIVES ON ADDRESSING UNMET RESEARCH NEEDS IN ACUTE TBI
CARE FOR OLDER ADULTS**

Objectives:
- Explore unanswered questions in how to leverage injury prognostication to guide neurocritical care delivery decisions – including imaging orders, neuromonitoring, surgery, triage transfers, and the distribution of health system resources.
- Consider priorities in health systems research to improve engagement, education, and consultation with patient-caregiver dyads.
- Examine research gaps in geriatric TBI populations with preexisting cognitive impairment and dementia.

10:50am   **Session Introduction**
Hibah Awwad, PhD - National Institute of Neurological Disorders and Stroke

10:55am   **Emergency Medicine in Geriatric TBI: Gaps in Prognostication and the Need for Improved Implementation of Value-based and Patient-Centered Care**
Kevin Biese, PhD - University of North Carolina at Chapel Hill

11:05am   **Neurocritical Care Systems in Geriatric TBI: A Need for Multidisciplinary Teaming in Coordinated Systems of Patient-Centered Care from Triage to Recovery**
Neha Dangayach, MD - Icahn School of Medicine at Mt. Sinai

11:15am   **Trajectories of Function in the First Year Post-Injury**
Raquel Gardner, MD - Chaim Sheba Medical Center at Tel HaShomer

11:25am   **Discussion/Q&A**

12:00pm   **Catered Lunch**

1:00pm   **Halftime Touchpoint**
Rachel Lazarus, PhD - AARP

SESSION III   **PERSPECTIVES ON ADDRESSING UNMET RESEARCH NEEDS IN POST-ACUTE
TBI CARE FOR OLDER ADULTS**

Objectives:
- Consider unaddressed challenges in geriatric TBI care from the perspective of caregivers.
- Explore new approaches to integrate patient priorities and outcome goals into clinical decision-making.

- Explore research gaps in understanding how bio-psycho-socio-ecological factors affect outcomes after TBI, highlighting post-TBI dementia as an example.
- Examine knowledge and implementation gaps for addressing health disparities in post-acute care quality and continuity, and consider research opportunities in home health and outpatient rehabilitation.
- Consider research opportunities to promote healthy brain aging after TBI in older adults given increased risk of neurologic and vascular disorders.

1:15pm **Session Introduction**
Kristine Yaffe, MD - University of California, San Francisco

1:20pm **Qualitative Research on Caregiver Perspectives in Geriatric TBI**
Michele Nelson, RN/PhD - University of California, San Francisco

1:35pm **Care Models for Integrating Patient-centered and Personalized Goals**
Mary Tinetti, MD - Yale University

1:45pm **Social Determinants of Health and Health Equity**
Ernest Barthélemy, MD/MPH - SUNY Downstate Health Sciences University

1:55pm **Optimizing Care Transitions and Improving Rehabilitative Outcomes**
Monique Pappadis, MeD/PhD - University of Texas, Medical Branch

2:05pm **Promoting Brain Health after TBI in Older Adults: Lessons Learned from the Epidemiology of Neurologic and Vascular Outcomes**
Andrea Schneider, MD/PhD - University of Pennsylvania

2:20pm **Discussion**

2:50pm **Break**

SESSION IV **APPROACHES TO REMEDY RESEARCH GAPS AND PROMISING FUTURE DIRECTIONS**

Objectives:
- Consider ideas on a forward-looking research agenda to improve TBI care and outcomes in older adults, integrating perspectives from neurology, geriatrics, preclinical science, emergency medicine, and drug development.
- Explore the use of digital tools and wearable technologies to predict and prevent falls in older adults.
- Discuss strategies for improving the inclusion of older adults in TBI clinical trials – such as overcoming barriers to exclusion criteria and increasing accessibility via remote assessments.
- Examine promising future directions, including the use of at-home monitoring, artificial-intelligence enabled tools, biomarkers, and personalized care models to better predict, prevent, and treat TBI in older adults.
- Foster discussions on how to translate current research findings into actionable clinical guidelines and healthcare system reforms to improve TBI care delivery for the aging population.

3:10pm **Session Introduction**
Lisa Barnes, PhD, Rush University

3:15pm   **Innovative Approaches to TBI Prevention in Older Adults**
David Ganz, MD/PhD - University of California, Los Angeles

3:25pm   **Leveraging Digital Technologies to Improve Geriatric TBI Prevention, Research and Care**
Jeffrey Kaye, MD - Oregon Health & Science University

3:35pm   **Approaches to Increase Inclusion of Older Adults in Clinical trials and Datasets**
Laurie Ryan, PhD - National Institute on Aging

3:45pm   **Effect of Age and Time Since Injury on TBI Biomarkers in Older Adults**
Frederick Korley, MD/PhD - University of Michigan

3:55pm   **Needs and Opportunities in Preclinical Research**
Janna Harris, PhD - Jackson Laboratory

4:05pm   **Needs and Opportunities in Therapies Development**
Ramon Diaz-Arrastia, MD/PhD - University of Pennsylvania

4:15pm   **Discussion**

SESSION V   CONCLUSION

4:45pm   **Closing Remarks by Workshop Co-Chairs**
Kristine Yaffe, MD - University of California, San Francisco
David Reuben, MD - University of California, Los Angeles

5:00pm   **Workshop Concludes**

For in-person attendees, an on-site reception will follow from 5:00 to 7:00pm, featuring light appetizers and refreshments

Planning Committee Roster

Kristine Yaffe, MD (she/her)
Co-Chair
Scola Endowed Chair; Epstein Endowed Chair; Vice Chair and Distinguished Professor of Psychiatry, Neurology, and Epidemiology; Director of the Center for Population Brain Health
University of California, San Francisco

David Reuben, MD (he/him)
Co-Chair
Director, Multicampus Program in Geriatric Medicine and Gerontology; Chief, Division of Geriatrics
University of California, Los Angeles

Hibah Awwad, PhD (she/her)
Program Director, Division of Neuroscience
National Institute of Neurological Disorders and Stroke
National Institutes of Health
Washington, D.C.

Lisa Barnes, PhD (she/her)
Alla V. and Solomon Jesmer Professor of Gerontology and Geriatric Medicine, Department of Neurological Sciences
Rush University
Chicago, Illinois

Kristen Dams-O'Connor, PhD (she/her)
Jack Nash Professor, Vice Chair of Research; Director, Brain Injury Research Center
Icahn School of Medicine at Mount Sinai
New York City, New York

Stuart Hoffman, PhD (he/him)
Senior Scientific Program Manager
Office of Research and Development
U.S. Department of Veteran's Affairs
Washington, D.C.

Rachel Lazarus, PhD (she/her)
Neuroscientist; Director of Neuroscience Research
AARP
Washington, D.C.

Lisa Opanashuk, PhD (she/her)
Program Director, Division of Neuroscience
National Institute of Aging
National Institutes of Health
Washington, D.C.

Dana Waltzman, PhD (she/her)
Behavioral Scientist, Division of Injury Prevention, National Center for Injury Prevention and Control
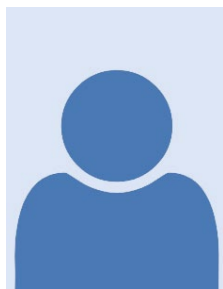Centers for Disease Control and Prevention
Atlanta, Georgia

Biosketches of Speakers

Session 1

Kristen Dams-O'Connor, PhD (she/her)

Kristen Dams-O'Connor, PhD is Director of the Brain Injury Research Center of Mount Sinai, a clinical neuropsychologist and Professor in the Departments of Rehabilitation Medicine and Neurology at Icahn School of Medicine at Mount Sinai in New York, NY. She is also Director of the New York Traumatic Brain Injury Model System of Care and a Founding Board Member of the New York Neurotrauma Consortium. Her primary fields of clinical and research expertise are in long-term outcomes after brain injury, intersections of TBI and neurodegenerative disease, neuropsychological assessment, and cognitive rehabilitation for individuals with neurological diseases. Dr. Dams-O'Connor sees patients in the Rehabilitation Neuropsychology Faculty Practice for neuropsychological assessment and neurocognitive remediation. Under her leadership, the Mount Sinai Brain Injury Research Center develops and tests new treatments for TBI, investigates long-term health and functional TBI outcomes, and studies the mechanism and pathology of post-traumatic neurodegeneration and its relationships with Alzheimer's disease and related dementias (ADRDs). Her research is currently supported by federal grants from the National Institutes of Health, National Institute for Disability and Rehabilitation Research, Patient Centered Outcomes Research Institute, and the Department of Defense. She completed a postdoctoral fellowship in clinical neuropsychology at Mount Sinai Medical Center, and a predoctoral internship in neurorehabilitation at the Rusk Institute of Rehabilitation Medicine at New York University Medical Center. She received her PhD from the University at Albany.
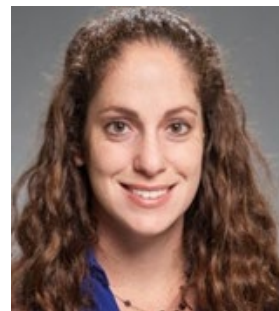
Cindy Daniel (she/her)

Cindy Daniel is one of the nation's leading experts in disability advocacy and awareness. With more than 25 years of involvement with disability law compliance and in developing and implementing policies and procedures for individuals with disabilities while she was on the President's Committee on Employment of People with Disabilities, she has become passionate about the prevention and treatment of brain injury. As the National Disability Coordinator for the Federal Emergency Management Agency, she found there was a lack of expertise in the area of disaster-related brain injury. Her experience makes her uniquely qualified to organize and disseminate best practices in the field of sports concussions. Having developed national protocols for people with disabilities enduring a disaster and then focusing on brain injury educational materials, Ms. Daniel now proposes to follow a similar process in the development of a Concussion/TBI Bill with a National Clearinghouse to provide vetted resources and information on brain injuries from national experts in the field of brain injuries. Her experience in the past years of topics that she presents about brain injuries ensures that people with disabilities, especially individuals who sustain a brain injury has the resources and support they need to have a quality of life that they choose. Cindy is a passionate advocate for the community that she represents and serves but most of all proudly belongs, working to address issues that for so long have gone unresolved.

Jeremiah Kinsman, MPH (he/him)

Jeremiah "Jeremy" Kinsman has more than 20 years of experience working as an emergency medical services (EMS) clinician in both prehospital and emergency department settings. As an EMS Specialist with the National Highway Traffic Safety Administration (NHTSA), Jeremy supports the administration of the National EMS Information System (NEMSIS) and leads the Office of EMS's analytics and research initiatives. He previously served as an Association of Schools and Programs of Public Health (ASPPH) Public Health Fellow with NHTSA and as a research associate in the Department of Emergency Medicine at the Yale School of Medicine. Jeremy's contributions to peer-reviewed literature span the fields of emergency medicine, public health, and health information infrastructure. His research encompasses a variety of topics, including the use of EMS data for public health research and analytics, as well as the development of digital data systems to support emergency medicine research, clinical quality measurement, and patient care. Jeremy's work has helped improve understanding of how emergency departments are utilized for mental health and substance use disorders and has contributed to efforts aimed at enhancing prehospital care through data-driven approaches. Jeremy received his Master of Public Health (MPH) degree from the Tulane School of Public Health and Tropical Medicine in 2015.

Dana Waltzman, PhD (she/her)

Dana Waltzman, PhD, is a behavioral scientist on the traumatic brain injury team in the Division of Injury Prevention at the Injury Center at the Centers for Disease Control and Prevention. Her work focuses on understanding the public health burden, etiology, long-term effects, and prevention of TBI among children and adults. Her specialties are statistical analysis, cognitive neuroscience, and neuroimaging. Dr. Waltzman earned her doctorate in cognitive neuroscience with a minor in developmental psychology from the University of California, Los Angeles. She completed postdoctoral fellowships at the University of California, San Francisco, and Stanford University.

Session 2

Kevin Biese, MD (he/him)

Kevin Biese, MD serves as an Associate Professor of Emergency Medicine (EM) and Internal Medicine as well as a Vice-Chair of the Board of the UNC Health Alliance and UNC Senior Alliance, the clinically integrated network across UNC Health care's delivery system. He also serves as a consultant with West Health, a San Diego based philanthropic organization dedicated to improving care for older adults (https://www.westhealth.org). With the support of the John A. Hartford (https://www.johnahartford.org) and West Health Foundations, he is the co-leader alongside Dr. Ula Hwang of the national Geriatric Emergency Department Collaborative (https://gedcollaborative.com), serving as PI of the implementation arm. He is grateful to chair the first Board of Governors for the ACEP Geriatric Emergency Department Accreditation Program (https://www.acep.org/geda/) which has now improved the quality of care in over 475 emergency departments in 40 states and 4 countries.

Neha S. Dangayach, MD, MSCR, FAAN, FANA, FCCM, FCCP (she/her)

Neha Dangayach, MD, MSCR, FAAN, FNCS, FCCM, FCCP is an Associate Professor of Neurology and Neurosurgery at the Icahn School of Medicine at Mount Sinai. She serves as the Director of Neuroemergencies Management and Transfers (NEMAT) for the Mount Sinai Health System, Research Director for Neurocritical care and Recovery and Faculty Wellness Leader for the Mount Sinai Hospital. As the PI of the NEMAT lab, she focuses on developing and implementing innovative solutions for preventing fragmentation of care for neuroemergencies, improving patient centered outcomes and leveraging technology for providing compassionate care from triage to recovery. She is a staunch advocate for patient-centered care, collaborative success, positive thinking, mentorship, and life-long learning. She has published several peer reviewed manuscripts and is a prolific speaker at national and international conferences. In the spirit of paying it forward through multidisciplinary collaborations and building community, Dr. Dangayach serves on several committees for the American Academy of Neurology, Society of Critical Care Medicine, American College of Chest Physicians, Neurocritical Care Society and American Heart Association. She serves on the editorial boards of Chest, Critical Care Medicine, Neurology Clinical Practice, AHA: SVIN journal among others.

Raquel C. Gardner, MD (she/her)

Raquel C. Gardner, MD is a U.S. board-certified behavioral neurologist with additional advanced training in clinical research methods and biostatistics. Prior to relocating to Sheba Medical Center in 2022, she was a Staff Neurologist at the San Francisco VA Medical Center and Associate Professor of Neurology at the University of California San Francisco. She leads an international clinical research program focused on the intersections between traumatic brain injury, aging, and neurodegenerative disease. She is a TRACK-TBI investigator, PI of the TRACK-GERI NINDS R01 study of acute TBI in older adults, former PI (prior to relocation) of the TRACK-VA VHA CSRD Merit-funded study of acute TBI in older Veterans, a prior LIMBIC/CENC Epidemiology Project co-I, and is currently a member of the Executive Committee of the International initiative for TBI Research (InTBIR) where she leads the Special Populations Working Group.

Session 3

Ernest J. Barthélemy, MD, MPH, MA, FCNS (he/him)

Ernest J. Barthélemy, MD, MPH, MA, FCNS is a neurosurgeon, global health scientist, and Chief of the Division of Neurosurgery at SUNY Downstate Health Sciences University. He subspecializes in trauma and acute care neurosurgery, and his clinical practice focuses on surgical care for acquired brain injury, degenerative spinal conditions, and cancer affecting the central nervous system. Dr. Barthélemy is the founding director of the Downstate Global Neurosurgery Laboratory, which focuses on multidisciplinary investigations geared towards advancing health equity in acute care neurosurgery. He is also co-founder and co-director of the Downstate Global Neuroscience Initiative, which hosts annual symposia that prioritize advancing global neuro-health equity. A Haitian-American native of Brooklyn, New York, Dr. Barthélemy completed his medical education and neurosurgery residency at the Icahn School of Medicine at Mount Sinai, and subsequently completed post-residency fellowships in both clinical neurotrauma and in health equity at the University of California, San Francisco. From 2017 to 2019, he was a Paul Farmer Global Surgery Research Fellow at Harvard University, where he also obtained a Master of Public Health degree with concentrations in Global Health and Public Health Leadership. Dr. Barthélemy is the founding president of the Society of Haitian Neuroscientists, a growing Haitian Diaspora organization with over 100 members in six countries that aims to advance neurological care and mental health in all Haitian communities. He is also the 2024-2025 Chair of the Global Neurosurgery Committee of the American Society of Black Neurosurgeons, a member of the Global Neurosurgery Committee of the World Federation of Neurosurgical Societies for the 2024-2026 period, and a member of the Mission: BRAIN Medical Board.

Michelle Nelson, RN, MS, PhD (she/her)

Michelle Diaz Nelson, RN, MS, PhD is a nurse scientist whose research and clinical focus is on improving healthcare outcomes for underserved populations, particularly older adults with traumatic brain injuries (TBI) and their caregivers. Holding a Master of Science and PhD in Nursing from the University of California, San Francisco (UCSF), she currently serves as an Adjunct Assistant Professor in UCSF's School of Nursing, Community Health Systems department. She has held previous roles as a Polytrauma and TBI Research Fellow at San Francisco Veteran Affairs San Francisco and a Postdoctoral Fellow at UCSF. Dr. Nelson's research is aimed at identifying and addressing healthcare gaps, developing evidence-based interventions, and reducing disparities in care for older adults and their caregivers.

Monique R. Pappadis, MEd, PhD, FACRM (she/her)

Monique R. Pappadis, PhD, MEd, FACRM is a tenured Associate Professor and Vice Chair in the Department of Population Health and Health Disparities at the University of Texas Medical Branch (UTMB) at Galveston. She is a Fellow of the Sealy Center on Aging, and currently the Accessing Underserved Populations Lead for the Institute for Translational Sciences. Dr. Pappadis is also an Investigator and the Director of Dissemination and Cultural Humility at TIRR Memorial Hermann's Brain Injury Research Center in Houston, Texas. Her research aims to advance health equity and decrease ethnic minority health disparities, particularly among persons with traumatic brain injury (TBI) or stroke, as well as improve care transitions and continuity of care following acute and post-acute care. Her recent work aims to improve screening for elder mistreatment with emphasis on vulnerable, older adults with mild cognitive impairment or Alzheimer's Disease and Related Dementias, as well as the intersection between elder mistreatment and TBI. She has a continued interest in minority aging, gender/sex disparities in rehabilitation, health literacy of patients and caregivers, and psychosocial adjustment to disability. She serves on a number of national committees, working groups and professional organizations related to rehabilitation medicine and brain injury. She is recognized nationally for her professional service, contributions to the medical rehabilitation field, and mentorship of scholars in the US and abroad.

Andrea Schneider, MD, PhD (she/her)

Andrea Schneider, MD, PhD is an Assistant Professor of Neurology in the Division of Neurocritical Care with a secondary appointment in the Department of Biostatistics, Epidemiology, and Informatics at the University of Pennsylvania Perelman School of Medicine. She received her MD in 2014 from the Johns Hopkins University School of Medicine and received her PhD in Epidemiology from the Johns Hopkins University Bloomberg School of Public Health in 2012. She completed Neurology Residency and Neurocritical Care Fellowship at Johns Hopkins Hospital in 2020. She is a neuroepidemiologist who has authored over 115 peer-reviewed publications. Her research program is centered on traumatic brain injury (TBI) epidemiology and the prevention of TBI-related sequelae, with a focus on the prevention of TBI-related neurodegeneration and dementia. Dr. Schneider is the PI of a NINDS K23 grant and two Department of Defense grants. She is the recipient of the 2023 Derek Denny-Brown Young Neurological Scholar Award in Clinical Science from the American Neurological Association and the 2023 Rising Star Award from the National Neurotrauma Society.

Mary Tinetti, MD (she/her)

Mary Tinetti, MD is the Gladys Phillips Crofoot Professor of Medicine (Geriatrics) and Public Health and emeritus Chief of Geriatrics at Yale School of Medicine. Her current research focus is on the net benefits and harms of commonly used treatments for older adults in the face of multiple health conditions. She is also leading a national effort to develop, test, disseminate, implement, and spread an approach to healthcare decision-making, Patient Priorities Care, that focuses on aligning the care of older adults with multiple conditions on their individual health priorities. She chaired an Institute for Healthcare Improvement-led national

group of advisors helping health systems become Age-Friendly and is a faculty member for the Age Friendly Health System initiative. Her previous research focused on identifying the causes and consequences of falls and fall injuries as well as preventive strategies for reducing their occurrence. Dr. Tinetti has published over 250 articles. She completed her undergraduate and medical degrees at the University of Michigan. She has received numerous awards, is a member of the National Academy of Medicine, and is a MacArthur Foundation Fellow. She provides care to older adults at Yale New Haven Health.

Session 4

Ramon Diaz-Arrastia, MD, PhD (he/him)

Ramon Diaz-Arrastia, MD, PhD is Professor of Neurology, University of Pennsylvania Perelman School of Medicine where he serves as Director of Clinical Traumatic Brain Injury (TBI) Research. Dr. Diaz-Arrastia's research interests are focused for the past 20+ years on understanding the molecular, cellular, and tissue level mechanisms of secondary neuronal injury and neuroregeneration, with the goal of developing therapeutic interventions. Dr. Diaz-Arrastia received his MD and PhD degrees at Baylor College of Medicine in 1988. After internship in Medicine at Beth Israel Hospital/Harvard Medical School, he completed a residency and fellowship in Neurology at Columbia University and Columbia-Presbyterian Medical Center. He served on the faculty at the University of Texas Southwestern from 1993 - 2011, and at the Uniformed Services University and the Center for Neuroscience and Regenerative Medicine from 2011 – 2016. Dr. Diaz-Arrastia has published over 300 primary research papers, as well as over 50 invited reviews and book chapters. He has also served in several national committees related to TBI research and practice, convened by the NIH, DoD, VA, and the National Academy Sciences, Engineering, and Medicine.

David Ganz, MD, PhD (he/him)

David A. Ganz, MD, PhD is a geriatrician at the US Department of Veterans Affairs Greater Los Angeles Healthcare System's Geriatric Research, Education and Clinical Center and the Center for the Study of Healthcare Innovation, Implementation and Policy. He is also Professor of Medicine at the University of California at Los Angeles, and Affiliated Adjunct Physician Policy Researcher at RAND. Dr. Ganz's research program focuses on fall prevention, care coordination, implementation science, and quality improvement.

Janna Harris, PhD (she/her)

Dr. Janna Harris, PhD has a PhD in Neurobiology and 20 years of experience in neuroscience research focusing on preclinical models of traumatic brain injury and aging. As a consultant with the Jackson Laboratory, Dr. Harris works collaboratively with clients to address the most pressing strategic and operational issues facing their research programs. Previously, she led the Brain Injury and Aging Laboratory and directed the Animal MRI Core resource at the University of Kansas Medical Center. Her research approach has combined animal models and translational neuroimaging with cellular, molecular, and behavioral neuroscience techniques. While working in the preclinical research domain, Dr. Harris has always maintained a strong connection to the ultimate goal of improving the lives of patients living with neurological injury and disease.
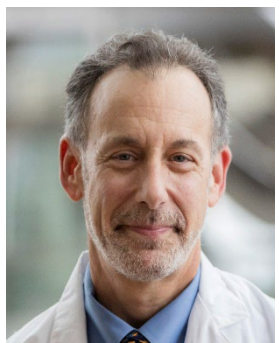
Jeffrey Kaye, MD (he/him)

Jeffrey Kaye, MD is the Layton Professor of Neurology and Biomedical Engineering at Oregon Health and Science University (OHSU). He directs the Layton Aging and Alzheimer's Disease Center, ORCATECH (the Oregon Center for Aging and Technology), and ORCASTRAIT (the Oregon Roybal Center for Care Support Translational Research Advantaged by Integrating Technology). His long-standing research focus has been to advance methods to sustain healthy aging and treat conditions associated with aging. This work has been facilitated by a remarkable cadre of interdisciplinary colleagues and collaborators within OHSU, as well as many others at research centers around the world. Through these many associations, He has enjoyed extensive experience in team-building, designing, conducting and analyzing studies of aging and diseases of aging across a wide spectrum of environments (e.g., clinics, community residences, assisted living and nursing facilities, 'smart' homes), designs (e.g., program projects, longitudinal natural history studies, proof-of-concept studies, randomized controlled trials, online surveys), and approaches (e.g., cognitive and behavioral testing, genetics, neuroimaging, biomarkers, in-home continuous assessment technologies). He leads or has led several longitudinal studies on aging and clinical trials including: The Oregon Brain Aging Study (OBAS), Intelligent Systems for Detection of Aging Changes (ISAAC), Ambient Independence Measures for Guiding Care Transitions, EVALUATE–AD (Ecologically Valid, Ambient, Longitudinal and Unbiased Assessment of Treatment Efficacy in Alzheimer's Disease), DETECT-AD (Digital Evaluations and Technologies Enabling Clinical Translation for Alzheimer's Disease), and the Collaborative Aging Research using Technology (CART) Initiative studies, all using pervasive computing and sensing technologies for assessment and interventions. He serves on many national and international panels and boards in the fields of geriatrics, neurology and technology. He is listed in Best Doctors in America. He has authored over 450 scientific publications and holds several major grant awards from federal agencies, national foundations and industrial sponsors.

Frederick Korley, MD, PhD (he/him)

Frederick Korley, MD, PhD is a Professor and the Associate Chair for Research in Emergency Medicine at the University of Michigan. He is also the scientific director of the Massey TBI Grand Challenge sponsored by the Weil Institute at the University of Michigan, which distributes up to $750,000 annually to investigators with high-risk and high-reward ideas for developing novel diagnostics and therapeutics in traumatic brain injury (TBI). Dr. Korley has conducted pioneering work in uncovering and quantifying gaps in emergency department evaluation and management of traumatic brain injury (TBI) and developed novel diagnostic and therapeutic approaches to bridge these gaps. He is a PI of the multi-center NINDS-funded study of hyperbaric oxygen treatment in treating acute severe TBI (HOBIT) and its blood-based biomarker ancillary study, which examines the role of blood-based biomarkers in monitoring response to therapy. He is also the PI of two DoD-funded studies validating brain injury biomarkers in TBI and another DoD funded study that is developing a microfluidic device for point-of-care measurement of TBI biomarkers. Dr. Korley's research has been published as first-author manuscripts in high-impact journals such as NEJM, JAMA, JAMA Cardiology, Journal of the American College of Cardiology, and Lancet Neurology. He is the recipient of the 2021 SAEM Mid-Career Investigator Award. He is an elected member of the American Society for Clinical Investigators.

Laurie Ryan, PhD

Laurie Ryan, PhD is Chief of the Clinical Interventions and Diagnostics Branch in the Division of Neuroscience at the National Institute on Aging, part of the NIH. She oversees the development, coordination, and implementation of the division's clinical therapeutic and diagnostics research programs and infrastructure. Dr. Ryan also directs the Alzheimer's disease and related dementias pharmacological clinical trials research portfolio. Dr. Ryan received her BA in Human Development from St. Mary's College of Maryland in 1986 and her Masters in Psychology from Loyola College in Maryland in 1991. She undertook doctoral training in clinical psychology with specialty focus in neuropsychology at Louisiana State University in Baton Rouge. She completed a neuropsychology-focused psychology residency at the Medical University of South Carolina, Charleston and clinical neuropsychology fellowship at Thomas Jefferson University, Philadelphia. After completing her fellowship, Dr. Ryan joined the Defense and Veterans Brain Injury Center (DVBIC) at Walter Reed Army Medical Center in Washington, DC. In 2003, Dr. Ryan became the Assistant Director for Research where she was responsible for overseeing clinical research development and implementation with a particular focus on clinical trials. In September 2005, Dr. Ryan joined the NIA as the Program Director for Alzheimer's clinical trials. In December 2013, she was promoted to the branch chief position.

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Biosketches of Planning Committee Members/Moderators

Kristine Yaffe, MD (she/her)
Planning Committee Co-Chair

Kristine Yaffe, MD is a Scola Endowed Chair, Epstein Endowed Chair, Vice Chair, and Distinguished Professor of psychiatry, neurology, and epidemiology at the University of California, San Francisco. She is an internationally recognized expert in the epidemiology of dementia, and cognitive aging, and the foremost leader in identifying modifiable risk factors for dementia. Dr. Yaffe and her colleagues were the first to determine that potentially 30% of dementia risk is preventable, and her team has also been at the forefront of research investigating connections between traumatic brain injury and cognitive aging. She has served on several National Academies' committees, including service as co-chair of the Committee on the Public Health Dimensions of Cognitive Aging. With over 700 peer reviewed articles dedicated to improving population brain health (H-index=170), her work has formed the cornerstone for dementia prevention trials worldwide. In recognition of these groundbreaking accomplishments. Dr. Yaffe has received several prestigious honors, including the American Academy of Neurology's Potamkin Prize for Alzheimer's Research in 2017, election to the National Academy of Medicine in 2019, the NIH Robert S. Gordon, Jr. Award in Epidemiology in 2021, and the Department of Veterans Affairs John B. Barnwell Award for Achievement in Clinical Research in 2022. Dr. Yaffe earned her medical degree from the University of Pennsylvania.

David Reuben, MD (he/him)
Planning Committee Co-Chair

David Reuben, MD, is the Archstone Professor and Chief of the Division of Geriatrics at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA). Dr. Reuben is also Director of the UCLA Alzheimer's and Dementia Care Program and Program Director of the UCLA Medicare & Medicaid Innovation (CMMI) Guiding an Improved Dementia Experience (GUIDE) program. Additionally, he serves as a member of the National Advisory Council on Aging for the National Institute on Aging. Dr. Reuben continues to provide primary care for frail older persons, including attending the inpatient geriatrics unit and making house calls. In 2012, Dr. Reuben received one of the first CMMI Innovations Challenge awards to develop a model program providing comprehensive, coordinated care for patients with Alzheimer's disease and other dementias. In 2018, he was awarded a multi-site Patient-Centered Outcomes Research Institute and National Institute of Aging-funded pragmatic trial (D-CARE) to compare the effectiveness of health system-based versus community-based dementia care versus usual care. Previously, he served as president of the American Geriatrics Society and director and chair of the American Board of Internal Medicine. His bibliography includes more than 220 peer-reviewed publications in medical journals, 39 books, and numerous chapters. Dr. Reuben earned his medical degree from Emory University. He completed his residency in Internal Medicine at Rhode Island Hospital and his fellowship in Geriatric Medicine at the UCLA School of Medicine.

Hibah Awwad, PhD (she/her)

Hibah Awwad, PhD is a program director in the Repair and Plasticity Cluster, Division of Neuroscience at the National Institute of Neurological Disorders and Stroke (NINDS). Dr. Awwad manages oversight of the NINDS grants and cooperative agreements in the portfolio for basic and translational research for TBI and post-TBI Alzheimer's disease related dementia. Dr. Awwad works closely with the broader TBI research community, including federal agencies and national and international partners, to identify and address unmet research and healthcare needs.Previously, she served as a clinical assistant professor at the University of Oklahoma Health Sciences Center and has been recognized with multiple awards for her excellence in teaching, mentoring, and research. research interests include mechanisms of functional deficits and recovery following a mild or moderate TBI, and molecular, biochemical, neurological, behavioral and imaging methods to study potential pharmacotherapies in rodent models of TBI. Dr. Awwad worked at the Gulf Pharmaceutical Industries in Dubai, United Arab Emirates, before earning her doctorate degree in pharmacology from the University of Houston, Texas.

Lisa L. Barnes, PhD (she/her)

Lisa L. Barnes, PhD is the Alla V. and Solomon Jesmer Professor of Gerontology and Geriatric Medicine and a cognitive neuropsychologist within the Rush Alzheimer's Disease Center at Rush University Medical Center. She is also the Associate Director of the Rush Alzheimer's Disease Research Center. She joined the faculty of Rush as an assistant professor in 1999. Dr. Barnes has received many NIH grants and has published over 300 manuscripts. She is internationally recognized for her contributions to minority aging and minority health. Her research interests include disparities in chronic diseases of aging, cognitive decline, and risk factors for Alzheimer's disease. She is the Principal Investigator of two longitudinal community-based studies of older African Americans, including the Minority Aging Research Study (MARS), which has been funded by NIA since 2004 and the African American Clinical Core which she has led since 2008. She advocates for recruitment of under-represented groups into clinical studies and has received many awards and fellowships from universities and organizations throughout the U.S. She received her PhD from the University of Michigan in biopsychology and completed a post-doctoral fellowship in cognitive neuroscience at the University of California, Davis.

Kristen Dams-O'Connor, PhD (she/her)

Kristen Dams-O'Connor, PhD is Director of the Brain Injury Research Center of Mount Sinai, a clinical neuropsychologist and Professor in the Departments of Rehabilitation Medicine and Neurology at Icahn School of Medicine at Mount Sinai in New York, NY. She is also Director of the New York Traumatic Brain Injury Model System of Care and a Founding Board Member of the New York Neurotrauma Consortium. Her primary fields of clinical and research expertise are in long-term outcomes after brain injury, intersections of TBI and neurodegenerative disease, neuropsychological assessment, and cognitive rehabilitation for individuals with neurological diseases. Dr. Dams-O'Connor sees patients in the Rehabilitation Neuropsychology Faculty Practice for neuropsychological assessment and

neurocognitive remediation. Under her leadership, the Mount Sinai Brain Injury Research Center develops and tests new treatments for TBI, investigates long-term health and functional TBI outcomes, and studies the mechanism and pathology of post-traumatic neurodegeneration and its relationships with Alzheimer's disease and related dementias (ADRDs). Her research is currently supported by federal grants from the National Institutes of Health, National Institute for Disability and Rehabilitation Research, Patient Centered Outcomes Research Institute, and the Department of Defense. She completed a postdoctoral fellowship in clinical neuropsychology at Mount Sinai Medical Center, and a predoctoral internship in neurorehabilitation at the Rusk Institute of Rehabilitation Medicine at New York University Medical Center. She received her PhD from the University at Albany.

Stuart Hoffman, PhD (he/him)

Stuart Hoffman, PhD, is the scientific program manager for the Brain Injury portfolio at the Department of Veterans Affairs, which includes traumatic brain injury (TBI) and stroke. Dr. Hoffman's research experience includes in vitro and animal models of TBI, translational drug development for neuroprotection, and clinical neurorehabilitation research. Previously, he served as an assistant professor in the Department of Emergency Medicine at Emory University. Dr. Hoffman was also faculty in the graduate and undergraduate neuroscience programs at Emory University, where he co-developed and directed a multidisciplinary course on neurotrauma. He was previously the research director for the Defense and Veterans Brain Injury Center in Johnstown, Pennsylvania. Dr. Hoffman has authored over 45 peer-reviewed publications in translational research on neuroprotection and recovery of function after brain injury. Dr. Hoffman earned his doctoral degree in behavioral and molecular neuroscience at Rutgers University and completed his postdoctoral training in pharmacology at Virginia Commonwealth University's medical campus.
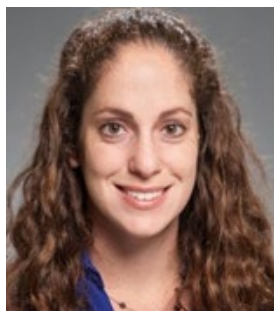
Rachel Lazarus, Phd (she/her)

Rachel Lazarus, PhD, is a neuroscientist at AARP and leads the Staying Sharp program, which provides educational content about healthy brain aging. She also serves as an ex-officio member of the National Academies Forum on TBI on behalf of AARP, advocating for improved clinical research and evidence-based clinical guidelines for geriatric TBI. Previously, they served as the research portfolio manager for the Defense Health Agency's Defense and Veterans Brain Injury Center, now called the TBI Center of Excellence. Dr. Lazarus has also volunteered for several years as a Grand Award Judge in Cellular and Molecular Biology for the Regeneron International Science and Engineering Fair and as an Evaluator and Judge for the Regeneron Science Talent Search. Dr. Lazarus earned her Ph.D. degree at the Uniformed Services University of the Health Sciences (USUHS), where her work investigated blood-based biomarkers and neuroimmunological changes following traumatic brain injury. Following her time at USUHS, she contributed to research at the FlyLight Lab at Howard Hughes Medical Institute's Janelia Research Campus, focusing on Drosophila-based brain mapping and novel methods in immunofluorescent tagging for confocal microscopy.

Lisa Opanashuk, Phd (she/her)

Lisa Opanashuk, PhD, is the program director for the pathobiology of Alzheimer's Disease (AD) and AD-related dementias (ADRD) research in the Neurobiology of Aging and Neurodegeneration Branch in the Division of Neuroscience at the National Institute on Aging (NIA). Her research interests include the etiology and disease progression of Alzheimer's Disease (AD), mechanisms underlying AD pathobiology and neuroinflammation, and the role of TBI in AD/ADRD pathogenesis. Previously, she served as a program manager for neurodegenerative diseases in the Department of Veterans Affairs (VA) Office of Research and Development (R&D) in the Biomedical Laboratory and Clinical Sciences R&D Services and as faculty at the University of Rochester School of Medicine, where her research focused on environmental risk factors for neurodevelopmental and neurodegenerative diseases and disorders. Dr. Opanashuk earned her doctorate in toxicology from the University of Rochester. She completed her postdoctoral fellowships at the University of Kentucky, where she investigated neurodevelopment and neurodegeneration, and at the Albert Einstein College of Medicine, where she studied the impact of environmental exposures on peripheral neurodegeneration.

Dana Waltzman, PhD (she/her)

Dana Waltzman, PhD, is a behavioral scientist on the traumatic brain injury team in the Division of Injury Prevention at the Injury Center at the Centers for Disease Control and Prevention. Her work focuses on understanding the public health burden, etiology, long-term effects, and prevention of TBI among children and adults. Her specialties are statistical analysis, cognitive neuroscience, and neuroimaging. Dr. Waltzman earned her doctorate in cognitive neuroscience with a minor in developmental psychology from the University of California, Los Angeles. She completed postdoctoral fellowships at the University of California, San Francisco, and Stanford University.

About the Convening Forums

Forum on Traumatic Brain Injury
The National Academies of Sciences, Engineering, and Medicine's Forum on Traumatic Brain Injury convenes leaders across TBI prevention, care, research, and lived experience to advance recommendations from the report Traumatic Brain Injury: A Roadmap for Accelerating Progress (NASEM 2022), foster progress in understanding TBI and enhancing prevention, diagnosis, care and recovery, and identify opportunities for collective action. The Forum addresses topics relating to critical research gaps, the complexity of the systems involved in TBI treatment and rehabilitation, the challenge of coordination across the lifecycle, and other needs and challenges facing those involved in this field.
www.nas.edu/TBIForum

Forum on Neuroscience and Nervous System Disorders
The National Academies of Sciences, Engineering, and Medicine's Forum on Neuroscience and Nervous System Disorders was established in 2006 to provide a venue for building partnerships, addressing challenges, and highlighting emerging issues related to brain disorders, which are common, major causes of premature mortality, and, in aggregate, the largest cause of disability worldwide. The Forum's meetings bring together leaders from government, industry, academia, disease advocacy organizations, philanthropic foundations, and other interested parties to examine significant—and sometimes contentious—issues concerning scientific opportunities, priority setting, and policies related to research on neuroscience and brain disorders; the development, regulation, and use of interventions for the nervous system; and related ethical, legal, and social implications. \
www.nas.edu/NeuroForum

Forum on Aging, Disability, and Independence
The National Academies of Sciences, Engineering, and Medicine's Forum on Aging, Disability, and Independence fosters dialogue and addresses issues of mutual interest related to aging and disability that affect an individual's ability to live independently. The populations of interest to the Forum include both individuals who are aging with a disability, and individuals who develop disabilities as they age. The Forum is particularly concerned with bridging the research, policy, and practice interests of the aging and disability communities to achieve common goals.
www.nationalacademies.com/ADIForum

Preventing Discrimination, Harassment, and Bullying Expectations for Participants in NASEM Activities

The National Academies of Sciences, Engineering, and Medicine (NASEM) are committed to the principles of diversity, integrity, civility, and respect in all of our activities. We look to you to be a partner in this commitment by helping us to maintain a professional and cordial environment. All forms of discrimination, harassment, and bullying are prohibited in any NASEM activity. This commitment applies to all participants in all settings and locations in which NASEM work and activities are conducted, including committee meetings, workshops, conferences, and other work and social functions where employees, volunteers, sponsors, vendors, or guests are present.

Discrimination is prejudicial treatment of individuals or groups of people based on their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that creates an intimidating, hostile, or offensive environment.

Other types of harassment include any verbal or physical conduct directed at individuals or groups of people because of their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws, that creates an intimidating, hostile, or offensive environment.

Bullying is unwelcome, aggressive behavior involving the use of influence, threat, intimidation, or coercion to dominate others in the professional environment.

Section 1.01   REPORTING AND RESOLUTION

Any violation of this policy should be reported. If you experience or witness discrimination, harassment, or bullying, you are encouraged to make your unease or disapproval known to the individual, if you are comfortable doing so. You are also urged to report any incident by:

- Filing a complaint with the Office of Human Resources at 202-334-3400, or
- Reporting the incident to an employee involved in the activity in which the member or volunteer is participating, who will then file a complaint with the Office of Human Resources.

Complaints should be filed as soon as possible after an incident. To ensure the prompt and thorough investigation of the complaint, the complainant should provide as much information as is possible, such as names, dates, locations, and steps taken. The Office of Human Resources will investigate the alleged violation in consultation with the Office of the General Counsel.

If an investigation results in a finding that an individual has committed a violation, NASEM will take the actions necessary to protect those involved in its activities from any future discrimination, harassment, or bullying, including in appropriate circumstances the removal of an individual from current NASEM activities and a ban on participation in future activities.

Section 1.02   CONFIDENTIALITY

Information contained in a complaint is kept confidential, and information is revealed only on a need-to-know basis. NASEM will not retaliate or tolerate retaliation against anyone who makes a good faith report of discrimination, harassment, or bullying.

Diversity, Equity, and Inclusion Statement and Guiding Principles

We, the National Academies of Sciences, Engineering, and Medicine (the National Academies), value diversity among our staff, members, volunteers, partners, vendors, and audiences. We recognize that talent is broadly distributed in society and that many perspectives enhance the quality of our work and drive innovation and impact.

We pledge to cultivate a workplace culture and climate that promotes inclusion, belonging, accessibility, and anti-racism; upholds equity; and values the participation of all who are engaged in advancing our mission.[1] By embracing the values of diversity, equity, and inclusion in our programs, institutional policies and practices, and products, we will be able to better advise the nation on the most complex issues facing society and the world.

Guiding Principles:

The following diversity, equity, and inclusion principles guide our work at the National Academies:

1. Integrate diverse perspectives and experiences into our programs, institutional policies and practices, and products.

2. Foster a culture of inclusion where all staff, members, and volunteers have full access to participation and feel welcomed, respected, valued, and a sense of belonging.

3. Approach scientific endeavors with a consideration of diversity, equity, and inclusion frameworks.

4. Cultivate mutually beneficial diverse partnerships and collaborations with a variety of communities, including, but not limited to, marginalized and underrepresented communities.

Our institutional strategy for putting these values and principles into practice are outlined in the National Academies DEI Action Plan, a comprehensive five-year plan that charts a path toward achieving our diversity, equity, and inclusion goals. The DEI Action Plan is one of many ways that we commit to systems of accountability and transparency to uphold these principles and allow for continuous learning and improvement.

Updated June 7, 2018