Exploring Risks of Repeated Head Impacts in Youth and Strategies to Minimize Exposure: A Workshop

April 15-16, 2025

Speaker Biosketches

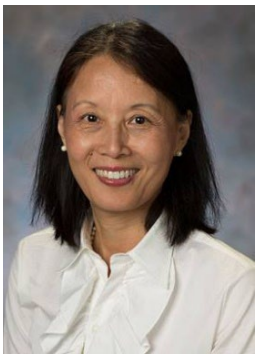
Session 1: Introduction to Repeated Head Impacts in Youth

Keith Yeates, PhD is professor of psychology, adjunct professor of pediatrics and clinical neurosciences, and former Ronald and Irene Ward Chair in Pediatric Brain Injury, at the University of Calgary, in Alberta, Canada. He also serves as the inaugural chair of the Canadian Concussion Network and the editor-in-chief of Neuropsychology. He is a fellow of the American Psychological Association, Canadian Academy of Health Sciences, and the Royal Society of Canada. He has a 30-year track record of research funded by the National Institutes of Health, Canadian Institutes of Health Research, Canada Foundation for Innovation, Brain Canada Foundation, and others focusing on the outcomes of childhood brain disorders, especially traumatic brain injury. Dr. Yeates was co-lead author of the report of the Centers for Disease Control Expert Panel on Acute Diagnosis and Management of Mild Traumatic Brain Injury among Children and Adolescents, an invited expert panel member at the 6th International Consensus Conference on Concussion in Sport in Amsterdam, and an invited member of the expert consensus group for the American Congress of Rehabilitation Medicine Diagnostic Criteria for Mild Traumatic Brain Injury. He is Chair of the Data Safety and Monitoring Board for the Concussion Health Improvement Program (CHIP) Trial at the University of Washington. He earned his doctorate in clinical psychology at the University of North Carolina, Chapel Hill.

Kristy Arbogast, PhD is the scientific director for the Center for Injury Research and Prevention, R. Anderson Pew Distinguished Chair of Pediatrics, and co-director of the Minds Matter Concussion Program at the Children's Hospital of Philadelphia. She is also the R. Anderson Pew Distinguished Chair and professor in the Department of Pediatrics at the University of Pennsylvania Perelman School of Medicine. Dr. Arbogast's research interests are pediatric injury biomechanics, injury causation and the effectiveness of safety products for children with a concentration in pediatric concussion and brain health, as well as the safety of children and youth in motor vehicle crashes. Dr. Arbogast served on the National Academies of Medicine Committee on Sports Concussion in Youth. She co-leads clinical research efforts in concussions focusing on head impact sensors for objective measures of concussion diagnosis and leveraging the electronic health record to define the natural history of concussions in children. She also co-leads an initiative for the NFL and NFL Players Association to design and implement head impact sensors to understand the loading conditions in professional football with the goal of enhancing head protection through improvements in protective equipment and is a member of the NFL Engineering Committee. Dr. Arbogast earned her doctorate in bioengineering at the University of Pennsylvania in 1997.

Session 2: Who Experiences Repeated Head Impacts

Johna Register-Mihalik, PhD, LAT, ATC, FACSM, FNATA is an associate professor in the Department of Exercise and Sport Science. She is the co-director, alongside Dr. Adam Kiefer, of the STAR Heel Performance Laboratory and is founding and core faculty in the Matthew Gfeller Center. She also serves as core faculty with the Injury Prevention Research Center and as the Traumatic Division Director for the National Center for Catastrophic Sport Injury Research. Dr. Register-Mihalik's research interests include the negative consequences, prevention, education and clinical management of sport and recreational TBI. Her work centers on novel behavioral and clinical interventions to improve prevention and care for concussion across the lifespan. Her work has been published in a variety of journals across the sports medicine and brain injury literature. Dr. Register-Mihalik is also an active member of many professional organizations including the National Athletic Trainers' Association, NATA, and the American College of Sports Medicine, ACSM. In addition, she currently serves on the NATA's Convention Program Committee and the NATA Research and Education Foundation's Pronouncements and Research Committees. Dr. Register-Mihalik was the 2018 recipient of the NATA Research and Education Foundation's New Investigator award and is a fellow of the American College of Sports Medicine and the National Athletic Trainers' Association. She completed her undergraduate work at the University of Alabama in athletic training and her master's, athletic training, doctoral, human movement science, and postdoctoral, neuroscience training at UNC-Chapel Hill.



Jingzhen (Ginger) Yang, PhD, MPH is a principal investigator at the Center for Injury Research and Policy of the Abigail Wexner Research Institute at Nationwide Children's Hospital. She is a professor of pediatrics at The Ohio State University College of Medicine, with a courtesy appointment in the Department of Epidemiology in The Ohio State University College of Public Health. Dr. Yang's research interest is injury prevention, with an emphasis on injuries to children and adolescents. Much of her current research focuses on the trajectory of recovery from sports-related mild traumatic brain injuries among children as well as parental engagement in teen driving safety. Dr. Yang's research address some of the leading causes of death and disability among children in the US and worldwide and she is recognized for her leadership in the field of injury prevention. Dr. Yang's research has not only advanced scientific knowledge but also impacted children and their families by preventing and reducing the burden of injuries. Funding for Dr. Yang's work has been provided primarily through the National Institutes of Health and Centers for Disease Control and Prevention. This research includes studies that monitor physical and cognitive rest following sports-related concussion for optimal recovery, and evaluate the effects of state TBI laws on rates and patterns of pediatric concussions and concussion-related healthcare utilization. Dr. Yang has a distinguished national and international record of achievement through involvement in a wide range of other injury prevention, intervention, and evaluation research projects. Over the course of her academic career, she has been the principal investigator or co-investigator on 35 grants and contracts, and author/co-author on over 150 peer-reviewed publications, and 5 book chapters. From 2010 to 2015, she was appointed to the Major League Baseball Injury Research Committee, which provides guidance in injury research among professional baseball players. In 2013, she received the American Public Health Association Injury Control and Emergency Health Services Section "Excellence in Science Award," a prestigious award for her outstanding achievements in the field of injury prevention.

William P. Meehan III, MD is director of the Micheli Center for Sports Injury Prevention, Director of Research for the Brain Injury Center at Boston Children's Hospital, and principal investigator of the Neurological Function across the Lifespan: A LONGitudinal, prospective and translational study for former NFL players (NFL-LONG). Dr. Meehan is currently an Associate Professor of Pediatrics and Orthopaedics at Harvard Medical School. Dr. Meehan conducts both clinical and scientific research in the areas of sports injuries, spine injuries, and concussive brain injury. His research has been funded by the National Institutes of Health, the Center for the Integration of Medicine and Innovative Technology, the National Football League Players Association, the National Football League, and the National Hockey League Alumni Association. He is the 2012 winner of the American Medical Society for Sports Medicine's award for Best Overall Research. He has multiple medical and scientific publications, is author of the books Kids, Sports, and Concussion: A Guide for Coaches and Parents and Concussions. He is co-editor of the book, Head and Neck Injuries in Young Athletes and an Associate Editor of the journal Medicine & Science in Sports & Exercise. Dr. Meehan earned his medical degree at Harvard Medical School.

Session 3: How Does RHI Exposure Affect Outcomes in the Shorter Term

Keisuke Kawata, PhD is a clinical neuroscientist and athletic trainer and an assistant professor in the Indiana University School of Public Health-Bloomington, where he studies effects of repetitive head impacts using sensor-installed mouthguard, blood biomarkers, eye tracking and cognitive assessment. His sports medicine training was with NFL Detroit Lions, MLS Sporting Kansas City, MLB Atlanta Braves and ESPN Wide World of Sports. Dr. Kawata earned his M.S. degree at Temple University where he studied molecular aspects of brain health using animal models and brain cells. He earned his doctorate degree at Temple University where he conducted clinical studies examining the effects of repetitive head impacts.

Sean Rose, MD is a pediatric neurologist with additional training in the diagnosis and management of concussion. He is co-director of the Complex Concussion Clinic at Nationwide Children's Hospital, and associate professor of pediatrics at The Ohio State University. His clinical practice focuses on concussion and other neurological conditions in athletes. He completed a fellowship in Sports Neurology, and he has provided sideline coverage for several sports at multiple levels of play. He is board certified in neurology with special qualifications in child neurology. Dr. Rose earned his medical degree at the University of Virginia.

Session 4: How Does RHI Exposure Affect Outcomes in the Longer Term

Jesse Mez, MD, MS is an associate director of the Boston University Alzheimer's Disease Center Clinical Core and is associate professor of neurology at Boston University Chobanian & Avedisian School of Medicine. Dr. Mez completed his undergraduate studies at Cornell University and earned his medical degree from the University of Maryland School of Medicine. He completed residency training in Neurology at Massachusetts General and Brigham and Women's Hospitals. He completed a clinical fellowship in aging and dementia and a research fellowship in neuroepidemiology at Columbia University. During fellowship training, he also earned a Masters in biostatistics with a focus on Statistical Genetics from the Mailman School of Public Health at Columbia.

Michael McCrea, PhD, ABPP is a board-certified clinical neuropsychologist. He is currently The Shekar N. Kurpad, MD, PhD, Chair in Neurosurgery; professor of Neurosurgery and Neurology; vice chair of research; co-director of the Center for Neurotrauma Research; and director of brain injury research at the Medical College of Wisconsin in Milwaukee, Wisconsin. He is a past president of the American Academy of Clinical Neuropsychology. Dr. McCrea has been an active researcher in the neurosciences, with numerous scientific publications, book chapters, and national and international lectures on the topic of traumatic brain injury. He authored the text Mild Traumatic Brain Injury and Postconcussion Syndrome: The New Evidence Base for Diagnosis and Treatment published by Oxford University Press. He is a member of the United States Department of Defense Health Board External Advisory Committee on Traumatic Brain Injury advising the Office of the Secretary of Defense on management and research of military related traumatic brain injury. Dr. McCrea 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 at Northwestern University Medical School.

Session 5: What Factors Influence and Modify Outcomes After RHI

Benjamin Brett, PhD is a clinical neuropsychologist and assistant professor in the departments of neurosurgery and neurology at the Medical College of Wisconsin. As a faculty member of the Brain Injury Research Program and the Center for Neurotrauma Research, Dr. Brett studies the acute and chronic effects of traumatic brain injury. He holds committee positions across various organizations including the Sports Neuropsychological Society, American Academy of Clinical Neuropsychology, and National Neurotrauma Society. Dr. Brett is co-investigator on a number of multicenter studies examining acute and chronic effects of TBI. In clinical practice, Dr. Brett specializes in the neuropsychological evaluation of adults with diverse neurologic and neurobehavioral presentations.

Tamerah Hunt, PhD, ATC, FACSM is a professor in the Department of Health Sciences and Kinesiology at Georgia Southern University. Dr. Hunt is a Certified Athletic Trainer and has worked at every level of sports during her career. Her research focuses on youth concussion examining the effects of the social determinants of health on incidence, management and recovery outcomes; youth recovery patterns; effort on assessment; and co-morbidities. Dr. Hunt has secured numerous grants, published concussion and brain injury research and has given numerous presentations regionally, nationally and internationally. She serves on numerous professional committees to enhance inclusion and diversity in the clinical and research setting. She has served as an Allied Health and Education Board of Trustee for ACSM and is currently the National Athletic Trainers' Association

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Session 6: What Factors Influence and Modify Outcomes After RHI

Christina Master, MD, FAAP, CAQSM, FACSM, FAMSSM is a Professor of Pediatrics and Orthopaedic Surgery at the University of Pennsylvania Perelman School of Medicine and a pediatric and adolescent primary care sports medicine specialist and academic general pediatrician at the Children's Hospital of Philadelphia (CHOP). Additionally, she is the co-founding director of the Minds Matter Concussion Program, which provides comprehensive cutting-edge and multi-disciplinary clinical care and rehabilitation for concussion, community advocacy, and outreach. Her research focuses on visual deficits following concussion, its role in persistent post-concussive symptoms, its potential as a target for active intervention and treatment, and its usefulness as an objective physiological measure serving as a quantitative biomarker of injury and recovery. She is board certified in pediatrics, sports medicine, and brain injury medicine, and is an elected fellow of the American College of Sports Medicine and American Medical Society for Sports Medicine. She treats over 800 children, youth, and young adults with concussion annually in her clinical sports medicine practice. She completed her undergraduate studies at Princeton University with an A.B. in Molecular Biology and graduated summa cum laude from the University at Buffalo School of Medicine and Biomedical Sciences. She completed pediatric residency training with an additional year as chief resident at CHOP and served for 14 years as the associate and vice program director for the pediatric residency program. She subsequently completed a sabbatical year sports medicine fellowship at the Hospital of the University of Pennsylvania and has since been caring for patients with concussion in her sports medicine practice and conducting clinical translational research in concussion.

Karlita L. Warren, PhD , LAT, ATC, FNAP received her Doctor of Philosophy degree in Athletic Training from Rocky Mountain University of Health Professions and has been a BOC certified athletic trainer for over 20 years. She is the Founder of The Kizo Effect, LLC, an organization dedicated to enhancing individuals' quality of life through health-conscious lifestyle choices, injury prevention, recovery, and empowerment in healthcare decision-making. Additionally, her organization provides consulting services on diversity, equity, inclusion, and accessibility (DEIA) in healthcare and health professions education. In addition, Dr. Warren is an adjunct professor at George Mason University. Dr. Warren previously served as Assistant Program Director and Professor of Practice in the Master of

Science in Community Medicine program at Keck Graduate Institute. She serves on several local, regional, and national professional committees. Dr. Warren's research interests include traumatic brain injuries; racial and ethnic health disparities and healthcare disparities; microaggressions in healthcare; and underrepresented minority enrollment and retention in athletic training education and the athletic training profession. In 2021, she was selected to be a Distinguished CHER Institute Faculty Fellow with the Center for Health Equity Research at California State University Long Beach and in 2023, she was inducted as a Distinguished Practitioner Fellow of the National Academies of Practice in Athletic Training.

Laura Keyes, LSW, CBIS has been a social worker for over 15 years and has worked in various areas including child welfare, school-based therapy, and home and community-based services. Currently, Keyes is the program social worker for the Children's Hospital of Philadelphia's Minds Matter Concussion Program. She has a special interest in traumatic brain injury and holds certification as a certified brain injury specialist.

Session 7: Interventions to Minimize Exposure to Repeated Head Impacts

Jaclyn Caccese, PhD is an assistant professor at the School of Health and Rehabilitation Sciences and a faculty member in the Ohio State University Chronic Brain Injury Program. Her research focuses on the neurodevelopmental effects of youth tackle football, TBI assessment, repetitive head impacts, and low-level blast exposures in law enforcement officers. Her work is funded by research grants from the National Institutes of Health and the U.S. Department of Defense. With over 55 peer-reviewed publications, Dr. Caccese is a leading expert in sport and tactical athlete concussion management, influencing injury prevention legislation and policies for youth tackle football players and law enforcement officers. She has played a key role in developing guidelines for head acceleration measurement technology, helping to set new standards for research and practice in this field. Dr. Caccese earned her doctorate in biomechanics and movement science at the University of Delaware and completed her postdoctoral studies at Temple University and the University of Delaware.

Carolyn Emery, PhD is a physiotherapist and epidemiologist. She completed her BSc in Physiotherapy at Queens University in 1988 and after several years of practice in pediatric rehabilitation and sport medicine, Dr. Emery completed her MSc in Epidemiology (Community Health Sciences, Faculty of Medicine) at the University of Calgary in 1999 and obtained her PhD in Epidemiology (Public Health Sciences, Faculty of Medicine) from the University of Alberta in 2004. Dr. Emery is a Professor (with tenure) in the Faculty of Kinesiology at the University of Calgary and holds joint appointments in Pediatrics and Community Health Sciences in the Cumming School of Medicine. Dr. Emery is a member of the Alberta Children's Hospital Research Institute, O'Brien Institute of Public Health, Hotchkiss Brain Institute and the McCaig Institute of Bone and Joint Health. The focus of her research is injury

prevention in youth sport and recreation, concussion, and pediatric rehabilitation, with the aim of reducing the public health burden of injury including long-term consequences such as overweight/obesity, post-traumatic osteoarthritis, and post-concussion syndrome. She holds a Chair in Pediatric Rehabilitation at Alberta Children's Hospital Research Institute and is Chair of the Sport Injury Prevention Research Centre at the University of Calgary. She leads "SHRed Injuries: Preventing Injuries and their Consequences in Youth Sport and Recreation" and "SHRed Concussions-Surveillance in High Schools to Reduce the Risk of Concussions and their Concequences. Dr. Emery was inducted as a Canadian Academy of Health Sciences Fellow and she is a Royal Society of Canada New Scholar.

George Chiampas, DO is an Assistant Professor in Emergency and Sports Medicine at the Feinberg School of Medicine at Northwestern University in Chicago. Dr. Chiampas serves multiple roles in the sports medicine world including team physician, emergency management and response, and mass event planning. He currently serves as team physician for the Northwestern University wildcats and Chicago Blackhawks, and travels and provides medical coverage for US soccer and the Men's National team locally and internationally. He has been the medical director of the Bank of America Chicago Marathon with 45,000 runners annually and the 40,000 participant Shamrock 8k shuffle. He works closely with city, state and federal agencies in the planning of these events and has incorporated and led the way with the "Unified Command" approach for mass sporting events and medical coverage. He currently is president of the American Road Race Medical Society. He has lectured nationally and internationally and authored book chapters and journal articles on topics including mass event management, EMS and communication in a unified command approach. In 2010 Dr Chiampas led and co-authored the medical chapter for the US Bid for the 2018 and 2022 World Cup. In Chicago, Dr Chiampas is involved with several shorter and larger running events and since 2009 has also served as co-medical director of the Hustle up the Hancock climb for lung disease research. He is involved and a member of several national emergency and sports medicine societies where his focus has become emergency management and mass event preparedness.

Erik Swartz, PhD, ATC, FNATA is the Vice Dean & Ruth S. Ammon Professor for the School of Health Sciences in the Ruth S. Ammon College of Education and Health Sciences at Adelphi University. Dr. Swartz's research focuses on the prevention and acute care of head and neck injuries in football. He has received grants from The NATA Foundation, NOCSAE, NFL Charities and was a winner of the NineSigma Head Health Challenge. He has published in journals such as The Journal of Athletic Training, American Journal of Emergency Medicine, New England Journal of Medicine, Spine, and The American Journal of Sports Medicine. He served on the NFL Head Neck and Spine Committee's Subcommittee on Safety Equipment and Rules and as writing chair of two NATA Position Statements on the prevention and acute management of head and spine injuries in athletes. He has served on the Editorial Boards of the Journal of Athletic Training and the Athletic Training and Sports Health Care Journal. In 2011 he was honored with a Fellows designation in the National Athletic Trainers' Association and in 2015 received the Most Distinguished Athletic Trainer Award, also from the NATA. He received his PhD in Applied Biomechanics at the University of Toledo.

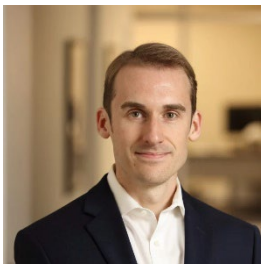
Session 8: Decision-Making on Return-to-Activity and Opportunities for Policy Change

Jillian Urban, PhD, MPH is an Assistant Professor in the Center for Injury Biomechanics in the Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences at Wake Forest University School of Medicine. Her primary research interests are focused on combining engineering and public health to inform, develop, and test evidence-based strategies to prevent and manage concussion and repetitive head impact exposure in sports, using a community-engaged approach. She is the principal investigator of multiple NIH-funded studies supported by the National Institute of Child Health and Human Development and has served as a collaborator and co-investigator of additional research studies supported by the NIH, Childress Institute for Pediatric Trauma, NASCAR, and Toyota Racing Development. She has specialized training in injury biomechanics and public health and over ten years of experience collecting head acceleration data and clinical outcome measures from concussed and non-concussed athletes on multi-disciplinary studies across helmeted and non-helmeted sports. She has additional experience conducting qualitative interviews surrounding sports safety with stakeholders in the youth sports and motorsports communities. Dr. Urban is passionate about engaging the sports community in research for the development and implementation of practical solutions to improve safety for athletes.

Emily Kroshus-Havril, ScD MPH is an Associate Professor at University of Washington's School of Medicine in the Department of Pediatrics. She is also a Principal Investigator at Seattle Children's Research Institute's Center for Child Health, Behavior and Development. She conducts research on health promotion in social settings, including shared decision making by families about sport participation after recovery from pediatric concussion. She obtained her doctoral degree in 2014 from the Harvard T.H. Chan School of Public Health in the Department of Social and Behavioral Sciences, with a concentration in health communication. Prior to coming to the University of Washington she was a post-doctoral research fellow at the National Collegiate Athletic Associations Sport Science Institute, where she worked on research and program development related to concussion and mental health in college sport.

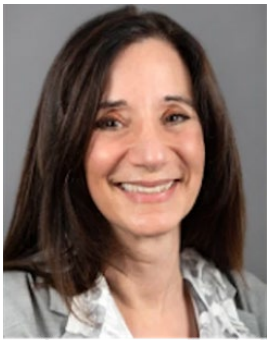
Session 9: Reflections on Research Gaps and Opportunities

Jeffrey Bazarian, MD, MPH is an emergency physician at the University of Rochester Medical Center with an active concussion clinic and research program. He has served on several traumatic brain injury-related task forces and panels for the Centers for Disease Control and Prevention, the National Institutes of Health, the National Science Foundation, and the Institute of Medicine. In 2008, he worked with the Defense and Veterans Brain Injury Center to develop mild traumatic brain injury (concussion) management guidelines for returning troops.



Lee Gabler, PhD is a senior engineer at BioCore LLC. Dr. Gabler specializes in the use of sophisticated tools including finite element models of the human head and constitutive models for brain tissue to answer fundamental questions in brain injury biomechanics. These include determining how mechanical forces translate to brain injury and what effects these forces have on the structure of brain tissue. Dr. Gabler earned a PhD in Mechanical and Aerospace Engineering from the University of Virginia in 2017.

Benjamin Brett, PhD, is a clinical neuropsychologist and assistant professor in the departments of neurosurgery and neurology at the Medical College of Wisconsin. As a faculty member of the Brain Injury Research Program and the Center for Neurotrauma Research, Dr. Brett studies the acute and chronic effects of traumatic brain injury. He holds committee positions across various organizations including the Sports Neuropsychological Society, American Academy of Clinical Neuropsychology, and National Neurotrauma Society. Dr. Brett is co-investigator on a number of multicenter studies examining acute and chronic effects of TBI. In clinical practice, Dr. Brett specializes in the neuropsychological evaluation of adults with diverse neurologic and neurobehavioral presentations.



Rebekah Mannix, MD, MPH is a senior physician in pediatrics and emergency medicine at Boston Children's Hospital. She is also a professor of pediatrics and professor of emergency medicine at Harvard Medical School. Dr. Mannix serves as the primary investigator for her Traumatic Brain Injury Lab and is co-investigator of the Neurologic Function across the Lifespan: A LONGitudinal Translational Study for Former National Football League Players (NFL-LONG Study). Her clinical research interest is the identification of new serum and imaging biomarkers for diagnosing and managing mild traumatic brain injury, and her work has been funded by grants from the Department of Defense, National Institutes of Health, Abbott Laboratories, and others. Dr. Mannix earned her medical degree at the University of Massachusetts Medical School and completed her MPH at the Harvard School of Public Health. She completed her residency and fellowship at Boston Children’s Hospital.