BU CTE Center | Alzheimer's Disease Research Center

Boston University
Alzheimer's Disease Research Center & CTE Center

7TH ANNUAL

CTE CONFERENCE

Nov. 30 - Dec. 1

PROGRAM SCHEDULE

DAY 1 - NOVEMBER 30, 2023

9:00-9:30AM - CONTINENTAL BREAKFAST

9:30-9:35AM - WELCOME

Kate Turk, MD, & Andrew Budson, MD

9:35-10:35AM -THE NEUROPATHOLOGY OF CTE AND IT'S RELATIONSHIP TO REPETITIVE HEAD IMPACTS

Ann McKee, MD

10:35-11:35AM - DIAGNOSING CTE DURING LIFE: CONTRIBUTIONS FROM THE DIAGNOSE CTE RESEARCH PROJECT (12/15/2015-11/30/2023)

Robert Stern, PhD

11:35-12:20PM - NEUROPSYCHOLOGY IN THE ERA OF BIOMARKERS: NEW INSIGHTS INTO THE DIAGNOSIS OF CHRONIC TRAUMATIC ENCEPHALOPATHY

Michael Alosco, PhD

12:20-1:00PM - LUNCH

1:00-1:05PM - RON KILLIANY MEMORIAL LECTURE INTRODUCTION

Rhoda Au, MD

1:05-1:45PM - RON KILLIANY MEMORIAL LECTURE, INVESTIGATING POST-TRAUMATIC NEURODEGENERATION

David Sharp, MD

1:45-2:05PM - MORNING PANEL Q&A

2:05-2:50PM - CRAFTING THE AMSTERDAM INTERNATIONAL CONCUSSION IN SPORTS CONSENSUS STATEMENT ON CTE

Robert Cantu, MD, PhD

2:50-3:30PM - MECHANISMS OF CTE

Lee Goldstein, MD, PhD

3:30-4:00PM - MECHANISMS OF TAUPATHY: NOVEL APPROACHES IN THE AGE OF AI & DIGITAL PATHOLOGY

John Crary, MD, PhD

4:00-4:20PM - AFTERNOON PANEL Q&A

4:20-5:00PM - MILITARY FAMILY PANEL DISCUSSION

Christopher Nowinski, PhD and others

PROGRAM SCHEDULE

DAY 2 - DECEMBER 1, 2023

9:00-9:30AM - CONTINENTAL BREAKFAST

9:30-9:35AM - WELCOME

Kate Turk, MD, & Andrew Budson, MD

9:35-10:35AM - UNDERSTANDING RISK FOR CTE & THE BU/BMC MEMORY AND AGING CLINIC: OUR APPROACH TO PATIENTS AT RISK FOR CTE

Jesse Mez, MD, MS

10:35-11:15AM - MIXED AND NOVEL PATHOLOGIES ASSOCIATED WITH REPETITIVE HEAD IMPACTS AND CTE

Thor Stein, MD, PhD

11:15-11:55AM - IMMUNE CHANGES DRIVE EARLY CTE PATHOGENISIS IN YOUNG INDIVIDUALS WITH A HISTYR OF REPETITIVE HEAD IMPACTS

Jon Cherry, MD

11:55-12:35PM - THE APPLICATIONS OF DATA SCIENCE APPROACHES TO CHARACTERIZE AND UNDERSTANDING THE RELATIONSHIPS BETWEEN BRAIN TRAUMA IN SPORT AND CHRONIC TRAUMATIC ENCEPHALOPATHY

Thomas Blaine Hoshizaki, MD

12:35-1:10PM - LUNCH

1:10-1:30PM - MORNING PANEL Q&A

1:30-2:10PM - DETECTING DELAYED NEURODEGENERATION IN FORMER PROFESSIONAL ATHLETES WHO HAVE SUFFERED REPETITIVE CONCUSSIVE AND SUB-CONCUSSIVE HEAD INJURIES

Carmela Tartaglia, FRCPC, MD

2:10-2:40PM - LONG-TERM EFFECT OF TBI AMONG VETERANS

Kate Turk, MD

2:40-3:00PM - FROM BOSTON TO BRITAIN: CTE PREVENTION PROTOCOLS IN PROFESSIONAL SOCCER

Adam White, PhD

3:00-3:45PM - AFTERNOON & FULL COURSE Q&A

3:45-4:45PM - PANEL: IMPACT OF CTE ON FAMILIES IN THE UNITED KINGDOM

Christopher Nowinski, PhD

4:45-4:50PM - CONCLUDING REMARKS

Kate Turk, MD, & Andrew Budson, MD

PRESENTOR BIOS

NOVEMBER 30-DECEMBER 1

KATE TURK, MD

Dr. Turk is a board-certified Neurologist specialized in Cognitive and Behavioral Neurology. She earned her medical degree from Tufts University School of Medicine and then completed her Internship and Neurology residency at the University of Washington in Seattle. She completed her fellowship training in Behavioral Neurology at Boston University/VA Boston. She sees patients at the Boston VA Memory Disorders clinic and is also a principal investigator and co-director of the Center for Translational Cognitive Neuroscience lab (CTCN) at VA Boston. She serves as the co-Leader of the Outreach, Recruitment and Engagement core of the Boston University Alzheimer's disease Research Center. She has received research funding from the Alzheimer's Association, the Doris Duke Foundation and the US Department of Veterans Affairs. Dr. Turk's research interests include behavioral interventions for memory loss in clinical populations including veterans with Alzheimer's disease and Traumatic Brain Injury as well as the investigation of event-related potentials as clinical diagnostic biomarkers.

ANDREW BUDSON, MD

Dr. Andrew E. Budson received his B.A. in Chemistry and Philosophy from Haverford College (1988) and his M.D. from Harvard Medical School (1993). He served as an intern in Internal Medicine at Brigham and Women's Hospital (1993-94). He was resident and Chief Resident in Neurology at the Harvard-Longwood Program (1994-97). He was a Clinical Fellow in Behavioral Neurology at Brigham and Women's Hospital (1997-99) and a Research Fellow in Psychology at Harvard University (1997-2000). He began as the Clinical Director of the Geriatric Research Education Clinical Center (GRECC) at the Bedford VA Hospital in 2004 and later served as overall Bedford GRECC Director (2008-2010). After serving a year as Bedford's Acting Chief of Staff (2009-2010) he moved to the VA Boston Healthcare System as Deputy Chief of Staff in 2010. In 2012 he became the Associate Chief of Staff for Education. He is Professor of Neurology at Boston University School of Medicine, Associate Director for Research at the Boston University Alzheimer's Disease Center, Lecturer in Neurology at Harvard Medical School, and Consultant Neurologist at the Division of Cognitive and Behavioral Neurology, Department of Neurology, at Brigham and Women's Hospital. Dr. Budson has had continual NIH research funding since 1998, receiving a National Research Service Award and a Career Development Award in addition to a Research Project (R01) grant. He continues to see patients while teaching fellows, residents, and medical students in his memory disorders clinic at VA Boston. He is board-certified in Neurology.

ANN MCKEE, MD

Dr. McKee's research over the past decade has led the field in CTE and post-traumatic neurodegeneration and has been instrumental in changing public awareness regarding the late effects of concussion, sub-concussion, and blast-related injury. Her work was fundamental to defining the neuropathological diagnostic criteria, staging scheme, and clinicopathological correlations of CTE. She was the first to report the association between ALS and CTE. She reported the first case of CTE in ice hockey, soccer, mixed martial arts, baseball, high school football, and college football. Dr. McKee reported the youngest athlete ever diagnosed with CTE (17 years). Her team defined the roles of other pathological proteins, TDP-43, beta-amyloid, alpha-synuclein in the development and progression of CTE. Her team reported the association between high cognitive reserve and delayed emergence of clinical symptoms in CTE and the association between age at first exposure to football and the risk of cognitive impairment and depression in later life. Her team published on the roles of microglia and inflammation in repetitive head impact injury and CTE, the unique finding of the cytokine, CCL11, in CTE, on prion spread of tau in CTE, and the presence of prion disease in some individuals diagnosed with CTE. Dr. McKee also helped define microvascular injury and the neuropathology of aging and Alzheimer's disease through her work with the Boston University Alzheimer's Disease Center and the Framingham Heart Study.

ROBERT STERN, PHD

Dr. Robert Stern is Professor of Neurology, Neurosurgery, and Anatomy and Neurobiology at Boston University (BU) School of Medicine, where he is also Director of Clinical Research for the BU Chronic Traumatic Encephalopathy (CTE) Center. From 2010-2019, he was the Director of the Clinical Core of the BU Alzheimer's Disease Center (funded by National Institutes of Health, NIH). A major focus of Dr. Stern's research involves the long-term effects of repetitive brain trauma in athletes, including the neurodegenerative disease, CTE. He has been funded from NIH and the Department of Defense for his work on developing methods of detecting and diagnosing CTE during life, as well as examining potential genetic and other risk factors for this disease. He is the lead principal investigator for the 7-year, multi-center DIAGNOSE CTE Research Project, funded by the National Institute of Neurological Disorders and Stroke. The goal of DIAGNOSE is to develop methods of detecting and diagnosing CTE during life, including the development and examination of neuroimaging and fluid biomarkers, establishing and validating diagnostic criteria for Traumatic Encephalopathy Syndrome (TES), and studying potential risk factors of the disease. He is also the principal investigator of the new, NIH-funded Head Impact and Trauma Surveillance Study (HITSS). HITSS will involve annual (completely online) assessments of 2400 former soccer players (women and men) and 2400 former American football players, all age 40 or older, who played their sport at any level (from youth to pro), to examine repetitive head impact exposure and other risk factors for later-life cognitive, mood, and behavioral problems. His other major areas of funded research include the assessment and treatment of Alzheimer's disease, the cognitive effects of chemotherapy in the elderly, thyroid-brain relationships, and driving and dementia.

PRESENTOR BIOS

NOVEMBER 30-DECEMBER 1

MICHAEL ALOSCO, PHD

Dr. Alosco is a licensed clinical neuropsychologist. He completed his undergraduate studies at Providence College and he earned his doctoral degree in clinical psychology, with a focus on neuropsychology, in 2015 from Kent State University. He completed his clinical internship in neuropsychology at the VA Boston Healthcare System. Dr. Alosco completed his post-doctoral studies in neuropsychology via NIH-funded training Awards (T32, F32) at the Boston University Alzheimer's Disease Research Center and CTE Center. In 2018, he became an Assistant Professor of Neurology at the Boston University School of Medicine and immediately received NIH/NINDS K23 Award. He was promoted to Associate Professor in 2019. Dr. Alosco has published extensively in the fields of Alzheimer's disease and related dementias, including CTE, and he is the PI of multiple NIH-funded grants. His research has set the stage for biomarker discovery in CTE and the long-term effects of repetitive head impacts on the white matter, and he has made major contributions to plasma biomarker development and validation in Alzheimer's disease. He has written numerous book chapters, and he is the co-Editor of the Oxford Handbook of Adult Cognitive Disorders which was published by Oxford University Press in 2019.

RHONDA AU, PHD

Rhoda Au, Ph.D., does research on cognitive aging and dementia has recently centered on using technologies to develop a multi-sensory brain health monitoring platform that is customizable, flexibly responsive to the rapidly changing technology landscape, technology agnostic, and scalable to achieve global representativeness in AD-related research. Her strategic research plan is to transition from reliance on active engagement technologies to low/no engagement ones to practically allow longitudinal assessments that are necessary to move from a primary focus on precision AD medicine to a broader emphasis on precision brain health. She actively supports broad data sharing/accessibility initiatives to accelerate data science/AI-driven discovery of digital biomarkers, including those that can serve as surrogate indices of fluid and imaging biomarkers and novel disease pathways and treatment solutions.

DAVID SHARP

David Sharp is Director of the Care Research and Technology Centre, which focuses on improving the lives of people living with dementia. He is Scientific Director of the Imperial College Clinical Imaging Facility and Associate Director of the Imperial Centre for Injury Studies. His research programme aims to improve clinical outcomes after dementia and traumatic brain injury, focusing on common cognitive impairments and systemic factors that affect cognitive function such as infections. He uses cognitive neuroscience and advanced neuroimaging to investigate the effect of brain injury on brain network function and the effects of inflammation and neurodegeneration. He has more than 150 peer reviewed publications and an H index of 64. His papers have been cited almost 18 thousand times and he is a Clarivate Highly Cited Academic in the field of Neuroscience and Behaviour.

ROBERT CANTU, MD

Dr. Robert Cantu serves as a scientific advisor for the National Football League (NFL) Head Neck and Spine Committee, VP and Chair of the Scientific Advisory Committee for the National Operating Committee on Standards for Athletic Equipment (NOCSAE), and as Co-founder and Medical Director of the Concussion Legacy Foundation. He currently receives research support from the NINS UNITE and Diagnose CTE grants. He has received travel support and honorariums for presentations at conferences and meetings. He receives royalties from Houghton Mifflin Hardcourt publishing. He has a clinical and consulting practice in forensic neurology and neurosurgery, including expert testimony, especially individuals with traumatic brain and spinal cord injuries. He uis a member of the National Collegiate Athletic Association AStudent-Athlete Concussion Injury Litigation Medical Science Committee.

LEE GOLDSTEIN, MD, PHD

Dr. Lee Goldstein received a bachelor's degree in humanities and biology from Columbia University and went on to complete his medical and doctoral training at Yale University. Dr. Goldstein completed an internal medicine internship and residency program in psychiatry at Harvard Medical School. He was previously an Assistant Professor of Psychiatry at Harvard Medical School, as well as the Director of the Molecular Aging & Development Laboratory and Center for Biometals & Metallomics at the Brigham & Women's Hospital, Boston. Dr. Goldstein joined the Boston University School of Medicine, College of Engineering, Photonics Center, and the BU ADC in December 2007.

JOHN CRARY, MD, PHD

Dr. Crary is an experimental neuropathologist and director of the Neuropathology Brain Bank & Research Core (NPBB) at Mount Sinai. His program focuses on human directed studies with a goal of identifying novel pathological changes and leveraging these findings to yield mechanistic insights to use for biomarker discovery, disease modeling and therapeutic development. Dr. Crary has made contributions to diagnostic algorithms through an international network of experimental neuropathologists. He spearheaded an international effort to establish consensus criteria for primary age-related tauopathy. Dr. Crary also contributed to efforts to define consensus criteria for aging-related tau astrogliopathy, chronic traumatic encephalopathy, and progressive supranuclear palsy. Dr. Crary is pioneering computer vision approaches (e.g., deep machine learning) to modernize evaluation of human brain tissues, having developed novel deep learning algorithms that have highlighted white matter injury. He developed a novel AI-derived histological biological clock ("HistoAge"). Finally, Dr. Crary has a track record of leading independent basic studies probing fundamental mechanisms of brain development and neurodegeneration, with a new focus on understanding tauopathy using new stem cell and optogenetic models.

PRESENTOR BIOS

NOVEMBER 30-DECEMBER 1

CHRISTOPHER NOWINSKI, PHD

Chris Nowinski, PhD, is co-founder and CEO of the Concussion Legacy Foundation, a non-profit organization leading the fight against concussions and CTE and dedicated to improving the lives of those impacted. Chris wrote the investigative book Head Games: Football's Concussion Crisis in 2006, co-founded CLF in 2007, co-founded the VA-BU-CLF Brain Bank in 2008, and served as a co-director of the Boston University Center for the Study of Traumatic Encephalopathy in from 2008 to 2014. Today he serves as an Outreach, Recruitment, Education, and Public Policy Leader for the BU CTE Center. Chris' journey has been profiled in media outlets like HBO Real Sports, ESPN Outside the Lines, and the New York Times, and he was the subject of the award-winning documentary Head Games: The Global Concussion Crisis by celebrated director Steve James. Dr. Nowinski earned his doctorate in Behavioral Neuroscience from Boston University School of Medicine and has authored more than 30 scientific publications. VICE Sports called him "the man most responsible for making CTE part of the national conversation," and Sports Illustrated said, "It is Nowinski's figure which looms behind the doctors and the headlines and the debate roiling over sports' newfound commitment to minimizing head trauma." Nowinski serves on the NFL Players Association Mackey-White Health & Safety Committee, the Ivy League Concussion Committee, the Positive Coaching Alliance National Advisory Board, and as an advisor to All-Elite Wrestling.

JESSE MEZ, MD, MS

Dr. Jesse Mez is an Associate Professor of Neurology at BU School of Medicine. He directs the BU ADRC Clinical Core, is an investigator in the BU CTE Center, and co-leads the Framingham Heart Study Brain Aging Program Clinical Core. He is also an AD Genetic Consortium Investigator. He joined BU's faculty in 2013, where he has been an integral player in the field of CTE and AD. His research seeks to understand genetic, neuropathological, epidemiological, and clinical aspects of AD, CTE, and related dementias. Ongoing research themes include investigating 1) the relationship between traumatic brain injury, exposure to repetitive head impacts from contact sports and military service and dementia-related outcomes and their interaction with genetic factors, 2) clinico-pathologic correlation in CTE with the goal to accurately diagnose CTE in life, 3) the genetic architecture, neuropathology and clinical course of AD subtypes, as defined by variation in neuropsychological presentation and 4) interaction between genetic and environmental factors and risk for and resilience from AD. He is a Principal Investigator or Core/Project Leader, on six NIH and DOD-funded grants and is an author of more than 100 research articles, reviews, editorials, and book chapters. He received his AB from Cornell University in Mathematics, his MD from the University of Maryland School of Medicine, and his MS in Biostatistics with an emphasis on Statistical Genetics from the Columbia University Mailman School of Public Health. He completed his Neurology Residency at the Harvard Partners Program in Boston. This was followed by a Clinical Fellowship in Aging and Dementia and a Research Fellowship in Neuroepidemiology at Columbia University College of Physicians and Surgeons. He is the recipient of an NIH-funded K23 Career Development Award, an NIH-funded Loan Repayment Program Award, and the BU Carlos S. Kase Outstanding Contribution to Neurology Research Award and is a 2015 BU Spivack Neuroscience Scholar.

THOR STEIN, MD, PHD

Dr. Stein completed his undergraduate and graduate studies at the University of Wisconsin- Madison where he earned his MD and PhD (neuroscience) degrees. He completed residency training in pathology and fellowship training in neuropathology at Massachusetts General Hospital. In 2011 he became Assistant Professor of Pathology at Boston University School of Medicine.

JON CHERRY, PHD

Dr. Cherry is an Assistant Professor of Pathology and Laboratory Medicine. He completed his undergraduate studies with a BS in biology at Ursinus College in 2008. He earned his doctoral degree in Pathology from the University of Rochester in 2015. Dr. Cherry joined the McKee laboratory as a postdoctoral researcher the same year. He was appointed as an assistant professor at Boston University School of Medicine in 2019. Dr. Cherry also holds a research health scientist position within the VA Boston Healthcare System. His laboratory space is located at the Jamaica Plain VA hospital where he performs his research and helps support the VA-BU-CLF brain bank.

THOMAS BLAINE HOSHIZAKIM MD

Dr Hoshizaki's research has focused on understanding how the brain responds to mechanical force and why cumulative brain trauma is linked to a spectrum of brain health outcomes. In 2005, he founded the Neurotrauma Impact Science Laboratory (NISL) to undertake research that meaningfully contributes to decreasing all types of head injury in society, sport, and recreational activities. NISL is considered a leading head impact reconstruction research laboratory in sport. Dr Hoshizaki has published 7 book chapters, 190 refereed scientific articles and 270 scientific presentations, given 45 invited and keynote addresses and graduated 12 Doctorate and 48 Master students. His research has made significant contributions to decreasing the risk of head injuries by developing technological innovations designed to make helmets safer, improve helmet safety standards and to better understand what types and level of trauma contribute to brain injuries in society. He has chaired the International Safety Organization ice hockey helmet standard committee and is a member of NOCSAE, CSA, ASTM, and CE standards for sport equipment. Research undertaken at NISL directly informed the development of the first rotational standard (NOCSAE 2017) and youth helmet test standard (NOCSAE 2021) to measure the ability of football helmets to mitigate the risk of concussive impacts. He has worked with numerous sports companies globally in guiding design and innovation for safer head protection. He presently holds 22 patents.

PRESENTOR BIOS

NOVEMBER 30-DECEMBER 1

CARMELA TARTAGLIA, FRCPC, MD

Dr. Tartaglia is a clinician-scientist at the University Health Network and University of Toronto. She maintains a cognitive/behavioral clinic within the UHN Memory Clinic where she sees patients with neurodegenerative diseases and those with multiple concussions who are at risk of developing a neurodegenerative disease. She holds the Marion and Gerald Soloway Chair in Brain Injury and Concussion Research. She is a PI of the Canadian Concussion Centre and the Tanz Centre for Research in Neurodegenerative Diseases. She uses a multi-modal approach that combines imaging and biofluid biomarkers to better diagnose and understand the pathological substrates that cause cognitive, behavioral and motoric dysfunction. The goal of her research program is to develop biomarkers for early detection of disease to bring precision medicine and targeted, early treatments to her patients

ADAM WHITE, PHD

Dr Adam J. White is Head of Brain Health at the Professional Footballers' Association, the players union for football in England. He is also co-founder of the Concussion Legacy Foundation UK; a not-for-profit organisation who's mission is to support athletes, Veterans, and all affected by concussions and CTE; achieve smarter sports and safer athletes through education and innovation; and to End CTE through prevention and research. He is an interdisciplinary researcher crossing Sport, Medicine and Health. He has authored a number of peer-reviewed research papers and has co-authored an academic book that critically examines sport; Sport, Theory and Social Problems. He completed his doctorate at the University of Winchester in 2018 where he investigated the role of contact sport within school physical education and the issues associated with injury and particularly brain trauma. He is most well-known as a strong advocate for protecting athletes brain health within sport. He was a Senior Lecturer at Oxford Brookes University in the Department of Sport, Health Sciences and Social Work. He taught on the BSc Sport, Coaching and Physical Education and the BSc Sport and Exercise Science degrees, and had leadership responsibility for research ethics across the Faculty of Health and Life Sciences. Additionally, He is an Honorary Research Fellow at Warwick University Medical School and Bournemouth University.

PANEL PARTICIPANTS

ATHLETE PANEL (DAY 2) MILITARY PANEL (DAY 1)

Adam White, PhD

Dawn Aslte

Rachel Walden

Jason Redman

BU CTE Center | Alzheimer's Disease Research Center

THANK YOU

ACCREDITATION

In support of improving patient care, Boston University Chobanian & Avedisian School of Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Boston University Chobanian & Avedisian School of Medicine designates this activity for AMA PRA Category 1 Credits™.

JOINTLY ACCREDITED PROVIDER™
WITH COMMENDATION
INTERPROFESSIONAL CONTINUING EDUCATION

AVAILABLE CREDITS

12.75 AMA PRA Category 1 Credits™
Boston University Chobanian & Avedisian School of Medicine designates this a live activity for a maximum of *12.75 AMA PRA Category 1 Credits™*. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

12.75 Social Work (ACE)

12.75 New York State Social Work
Boston University Chobanian & Avedisian School of Medicine, Dr. Barry M. Manuel Continuing Medical Education Office is recognized by the New York State Education Department's State Board for Social Work as an approved provider of continuing education for licensed social workers #SW-0589.