BU ADC Bulletin Fall 2018

Boston University Alzheimer's Disease Center

Why are Black Americans at Increased Risk of Developing Alzheimer's Disease?

ALZHEIMER'S DISEASE (AD) is a degenerative disease that affects people's thinking and memory and is the major cause of dementia. The fast-growing prevalence of AD within the US population has become a real public health issue. According to the 2018 Alzheimer's Association



Eric Steinberg, HOPE Study Manager, stands alongside guests at our HOPE Appreciation Brunch

facts and figures, an estimated 5.7 million Americans are living with Alzheimer's dementia. This number includes an estimated 5.5 million people age 65 and older and approximately 200,000 individuals under age 65 who have younger-onset Alzheimer's. A growing body of evidence suggests that the prevalence of AD may be two to three times higher among Black Americans than in non-Hispanic whites. In 2010, the US Census Bureau indicated that 20

percent of the US population aged 65 and older was a racial or ethnic minority. Current projections suggest that by 2050, 42 percent of the nation's older adults will be members of minority groups. Among those 85 and older, one-third are projected to be a member of a minority group.

Although there is more research to be done, there has been some research that suggests why Black Americans may be more likely to develop AD than non-Hispanic whites.

- 1) Genetics are one of many risk factors for dementia. Research has found that a gene called ApoE4 can increase your risk for Alzheimer's. The prevalence of the APOE e4 allele has consistently been found to be higher in Black Americans than non-Hispanic whites. Similarly, another gene associated with Alzheimer's disease, ABCA7, is also an increased risk in Black Americans. New clinical trials are starting to take into account the genetics behind AD such as the Generations study, just opening at the BU ADC.
- 2) Socioeconomic factors such as living within higher rates of poverty can be a risk factor for developing AD. According to the Federal Safety Net, 8.3% of non-Hispanic White Americans are living at the poverty level and 22.0% of Black Americans are living at the poverty level. Research has shown that individuals who are living at the poverty level are more likely to develop Alzheimer's disease.
- 3) Vascular Conditions such as diabetes and high blood pressure have been found to be a risk factor for developing AD and other forms of dementia, such as vascular dementia, which is due to strokes. Research has shown that Black Americans have a 60% higher risk of type 2 diabetes. Weight has also been shown to be a risk factor. Black Americans have a higher prevalence of being overweight and obese compared to non-Hispanic whites, which has a strong relationship with diabetes and hypertension.
- 4) Black Americans are less likely to go to the doctor's office and get help with memory problems. It is for this reason that when they come to medical attention, the Alzheimer's disease has often progressed. It has also been documented that Black Americans are less likely than

In This Issue

Congratulations, Ms. Val Nolen, for over 20 years of advocacy work and leading our **BU ADC Community Action Council**

Read more about our



Val Nolen receiving an award from Mike Kincade, BU ADC Advocate, for her service

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non-Hispanic whites to receive Alzheimer's treatments, such as acetylcholinesterase inhibitors (such as donepezil, brand name Aricept) or memantine (brand name Namenda).

It has been noted that many Black Americans are hesitant to participate in research because of the history of how this population was treated in past clinical research. The Boston University Alzheimer's Disease Research Center is determined to break that stigma and is working hard to understand the Alzheimer's disease disparity among Black Americans, but we can't do it without your help. We ask you to participate in research to help us gain a better understanding of not just why Black Americans are at an increased risk of developing AD, but what can be done about it. We are determined to help all individuals live longer and healthier lives.

Please call (617) 358-5382 or email JoinADC@bu.edu or visit our website: http://www.bu.edu/alzresearch/ for more information about participating in research.

BU ADC in the Community

Meeting of The Minds

In collaboration with the BU ADC, Alzheimer's Association, Brigham and Women's Hospital Center for AD Research, and the Mass ADRC, these informative workshops take place every other month in the Boston community and include a regular discussion with local researchers on topics like normal aging, memory problems, keeping your brain healthy, and available resources in your community. Please visit the BU ADC Website Calendar to view upcoming Meeting of the Minds Workshops.

http://www.bu.edu/alzresearch/calendar/



Christina DiTerlizzi, Assistant Director of the Outreach, Recruitment, and **Education Core, speaks with people** from the Dorchester Community about BU ADC research.

Memory Sunday

Memory Sunday, the SECOND SUNDAY IN JUNE, is a designated Sunday within congregations serving African Americans that provides education on Alzheimer's prevention, treatment, research, and caregiving. The purpose of MEMORY SUNDAY is to utilize the power and influence of the African American pulpit to bring national and local attention to the tremendous burden that Alzheimer's disease and other dementias are having on the African American community, as well as to

distribute the facts about Alzheimer's, encourage participation in research studies, and support persons living with Alzheimer's and their caregivers. On June 10th, 2018, the BU ADC partnered with the Berea SDA Church in Dorchester, Dementia Friendly Boston, Massachusetts Alzheimer's Disease Research Center and the Alzheimer's Association. and the Executive Office of Elder Affairs and together hosted the very first Memory Sunday in the Northeast. The event was a huge success, and we encourage all churches across the country to participate next year on Sunday, June 9th, 2019.

For more information about Memory Sunday, visit the Balm in Gilead website: http://brainhealthcenterforafricanamericans.org/memory-sunday

About Us

The Boston University Alzheimer's Disease Research Center (BU ADC) aims to reduce the human and economic costs of Alzheimer's disease through the advancement of knowledge. We conduct cutting-edge Alzheimer's research and provide education about aging and dementia to professionals and communities in Boston and beyond.

The BU ADC Education core publishes the BU ADC Bulletin annually. It includes stories about research findings, new studies, and more.

BU ADC Bulletin Staff

Publisher & Co-Editor-in-Chief: Andrew E. Budson, MD. Outreach, Recruitment & **Education Core Director**

Co-Editor-in-Chief: Maureen K. O'Connor, PsyD, Outreach, Recruitment & **Education Core Associate Director**

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Comments or questions for Bulletin staff & interested in research participation?

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Other questions?

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BU ADC Leadership

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Community Events & Programs

The BU ADC holds many educational events and programs for community members, and



Associate Center

Director and ORE Core Director our faculty speaks at a variety of community events throughout Massachusetts, Southern New Hampshire, Rhode Island, and Eastern Connecticut. We also conduct numerous educational activities for healthcare professionals. We are able to tailor each lecture

and presentation to the needs of the audience.

Visit our online calendar to learn more about upcoming presentations and call our Center if you would like to schedule a time for us to speak to your group. To request a speaker for a community education event, get in touch!

E: JoinADC@bu.edu | P: 857-364-2140

HOPE Appreciation Brunch 2018

The Boston University Alzheimer's Disease Center's main research registry — HOPE, or Health Outreach Program for the Elderly — held a special event for the study's 400 volunteers. The HOPE APPRECIATION BRUNCH gave BU ADC leadership an opportunity to thank HOPE participants for the contributions they make to a variety of



studies and to a future without Alzheimer's. It was a special day and enjoyed by everyone who attended.



Dr. Ann McKee named on TIME magazine's annual list of the 100 Most Influential People in the World, 2017 Bostonian of the Year and the 2018 Henry Wisniewski Lifetime Achievement Award in Alzheimer's Research at AAIC!

Congratulations to Dr. Ann McKee! Her work on Chronic

Traumatic Encephalopathy (CTE) has truly changed the world, including how sports such as football, hockey, rugby, and soccer are played from the professional level down to that of youth athletes. Her work also has far-reaching implications for Veterans who may develop CTE after being exposed to blasts and other military exposures to trauma. She has shown



Dr. Ann McKee

that by being a superb clinician-scientist and a tireless advocate for the implications of your research you can make the world a safer place. Dr. McKee runs the largest CTE Brain Bank in the world, including over 320 brains that have been diagnosed with the disease. She was the first scientist to report a link between motor neuron disease and CTE. She led the team that created the neuropathologic criteria for the disease by defining the changes in the brain that must be observed for the diagnosis of CTE and establishing the novel staging system for the condition.

Advocacy in Washington, D.C.

This past June, nearly 1,300 Alzheimer's advocates convened in Washington, D.C. for the Annual Alzheimer's Advocacy Forum. Every state was represented, with constituents from a variety of districts there to talk about how Alzheimer's disease had affected



BU ADC Recruitment Coordinator, in D.C. for the Annual Alzheimer's Advocacy Forum

them and why the 2018 Asks are so important. The first request was for an increase in research funding; the second for support of the Building Our Largest Dementia (BOLD) Infrastructure Act, legislation designed to support those affected by the growing Alzheimer's epidemic; the third for support of the Palliative Care and Hospice Education Training Act (PCHETA). Nicole Gullotti, the Recruitment Coordinator for the BU ADC, joined the Massachusetts/ New Hampshire Chapter as the Ambassador to Senator Markey. She said her experience "further showed why the research we do back in Boston is so important and how our participants are making a real difference." Several of our ADC HOPE participants also attended as advocates. To learn more about the forum and the subsequent impact, visit: https://alz.org/forum/overview.asp. Thank you for volunteering — your participation holds weight on both Beacon Hill and Capitol Hill!

VALITS

CURRENTIV

STUDY TITLE	STUDY DESCRIPTION	STUDY AGE RANGE	CURRENTLY RECRUITING
Health Outreach Program for the Elderly (HOPE)	HOPE is the main registry of participants. People who join HOPE attend a yearly visit in which their memory and thinking abilities are evaluated. Following their appointment, participants receive feedback on their results. They also participate in other BU ADC-affiliated studies. <i>Locations in Boston and Needham.</i>	55+	Healthy Adults, MCI, AD
Alzheimer's Disease Neuroimaging Initiative 3	ADNI 3 aims to determine the relationships between the clinical, cognitive, imaging, genetic and biochemical biomarker characteristics of the entire spectrum of Alzheimer's disease (AD). <i>Located in Boston</i> .	55-90	MCI, AD
Home-Based Exercise Study	This study is investigating the effects of a home-based exercise program on cognitive functioning. The goal is to examine whether digital self-monitoring of physical activity can improve cognition and functional fitness compared to an aerobic exercise program of the same duration. <i>Located in Boston.</i>	55-85	Healthy Adults
The Light Study	This study is designed to research a new system designed to measure brain activity by taking a series of measurements while a variety of tasks are performed. <i>Located in Bedford</i> .	65-90	Healthy Controls and MCI
DIAGNOSE CTE Research Project	This new project entitled Diagnostics, Imaging, And Genetics Network for the Objective Study and Evaluation (DIAGNOSE) of Chronic Traumatic Encephalopathy (CTE) is looking to develop diagnostic criteria for CTE. This study is funded by the NIH/ NINDS. Located in Boston, New York City, Las Vegas, and Scottsdale.	45-74	Control
Memory in AD	This study looks at participant responses to certain cognitive testing. Research suggests that patients with different types of brain problems perform differently on certain tests. The goal of this study is to better understand how different brain problems affect perception, thinking and memory, hopefully leading to better diagnostic evaluations. <i>Located in Boston.</i>	65-90	Healthy Adults, MCI, AD
Optical Spect Study	This study is looking to detect changes in the brain associated with aging and cognitive impairment using near infrared spectroscopy (NIRS). <i>Located in Boston.</i>	18-89	Control, MCI
Subclinical Paroxysmal EEG Abnormalities in Alzheimer's Disease	The purpose of this research study is to find out if patients with early Alzheimer's disease have periods of abnormal brain activity, such as seizures, that might explain some of their memory problems. <i>Located in Boston.</i>	50-90	Healthy adults, MCI, LD
Utility of EEG in a Memory Disorders Clinic	Study investigating the use of event-related potentials to diagnose AD in the clinic. Ultimately the project will compare the diagnosis of AD using event-related potential techniques to amyloid PET techniques as a gold standard. <i>Located in Boston</i> .	50-100	Anyone with a Memory Disorder
Spatial Navigation	This program uses MRI to study the parts of the brain that play a role in spatial navigation, specifically the ability for a person to orient oneself in their surroundings. Participants will undergo an MRI scan and will be shown different pictures while in the scanner. Located in Boston.	20-35 and 60-80	Control, MCI
Chronic Stress Research Study for African American Older Adults	This study assesses the relationship between chronic stress and cognition in older African American adults. <i>Located in Boston.</i>	55-75	Control

Interested? Contact the BU ADC recruitment coordinator at 617-358-5382 or joinADC@bu.edu

If you don't see a study that interests you right now, please check back on our website as we always have new studies starting.

www.bu.edu/alzresearch/research/recruiting-studies/

The BU ADC HOPE Study is looking for New Volunteers

The Boston University Alzheimer's Disease Center is opening a new extension of the current Research Registry (also known as the HOPE Study). We are looking for potential participants with a history of playing contact sports, specifically soccer, football and hockey. If you or someone you know have a history playing any of these three sports and would like to learn more about the program, please call or e-mail us and we will provide additional information.

Want more information? Contact joinadc@bu.edu or 617-358-5382

Research Updates

Eisai and Biogen Announce Positive Topline Results of the Final Analysis for BAN2401 at 18 Months

The BU ADC took part in a successful Phase II study with BAN2401, an anti-amyloid beta protofibril antibody. Eisai and Biogen announced in early July that the drug has shown positive results. The final analysis at 18 months of the 856-patient phase II clinical study in early Alzheimer's disease demonstrated statistically significant slowing in clinical decline and reduction of amyloid beta accumulated in the brain. First late-stage study data successfully demonstrated potential disease-modifying effects on both clinical function and amyloid beta accumulation in the brain. These new results, if corroborated by important secondary analyses, would provide compelling evidence to further support amyloid hypothesis as a therapeutic target for Alzheimer's disease. The next step will be the secondary analyses, followed by a phase III clinical trial.

Investigating the Use of Event-Related Potentials To Diagnose AD in the clinic

Kate Turk, MD, Instructor in Neurology at BUSM and Physician Scientist at the Veterans Affairs (VA) Boston Healthcare System, was awarded the Alzheimer's Association Clinical Fellowship Award under the mentorship of Dr. Andrew Budson in 2017. Her study, investigating the use of event-related potentials to diagnose AD in the clinic, is entering its second year. The funding of \$150,000 over three years includes amyloid PET scans for participants as well as quantitative MRI techniques. Over 120 subjects have had EEGs captured and, of that group, a subset has had amyloid PET scans. Initial analyses investigating event-related potential features which are predictive of positive amyloid PET status were presented at the AAIC conference in Chicago this July.

Developing Methods of Diagnosing Chronic Traumatic Encephalopathy During Life

The DIAGNOSE CTE Research Project is a \$16 million, 7-year, multi-site study, funded by the National Institutes of Health, led by Robert Stern, PhD, Clinical Core Director of the BU ADC, with co-principal investigators at the Cleveland Clinic, Banner Alzheimer's Institute, and Harvard Medical School. The project is entering the second year of enrollment. CTE is a progressive degenerative brain disease, similar to Alzheimer's disease, which is associated with repetitive hits to the head, such as those experienced in football and other contact sports. Currently, CTE can only be diagnosed after death. The major goal of this research project is to develop methods of diagnosing CTE during life and to examine risk factors for the disease. The study is looking for volunteers ages 45-74 who are either former NFL players, former college football players, or healthy men who have never participated in contact sports. For more information, go to www.diagnosecte.com or contact the Recruitment Coordinator at 617-358-6562/diagnose@bu.edu.

Youth Football Linked To Earlier Brain Problems

A new study by researchers at the BU School of Medicine (BUSM) suggests that playing youth tackle football may lead to earlier onset of cognitive, behavior, and mood symptoms in later life. The researchers conducted telephone clinical interviews with family and friends of 246 deceased football players and found that those who began tackle football before age 12 experienced symptoms an average of 13 years earlier than those who started playing at age 12 or older. "Thirteen years is a huge number," says Michael Alosoco, PhD, BUSM assistant professor of neurology and lead author of the study, published April 30, 2018, in the *Annals of Neurology*. "The younger they started to play football, the earlier these symptoms began."

Dr. Michael Alosco and Colleagues Are Working Toward Filling Knowledge Gaps in Exposure Science, Neuroimaging, and Neuropathology

Michael Alosoco, PhD, and colleagues have been awarded a grant by the National Institute of Neurological Disorders and Stroke. They will be using special brain imaging scans called fluid attenuated inversion recovery (FLAIR) and diffusion MRI to examine cerebral small vessel disease as a long-term consequence of repetitive head impacts that affect later-life clinical function. Participants will include former NFL players from Dr. Stern's DIAGNOSE CTE Research Project, as well as participants with Alzheimer's disease dementia from the BU ADC.

Dr. Jesse Mez and Colleagues Are Leveraging Existing Aging Research Networks To Investigate Traumatic Brain Injury (TBI) and Alzheimer's Disease (AD) and Related Dementia Risk

People who serve in the military have specific risk of exposure to traumatic brain injury (TBI) in addition to the typical risks faced by all people. TBIs can be fatal or cause severe disability, but many people survive TBI and recover well. The goal of this study is to study the late-life health associations of TBI and military service by using detailed data already available from a large-scale population-based longitudinal research study of veterans and civilians. Jesse Mez, MS, MD, and colleagues will use extensive existing resources from the Framingham Heart Study, which includes access to a long-committed volunteer study sample, as well as health, lifestyle, genetic, cognitive, brain imaging and brain autopsy data. We will also collect new self-report TBI and military service data using methods recommended by the National Institutes of Health. This study will comprehensively characterize the role of TBI and military service in a wide array of cognitive and functional outcomes, as well as identify factors that may modify these relationships.

Researcher Dr. Lee Goldstein Shows Hits, Not Concussions, Cause CTE

Lee Goldstein, MD, PhD, and researchers have identified evidence of early Chronic Traumatic Encephalopathy (CTE) brain pathology after head impact—even in the absence of signs of concussion. Early indicators of CTE pathology not only persisted long after injury but also spread through the brain, providing the best evidence to date that head impact, not concussion, causes CTE.

Interview with Michael L. Alosco, PhD

In August 2018, he received a five-year K23 Award from the National Institutes of Health's National Institute of Neurological Disorders and Stroke (NINDS).

Michael L. Alosco, PhD, Assistant Professor of Neurology at BUSM, is a clinical neuropsychologist and investigator at the BU Alzheimer's Disease Center (ADC) and BU CTE Center. He was recently the first author on an *Annals of Neurology* manuscript examining the relationship between youth tackle football and long-term neurobehavioral symptoms in deceased tackle football players with neuropathologically-diagnosed CTE (see page 5).



His career, thus far, has been devoted to the investigation of the diagnosis, risk factors, and in vivo biomarkers of neurodegenerative diseases, with a focus on the role of cerebrovascular disease in the pathogenesis of AD, CTE, and related dementias. He earned his Ph.D. from Kent State University (KSU) in clinical psychology in 2015, with emphasis in neuropsychology. He completed his post-doctoral fellowship at the BU ADC and BU CTE Center, initially on a NIA-funded T32, followed by a two-year NINDS-funded National Research Service Award (NRSA) F32 Award. He became Assistant Professor of Neurology at BUSM in 2018.

Dr. Alosco is currently an investigator in the NIA-funded BU ADC Clinical Core, where he participates in weekly multidisciplinary diagnostic consensus conferences to assist with clinical diagnoses for participants. For the past 3 years, he has conducted weekly clinical interviews with next-of-kin of brain donors with a history of exposure to repetitive head injuries and neuropathologically-confirmed CTE for Dr. McKee's U01 study. He further plays a critical role as an investigator on Dr. Stern's U01 examining the clinical presentation and in vivo biomarkers for CTE in living participants. Because of these experiences, he is one of the few clinicians in the country with hands-on training and experience in the clinical assessment of the long-term clinical consequences associated with repetitive head injuries, especially CTE. His research has led to high impact publications on the long-term cognitive and neuropsychiatric disturbances associated with contact and collision sport participation.

In August 2018, he received a five-year K23 Award from the National Institutes of Health's National Institute of Neurological Disorders and Stroke (NINDS). His other work is funded by the National Institutes of Health and the Alzheimer's Association. His ongoing and future research will examine the specific contribution of cerebrovascular disease to the clinical and neuropathological expression of AD and CTE. (See the Research Section page to learn more about Dr. Alosco's current research)

Honorary and Memorial Contributions

The Boston University Alzheimer's Disease Center is involved in a variety of clinical, research and educational activities. Research study participants, families and community leaders often wish to contribute to the fight against Alzheimer's disease. We welcome honorary and memorial donations. These gifts are an excellent way to honor a family member or friend while contributing to the advancement of Alzheimer's research. To make a donation, please call Suzanne Maselli in the BU Development Office at 617-638-5676 or visit us online: www.bu.edu/alzresearch.

The BU ADC would like to recognize the following private donors for their greatly appreciated contributions, which were made between July 2017 and June 2018. Please note that anonymous donors are not listed.

In Honor of Charles E. Burton
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BU ADC Happenings

Welcome

The Boston University Alzheimer's Disease Center (BU ADC) and its affiliate, the Chronic Traumatic Encephalopathy Center (CTE Center), would like to extend a warm welcome to new faculty members and employees:

BU ADC Staff

Elizabeth Fay, Neuropathology Core & CTE Center Administrative Assistant. Elizabeth, came to the CTE Center after nine years at the School of Dental Medicine. She has a degree in history from Boston University. In 2016 she was awarded the Henry M. Goldman Award for Distinguished Service.

Caroline Labriola, Psychometrician for the Health Outreach Program for the Elderly (HOPE) Study. Caroline, graduated from Smith College in 2018 with a Bachelors of Arts in Neuroscience and a minor in Chemistry. She was a member of the Smith College field hockey team all four years, and she worked in a neuroscience lab studying circadian rhythms while at Smith. During her senior year she completed an honors thesis in collaboration with a lab at UMass Amherst on the effects of circadian rhythm protein modulation in cancer cells as a potential cancer therapeutic agent.

Olivia Haller, DIAGNOSE CTE Research Project Research Assistant. Olivia, joined the DIAGNOSE CTE Research Project team in May 2018 after graduating from Colgate University. Her primary focus with the team is on recruitment and outreach.

Sienna Carpenter, Clinical Trials Research Coordinator.

Sienna, joined the BU ADC Clinical team in June 2018 after graduating with her BS in Psychology with a concentration in Neuroscience from the University of Massachusetts Amherst. Sienna, worked in a neuroscience laboratory that studied sleep and its impact on cognition and memory in preschool-aged children. In addition, during her senior year she completed a research thesis that looked into attachment and how it impacts human behavior in relationships.

BU ADC Education Component Trainees

Jonathan Cherry, PhD, received his doctoral degree in Pathology from the University of Rochester in 2015. Dr. Cherry's research interests focus on understanding how neuroinflammation after repetitive traumatic brain injury contributes to CTE pathogenesis. Specifically, Dr. Cherry seeks to identify what role reactive microglia and inflammatory cytokines play in the early onset of hyperphosphorylated tau accumulation and spread.

Olga Minaeva, PhD, received her doctoral degree in Physics in 2009 from the Moscow State Pedagogical University. Dr. Minaeva's research interests are truly cross-disciplinary, covering theoretical and experimental areas of quantum physics, photonics, electronics, device engineering, biological imaging, and practical application of developed devices.

Zhang Xiaoling, PhD, received her doctoral degree in Bioinformatics from Boston University. Dr. Xiaoling's research interests include developing methods for analyzing large-scale genetics and genomics data including microarray, genotype and next-generation sequencing data; and translating these findings to the molecular mechanisms underlying human genetic disorders.

Quishan Tao, MD, MHS, received his doctoral degree from Henan Medical University (Zhengzhou, China). Dr. Tao's research interests include data analysis in clinical research, bioinformatics, and longitudinal big data, using both SAS and R to conduct reproducible research with confidence.

Sekio Ikezu, MD, received her doctoral degree from Gunma University Faculty of Medicine, Japan. Dr. Ikezu's research interests include developing skills to analyze the big data of the RNA sequencing and proteomics from AD patients and its association with their demography.

Ella Zeldish, PhD, received her doctoral from Oral Biology and Physiology and Pharmacology, Tel Aviv University, Sackler School of Medicine, Israel. Dr. Zeldish's research is aimed to explore the role of Klotho protein in the brain as a target for prevention and treatment of age-related neurodegeneration in AD, multiple sclerosis, ALS, as well as in other neurodegenerative diseases.

Goodbyes

Many thanks and best wishes to departing BU ADC and CTE Center staff:

Jason Miller, UNITE Administrative Assistant, left to pursue his MBA fulltime at Boston University School of Business.

Rose Healy, Psychometrician for the Health Outreach Program for the Elderly (HOPE) Study, left to pursue her medical degree at UMASS Medical School.

Claire Thomas, Clinical Trials Research Assistant, left to pursue her PhD in Epidemiology from the University of Pittsburgh.





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Register Today!

3rd Annual BU Chronic Traumatic Encephalopathy Continuing Medical Education Course

Dates: October 24th and 25th, 2018

Location: Boston University, Metcalf Trustee Center, 1 Silber Way, Boston, MA 02215

The Boston University Alzheimer's Disease and Chronic Traumatic Encephalopathy Center and the US Department of Veterans Affairs will be holding a Continuing Medical Education Course on October 24th and 25th. During this two-day course participants will learn about all aspects of CTE, including its pathology, pathophysiology, genetics, biomarkers, imaging, clinical syndromes, clinical criteria, differential diagnosis, impact on veterans and implications for the family, and what it is like to live with or worry about the disease.

We will be joined by distinguished presenters from our center and from around the world, as well as athletes who will talk about their experience playing contact sports. Continuing Medical Education Credits will be provided for Physicians, Psychologists, and Athletic Trainers.

Please refer to the conference website for details. www.cteconference.com

New This Year! Free & Open to the Public — CTE Information Session — October 23rd

Boston University Questrom School of Business Rafik B. Hariri Building, Room HAR 105, 595 Commonwealth Avenue, Boston, MA 02215 6:30-7pm Light Refreshments | 7-9pm Free Conference

Visit the conference website for more information!