SLAM-DUNC

Symposium for Learning about Alzheimer's Disease Medical Research at Duke and UNC

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

Duke UNIVERSITY

NCCentral UNIVERSITY

UNC PEMBROKE

ECU

Duke Karsh Alumni Center
Durham, North Carolina
June 24-25, 2022

Sponsored by the Duke-UNC Alzheimer's Disease Research Center and the Translating Duke Health Initiative

Symposium Agenda

Friday, June 24, 2022

5:00 – 5:25 Welcome and opening remarks
Duke-UNC ADRC REC Co-Directors
Jan Busby-Whitehead, MD, *Professor of Medicine, Geriatrics, University of North Carolina at Chapel Hill*
Kyle Walsh, PhD, *Associate Professor of Neurosurgery, Duke University School of Medicine*

5:30-6:30 Structured Networking Session

6:30-7:00 Informal networking and Happy Hour

Saturday, June 25, 2022

8:00 – 9:00 Arrival, poster set-up, and breakfast

9:00-10:00 Keynote Speaker: "Amyloid on the brain, Alzheimer's on the mind"
Jason Karlawish, MD, *Professor of Medicine, Geriatrics, Pearlman School of Medicine, University of Pennsylvania*

10:00-10:30 "Development of a home-based stress management toolkit for dementia caring dyads"
Melissa Harris, PhD, RN, REC Scholar
Clinical Associate, School of Nursing, Duke University

10:30-10:45 "Predicting PET biomarkers of Alzheimer's disease with MRI using deep convolutional neural networks"
Christopher Lew, *3rd year medical student*
Duke University School of Medicine

10:45-11:00 "Cognitive screening and dementia diagnoses in primary care settings"
Chelsea Perfect, MD, MPH, Resident
Department of Medicine, Duke University School of Medicine

11:00-11:30 "Deciphering the aged tau species that evolve during normal aging"
Jui-Heng "Henry" Tseng, PhD, Lead Research Scientist
Postdoctoral Fellow, Department of Neurology, University of North Carolina School of Medicine

11:30-11:45 Announcements
Video messages from Coach K and Coach Williams

11:45-12:30 Lunch

12:00-2:00 Poster Session
12:00-1:00 Session 1: Odd poster numbers
1:00-2:00 Session 2: Even poster numbers

2:00 – 3:00 Keynote Speaker: "Our aging brains: a tug-of-war between pathology and resiliency"
Todd Cohen, PhD
Associate Professor, Department of Neurology, University of North Carolina School of Medicine

3:00-3:30 "Developing new biomarkers for Alzheimer's Disease and related Tauopathies Diagnosis"
Ling Wu, PhD, REC Scholar
Research Assistant Professor, BRITE Institute of North Carolina Central University

3:30-3:45 "Non-pharmacologic avenue targets the autophagy-lysosomal pathway to offset the synaptic decline in a brain explain model of age-related proteostatic stress"
Michael Fernandes de Almeida, MS
Department of Biology, University of North Carolina - Pembroke

3:45-4:00 "Lack of ADAP1/Centaurin-α1 rescues cognitive and synaptic deficits in a mouse model of Alzheimer's disease"
Erzsebet Szatmari, PhD,
Assistant Professor, Department of Physical Therapy, College of Allied Health Sciences, East Carolina University

4:00-4:15 Poster Awards and Closing Remarks

4:05-5:30 Happy hour and informal networking

Friday Night Networking Session

5:30 – 6:00 – Session 1 Topic Groups

Biomarkers 1
Andy Liu
Kathleen Walter
Michael Lutz
Reeva Patel
Samuel Strader
Srinivas Sriramula

Biomarkers 2
Cairo Hyers
Drew Theobald
Erzsebet Szatmari
Mariah Stewart
Miles Berger
Rohan Parekh
Xian Chen

Clinical 1
Carolina Quiroga
Donna Roberson
Jan Busby-Whitehead
Jenni Shafer
Kim Johnson
Meredith Srour
Niccolo Terrando
Wayne Feng
Yuan Zhang

Clinical 2
Chelsea Perfect
Ellen Roberts
Eric Griffith
Harvey Cohen
Kimberly Hreha
Minh Huy Giang
Patrick Smith
Murali Doraiswamy

Clinical 3
Audrey Zhang
Claire Klein
Gwenn Garden
Jason Karlawish
Lauren Winslow
Maria Boylan
Mike Devinney
Sameer Kunte
Sheng Luo

Engagement 1
Andrea Bozoki
Heidi Roth
Julie Gaven
Lynn Harris
Marianne Chanti-Kettrl
Victoria Huggins

Engagement 2
Keturah Faurot
Jenna Merenstein
Kathleen Welsh-Bohmer
Mallory Feldman
Melissa Harris
Whitney Robinson

Neuroimaging
Alexandra Badea
Denys Bashtovyy
Heather Whitson
Keara Cousins
Kylie Joyce
Nicolas Pirrozi
Simon Davis
Wyatt Bruner

Neuropath 1
Ankit Choudhury
Ashley Chi
Ben Bahr
Rachel Kohmann
Giulia Fragola
Jonathan Schisler
Michael Almeida

Neuropath 2
Erin Grieg
Jared Tuton
Kyle Walsh
Dayami Lopez
Henry Tseng
Karen Farizatto
Miles Bryan

6:00-6:30 Session 2 – Cross-Overs
- Biomarkers 1/Clinical 1
- Biomarkers 2/Neuropath 1
- Clinical 2/Engagement 1
- Clinical 3/Neuropath 2
- Engagement 2/Neuroimaging

**Tables will be marked with group assignments.*

Long COVID in K18-hACE2 mice causes persistent brain inflammation and neurocognitive impairment
Jeffrey B. Eells, Department of Anatomy and Cell Biology, East Carolina University

Poster #1

Organophosphate toxin exposure, a military-related vulnerability that increases dementia risk, elicits synaptopathy, astrocytic activation, and altered structural dynamics
Karen L. G. Farizatto, Department of Biology, University of North Carolina - Pembroke

Poster #2

An integrated genome and phenome-wide association study approach to understanding Alzheimer's disease predisposition
Archita S. Khaire, Department of Neurosurgery, Duke University

Poster #3

Alzheimer's Disease Diagnosis-Seeking In Mexico and the United States: Barriers and Motivations
Eric Griffith, Samuel DuBois Cook Center, Duke University

Poster #4

Immune activation and associative learning deficits: sex-dependent effects
Nicolas Pirozzi, Department of Psychology, University of North Carolina - Wilmington

Poster #5

Cognitive Screening and Dementia Diagnoses in Primary Care Settings
Chelsea Perfect, Department of Medicine, Duke University

Poster #6

Integrin adhesion dynamics may govern the dementia risk factor arising from cholinergic crises
Jared J. Tuton, Department of Biology, University of North Carolina - Pembroke

Poster #7

The Impact of Vision and Hearing Impairment on Cognitive Function and Loneliness: Evidence from the Mexican Health and Aging Study
Kimberly Hreha, Department of Orthopaedic Surgery, Duke University School of Medicine

Poster #8

Non-pharmacologic avenue targets the autophagy-lysosomal pathway to offset the synaptic decline in a brain explant model of age-related proteostatic stress
Michael Fernandes de Almeida, Department of Biology, University of North Carolina - Pembroke

Poster #9

Improving Diversity in a National Biomarker Study: The ADNI3 and Duke experience
Adaora Nwosu, Department of Psychiatry and Behavioral Sciences, Duke University

Poster #10

Prenatal Alcohol Exposure Causes Persistent Neuroinflammation and Age- and Sex- Specific Effects on Cognition and Metabolic Outcomes in an Alzheimer's Disease Mouse Model
Kathleen R. Walter, UNC Nutrition Research Institute, University of North Carolina at Chapel Hill

Poster #11

Lack of ADAP1/ Centaurin-α1 Rescues Cognitive and Synaptic Deficits in a Mouse Model of Alzheimer's Disease
Erzsebet Szatmari, Department of Physical Therapy, East Carolina University

Poster #12

Poster #13

Machine learning XGBoost classification of postoperative delirium by intraoperative EEG metrics

Sophie Wu, Department of Biomedical Engineering, Duke University

Poster #14

Blast exposure, a military-related vulnerability that increases dementia risk, produces synaptic compromise and corresponding astrocyte morphology changes in hippocampal explants

Minh Giang, Biotechnology Research and Training Center, University of North Carolina - Pembroke

Poster #15

The NC Registry for Brain Health: A State Plan to Include Under-Represented Groups in Alzheimer's Disease & Brain Health Research

Kathleen A. Welsh-Bohmer, Department of Psychiatry Behavioral Sciences, Duke University

Poster #16

Replication of Implementing a Sit-to-Stand Exercise Program in an Assisted Living

Deborah B. Hummer, McKenzie-Elliott School of Nursing, University of North Carolina - Pembroke

Self-reported increases in cognitive problems among middle and older age autistic adults
Julia Heinley, TEACCH Autism Program, University of North Carolina at Chapel Hill

Poster #17

A novel language-neutral neurocognitive screening test in African Americans
Andy Liu, Department of Neurology, Duke University

Poster #18

Discovery of small molecule activators of PLC-2, a novel therapeutic target in Alzheimer's Disease
Adam J. Carr, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill

Poster #19

The Physiological Hypotheses of Emotional Aging: Introduction and implications for Alzheimer's Disease
Mallory Feldman, Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill

Poster #20

Predicting PET biomarkers of Alzheimer's disease with MRI using deep convolutional neural networks

Christopher O. Lew, Department of Radiology, Duke University

Poster #21

Age-Related Differences in Selective Attention During Feature Search and Conjunction Search: An fMRI Study

Jenna L. Merenstein, Brain Imaging and Analysis Center, Duke University

Poster #22

Uncovering Diverse Mechanistic Spreading Pathways in Disease Progression of Alzheimer's Disease

Guorong Wu, Department of Psychiatry, University of North Carolina at Chapel Hill

Poster #23

Feasibility and preliminary outcomes of a telephone-delivered mindfulness intervention for rural African American families caring for a person with dementia

Jenni Shafer, Department of Physical Medicine and Rehabilitation, University of North Carolina at Chapel Hill

Poster #24

Duke-UNC ADRC Cores

Biomarker Core

The Biomarker Core's objective is to acquire and analyze biofluid and imaging biomarkers; characterize their relevance to AD+ADRD, and determine the underlying age-related factors that drive the development, progression, or experience of the disease; and to advise local investigators in AD+ADRD biomarker research.

Clinical Core

The Clinical Core is responsible for recruiting, clinically characterizing, and following a diverse group of participants who will provide biomarker data and brain tissue to investigators studying AD+ADRD.

Data Management and Statistics Core

The Data Management and Statistics Core offers integrated data management and statistical/ bioinformatics collaborative expertise. DMS consultation is available to all development project awardees.

Neuropathology Core

The Neuropathology Core supports research by performing postmortem histopathological analysis and providing well-annotated and high-quality postmortem tissue and biofluids to investigators studying AD+ADRD.

Outreach Recruitment and Engagement (ORE) Core

The ORE Core promotes outreach and education in the community in order to facilitate research recruitment into the ADRC and its supported projects, with a particular focus on the enfranchisement of clinically underserved groups in our region.

Research Education Component

The REC's goal is to develop future leaders in AD+ADRD research by providing early-career exposure to AD+ADRD research, delivering broad cross-campus research education, and annually selecting REC Scholars for focused research mentorship and funding.

Keynote Speakers

Jason Karlawish, MD

Dr. Karlawish is a physician and writer. He cares for patients at the Penn Memory Center, which he co-directs, and studies and writes about issues at the intersections of bioethics, aging and the neurosciences. In a widely read essay in the Journal of the American Medical Association, he introduced the concept of "desktop medicine," a theory of medicine that recognizes how risk and its numerical representations are transforming medicine, medical care, and health. His essays on the concept of "whealthcare" have raised national awareness about the tight linkages between cognitive health and financial wealth. His essays have appeared in Forbes.com, The Hill, the New York Times, the Philadelphia Inquirer, STAT news and the Washington Post. He is the author of the novel Open Wound: The Tragic Obsession of Dr. William Beaumont. Based on true events along the early 19th century American frontier, it is the story of a physician's increasing obsession with achieving fame and fortune. His book, The Problem of Alzheimer's, is an account of how Alzheimer's disease became a crisis and the steps needed to address it.

Todd Cohen, PhD

Dr. Todd Cohen is an Associate Professor in the Department of Neurology and Neuroscience Center at UNC-Chapel Hill. He received his Ph.D. from Duke University and held a postdoctoral position at the University of Pennsylvania (under Dr. Virginia Lee) where he studied the pathological underpinnings of Alzheimer's disease and related forms of dementia including frontotemporal dementia. He now has an independent research program at UNC focused on normal brain aging, a range of neurodegenerative brain disorders (including Alzheimer's disease and motor neuron diseases such as Amyotrophic Lateral Sclerosis (ALS)), and muscle inflammatory myopathies. Although distinct, these clinical syndromes have many common underlying themes that lead to their degeneration. For his efforts, Dr. Cohen has been awarded Alzheimer's Association funding, an American Federation of Aging award, a Muscular Dystrophy Association award (MDA), a CurePSP award, and is the recipient of several ongoing multi-institutional collaborative NIH grants.