



Research



South Carolina  
Alzheimer's Disease  
Research Center

2023  
MUSC CENTER FOR HEALTHY AGING  
RESEARCH SYMPOSIUM

Sponsored by:

MUSC Center for Healthy Aging &  
South Carolina Alzheimer's Disease Research Center

In partnership with:

Clemson University, Institute for Engaged Aging &  
University of South Carolina, Office for the Study of Aging



CLEMSON UNIVERSITY  
INSTITUTE FOR  
ENGAGED AGING



Office for the Study of Aging  
Arnold School of Public Health  
UNIVERSITY OF SOUTH CAROLINA

# Welcome to the MUSC Center for Healthy Aging Research Symposium



**Lori L. McMahon, Ph.D.**  
*MUSC Vice President for Research  
Interim Executive Director  
Center for Healthy Aging*

It is with great pleasure and excitement that we welcome you to the MUSC Symposium on Healthy Aging, presented in partnership with Clemson and the University of South Carolina!

Aging is not a journey towards the twilight years; it's a lifelong voyage that begins the moment we take our first breath. It's a process filled with promise, possibilities, and opportunities to achieve healthy and vibrant lives. Through your dedicated research and commitment to healthy aging, you exemplify the idea that better futures for us all are possible through discovery.



**Steven L. Carroll, M.D., Ph.D.**  
*Director, SC Alzheimer's Disease  
Research Center*

At the core of our time together over the next two days lies our shared belief in the importance of collaboration as a driving force behind research. We recognize that by working together, we uncover insights and solutions that have the potential to transform our understanding of aging and, in turn, enhance the lives of individuals as they progress through the stages of life.

As we share this time together, we encourage you to engage in open and thoughtful discussions, share your research insights, and foster collaborations that will undoubtedly contribute to a world where the journey of aging is one of vitality, wisdom, and enduring health for South Carolinians and beyond.

Thank you for being a part of this inaugural symposium, and we eagerly anticipate the wealth of ideas, discoveries, and shared experiences that will inspire us as we collectively work towards healthier aging for us all.

# Symposium Schedule - October 26, 2023

11 a.m.      **Registration Opens/Lunch Begins**

12 p.m.      **Welcome**

**Lori L. McMahon, Ph.D.**

Vice President for Research, MUSC

Interim Director, MUSC Center for Healthy Aging

12:05 p.m.   **Speaker Introduction**

**Lisa K. Saladin, PT, Ph.D., FAPTA**

Executive Vice President for Academic

Affairs and Provost, MUSC

James W. Colbert Endowed Chair

12:10 p.m.   **Aging in the State of South Carolina**

**Connie Munn, MSW**

Director, South Carolina Department on Aging

12:50 p.m.   **Break**

1 p.m.        **Session 1: Fundamental & Discovery Research**

**Moderator:** William “Dave” Hill, Ph.D. - MUSC

Targeting Brain Insulin to Improve  
Post-Stroke Cognitive Impairment

**Catrina Robinson, Ph.D.**

Associate Professor

*Medical University of South Carolina*

Immune Cell Dysfunction: A Hallmark  
of Age-Related Hearing Loss

**Hainan Lang, M.D., Ph.D.**

Professor

*Medical University of South Carolina*

The Impact of Metabolic Aging on the  
Cerebrovasculature: Relevance to Dementia

**Adviye Ergul, M.D., Ph.D.**

Professor

*Medical University of South Carolina*

Delivery of mtDNA Using Cell-Penetrating  
Peptides: A Molecular Tool for Restoring  
Damaged mtDNA in Cells

**Andrew Jakymiw, Ph.D.**

Associate Professor

*Medical University of South Carolina*

# Symposium Schedule - October 26, 2023

## 2:20 p.m. Session 2: Clinical Care & Research

**Moderator:** Vanessa Hinson, M.D. - MUSC

Genetic Counselor Administered  
Evidence-Based Interventions to Improve  
Adherence after Receiving a Genetic Result

**Anna Baker, Ph.D.**  
Assistant Professor  
*Clemson University*

Cognition and Oral Health

**Anwar T. Merchant, ScD, MPH, D.M.D.**  
Professor  
*University of South Carolina*

Balance and Strength Interventions to  
Support the Aging Process

**Jessica Avilés, Ph.D.**  
Assistant Professor  
*Clemson University*

Differences in Home Health Care Access  
and Functional and Functional Status Among  
Medicare Beneficiaries With and  
Without Dementia

**Sara Knox, PT, DPT, Ph.D.**  
Associate Professor  
*Medical University of South Carolina*

## 3:45 p.m. Meet the Joe - Tour of Joe Riley Stadium

## 4:30 p.m. - 6 p.m. Collaboration, Cocktails and Conversation Poster Session

Sponsored by: University of South Carolina  
College of Social Work SeniorSMART®  
Center of Economic Excellence: SMARTHome

**Dinner on your own!**  
**Enjoy the tasty cuisine scene of Charleston.**

# Collaboration, Conversation and Cocktails Poster Session

Sponsored By:

USC SeniorSMART® Center of Economic Excellence: SMARTHome

Poster #:	Poster Title:	Submitted By:
1	A Multi-Methods Exploration of Expectations and Preferences for Digital Cessation Treatment Among	Fahey, Margaret
2	Non-electrophilic Bach1 inhibitor attenuates progression of Alzheimer's Disease-like Pathology in the APP/PS1 mouse model.	Dutta, Debashis
3	Pharmacological activation of Kv11.1 potassium channel in cancer cells produces a tumor-killing immune response	Vakili Saatloo, Maedeh
4	Lysosomal mechanisms of Oxidation resistance 1 (OXR1)-mediated neuroprotection in preclinical models of Parkinson's disease	Ammal Kaidery, Navneet
5	Endothelin-1 (ET-1) mediates brain pericyte senescence in diabetes-mimicking conditions: Relevance to dementia	Edegrton, Mia
6	5xFAD-Induced Hearing Loss in ahl-Corrected C57BL/6 Mice (FAD2) Does not Correlate With Amyloid Deposition	Sha, Suhua
7	Activation of TRPA1 channel by Cannabidiol (CBD) leads to Ca <sup>2+</sup> -dependent degradation of EGFR and colon cancer cell death.	Eskandari, Najmeh
8	Targeting the KCa3.1 potassium channel arrests ER <sup>+</sup> breast cancer growth and re-sensitizes to drug resistance	Delisi, Davide
9	Red Blood Cells shuttle beta amyloid between brain and heart: implications for the pathogenesis and the progression of Alzheimer Disease and Cardiomyopathy	Bacchin, Camilla
10	Cerebral hypoperfusion activates the brain endothelin receptor A (ETA) and exerts negative effects on cognitive functions in diabetic rats	Abdul, Yasir
11	Cognitive and Functional Connectivity Outcomes from a Phase I Trial of Accelerated Intermittent Theta Burst Stimulation in Amnesic MCI	Aghamoosa, Stephanie

# Collaboration, Conversation and Cocktails Poster Session

Sponsored By:  
USC SeniorSMART® Center of Economic Excellence: SMARTHome

Poster #:	Poster Title:	Submitted By:
12	Reactive Carbonyl Species and Chronic Disease: A qNMR Investigation of Seaweed for Anti-diabetic Agents	Hanna, George
13	Exploring sex differences of in vivo Locus Coeruleus physiology	Rae, Rosaria
14	Reducing fear of falling among older adults who live alone or have osteoporosis	Kemper, Karen
15	Exploring the transportation needs of older adults aging in place in South Carolina	Hucek, Ally
16	Obesity and Hyperinsulinemia Impair Insulin Receptor Transport in the Brain Microvascular Endothelium	Dilucia, Stephanie
17	Addressing the Mental Health Crisis Among People with Post-Stroke Aphasia	Blackett, Deena
18	Loss of Presenilin-2 impairs cognitive and cardiac function in a murine model	Butler, Helen
19	An Advanced Human Brain Organoid Culture System to revert senescence-induced neurodegenerative diseases	Krieg, Carsten
20	Polysaturated Fatty Acid (PUFA)-Enriched Diet May Minimize Vascular Aging Following VCID-Associated Cerebral Hypoxia	Tomberlin, Jensen
21	Ceramide-Mediated Restoration of Mitophagy: A Novel Approach to Mitigate Neuronal Death in Neurodegenerative Diseases	Walton, Chase
22	Endothelin-1 (ET-1) mediates endothelial mesenchymal transition in diabetes: Impact of potential sex differences	Abdelsaid, Kareem

# Symposium Schedule - October 27, 2023

7:30 a.m. Registration Opens/Breakfast Begins

8 a.m. Opening Remarks

**Steven L. Carroll, M.D., Ph.D.**

Professor, Medical University of South Carolina  
Director, Carroll A. Campbell, Jr. Neuropathology Laboratory  
Director, SC Alzheimer Disease Research Center at MUSC

8:10 a.m. Session 1: Alzheimer's Disease and Related Dementias

**Moderator:** R. Amanda C. LaRue, Ph.D. - MUSC

Neurodegenerative Diseases in  
South Carolina: Making Sense of our  
Silver Tsunami

**Steven L. Carroll, M.D., Ph.D.**

Professor  
*Medical University of South Carolina*

Cognitive Training: Does it Maintain  
Brain Health and Everyday Function?

**Lesley Ross, Ph.D.**

Professor  
*Clemson University*

Targeting Serine Metabolism to Reverse  
Age-Related Memory Loss

**Joseph A. McQuail, Ph.D.**

Assistant Professor  
*University of South Carolina*

Early Palliative Care for Patients  
with Dementia

**Amanda Overstreet, D.O.**

Assistant Professor  
*Medical University of South Carolina*

Alzheimer's Disease Research in the  
Veteran's Administration

**Jacobo Mintzer, M.D., MBA**

Assistant Professor  
*Medical University of South Carolina*

10 a.m. Break

Nano-ERASER: A Novel Intracellular  
Protein Degradation Approach and its  
Application in Alzheimer's Disease Therapy

**Peisheng Xu, Ph.D.**

Professor  
*University of South Carolina*

# Symposium Schedule - October 27, 2023

Let's Build a Living Lab for Digital Health  
Technologies in ADRD Research

**Christopher L. Metts, M.D.**  
Associate Professor  
*Medical University of South Carolina*

Socio-Contextual Factors Related to  
Health and Well-Being in Diverse Older  
Adult Communities

**Alyssa A. Gamaldo, Ph.D.**  
Professor  
*Clemson University*

## 11:10 a.m. Lunch & Alzheimer's Discussion Panel: A Brighter Future for SC

**Moderator:** Lori L. McMahon, Ph.D. - MUSC

**Panelists:** Steven L. Carroll, M.D., Ph.D. - MUSC  
R. Amanda C. LaRue, Ph.D. - MUSC  
Nicholas Milano, M.D. - MUSC  
Lesley Ross, Ph.D. - Clemson University  
Jacobco Mintzer, M.D., MBA - MUSC

## 12:20 p.m. Session 1 Continued: AD and Related Dementias

**Moderator:** R. Amanda C. LaRue, Ph.D.

Unraveling Neuro-Immune Mechanisms of  
Alzheimer's Disease

**Jose H Ledo, Ph.D.**  
Assistant Professor  
*Medical University of South Carolina*

The South Carolina Alzheimer's Disease Registry

**Maggi C. Miller, MS, Ph.D.**  
Assistant Professor  
*University of South Carolina*

Phase I and II Trials of Accelerated Intermittent  
Theta Burst Transcranial Magnetic Stimulation for  
Mild Cognitive Impairment

**Andreana Benitez, Ph.D.**  
Associate Professor  
*Medical University of South Carolina*

## 1:20 p.m. Break



# Symposium Schedule - October 27, 2023

## 1:30 p.m. Session 2: Population Health & Data Science

**Moderator:** Hermes Florez, M.D., Ph.D., MPH

Physical Activity Initiated from Midlife on Risk of Dementia and Cognitive Impairment

**Jingkai Wei, Ph.D., MSPH**  
Assistant Professor  
*University of South Carolina*

Racial/Ethnic Disparities in Advance Care Planning Among Older Adults Across Cognitive Functioning Levels

**Zahra Rahemi, Ph.D., RN**  
Assistant Professor  
*Clemson University*

Cardio-Metabolic Health in Older Adults: Lifestyle Intervention and Beyond

**Hermes Florez, M.D., Ph.D., MPH**  
Professor and Chair  
*Medical University of South Carolina*

## 2:30 p.m. 3 Minute Thesis Competition

**Moderator:** Lori L. McMahon, Ph.D.

## 2:50 p.m. Closing Remarks

Lori L. McMahon, Ph.D.

# Meet the Speakers



**Jessica Avilés, Ph.D.**

Assistant Professor  
Department of Industrial Engineering  
College of Computing, Engineering and  
Applied Sciences  
Clemson University



**Anna Baker, Ph.D.**

Assistant Professor  
College of Behavioral, Social and Health Sciences  
Clemson University



**Andreana Benitez, Ph.D.**

Associate Professor  
College of Medicine  
Department of Neurology  
Medical University of South Carolina



**Steven L. Carroll, M.D., Ph.D.**

Professor & Chair  
Gordon R. Hennigar, Jr, M.D., Endowed Chair  
in Pathology  
Department of Pathology and Laboratory Medicine  
College of Medicine  
Director, Carroll A. Campbell, Jr.  
Neuropathology Laboratory  
Medical University of South Carolina  
Director, SC Alzheimer's Disease Research Center  
Chair, ARCC Research and Eval. Subcommittee  
Board Member, SC Chapter of the  
Alzheimer's Association



**Adviy Ergul, M.D., Ph.D.**

Professor  
Department of Pathology and Laboratory Medicine  
College of Medicine  
Medical University of South Carolina



**Hermes Florez, M.D., Ph.D., MPH**

Professor & Chair  
Department of Public Health Sciences  
College of Medicine  
Medical University of South Carolina



**Alyssa A. Gamaldo, Ph.D.**

Professor  
College of Behavioral, Social and Health Sciences  
Clemson University



**William "Dave" Hill, Ph.D.**

Professor  
Department of Pathology and  
Laboratory Medicine  
College of Medicine  
Medical University of South Carolina



**Vanessa Hinson, M.D., Ph.D.**

Professor  
Department of Neuroscience  
College of Medicine  
Medical University of South Carolina



**Andrew Jakymiw, Ph.D.**

Associate Professor  
Department of Oral Health Sciences  
College of Dental Medicine  
Medical University of South Carolina



**Sara Knox, PT, DPT, Ph.D.**

Associate Professor  
Department Health Sciences and Research  
College of Health Professions  
Associate Director for Medicare Data for the  
Comparative Effectiveness and Data  
Analytics Resource (CEDAR)  
MUSC Data Custodian for Medicare and  
Medicaid Data  
Medical University of South Carolina



**Hainan Lang, M.D., Ph.D.**

Professor  
Department of Pathology and  
Laboratory Medicine  
College of Medicine  
Medical University of South Carolina

# Meet the Speakers



**R. Amanda C. LaRue Ph.D.**  
Professor & Vice Chair for Research  
Department of Pathology and  
Laboratory Medicine  
College of Medicine  
Medical University of South Carolina



**Nicholas Milano, M.D.**  
Associate Professor  
Department of Neurology  
College of Medicine  
Medical University of South Carolina



**Jose Ledo, Ph.D.**  
Assistant Professor  
Department of Pathology and  
Laboratory Medicine  
College of Medicine  
Medical University of South Carolina



**Maggi Miller, MS, Ph.D.**  
Research Assistant Professor  
Department of Epidemiology and Biostatistics  
Co-Director, Office for the Study of Aging  
Arnold School of Public Health  
University of South Carolina



**Lori L. McMahon, Ph.D.**  
Professor  
Department of Neuroscience  
College of Medicine  
Vice President for Research  
Interim Director, Center for Health Aging  
Medical University of South Carolina



**Jacobo Mintzer, M.D., MBA**  
Professor  
Department of Health Studies  
College of Health Professions  
Medical University of South Carolina



**Joseph A. McQuail, Ph.D.**  
Assistant Professor  
Department of Pharmacology, Physiology  
& Neuroscience  
School of Medicine Columbia  
University of South Carolina



**Connie Munn, MSW**  
Director, SC Department on Aging



**Anwar T. Merchant, ScD, MPH, D.M.D.**  
Professor  
Director, Epidemiology Division  
Department of Epidemiology and Biostatistics  
Arnold School of Public Health  
University of South Carolina



**Amanda Overstreet, D.O.**  
Assistant Professor  
Department of Medicine  
College of Medicine  
Medical University of South Carolina



**Christopher L. Metts, M.D.**  
Associate Professor  
Department of Pathology and  
Laboratory Medicine  
Director, Research Informatics  
Director, Digital Biomarker Core  
MUSC Alzheimers Disease Research Center  
Medical University of South Carolina



**Zahra Rahemi, Ph.D., RN**  
Assistant Professor  
College of Behavioral, Social and Health Sciences  
Clemson University

# Meet the Speakers



**Catrina Robinson, Ph.D.**  
Associate Professor  
Department of Neurology  
College of Medicine  
Medical University of South Carolina



**Jingkai Wei, Ph.D., MSPH**  
Assistant Professor  
Department of Epidemiology and Biostatistics  
Arnold School of Public Health  
University of South Carolina



**Lesley Ross, Ph.D.**  
Professor  
SmartState/SmartLife Endowed Chair in  
Aging and Cognition  
College of Behavioral, Social and Health Sciences  
Director of the Institute for Engaged Aging  
Clemson University



**Peisheng Xu, Ph.D.**  
Professor  
Department of Drug Discovery &  
Biomedical Sciences (DDBS)  
College of Pharmacy  
University of South Carolina



**Lisa K. Saladin, PT, Ph.D., FAPTA**  
Executive Vice President for  
Academic Affairs and Provost  
James W. Colbert Endowed Chair  
Medical University of South Carolina

# Become a member of the Center for Healthy Aging

The Center for Healthy Aging (CfHA) unifies researchers from MUSC, institutions nationwide, and community members from the South Carolina Lowcountry area. CfHA is currently recruiting members to collaborate and participate in aging research, education, and outreach initiatives.

Periodically, we will ask members to provide updated information for CfHA database. Researchers may be invited to participate on at least one internal grant review yearly.



## Are you an Alzheimer's Disease and Related Dementias Researcher?

Please scan the QR code below and complete the Researcher Survey form. The South Carolina Alzheimer's Disease Research Center is working to develop a list of investigators from around the state who may be interested in future trainings, collaborations, and/or other opportunities offered by the SC-ADRC.



# MUSC Center for Healthy Aging Research Symposium

## Planning Committee

### Center for Healthy Aging

Lori L. McMahon, Ph.D.

Catrina Robinson, Ph.D.

Heather Boger, Ph.D.

William Hill, Ph.D.

Vanessa Hinson, M.D., Ph.D.

Hermes Florez, M.D., Ph.D., MPH

Amanda Overstreet, D.O.

Tiffany Harrison, CfHA Program Coordinator

### South Carolina Alzheimer's Disease Research Center

Steven Carroll, M.D., Ph.D.

Laura Davis, ADRC Program Manager

## Thank You

To all symposium presenters, attendees, speakers and sponsors. A special shout out to MUSC University Press for the outstanding customer service, posters, signs, and booklets for the 2023 MUSC Center for Healthy Aging Research Symposium.

# Upcoming Events



**MUSC Precision Health  
Research Symposium**

Tuesday, November 7th  
9am-5pm  
Storm Eye Auditorium



 **MUSC**  
Medical University  
of South Carolina

**Research**



**Center for Healthy Aging  
SEMINAR SERIES**

This monthly lecture series, held on the first Thursday, consist of hour-long lunchtime lectures, delivered by invited guests or distinguished members of MUSC. We aim to highlight important developments in aging research, encourage collaborations and provide information about new findings and funding opportunities.

Next Seminars are scheduled via Teams on  
November 2, 2023 @ 12 PM  
December 7, 2023 @ 12 PM

Register NOW!



 **MUSC**  
Medical University  
of South Carolina  
Changing What Possible



 **MUSC**  
Medical University  
of South Carolina

 Trident Area Agency on Aging  
Assistance, Advocacy, Answers on Aging

**MUSC SENIOR EXPO**

Presented in partnership with Trident Area Agency on Aging

March 13 • 9 a.m. - 1 p.m.  
Charleston Area Convention Center

FREE event for seniors, families, and caregivers!



**FREE FLU/COVID VACCINES AND HEALTH SCREENINGS AVAILABLE**