We are excited to share another installment of the CATR News Blast! We have slightly modified the format, providing links to read the full presentation of Center activities embedded within.

In this Fall 2016 edition, we are pleased to highlight the growing dissemination of aging research, with a special mention to student trainee numbers increasing from across campus presenting at UWM Research Symposia. Scientists have submitted a number of impactful journal articles, presented their work across the country, and all continue to solicit and receive funding for their research – with over $5 million in research funding requests from a multitude of different sources.

Our Education Core continues to grow community offerings of continuing education opportunities. There is considerable excitement that this upcoming Spring there will be two new course offerings specific to aging as part of the Undergraduate Certificate in Healthy Aging. Please keep an eye out for more to come as we expand educational opportunities with an eye to prepare upcoming generations to meet changing societal needs.

Thank you for your continued interest and support to the Center. We at the Center wish everyone a very happy holiday season. If you have any questions or comments, please be sure to contact us.

CATR Director - Scott Strath, PhD, FACSM

Welcome CATR’s Newest Affiliated Scientist, Dr. Xiao Qin!

Please welcome the newest addition to the CATR team: Dr. Xiao Qin, PhD. He will be joining us as an Affiliated Scientist and has focused his research around traffic and highway engineering. Welcome Dr. Qin!

A full profile on Dr. Qin is available on the CATR website.
On May 6, 2016, students of CATR Scientists presented their research at the CHS Spring Research Symposium. The work of CATR Scientists and their students were represented on thirteen posters by undergraduate and graduate students from the College of Health Sciences, the College of Letters and Science, the College of Nursing, the Helen Bader School of Social Welfare, and the School of Education.

**College of Health Sciences:**
Mukta Joshi  
Force fluctuations and motor unit activity during a handgrip task in individuals with chronic stroke and multiple sclerosis

Jeff Peterson  
Differences in spatial EMG distribution, EMG amplitude, and force steadiness between young and older adults

Taylor Wenos Rowley  
Energy cost of slow and normal gait speed in adults with and without lower-body impairments

Nick Lerma  
Age alters muscle activation but not energy expenditure during sedentary behavior alternatives

Emily Gerstle  
Lower extremity muscle activity during descent from varying step heights

**College of Letters and Science:**
Hannah Scherkenbach  
Apolipoprotein E Polymorphisms associated with reduced subcortical volume and cortical thickness in healthy middle-aged adults

Laura Korthauer  
KIBRA polymorphism associated with hippocampal dependent tasks in middle-aged, healthy adults

Marijam Frahmand  
Associations between genetic risk for Alzheimer’s disease and behavioral and biochemical brain integrity in healthy middle aged adults

Christine Kaiver  
Delay and trace conditioning in middle and older age

Jenna Blujus  
Dissociations between memory performance in “at risk” individuals

**College of Nursing:**
Jessie Aguilera, Johann Hernandez, Mayra Escoto, Jazmin Gonzalez, Erin Green, and Danielle Olsen  
Engaging and Empowering Ethnic Elders as Partners in the Pursuit of Promise: Dia de los Muertos B’CAUSSE
Helen Bader School of Social Welfare:
Holly Neuman
Engagement as a means for research participant retention

School of Education:
Hotaka Maeda
Psychometric properties of the community characteristics scale for older adults

Recent Publications


Recent Presentations


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**Recent Grant Submissions**

Since April 2016, the Center for Aging and Translational Research has helped to submit over a dozen new applications for grants totalling over $5 million.

**Calibrating free-living physical activity characteristics across functionally-limited populations using machine-learned accelerometer approaches**
National Institutes of Health
$3,495,026
Principal Investigator: Scott Strath, PhD

**Distinguishing normal from pathological aging: using eye movement measures to investigate age-related changes in memory**
National Institutes Of Health
$380,344
Principal Investigator: Ira Driscoll, PhD

**Effect of concussion on sensorimotor function in youth athletes**
National Institutes of Health
$364,662
Principal Investigator: Jinsung Wang, PhD

**Effects of ischemic preconditioning on walking function post stroke**
Clinical & Translational Science Institute of Southeast Wisconsin
$2,096
Site Principal Investigator: Chris Cho, MS

**Individualized music listening to improve dementia quality of life**
Alzheimer’s Association
$120,000
Principal Investigator: Jung Kwak, MSW, PhD

**Informal and formal care in alzheimer’s families: mapping the role of hispanic cultural values in crisis and transition points between care systems**
National Institutes of Health
$387,667
Principal Investigator: Melinda Kavanaugh, PhD, LCSW

**An innovative tool for assessment of gait dysfunction in clinical setting**
National Institutes of Health
$163,981 - Funded!
Site Principal Investigator: Stephen Cobb, PhD, ATC, CSCS

**The integration of standing desks in elementary schools to reduce daily sedentary behavior**
Safco
$38,420 - Funded!
Principal Investigator: Ann Swartz, PhD

**Interpersonal processes that influence physical activity and changes in physical activity among older adults**
National Institutes of Health
$382,865
Site Principal Investigator: Scott Strath, PhD

**Intervention to reduce sedentary behavior at work**
Clinical & Translational Science Institute of Southeast Wisconsin
$5,054
Site Principal Investigator: Scott Strath, PhD
This month, CATR is highlighting the work of two Psychology graduate students who are working under the direction of Dr. Ira Driscoll, one of the Center’s Affiliated Scientists. Laura Korthauer is a fourth year doctoral student in the Clinical Psychology Ph.D. program, and has been working with Dr. Driscoll since she began the program. Jenna Blujus is one year into her Experimental Psychology program (Neuroscience concentration), and has been studying with Dr. Driscoll since she began as well. We asked Laura and Jenna to describe some of the research they are currently conducting, which has implications for the study of the effects of aging on cognition and cognitive decline.

Laura Korthauer, Clinical Psychology

I am a doctoral student in the Experimental Psychology program concentrating in Neuroscience. I am a member of the Neurobiology of Aging Laboratory under Ira Driscoll. One line of our lab’s research focuses on changes in the brain that can be used as biomarkers for dementia. Alzheimer’s Disease (AD), the most common cause of dementia, is a progressive neurodegenerative disease associated with pathological hallmarks and decline.

Jenna Blujus, Experimental Psychology

My interest is in studying how genetic risk factors for Alzheimer’s Disease may affect brain integrity. As part of Dr. Ira Driscoll’s Neurobiology of Aging laboratory, I focus on structural and functional brain networks that could be biomarkers of age-related cognitive decline.

Grant Submissions continued

Ischemic pre-conditioning improves leg function post stroke
National Institutes of Health
$82,223
Site Principal Investigator: Chris Cho, MS

Lessons from healthy obese: longitudinal studies, weight loss, and animal models
American Heart Association
$175,152
Site Principal Investigator: Scott Strath, PhD

Prediction and prevention of falls in older adults
Judd Leighton Foundation
$50,000 - Funded!
Site Principal Investigator: Kevin Keenan, PhD

Grant Submissions continued
in the domain of learning and memory. Normal aging is also associated with structural atrophy and cognitive decline, making it difficult to differentiate earlier in the trajectory of the disorder those who may be at risk for developing AD and those who will healthily age. Therefore, it is imperative to identify a biomarker that can identify those at risk for pathological decline prior to the emergence of clinical symptoms, which can help us more effectively target prevention and treatment efforts.

Currently, in the lab we are investigating the potential use of eye movement behavior as a biomarker to differentiate between normal and pathological aging. Why would we think to use eye movement behavior as a biomarker? Eye movement behavior has been shown to be a sensitive index of learning and memory. In particular, eye-movement-based relational memory effects emerge rapidly (within 500-750ms of stimuli onset) and prior to behavioral responding in healthy, cognitively intact individuals, regardless of task demands. These effects are divergent in patient populations. Specifically, eye-movement-based relational memory effects are delayed in onset in patients with schizophrenia and completely absent in patients with hippocampal amnesia, suggesting a utility of eye movement measures in distinguishing normal, age-related from pathological cognitive impairment.

We tested healthy, community dwelling middle-aged and older adults and used the Montreal Cognitive Assessment to screen individuals performing in the Mild Cognitive Impairment range (“at risk”), as MCI has been suggested a prodrome of dementia. It was found that eye-movement-based relational memory effects were delayed in onset in “at risk” participants as compared to healthy individuals. Healthy middle-aged, older, and “at risk” adults were all able to explicitly differentiate between target-present and target-absent displays. Overall, further research is needed to identify whether the delay in emergence of eye-movement-based relational memory effects seen in the “at risk” adults may serve as a useful biomarker. These findings are important because if we can isolate individuals who may go on to develop AD prior to the onset of clinical symptoms we may be able to more effectively treat this population, as current treatments to target the late stages of AD are rather ineffective.

upcoming presentation at the Annual Meeting of Society for Neuroscience, we focused on a gene called KIBRA. Polymorphism in KIBRA has previously been associated with differences in the volume and activation of the hippocampus, a key brain structure involved in learning and memory. This project examined differences in brain integrity among carriers versus non-carriers of a KIBRA risk allele. We studied these effects in healthy, cognitively normal, middle-aged adults, years before the possible onset of clinical symptoms of age-related cognitive decline. We found that KIBRA risk allele carriers had smaller volumes of the hippocampus, changes in hippocampal biochemistry, and disorganization of white matter tracts in the brain. Furthermore, the risk allele carriers performed more poorly on a hippocampus-dependent learning and memory task.

Collectively, these results suggest that middle-aged carriers of the KIBRA risk allele have weaker structural brain integrity and memory, years before the potential onset of cognitive impairment. This research could be helpful in identifying people who are at risk for developing age-related cognitive problems, improving our ability to target prevention and treatment efforts for those who would benefit the most.
Continuing Education

January starts a new semester of Continuing Education offerings for those working with older adults. Sessions will focus on various aspects of memory care including the importance of the life story and mindful movement for memory. The Center will also offer a three-part series with CATR Scientist Jung Kwak, PhD on advance care planning. And finally, Dr. Marilyn Bonjean will address retirement and the role of purpose in later life in the second of a two-part series on transition and change.

The Center welcomes Brookfield Rehabilitation and Specialty Care to our list of locations for Continuing Education sessions. They will host the three-part series on advance care planning.

Importance of the Life Story
Friday, January 13, 2017, 9:00am - 12:00pm
Jewish Home and Care Center
Diane Baughn, MA

Transition and Change in Later Life: Retirement and Reinvention
Tuesday, January 17, 2017, 9:00am - 12:00pm
Milwaukee Catholic Home
Marilyn Bonjean, EdD, MS, LMFT

Mindful Movement for Memory
Friday, February 10, 2017, 9:00am - 12:00pm
Jewish Home and Care Center
Marietta Pucillo, CYT, RYT

Tough Conversations: Advance Care Planning
Friday, March 3, 2017, 9:00am - 12:00pm
Brookfield Rehabilitation and Specialty Care
Jung Kwak, MSW, PhD

Tough Conversations: Advance Care Planning for Diverse Ethnic Groups
Friday April 7, 2017, 9:00am - 12:00pm
Brookfield Rehabilitation and Specialty Care
Jung Kwak, MSW, PhD

Tough Conversations: End-of-Life Decision Guide for Persons with Dementia
Friday, May 5, 2017, 9:00am - 12:00pm
Brookfield Rehabilitation and Specialty Care
Jung Kwak, MSW, PhD

Get full course descriptions here.

New Course Offerings for Spring 2017 Count Towards Certificate in Healthy Aging

Two new courses have been added to UWM’s Schedule of Classes for Spring 2017. CATR has partnered with the Department of Religious Studies and the Department of Communication to present these two exciting new offerings.

Spirituality and Aging
RELIGST 250
TR 11:00-12:15, Curtin Hall 124

Communicating with Older Adults
COMMUN 299
Online Course
The Gerontological Society of America (GSA), which is the largest interdisciplinary aging focused academic organization in the United States, has named Dr. Jung Kwak, CATR Scientist, as a Gerontological Society of America Fellow in the Social Research, Policy, and Practice Section.

Read more about Dr. Kwak here.

Dr. Melinda Kavanaugh, a CATR Scientist, was interviewed in July on Wisconsin Public Radio regarding the role that children sometimes play as caregivers for sick and disabled adults and elderly family members.

Listen to the full interview here.