

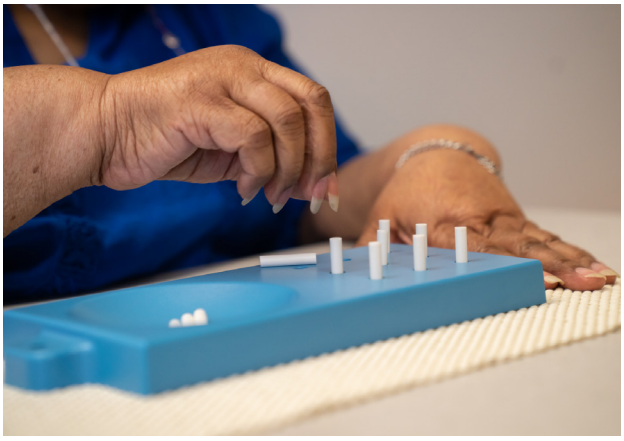
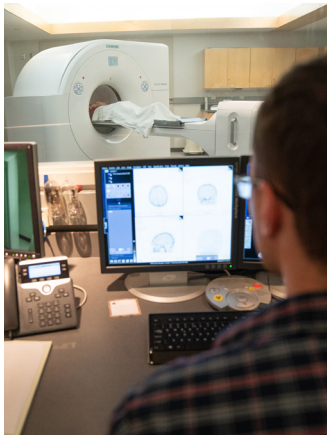

Annual Report

Grant Year 11, 2019-2020

Wisconsin Alzheimer's Disease Research Center
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Director's Message

I am excited to share with our research participants, partners, friends, and donors the Wisconsin Alzheimer's Disease Research Center (ADRC) 2019-2020 Annual Report, which serves as a review of some of our Grant Year 11 accomplishments. The National Institute on Aging awarded the Wisconsin ADRC $15 million over the next five years for the successful competitive renewal of our P30 grant. This funding will allow the center to continue its work as the central hub for Alzheimer's disease research at UW–Madison and establish new areas of expertise in early diagnosis, care research, and training the next generation of Alzheimer's disease scientists. Thank you for your continued support of our work. Together, we can improve the lives of people affected by Alzheimer's disease.

Sanjay Asthana, MD

Duncan G. and Lottie H. Ballantine Chair in Geriatrics

Associate Dean for Gerontology

Director, Wisconsin ADRC and Madison VA GRECC

UW School of Medicine and Public Health

Center Highlights

REC hosts high school students for scientist luncheon, brain cutting

On November 21, 2019, the Research Education Component (REC) hosted eight high school sophomores and juniors for a half-day research experience at the UW School of Medicine and Public Health. The students were part of the inaugural class of the REC Junior Fellowship, a program that aims to cultivate the next generation of Alzheimer's disease scientists. The students attended a presentation that introduced them to dementia research, networked over lunch with faculty and research staff, and observed a brain cutting in the medical school morgue.

Photo: Shahriar Salamat, MD, PhD, led a brain cutting for REC Junior Fellows.

Wisconsin governor meets with Alzheimer's disease program leaders

On March 9, 2020, Wisconsin Governor Tony Evers and First Lady Kathy Evers joined about 30 UW Alzheimer's disease program leaders and researchers for a discussion about Alzheimer's disease, reducing health disparities, and supporting Wisconsinites with dementia and their families. The First Lady has identified dementia support as an area of focus during her tenure. She is interested in work with UW experts to disseminate health education information across the state, as well as help educate the public about identifying trustworthy health information sources. During the gubernatorial visit, researchers offered presentations on the structure of the Alzheimer's disease programs at the UW, as well as research, diagnosis, and care programs.

Photo: Wisconsin Governor Tony Evers and Wisconsin First Lady Kathy Evers during a meeting with UW–Madison Alzheimer's disease research leaders.

Center launches Black Leaders for Brain Health collaboration

The Inclusion of Underrepresented Groups Core hosted the first meeting of Black Leaders for Brain Health in May 2019. This ongoing collaboration between the Nehemiah Center for Urban Leadership Development and the Wisconsin ADRC provides an opportunity for local African American leaders to advise scientists working in the fields of Alzheimer's disease and related dementias and cognitive aging. The goal is to ensure that research with African American elders accurately reflects the community's perspectives and is responsive to community needs. In Grant Year 11, Wisconsin ADRC researchers published one paper that was co-authored with a member of Black Leaders for Brain Health.

Funding Highlights

Advanced brain imaging and other biomarker studies have given researchers insight into early brain changes associated with Alzheimer's disease. Traditionally, information about early brain changes has not been shared with Alzheimer's disease research participants. **Lindsay Clark, PhD**, is studying the positive and negative consequences of disclosing this information to cognitively healthy adults. Results of this study will be used to develop culturally sensitive biomarker disclosure procedures.

Alzheimer's Disease Biomarker Disclosure in African Americans and Whites: Personal and Programmatic Consequences of Knowing ATN Status
4/1/2019 – 3/31/2021
National Institute on Aging

Autophagy is the body's way of cleaning out damaged cells. In many chronic degenerative diseases such as Alzheimer's disease, autophagy stops working normally and an accumulation of toxic proteins begins. **Luigi Puglielli, MD, PhD**, studies autophagy in the brain. He has developed a way to manipulate autophagy in mice and restart the natural process for cleaning out toxic proteins. The ultimate goal of his work is to develop drugs that encourage autophagy in the human brain and prevent the onset of Alzheimer's disease.

Novel Mechanisms for Alzheimer Disease Prevention and/or Treatment
4/1/2019 – 3/31/2023
U.S. Department of Veterans Affairs

Kimberly Mueller, PhD, CCC-SLP, and the Cognitive-Communication in Aging and Neurogenic Disorders Laboratory (CCANDL) is studying the use of recorded conversations as a way to measure changes in cognitive health. This information will be used to identify the stage of Alzheimer's disease a person is experiencing, as well as provide caregivers with tools and resources they can use to better communicate with their loved ones with Alzheimer's disease.

Improving Communication Quality of Life for Individuals with Memory Loss
7/1/2020 – 6/30/2021
UW–Madison Baldwin Wisconsin Idea Endowment Seed Grant

Insulin resistance is a condition in which the hormone insulin is not effectively used by the body. This in turn puts individuals at increased risk for type 2 diabetes. Previous research has suggested that insulin resistance may be related to dementia due to Alzheimer's disease; however, the linkage between insulin resistance and Alzheimer's disease pathology is not clear. **Gilda Ennis, PhD**, is investigating insulin resistance's relationship to the development of Alzheimer's disease pathology and the degeneration of nerve cells.

The Longitudinal Linkage Between Insulin Resistance and Alzheimer's Disease
11/1/2019 – 10/30/2022
Alzheimer's Association

Featured Publications

Wisconsin ADRC investigators published 61 peer-reviewed journal articles in GY11. Three of them are highlighted below.

"Association between enrollment factors and incident cognitive impairment in Blacks and Whites: Data from the Alzheimer's Disease Center"
Gleason CE, Norton D, Zuelsdorff M, Benton SF, Wyman MF, Nystrom N, Lambrou N, Salazar H, Koscik RL, Jonaitis E, Carter F, Harris B, Gee A, Chin N, Ketchum F, Johnson SC, Edwards DF, Carlsson CM, Kukull W, Asthana S
Alzheimer's & Dementia: The Journal of the Alzheimer's Association
December 2019
PMID: 31601516

"Amyloid and tau imaging biomarkers explain cognitive decline from late middle-age"
Betthauser TJ, Koscik RL, Jonaitis EM, Allison SL, Cody KA, Erickson CM, Rowley HA, Stone CK, Mueller KD, Clark LR, Carlsson CM, Chin NA, Asthana S, Christian BT, Johnson SC
Brain: A Journal of Neurology
January 1, 2020
PMID: 31886494

"Neighborhood disadvantage is associated with cerebral and hippocampal volume"
Hunt JFV, Buckingham W, Kim AJ, Oh J, Vogt NM, Jonaitis EM, Hunt TK, Zuelsdorff M, Powell R, Norton D, Rissman RA, Asthana S, Okonkwo OC, Johnson SC, Kind AJH, Bendlin BB
JAMA Neurology
January 6, 2020
PMID: 31904767

Wisconsin ADRC By the Numbers

The Wisconsin Alzheimer's Disease Research Center (ADRC) studies the causes, diagnosis, treatment, and prevention of Alzheimer's disease, as well as related topics such as caregiver stress and patient care. The following is a summary of our accomplishments since the center was formally established in April 2009 through March 31, 2020.

33 SCIENTISTS

266 community outreach and educational events in 2019

66 podcast episodes of *Dementia Matters*

104,380 episode downloads

13% international listenership from **88** countries

50+ ACTIVE RESEARCH STUDIES IN BASIC SCIENCE AND CLINICAL RESEARCH

77% overall Clinical Core retention rate

61 **RESEARCH PAPERS PUBLISHED** last year

981 participants in Clinical Core

25% from underrepresented groups (URGs)

789 participants received Magnetic Resonance Imaging (MRI) scans

543 participants received Lumbar Punctures (LPs)

519 participants received combined MRI and LP

80 participants received biomarker Positron Emission Tomography (PET) exams

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UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

NIH National Institute on Aging Designated Alzheimer's Disease Research Center

Stay Connected!

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