

# With Your Brain in Mind



## Monthly news and updates from the Stanford Alzheimer's Disease Research Center

### *Why Research?*

### Upcoming Events

More information on all events can be found on the Stanford ADRC website [here](#).

March 7  
6-7p **Wisdom of Aging talk series: Healthy Aging in English/Spanish.** East Palo Alto YMCA.

March 21  
10:30a-12p **Healthy Brain Aging.** Peninsula Jewish Community Center, 800 Foster City Blvd, Foster City.

**April 8  
8a-4:15p** **4<sup>th</sup> Annual Alzheimer's Latino Conference.** Mayfair Community Center, San Jose. Click [here](#) for more information.

**May 11  
8a-4:15p** **19<sup>th</sup> Annual Updates on Dementia: Translating Research into Practice.** South SF Conference Center. Click [here](#) for more information.

### Why Research?

Allyson C. Rosen, PhD, ABPP

The Stanford Alzheimer's Disease Research Center (ADRC) offers opportunities to move forward some of the most fascinating research on aging and dementia. The goal of the Healthy Brain Aging Study is to describe and follow older adults who are healthy controls and those with early stage memory diagnoses. There are opportunities to participate in neuroimaging studies that can tell us about how working memory changes with Alzheimer's and Parkinson's disease. Other MRI studies examine brain structure. Many researchers and clinicians believe that over the next decade there will be treatments for Alzheimer's that directly treat the brain changes of the disease. Many of these studies recruit people long before they have any memory problems. Some drugs reduce amyloid, an abnormal protein seen in high levels in the brains of Alzheimer's patients. Other studies in people with mild to moderate Alzheimer's disease infuse the blood from young donors. This treatment has been shown in mice to improve brain health.

The ADRC also does outreach to communities to help patient caregivers cope with stress and to the general public and professionals to help them support people with dementia. We look forward to sharing these studies with you and introducing you to more members of our research team in future newsletters.



### Links

[Stanford ADRC's website](#)

[Stanford ADRC's Facebook page \(English\)](#)

[Stanford ADRC's Facebook page \(Español\)](#)

Photo: the new Stanford Neuroscience Health Center, opened in January 2016. Read more about it [here](#).



## Feature: Research at Stanford

### Working Memory in Parkinson's Disease: A Cognitive & Systems Neuroscience Approach

**Kathleen Poston, MD, MS**

Cognitive impairment and dementia are among the most devastating symptoms that occur in people with Parkinson's disease (PD). In early disease, patients can exhibit subtle cognitive dysfunction, which is often already present by the time motor symptoms develop. Over 15% of PD patients will fulfill criteria for Mild Cognitive Impairment at the time of the initial PD diagnosis. Among the cognitive deficits seen in people with PD, many patients have specific impairment of Working Memory, which plays an important role in higher-order cognitive functions.

In this research, we are performing a systematic study of Working Memory dysfunction in PD patients. The overarching goals of this study are to determine changes in brain activation, network connectivity, and causal

neural dynamics associated with Working Memory deficits in people with PD and contrasting these changes with Working Memory deficits in people with early Alzheimer's disease. We will also determine the changes in activation, connectivity, and causal dynamics associated with PD dopamine medications, which can sometimes improve and other times worsen Working Memory function. These studies will lead to new and improved understanding of the mechanisms underlying cognitive impairment in PD and Alzheimer's disease, the two most common neurodegenerative disorders in the aging population. Characterizing these deficits is profoundly important to reducing the substantial human and financial costs associated with cognitive dysfunction in PD, and ultimately promoting better treatments for all patients.

## Meet the ADRC Team – a monthly feature



**Kathleen Poston, MD, MS**

**Associate Professor, Neurology and Neurological Sciences, ADRC Clinical Core co-leader**

Dr. Poston received her Bachelor's of Science in Bioengineering at the University of Pennsylvania, her Master's Degree in Biomedical Engineering and her MD at Vanderbilt University. She completed her Neurology residency training at UCSF, where she was Chief Resident. She also completed a fellowship in clinical Movement Disorders under the mentorship of Dr. Stanley Fahn at Columbia University and post-doctoral training in Functional Neuroimaging with Dr. David Eidelberg at the Feinstein Institute.

Dr. Poston's clinical expertise include Parkinson's Disease, atypical Parkinsonian disorders, Essential Tremor, Huntington's Disease, and tics. She also has interest in the treatment of dystonia and blepharospasm with botulinum toxin.

Dr. Poston's research focuses on the development of novel neuroimaging biomarkers to improve diagnostic accuracy and monitor the efficacy of investigational treatments for Parkinson's Disease and other movement disorders. She is also the Principle Investigator for clinical trials in movement disorders, such as Gene Therapy in Parkinson's disease.