S·A·D·R·C
for healthy brain aging
Farrukh–Jamal Stanford Alzheimer's Disease Research Center

2024 Spring Issue

MIND MATTERS

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ADRC IN THE COMMUNITY!

FEBRUARY 28TH
Dr. Carla Abdelnour gave a web based seminar on Parkinson's and Lewy body disease dementia in Spanish for participants and community members

Future seminars click HERE

MARCH 7TH
The Padula BRAVE lab team held a recruitment event at the Golden State Warriors home game vs. the Chicago Bulls

Opportunities for connection...
Memory Cafés and Support Groups in SF and Marin
for information email:
info@seniorsathome.org

Participant Appreciation Day 2023

Thank you to everyone who joined us this past November for our 6th annual Participant Appreciation Day! We had great success this year with 75 attendees and an agenda full of fantastic talks. It was wonderful to see so many of you and thank you all for your engagement and energy throughout the day.

If you were not able to join, or if you'd like to revisit any of the presentations, you will find a link to a recording **here** and on our website on the events page under "2023 Conference Slides". Topics covered included new FDA approved treatments, destigmatizing lumbar punctures, genetics driving advancements, caregiving strategies and resources, and more.

In response to popular demand at the event we are presenting updates on some current ADRC research projects. We do hope to host a hybrid event next year in order to include as many participants as we can.

The goal of Participant Appreciation Day is to show our appreciation for your involvement in our research and to provide you with research updates and progress at our center and we hope to continue accomplishing that for years to come!

Justice, Equity, Diversity, & Inclusion (JEDI) Developmental Research Project Highlights

Improving Access to Geriatric Emergency Care among Older Adults with Dementia

Michelle Lin, MD, MPH, MS
Associate Professor of Medicine

Older adults and persons living with dementia (PLWD) account for a growing share of U.S. Emergency Department visits. They are more likely to be hospitalized and to experience adverse events associated with hospitalization, including iatrogenic harm, functional decline, and readmissions. Geriatric Emergency Departments (GEDs) have emerged as a promising model of care for older adults and PLWD. However, little is known about disparities in access to GEDs and their adoption among hospitals serving historically marginalized groups. This project aims to address this knowledge gap by (1) measuring disparities in access to GEDs among PLWD, including differences by race, ethnicity, income, and geographic location and (2) identifying barriers and facilitators to the adoption of GEDs in safety-net hospitals serving PLWD. These findings will inform policy and practice recommendations to improve access to GEDs for PLWD and serve as preliminary data for an R01 to promote equity in the adoption of GEDs and reduce disparities for PLWD from historically marginalized groups.

IDD-TRANSFORM: Building an Engaged and Diverse Community-Based Cohort for Aging, Alzheimer's, and Down's Syndrome

Holly Tabor, PhD
Associate Professor of Medicine

While the importance of Alzheimer's to overall public health has been long recognized, the etiology and challenges of Alzheimer's in patients with Down Syndrome (DS) has been less studied or well characterized. In recent years, the high prevalence of Alzheimer's disease in patients with DS, as well as the earlier age of onset, has led researchers to increase their interest and focus on studies of the disease in this population. However, such studies lack data about the specific etiology, characteristics, lived experiences, and health and healthcare access challenges of adults with DS in general, and most specifically aging adults with DS. It is imperative to engage with adults with DS and their caregivers themselves, in order to characterize their lived experience and understand the issues driving disparities in health outcomes and health care access. This direct engagement can help facilitate the development of interventions that are likely to improve health outcomes, health access, and quality of life for this population. The goal of our grant is to build an engaged and diverse community-based cohort to study AD and DS, and it has four aims to : 1) to create a Core Advisory Board of researchers, health care workers, adults with Down's Syndrome (DS), DS caregivers, and community agencies/partners, to collaboratively design and implement a Community Based Participatory Research (CBPR) approach to studying Alzheimer's and DS in a racially, ethnically, and socio-economically diverse population in the Bay Area; 2) To develop language- and culturally- concordant educational flyers and Virtual Health Forum sessions about DS and Alzheimer's disease; 3) To characterize knowledge, needs, and lived experiences of DS adults with Alzheimer's Disease, by conducting focus groups and interviews with adults with DS, caregivers of adults with DS, and community agencies/partners that serve adults with DS/IDD; and 4) Develop a research proposal to submit to NIH in Fall 2025 on DS and AD in diverse populations.

Developmental Research Project Highlights

Characterizing cholinergic deficits and their impact on cognitive-motor deficits across progressive neurodegenerative diseases

Helen Bronte-Stewart, MD, MSE, FAAN, FANA Professor of Neurology and by courtesy Neurosurgery

There is a critical unmet need for effective treatments to stabilize cognitive decline in progressive neurodegenerative diseases such as Parkinson's disease, Dementia with Lewy Bodies, and Alzheimer's disease. Despite varying pathologies, these diseases share decline in a common brain network, known as the cortical cholinergic network, which is responsible for cognitive functions such as arousal, attention, information processing, and aspects of memory. This degeneration begins early in the disease, often before these cognitive deficits can be identified. This presents a major challenge, as by the time of diagnosis, the severity of this decline makes it difficult to successfully intervene. However, there is an increasing amount of literature supporting the idea that there may be motor components of cognitive impairment that manifest themselves significantly earlier, termed the cognitive-motor syndrome. These higher resolution behaviors offer an opportunity to identify cognitive-related deficits earlier when interventions may be more effective and allow tracking of response to therapies over time. We aim to investigate the relationships between this shared degeneration and measures of cognitive-motor syndrome in people with Parkinson's disease, Dementia with Lewy Bodies, and Alzheimer's disease using multi-modal brain imaging techniques. The outcome of this research will provide unique insight into the underlying neurobiology of cognitive-motor deficits of each disease.

Characterizing Cholinergic Deficits and Their Impact on the Cognitive-Motor Deficits Across Neurodegenerative Diseases

Stanford Alzheimer's Disease Research Center Development Grant Human Motor Control and Neuromodulation Lab

Participants For The Study

- Are at least 40 years of age
- Diagnosed with either Alzheimer's disease, Parkinson's disease, or dementia with Lewy bodies; or Healthy Control
- Attend research visits (2-4 hours) to perform a series of cognitive and motor tasks
- Undergo an MRI scan
- Enrolled participants receive paid parking or reimbursement for public transportation

Four (4) Day Visit

- Day 1: Motor Tasks
- Day 2: Cognitive Tasks
- Day 3: MRI Scan
- Day 4: Neuropsychological Assessments

Study Summary:
Examining the differences and similarities between cholinergic deficits of various neurological diseases: Alzheimer's Disease(AD), Parkinson's Disease(PD), and Dementia with Lewy Bodies(DLB) to better understand their pathologies and their effects on cognitive-motor deficits.

Contact the lab at: bronte-stewart-lab@stanford.edu
Participant information is kept strictly confidential, and participation is completely voluntary. For complaints, concerns, or participant's right questions contact 1-866-680-2906

Developmental Research Project Highlights

**Julia Kaltschmidt, PhD
Associate Professor of
Neurosurgery**

Enteric pathophysiology in Parkinson's disease

Parkinson's Disease (PD) is a progressive, age-related movement disorder that affects more than 5 million people worldwide. There is currently no effective tool for diagnosing PD before movement symptoms manifest. While primarily characterized as a movement disorder, non-motor PD symptoms, such as constipation, have been identified to precede motor symptoms by years. The characteristic sign of PD in the brain are aggregations of α-synuclein protein. However, accumulating evidence suggests that α-synuclein aggregations begin in and migrate from gut (enteric) neurons. Enteric α-synuclein aggregates, proposed to be triggered in part by environmental risk factors, such as herbicide exposure, are thus attractive as a potential early biological marker for diagnosis of PD. We will study the initial stages of PD using two mouse models of α-synuclein aggregation: 1) exposure to the herbicide paraquat, and 2) viral overexpression of human α-synuclein in the mouse gut. Using these models, we aim to identify cells in the gut most susceptible to α-synuclein aggregation and to trace neuronal pathways through which α-synuclein may migrate from the gut to the brain, providing information essential to understanding the pathophysiology of early PD.

**Brad Zuchero, PhD
Associate Professor of
Neurosurgery**

Myelin dysfunction in Alzheimer's disease

Myelin is essential in the central nervous system (CNS) for rapid nerve signaling and neuroprotection. CNS myelin is built by oligodendrocytes, specialized glial cells that undergo dramatic cell biology changes to form and maintain myelin. Myelin dysfunction is emerging as central to Alzheimer's disease (AD), yet the precise contributions of myelin to AD remain largely unexplored. Several recent studies using single-cell transcriptomics of human AD patients or mouse models of AD have consistently revealed that myelin and oligodendrocyte dysfunction occurs early in AD. A major knowledge gap is the extent to which myelin dysfunction contributes to neurodegeneration and cognitive decline, and what cellular mechanisms are responsible for this. To address these questions, we will start a new project leveraging our expertise in myelin cell biology together with the resources and expertise of the ADRC. We will test the oligodendrocyte-autonomous roles of several AD-linked genes to determine whether they are sufficient to perturb oligodendrocyte differentiation, myelination, and/or myelin integrity. Overall, the goal of this proposal is to launch a new AD-focused research direction—bringing our expertise in myelin cell biology to the question of how myelin dysfunction contributes to AD. Successful completion of this project would provide important insights into myelin's role in neurodegeneration and may reveal new therapeutic avenues for preserving or recovering cognitive function in AD.

New Research Study at the ADRC!

ASIAN COHORT FOR ALZHEIMER'S DISEASE (ACAD)

ACAD, linked **HERE,** is an international collaboration funded by the NIA. Its goal is to compile a large population of underrepresented Asian American and Asian Canadian older adults for research on the impact of lifestyle and genetic factors on risks for Alzheimer's disease and related disorders. ACAD addresses this gap by creating a large group (i.e. a cohort) of people of East Asian (Chinese, Korean, and Vietnamese) ancestry, and to expand later to other major Asian populations in both countries. Enrollment in ACAD-Stanford involves questionnaires (in English and Mandarin), a neurological examination, cognitive testing, and a blood or saliva sample for genetic analysis.

ADDITIONAL OPPORTUNITIES TO PARTICIPATE IN RESEARCH

Stanford ADRC Affiliated Studies

Study: Healthy Brain Aging Study / Stanford ADRC
Study status: Open, enrollment ongoing

Contact: Veronica Ramirez vramirez1@stanford.edu or (650) 721-2409

Study: Longitudinal Early-Onset Alzheimer's Disease Study (LEADS)
Study status: Open, enrollment ongoing

Contact: Savneet Takhar sktakhar@stanford.edu or (650) 304-7428
Contact: Stephanie Tran trans@stanford.edu or (650) 521-7287

Study: Alzheimer Gut Microbiome Project
Study status: Open, enrollment ongoing

Contact: Veronica Ramirez vramirez1@stanford.edu or (650) 721-2409

Study: Asian Cohort For Alzheimer's Disease Study
Study status: Open, enrollment ongoing

Contact: Joy Ku joylku@stanford.edu
Contact: Veronica Ramirez vramirez1@stanford.edu or (650) 721-2409

Study: Sleep and Physical Activity Study
Study status: Open, enrollment ongoing

Contact: Joseph Winer jwiner@stanford.edu

Study: Neighborhoods Study
Study status: Open, enrollment ongoing

Contact: Nicole Caceres ncaceres@stanford.edu or (650) 736-2893

More information can be found HERE

Clinical Trials

Study: Eisai and NIH (AHEAD 3-45 Study)
Study status: Open, enrollment ongoing

Contact: Anthony Velasquez; anthgv@stanford.edu; (650) 206-0963

Study: EIP Pharma DLB Phase 2b
Study status: Open, enrollment ongoing

Contact: Kaila Sevilla; kailas44@stanford.edu; 650- 454-5458

Study: Indiana University and NIA (LEADS)
Study status: Open, enrollment ongoing

Contact: Stephanie Tran; trans@stanford.edu; (650) 521-7287

Study: ARI-Bio Trial (Polaris-AD)
Study status: Open, enrollment ongoing

Contact: Kaila Sevilla; kailas44@stanford.edu; 650- 454-5458

Study: Cognition Therapeutics (Shimmer Study)
Study status: Open to patients with diagnosed Lewy Body Disease

Contact: Stephanie Tran; trans@stanford.edu; (650) 521-7287

Study: CELIA Trial
Study status: Open, enrollment ongoing

Contact: Olivia Lu; Olivialu@stanford.edu; 650-374-9286

More information can be found HERE