



Alzheimer's Disease and Dementia Research Center (ADRC)

2024-2025 Impact Report



Emma Eccles Jones College of Education & Human Services
Alzheimer's Disease & Dementia Research Center
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The Purpose and Mission of the ADRC

The Alzheimer's and Dementia Research Center (ADRC) at Utah State University is a state-funded center committed to research and support for the rapidly growing number of adults in Utah who are diagnosed with Alzheimer's disease and other forms of dementia, as well as those who care for them. Our mission is to build a collaborative research infrastructure where individuals throughout the state of Utah can be involved and informed in dementia research, learn more about best practices in dementia care, and find resources for emotional and practical support. The center engages with multiple research institutions across the state and is guided by the principles and needs outlined in *Utah Alzheimer's Disease and Related Dementias State Plan*.

A Message from ADRC Director Beth Fauth



Our third year at the Alzheimer's Disease and Dementia Research Center has been one of remarkable expansion. This year, several of our pilot grant recipients successfully leveraged their ADRC-funded data to secure large federal research awards, amplifying the impact of our investment into Utah's dementia-focused infrastructure. At the same time, we've been humbled by the generosity of private donors whose philanthropy has allowed the ADRC to fund more pilot studies this year than ever before.

We also deepened our commitment to statewide collaboration by extending partnerships to a growing network of scientists, clinicians, USU Extension faculty, and students working together to prevent and treat dementia. We expanded our community-based research and outreach, hosting health fairs, presentations, and public events that provide education and resources while inviting Utahns to participate in our research registry and active studies. Our Dementia Caregiver Clinic in the Sorenson Center for Clinical Excellence at USU's Logan campus is bringing much-needed services to Northern Utah and to rural Utah via telehealth.

A handwritten signature in black ink, appearing to read 'E. Fauth', written in a cursive style.

Elizabeth Fauth, Director

We remain deeply grateful for the continued support of the State of Utah, our research and community partners, and our donors, whose commitment allows us to accelerate progress, expand our research resources, and bring hope to individuals and families affected by Alzheimer's disease and related dementias.

The ADRC has supported dementia research funding:

- **7 pilot studies** conducted at Utah State University
 - Studying changes in gait as an early marker of cognitive decline
 - Exploring a natural compound as a possible Alzheimer's treatment
 - Developing new imaging tools to study brain receptors in Alzheimer's
 - Testing a short online program to support people with dementia and caregivers
 - Identifying lifestyle and personality factors linked to dementia risk
 - Exploring how nutrient loss in the brain may contribute to Alzheimer's
 - Tracking eye movements to detect early signs of cognitive aging
- **4 pilot studies** conducted at the University of Utah
 - Understanding why Alzheimer's progresses even after amyloid removal
 - Analyzing Alzheimer's care costs and challenges for families in Utah
 - Studying dementia risk after weight-loss surgery
 - Investigating how brain protein transport problems may drive Alzheimer's
- **1 pilot study** conducted at Brigham Young University
 - Using family genetics to uncover rare Alzheimer's risk factors
- The ADRC has also **supported the following projects**:
 - Developing Competencies for Behavior Analytic Service Providers in Alzheimer's and Dementia Care
 - Digital Literacy Training for Older Adults and Dementia Caregivers
- Additional projects **supported by donors**:
 - Determining how deep-fried foods may create brain-harming compounds
 - Testing a nerve-stimulation device to slow Alzheimer's progression
 - Developing a photography and video exhibition that honors Alzheimer's and dementia patients and their caregivers

ADRC Faculty Affiliates Pursue Federal Grant Funding:

- Received: **8**
- Under review: **3**

ADRC Funds Research for Compassion Compass to Support Emotional Wellbeing Following Dementia Diagnosis

An ADRC-funded research study at USU recently examined the impact of Compassion Compass, an asynchronous single-session digital mental health intervention for adults who have received a dementia diagnosis. The program was created as a collaboration between the ADRC, Institute for Disability Research, Policy, and Practice (IDRPP), and the Department of Psychology at USU. It teaches skills from Acceptance and Commitment Therapy (or ACT), which incorporates acceptance, mindfulness, and values-based strategies to promote mental health and wellbeing. Although ACT interventions have been shown to be effective at improving quality of life and reducing psychological distress among other groups, a single-session online training had not yet been developed or tested among individuals with dementia. The Compassion Compass program aims to teach skills to help individuals better navigate their emotional responses to a dementia diagnosis.



Heather Kelley, Ph.D. with doctoral student Francesca Knudsen

Heather Kelley, principal investigator and researcher at the IDRPP, said, “Our goal was to see if a self-guided, online program could really make a difference for people with dementia. Will they enroll, will they like the program, and will it improve their quality of life and mental health?”

In the study, 18 people who had received a dementia diagnosis in the past year completed the Compassion Compass program and then participated in follow-up surveys and an in-depth interview. Participants consistently reported positive changes in emotional awareness and regulation, self-compassion, understanding and accepting diagnosis, connection to self-identified values, and behaviors. Ninety-four percent of participants said they found the program helpful.

“The program’s accessible format and ACT-based skills make it a promising approach to help address the gaps in emotional support for people with dementia,” said Kelley. “With continued research, it is possible that Compassion Compass can be easily integrated into healthcare contexts in a cost-effective manner to provide a meaningful support to adults going through this life-changing diagnosis.”

USU Biological Engineers Study the Amyloid Protein, Found in Both Alzheimer's Disease and Macular Degeneration

Elizabeth Vargis, associate professor of biological engineering at USU, and her research team were awarded an ADRC-funded pilot grant to study how natural parts of aging contribute to the development of retinal diseases, such as macular degeneration. Their research studies the amyloid protein, which is found in both Alzheimer's disease and macular degeneration. By better understanding how amyloid deposits in the tissue of the eye, their work may increase understanding of amyloid deposits in the brain.

"The overall objective of the project was to model how normal aspects of aging affect the development of age-related disease," explained Dillon Weatherston, doctoral student in the Department of Biological Engineering at USU and a key member of Vargis's research group.

"By exploring how aging affects cellular behavior in the retina, we hope to better understand how age-related diseases progress, which will help with Alzheimer's disease detection and treatment."

The researchers emphasized how vital the ADRC's support has been. "Because of this funding, we were able to get real results," said Vargis. "The impact on our student researchers and on science has been tremendous."

To extend the work, the team will publish the results and seek additional nationally funded grants.

"As we explore aging from the retinal side, we will compare it to studies on the brain and continue to clarify how Alzheimer's disease and macular degeneration are connected. As we better understand this connection, I hope that we can develop better and earlier treatments for both diseases," said Weatherston. "If markers of Alzheimer's disease can be easily detected in the retina prior to any symptoms in the brain, people could take steps to preserve their brain health after a simple and non-invasive eye exam."



Elizabeth Vargis, Ph.D. with her research team

ADRC Pilot Grant Supports Larger NIH Funding to Examine Alzheimer's Disease Among Pacific Islanders



JoAnn Tschanz, Ph.D, with Perry Ridge, Ph.D.

Preliminary data acquired from a 2022 ADRC-funded pilot grant has been used to help secure a five-year grant awarded by the National Institutes of Health to Perry Ridge, Ph.D., professor of bioinformatics and neuroscience at Brigham Young University. Ridge collaborated closely with JoAnn Tschanz, Ph.D., clinical neuropsychologist and professor in the Psychology Department at Utah State University, on the pilot study with their respective research teams. The pilot aimed to augment the Cache County Memory Study (CCMS) population database with a Native Hawaiian-Pacific Islander sample. Data on this specific population are sparse. Pilot grants, or smaller studies, provide the initial proof-of-concept required in large federal grant proposals.

Ridge's team reviewed the preliminary data and found that the biology of Alzheimer's disease appears to be different in Pacific Islanders compared to other racial and ethnic groups that have been more thoroughly studied. "Our data suggest two important things," Ridge explained. "First, the most prominent genetic risk factor for Alzheimer's disease in white people is not involved in dementia in Pacific Islanders. Second, blood-based biomarkers that are now the gold standard for Alzheimer's diagnosis in white people do not appear to be predictive of disease status in Pacific Islanders."

His team aims now to determine whether existing diagnostics are accurate in Pacific Islanders and to develop new diagnostic methods, or refine existing ones, if needed. Also, they will determine if disease markers that were identified in individuals of European descent are also markers of disease in Pacific Islanders and identify disease markers that are specific to Pacific Islanders. Finally, the team will work to determine what happens to brain morphology (i.e., shape and size) in Pacific Islanders who have Alzheimer's disease compared to those who don't.

Next steps include recruiting 5,000 Pacific Islanders over the next five years, conducting thorough neuropsychological assessments, collecting genome data for genetic analyses and information about lifestyle and medical histories, and biobanking blood and plasma for future studies.

Service Impact

ADRC Hosts Special Showing of “Singin’ in the Rain” for People With Dementia and Their Caregivers

People with dementia and their caregivers residing in Cache Valley were invited to attend a special showing of the classic 1952 film “Singin’ in the Rain.” The event was held in collaboration with the Utah chapter of the Alzheimer’s Association and the historic Utah Theatre in downtown Logan.

“We purposely chose an older movie that attendees may have an emotional connection with,” explained ADRC Director Beth Fauth. She also encouraged attendees to sing along to the familiar songs. “Caregivers sometimes worry about their loved one’s actions in social settings. At this movie, everyone was free to be themselves, and there was a lot of understanding and support from the audience,” Fauth explained.

Event organizers were intentional in creating an activity that caregivers would enjoy as well. “Being a caregiver of someone with dementia can be very isolating,” said Fauth. “As a center we want to create and support activities where caregivers meet each other, and learn about resources.” People interested in learning about dementia-friendly events can email adrc@usu.edu.



Second Annual Alzheimer’s Disease and Dementia Prevention Health Fair



The ADRC hosted its second annual Alzheimer’s Prevention Health Fair for the community in Northern Utah at the Taggart Student Center on the USU Logan campus. The event brought together experts from USU in psychology, aging, neuroscience, nutrition, and caregiving to provide resources and support for people experiencing memory loss and their caregivers. Attendees had the opportunity to learn about lifestyle choices that can reduce Alzheimer’s risk, including diet, physical activity, social engagement, sleep, and stress management. Eleven lifestyle factors—the backbone of the ongoing Prevent Alzheimer’s for Life Study (PALS)—were featured at interactive booths, where participants could speak directly with researchers about strategies to improve cognitive health. The fair continues to provide ongoing education, research opportunities, and support for Utah residents and caregivers navigating Alzheimer’s disease and dementia.

Dementia Caregiver Clinic Enters Second Year of Supporting Utah Residents

Since August 2024, experts from the Sorenson Center and the ADRC have been providing clinical services to people with dementia and their family caregivers. Funded by the Utah Department of Health and Human Services (DHHS), USU's Dementia Caregiver Clinic continues to serve residents of Cache, Rich, and Box Elder counties free of charge, with telehealth options available for caregivers living elsewhere in Utah.

The clinic is an active, ongoing program that continues to provide support to families. During a full consultation, caregivers and their loved ones with memory concerns meet with an interdisciplinary team of professionals from the Sorenson Clinic and the ADRC. Together, they evaluate the needs of both the person with dementia (or suspected dementia) and their caregiver, ensuring continued guidance, support, and resources throughout their journey.

Get Involved with the ADRC

435-797-1772 • cehs.usu.edu/adrc • adrc@usu.edu

Join us in our ongoing mission to research dementia and related disorders, provide Statewide services with community partners, and train a dementia-competent workforce. Our primary goals are to provide additional resources for caregivers and support through research opportunities.

- If you're interested in participating in **research or volunteering** with the center, please contact us.
- Keep up to date with the latest from the ADRC. Email us or visit our website to subscribe to our **newsletter**.
- Your donations matter! If you would like to **contribute** to the ADRC's mission of outreach and research, visit cehs.usu.edu/giving or scan the QR code below, and select ADRC as the donation designation.
- Have you or your loved ones have been impacted by Alzheimer's disease or dementia? We want to hear from you. **Send your story** to adrc@usu.edu.



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