Commonwealth of Virginia
Alzheimer's and Related Diseases Research Award Fund

2026-2027 ARDRAF Recipients Announced

The Alzheimer's and Related Diseases Research Award Fund (ARDRAF) was established by the Virginia General Assembly in 1982 to stimulate innovative investigations into Alzheimer's disease and related disorders along a variety of avenues, including the causes, epidemiology, diagnosis and treatment of the disorder; public policy and the financing of care; and the social and psychological impacts of the disease upon the individual, family and community.

Awards Committee 2026

The Virginia Center on Aging acknowledges the dedicated work of this independent review panel of subject matter experts, and is grateful to them for contributing their time and expertise.

Paul Aravich, Ph.D.
Eastern Virginia Medical School

Kimberly Battle, Ph.D., FNP-BC
Virginia Commonwealth University

Anne Brown, Ph.D.
Virginia Tech

Frank Castora, Ph.D.
EVMS at Old Dominion University

Severn Churn, Ph.D.
National Institute of Neurological Disorders and Stroke

Leslie Davidson, OTR/L, Ph.D., FAOTA
George Washington University

Kirsty Dixon, Ph.D.
Virginia Commonwealth University

Theodore Dumas, Ph.D.
George Mason University

Shannon Farris, Ph.D.
Virginia Tech

Rodney Guttmann, Ph.D.
University of West Florida

Rebecca Heise, Ph.D.
Virginia Commonwealth University

Vasiliki Ikonomidou, Ph.D.
Vectech

Christine Jensen, Ph.D.
Riverside Center for Excellence in Aging and Lifelong Health

Elvin Price, PharmD, Ph.D.
Virginia Commonwealth University

Terrie K. Rife, Ph.D.
James Madison University

Lana Sargent, Ph.D., R.N., FNP-C, GNP-BC
Virginia Commonwealth University

Patricia Trimmer, Ph.D.
Virginia Commonwealth University

George Worthington, M.S.
Virginia Department for Aging and Rehabilitative Services

Ning Zhang, Ph.D.
Virginia Commonwealth University

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ASTROCYTE-DERIVED PLEIOTROPHIN AS A MODULATOR OF GLIAL NEUROINFLAMMATION IN ALZHEIMER'S DISEASE

Ashley Brandebura, Ph.D. - University of Virginia

Neuroinflammation mediated by non-neuronal cells, known as glial cells, is an early feature of Alzheimer's disease (AD) pathology. During AD progression, glial cells undergo molecular changes referred to as "reactive state transitions." These reactive states can function as a "double-edged sword," with some aspects promoting tissue repair while others drive inflammatory signaling cascades that when activated chronically are detrimental to neuronal health. However, the exact molecular mechanisms that drive these separate prongs of reactive states are not well understood. Identification of molecular mediators that can promote the tissue repair aspects while minimizing long-term neuroinflammation may be effective to slow AD progression.

Our previous work showed that AD astrocytes downregulate a secreted synaptic-modulating molecule called Pleiotrophin. We showed that restoring Pleiotrophin levels with an overexpression strategy resulted in more compact amyloid plaque pathology, suggesting a promotion of repair mechanisms, and also attenuated neuroinflammation, suggesting that Pleiotrophin may have secondary functions as an anti-inflammatory cytokine.

We will build on this work to further understand the mechanisms by which Pleiotrophin reduces neuroinflammation. First, we will investigate how Pleiotrophin influences astrocyte and microglial reactive state transitions by examining these cells at the molecular level following Pleiotrophin overexpression using single-cell strategies. Second, we will investigate if Pleiotrophin alters the cytokine secretion repertoire of astrocytes and/or microglia and identify the receptor(s) that Pleiotrophin binds to.

These studies will provide evidence for role of Pleiotrophin as an anti-inflammatory cytokine and provide mechanistic insight into the cell types and receptor(s) through which Pleiotrophin exerts its anti-inflammatory effects.

Ashley Brandebura, Ph.D., is an Assistant Professor in the Department of Neuroscience and the Brain Immunology and Glia Center at the University of Virginia School of Medicine. She received a B.S. in Neuroscience from Allegheny College and a Ph.D. in Biochemistry & Molecular Biology from West Virginia University, where she studied astrocyte-synapse interactions during brain circuit development. She then completed postdoctoral training with Dr. Nicola Allen at the Salk Institute for Biological Studies, where she studied astrocyte contributions to circuit dysfunction in Down syndrome, a condition that is both a neurodevelopmental disorder and a neurodegenerative disorder, with high rates of AD comorbidity. Dr. Brandebura's lab studies astrocyte and microglial contributions to neuroinflammation in AD and investigates approaches to modulate astrocyte and microglial reactive states to optimize repair functions while attenuating negative consequences of chronic neuroinflammation in the AD brain.

Commonwealth of Virginia
Alzheimer's and Related Diseases Research Award Fund

CIRCLES OF CARE: ADAPTING THE FAMILY AND GROUP CONFERENCING MODEL TO CARE FAMILIES OF PERSONS LIVING WITH DEMENTIA

Li-Mei Chen, Ph.D. M.S.W.; Lucas Reyes Prieto, Ph.D., M.S.W.; Megumi Inoue, Ph.D., M.S.W., R.N.; and Dr. Naoru Koizumi, Ph.D. - George Mason University

More than 11 million Americans provide unpaid care for a person living with dementia, yet many face the challenges of caregiving while feeling isolated and overwhelmed. While family members, friends, neighbors and community members often want to help, few evidence-based programs provide a structured way to bring these support networks together.

With support from this award, Dr. Li-Mei Chen and her team will introduce Circles of Care, the first U.S. adaptation of the Family Group Conferencing model for dementia care. Although similar approaches have shown promise in countries such as the Netherlands and the United Kingdom, this will be the first study to evaluate how a social network-centered approach can strengthen dementia care in the United States. Guided by a trained facilitator, Circles of Care brings together family members and trusted members of a person's social network to develop a shared care plan, strengthen supportive relationships and coordinate caregiving responsibilities.

The project will evaluate whether Circles of Care is feasible and acceptable for diverse families and whether it enhances confidence, empowerment through supportive relationships, collaboration and social connectedness while reducing caregiver burden and isolation. By harnessing the power of social relationships, this innovative project has the potential to transform how dementia care is supported in communities across the United States.

Li-Mei Chen, Ph.D., is a gerontologist and assistant professor in the Department of Social Work at the George Mason University College of Public Health. She is a Fellow of the Gerontological Society of America and has taught and conducted research in the United States and Japan for more than 20 years. Dr. Chen's research examines how social relationships influence health and well-being in later life. Her work focuses on improving dementia care through relationship-centered approaches, including technology-assisted training for frontline care workers and support for families caring for people living with dementia. She also studies how civic engagement and meaningful social connections can reduce loneliness, social isolation, and mental health disparities among underserved older adults. Through community-engaged, interdisciplinary research, Dr. Chen develops evidence-based strategies that strengthen social connectedness and promote healthy aging, with the goal of improving the quality of life and well-being of older adults and their families.

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IDENTIFYING CELLULAR AND MOLECULAR DRIVERS OF ALZHEIMER'S DISEASE (AD) RISK IN SOCIAL ISOLATION

Michelle L. Olsen, Ph.D. and Michelle H. Theus, Ph.D. - Virginia Tech

Loneliness and social isolation, which can exacerbate feelings of loneliness, affect up to one-half of older adults in the U.S. The National Institutes of Health recognizes social isolation and loneliness among older adults as a significant health hazard, dramatically increasing dementia risk and AD pathogenesis.

Recent human clinical data have linked globally reduced cerebral blood flow (CBF) and depression, a condition strongly linked to social isolation. Correspondingly, decades of research indicate that a global reduction in CBF represents one of the earliest observable pathologies in the brains of individuals with AD, a phenotype that is recapitulated in animal models of AD with vascular amyloid-beta (Aβ) accumulation, or cerebral amyloid angiopathy. We recently demonstrated in AD mice that cerebral amyloid angiopathy within the leptomeninges correlates with reduced cerebral blood flow.

Herein, we provide novel preliminary data that housing wild-type mice in social isolation leads to reduced global CBF. Further, exercise (or voluntary wheel running) does not rescue reduced cerebral blood flow in socially isolated mice, suggesting that social isolation is sufficient to drive cerebral blood flow reductions and, as such, may drive AD pathology.

The goal of this project is to determine if social isolation exacerbates cortical blood flow loss in AD by enhancing leptomeningeal vascular Aβ accumulation, thus choking off the primary route for cortical blood inflow. Here we 1) evaluate the effect of social isolation on cortical cerebral blood flow in a preclinical AD mouse model and 2) evaluate the effects of social isolation on meningeal vessel Aβ accumulation in a pre-clinical AD mouse model.

Drs. Olsen and Theus are cellular and molecular neuroscientists with longstanding interests in glia, neuroinflammation and the vasculature in health and disease. Their recent work has shown that hyperaccumulation of amyloid-beta Aβ on leptomeningeal vasculature is associated with reduced cerebral blood flow, in animal models of AD. Reduced cerebral blood flow is an early hallmark of AD. Their findings demonstrating extensive leptomeningeal arterial Aβ deposition may serve to starve cortical tissue of its blood supply, offering a new explanation for the underlying cause of early hypoperfusion in AD.

Michelle Olsen, Ph.D. is a Professor and the Director of the School of Neuroscience at Virginia Tech.

Michelle Theus, Ph.D. is a Professor and the Associate Chair of the Department of Biomedical Sciences and Pathobiology.

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REAL-WORLD PRESCRIBING AND COGNITIVE SAFETY OF OVERACTIVE BLADDER MEDICATIONS IN OLDER ADULTS WITH DEMENTIA

Stephanie W. Zuo, M.D., M.S.; Justin Mutter, M.D. MSc; and Wendy Novicoff, Ph.D. - University of Virginia

Over half of adults living with Alzheimer's disease and related dementias (ADRD) experience bothersome overactive bladder (OAB). As dementia progresses, OAB typically worsens, resulting in severe urinary urgency and leakage that do not improve without treatment. OAB is associated with depression, falls, increased caregiver burden and nursing home placement.

OAB symptoms are most commonly managed using medications, including anticholinergics and beta-3 agonists. Both classes of medications are effective at reducing OAB in up to 60% of people with ADRD. However, anticholinergic medications have been linked to an increased risk of cognitive decline. Despite this, they remain widely used, with nearly one in ten individuals with ADRD prescribed an anticholinergic OAB medication. Beta-3 agonists, on the other hand, target the bladder muscle and are theoretically safer, but no studies have yet examined the cognitive impacts of beta-3 agonists in persons with ADRD.

Our proposed research seeks to improve OAB management in people with ADRD. Our aims are to 1) establish the first population-level view of OAB prescribing patterns among Virginians with ADRD, and 2) rigorously compare the longitudinal cognitive effects of anticholinergics versus beta-3 agonists in adults with cognitive dysfunction. Our results will directly define new standards of care for adults with ADRD and OAB, which will lead to downstream benefits for patient quality of life, caregiver burden, and public health costs.

Stephanie W. Zuo, M.D., M.S., is an Assistant Professor of Urogynecology and Reconstructive Pelvic Surgery with dual appointments in the Departments of Obstetrics and Gynecology and Urology at the University of Virginia. Her clinical practice focuses on caring for older women with pelvic floor disorders, including urinary and fecal incontinence and pelvic organ prolapse. Dr. Zuo's research examines how aging and dementia influence outcomes in urogynecologic care, with the goal of developing effective, tailored interventions that improve both medical and surgical results for older adults.

VCU College of Health Professions

Gerontology and the Virginia Center on Aging

Commonwealth of Virginia

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FUNDING OPPORTUNITY

In 1982, the Commonwealth of Virginia established the Alzheimer's and Related Diseases Research Award Fund (ARDRAF) to encourage scientific research into:

- the underlying causes, epidemiology, diagnosis, or treatment of Alzheimer's and related diseases
- policies, programs and financing for care and support of those affected by Alzheimer's and related diseases
- the social and psychological impacts of Alzheimer's and related diseases upon the individual, family and community

Funding: Four awards of up to $75,000 will be granted.

Eligibility: Applicants must be affiliated with colleges or universities, research institutes, or other not-for-profit organizations located in Virginia.

Timeline:

- **By 11:59 p.m. on Dec. 1, 2026, prospective applicants are required to submit a non-binding letter of intent (LOI).** Potential applicants will be contacted if LOIs are deemed inappropriate.
- **Applications are due by 11:59 p.m. on Feb. 1, 2027**. After approval of their LOI, applicants will be emailed a link to submit their full application.
- **Announcement of Awards:** Awardees will be notified by July 1, 2027.
- **Funding Period:** Begins July 1, 2027 and ends June 30, 2028.

Scan the QR code or visit https://vcoa.chp.vcu.edu/grant/ardraf/ for more information and to apply.