Aging in America

America’s population is aging dramatically. More than 10,000 of the 78 million Baby Boomers are turning 65 every day.\textsuperscript{1} Approximately 20\% of the population will be 65 years of age and older by 2030.\textsuperscript{2}

Care for older adults with multiple conditions accounts for 66\% of health care spending. Experts predict that health care costs will increase 25\% by 2030, primarily due to this population aging. Spending for Medicare alone will jump by more than 60\% in the next 10 years, from $555 billion in 2011 to $903 billion by 2020.\textsuperscript{3}

This aging population poses unique scientific, medical and societal challenges that must be met if people are to live long, healthy, and productive lives.

What is AFAR?

The American Federation for Aging Research (AFAR) is a national non-profit organization founded in 1981. Its mission is to support and advance healthy aging through biomedical research. AFAR invests in medical research to advance a better understanding of how aging processes increase our vulnerabilities to diseases as we age.

AFAR has awarded over $160 million in grants to more than 3,200 talented scientists and trainees. It funds scientists at all stages of their careers, providing grants which range from $7,500 to $220,000. AFAR identifies and supports cutting-edge research and encourages physicians to address the needs of older adults. AFAR provides opportunities for scientific exchange and collaborations, and updates the public on significant medical findings.

Aging and Disease

Age is a major risk factor for several physically, mentally, and economically devastating diseases typical of old age. Science provides the tools to uncover the connections between aging and illness. AFAR funds research projects which examine the impact of aging on the development and progression of diseases such as Alzheimer’s disease and dementia.

Alzheimer’s Disease

Alzheimer’s disease is a type of dementia that over time causes debilitating problems with memory, thinking, and behavior.

Alzheimer’s disease affects 1 in 9 Americans over 65. It jumps to 1 in 3 Americans over 85.\textsuperscript{4}

Alzheimer’s disease is the 5th leading cause of death in adults over 65.\textsuperscript{5}

Alzheimer’s disease is progressive, and, as the disease worsens, can cause hallucinations, delusions, and reckless behavior.\textsuperscript{6}

Causes of Alzheimer’s are not well understood – most cases appear randomly.\textsuperscript{7}

Among the top 10 causes of death in America, Alzheimer’s disease is unique in that it cannot be prevented, cured, or slowed down.\textsuperscript{8}
AFAR’s Grants to Alzheimer’s Disease Research

- Over $22.3 million has been awarded to 227 scientists researching Alzheimer’s disease and related dementias at 90 institutions in 32 states as well as Ireland and Israel

AFAR Grantees conducting noteworthy Alzheimer’s Disease Research

Randall J. Bateman, MD: Distinguished Professor of Neurology, Washington University School of Medicine
- AFAR Beeson Scholar, 2007
- MetLife Foundation Promising Investigator Award Recipient, 2012
- MetLife Foundation Major Award Recipient, 2015
- Director of the Dominantly Inherited Alzheimer’s Network Therapeutic Trials Unit (DIAN), which is leading efforts to begin the first clinical trials of treatments designed to prevent the progression of inherited Alzheimer’s disease

David M. Holtzman, MD: Professor and Chair of Neurology; Professor of Developmental Biology; Associate Director of the Alzheimer’s Disease Research Center; Member, Hope Center for Neurological Disorders, Washington University School of Medicine
- AFAR Beeson Scholar, 1995
- MetLife Foundation Award Recipient, 2006; Chair, MetLife Foundation Awards for Medical Research Advisory Committee

Subhojit Roy, MD, PhD: Associate Professor of Pathology, University of California, San Diego
- New Investigator Award Recipient, 2011
- Led study to determine why only some people develop Alzheimer’s disease, which was published in Neuron in August 2013 and featured in the Huffington Post

Reisa A. Sperling, MD, MMSc: Director, Center for Alzheimer’s Disease Research and Treatment; Co-Leader, Neuroimaging Program, Massachusetts Alzheimer’s Disease Research Center; Professor of Neurology, Harvard Medical School
- AFAR Beeson Scholar, 2003
- Featured frequently by major news outlets such as The New York Times for her work on developing screening tools and treatments for Alzheimer’s disease

Terrence Town, PhD: Professor, Physiology and Biostatistics, University of Southern California
- AFAR Julie Martin Mid-Career Award Recipient, 2011
- Created the first rat model for Alzheimer’s disease, which will make it easier to identify causes and treatments for Alzheimer’s disease in humans; this study was published in the Journal of Neuroscience and featured in US News and World Report

“...I wish we had a treatment that could prevent or reverse this cruel disease that now afflicts more than 5 million Americans. But the hard truth is that nothing turns back the clock once Alzheimer’s symptoms take hold.” - Richard W. Besdine, MD, AFAR Medical Officer (November 2012)
Aging & Alzheimers’s Disease  |  AFAR Funded Research Projects

David Adamowicz: Characterize induced pluripotent stem cell models of age-related neurodegeneration and optimize transfection methods for future live imaging, University of California, San Diego (2013)


Michal Arbel, PhD: Impaired drainage of solutes from the brain as a common mechanism of brain aging and amyloid deposition in Cerebral amyloid angiopathy and Alzheimer’s disease, Massachusetts General Hospital (2014)

Randall J. Bateman, MD: Abeta and proteomic analysis of CSF in AD and Aging, Washington University School of Medicine (2007)

Einor Ben Assayag, PhD: Stress vulnerability and post-stroke cognitive decline, Tel Aviv University (2011)

Ashley I. Bush, MD, PhD, BS, DPM: Zinc exposure as a risk factor for Alzheimer’s Disease, Harvard Medical School (1995)

Todd Cohen, PhD: Novel Post-translational Mechanisms that Mediate Neurodegeneration in Aging and Alzheimer’s Disease, University of North Carolina at Chapel Hill (2015)

Ehud Cohen, PhD: Roles of Peptidylprolyl cis/trans Isomerases in the regulation of aging and countering Alzheimer’s disease, Hebrew University of Jerusalem (2009)

Carlos Cruchaga, PhD: Identification of additional risk variants and functional characterization of TREM2 and PLD3, Washington University School of Medicine (2013)

Radoslaw Dobrowolski, PhD: Altered Molecular Trafficking Inhibits GSK3/Wnt Signaling leading to Phospho-Tau build-up in Early and Late Onset Alzheimer’s Disease, Rutgers University, Newark (2013)

Roberto Fernandez-Romero, MD, MPH, PhD: Mechanisms of Impaired Navigation in Aging and Alzheimer’s Disease, University of Virginia (2014)

James E. Galvin, MD: In Vitro and In Vivo Models of Synucleinopathies, Washington University School of Medicine (2002)

Todd E. Golde, MD, PhD: Proteolytic Generation of the Amyloid Beta Peptide in Alzheimer’s Disease, Mayo Clinic College of Medicine, Jacksonville (1997)

Jason Hinman, MD, PhD: Development of a Novel Mouse Model of Mixed Vascular and Alzheimer’s Dementia, University of California, Los Angeles (2015)

Lap Ho, PhD: Characterizing the Influence of Immune Inflammatory Activites in the Clinical Progression of Alzheimer’s Disease Dementia, Mount Sinai School of Medicine (2002)

David M. Holtzman, MD: Molecular and cellular factors that play a role in maintaining neuronal form and function in the normal aging CNS and how they may be altered in AD, Washington University School of Medicine (1995)

Willam Hu, MD, PhD: Early CSF detection of FTLD, Emory University (2013)

Bradley T. Hyman, MD, PhD: Are Nitric Oxide Synthase Neurons Spared in Alzheimer’s Disease? Massachusetts General Hospital (2002)

Catherine Kaczorowski, PhD: Genetics of Cognitive Aging: The Use of the BXD Murine Reference Panel to Identify the Genetic Modifiers of Memory Function, University of Tennessee Health Science Center Systems (2014)
Itamar Kahn, PhD: Longitudinal functional characterization of neurodegeneration induced by Cdk5 aberrant activation using optogenetic fMRI, Technion - Israel Institute of Technology (2012)

Kejal Kantarci, MD, MSc: H MRS markers of MCI syndromes and common dementias, Mayo Clinic, Rochester (2007)

Jason Karlawish, MD: Caregiver and Patient Preferences for the Treatment of Alzheimer’s Disease, University of Pennsylvania (2000)


Donovan Maust, MD: Preventable Hospitalization in Dementia: The Impact of Neuropsychiatric Symptoms, University of Michigan (2014)

Bernadette McGuinness, MD, PhD, MRCP: Platelet b-secretase in Mild Cognitive Impairment, Queen’s University, Belfast (2007)

David G. Morgan, PhD: Gene Expression in Alzheimer’s Disease, University of Southern California (1987)

Sarah Neuner: Identification of Genetic Modifiers of Neuronal Deficits and Memory Failure in Alzheimer’s Disease, University of Tennessee Health Science Center (2003)

Subhojit Roy, PhD: Neuronal trafficking and metabolism of key proteins in Alzheimer’s disease and novel intervention strategies, University of California, San Diego (2011)

Manu Sharma, PhD: Tau Proteostasis by Hsc70 Co-Chaperones, Weill Cornell Medical College (2015)

Joshua Shulman, MD, PhD: CD2AP and the integration of synaptic structure with function in brain aging and Alzheimer’s disease, Baylor College of Medicine (2014)


Reisa A. Sperling, MD, MMSc: Investigating the Neural Underpinnings of Memory Impairment in Aging and Early Alzheimer’s Disease, Brigham and Women’s Hospital/ Harvard Medical School (2003)

Stephen A. Todd, MD: Investigation of platelet b-secretase activity in Alzheimer’s Disease, Queen’s University, Belfast (2008)

Terrence Town, PhD: Re-balancing TGF-beta Signaling in Age Alzheimer’s Rats, Cedars-Sinai Medical Center (2011)

R. Scott Turner, MD, PhD: The Role of X11& in Amyloid Precursor Protein, University of Michigan (1998)

Marc Vermulst, PhD: Transcription errors in Alzheimer’s disease, Children’s Hospital of Philadelphia (2015)

Kristine Yaffe, MD: Determinants of Cognitive Change and its Outcomes in African-American and White Elders, University of California, San Francisco (2001)

Guang Yang, PhD: In vivo imaging of microglia function in a mouse model of Alzheimer’s disease, New York University School of Medicine (2008)

Steven G. Younkin, MD, PhD: The Basal Forebrain Cholinergic System in Aging and Alzheimer’s Disease, Case Western Reserve University (1986)

Alon Zaslaver, PhD: Synaptic failure in AD during aging-associated proteostasis collapse, The Hebrew University of Jerusalem (2015)

Qi Zhang, PhD: A mechanistic study of presynaptic dysfunction in Alzheimer’s disease, Vanderbilt University (2010)