

2008 Alzheimer's Association Grants Portfolio

—Organized by trends in research

Biology of disease-related molecules

1. Production of beta-amyloid

- **Willem G. Annaert, Ph.D.**
Flanders Interuniversity Institute for Biotechnology
Leuven, Belgium
Targeting and Localization of Distinct Gamma-Secretase Complexes Versus APP
Investigator-Initiated Research Grant—\$240,000 over three years
Which variant form of gamma-secretase targets APP?
 - **Bing Gong, M.D.**
Mount Sinai School of Medicine
New York, New York
Fbx2-Mediated Ubiquitin Pathway: A Novel Route for BACE1 Degradation
Investigator-Initiated Research Grant—\$240,000 over three years
What mechanism regulates levels of a protein involved in beta-amyloid production?
 - **Yong-Keun Jung, Ph.D.**
Seoul National University
Seoul, South Korea
Novel Activator Genes of Gamma-Secretase (SecAs) for APP-Favorable Cleavage
Investigator-Initiated Research Grant—\$240,000 over three years
Do certain proteins activate gamma-secretase to target and process APP?
 - **David E. Kang, Ph.D.**
University of California, San Diego
La Jolla, California
Targeting the LRP Pathway for Abeta Reduction From Inside and Outside
Investigator-Initiated Research Grant—\$240,000 over three years
How does APP interaction with another protein promote the production of beta-amyloid?
 - **Seong-Hun Kim, M.D., Ph.D.**
University of Florida
Gainesville, Florida
Role of Rer1 in the Regulation of Gamma-Secretase Trafficking and Activity
Investigator-Initiated Research Grant—\$240,000 over three years
How does a certain protein's regulation of gamma-secretase activity contribute to beta-amyloid production?
 - **Yueming Li, Ph.D.**
Sloan-Kettering Institute for Cancer Research
New York, New York
Modulation of the Gamma-Secretase Complex and Activity by Individual Subunits
Investigator-Initiated Research Grant—\$240,000 over three years
How do presenilin proteins work with other enzymes to promote excessive beta-amyloid production?
 - **Peter T. Nelson, M.D., Ph.D.**
University of Kentucky Research Foundation
Lexington, Kentucky
Mechanism and Therapeutic Significance of an Alzheimer's Disease-Relevant MicroRNA Pathway
New Investigator Research Grant—\$100,000 over two years
Does inhibition of a certain brain chemical decrease the expression of a gene encoding a key protein in beta-amyloid production?
 - **Masuo Ohno, Ph.D.**
Nathan S. Kline Institute for Psychiatric Research
Orangeburg, New York
Testing of Rab5-Overexpressing Mice as a Novel Alzheimer's Disease Model
Investigator-Initiated Research Grant—\$240,000 over three years
How might a certain protein contribute to the abnormal trafficking of APP and subsequent beta-amyloid production?
 - **Davide Tampellini, Ph.D.**
Joan & Sanford I. Weill Medical College of Cornell University
New York, New York
Study of the Relation Between Synaptic Activity and Amyloid-Beta
New Investigator Research Grant—\$99,660 over two years
How does synaptic activity affect the production and transport of beta-amyloid?
 - **Gopal Thinakaran, Ph.D.**
University of Chicago
Chicago, Illinois
Altering Microdomain Localization of Gamma-Secretase in Transgenic Mice
Investigator-Initiated Research Grant—\$240,000 over three years
How do factors controlling the location of gamma-secretase in a cell mediate beta-amyloid production?
 - **Kulandaivelu S. Vetrivel, Ph.D.**
University of Chicago
Chicago, Illinois
Exploring Beta-Secretase Activity in Lipid Raft Microdomains
New Investigator Research Grant—\$100,000 over two years
What role do certain proteins play in transporting and locating enzymes involved in beta-amyloid production?
 - **Sungok Yoon, Ph.D.**
Ohio State University Research Foundation
Columbus, Ohio
The Role of JNK3 in APP Trafficking
Investigator-Initiated Research Grant—\$214,800 over three years
How does a protein's trafficking of APP in a cell influence beta-amyloid production?
- #### 2. Formation of neurofibrillary tangles
- **Koichi Iijima, Ph.D.**
Thomas Jefferson University
Philadelphia, Pennsylvania
Mechanisms of Tau Phosphorylation and Toxicity Induced by Abeta42 In Vivo
New Investigator Research Grant—\$99,999 over two years
What enzymes mediate beta-amyloid-induced abnormal chemical changes in tau proteins?
 - **Fei Liu, Ph.D.**
Research Foundation for Mental Hygiene, Inc. at New York State Institute for Basic Research
Staten Island, New York
Involvement of Dyrk1A in ASF-Regulated Alternative Splicing of Tau Exon 10
New Investigator Research Grant—\$100,000 over two years
How do certain proteins regulate the production of variant tau proteins susceptible to tangle formation?

- **Jaya Padmanabhan, Ph.D.**
Johnnie B. Byrd, Sr. Alzheimer's Center and Research Institute, Inc.
Tampa, Florida
Regulatory Functions of Inflammatory Proteins in Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Do inflammatory proteins help regulate disease-related alterations of the tau protein?
- 3. Normal function of disease-related proteins**
- **Olav Andersen, Ph.D.**
University of Aarhus
Aarhus, Denmark
Influence on APP Processing by the Sorting Complex of SorLA and Retromer
New Investigator Research Grant—\$100,000 over two years
How do certain proteins normally regulate the trafficking of APP and other proteins in neurons?
 - **Andrew F. Hill, Ph.D.**
University of Melbourne
Parkville, Australia
Investigating Exosomes as Novel Secretory Carriers of APP and Abeta
New Investigator Research Grant—\$99,000 over two years
How does certain cellular “machinery” secrete APP and beta-amyloid from neurons?
 - **Ipe Ninan, Ph.D.**
New York University School of Medicine
New York, New York
Modulation of Synaptic Neurotransmission by Physiological Amyloid-Beta
New Investigator Research Grant—\$99,956 over two years
What role do healthy levels of beta-amyloid play in cell function and cell-to-cell communication?

Alzheimer's disease pathology

1. Properties and toxicity of abnormal protein structures

- **Yoshitaka Ishii, Ph.D.**
University of Illinois - Chicago
Chicago, Illinois
Toxicity and Structure of Aggregated Alzheimer Beta-Amyloid
Investigator-Initiated Research Grant—\$240,000 over three years
What are the toxic and structural properties of various beta-amyloid aggregates?
- **Matt Kaerberlein, Ph.D.**
University of Washington
Seattle, Washington
TOR Signaling in Amyloid Beta Toxicity
How does TOR (target of rapamycin) kinase affect amyloid beta toxicity?
- **Bruce T. Lamb, Ph.D.**
Cleveland Clinic Foundation
Cleveland, Ohio
A Humanized Mouse Model of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
What can be learned about beta-amyloid–tau interactions in a novel genetic mouse model of Alzheimer's disease?

- **Bradley Linden Nilsson, Ph.D.**
University of Rochester
Rochester, New York
Probing Amyloid-Beta Structure and Aggregation With Non-Natural Amino Acids
New Investigator Research Grant—\$99,998 over two years
How does beta-amyloid folding affect its aggregation and toxicity?
- **Einar M. Sigurdsson, Ph.D.**
New York University School of Medicine
New York, New York
Tau Pathology: Therapy and In Vivo Imaging
Will a new in vivo imaging technique clarify the neurotoxic effects of the tau protein?
- **Michael S. Wolfe, Ph.D.**
Brigham and Women's Hospital
Boston, Massachusetts
Regulation of RNA Splicing in Alzheimer's and Related Dementias
Zenith Fellows Award—\$450,000 over three years
How might errors in the “translation” of genetic instructions result in toxic forms of beta-amyloid and tau?

2. Mediators of beta-amyloid toxicity

- **Gilles J. Guillemin, Ph.D.**
University of New South Wales
Sydney, Australia
Identification of a New Neurodegenerative Mechanism in Alzheimer's Disease
Investigator-Initiated Research Grant—\$228,453 over three years
What intermediary role does a certain protein play in beta-amyloid's toxic effect on cells?
- **Giulio Tagliatalata, Ph.D.**
University of Texas Medical Branch at Galveston
Galveston, Texas
Neurobehavioral Toxicity of Natural Amyloid-Beta Oligomers
Investigator-Initiated Research Grant—\$240,000 over three years
How does a certain protein mediate the toxic effect of small beta-amyloid structures?
- **Henrik Zetterberg, M.D., Ph.D.**
Göteborg University
Molndal, Sweden
Targeted Proteomics of Cerebrospinal Fluid Amyloid-Beta Fragments in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
What mechanism regulates the accumulation of beta-amyloid in cerebrospinal fluid in Alzheimer's disease?

3. Synaptic dysfunction: Loss of cell-to-cell communication

- **Guojun Bu, Ph.D.**
Washington University in St. Louis
St. Louis, Missouri
LRP1 and ApoE Isoforms in Brain Lipid Metabolism and Synaptic Functions
Zenith Fellows Award—\$450,000 over three years
How do variant forms of an Alzheimer risk gene affect the function of a protein that plays a role in maintaining synapses?

- **Gilbert Di Paolo, Ph.D.**
Columbia University Medical Center
New York, New York
Genetic Modulation of PIP2 in Alzheimer's Disease Mouse Models: Effect on Cognitive Decline
New Investigator Research Grant—\$100,000 over two years
Do beta-amyloid oligomers cause synaptic dysfunction by targeting a certain cell-membrane protein?
 - **Wen-Biao Gan, Ph.D.**
New York University School of Medicine
New York, New York
The Role of Microglia in Amyloid Plaque Clearance and Synaptic Pathology
Investigator-Initiated Research Grant—\$240,000 over three years
How do supporting brain cells affect synaptic function and dysfunction?
 - **Nashaat Gerges, Ph.D.**
Medical College of Wisconsin
Milwaukee, Wisconsin
Role of Neurogranin in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
How does beta-amyloid alter the properties and function of a protein essential for cell-to-cell communication?
 - **Kwang Mook Jung, Ph.D.**
University of California, Irvine
Irvine, California
Deficits in Anandamide Signaling Underlie Cognitive Dysfunction in Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,714 over three years
Do beta-amyloid-induced alterations of a protective brain chemical result in synaptic dysfunction?
 - **Peter Penzes, Ph.D.**
Northwestern University
Chicago, Illinois
Modeling Synapse Dysgenesis-Linked Memory Impairment in Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,764 over three years
How might structural changes in neurons account for the link between synaptic dysfunction and memory impairment in Alzheimer's disease?
 - **Subhojit Roy, Ph.D.**
University of California, San Diego
San Diego, California
Mechanisms of Axonal Transport Dysfunction in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
How might amyloid-induced damage to a cell's nutrient-transport network disrupt synaptic function?
- 4. Mitochondrial dysfunction: Impairment in cells' energy-producing structures**
- **Anand Hindupur, Ph.D.**
University of Pennsylvania
Philadelphia, Pennsylvania
Mechanisms Underlying the Biogenesis of Mitochondrial Abeta
Investigator-Initiated Research Grant—\$240,000 over three years
How does beta-amyloid affect a brain cell's energy-producing structures?
 - **Qingli Shi, Ph.D.**
Winifred Masterson Burke Medical Research Institute
White Plains, New York
Oxidative Stress/Gene Regulation of Mitochondrial Enzymes Implicated in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
How might toxic oxygen molecules disrupt the function of proteins in a neuron's energy-producing structures?
 - **Shi Du Yan, M.D.**
Columbia University
New York, New York
Cyclophilin D as a Mitochondrial Target of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
How might a certain protein contribute to energy-producing dysfunction in neurons in Alzheimer's disease?
- 5. Function and dysfunction of neuroprotective factors**
- **Jason Eriksen, Ph.D.**
University of Houston
Houston, Texas
Role of PGRN in Microglial Activity in Alzheimer's Disease
New Investigator Research Grant—\$99,970 over two years
What mediating role might a certain protein play between toxic Alzheimer agents and dysfunctional "janitorial" processes in neurons?
 - **Stanislav L. Karsten, Ph.D.**
Los Angeles Biomedical Research Institute at Harbor –
UCLA Medical Center
Torrance, California
Neuroprotective Role of Puromycin-Sensitive Aminopeptidase (PSA)
New Investigator Research Grant—\$100,000 over two years
What role does a certain protein play in the removal of excess or abnormal tau from neurons?
 - **David M. Lin, Ph.D.**
Cornell University
Ithaca, New York
A Novel Mouse Model of Neurodegeneration
Investigator-Initiated Research Grant—\$240,000 over three years
How might the disruption of helper cells in the brain contribute to the degeneration of neurons?
 - **Helene Marie, Ph.D.**
European Brain Research Institute
Rome, Italy
Does NGF Deprivation Lead to Glutamatergic/GABAergic Network Imbalance?
New Investigator Research Grant—\$98,450 over two years
How might a decline in a neuroprotective protein lead to a chemical imbalance in neurons in Alzheimer's disease?
 - **Robert A. Marr, Ph.D.**
Rosalind Franklin University of Medicine and Science
North Chicago, Illinois
Investigation of the Role of MMEL in Protection From Alzheimer's Disease
New Investigator Research Grant—\$239,999 over two years
What is the role of a beta-amyloid-degrading enzyme in protecting brain cells?

- **William Mobley, M.D., Ph.D.**
Stanford University
Stanford, California
Degeneration of Hippocampal Circuits in Down Syndrome: a Role for APP?
Investigator-Initiated Research Grant—\$239,901 over three years
Does APP disrupt a neuron’s ability to use protective proteins?
 - **Nicholas W. Seeds, Ph.D.**
University of Colorado Denver, Anschutz Medical Campus
Aurora, Colorado
Plasminogen Activator and Its Inhibitors in Alzheimer’s Disease
Investigator-Initiated Research Grant—\$200,000 over three years
What factors inhibit normal beta-amyloid-degrading functions in the brain?
 - **Dengshun Wang, M.D., Ph.D.**
University of Wisconsin–Madison
Madison, Wisconsin
Identifying Pathophysiologically Relevant Amyloid-Beta–Degrading Enzyme in Alzheimer’s Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Does impairment of beta-amyloid-degrading enzymes contribute to the accumulation of beta-amyloid in Alzheimer’s disease?
 - **Ronald Wetzel, Ph.D.**
University of Pittsburgh
Pittsburgh, Pennsylvania
The Role of Amyloid-Beta Aggregate Polymorphism in Alzheimer’s Disease
Investigator-Initiated Research Grant—\$240,000 over three years
How might amyloid plaque function to sequester toxic amyloid in the brain?
 - **Dun-Sheng Yang, Ph.D.**
Nathan S. Kline Institute for Psychiatric Research
Orangeburg, New York
Rescue Autophagic-Lysosomal Protein Degradation to Reverse Amyloid Pathology
Investigator-Initiated Research Grant—\$239,968 over three years
Does repair of a neuron’s internal “waste management” system reverse beta-amyloid-induced cell damage?
 - **Ryohei Yasuda, Ph.D.**
Duke University Medical Center
Durham, North Carolina
Amyloid-Beta Induced Rho GTPase Signaling in Dendritic Spines
New Investigator Research Grant—\$100,000 over two years
How does beta-amyloid affect enzymes responsible for maintaining a neuron’s dendrites, or long branching arms?
- 6. Disruption of other brain cell functions and properties**
- **Bernardo Rudy, M.D., Ph.D.**
New York University School of Medicine
New York, New York
Neocortical Cholinergic Function in Alzheimer’s Mouse Models
Investigator-Initiated Research Grant—\$198,000 over three years
How does the dysfunction of specialized neurons contribute to symptoms of Alzheimer’s disease?
 - **Grace Stutzmann, Ph.D.**
Rosalind Franklin University of Medicine and Science
North Chicago, Illinois
Neuronal Ca²⁺ Dysregulation as a Pathogenic Factor in Alzheimer’s Disease
New Investigator Research Grant—\$100,000 over two years
How might the dysregulation of calcium levels in neurons affect the function of cellular processes linked to Alzheimer’s disease?
 - **Michele Zoli, M.D.**
Università di Modena e Reggio Emilia
Modena, Italy
Genetic Deletion of Hippocampal Precursors in a Transgenic Model of Alzheimer’s Disease
Investigator-Initiated Research Grant—\$198,000 over three years
How does Alzheimer’s disease influence the normal generation of new nerve cells in the hippocampus?
- 7. Inflammation**
- **Sergey Kalinin, M.D.**
University of Illinois at Chicago
Chicago, Illinois
Locus Coeruleus Damage During Normal Aging and in Transgenic Models of Alzheimer’s Disease
New Investigator Research Grant—\$99,999 over two years
How does inflammation affect cells in a vulnerable region of the brain in normal and Alzheimer-like aging mice?
 - **Lih-Fen Lue, Ph.D.**
Sun Health Research Institute
Sun City, Arizona
Deficiency of Circulating Soluble Receptor RAGE in Subjects With Mild Cognitive Impairment
Investigator-Initiated Research Grant—\$238,843 over three years
Does reduction of an immune-system protein increase the risk of Alzheimer-related inflammation and disease progression?
 - **Susan O. McGuire, Ph.D.**
Loyola University of Chicago
Maywood, Illinois
Loss of C5L2 and NFT Formation: Conversion of Mild Cognitive Impairment to Alzheimer’s Disease
Investigator-Initiated Research Grant—\$239,323 over three years
Does the loss of brainstem cells critical for suppressing inflammation contribute to the progression of Alzheimer’s disease?
 - **Susanna Rosi, Ph.D.**
University of California, San Francisco
San Francisco, California
Altered Neuronal-Microglia Communication Impacts Neuronal Function
New Investigator Research Grant—\$100,000 over two years
By what mechanisms might inflammation disrupt neuron function and cell-to-cell communication?
 - **Volney Sheen, M.D., Ph.D.**
Beth Israel Deaconess Medical Center
Boston, Massachusetts
In Vitro Modeling of Neuronal-Glial Interactions in Alzheimer’s Disease
New Investigator Research Grant—\$99,990 over two years
By what mechanism does an inflammation-related protein contribute to cell dysfunction or death?

8. Cardiovascular factors in Alzheimer's disease

- **Angela L. Jefferson, Ph.D.**
Boston University
Boston, Massachusetts
Left Ventricular Function and Mild Cognitive Impairment
Investigator-Initiated Research Grant—\$240,000 over three years
Does dysfunction of the heart's main pumping chamber contribute to deficits in brain function?
 - **James McCallum Noble, M.D.**
Columbia University Medical Center
New York, New York
Arteriosclerosis and Alzheimer's in a Multiethnic Group of Autopsy Brains
New Investigator Research Grant—\$95,501 over two years
What is the relationship between the severity of hardened arteries and severity of dementia?
 - **Henry Rusinek, Ph.D.**
New York University School of Medicine
New York, New York
Hippocampal Blood Flow and Vascular Reactivity in Normal Aging and Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,941 over three years
Can abnormal blood flow in a memory-related region of the brain predict neurodegeneration in that region?
 - **Aad Van Der Lugt, Ph.D.**
Erasmus Medical College
Rotterdam, Netherlands
Arterial Calcifications and Risk of Dementia
New Investigator Research Grant—\$100,000 over two years
What contribution does blood vessel damage make to cognitive decline and neurodegenerative diseases?
- ## 9. Other factors in Alzheimer pathology
- **Adriana Ferreira, Ph.D.**
Northwestern University
Chicago, Illinois
Cholesterol and the Susceptibility of Aging Neurons to ABeta Toxicity
Investigator-Initiated Research Grant—\$240,000 over three years
Do levels of cholesterol in neurons increase as neurons age and in turn cause increased cleavage of the protein tau, neuronal degeneration and cell death?
 - **Lawrence S. Honig, M.D., Ph.D.**
Columbia University Medical Center
New York, New York
Changes in Telomere Length and the Risk of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Does the shortening of end regions of chromosomes contribute to the onset and progression of Alzheimer's disease?
 - **Yoshihiro Konishi, M.D., Ph.D.**
National Hospital Organization Tottori Medical Center
Tottori, Japan
Comparison of Beta-Secretase Between Alzheimer Brain in the United States and Japan
New Investigator Research Grant—\$96,000 over two years
How might beta-amyloid pathology differ between populations with significantly different diet and lifestyle practices?

- **Mary Jo LaDu, Ph.D.**
University of Illinois – Chicago
Chicago, Illinois
The Effect of ApoE Isoform on Intraneuronal ApoE/Abeta42 Interactions
Zenith Fellows Award—\$450,000 over three years
What is the effect of variant forms of an Alzheimer risk gene on its protein products' interactions with beta-amyloid?
- **Terri Monk, M.D.**
Duke University Medical Center
Durham, North Carolina
Does Inhalational Anesthesia Accelerate Postoperative Cognitive Decline?
Investigator-Initiated Research Grant—\$240,000 over three years
Do certain forms of general anesthesia contribute to cognitive decline after surgery?
- **Ken A. Paller, Ph.D.**
Northwestern University
Evanston, Illinois
Memory Processing During Sleep in Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Do people with Alzheimer's disease experience disruption of memory processing during sleep?
- **Sanjay W. Pimplikar, Ph.D.**
Cleveland Clinic Foundation
Cleveland, Ohio
The Role of APP Intracellular Domain in Neuronal Excitotoxicity
Investigator-Initiated Research Grant—\$240,000 over three years
How does a portion of APP contribute to an overstimulation of neurons linked to neuron damage and death?
- **Rebecca J. Rylett, Ph.D.**
University of Western Ontario
London, Ontario, Canada
Modulation of Neuronal Gene Expression by Choline Acetyltransferase
Investigator-Initiated Research Grant—\$240,000 over three years
What role does an enzyme play in gene expression patterns that may make certain cells vulnerable in Alzheimer's disease?
- **John Seibyl, M.D.**
Institute for Neurodegenerative Disorders
New Haven, Connecticut
Imaging Noradrenergic Function in Alzheimer's Disease
Investigator-Initiated Research Grant—\$236,544 over three years
How does Alzheimer's disease affect specialized cells in the brainstem over time?

Dementia risk factors

- **Jeffery B. Allen, Ph.D.**
Wright State University
Dayton, Ohio
Impact of Quality of Education on Cognitive Status of African-American Elders
Investigator-Initiated Research Grant—\$185,526 over three years
What impact does education quality and literacy have on the cognitive and adaptive functioning of older African-Americans?

- **Natalia A. Crivello, Ph.D.**
Tufts University
Boston, Massachusetts
Folate Deficiency, Brain Lipids and Amyloid Toxicity in APP/PS1 Mice
New Investigator Research Grant—\$98,997 over two years
What influence does folate deficiency have on levels of an essential brain chemical and amyloid toxicity in Alzheimer-like mice?
- **Mathieu Lesort, Ph.D.**
University of Alabama at Birmingham
Birmingham, Alabama
Pathological Interactions in Diabetes and Alzheimer's Disease
Investigator-Initiated Research Grant—\$200,000 over three years
Does diabetes-induced chemical changes to tau predispose the brain to Alzheimer pathology?
- **Brenda L. Plassman, Ph.D.**
Duke University Medical Center
Durham, North Carolina
Middle- and Late-Life Predictors of Alzheimer's Disease in Elderly Twins
Investigator-Initiated Research Grant—\$198,363 over three years
Can cardiovascular risk factors of Alzheimer's disease be better characterized by comparing outcomes among twins?
- **Dorene M. Rentz, Psy.D.**
Brigham and Women's Hospital, Inc.
Boston, Massachusetts
Amyloid Deposition in Normal Controls: Impact of Cognitive Reserve
Investigator-Initiated Research Grant—\$239,569 over three years
Does a presumed cognitive reserve provide a protective effect in people with imaging-detected beta-amyloid deposits?
- **Nicole Schupf, Ph.D.**
Columbia University Medical Center
New York, New York
Genetics of Estrogen and Alzheimer's Disease in a Multiethnic Cohort
Investigator-Initiated Research Grant—\$239,999 over three years
Do variant forms of genes related to estrogen production increase the risk of Alzheimer's disease?
- **Kristine Yaffe, M.D.**
University of California, San Francisco
San Francisco, California
Predictors of Mild Cognitive Impairment/Dementia Among the Oldest Old Women
Investigator-Initiated Research Grant—\$240,000 over three years
What factors increase the risk of dementia in women in their 80s and 90s?
- **Andras L. Palotas, M.D., Ph.D.**
Asklepios-Med Bt.
Szeged, Hungary
Early Diagnosis Using Fibroblasts and Lymphocytes in Alzheimer's Disease
New Investigator Research Grant—\$97,912 over two years
Can variant genes associated with white blood cells or connective tissue cells indicate a risk or the onset of Alzheimer's disease?
- **Calin I. Prodan, M.D.**
University of Oklahoma Health Science Center
Oklahoma City, Oklahoma
Coated Platelets: A Potential Biomarker for Alzheimer's Disease
New Investigator Research Grant—\$99,968 over two years
Can a certain subset of blood platelets serve as a marker of Alzheimer's disease onset and progression?
- **Chengjie Xiong, Ph.D.**
Washington University in St. Louis
St. Louis, Missouri
The Earliest Antecedent Markers of Alzheimer's Disease
New Investigator Research Grant—\$99,956 over two years
Can a combination of disease markers be identified that provide a clinically useful measure of Alzheimer's disease risk or onset?

2. Brain imaging

- **Mark Bondi, Ph.D.**
University of California, San Diego
San Diego, California
Functional Neuroanatomy of Memory in Elders: a Combined FMRI and DTI Study
Investigator-Initiated Research Grant—\$239,988 over three years
Can functional magnetic resonance imaging and diffusion tensor imaging identify patterns of brain changes in people at high risk for Alzheimer's?
- **Jason E. Gestwicki, Ph.D.**
University of Michigan
Ann Arbor, Michigan
Chemical Probes for Selective Recognition of Amyloid Oligomers
New Investigator Research Grant—\$99,813 over two years
Can an imaging agent selectively identify only small aggregates of beta-amyloid in the brain?
- **William Jagust, M.D.**
University of California, Berkeley
Berkeley, California
The Detection of Alzheimer's Disease in Normal Older People
Zenith Fellows Award—\$449,999 over three years
Can a combination of imaging studies identify healthy older adults in nonsymptomatic early stages of Alzheimer's disease?
- **Ricardo Maccioni, Ph.D.**
International Center for Biomedicine
Santiago, Chile
In Search of Tau-Binding Molecules With Potential Clinical Applications
Investigator-Initiated Research Grant—\$238,800 over three years
Can a tau-binding agent be identified that could be used in imaging studies to measure tau pathology?

Diagnosis and disease monitoring

1. Biomarkers

- **Gilbert T. Feke, Ph.D.**
Retina Associates, Inc.
Boston, Massachusetts
Objective Biomarkers for Alzheimer's Disease in the Retina
Investigator-Initiated Research Grant—\$239,390 over three years
Can changes in the retina provide an early indication of cognitive impairment?

- **Pedro Rosa-Neto, M.D., Ph.D.**
McGill University
Montreal, Canada
Glutamatergic Abnormalities in Patients With Early Alzheimer's Disease
New Investigator Research Grant—\$98,000 over two years
Can increased levels of a cell-surface protein associated with Alzheimer's disease be detected with brain imaging?
 - **Youssef Zaim Wadghiri, Ph.D.**
New York University School of Medicine
New York, New York
Susceptibility-Based MRI Detection of Alzheimer's Amyloid
Investigator-Initiated Research Grant—\$240,000 over three years
Can a chemical probe used with magnetic resonance imaging enable researchers to measure levels of beta-amyloid in the brains of Alzheimer-like mice?
- ### 3. Other diagnostic studies
- **Vladimir Hachinski, Ph.D.**
Lawson Health Research Institute
London, Canada
Risk Score Development to Predict Alzheimer's Disease and Dementia
Investigator-Initiated Research Grant—\$238,770 over three years
Can a risk assessment tool identify people at increased risk of developing Alzheimer's disease?
 - **Hochang Lee, M.D.**
Johns Hopkins University School of Medicine
Baltimore, Maryland
Assessment of Burden of Dementia Among Korean Elders in Maryland
Investigator-Initiated Research Grant—\$240,000 over three years
Can a Korean-language assessment tool improve the diagnosis of dementia in Korean-Americans?
 - **Michael D. Lee, Ph.D.**
University of California, Irvine
Irvine, California
Bayesian Methods for the Detection, Diagnosis and Treatment of Alzheimer's
New Investigator Research Grant—\$87,726 over two years
What imaging, clinical and cognitive tests most accurately diagnose Alzheimer's disease and measure its severity?
 - **Adriana Macias Strutt, Ph.D.**
Baylor College of Medicine
Houston, Texas
Validation of a Spanish Neuropsychological Dementia Battery
New Investigator Research Grant—\$99,715 over two years
Can a comprehensive test for dementia be validated for Spanish-speaking individuals in the United States?
 - **Philip Williams, Ph.D.**
University of Hawaii
Honolulu, Hawaii
Medicines From Marine Sources
New Investigator Research Grant—\$99,977 over two years
Can chemicals isolated from sponges and marine bacteria inhibit a key protein in beta-amyloid production?
 - **Muralikrishnan Dhanasekaran, Ph.D.**
Auburn University
Auburn, Alabama
Novel Neuroprotective Effects of Centella asiatica
New Investigator Research Grant—\$99,990 over two years
By what mechanism does an Asian medicinal plant decrease beta-amyloid levels in Alzheimer-like mice?
 - **Valentina Echeverria Moran, Ph.D.**
Bay Pines Foundation, Inc.
Bay Pines, Florida
Molecular Mechanisms Underlying the Neuroprotective Actions of Cotine
New Investigator Research Grant—\$100,000 over two years
Can a chemical derived from nicotine prevent the formation of toxic beta-amyloid structures in Alzheimer-like mice?
 - **Douglas L. Feinstein, Ph.D.**
University of Illinois – Chicago
Chicago, Illinois
Anti-amyloidogenic Effects of Noradrenaline
Investigator-Initiated Research Grant—\$239,999 over three years
Does a drug that boosts levels of certain brainstem cells have an anti-amyloid effect and other therapeutic effects on Alzheimer-like mice?
 - **Veronica Galvan, Ph.D.**
University of Texas Health Sciences Center
San Antonio, Texas
Small-Molecule Inhibitors of Asp664 Cleavage of APP
New Investigator Research Grant—\$148,660 over two years
Can a molecule be identified that inhibits a particular protein-protein interaction that helps initiate beta-amyloid production?
 - **Bonnie Goodwin, Ph.D.**
University of South Florida
Tampa, Florida
Gamma-Secretase Inhibitors Induce Cell Cycle Defects and Chromosome Aneuploidy
New Investigator Research Grant—\$100,000 over two years
What is the effect of gamma-secretase inhibition on normal cellular functions?
 - **Michael Hecht, Ph.D.**
Princeton University
Princeton, New Jersey
Discovery of Compounds that Prevent A-Beta Toxicity
Investigator-Initiated Research Grant—\$239,993 over three years
Can a compound be identified that blocks the aggregation of beta-amyloid in cultured cells and in a roundworm model of beta-amyloid aggregation?
 - **Ashok N. Hegde, Ph.D.**
Wake Forest University
Winston-Salem, North Carolina
Ameliorating Harmful Abeta Effects on Synaptic Plasticity and Memory
Investigator-Initiated Research Grant—\$240,000 over three years
Can an experimental drug inhibit the action of beta-amyloid on synaptic function?

Drug development and clinical interventions

1. Anti-amyloid therapies

- **Yona Levites, Ph.D.**
Mayo Clinic
Jacksonville, Florida
Single Chain Fragments as a Tool to Target Generic Amyloid
New Investigator Research Grant—\$100,000 over two years
Can an anti-amyloid antibody be designed that specifically targets small, toxic beta-amyloid aggregates in Alzheimer-like mice?

- **Louis B. Hersh, Ph.D.**
University of Kentucky
Lexington, Kentucky
A Modified Neprilysin for Gene Therapy
Investigator-Initiated Research Grant—\$238,936 over three years
Does an engineered version of a beta-amyloid-degrading brain enzyme have a disease-modifying effect in Alzheimer-like mice?
 - **Daniel Paris, Ph.D.**
Roskamp Institute
Sarasota, Florida
Effect of Celastrol in a Transgenic Mouse Model of Alzheimer's Disease
Investigator-Initiated Research Grant—\$200,000 over three years
Does a compound derived from an Asian medicinal plant have a disease-modifying effect in Alzheimer-like mice?
 - **Peter M. Tessier, Ph.D.**
Rensselaer Polytechnic Institute
Troy, New York
Molecular Mechanisms of Abeta Aggregation Inhibitors
New Investigator Research Grant—\$100,000 over two years
By what mechanism does a certain class of compounds inhibit the aggregation of beta-amyloid molecules?
 - **Mark H. Tuszynski, Ph.D.**
University of California, San Diego
La Jolla, California
Therapeutic Effects of BDNF in APP Mutant Mice
Investigator-Initiated Research Grant—\$240,000 over three years
Does brain-derived neurotrophic factor (BDNF) prevent neuron loss, preserve neuron function and improve behavioral changes in mice with amyloid precursor protein mutations?
 - **Jerry C. Yang, Ph.D.**
University of California, San Diego
La Jolla, California
Exploring Methods to Chemically Degrade Aggregated Abeta Peptides
New Investigator Research Grant—\$100,000 over two years
Can experimental compounds degrade small, toxic aggregates of beta-amyloid in cultured cells?
- ## 2. Nutritional therapies
- **Nancy B. Emerson Lombardo, Ph.D.**
Boston University
Bedford, Massachusetts
Nutritional Supplement Clinical Trial for Early Alzheimer's (MPNSP)
Investigator-Initiated Research Grant—\$240,000 over three years
Does a combination of nutritional supplements have a treatment effect in people with early-stage Alzheimer's disease?
 - **Donald K. Ingram, Ph.D.**
Louisiana State University Agricultural and Mechanical College
Baton Rouge, Louisiana
Developing Calorie Restriction Mimetics for Treating Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,426 over three years
Can drugs that mimic the effect of a low-calorie diet delay cognitive decline in Alzheimer-like mice?
 - **Thomas B. Shea, Ph.D.**
University of Massachusetts, Lowell
Lowell, Massachusetts
A Phase II Clinical Trial of a Vitamin/Nutriceutical Formulation for Alzheimer's Disease
Investigator-Initiated Research Grant—\$237,449 over three years
Does a nutritional supplement have a beneficial effect on cognitive function in people with Alzheimer's disease?
- ## 3. Other therapies
- **Fortunato Battaglia, Ph.D.**
City College of New York and the Research Foundation of City University of New York
New York, New York
Boosting Memory in APP/PS1 Mice With Transcranial Magnetic Stimulation
New Investigator Research Grant—\$99,000 over two years
Can magnetic stimulation of brain cell activity restore normal function and biochemistry of synapses in Alzheimer-like mice?
 - **David H. Cribbs, Ph.D.**
University of California, Irvine
Irvine, California
Reducing the Risk of Cerebral Vascular Adverse Events in Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Can treatments reduce the effect of amyloid-induced damage to brain blood vessels in Alzheimer-like mice?
 - **Orestes Forlenza, Ph.D.**
University of São Paulo
São Paulo, Brazil
Disease-Modifying Properties of Lithium in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
Can lithium treatment delay the onset of Alzheimer's disease in people with mild cognitive impairment?
 - **Pamela A. Maher, Ph.D.**
The Salk Institute for Biological Studies
La Jolla, California
Fisetin and derivatives as Neuroprotective Drugs for Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Can a new form of the natural product fisetin protect neurons and enhance memory in Alzheimer's?
 - **Prasad R. Padala, M.D.**
University of Nebraska Medical Center
Omaha, Nebraska
Improving Function, Quality of Life and Glycemia in Diabetics With Dementia
New Investigator Research Grant—\$98,690 over two years
Can a drug that reduces apathy improve blood sugar level control and quality of life in people with diabetes and dementia?
 - **Martin J. Sadowski, M.D., Ph.D.**
New York University School of Medicine
New York, New York
Therapeutic Monoclonal Antibodies for Prion Exposure Prophylaxis
Investigator-Initiated Research Grant—\$240,000 over three years
Can an antibody block the spread of abnormal prions in mice with prion-induced neurodegeneration?

- **Moussa Youdim, Ph.D.**
Technion–Israel Institute of Technology
Haifa, Israel
Novel Neuroprotective and Neurorestorative Drugs for Alzheimer's Disease
Investigator-Initiated Research Grant—\$297,000 over three years
Can iron-binding drugs protect and restore nerve cells in mice with an Alzheimer-like pathology?
- **Dolores E. Gallagher-Thompson, Ph.D.**
Stanford University
Stanford, California
Development and Evaluation of a Fotonovela to Manage Difficult Behaviors
Investigator-Initiated Research Grant—\$240,000 over three years
Is a fotonovela an effective tool for training Latino caregivers to manage problem behaviors and neuropsychiatric symptoms?

Care, support and social-behavioral factors

1. Nursing homes, assisted living residences and dementia care units

- **Kathryn de Medeiros, Ph.D.**
Copper Ridge Institute
Sykesville, Maryland
The Social Environments of People With Dementia in Long-Term Care
New Investigator Research Grant—\$99,389 over three years
What factors influence the quality of social relationships in dementia care facilities?
- **Sharon K. Inouye, M.D.**
Hebrew Rehabilitation Center for the Aged
Boston, Massachusetts
Impact of Hospitalization in Alzheimer's Disease: Risk Factors and Outcomes
Investigator-Initiated Research Grant—\$240,000 over three years
What are the risk factors for hospitalization and the outcomes of hospital care in people with Alzheimer's disease?
- **Susan C. Miller, Ph.D.**
Brown University
Providence, Rhode Island
End-of-Life Care and Hospice: Older Adults With Dementia in Nursing Homes
Investigator-Initiated Research Grant—\$198,963 over three years
What is the quality and extent of hospice care available to nursing home residents with late-stage dementia?
- **Quincy M. Samus, Ph.D.**
Johns Hopkins University School of Medicine
Baltimore, Maryland
Specialization of Dementia Care Assisted Living: A Pilot Project
New Investigator Research Grant—\$100,000 over two years
How does quality of care differ between general care and dementia-specific care in assisted living facilities?

2. Care interventions and quality of life

- **David M. Bass, Ph.D.**
Benjamin Rose Institute
Cleveland, Ohio
Partners in Dementia Care
Investigator-Initiated Research Grant—\$239,811 over three years
Can a collaborative care program of the Veterans Administration and the Alzheimer's Association improve care for U.S. veterans?
- **Michelle Bourgeois, Ph.D.**
Ohio State University
Columbus, Ohio
Determining Quality of Life in Dementia With Visual and Written Stimuli
Investigator-Initiated Research Grant—\$200,000 over three years
Can visual and verbal techniques help people with dementia answer quality-of-life questions?
- **Judith G. Gonyea, Ph.D.**
Boston University
Boston, Massachusetts
Circulo de Cuidado: A Behavioral Group Intervention for Latino Families
Investigator-Initiated Research Grant—\$239,080 over three years
Can a group behavioral intervention program for Latino caregivers minimize behavioral and neuropsychiatric symptoms in people with Alzheimer's disease?
- **McKee J. McClendon, Ph.D.**
Case Western Reserve University
Cleveland, Ohio
Quality of Caregiving in Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,996 over three years
How do a caregiver's skills, emotional health and caregiving style affect the quality of life of a person with dementia?
- **Joann Reinhardt, Ph.D.**
Jewish Home and Hospital for the Aged
New York, New York
Enhancing Life Quality for Residents With End-Stage Dementia and Families
Investigator-Initiated Research Grant—\$237,067 over three years
How does an interdisciplinary care model maximizing physical and psychosocial comfort affect the quality of life for people with end-stage dementia?
- **Robert A. Stern, Ph.D.**
Boston University Medical Campus
Boston, Massachusetts
Assessment of Driving Safety in Aging, Mild Cognitive Impairment and Dementia
Investigator-Initiated Research Grant—\$239,999 over three years
Can a combination of office-based tests accurately predict safe driving skills in people with mild cognitive impairment and dementia?
- **Angelo Volandes, M.D.**
Massachusetts General Hospital
Boston, Massachusetts
Using Video Images of Dementia in Advanced Care Planning
New Investigator Research Grant—\$96,844 over two years
Can video depictions of advanced dementia help people with early-stage dementia make long-term care plans?

3. Technology-assisted care

- **Arlene Astell, Ph.D.**
University of St. Andrews
St. Andrews, United Kingdom
Prompting to Support Independence in Dementia
Everyday Technologies for Alzheimer Care Grant
—\$179,634 over two years
What kind of electronic prompts can assist people with dementia with such tasks as cooking or keeping track of appointments?

- **Holly B. Jimison, Ph.D.**
 Oregon Health & Science University
 Portland, Oregon
Cognitive Health Coaching for Elders in a Home Environment
 Everyday Technologies for Alzheimer Care Grant
 —\$189,842 over two years
 Can a computer-based coaching tool improve the management of physical exercise, nutrition and sleep for people with dementia?
 - **Alex Mihailidis, Ph.D.**
 University of Toronto
 Toronto, Ontario, Canada
Toward a Pervasive Prompting System: Improving and Expanding the COACH
 Everyday Technologies for Alzheimer Care Grant
 —\$196,324 over three years
 Can an electronic prompting tool assist people with dementia in performing everyday self-care activities?
 - **Pascal Poupart, Ph.D.**
 University of Waterloo
 Waterloo, Ontario, Canada
Composite Behavioral Markers to Assess and Monitor Alzheimer's Disease
 Everyday Technologies for Alzheimer Care Grant
 —\$200,000 over three years
 Can sensors detect behaviors that enable the monitoring of behavioral symptoms of Alzheimer's disease?
- 4. Caregiver support**
- **Ilene Siegler, Ph.D.**
 Duke University Medical Center
 Durham, North Carolina
Culture and the Emotional Health of Black and White Alzheimer's Disease Caregivers
 Investigator-Initiated Research Grant—\$238,729 over three years
 How do cultural and social factors influence the emotional health of caregivers?