

## 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?
- **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 Tagliavola, 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

## 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?
- **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 Ca<sup>2+</sup> 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?

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## 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?

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## 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?

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## 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?

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## 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?