## 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?

### 2. Formation of neurofibrillary tangles

- **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?
2008 Research Grants Portfolio—Organized by trends in research

3. Normal function of disease-related proteins

- 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?

- Olav Andersen, Ph.D.
  University of Aarhus
  Aarhus, Denmark
  **Influence on APP Processing by the Sorting Complex of SorLA and Retroner**
  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 Taglialatela, 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?
4. Mitochondrial dysfunction: Impairment in cells' energy-producing structures

- **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?

5. Function and dysfunction of neuroprotective factors

- **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?

- **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 Purumycin-Sensitive Aminopeptidase (PSA) in Alzheimer’s Disease*
  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 Mohley, 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
  Locas 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
  New Investigator 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 Toxicty*
     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*
  Investigator-Initiated 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?
• 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?

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?

• 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 Cotinine*
  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?
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?

- **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. Tusznyski, 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
  Can experimental compounds degrade small, toxic aggregates of beta-amyloid in cultured cells?

- **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?

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—$238,936 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 Fotonova to Manage Difficult Behaviors*
  Investigator-Initiated Research Grant—$240,000 over three years
  Is a fotonova an effective tool for training Latino caregivers to manage problem behaviors and neuropsychiatric symptoms?

• **Judith G. Gonyea, Ph.D.**
  Boston University
  Boston, Massachusetts
  *Círculo 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?

• **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?

• **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?

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?

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?