

2004 Alzheimer's Association Grant Portfolio

—Organized by trends in research

APP/Beta-Amyloid

1. APP function

- **Veronica Galvan, Ph.D.**
Buck Institute for Age Research
Novato, California
A Role for the Intracytoplasmic Cleavage of APP in Alzheimer's Disease
New Investigator Research Grant—\$99,140 over two years
Exploring the function of the part of beta-amyloid's parent molecule that stays inside a cell.
- **Edward H. Koo, M.D.**
University of California at San Diego
La Jolla, California
APP Cytoplasmic Domain and Cell Death
Investigator-Initiated Research Grant—\$240,000 over three years
Does the part of beta-amyloid's parent molecule that doesn't become beta-amyloid signal cells to self-destruct?
- **Michael P. Murphy, M.A., Ph.D.**
Mayo Clinic, Jacksonville
Jacksonville, Florida
Using Cloning Technology to Create an APP Transgenic Rat
New Investigator Research Grant—\$100,000 over two years
A rat model of Alzheimer's disease would be easier to autopsy and would offer greater potential to study behavioral effects of experimental therapies.
- **Tommaso Russo, M.D.**
CEINGE Biotecnologie Avanzate
Naples, Italy
Regulation of Gene Expression by APP-Fe65 Complex
Investigator-Initiated Research Grant—\$239,800 over three years
Exploring whether the portion of beta-amyloid's parent molecule that stays inside the cell is involved in activating certain genes.

2. Molecules involved in APP processing and beta-amyloid production

- **Guojun Bu, Ph.D.**
Washington University
St. Louis, Missouri
Role of LRP1B in APP Trafficking and Alzheimer's Disease
Investigator-Initiated Research Grant—\$239,993 over three years
Exploring how certain proteins influence the function of beta-amyloid's parent molecule.
- **Alain Israel, Ph.D.**
Institut Pasteur
Paris, France
Genetic Analysis of Gamma-Secretase Activity in Mammalian Cells
Investigator-Initiated Research Grant—\$237,600 over three years
Identifying subparts of an enzyme involved in producing beta-amyloid that may offer more attractive therapeutic targets than the whole molecule.

- **Yueming Li, Ph.D.**
Sloan-Kettering Institute for Cancer Research
New York, New York
Defining the Catalytic Machinery of Secretosome for Alzheimer's Disease Therapy
Zenith Fellows Award—\$250,000 over two years
Understanding the chemical steps that produce beta-amyloid.
 - **Stephen Pasternak, M.D., C.M., Ph.D.**
University of Western Ontario
Toronto, Ontario, Canada
Characterizing the Endosomal/Lysosomal Production of Beta-Amyloid
New Investigator Research Grant—\$99,806 over two years
Exploring the role of cellular substructures in producing beta-amyloid.
 - **Gopal Thinakaran, Ph.D.**
University of Chicago
Chicago, Illinois
Mechanisms of Raft Association and Abeta Production by PS1/Gamma-Secretase
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring precise molecular details involved in production of beta-amyloid.
 - **Philip C. Wong, Ph.D.**
Johns Hopkins University
Baltimore, Maryland
Reduction of Gamma-Secretase Activity by RNAi in Brains of Mutant APP/PS1 Mice
Zenith Fellows Award—\$250,000 over two years
Understanding possible side effects of blocking beta-amyloid production.
- ### 3. Beta-amyloid aggregation, toxicity and function
- **Changhai Cui, Ph.D.**
West Virginia University Research Corporation
Rockville, Maryland
Modulation of GluRs by Soluble Oligomers of Amyloid Beta Peptides
New Investigator Research Grant—\$99,998 over two years
Exploring a mechanism by which small groups of beta-amyloid fibers may disrupt cell-to-cell communication.
 - **Jochen Klein, Ph.D., D.Sc.**
Texas Tech University Health Sciences Center
Amarillo, Texas
Amyloid Deposition and Central Cholinergic Activity
Investigator-Initiated Research Grant—\$146,424 over two years
How does beta-amyloid disrupt one particular nerve cell network more than others?

◆ Indicates research considering the impact of ethnic, cultural and socioeconomic factors in Alzheimer's disease and dementia care.

- **Douglas V. Laurents, Ph.D.**
Instituto de Química-Física
Madrid, Spain
High Resolution Structure of Abeta Peptide Oligomers by NMR
New Investigator Research Grant—\$99,897 over two years
Using nuclear magnetic resonance to explore the structure and function of early stages of beta-amyloid aggregation.
- **Agueda Rostagno, Ph.D.**
New York University
New York, New York
Amyloidogenic Peptides: Conformational Modifiers, Inflammation and Toxicity
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring how amyloid deposits form in two disorders other than Alzheimer's disease.
- **Jie Shen, Ph.D.**
Brigham and Women's Hospital
Boston, Massachusetts
Role of Presenilin-1 Mutation in Synaptic Dysfunction and Alzheimer's Disease Pathogenesis
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring how gene variations known to cause Alzheimer's disease actually damage nerve cells.

Other Disease Mechanisms and Treatment Targets

1. Tau, neurofibrillary tangles and hyperphosphorylation

- **Apostolia Baki, Ph.D.**
Mount Sinai School of Medicine
New York, New York
PS1 Prevents Development of Alzheimer's Disease Pathological Hallmarks via PI3K Signaling
New Investigator Research Grant—\$100,000 over two years
Exploring a mechanism by which a gene may cause Alzheimer's disease.
- **Gail V.W. Johnson, Ph.D.**
University of Alabama at Birmingham
Birmingham, Alabama
Tau Phosphorylation and Caspase Cleavage in Disease Pathogenesis
Investigator-Initiated Research Grant—\$239,991 over three years
Clarifying the role and function of tau in Alzheimer's disease in an effort to find new therapeutic targets.
- **George Perry, Ph.D.**
Case Western Reserve University
Cleveland, Ohio
Phosphorylation Dependency of Protein Oxidation
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring the relationship between two molecular processes implicated in Alzheimer's disease.

2. APOE

- **Pamela J. McMillan, Ph.D.**
Seattle Institute for Biomedical and Clinical Research
Seattle, Washington
Effect of APOE on IDE and Insulin Signaling in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
Exploring whether a risk gene for Alzheimer's disease affects insulin regulation, in turn affecting amyloid processing.
- **Jay Nierenberg, M.D., Ph.D.**
The Nathan Klein Institute
Orangeburg, New York
MRI and MRSI of Subjects With ApoE Genotype
New Investigator Research Grant—\$100,000 over two years
Exploring how a risk gene for Alzheimer's disease may affect brain structure and function.
- **Barbara L. Trommer, M.D.**
Evanston Northwestern Healthcare Research Institute
Evanston, Illinois
ApoE Isoform Dependent Susceptibility of LTP to Amyloid Beta
Investigator-Initiated Research Grant—\$239,834 over three years
Exploring how beta-amyloid may interfere with memory formation.

3. Immune system response and inflammation

- **Benoit Melchior, Ph.D.**
The Scripps Research Institute
La Jolla, California
TREM-2-Mediated Activation of Microglia
New Investigator Research Grant—\$99,626 over two years
Exploring how activation of the brain's immune cells affects Alzheimer's disease pathology.
- **Alon Monsonego, Ph.D.**
Ben Gurion University of the Negev
Beersheva, Israel
Investigation of ABeta-Reactive T Cells in a Mouse Model of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring an immune reaction that may explain why some recipients of the first "Alzheimer vaccine" developed brain inflammation.
- **Timothy J. Seabrook, B.M.L.Sc., Ph.D.**
Brigham and Women's Hospital
Boston, Massachusetts
Modulation of Microglia Activation: A Potential Therapeutic for Alzheimer's Disease
New Investigator Research Grant—\$99,994 over two years
Exploring whether suppressing activities of the brain's immune cells at certain times may benefit Alzheimer's disease.

4. Other

- **Brian J. Balin, Ph.D.**
Philadelphia College of Osteopathic Medicine
Philadelphia, Pennsylvania
Chlamydia Pneumoniae Infection of Mice Triggers Alzheimer-Like Pathology
Investigator-Initiated Research Grant—\$240,000 over three years
Does infection with a common bacterium play a role in Alzheimer's disease?

◆ Indicates research considering the impact of ethnic, cultural and socioeconomic factors in Alzheimer's disease and dementia care.

- **Michal Hetman, M.D., Ph.D.**
University of Louisville Research Foundation, Inc.
Louisville, Kentucky
Analysis of NMDAR-GSK3-Alzheimer Disease Connections in Cultured Neurons
Investigator-Initiated Research Grant—\$240,000 over three years
Does beta-amyloid latch on to a receptor and block activation of a gene critical for cell survival?
- **Christian J. Pike, Ph.D.**
University of Southern California
Los Angeles, California
The Role of Age-Related Testosterone Depletion in Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring how normal age-related decline in male sex hormones may make brain cells vulnerable to Alzheimer's disease.
- **Jeremy M. Silverman, Ph.D.**
Mount Sinai School of Medicine
New York, New York
Successful Cognitive Aging Phenotypes in a Genetically Isolated Population
Investigator-Initiated Research Grant—\$240,000 over three years
Hunting for genes that may protect against dementia in a remote Costa Rican population.
- **Zhuohua Zhang, Ph.D.**
The Burnham Institute
La Jolla, California
DSCR1 and Neuropathology of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Zeroing in on a gene that may play a key role in why individuals with Down syndrome almost always develop Alzheimer's disease.
- **Sidney Strickland, Ph.D.**
Rockefeller University
New York, New York
Modulating the tPA/Plasmin System to Facilitate Beta-Amyloid Clearance
Investigator-Initiated Research Grant—\$239,998 over three years
Exploring whether improving the function of a protein degrading system increases breakdown of beta-amyloid.

2. Other therapeutic strategies

- **Randy D. Blakely, Ph.D.**
Vanderbilt University
Nashville, Tennessee
A Chemical Genetic Screen for Modifiers of Presynaptic Choline Transport
Zenith Fellows Award—\$250,000 over two years
A new approach to support brain cells most affected by Alzheimer's disease.
- **Mark P. Burns, Ph.D.**
Georgetown University
Washington, D.C.
Cholesterol, Statins and Secretase Activity
Investigator-Initiated Research Grant—\$239,952 over three years
Exploring how statins may affect amyloid processing.
- **Karen Duff, Ph.D.**
The Nathan Kline Institute
Orangeburg, New York
Kinase Inhibitors for the Treatment of Tangles
Investigator-Initiated Research Grant—\$249,860 over two years
Treatment strategies targeting tangles.
- **Frank M. Longo, M.D., Ph.D.**
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina
Prevention of Abeta-Induced Degeneration With Neurotrophin Domain Mimetics
Investigator-Initiated Research Grant—\$240,000 over three years
Developing smaller, synthetic forms of natural molecules that protect nerve cells.
- **Paul K. Crane, M.D., M.P.H.**
University of Washington
Seattle, Washington
◆ *Acculturation and Alzheimer's Disease Risk Among Japanese and Japanese-American Elderly*
Investigator-Initiated Research Grant—\$239,953 over three years
What accounts for differing rates of Alzheimer's disease in Japanese and Japanese Americans?
- **Hilkka S. Soininen, M.D., Ph.D.**
University of Kuopio
Kuopio, Finland
Cardiovascular and Lifestyle Risk Factors of Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
A long-running study exploring factors throughout life that may help fend off dementia.

Therapeutic Interventions and Prevention

1. Anti-amyloid therapies

- **Vernon M. Ingram, Ph.D., D.Sc.**
Massachusetts Institute of Technology
Cambridge, Massachusetts
Developing Decoy Peptides and Active Small Molecules for Alzheimer Therapy
Investigator-Initiated Research Grant—\$200,000 over two years
Tricking beta-amyloid fragments into not sticking together.
- **John M. Lee, M.D., Ph.D.**
Loyola University Medical Center
Maywood, Illinois
Effects of Glycosaminoglycans on Alzheimer Pathology and Behavior
Investigator-Initiated Research Grant—\$239,959 over three years
Exploring a molecule's effect on how plaques form (the molecule is in the same class as the investigational drug Alzhemed, or NC 758).
- **Einar M. Sigurdsson, Ph.D.**
New York University
New York, New York
Abeta Derivatives as Safer Vaccines for Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring vaccine formulations based on shortened forms of beta-amyloid.

- ◆ Indicates research considering the impact of ethnic, cultural and socioeconomic factors in Alzheimer's disease and dementia care.

- **Patrick M. Sullivan, Ph.D.**
Duke University
Durham, North Carolina
Effect of Diet and APOE Genotype on Susceptibility to Alzheimer's Disease
Investigator-Initiated Research Grant—\$240,000 over three years
Exploring whether eating a diet rich in antioxidant vegetables may counter the effects of an Alzheimer's disease risk gene.
- **Myron F. Weiner, M.D.**
University of Texas Southwestern Medical School
Dallas, Texas
- ◆ **Cardiovascular Risk Factors and Alzheimer Disease in Native Americans**
Investigator-Initiated Research Grant—\$239,676 over three years
- **Voyko Kavcic, Ph.D.**
University of Rochester
Rochester, New York
Early Detection of Alzheimer's Disease With Diffusion Tensor Imaging and Behavioral Testing
New Investigator Research Grant—\$98,531 over two years
Assessing whether testing visual-spatial perception combined with an advanced type of MRI may have potential as a diagnostic tool.
- **Anita Ramani, M.Sc., Ph.D.**
New York University
New York, New York
Quantitative Magnetization Transfer Measurements in Alzheimer's Disease
New Investigator Research Grant—\$100,000 over two years
Could an advanced form of MRI have potential as a diagnostic tool?

Diagnosis, Assessment and Disease Monitoring

1. Brain imaging and biomarkers

- **Zoe Arvanitakis, M.D.**
Rush University Medical Center
Chicago, Illinois
Markers of Oxidative Stress and Mild Cognitive Impairment
New Investigator Research Grant—\$99,956 over two years
Testing stored blood samples to correlate evidence of oxidative stress with degree of cognitive impairment.
- **Ashley I. Bush, M.D., Ph.D.**
Massachusetts General Hospital
Charlestown, Massachusetts
Novel Imaging Agents for Alzheimer's Disease
Zenith Fellows Award—\$250,000 over two years
Exploring whether an experimental treatment may also help image amyloid.
- **Lee E. Goldstein, M.D., Ph.D.**
Brigham and Women's Hospital
Boston, Massachusetts
Development of a Novel, Noninvasive Alzheimer's Disease Diagnostic and Monitoring Instrument
Investigator-Initiated Research Grant—\$240,000 over three years
Diagnosis based on beta-amyloid deposits in the lens of the eye.
- **Michael D. Greicius, M.D., M.P.H.**
Stanford University
Stanford, California
A Novel fMRI Biomarker of Incipient Alzheimer's Disease
New Investigator Research Grant—\$99,532 over two years
Exploring whether a variation on magnetic resonance imaging has potential as a diagnostic tool.
- **Karl Herrup, Ph.D.**
Case Western Reserve University
Cleveland, Ohio
Cell Cycle Events as Outcome Measures in Alzheimer's Preclinical Studies
Investigator-Initiated Research Grant—\$237,600 over three years
Measuring cell-death events as a means to track progression of Alzheimer's disease.
- **Nikolaos Scarmeas, Ph.D.**
Columbia University
New York, New York
Early Alzheimer's Disease Detection via Arterial Spin Labeling MRI and Covariance Analyses
Investigator-Initiated Research Grant—\$239,475 over three years
Diagnostic strategy using an MRI variation.
- **Daniel H. Turnbull, Ph.D.**
New York University
New York, New York
MRI Detection of Alzheimer's Amyloid
Investigator-Initiated Research Grant—\$240,000 over three years
- **Nicholaas P.L.G. Verhoeff, M.D., Ph.D., F.R.C.P.C., D.A.B.P.N**
Baycrest Centre for Geriatric Care
Toronto, Ontario, Canada
Beta-Amyloid PET Imaging in Alzheimer's Disease
New Investigator Research Grant—\$99,913 over two years
Testing compounds that may latch on to beta-amyloid and show up in a PET scan.

2. Others

- **Kevin S. LaBar, Ph.D.**
Duke University
Durham, North Carolina
Early Detection of Amygdala Dysfunction in Alzheimer's Disease
New Investigator Research Grant—\$99,000 over two years
Exploring whether tests of emotional memory combined with measuring volume of a brain region may offer a potential new diagnostic tool.
- **Adrian Leibovici, M.D.**
University of Rochester
Rochester, New York
Assessment and Monitoring of Noncognitive Symptoms of Dementia
Everyday Technologies for Alzheimer Care Grant—\$199,626 over three years
Electronic strategies for monitoring behavioral symptoms.

◆ Indicates research considering the impact of ethnic, cultural and socioeconomic factors in Alzheimer's disease and dementia care.

- **Diane F. Mahoney, Ph.D.**
Hebrew Rehabilitation Center for Aged
Boston, Massachusetts
*Sensors for Seniors With Alzheimer's Disease:
Tailoring Technologies*
Everyday Technologies for Alzheimer Care Grant
—\$199,999 over three years
Technology and ethical issues in integrated monitoring systems.
- **Donald J. Connor, Ph.D., Ph.D.**
Sun Health Research Institute
Sun City, Arizona
- ◆ *Assessment of Cognitive Status in American Indian Populations*
New Investigator Research Grant—\$100,000 over two years
An effort to develop assessment instruments appropriate for
Native Americans.
- **Alan F. Newell, Ph.D.**
University of Dundee
Dundee, Scotland
Digital Television Agents as Prompts for Daily Living
Everyday Technologies for Alzheimer Care Grant
—\$199,718 over three years
Exploring whether TVs can provide cues that help those with
Alzheimer's disease function and remain independent.
- **Martin J. Prince, M.D., M.Sc., M.R.C.Psych.**
Institute of Psychiatry, King's College London
London, England
- ◆ *Dementia Care in Mexico, Peru and Argentina*
Investigator-Initiated Research Grant—\$224,400 over three years
Assessing attitudes about dementia and exploring quality of care
available in developing countries in South America.

Care Management

- **Laura D. Baker, M.A., Ph.D.**
University of Washington
Tacoma, Washington
*Cognitive Effects of Aerobic Exercise for Prodromal
Alzheimer's Disease: A Controlled Trial*
New Investigator Research Grant—\$100,000 over two years
Assessing whether aerobic exercise may benefit individuals with mild
cognitive impairment (MCI).
- **John A. Capitman, Ph.D.**
California State University
Fresno, California
- ◆ *Racial/Ethnic Minority Senior Housing Residents With Dementia*
Investigator-Initiated Research Grant—\$239,974 over three years
How to make senior housing responsive to needs of minority
residents with dementia.
- **Tania Giovannetti, Ph.D.**
Temple University
Philadelphia, Pennsylvania
Improving Everyday Action Through Strategic Object Placement
New Investigator Research Grant—\$99,738 over two years
Determining whether household objects can be arranged in a way
that improves the ability of people with dementia to carry out
common daily tasks.
- **Alex Mihailidis, Ph.D.**
University of Toronto
Toronto, Ontario, Canada
*An Intelligent Environment to Support Aging-in-Place
and Independence*
Everyday Technologies for Alzheimer Care Grant
—\$172,558 over three years
Creative use of technology to prolong independent living.
- **Daniel L. Murman, M.D., M.S.**
Michigan State University
East Lansing, Michigan
- ◆ *Quality Indicators in Ambulatory Dementia Care*
Senator Mark Hatfield Award for Clinical Research in
Alzheimer's Disease—\$239,953 over three years
Assessing quality of outpatient dementia care.
- **Sandra F. Simmons, Ph.D.**
University of California at Los Angeles
Reseda, California
*Prevention of Weight Loss in Nursing Home Residents
With Dementia*
Investigator-Initiated Research Grant—\$240,000 over three years
- **Philip D. Sloane, M.D., M.P.H.**
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina
*Improving Medical Care of Assisted Living Residents
With Dementia*
Pioneer Award for Alzheimer's Disease Research
—\$1,000,000 over five years
- **Ruth M. Tappen, Ed.D., R.N., F.A.A.N.**
Florida Atlantic University
Boca Raton, Florida
*Cognitive Retraining for Individuals With Early-Stage
Alzheimer's Disease*
Investigator-Initiated Research Grant—\$240,000 over three years
Does teaching coping skills to early-stage individuals improve quality
of life?

◆ Indicates research considering the impact of ethnic, cultural and socioeconomic factors in Alzheimer's disease and dementia care.

Caregiver Support and Well-Being

- **Ronald M. Baecker, Ph.D.**
University of Toronto
Toronto, Ontario, Canada
Internet Multimedia Technology to Support Alzheimer Caregivers and Families
Everyday Technologies for Alzheimer Care Grant
—\$185,130 over three years
- **Michael S. Clark, Ph.D.**
Flinders University
Adelaide, Australia
Allostatic Load as a Predictor of Poor Health for Dementia Caregivers
Investigator-Initiated Research Grant—\$230,716 over three years
Exploring how physical markers of stress correlate with caregiver health.
- **Dolores E. Gallagher-Thompson, Ph.D.**
Stanford University
Stanford, California
Skill-Building to Reduce Distress in Chinese Dementia Family Caregivers
Investigator-Initiated Research Grant—\$240,000 over three years
- **Randy S. Hebert, M.D., M.P.H.**
University of Pittsburgh
Pittsburgh, Pennsylvania
Spirituality, Health and Health Service Use Among Dementia Caregivers
New Investigator Research Grant—\$63,241 over two years
The impact of spirituality on caregiver well-being.
- **Mary S. Mittelman, M.S., Dr.P.H.**
New York University
New York, New York
Couples Counseling for People With Alzheimer's Disease and Their Spouses: A Randomized Trial
Zenith Fellows Award—\$249,985 over two years
Can couples counseling improve quality of life?
- **Huali Wang, M.D., Ph.D.**
Peking University Institute of Mental Health
Beijing, China
- ◆ *Dementia Caregiving and Care-Seeking Experiences in Chinese Culture*
New Investigator Research Grant—\$99,794 over two years
Understanding the experience of Alzheimer's disease and caregiving in China.