

2014 Alzheimer's Association® Grant Awards and Strategic Research Initiatives

— Portfolio Profile

In 2014 the Alzheimer's Association® made investments totaling nearly \$14 million in 88 scientific investigations. These include grant awards to 78 projects funded through its International Research Grant Program (IRGP), representing proposals ranked highest by a peer-reviewed process in an extremely competitive field of 537 applications that were invited from over 1,100 letters of intent.

Since 1982 the Alzheimer's Association has invested over \$335 million in more than 2,250 scientific investigations. As of August 2014, its active investments were enabling over 350 investigations in twenty-one countries.

Research Categories

Molecular Pathogenesis and Physiology of Alzheimer's Disease – 41% of the funded projects are exploring the mechanisms that contribute to disease-related processes including the production of beta-amyloid, the mediators of beta-amyloid's toxicity and its adverse effect on cell-to-cell communication, the abnormal chemical alterations of tau, and the normal functions of related proteins implicated in Alzheimer's disease pathology. These projects may also examine the cellular properties and functions that normally protect and maintain neurons in the brain.

Diagnosis, Assessment and Disease Monitoring – 23% of the projects are investigating brain imaging, biomarkers, and clinical tools that may result in earlier and more accurate diagnoses, timelier interventions, and effective disease monitoring.

Translational Research and Clinical Interventions – 21% of the projects are exploring novel treatment strategies and non-pharmacological interventions.

Epidemiology – 9% of the projects are examining various factors that may contribute to Alzheimer's and other dementias, including blood vessel damage and genetic risk factors.

Care, Support and Health Economics of Alzheimer's Disease – 6% of the projects are studying ways to improve care for people with dementia through new technologies and exploring the values and beliefs of diverse cultures that impact the use of health services.

Specific Grant Competitions

(15) **Investigator-Initiated Research Grants (IIRG)** have been awarded to established scientists exploring important research questions targeted at the following areas:

(5) **Biological Underpinnings of Genetic Risk Factors in Alzheimer's Disease (IIRG-BGF)** awards are promoting understanding of the underlying biological mechanisms of the genetic risk factors, identified by Genome Wide Association Studies (GWAS) or other genomic approaches, associated with Alzheimer's and other dementias.

(4) **Discovery-Validation of Therapeutic Targets for Developing Novel Interventions for Alzheimer's Disease (IIRG-DVT)** awards are stimulating the discovery and validation of a broad spectrum of potential therapeutic targets and/or agents that could be tested in human subjects as putative disease-modifying interventions in Alzheimer's.

(3) **Non-Pharmacological Strategies to Ameliorate Symptoms of Alzheimer's Disease and Related Dementia (IIRG-NPSASA)** awards are stimulating the scholarly investigation of the development of non-pharmacological strategies to improve the care of persons with Alzheimer's and other dementias.

(3) **Role of Vascular Metabolic Factors in the Pathogenesis of Alzheimer's Disease and Related Dementia (IIRG-VMF)** awards are broadening the conceptual models and areas of exploration regarding potential contributing factors to the pathogenesis of neurodegeneration / Alzheimer's disease / dementia.

(44) **New Investigator Research Grants (NIRG)** are growing the next generation of scientists with funding that enables them to gather preliminary data, test procedures, and develop hypotheses. These grants advance research while supporting the early-career development of researchers who have earned their doctoral degrees within the last 10 years.

(2) **New Investigator Research Grants to Promote Diversity (NIRGD)** are funding investigators currently underrepresented at academic institutions in Alzheimer's or other dementias research. They are conducting basic, clinical, and social/ behavioral research grounded in the advanced methods and experimental approaches needed to solve problems related to Alzheimer's.

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(3) **Mentored New Investigator Research Grants to Promote Diversity (MNIRGD)** are helping close the gap between diverse and non-diverse investigator populations, as well as providing a forum for further training and support for a senior scientist. They are intended to enhance the capacity of scientists to conduct basic, clinical, and social/behavioral research.

(1) **Everyday Technologies for Alzheimer Care (ETAC) Grant** has been awarded to an investigator exploring how computers, monitoring devices, and other electronics can be used to meet the day-to-day needs of people with Alzheimer's disease and those who care for them.

(4) **Zenith Fellows Awards (ZNTF)** have been awarded to senior scientists who have made significant contributions to the field and who continue to pursue promising lines of investigation in disease mechanisms, diagnosis, novel treatments, and quality care.

(9) **Biomarkers Across Neurodegenerative Disease (BAND)** awards are enabling researchers to analyze data of existing cohorts to discover biomarkers, develop assay standardization, identify genetic profiles, and optimize imaging modalities across Alzheimer's disease and other dementias to increase an understanding of the similarities or differences between these diseases and to help stratify populations and possible treatments.

Strategic Research Initiatives

The Alzheimer's Association is able to identify and enable special projects with elevated potential for advancing the field. In 2014 it supported **10 new and ongoing strategic research initiatives** to advance emerging issues and facilitate global collaboration.

African American Genome Sequencing to Assess Alzheimer's Risk to sequence the genome of African Americans in order to study the role of gene variants in the development of Alzheimer's disease.

Alzheimer's Association Multi-Center Program Grant Awards (MCPG) to enable four scientists to work collaboratively on a common project investigating the role of the immune system and inflammation in Alzheimer's.

Alzheimer's Disease Neuroimaging Initiative (ADNI-2) to monitor and assess biological changes associated with Alzheimer's with imaging, cerebrospinal fluid, genetics, and many other measures.

Alzheimer's Disease Neuroimaging Initiative (Add-On) to help support ADNI by developing methodologies and standardization protocols to measure changes in the volume of hippocampal sub-regions.

Alzheimer's Disease Regulatory Science Fellowship at the Food and Drug Administration (FDA) in partnership with the Reagan-Udall Foundation for the FDA to train physicians to facilitate communication and collaboration between the FDA and the various Alzheimer's stakeholders in order to develop products to treat, prevent, or cure Alzheimer's.

Dominantly Inherited Alzheimer's Network Trials Unit (DIAN-TU) to test therapeutics on individuals with familial Alzheimer's disease.

Global Alzheimer's Association Interactive Network (GAAN), a cloud-based, digital network that will provide researchers access to a vast repository of shared Alzheimer's research data and the sophisticated analytical tools and computational power needed to analyze it.

Global Consortium for Biomarker Standardization (GCBS), a program to develop high-quality, standardized procedures and laboratory tests to be used globally to measure CSF biomarkers to identify Alzheimer's disease and for the enrollment of participants into clinical trials.

National Biomedical Research Ethics Council (NBREC) to establish a National Institutional Review Board for neurodegenerative disease for large, multi-center clinical trials to improve the safety of human subjects while reducing the time and cost of these studies.

Study of Knowledge and Reactions to Amyloid Testing (SOKRATES) to better understand how individuals respond to having an amyloid positive status, its impact on his or her social relationships, and the perceptions of stigma and discrimination for those individuals.

Peer-Reviewed Evaluation

The Alzheimer's Association Medical and Scientific Relations Division engages a panel of three or four volunteer scientists to evaluate the merits of each proposal anonymously. More than 1,100 reviewers from 31 countries provided over 1,750 reviews in 2014. The Association's Medical and Scientific Advisory Council (MSAC) ensures the fairness of these evaluations and fine-tunes each year's awards so that the overall portfolio covers established research areas and moves the field forward in important new directions. Based on the peer-review scores and the MSAC's review, the Association's science staff estimates that approximately 25 percent of the proposals received in 2014 deserved funding. Only about 14.5 percent could be supported with available resources.

With every peer-reviewed research grant awarded by the Alzheimer's Association, all indirect costs are capped at 10 percent (rent for laboratory/ office space is expected to be covered by indirect costs paid to the institution). The Association expects and enforces that 90 percent of the grant goes directly to funding the research itself. No more than 10 percent of the grant can be directed to administrative costs.