

2015 Alzheimer's Association Grant Awards and Strategic Research Initiatives

— Portfolio Profile

In 2015 the Alzheimer's Association® made investments totaling over \$17 million in more than 80 scientific investigations. These include grant awards to 68 projects funded through its International Research Grant Program (IRGP), representing proposals ranked highest by a peer-reviewed process in an extremely competitive field of 540 applications that were submitted from over 1,040 letters of intent.

Since 1982 the Alzheimer's Association has invested over \$350 million in more than 2,300 scientific investigations. As of August 2015, the Association's active investments of over \$80 million were enabling more than 350 investigations in 21 countries.

Research Categories

Molecular Pathogenesis and Physiology of Alzheimer's Disease – 43% 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 – 15% 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 – 31% of the projects are exploring novel treatment strategies and non-pharmacological interventions.

Epidemiology – 3% 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 – 7% 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

(Number of grants per competition are indicated in parentheses)

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

(2) Biological Underpinnings of Genetic Risk Factors in Alzheimer's Disease (IIRG-BFG) awards are promoting understanding of the underlying biological mechanisms of the genetic risk factors associated with Alzheimer's and other dementias.

(1) 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.

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

(2) 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 brain changes of neurodegeneration / Alzheimer's disease / dementia.

(4) Understanding the Development and Devising Treatments for Alzheimer's Disease in Individuals with Down Syndrome (IIRG-DSAD) awards are broadening the understanding of the mechanism(s) that lead to the initiation of Alzheimer's in this specific population, with the intent to identify novel therapeutic strategies to treat Alzheimer's in both the Down syndrome and non-Down syndrome populations. These grants are co-funded by the Alzheimer's Association, Global Down Syndrome Foundation and the Linda Crnic Institute for Down Syndrome.

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Specific Grant Competitions (cont.)

(41) 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.

(2) 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.

(5) Part the Cloud Translational Research Funding for Alzheimer's Disease (PTCR) grants have been awarded in partnership with the Part the Cloud initiative to increase the research efforts in Phase I and Phase II clinical trials directed towards Alzheimer's disease and other dementias in North America. These awards have been made possible by the Part the Cloud gala and steering committee.

(4) Zenith Fellows Awards (ZNTH) 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.

(1) Katzman Fellowship is a collaboration between the American Brain Foundation, the American Academy of Neurology, and the Alzheimer's Association to support training for physicians in Alzheimer's disease-related medicine.

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Strategic Research Initiatives

The Alzheimer's Association is able to identify and enable special projects with elevated potential for advancing the field. In 2015 the Association supported 12 new and ongoing strategic research initiatives to advance emerging issues and facilitate global collaboration.

Accelerating Medicines Partnership - Alzheimer's Disease Project (AMP-AD) is a collaboration between the National Institutes of Health (NIH), biopharmaceutical companies and non-profit organizations such as the Alzheimer's Association to develop new diagnostics and treatments by jointly identifying and validating promising biological targets in Alzheimer's.

Advance Care Planning in Patients with AD Dementia seeks to gain a better understanding of the status of care planning among patients with dementia and examine how this differs by race and disease stage.

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

Alzheimer's Prevention Initiative - APOE study focuses on determining whether therapies targeting amyloid may prevent or delay the emergence of Alzheimer's symptoms in people who are at high genetic risk for developing the disease because they have two copies of the APOE4 gene.

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

DIAN-TU Tau Imaging (Add-On) develops and validates tau PET imaging in individuals with autosomal-dominant Alzheimer's disease (ADAD) and investigates how specific treatments alter the formation of abnormal tau.

Global Alzheimer's Association Interactive Network (GAIN)™ is a cloud-based, digital network that provides 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 Biomarker Standardization Consortium (GBSC) is 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.

Hippocampal Sub-Region Standardization in the Alzheimer's Disease Neuroimaging Initiative to help support ADNI by developing methodologies and standardization protocols to measure changes in the volume of hippocampal sub-regions.

Longitudinal Evaluation of Amyloid Risk and Neurodegeneration (LEARN) is a first-of-its-kind natural history study to determine whether the rate of cognitive decline during the development of Alzheimer's is directly related to biological markers, such as beta-amyloid and tau. LEARN is a companion study to the Anti-Amyloid Treatment in Asymptomatic Alzheimer's Disease (A4) Study.

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

Quality Control Program for CSF Biomarkers is a program to improve the quality of all aspects of CSF biomarker measurements, enabling values to be harmonized world-wide and helping both clinical trials and standard medical practice.

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 1,050 reviewers from 29 countries provided over 1,700 reviews in 2015. 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 31 percent of the proposals received in 2015 deserved funding. Nearly 13 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 a grant can be directed to administrative costs.