

# Analysis of Genome-Wide Data in the Health and Retirement Study

<https://neurodegenerationresearch.eu/survey/analysis-of-genome-wide-data-in-the-health-and-retirement-study/>

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### Country

USA

## Title of project or programme

Analysis of Genome-Wide Data in the Health and Retirement Study

## Source of funding information

NIH (NIA)

## Total sum awarded (Euro)

€ 1,031,057.80

## Start date of award

01/09/2015

## Total duration of award in years

2

## The project/programme is most relevant to:

Alzheimer's disease & other dementias

## Keywords

Acquired Cognitive Impairment... Aging... Alzheimer's Disease... Alzheimer's Disease including Alzheimer's Disease Related Dementias (AD/ADRD)... Basic Behavioral and Social Science... Behavioral and Social Science... Brain Disorders... Dementia... Genetics... Human Genome... Neurodegenerative

## Research Abstract

? DESCRIPTION (provided by applicant): The Health and Retirement Study (HRS) has the potential to become a critical resource in social-science genetics in general, and the behavioral genomics of aging in particular, due to its relatively large sample size, its rich longitudinal behavioral measures, and the availability of dense genomic data for approximately 13,000 older Americans, with data on 7,000 more on the way. The proposed research will use the HRS's rich phenotypic, genetic, and environmental data to pursue two complementary strategies. One is to incorporate HRS data into large consortium meta-analyses of behavioral phenotypes conducted under the auspices of the Social Science Genetic Association Consortium (SSGAC), which the applicants organize. The second strategy is to use the HRS data to test specific hypotheses arising from the consortium's findings and to shed light on the genetic architecture-i.e., the joint distribution of genetic effect sizes and allele frequencies-of the rich set of behavioral phenotypes measured in the HRS. Our general aim is to use the phenotypic, genetic, and environmental data from the HRS to significantly advance understanding of behavioral genomics in general, and of the economic behavior, health, and well-being of older Americans in particular. Among the goals of our proposal are: (a) discoveries of specific genetic polymorphisms that are associated with important behavioral outcomes, psychological characteristics, and economic preferences; (b) analysis of biological pathways that underlie these associations; (c) development of polygenic scores (indexes of many polymorphisms) that, when constructed with weights estimated in large samples, will have substantial predictive power for behavioral phenotypes; (d) identification of behavioral mechanisms (i.e., endophenotypes) that mediate associations with specific polymorphisms and polygenic scores; (e) analysis of the genetic architecture of a range of phenotypes measured in the HRS; and (f) examination of gene-environment interactions.

### **Lay Summary**

**PUBLIC HEALTH RELEVANCE:** The ever-increasing availability of genomic data has the potential to provide individuals with much more information about themselves that could be used to make better health and financial decisions. This project aims to use the Health and Retirement Study, along with other datasets, to shed light on the potential for genomic data to be informative about economic behaviors and outcomes.

### **Further information available at:**

#### **Types:**

Investments > €500k

#### **Member States:**

United States of America

#### **Diseases:**

Alzheimer's disease & other dementias

#### **Years:**

2016

#### **Database Categories:**

N/A

#### **Database Tags:**

N/A