

# **Common Alzheimer's Disease Research Ontology (CADRO) and International Alzheimer' Disease Research Portfolio (IADRP)**

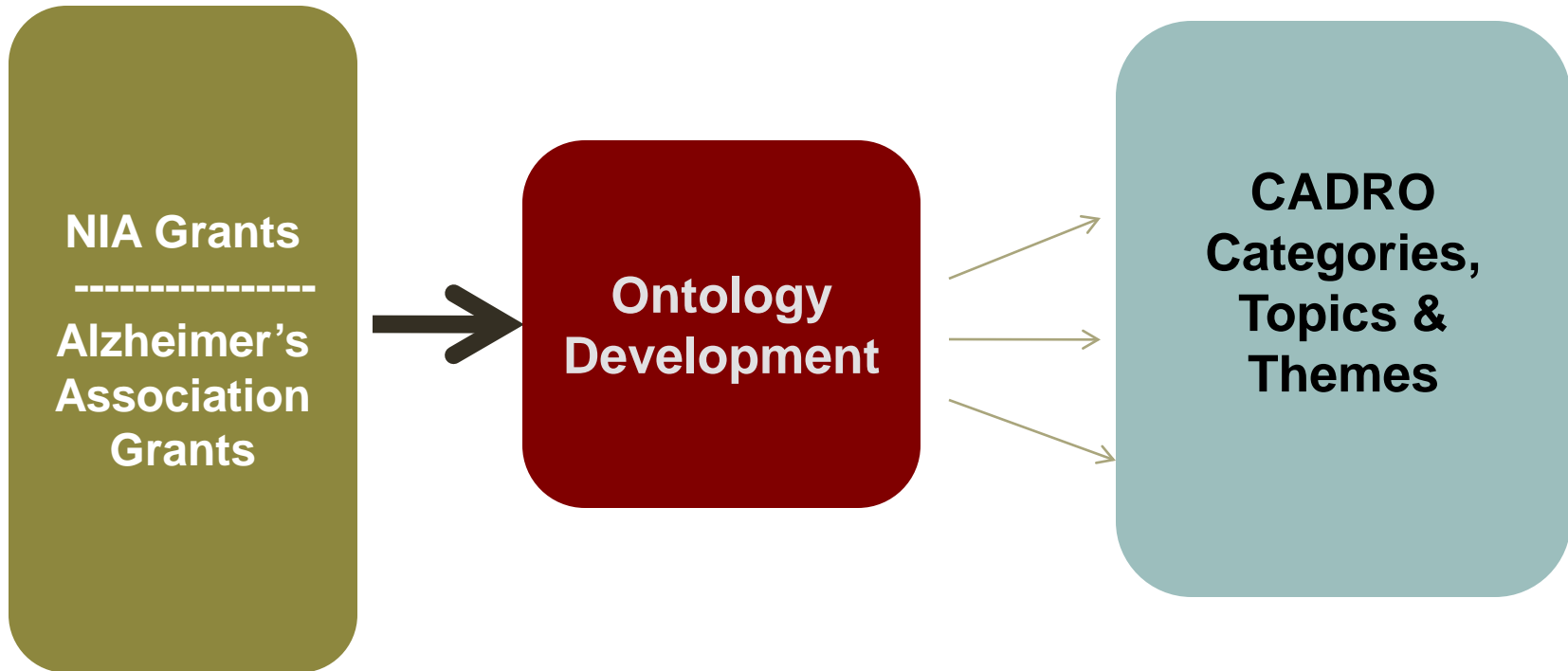
# Project History and Goals

- CADRO (Common Alzheimer Disease Research Ontology): collaborative effort between the National Institute on Aging (NIA) and the Alzheimer's Association (AA).
  - Began in May 2010
  - First Iteration – published July 2012
  
- Unified classification system to enable comparative analysis of research portfolios, strategic planning, and coordination by federal and non-federal agencies supporting AD research in the United States and internationally.

# Project History and Goals

- The CADRO is meant to be a dynamic portfolio analysis tool that can be used to:
  - Track changes in the AD research landscape over time
  - Identify research gaps and areas of overlap within and across AD-funding agencies
  - Identify collaborative opportunities aimed at advancing AD research and alleviating the socioeconomic burden of this devastating disease.
  
- The ultimate goal of this project is to expand the use of the CADRO across federal and non-federal agencies that support AD research in the US and internationally through a publicly available database.

# Ontology Development Process



# Common Alzheimer's Disease Research Ontology (CADRO) Structure

- The CADRO is a *three-tier classification system* created to capture the complete range of AD research and AD research-related resources.
- The first level of classification consists of seven categories: five research and two research resources-related:
  - Category A – Molecular Pathogenesis and Physiology of Alzheimer's Disease
  - Category B – Diagnosis, Assessment and Disease Monitoring
  - Category C – Translational Research and Clinical Interventions
  - Category D – Epidemiology
  - Category E – Care, Support and Health Economics of Alzheimer's Disease
  - Category F – Resources for the research community
  - Category G – Consortia and Public Private Partnerships
- Each category is divided into research “topics”; many of the topics are further divided into “themes”.
- This detailed classification will enable funders to identify research gaps, areas of overlap/duplication of effort and opportunities for collaboration with much greater specificity.

**National Institutes of Health**

**Other Federal Agencies**

**International Alzheimer's  
Disease Research Portfolio  
(IADRP)**

**Non-Profit Organizations**

**International Organizations**

# INTERNATIONAL ALZHEIMER'S DISEASE RESEARCH PORTFOLIO (IADRP)

Home

Advanced Database Search

About IADRP

About CADRO

Visualize Data

Help

What is IADRP?

What is CADRO?

Data Visualization

19q13.2 poliovirus rece  
translocase

19q13.2 apolipoprotein

19q13.2 apolipoprotein

19q13.2 apolipoprotein

19q13.3 apolipoprotein

19q13.3 cleft lip

The goal of the International Alzheimer's Disease Research Portfolio (IADRP) project is to enable funding agencies to assess the changing landscape of Alzheimer's Disease (AD) research and coordinate funding strategies in order to enhance efficiency and avoid duplication of funding efforts.

Learn more

- The IADRP database is a web-based portal that will enable funding agencies to identify gaps and redundancies in their respective portfolios.
- This information can be used for strategic coordination and leveraging of resources.

<http://www.nia.nih.gov/research/dn/international-alzheimers-disease-research-portfolio>

# IADRP Capabilities Overview

- Search projects using the CADRO classification alone or in combination with keywords search
- Provide searchable data fields based on information related to the research project, principal investigator and funding agency
- Export data to Excel and data visualization using motion charts and figures



# Advanced Database Search

## Scientific Categories & Keywords

### Common Alzheimer's Disease Research Ontology (CADRO)

 All

- Category A. Molecular Pathogenesis and Physiology of Alzheimer's Disease
- Category B. Diagnosis, Assessment, and Disease Monitoring
- Category C. Translational Research and Clinical Interventions
- Category D. Epidemiology
- Category E. Care, Support and Health Economics of Alzheimer's Disease
- Category F. Research Resources
- AD-related

### Keywords

Multiple keywords may be entered, separated by either *AND* or *OR*. Do not use both *AND* and *OR* in the same search.

## Project & Funding Information

### Project Number

### Project Title

### Funding Organization

### Funding Year

### Funding Organization Country

### Activity Code [details](#)

### Institute or Center (NIH Only)

### Type (Federal Only) [details](#)

### Funding Opportunity Announcement

# IADRP Participants and Features

Participating Organizations (to date):	Database Search Features	Database Visualization
<p data-bbox="92 496 581 529"><b>Federal Funding Organizations:</b></p> <ul data-bbox="92 582 606 882" style="list-style-type: none"><li data-bbox="92 582 562 615">▪ National Institutes of Health</li><li data-bbox="92 625 484 705">▪ Agency for Healthcare Research and Quality</li><li data-bbox="92 715 562 795">▪ Centers for Disease Control and Prevention</li><li data-bbox="92 805 504 838">▪ Administration on Aging</li><li data-bbox="92 848 606 882">▪ Department of Veterans Affairs</li></ul> <p data-bbox="92 933 417 1011"><b>Non-Federal Funding Organizations:</b></p> <ul data-bbox="92 1062 504 1095" style="list-style-type: none"><li data-bbox="92 1062 504 1095">▪ Alzheimer's Association</li></ul>	<p data-bbox="643 496 1116 574"><b>Search projects by (alone or in combination with):</b></p> <ul data-bbox="643 625 1151 1100" style="list-style-type: none"><li data-bbox="643 625 857 658">▪ Keywords</li><li data-bbox="643 668 1112 748">▪ CADRO category, topic and theme</li><li data-bbox="643 758 1016 791">▪ Funding organization</li><li data-bbox="643 801 1132 833">▪ Institute or Center (NIH Only)</li><li data-bbox="643 843 1112 876">▪ Grant Type and Mechanism</li><li data-bbox="643 886 1074 966">▪ Principal Investigator and Awardee Organization</li><li data-bbox="643 976 1151 1056">▪ Geographic location (including state and country)</li><li data-bbox="643 1066 904 1100">▪ Funding year</li></ul>	<p data-bbox="1178 496 1557 529"><b>Interactive motion chart:</b></p> <ul data-bbox="1178 582 1649 838" style="list-style-type: none"><li data-bbox="1178 582 1649 838">▪ Year-by-year comparison of funding across CADRO categories and topics for participating funding organizations (including individual NIH ICs).</li></ul>



A Preview of

**ALZHEIMER'S DISEASE  
RESEARCH PORTFOLIO  
ANALYSIS**

# Alzheimer's Disease Research Portfolio Analysis

- **Purpose** - Quantify and evaluate the collective investment in AD research funding over time across multiple funding organizations (beginning FY2008)
  
- **Some examples of information that can be extracted:**
  - Funding and trend analyses of awarded research (across categories, topics and themes)
  - Identify and quantify emerging areas of science and opportunities for translation
  - Identify areas of overlap and duplication among funding organizations
  - Assess potential research gaps and identify areas that may be underfunded
  - Compare utility of various grant mechanisms (such as level of investment in new investigators and small businesses)
  - Geographic distribution of AD research awards

# Cumulative Funding for Non-Federal and Federal Organizations, 2008-2011

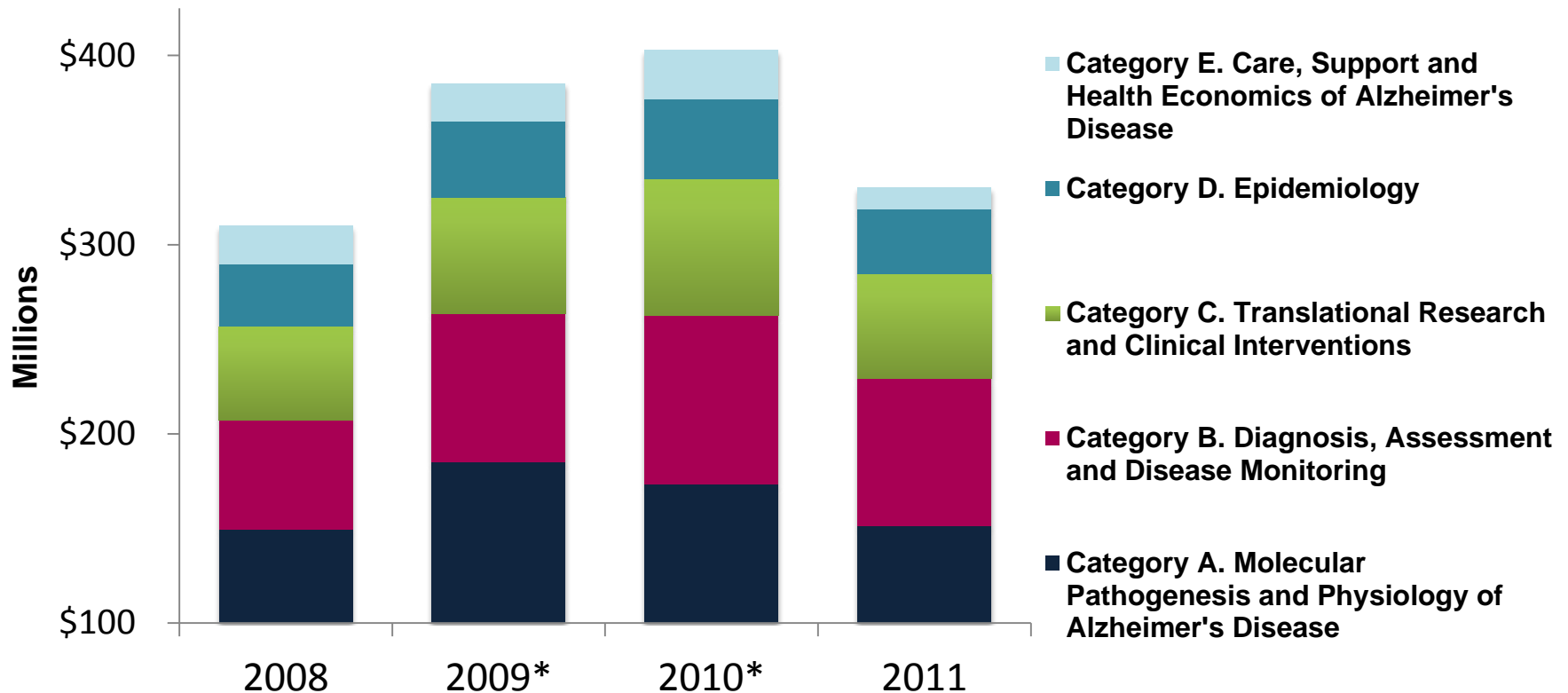
	Non-Federal*	Federal**	Grand Total
<b>Total Funding Awarded, 2008 to 2011 ^</b>			
<b>Category A. Molecular Pathogenesis and Physiology of Alzheimer's Disease</b>	202 \$31,635,203	898 \$626,587,657	1,100 \$658,222,860
<b>Category B. Diagnosis, Assessment and Disease Monitoring</b>	54 \$10,482,335	348 \$293,511,395	402 \$303,993,730
<b>Category C. Translational Research and Clinical Interventions</b>	57 \$10,748,182	267 \$227,066,201	324 \$237,814,383
<b>Category D. Epidemiology</b>	18 \$2,863,247	117 \$147,125,950	135 \$149,989,197
<b>Category E. Care, Support and Health Economics of Alzheimer's Disease</b>	39 \$7,018,398	108 \$71,288,252	147 \$78,306,650
<b>TOTAL</b>	370 \$62,747,365	1,738 \$1,365,579,454	2,108 \$1,428,326,819

\* Alzheimer's Association

\*\* Administration on Aging, National Institutes of Health, Department of Veterans Affairs (2010-2011), Administration of Health and Quality, Centers for Disease Control and Prevention; ^ 2009-2010 includes ARRA funding.

# Cumulative Funding, 2008-2011 in Alzheimer's Disease Research

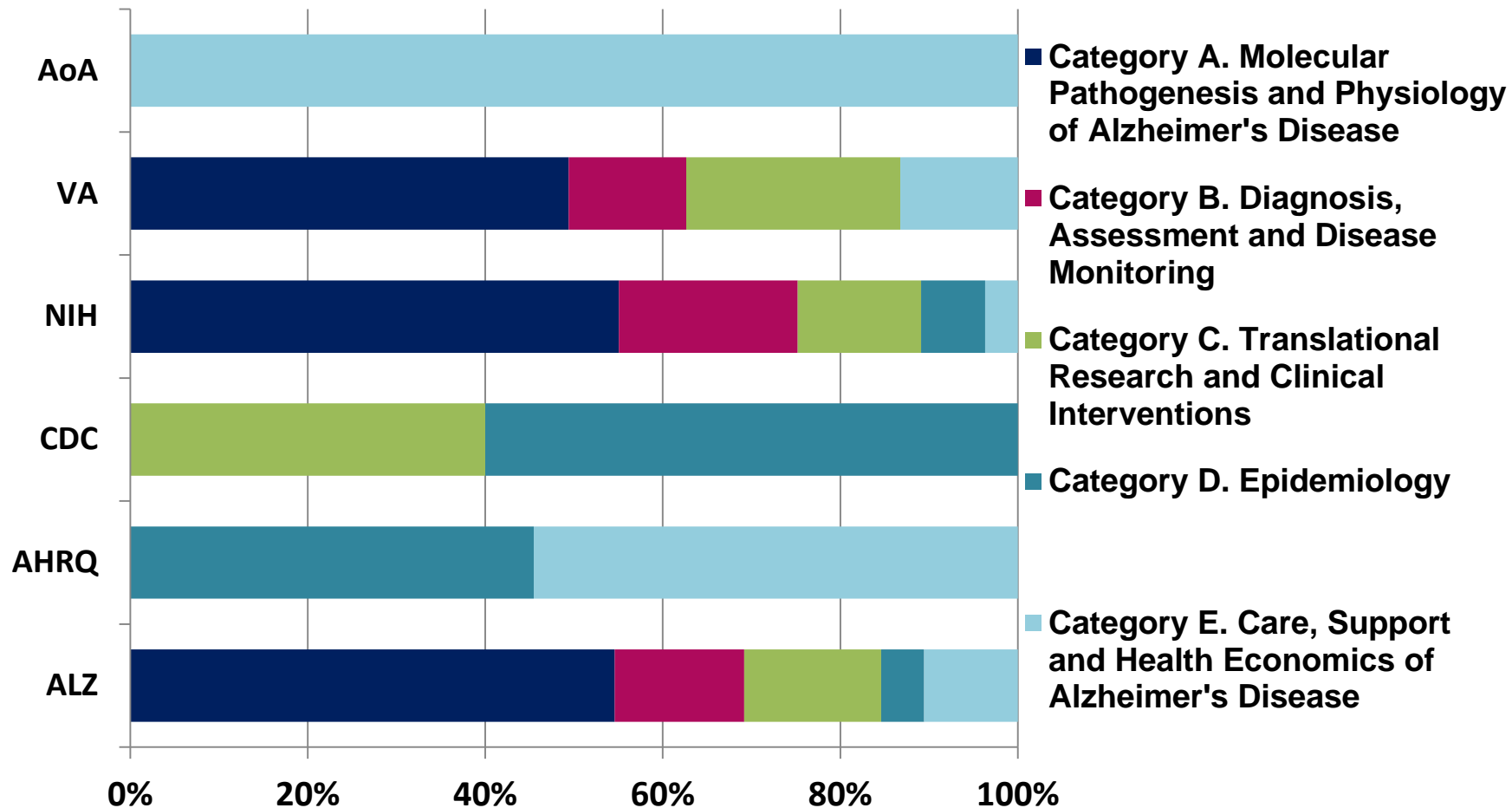
(AoA, ALZ, NIH, CDC, VA\*\*, AHRQ)



\*2009 and 2010 includes ARRA funding for AD research

\*\* VA data included for 2010 and 2011

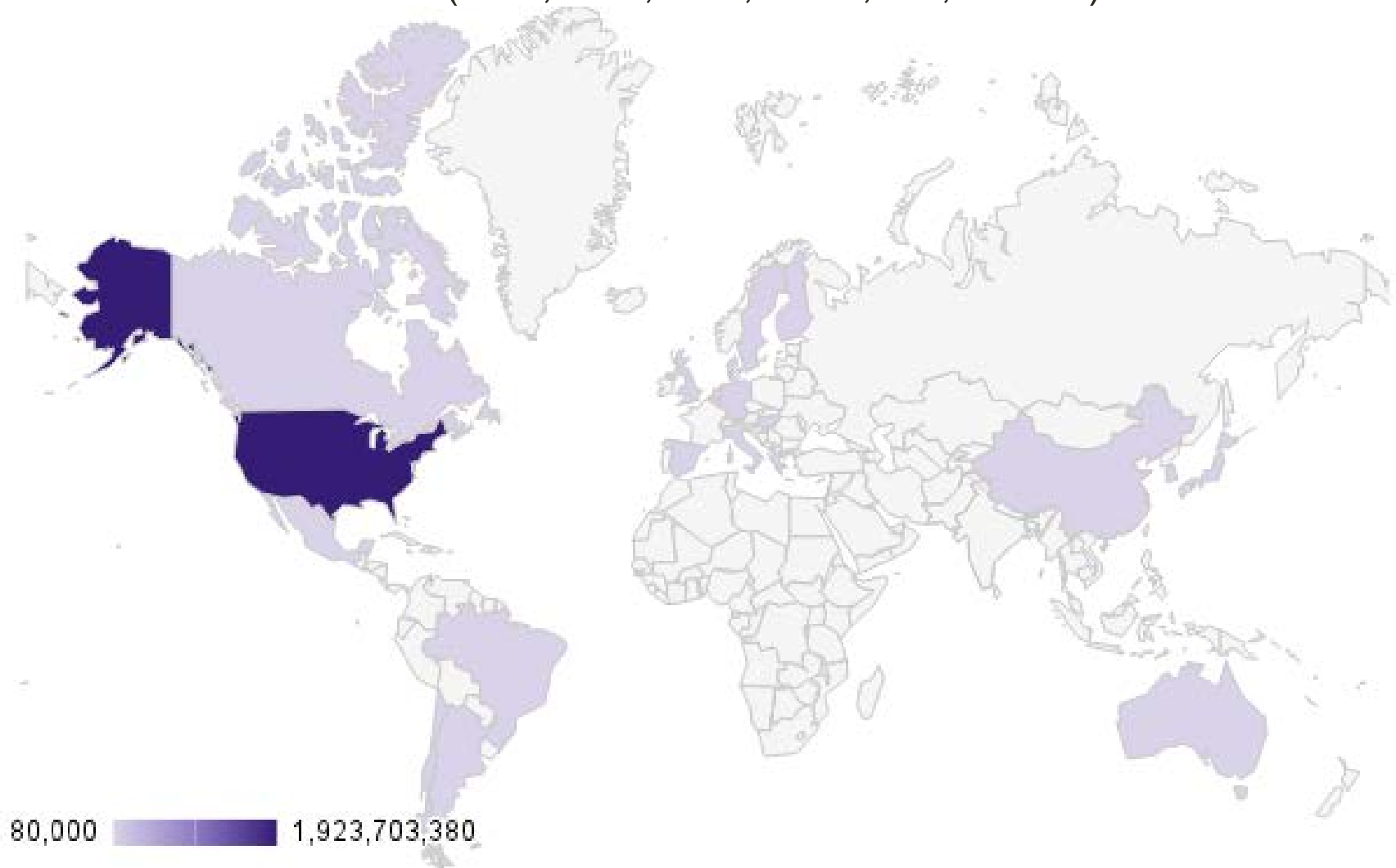
# Cumulative Portfolio Breakdown, By Organization, 2008-2011\*



\* 2009 and 2010 include ARRA. VA data 2010-2011.

# Cumulative Funding, 2008-2011 in Alzheimer's Disease Research\*

(AoA, ALZ, NIH, CDC, VA, AHRQ)



\* 2009-2010 includes ARRA Funding



# CADRO/IADRP Development Team

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**\*NIA contact**

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The screenshot shows the IADRP website interface. On the left, there is a vertical navigation menu with three items: "What is IADRP?", "What is CADRO?", and "Data Visualization". The main content area features a colorful grid of data points on the left, a central graphic with text like "APO E", "APO C1", "APO C4", "APO C2", "CLPTM", "GEMIN", "HPP1", "19q13.2", "19q13.3", "apolipoprotein", and "Alzh", and a text box on the right. The text box contains the following text: "The goal of the International Alzheimer's Disease Research Portfolio (IADRP) project is to enable funding agencies to assess the changing landscape of Alzheimer's Disease (AD) research and coordinate funding strategies in order to enhance efficiency and avoid duplication of funding efforts." Below this text is an orange button labeled "Learn more".

<http://www.nia.nih.gov/research/dn/international-alzheimers-disease-research-portfolio>