GAAIN
Global Alzheimer’s Association Interactive Network

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What is GAAIN?

A global cooperative of sharing, investigation and discovery for Alzheimer’s Disease Research

• Data federation
• Cloud-enabled infrastructure
• Global network of analysis and workflow tools
SAB Members

- Paul Aisen, UCSD
- Neil Buckholtz, National Institutes of Health
- William Klunk, University of Pittsburgh
- Enrique Castro deLeon, Intel
- Alon Halevy, Google
- Harry Johns, Alzheimer’s Association
- William Thies, Alzheimer’s Association
Primary Components

• Alzheimer’s Disease Research Registry
  – Catalog of AD research conducted in the US and internationally
  – Interactive Search and Exploration Tools

• GAAIN Research Data Repository
  – Federated Database
  – Analysis/Workflow Tools
  – Compute Resources
GAAIN Registry Features

• Publicly accessible website for:
  – Search
  – Research portfolio analysis
  – Analyzing trends & gaps in AD research

Top Molecular Pathogenesis and Physiology Topics

- Amyloid
- Synaptic Dysfunction
- Genetics
- Immunity and Inflammation
- Tau
- Cell death
- Brain circuits and Synapses
A Global Cooperative of Sharing, Investigation, & Discovery

The Global Alzheimer's Association Interactive Network (GAIN) is a collaborative project that will provide researchers around the globe with access to a vast repository of Alzheimer's disease research data and the computational tools and computational power needed to work with that data. Our goal is to transform the way scientists work together to answer key questions related to understanding the causes, diagnosis, treatment and prevention of Alzheimer's and other neurodegenerative diseases.

STUDY REGISTRY

Help us make better decisions and improve the overall governance of Alzheimer's research.

Register Today!

BE A PARTNER

Be at the forefront of advancing Alzheimer's research. We are currently seeking partners.

Apply Now!

DATA & TOOLS

GAIN provides access to a vast repository of data, analytical tools, and computational power.

Learn More!

Events

- Research & Standardization in Alzheimer's Disease Conference (RASAD 2012)
- Alzheimer's Association International Convention (AAIC)

More →

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PARTNERS

Network Partners in GAIN will become part of a global effort to share and collaborate. GAIN will link investigators, data, tools and infrastructure, creating a powerful and efficient environment for the study of Alzheimer's Disease.

Benefits of GAIN Network Partnership include:

- Prestigious membership in a global network of investigators committed to advancing a sustainable and federated Alzheimer's Disease research infrastructure
- Access to a vast network of data and computer resources
- Access to a growing set of analytic tools spanning clinical, biologic, imaging and genetic data
- Data federation tools that support ontologies and metadata standards
- Online analytic tools allowing you to compare your data and analysis results with others.

Are you a GAIN Partner?

Our expectations for new GAIN partners include:

- Extensive, accessible and well organized set of Alzheimer's Disease research data from imaging, behavior or genetics (300+ research subjects)
- Experience and interest in collaborative efforts
- Ability to share re-identified data
- Reliable computer resources and high speed internet access to support data federation
- Technical expertise sufficient to test and implement data federation tools
- Willingness to beta test new tools
- Proponent of ethical data sharing

Download Application Form (PDF)
GAAIN Federated Data Repository

• Global network of committed investigators
• Vast network of data and compute resources
• Data federation tools
• Ontologies and metadata standards provide semantic framework
• Analytic tools for comparison of data across studies
GAAIN Challenges

- Subject privacy protection across international boundaries
- Complexity from cross-disciplinary data collection and analysis
- Creating robust and compelling tools for searching, visualizing, sharing and analyzing the federated data
- Semantics, ontologies, etc.
Data Federation
Controlled Terminologies

- Controlled terminologies enable mapping of heterogeneous data into common terms
  - Supports searching across databases
  - Supports data integration
- **CDISC Terminologies**  (Clinical Data Interchange Standards Consortium Terminology)
  - STDM: Study/Trial Design Model
  - ADaM: Basic Data Structure for Tome-to-Event Analysis
  - CDASH: Basic recommended data collection fields for 18 domains
  - SEND: Standard for Exchange of Nonclinical Data
Mapping Tool

- View, inspect and transform source data
- View and inspect target schema and controlled terminologies
Questions like, “How many subjects are there with functional assessments and imaging?” can be asked.
Drag and drop individual items into work area to see distribution of values and number of subjects having data available. Study-level access levels shown.
Drag and drop minor or major categories into work area to see inventory of information types available from each study.