GRIP Global Research and Imaging Platform

Alzheimer's Disease and Related Dementias

Unlock the power of data and AI to catalyze breakthroughs in disease research.

The challenge

Dementia is difficult to diagnose, treatments are limited, and there is no cure. Cutting-edge data analysis could offer a solution. In recent years, researchers have generated staggering amounts of data across multiple modalities, creating the potential to accelerate progress dramatically.

Data modalities

- Increasingly sophisticated clinical data
- MRI, PET, and other imaging data
- Plasma biomarker panels
- Speech samples and other digital data
- Different types of -omics data

However, the development of systems and tools that empower the scientific community to use data has not kept pace with the data itself. The process of ingesting data and cleaning data, harmonizing it across all these modalities, and visualizing it is prohibitively expensive and time-consuming. In addition, for administrative, legal, and logistical reasons, data sharing is still the exception, not the norm, so data analysis continues to happen mostly one data set at a time.

These barriers have prevented researchers from fully tapping into the discoveries that multi-modal data and modern analysis tools should be making possible.

The solution

GRIP is a user-friendly one-stop shop where researchers can:

- ✓ Ingest data of multiple different types and formats
- ✓ Process complex data via access to flexible, standardized tools and workflows
- ✓ Leverage powerful analysis tools and collaborative synergy in secure workspaces with 61 unique modules and 15 associated workflows available
- ✓ Share data insights easily with project partners and/or the entire community
- ✓ Join a growing, international community of over 10K registered users across 60 institutions
- ✓ Explore data securely in GRIP's ISO 27001 certified and GDPR/HIPAA compliant workspaces
- ✓ Utilize AI assistants and agents to optimize experimental design, data harmonization, visualization, and analysis

The status quo is that researchers must build their own custom tools to facilitate a multi-step data curation process, including ingestion, standardization, anonymization, annotation, quality control, mapping, and visualization.

GRIP makes standardized but flexible tools affordably available so researchers can use them on demand in the precise configuration that meets their individual needs. Then GRIP provides a space where researchers can share their data and collaborate on sophisticated analyses powered by another set of built-in tools.

GRIP is being co-developed by teams currently doing Alzheimer's research at major academic centers and research organizations, so its functionality is continually informed by the experiences of researchers managing challenges in real time.

GRIP is intended to save money and time for researchers, funders, and investigators. More importantly, it is intended to facilitate cutting-edge research that isn't happening now because the infrastructure for it doesn't exist. That research could lead to insights that result in better options for the 50 million people worldwide living with Alzheimer's and related dementias.

Background and vision

Born from needs expressed by multiple research partners to Gates Ventures, GRIP was initiated to help manage workflows for the increasingly complex set of tasks required for multimodal data curation and analysis in Alzheimer's disease and related dementias. We continue to operate with the philosophy of "build it once and re-use," and a collaborative approach to co-building the platform together with our partners. GRIP remains open-access and modular, with open source tools and workflows, so its functionality can grow and evolve over time based on researcher needs. A white-labelable approach also makes it compatible for expansion across multiple therapeutic/research areas.

GRIP now powers four independent data platforms and two clinical trial data sharing sites, in addition to providing multiple Alzheimer's Disease Research Centers (ADRCs) with their own, custom catalogs, workspaces, and analysis workflows:

- AD Workbench (ADWB)
- Global Neurodegeneration Proteomics Consortium (GNPC)
- The European Platform for Neurodegenerative Diseases (EPND)
- Alzheimer's Drug Discovery Foundation's SpeechDx Program
- Anti-Amyloid Treatment in Asymptomatic Alzheimer's (A4/LEARN) Study
- The AHEAD 3-45 Study

Visit **grip-research.org**
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Discover how GRIP supports analysis of data modalities, including imaging, digital, and -omics data

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