



alzheimer's  association®

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July 18, 2015

**The Global Alzheimer's Association
Interactive Network**

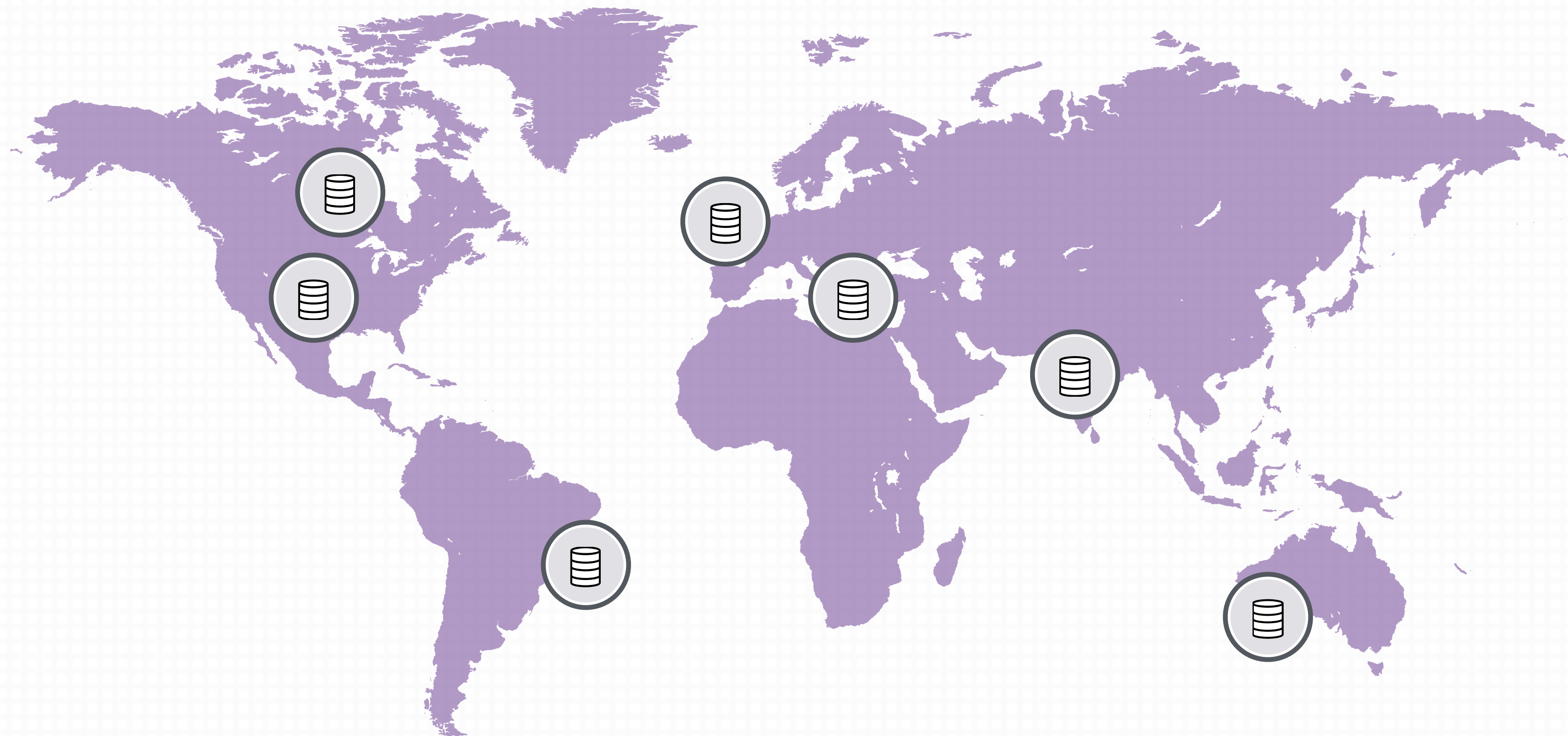
**A Portal to Alzheimer's Disease
Research Data Connecting
Scientists Worldwide**



**Powered by
Laboratory of
Neuro Imaging**

THE PREMISE

Research efforts could be **vastly expanded** in scope and capabilities if **data were linked to a global infrastructure** that enabled scientists to access a **large interlinked repositories of data** on thousands of subjects at risk for or already suffering from the ravages of Alzheimer's disease.

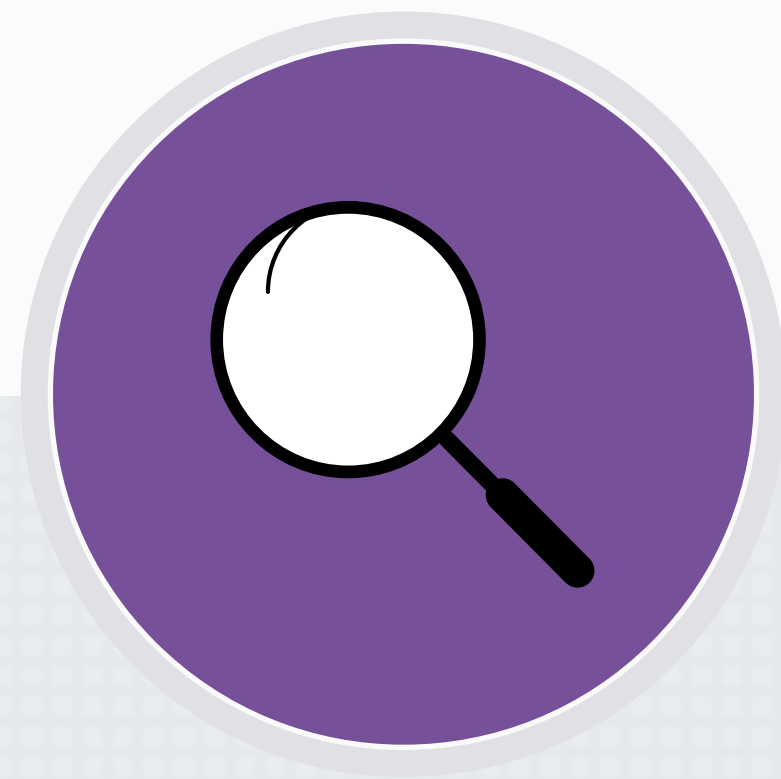


WHY DOES IT MATTER?

Giving researchers the opportunity to define large enough sample size cohorts for **meaningful results** and **replication**. Scientific research is demanding a comprehensive solution but **none have been created** to serve this need.



THE PROBLEM FOR INVESTIGATORS



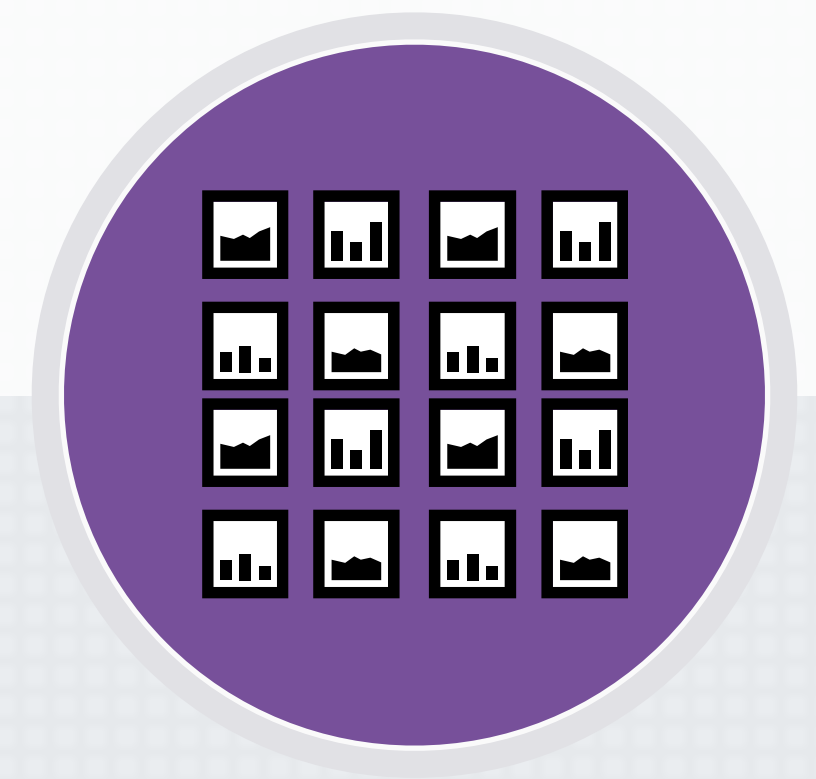
Discovering
existence of data
needed for
investigation.



Obtaining data from
other study
investigators.



Combining and
interpreting data
across studies.

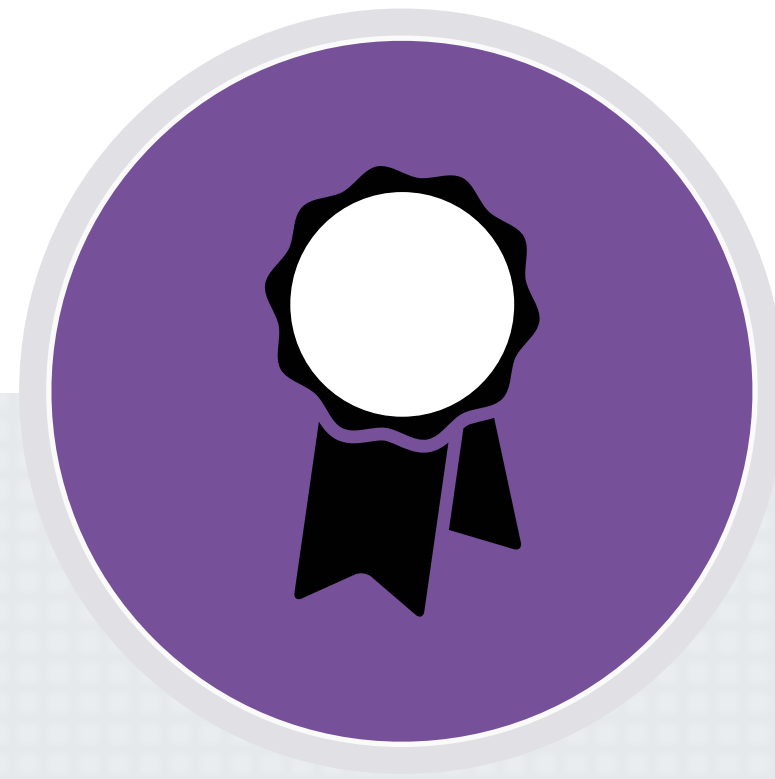


Analyzing **large**
quantities of data.

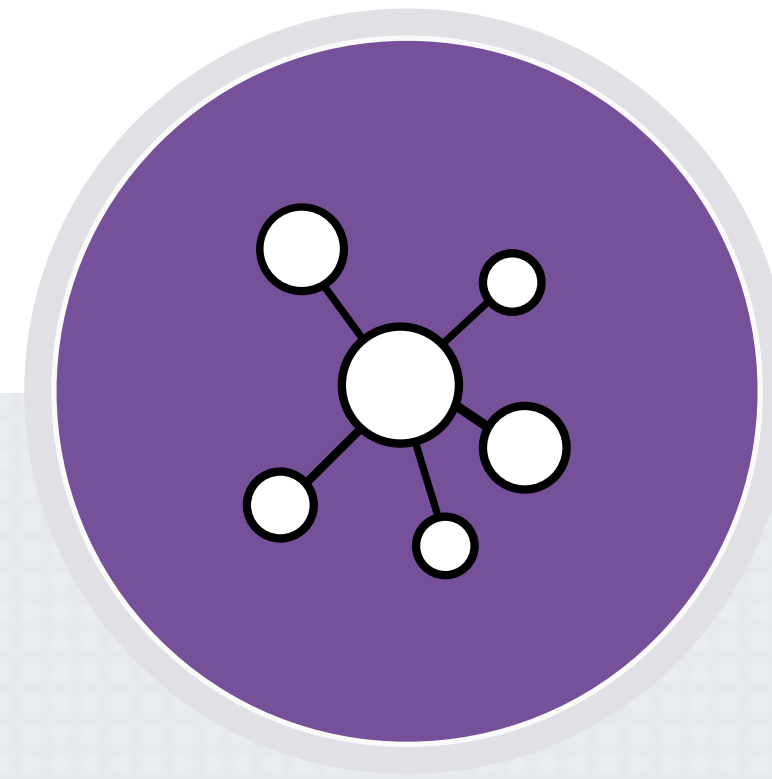
DATA HOLDERS CONCERNS



Protecting subject **privacy**.



Receiving **credit** for acquiring & providing data.



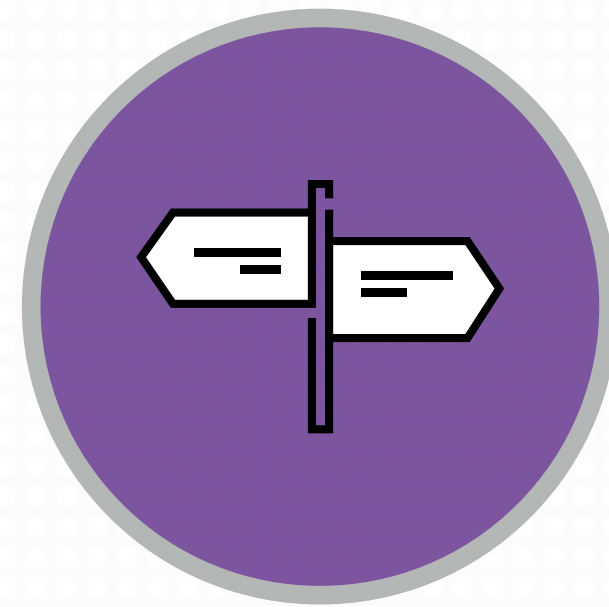
Maintaining data **sharing infrastructure** & support resources.



Requires **expertise across domains** to interpret data.

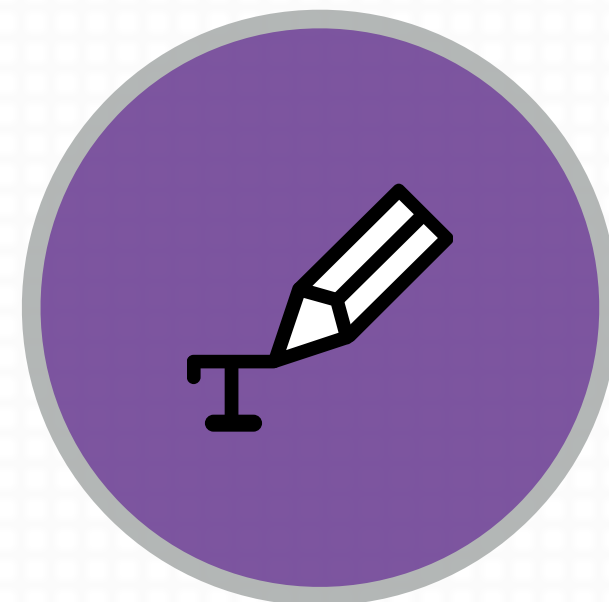
DATA ANALYSIS CHALLENGES

Data are in **different** locations.



&

Different **nomenclature** defines data.



GAAIN links and homogenizes data **across multiple domains**.

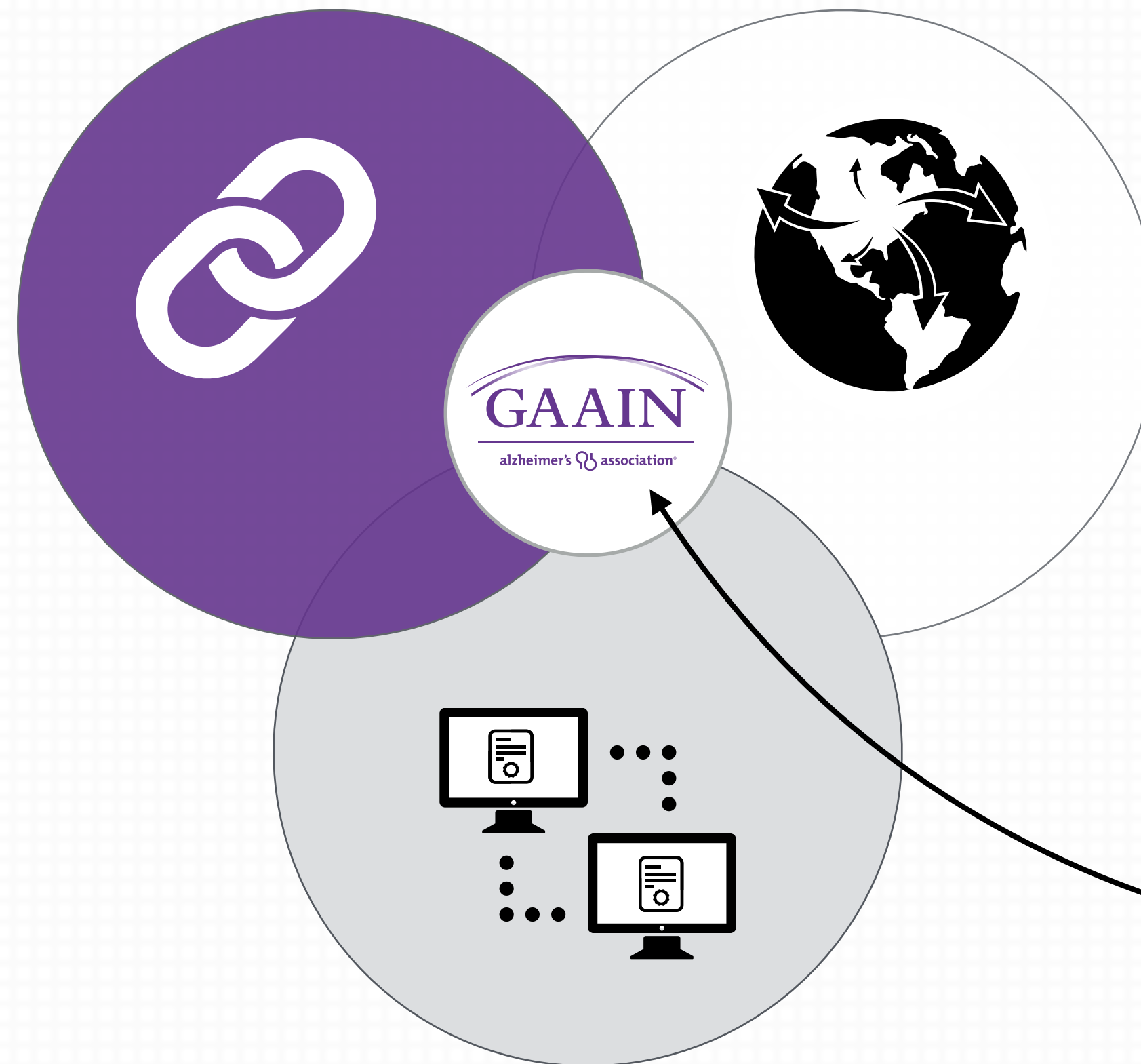
THE FIRST GLOBAL DATA NETWORK FOR ALZHEIMER'S DISEASE

Collaborative Effort

Providing researchers around the globe with **access** to a **vast repository** of **Alzheimer's disease research** data.

Secure Networks

Aggregating information **without infringing** upon data **sharing policies** and regulations. Data Partners always **remain in control of their data**.

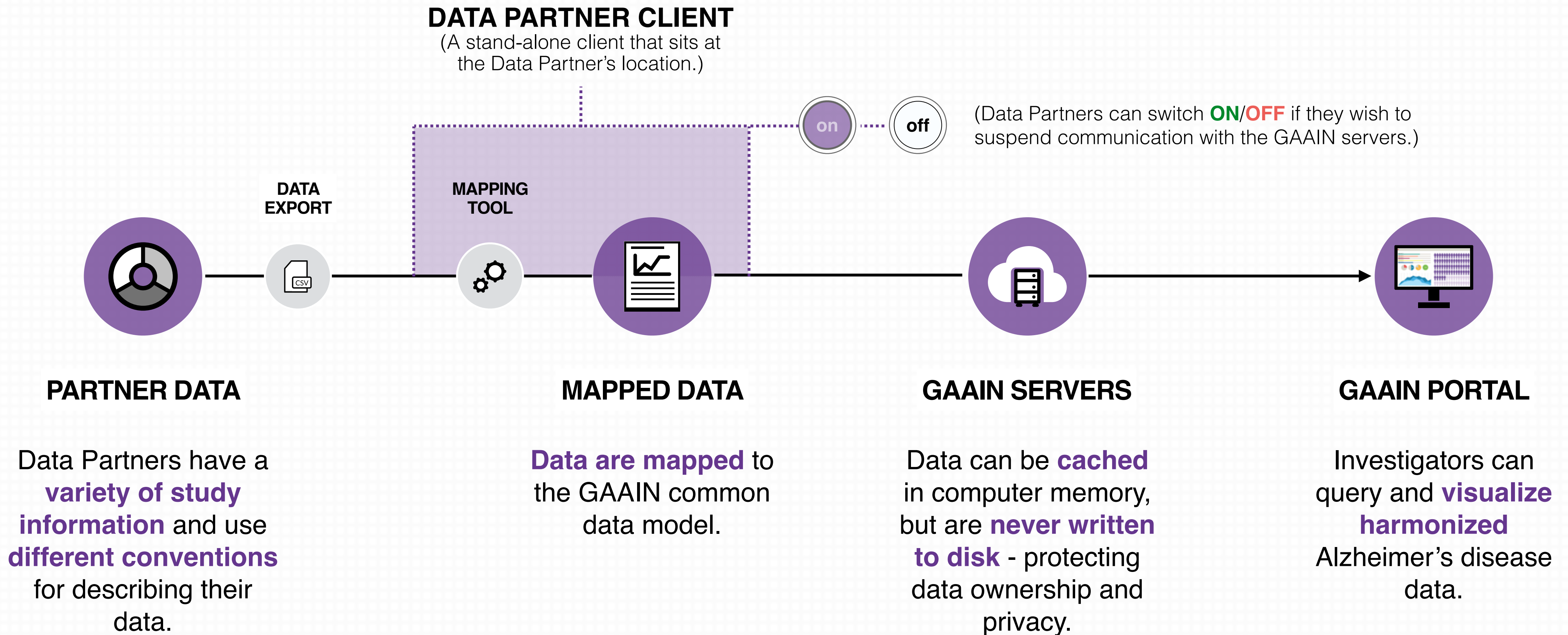


A Global Research Hub

Allowing researchers to **search** across multiple data sources instantly and **contact** these **Data Partners directly** for data.

Opportunity to **connect scientists worldwide**.

GAAIN ARCHITECTURE ADDRESSES DATA PARTNER CONCERNS



GAAIN SOLUTION ADVANTAGES



Data Partners remain **completely autonomous** from the federation servers.



A single **unified view** of the data sources can be maintained **as new partners are added**.



Partner's **responsibility** toward their study **subjects** are **not breached**.

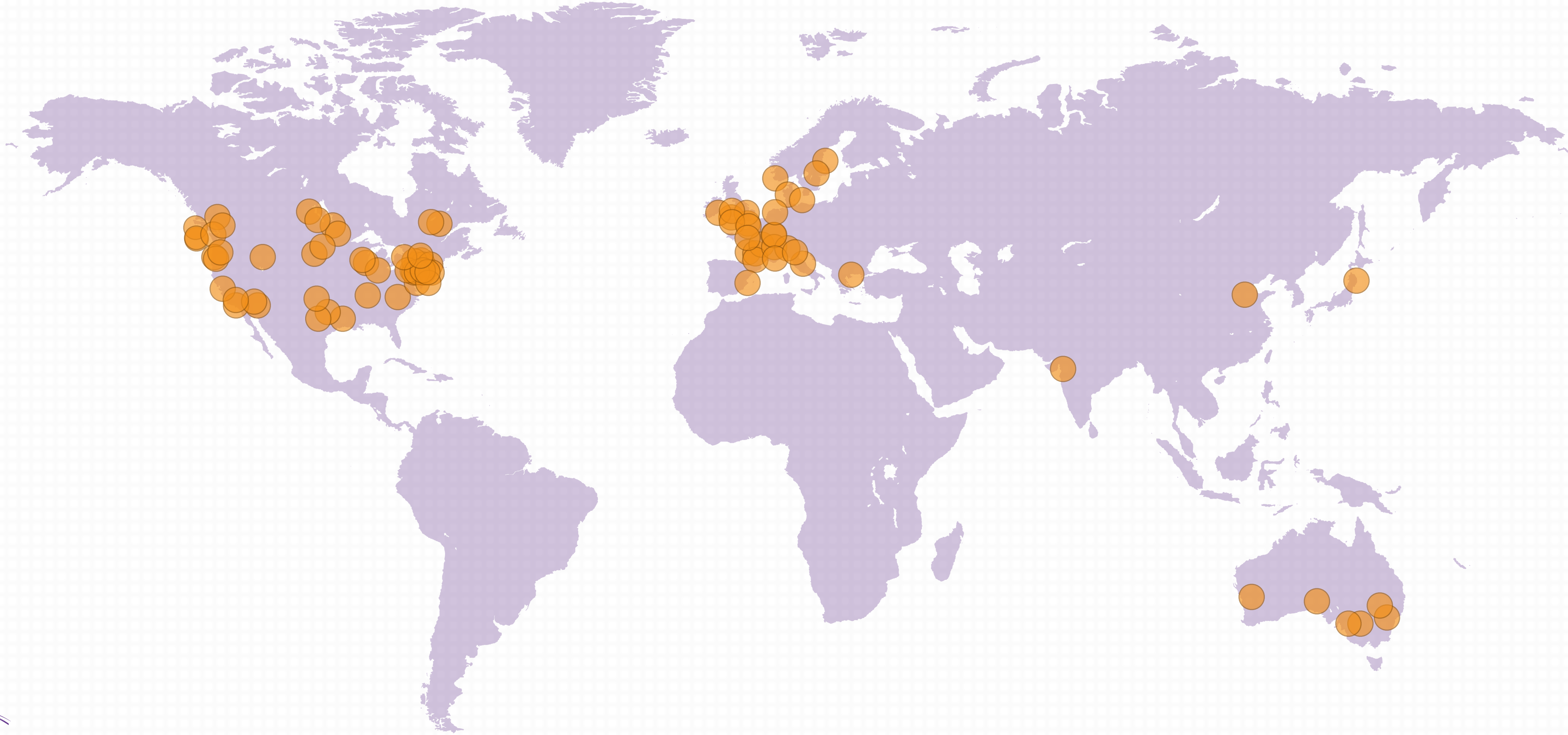


Partners retain **control over their data**.

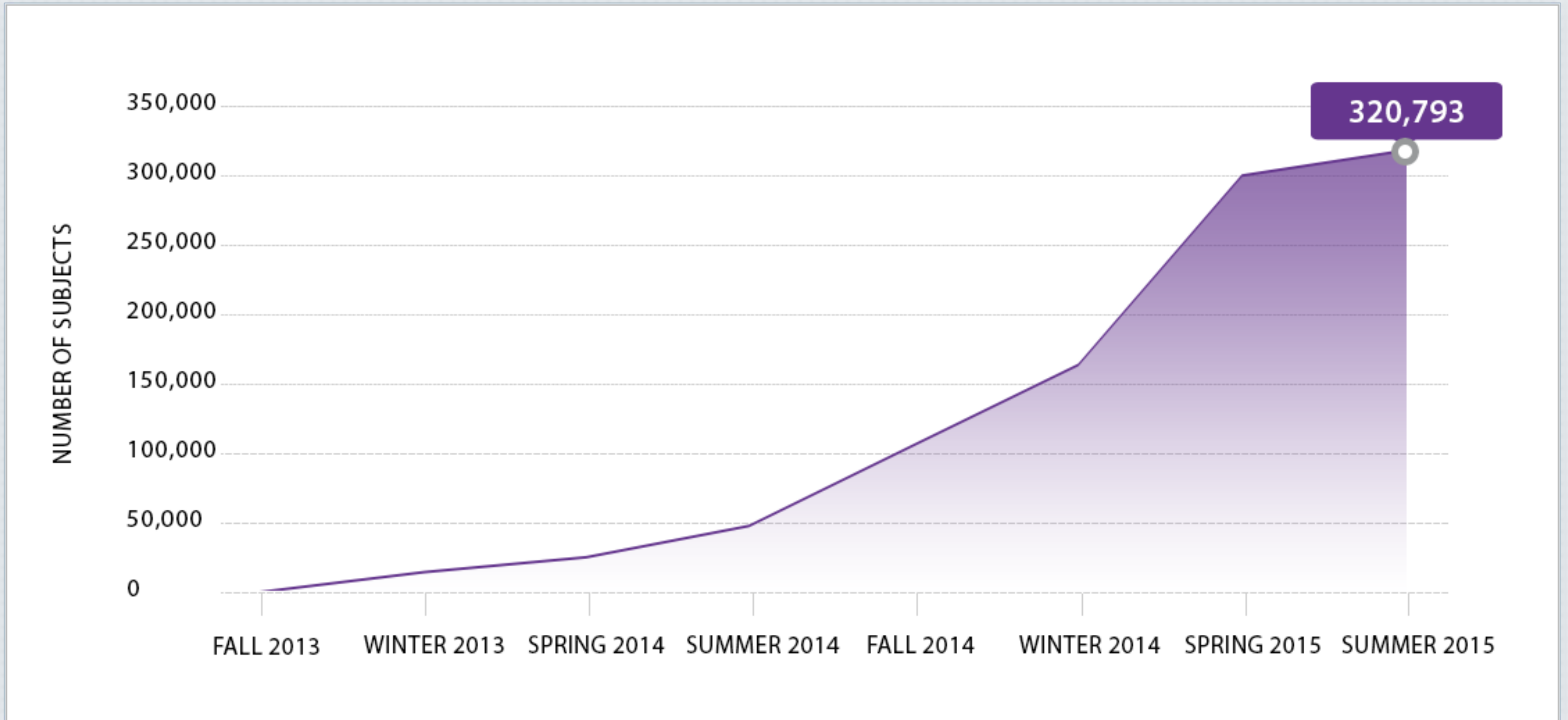
OUR DATA PARTNERS



GAAIN is in progress **on-boarding over 90+** Data Partners.



NUMBER OF SUBJECTS SEARCHABLE IN GAAIN OVER TIME



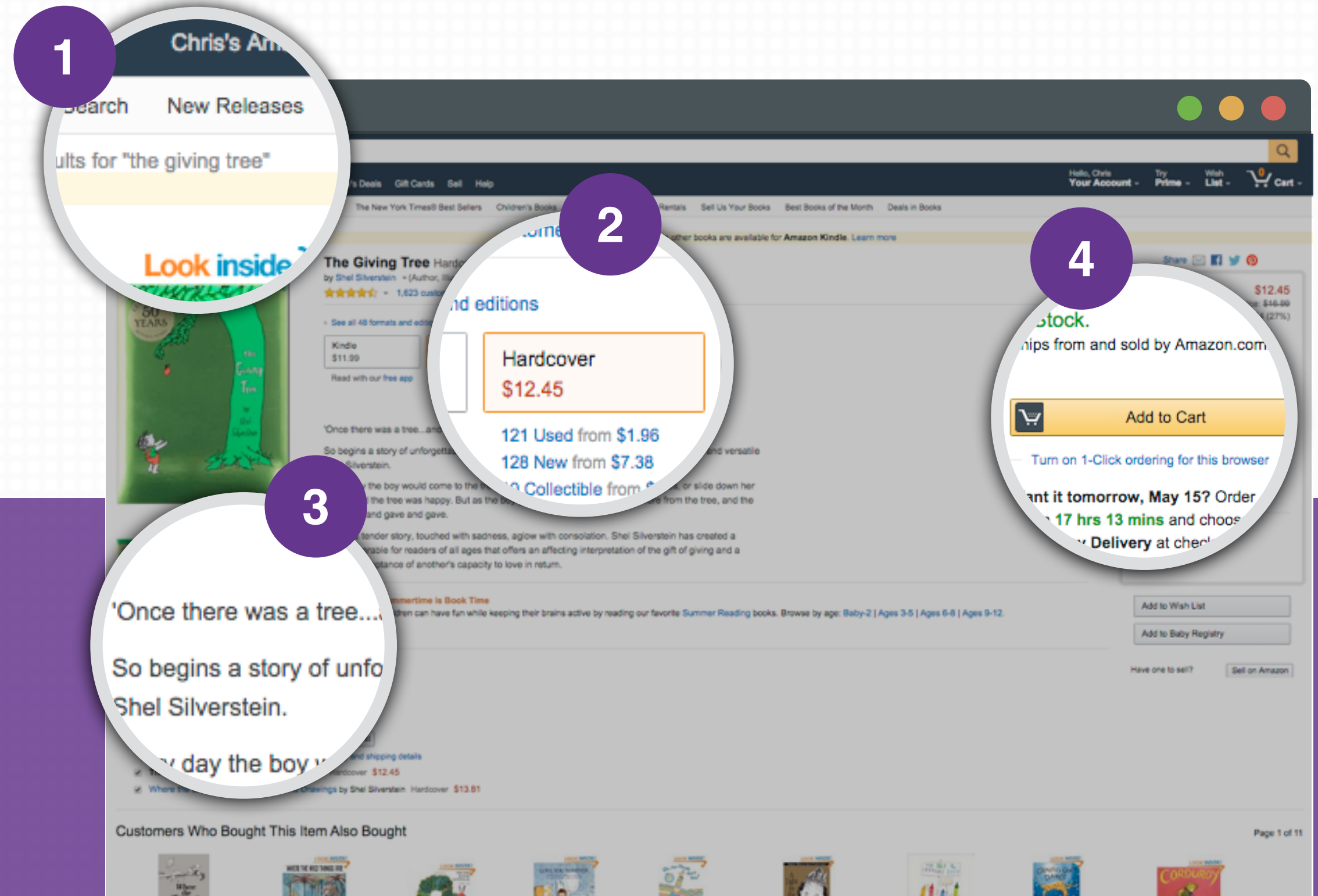
GAAIN'S FUNCTIONALITY IS COMPARABLE TO AMAZON

1 SET SEARCH CRITERIA

2 VIEW RESULTS

3 STUDY DETAILS

4 OBTAIN COPY

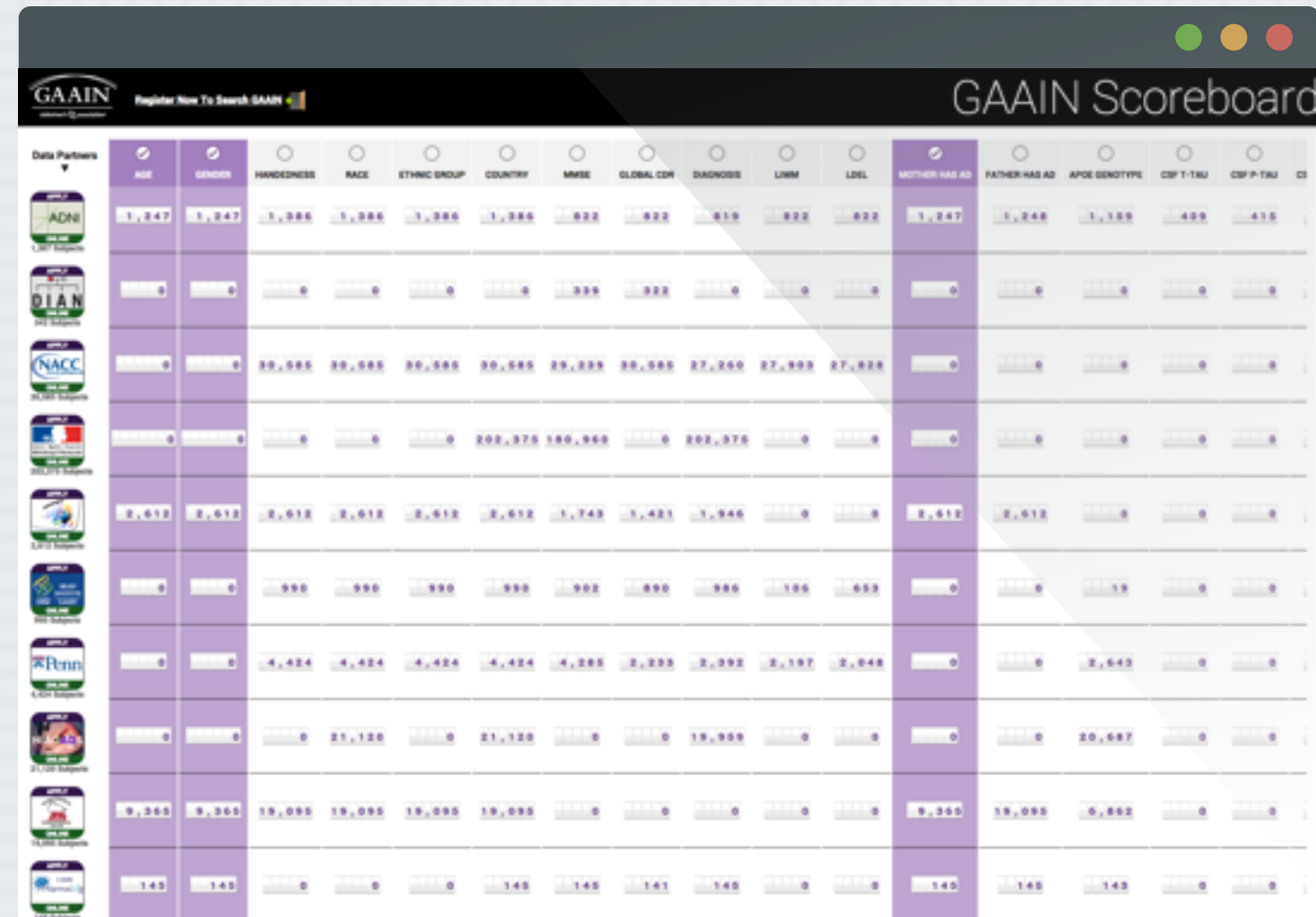


...WITH SLIGHT DIFFERENCES

- 1 SET SEARCH CRITERIA
- 2 VIEW RESULTS
- 3 STUDY DETAILS ABOUT THE DATA FROM DATA PARTNERS
- 4 APPLY FOR YOUR OWN COPY



SEARCH DATA WITH GAIN SYSTEMS



The screenshot shows the GAIN Scoreboard interface. At the top, it says "GAIN Scoreboard". Below that, there's a table with columns for "Data Partners" (ADNI, DIAN, NACC, Penn, etc.) and various demographic and clinical variables. The table is partially obscured by a diagonal watermark.

Data Partners	AGE	SEX	HANDNESS	RACE	ETHNIC GROUP	COUNTRY	MALE	GLOBAL CDR	DIAGNOSIS	LNIN	LEL	MOTHER HAS AD	FATHER HAS AD	APOE GENOTYPE	CSP T-TAU	CSP P-TAU	CS
ADNI	1,247	1,247	1,386	1,386	1,386	1,386	822	822	819	822	822	1,247	1,248	1,159	499	415	
DIAN							399	399									
NACC			30,585	30,585	30,585	30,585	28,239	30,585	27,260	27,999	27,999						
Penn	3,617	3,617	3,618	3,618	3,618	3,618	1,749	1,491	1,946			3,617	3,618				
W Penn			990	990	990	990	990	990	990	106	693			19			
UPenn			4,424	4,424	4,424	4,424	4,285	3,399	3,992	3,197	3,048			3,649			
UCSD	9,360	9,360	19,095	19,095	19,095	19,095						9,360	19,095	6,892			
UCLA	145	145					145	145	145	145		145	145	145			

GAIN SCOREBOARD

A front-end tool to **illustrate the breadth of variables** and subjects in GAIN. It is publicly available **without a GAIN account**.



GAIN INTERROGATOR

An easy-to-use interface to **study relationships of variables in self-defined study cohorts** across multiple sources. Access to the Interrogator **requires a GAIN Investigator Account**.

THE GAAIN TEAM

Arthur Toga
Naveen Ashish
Karen Crawford
Scott Neu

THANK YOU.