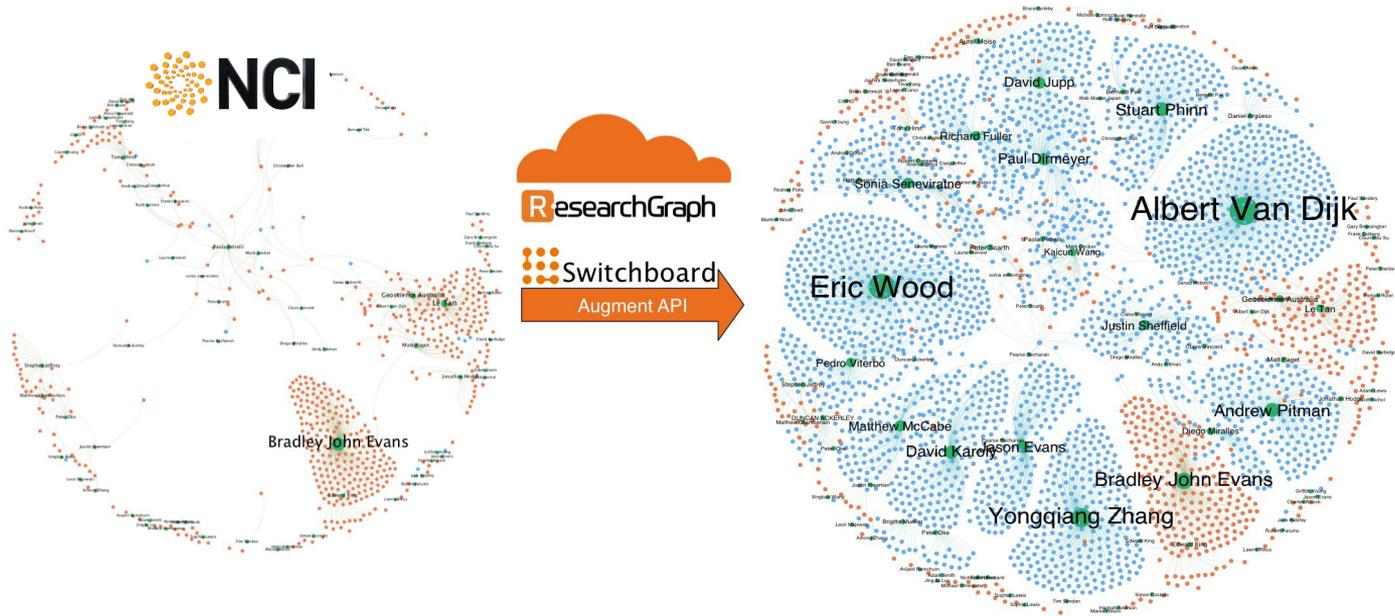


Creating a Data Service Using Research Graph and VIVO

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Institutions want connected
graphs of scholarship, but
technology and data
practices are not generally
available

Example of Augmented Graph



What is VIVO?

OpenVIVO

Home | People | Organizations

OpenVIVO is a demonstration of a research-focused discovery tool that enables collaboration among researchers across all disciplines.

Browse or search information on people, departments, courses, grants, and publications.

Search OpenVIVO

limit search → Search

Research

- 1,076 Academic Articles
- 79 Books
- 92 Chapters
- 109 Conference Papers
- 4 Reports

[View all...](#)

VIVO Research & Expertise Across Cornell

Home | People | Organizations | Research | Events

Welcome to VIVO

VIVO is a research-focused discovery tool that enables collaboration among researchers across all disciplines.

Browse or search information on people, departments, courses, grants, and publications.

Search VIVO

limit search → Search

Research

- 60,942 Academic Articles
- 12,645 Conference Papers
- 55 Edited Books
- 80 Library Collections
- 39 Media Contributions

[View all...](#)

Faculty

- [Ritter, Gretchen](#)
Academic Dean, Office of the Academic Dean
- [Baird, Barbara A.](#)
Professor, Chemistry and Biology (CHDB)
- [Swallow, Khena M.](#)
Assistant Professor, Psychology (PSYCH)
- [Migiel, Mairlyn](#)
Professor, German Studies

Scripps VIVO scientific profiles

THE SCRIPPS RESEARCH INSTITUTE

Home | People | Organizations | Research | Events

Welcome to VIVO

VIVO is a research-focused discovery tool that enables collaboration among scientists across all disciplines.

Browse or search information on people, departments, and research.

Search VIVO

limit search → Search

Research

- 34,337 Academic Articles
- 36 Books
- 82 Chapters
- 1 Conference Papers
- 34 Edited Books
- 33 Reports

[View all...](#)

Faculty

- [Loring, Jeanne](#)
- [Milner, Richard](#)
- [Putharveetil, Sathyanarayanan](#)
- [Zhao, Bo](#)

[View all...](#)

Departments

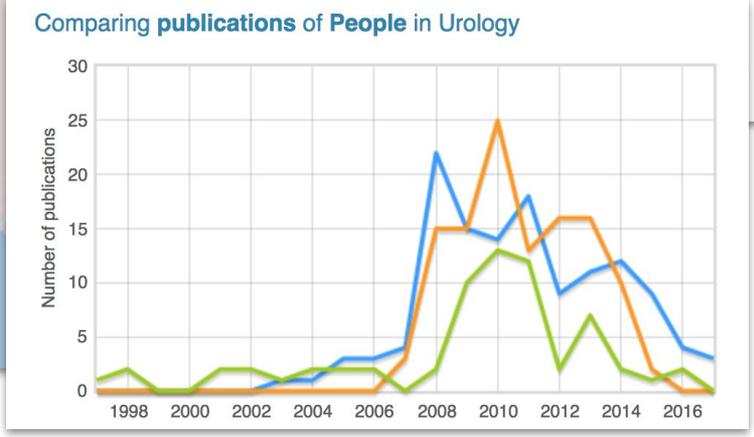
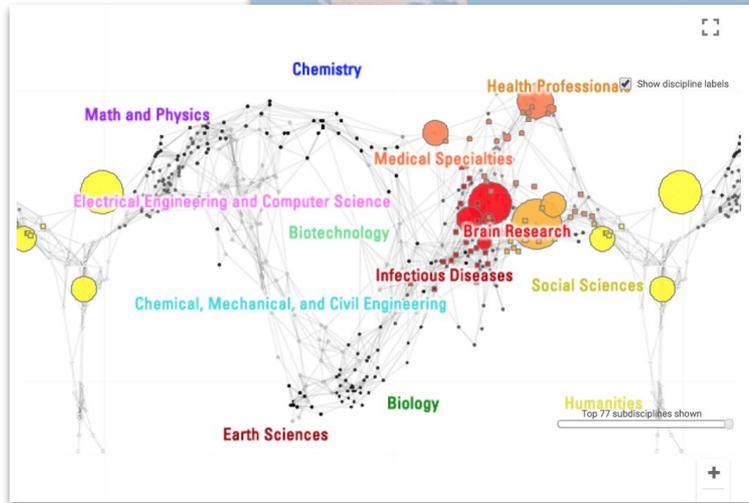
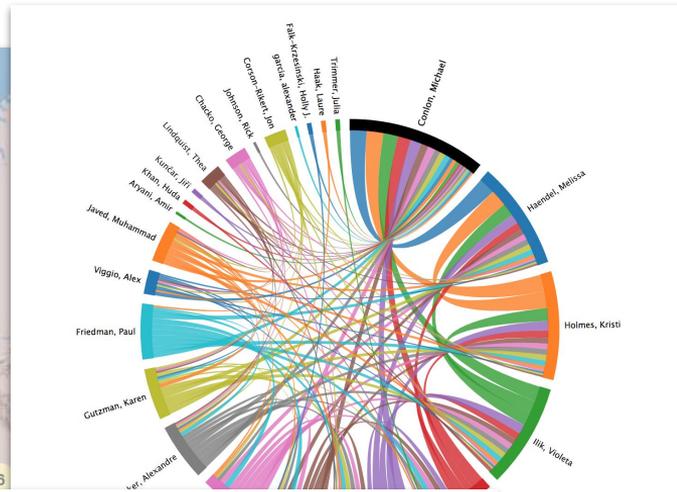
- Cell Biology
- Department of Pathology and Laboratory Medicine
- Integrative Structural and Computational Biology (ISCB)
- Infectious Diseases
- Neurobiology
- Molecular Biology

[View all...](#)

Statistics

- 347 People
- 1 Activities
- 46 Events
- 837 Organizations
- 37_k Research
- 63 Locations

Sample VIVO Visualizations



SPARQL Query

Query:

```
16 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
17 PREFIX vcard: <http://www.w3.org/2006/vcard/ns#>
18 PREFIX vivo: <http://vivoweb.org/ontology/core#>
19
20 #
21 # Count high-level entities in VIVO.
22 #
23 SELECT ?orgs ?people ?publications
24         ?grants ?data_sets
25 WHERE {
26
27   {
28     SELECT (COUNT(DISTINCT ?uri) AS ?orgs)
29     WHERE {
30       ?uri a foaf:Organization .
31     }
```

Format for SELECT and ASK query results:

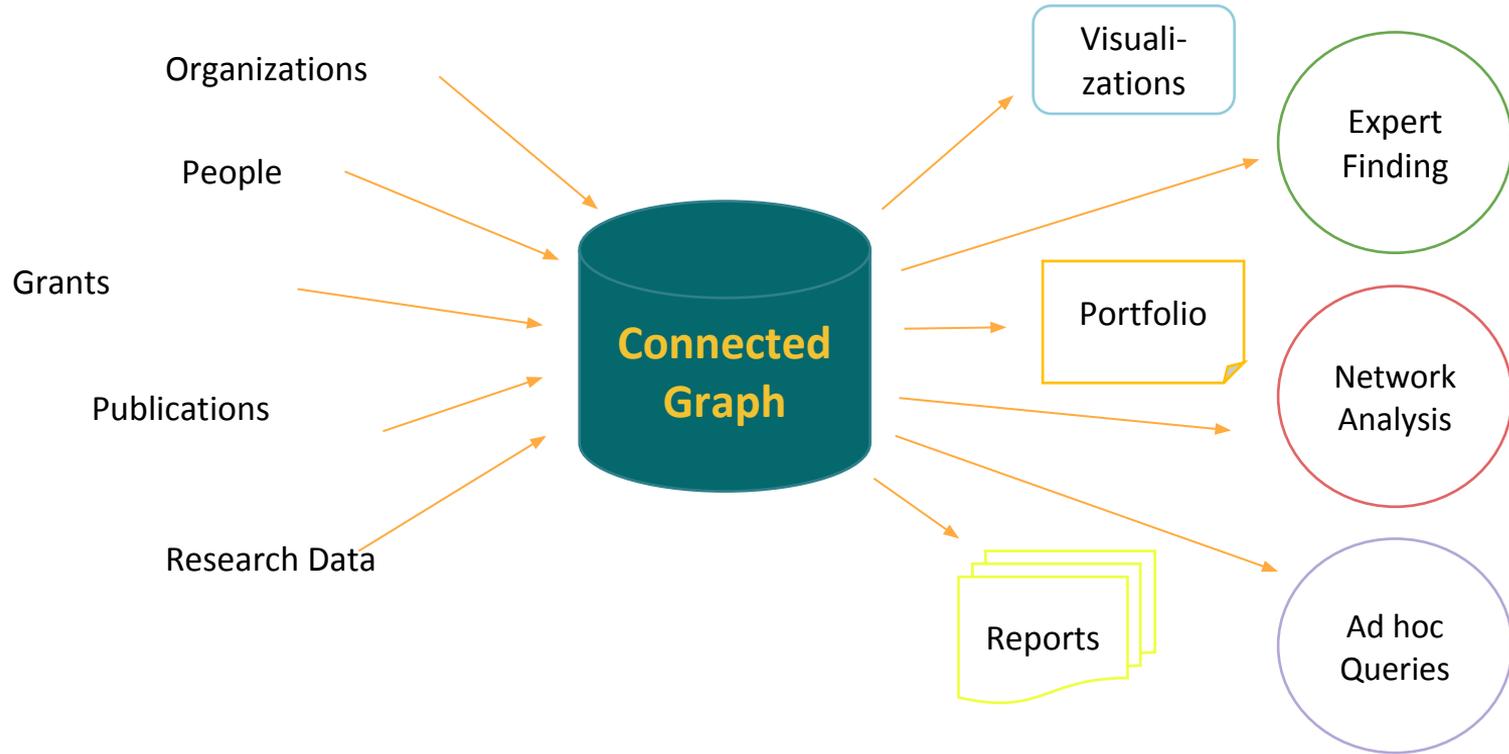
- RS_TEXT
- CSV
- TSV
- RS_XML
- RS_JSON

Format for CONSTRUCT and DESCRIBE query results:

- N-Triples
- RDF/XML
- N3
- Turtle
- JSON-LD

Run Query

The Connected Graph



Solution

Use ResearchGraph to augment client's data, providing a rich and connected graph.

Load the graph into a private hosted VIVO, providing the client with a solution for visualizations, queries, and data reuse.

How the service works

Client provides

- A list of research datasets
- A list of researchers
- A list of grants
- A list of papers
- A combination of any or all of the above

These records will be augmented using ResearchGraph

Augmented data is represented as VIVO RDF

VIVO RDF data is loaded into a hosted VIVO for the client

Client gets a hosted VIVO with augmented data for presentation, query, and reuse

Main Technology Steps

- ETL: Work with repositories to transform their data into a connected graph
- Augment API: Using AWS cloud hosted services to improve the content of the graph.
- Create and launch VIVO instance on the cloud

1

ETL

Transforming the repository data to a connected graph

2

Augment API

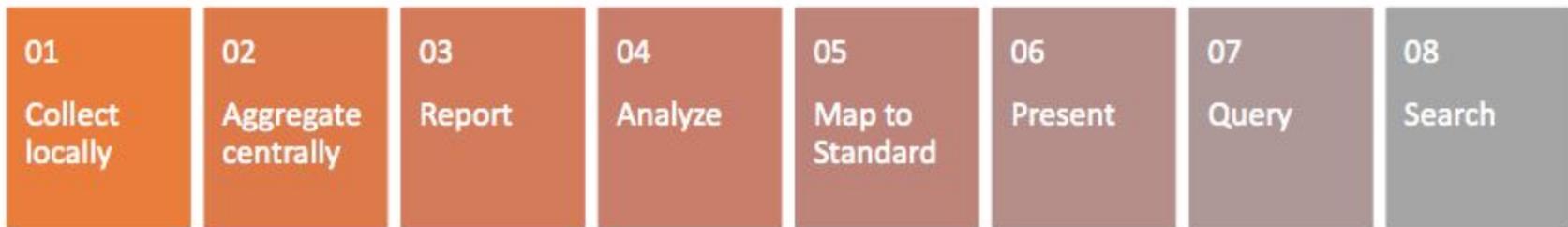
Augmenting the repository data with research graph data

3

VIVO

Exporting VIVO RDF and
Launching VIVO instance on EC2 Cloud

VIVO



ResearchGraph

Join us in discovery

Research Graph and VIVO are working with Duraspace, a non-profit organization, (see <http://duraspace.org>) to create a pilot service. Based on findings from the pilot, final features of the service will be determined.

To express interest in the pilot, visit
<http://researchgraph.org/collaborators/cloud-pilot/>