

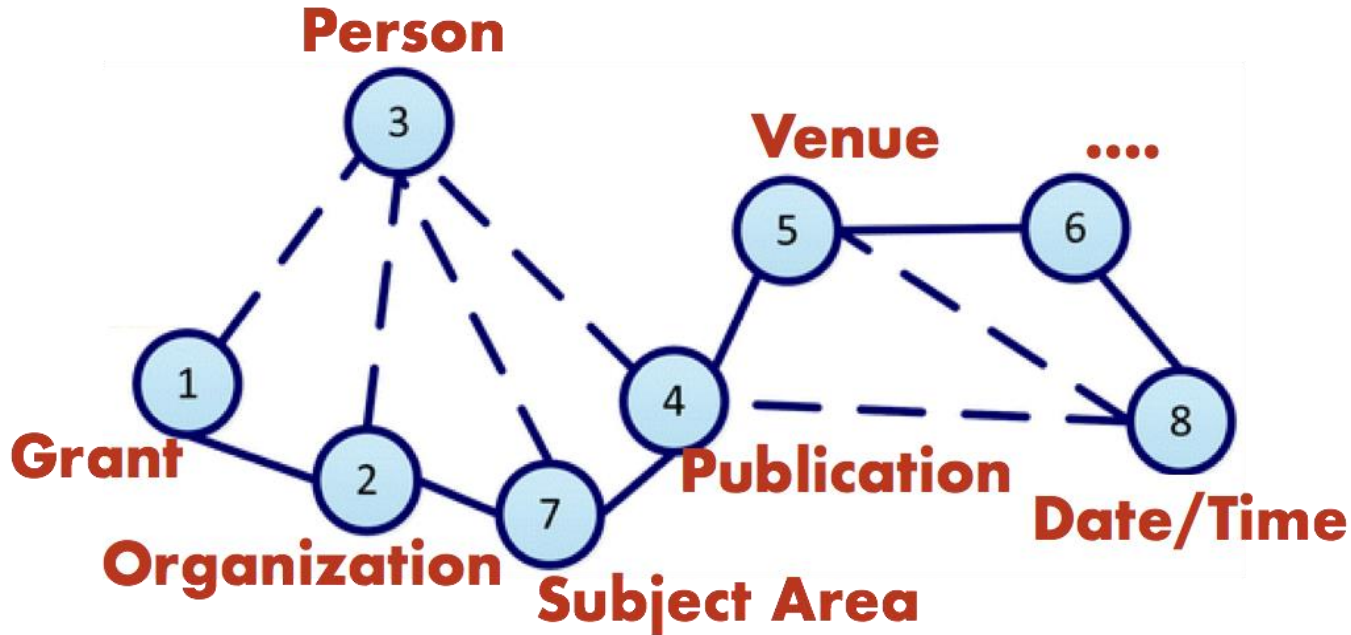
Visualizing Linked Open Data Using VIVO

10/4/2017

What is VIVO?

- A web resource for single point of access for **information on scholarly activity** at Cornell. [Jon Corson-Rikert et. al. (Sep. 2007)]
- A **semantic web**-based researcher and research **discovery tool**. [Duraspace & VIVO Sponsor Webinar (2012)]
- An **open source tool** for **describing** and **linking** researchers and **research**. [Dean B. Krafft and Jon Corson-Rikert (2012)]
- VIVO creates a **connected, integrated record** of the scholarly work of your institution, ready for **reporting, visualization, and analysis**. [VIVO: website (2017)]

VIVO – Creates an Institutional Knowledge Graph



Representation

- How does a person use **long lists views** that are available in out of the box VIVO?
- Is anyone going to browse through dozens of pages?

Home | People | Organizations | **Research** | Events | Capability Map

Research

► Academic Article (1,284)

Article (1,652)

Book (118)

Chapter (140)

Conference Paper (175)

Conference Poster (74)

Dataset (191)

Journal (44,357)

Report (6)

Software (1)

Concept (250)

Academic Article

► all A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

page 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 more...

[A History of Israelite Religion in the Old Testament Period. Vol. 1. From the Beginnings to the End of the Monarchy . Rainer Albertz , John Bowden](#)

[A Multiscale and Multidisciplinary Investigation Of Ecosystem-Atmosphere CO 2 Exchange Over the Rocky Mountains of Colorado](#)

[A Spitzer Census of the IC 348 Nebula](#)

[Ancient Israel's Faith and History: An Introduction to the Bible in Context . By George E. Mendenhall. Edited by. Gary A. Herion. Louisville, Kentucky; London; and Leiden: Westminster John Knox Press, 2001. Pp. xx + 284 + 28 figs. + 7 maps + 7 tables. \\$29.95 \(paperback\).](#)

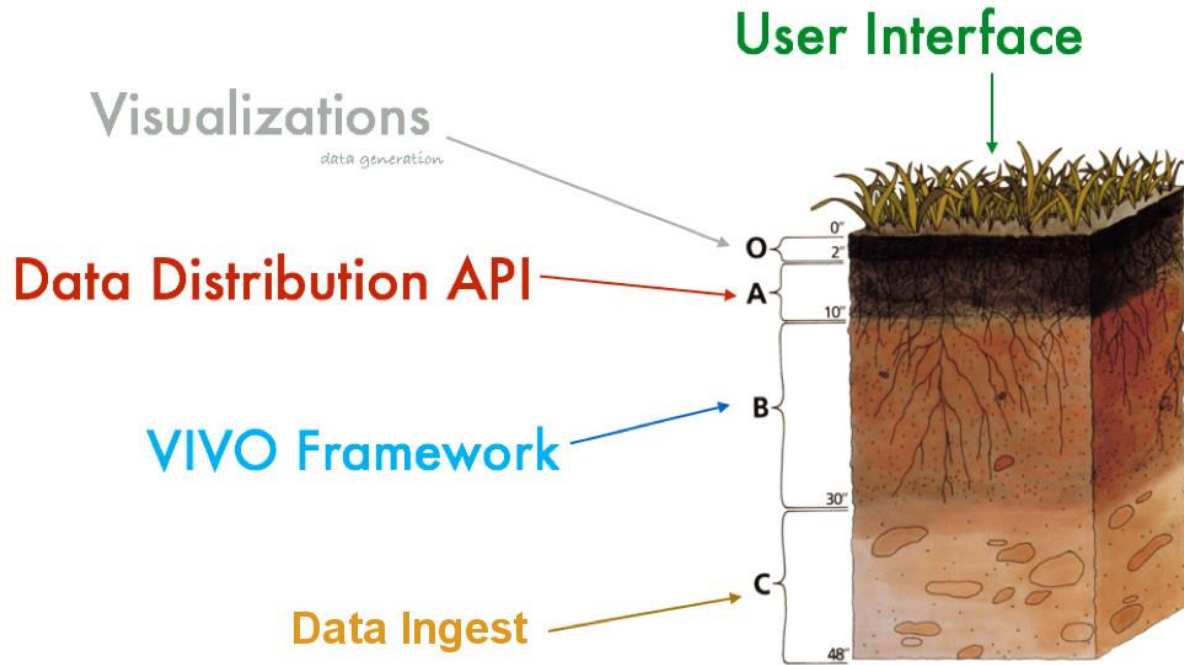
[Biblical Israel: State and People . Benjamin Mazar , Shmuel Ahituv In Search of 'Ancient Israel' . Philip R. Davies Prologue to History: The Yahwist as Historian in Genesis . John van Seters](#)

[Das Deuteronomium: Politische Theologie und Rechtsreform in Juda und Assyrien . By Eckart Otto. Beihefte zur Zeitschrift für die alttestamentliche Wissenschaft, Band 284. Berlin and New York: Walter de Gruyter, 1999. Pp. x + 432. € 101.24.](#)

[Editorial: Molecular Endocrinology Articles in the Spotlight for October 2012](#)

VIVO: Under-developed for reporting and analysis

- Out of the box,
 - Limited analysis & visualizations.
 - Data can only be downloaded/shared in RDF format.
 - RDF to JSON transformation ?
 - Limited data reuse: Cannot push data to other sites.
 - An API ? VIVO has one but is limited.
 - Should not need to go to the VIVO site to use data



Scholars@Cornell

FRESH START



Cartilage

2. Processing of Type I Collagen Gels Using Non-Enzymatic Glycation

3. Fiber development and matrix production in tissue-engineered menisci using b cells and fibrochondrocytes

4. Characterization of mesenchymal stem cells and fibrochondrocytes in three-dimensional analysis of cell shape, matrix production, and mechanical performance

5. Induction of fiber alignment and mechanical anisotropy in tissue engineered m anchoring

Cellular biophysics

Confocal

Shear modulus

Cartilage lubrication

Type I collagen

Boundary lubrication

Tissue engineering

Cartilage repair

Repair

Mechanical properties

Integrin

Adhesion

Cartilage

Meniscus

Imaging

Articular cartilage

Extracellular matrix

Tymanoplasty

Gene Therapy

Cartilage tissue engineering

Cartilage friction

Scaffold

Attachment

Multiphoton microscopy

Deformation

Hyaluronic acid

Lubricin

Collagen

Growth Factor

PRG4

Biomechanics

Hydrogel

osteoarthritis

3D printing

Implant

pulpus

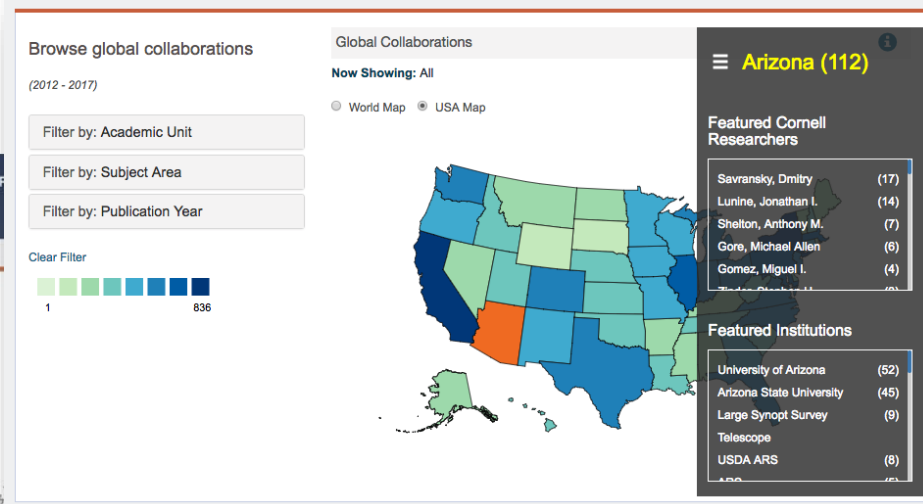
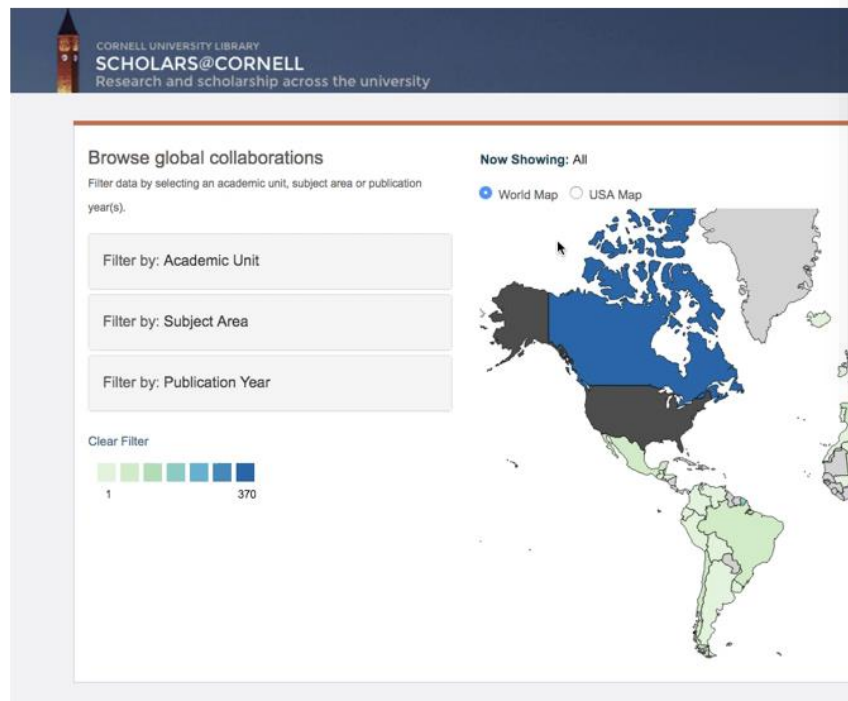
strain mapping

Scholars VIVO keyword cloud is interactive

- Demo:
<https://scholars.cornell.edu/homeWordcloudVisualization>
- Screencast

Global Collaborations

of the Academic Units



Global Collaborations

- <https://scholars.cornell.edu/homeWorldmapVisualization>
- Screencast

Browse global collaborations

(2012 - 2017)

Filter by: Academic Unit

Filter by: Subject Area

Filter by: Publication Year

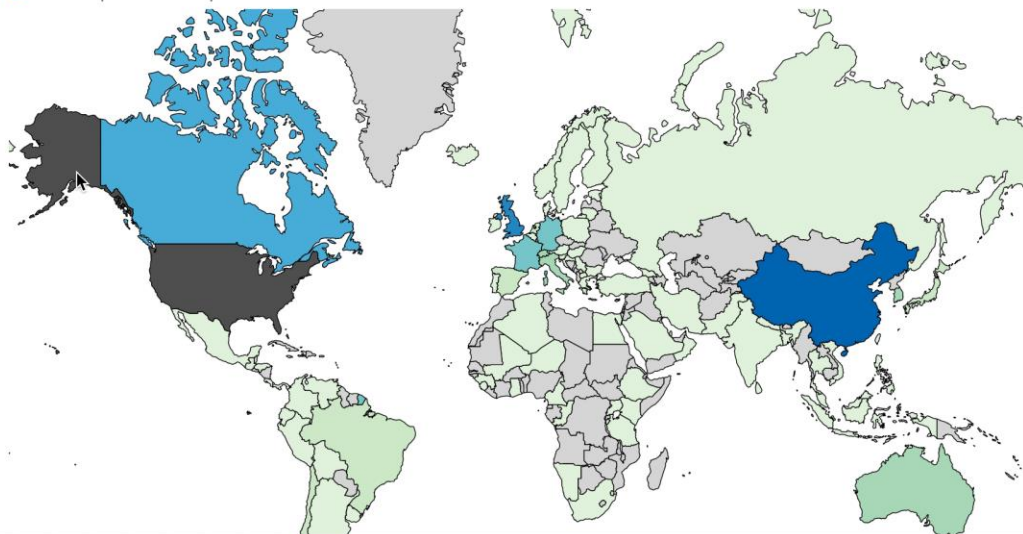
Clear Filter



Global Collaborations

Now Showing: All

☒ World Map ☐ USA Map

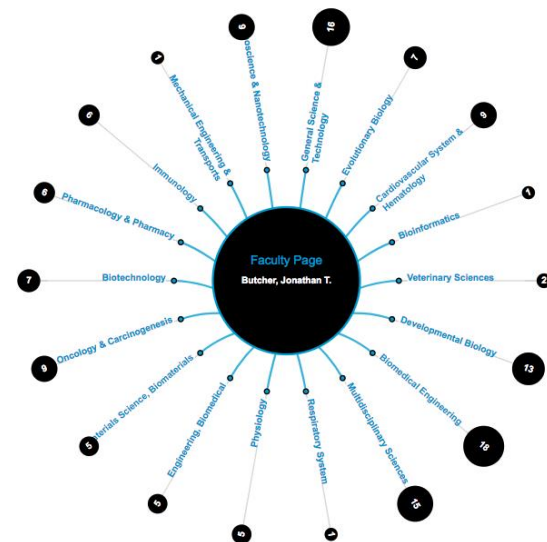
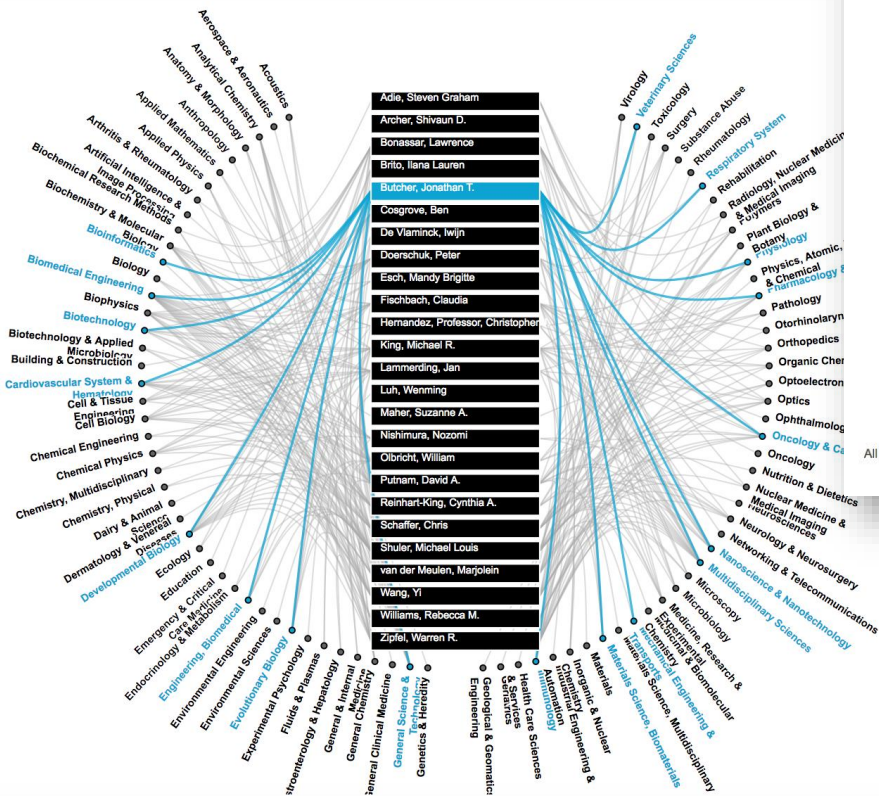


TrouProd-02-26-2016.txt

Coffee-01-27-2017.txt

Show All x

Research areas for **Meinig School of Biomedical Engineering**



All Data

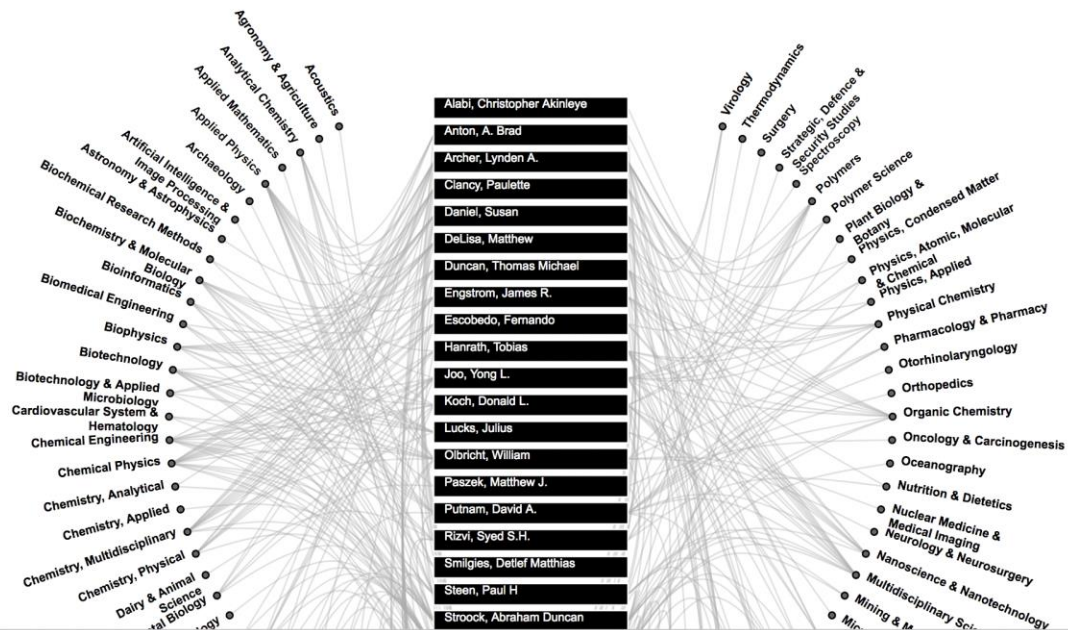
Research Interests

- <https://scholars.cornell.edu/orgSAVisualization>
- Screencast

Browse research interests

Select: Academic Unit

Research areas for **Smith School of Chemical and Biomolecular Engineering**



Under the hood

- Visualizations are created using d3.js
- A javascript layer for managing all visualizations
- Data Distributor (the API)
- Coming soon: raw data from visualizations will be downloadable

Data Distributor

- Several distributor types (static and real time data)
- Data served is managed by the site admin
- Static data is periodically refreshed using scripts/tools
- Accessible via a URL as a “named” distributor

<https://scholars.cornell.edu/api/dataRequest/departmentList>

RDF for "static" File distributor

:data_distributor_topoc_json :actionName "[topoc](#)" .

:data_distributor_topoc_json

 a <java:edu.cornell.library.scholars.webapp.controller.api.distribute.DataDistributor> ,

 <java:edu.cornell.library.scholars.webapp.controller.api.distribute.FileDistributor> ;

 :path "[visualizationData/countries.topo.json](#)" ;

 :contentType "application/[json](#)" .

RDF for real time distributor

```
:department_list_distributor
```

```
  a <java:edu.cornell.library.scholars.webapp.controller.api.distribute.DataDistributor> ,  
    <java:edu.cornell.library.scholars.webapp.controller.api.distribute.SparqlSelectData  
Distributor> ;
```

```
  :actionName "departmentList" ;
```

```
  :query """
```

```
    PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
```

```
    PREFIX vivo: <http://vivoweb.org/ontology/core#>
```

```
    SELECT ?uri ?label
```

```
    WHERE {
```

```
      ?uri a vivo:AcademicDepartment ;
```

```
      rdfs:label ?label .
```

```
    }
```

```
    ORDER BY ?label
```

```
    """.
```

Going forward

- "Productizing" Data Distributor
- Bundle supporting javascript
 - Supports visualizations generated in VIVO viewed in external sites
- Explore other visualizations
- Document, Document, Document



John Ferreira
Programmer/Analyst/Systems Architect
Cornell University Library
jaf30@cornell.edu