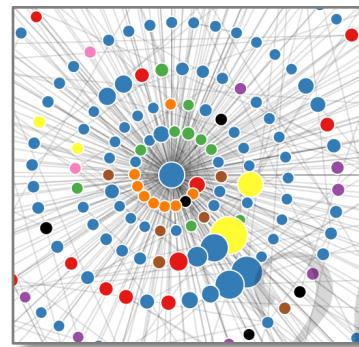
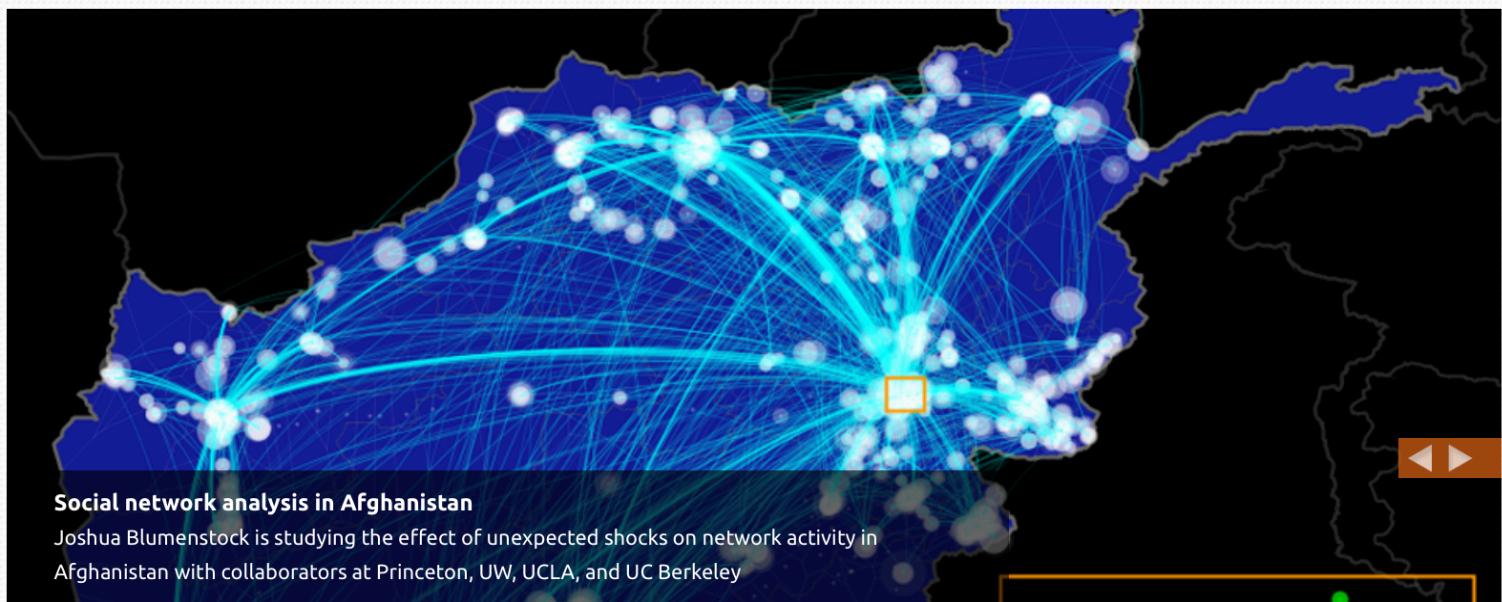


# Science of Science?

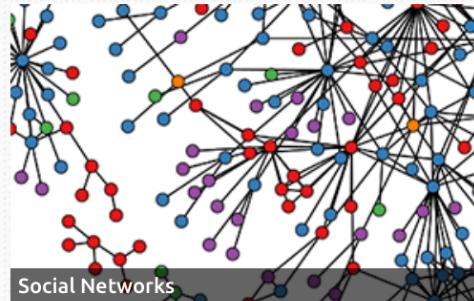




#### Research Focus Areas



Data for Development



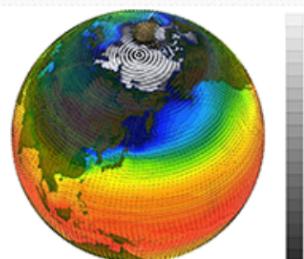
Social Networks



Data Visualization

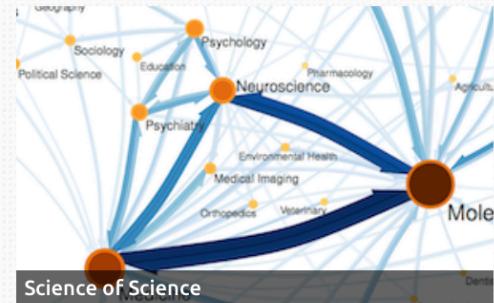


Computational Social Science

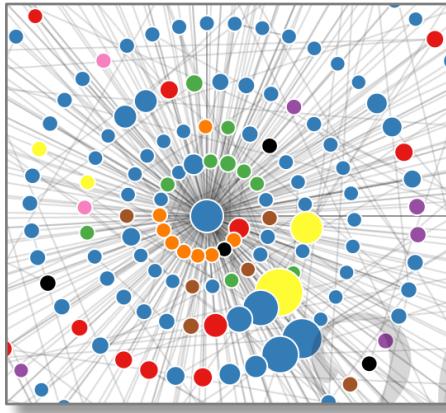


Data Curation

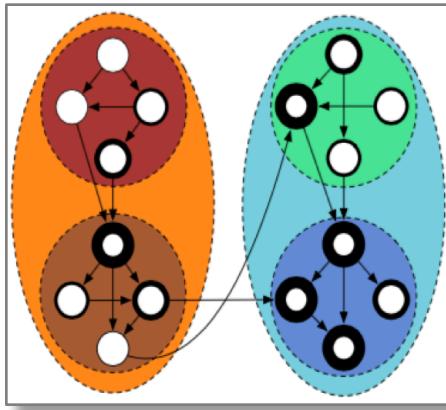
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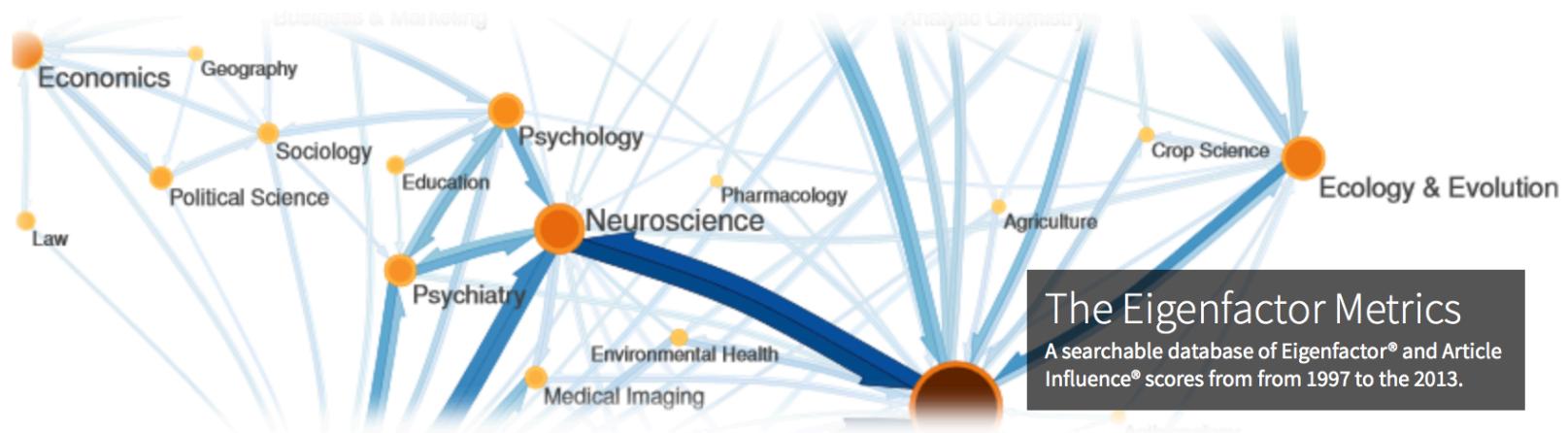
Science of Science



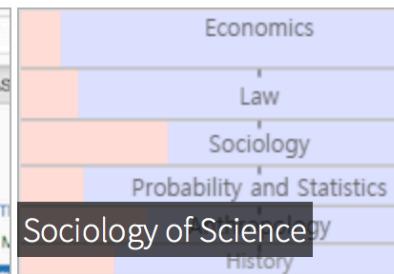
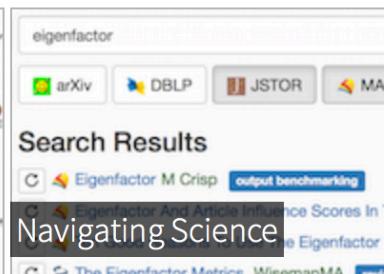
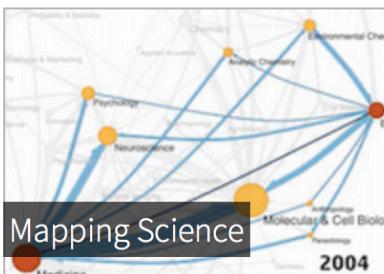
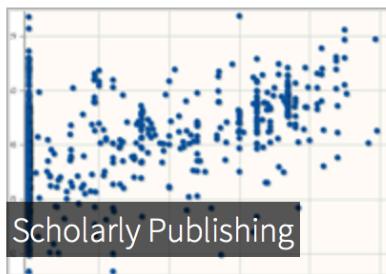
Knowledge Science



Knowledge Engineering



## RESEARCH AREAS



## NEWS

23

Nov.

### JEVIN WEST ON MEGAJOURNALS IN THE *CHRONICLE OF HIGHER EDUCATION*

Jevin West discusses the rise of the megajournal and our [open access cost effectiveness tool](#) in the *Chronicle of Higher Education*.

23

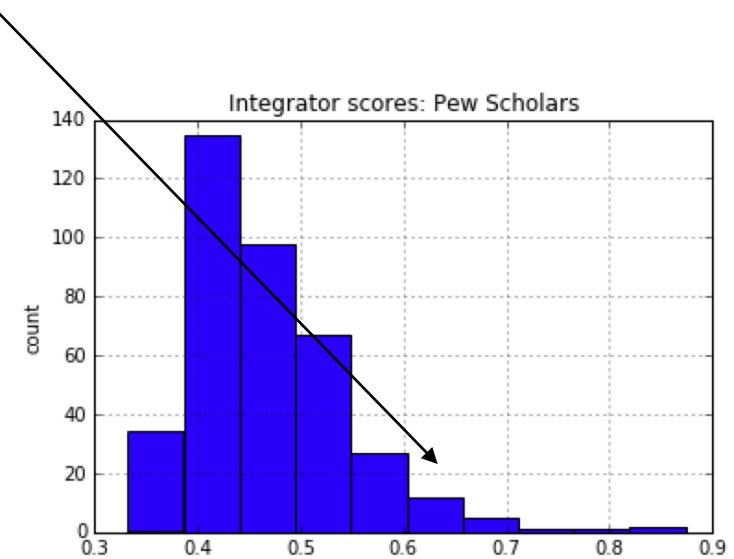
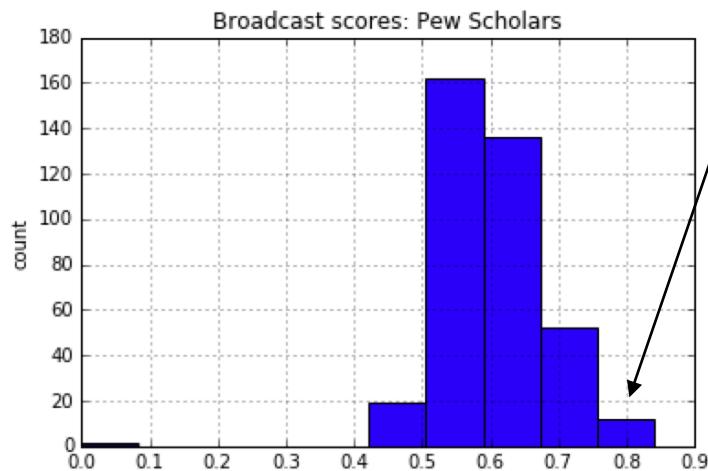
Nov.

### EIGENFACTOR TEAM PLACES SECOND IN MICROSOFT RESEARCH'S WSDM CUP

The [WSDM Cup Challenge](#) asked teams to use 30GB of data from the Microsoft Academic Graph to rank the importance of individual articles. This year, one of the article-level Eigenfactor algorithms placed second.

# Measuring Interdisciplinarity

Carl and Jacob



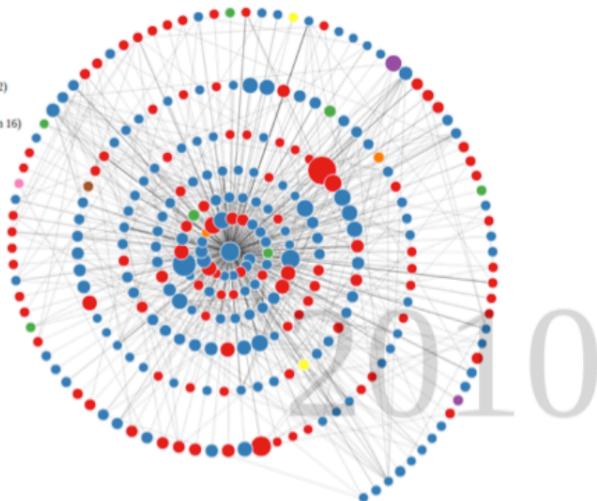
Bergstrom, CT, Foster, J, Portenoy, J, A. Misra, West, JD. (2016). Measuring interdisciplinarity without subject categories. (in prep)

# Visualizing Interdisciplinarity



Jason Portenoy

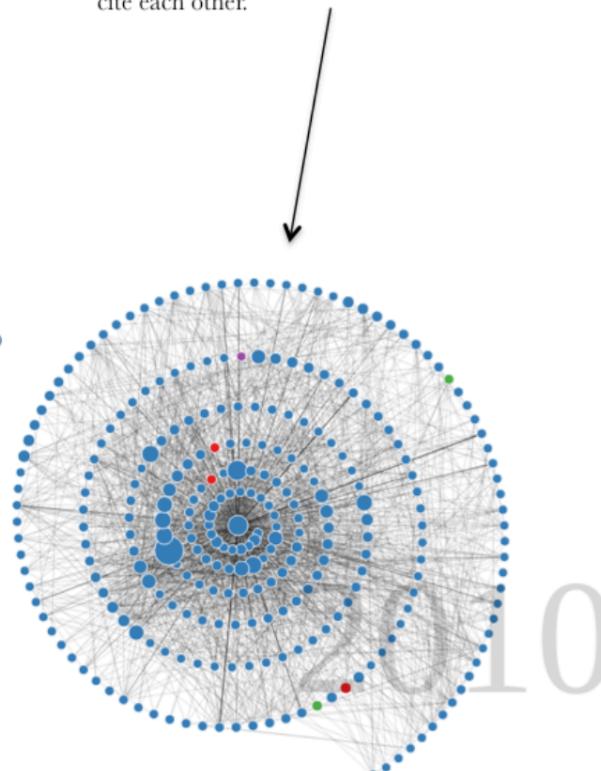
- Papers in category "Medicine" (domain 6)
- Papers in category "Biology" (domain 4)
- Papers in category "Chemistry" (domain 5)
- Papers in category "Engineering" (domain 8)
- Papers in category "Material Science" (domain 12)
- Papers in category "Physics" (domain 19)
- Papers in category "Agriculture Science" (domain 16)
- Papers in category "Social Science" (domain 22)



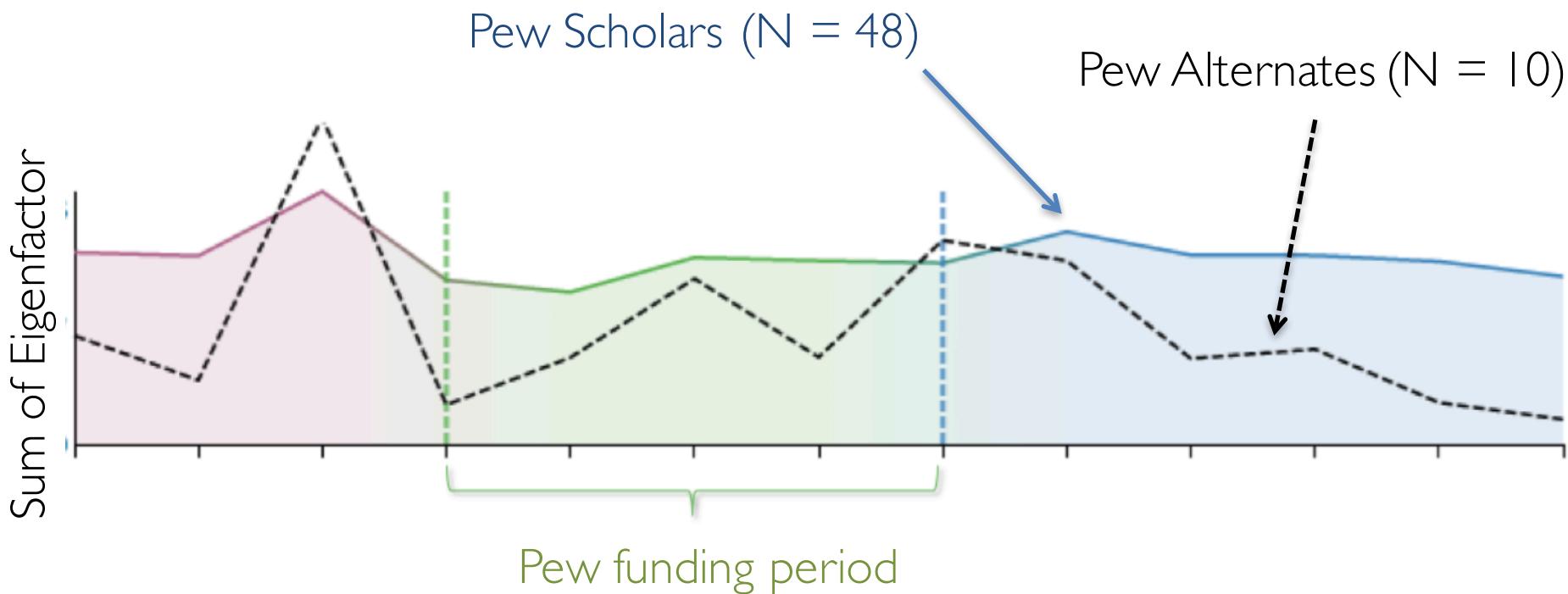
A more sparse network indicates fewer citations between papers shown in the network. This could be a result of the central scholar having impact across a wider set of academic communities.

A denser network means that the papers that cite the central author also tend to cite each other.

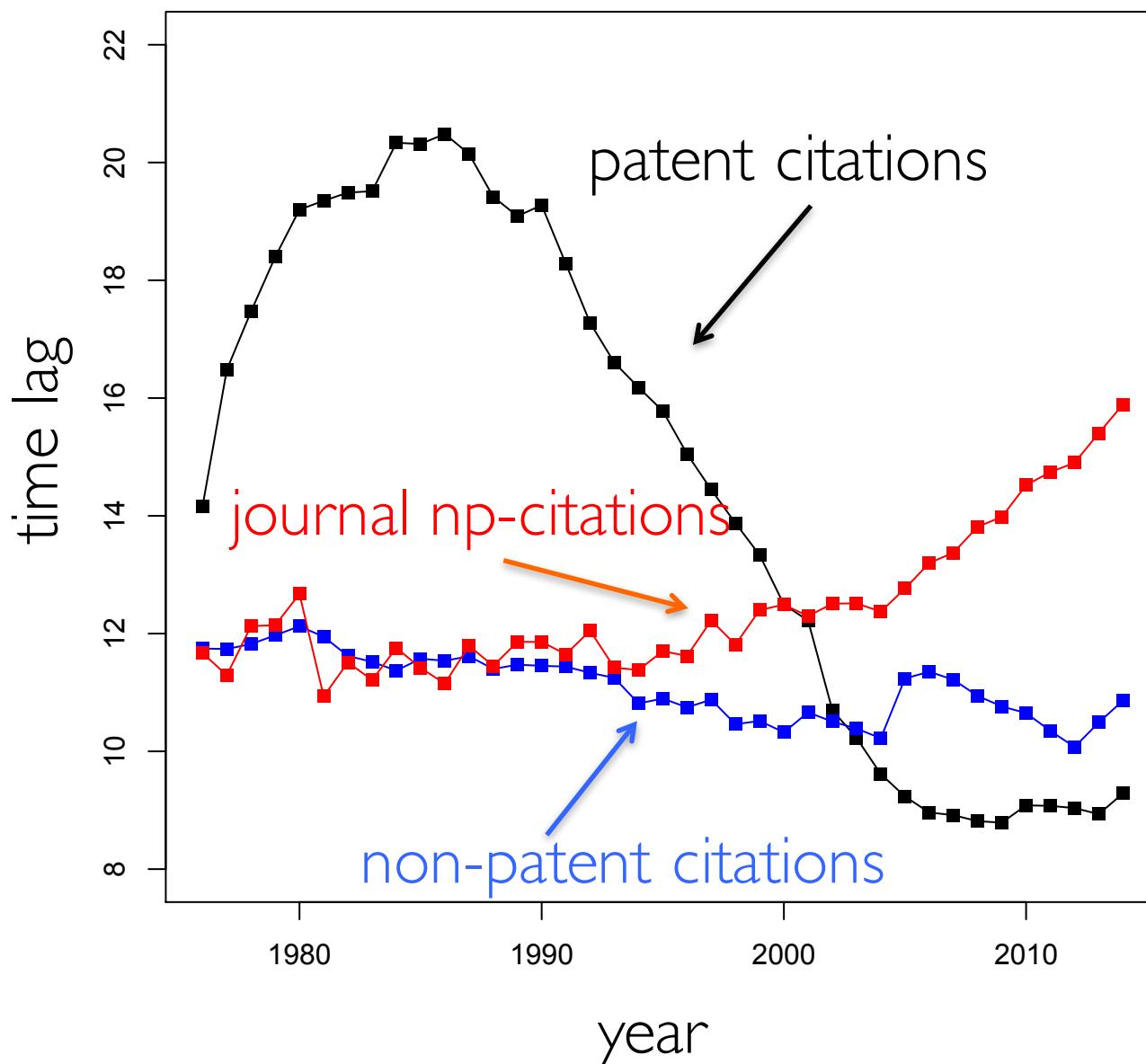
- Papers in category "Biology" (domain 4)
- Papers in category "Medicine" (domain 6)
- Papers in category "Chemistry" (domain 5)
- Papers in category "Social Science" (domain 22)



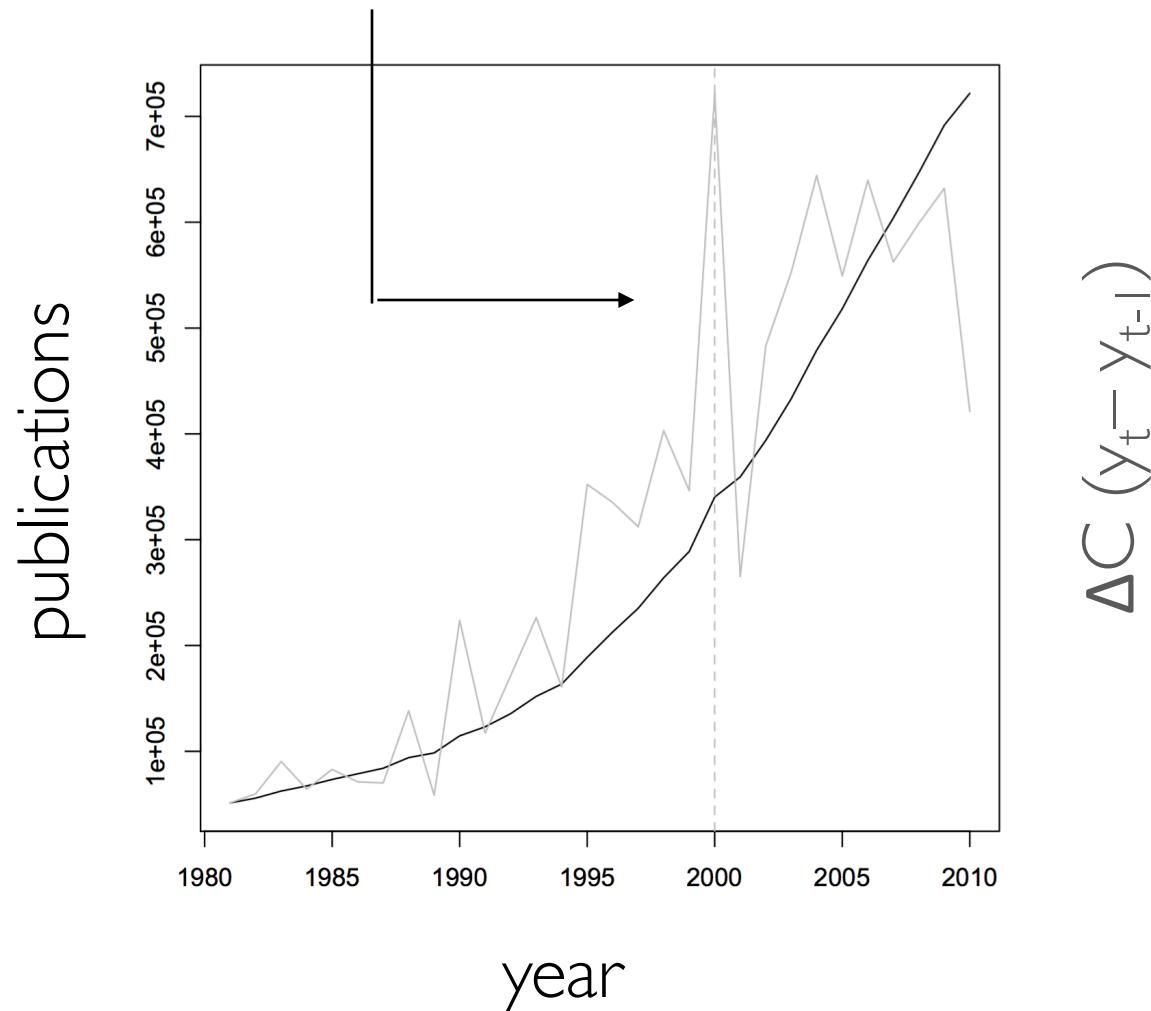
# Funding Impact



# Patent Myopia



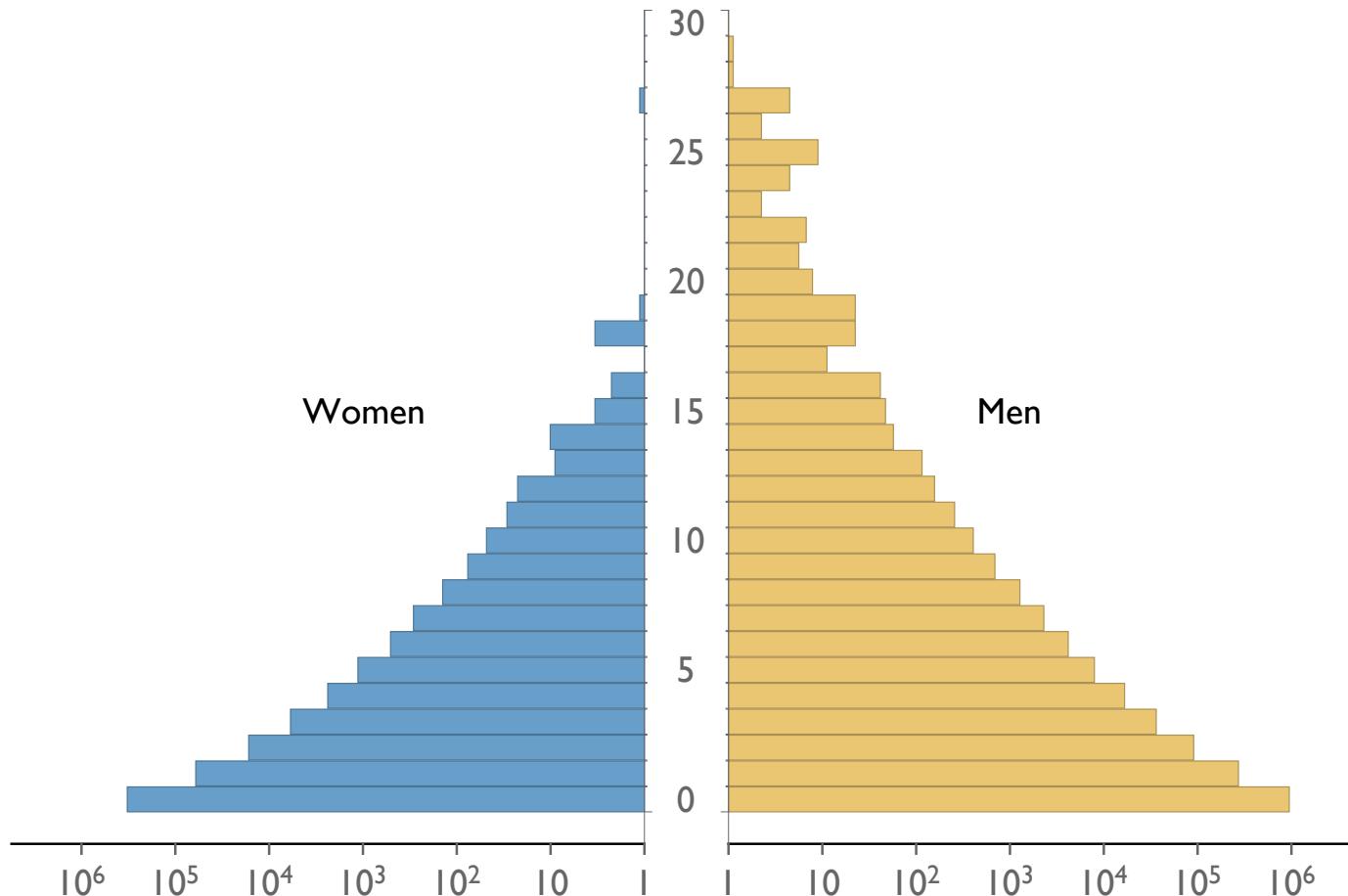
# Millennium Effect



Bergstrom, CT, Jacquet, J, and West, JD (2016) The millennium effect in science. (in prep)

# Gender and Self Citation

Number of authorships with n self-citations



# Student Migration



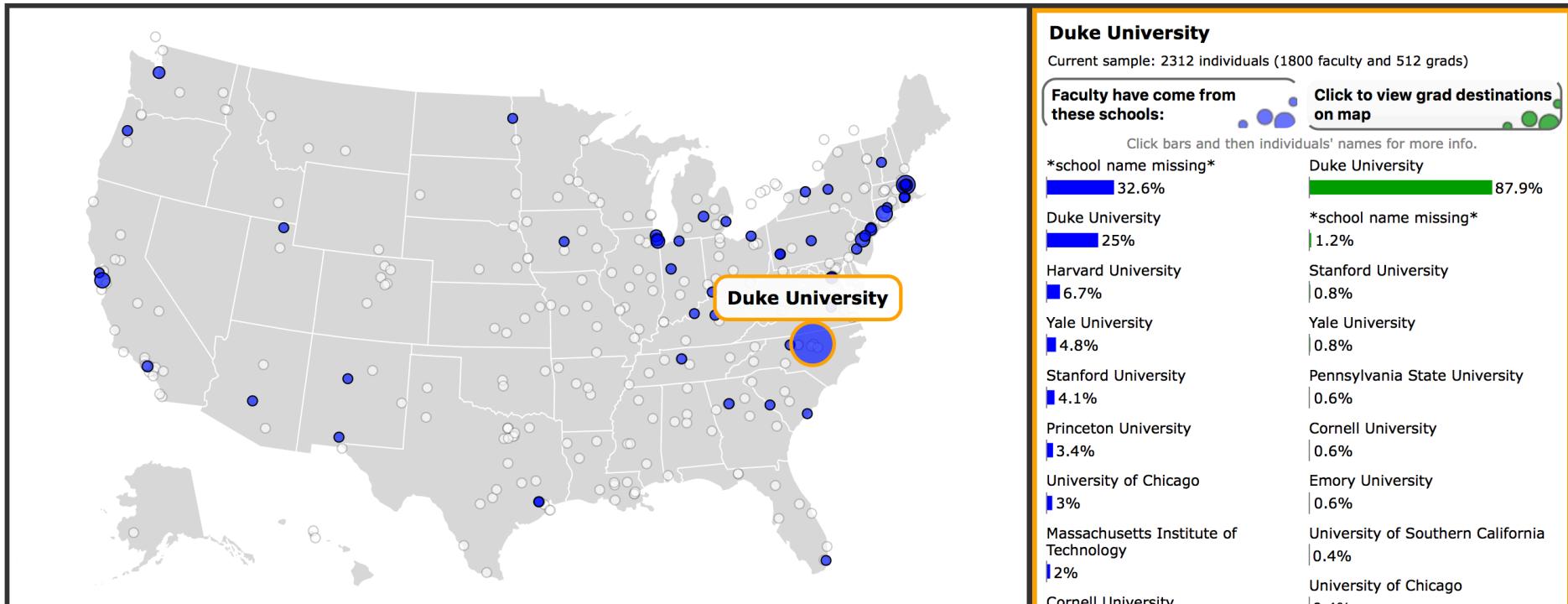
Aulck, L. and West, JD. (2016) Using Large-Scale, Heterogeneous Data to Examine Student Persistence and Performance: A Focus on Transfer Students. *AERA* (in review)

# Faculty Migration

## U.S. ACADEMIC MIGRATION MAP

Where do people who pursue academic careers in the U.S. go on to land faculty positions after earning their advanced degrees?

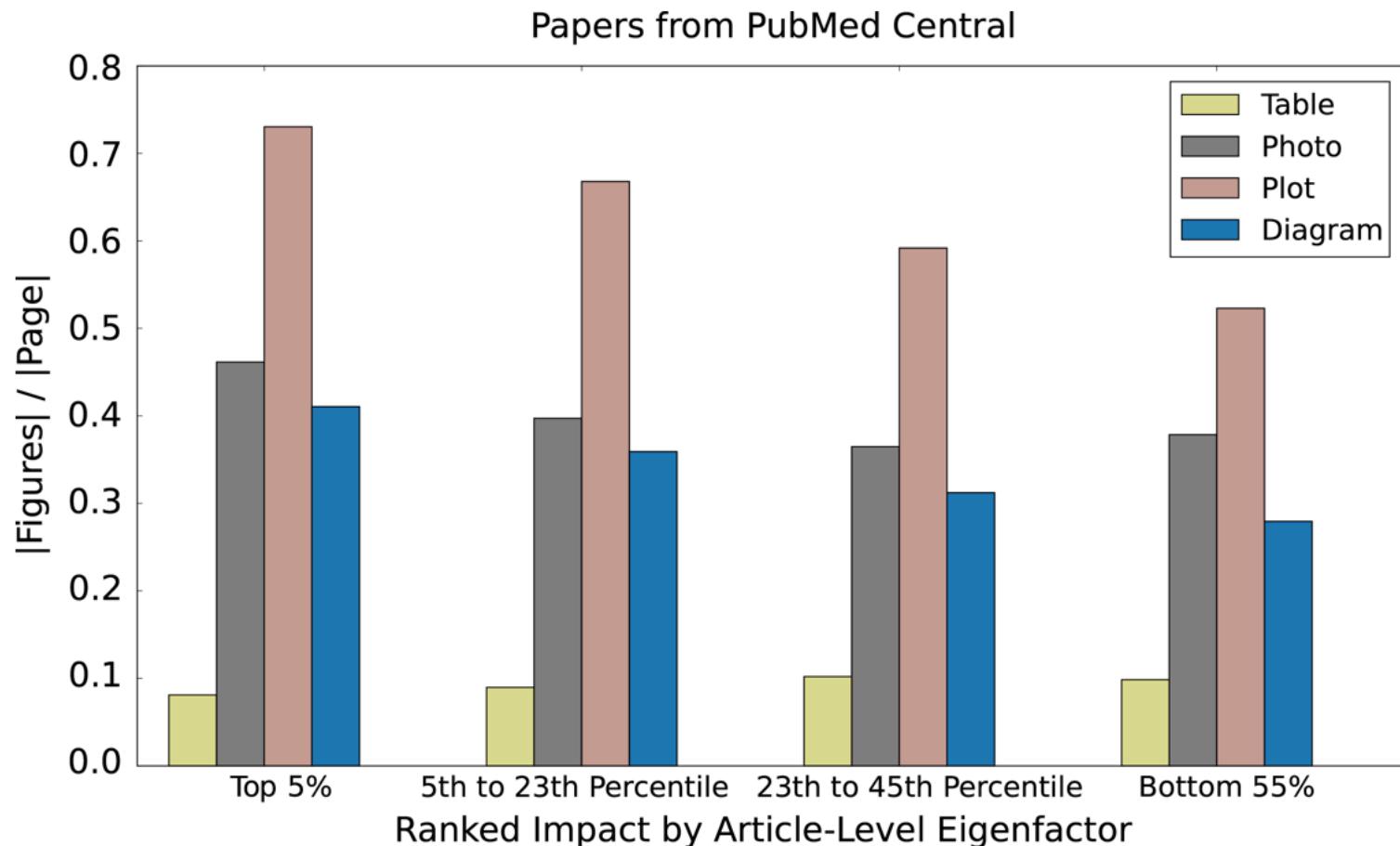
Where do faculty come from? Click on a school to explore.



[Eigenfactor.org/projects/migration/](http://Eigenfactor.org/projects/migration/)

Data sources: [neurotree.org](http://neurotree.org)

# Visual Patterns in Scholarly Literature



Lee, P, West, JD, and Howe, B. (2016) Viziometrics: Analyzing Visual Information in the Scientific Literature. (in prep)

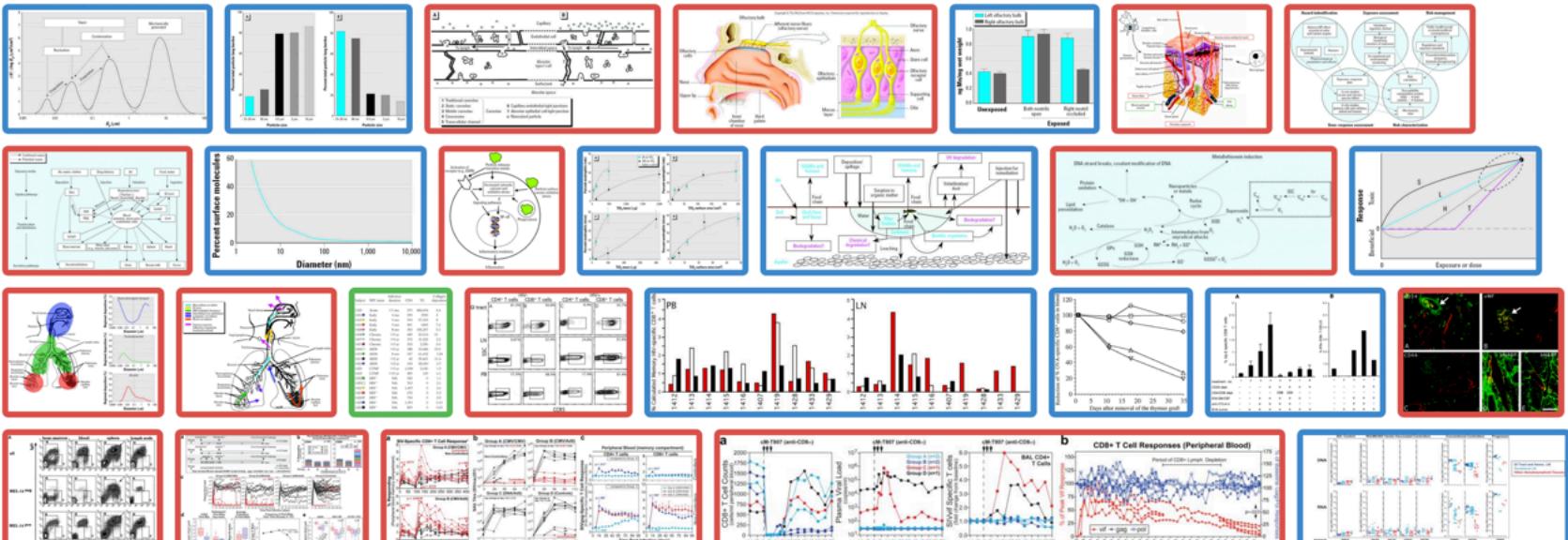
# Figure-Centric Search Engine

 [viziometrics.org](https://viziometrics.org)

VizioMetrix   About   **Search**   Crowdsourcing

Impact   blood lymph  

Composite    Equation    Diagram    Photo    Plot    Table



A project of the eScience Institute at the University of Washington

# WSDM CUP CHALLENGE

*SIGN-UPS FOR THE WSDM CUP CHALLENGE ARE NOW CLOSED*

## The Graph

The Microsoft Academic Graph is a heterogeneous graph containing scientific publication records, citation relationships between publications, as well as authors, institutions, journal and conference "venues," and fields of study.

## The Data

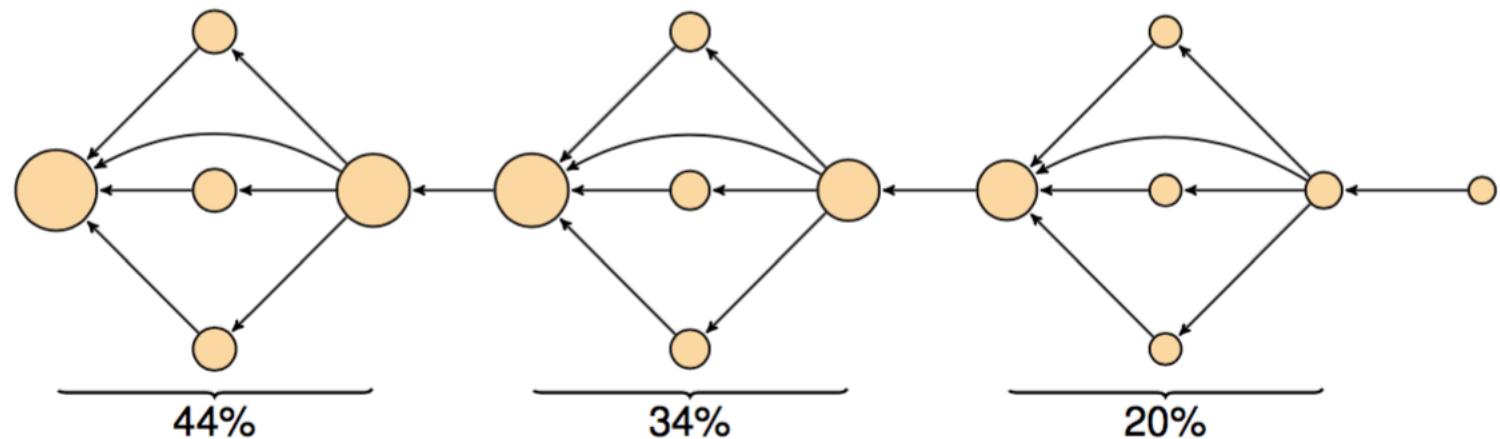
This data is available as a set of zipped text files stored in Microsoft Azure blob storage and available via HTTP. The file size (zipped) is ~30GB and may be downloaded [here](#).

## The Challenge

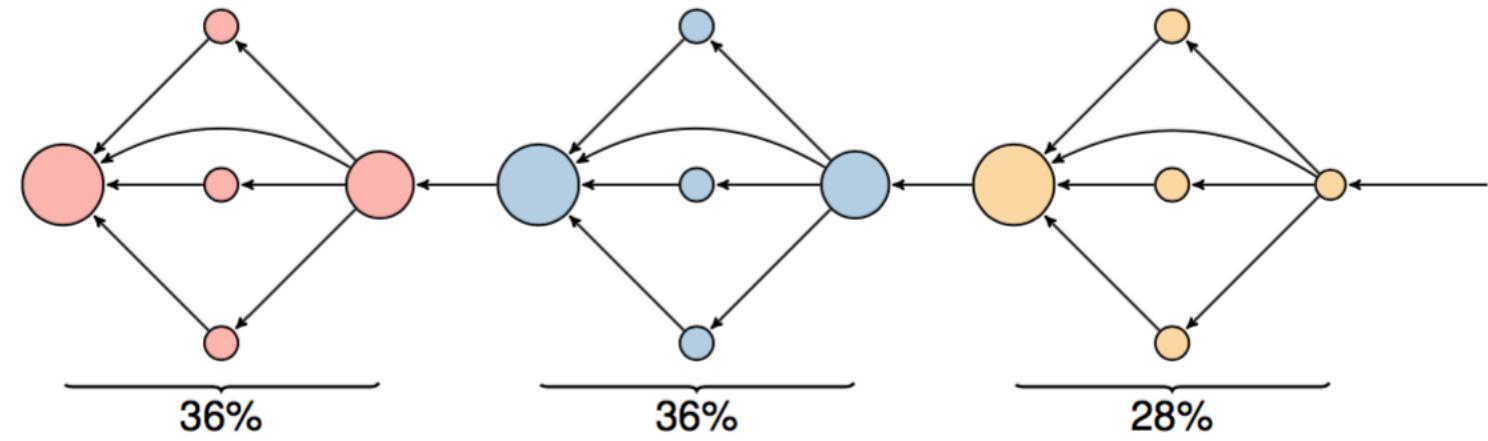
The goal of the Ranker Challenge is to assess the query-independent importance of scholarly articles, using data from the Microsoft Academic Graph.

# Ranking on time-directed networks

PageRank

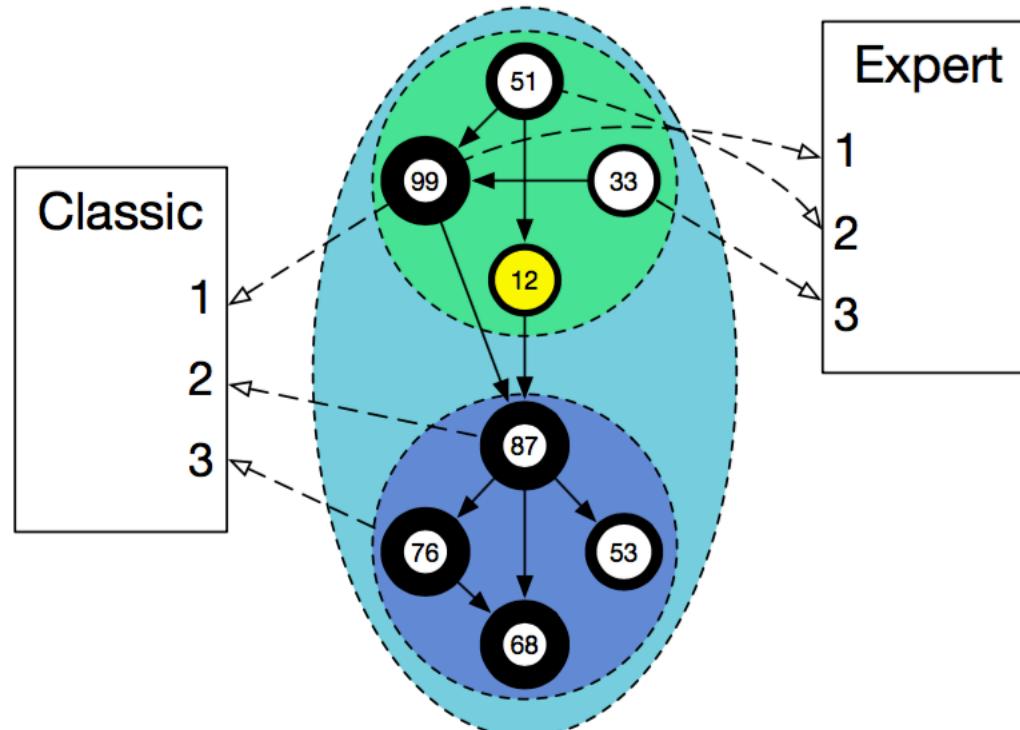


ALEF

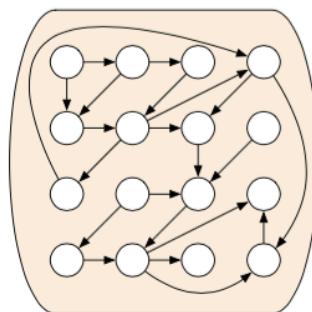


Time →

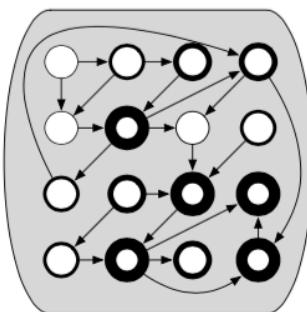
# Recommend



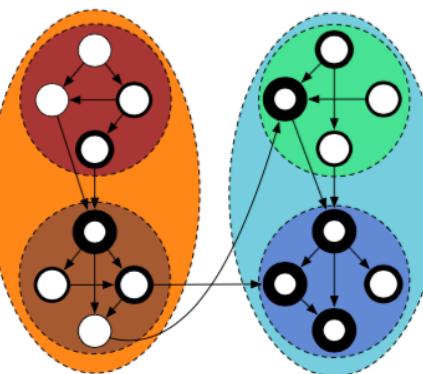
Assemble



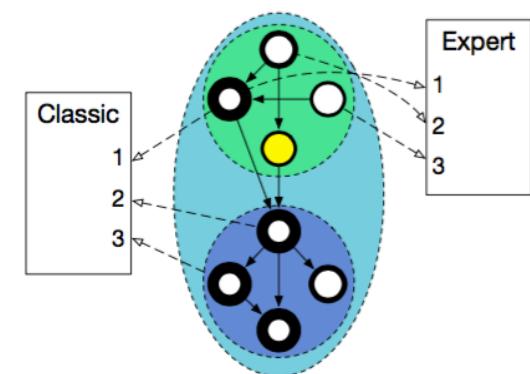
Rank



Cluster



Recommend



West, Wesley-Smith, Bergstrom (2016) A recommendation system based on hierarchical clustering of an article-level citation network. *IEEE Transactions on Big Data* (in press)

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2. Rhinovirus Uses a Phosphatidylinositol 4-Phosphate/Cholesterol Counter-Current for the Formation of Replication Compartments at the ER-Golgi Interface. Roulin PS, Lötzerich M, Torta F, Tanner LB, van Kuppeveld FJ, Wenk MR, Greber UF. *Cell Host Microbe*. 2014 Nov 12;16(5):677-690. doi: 10.1016/j.chom.2014.10.003. Epub 2014 Nov 12. PMID: 25525797 [PubMed - as supplied by publisher]

3. A report from The Liver Meeting 2014 (November 7-11 - Boston, Massachusetts, USA). Rabasseda X. *Drugs Today (Baco)*. 2014 Nov;50(11):763-774. PMID: 25525637 [PubMed - as supplied by publisher]

4. The human splicing code reveals new insights into the genetic determinants of disease. Xiong HY, Alipanahi B, Lee LJ, Bretschneider H, Merico D, Yuen RK, Hua Y, Gueroussov S, Nagafabadi HS, Hughes TR, Morris Q, Barash Y, Krainer AR, Jovic N, Scherer SW, Blencowe BJ, Frey BJ. *Science*. 2014 Dec 18; pii: 1254806. [Epub ahead of print] PMID: 25525159 [PubMed - as supplied by publisher]

5. Cardiac rehabilitation improves coronary endothelial function in patients with heart failure due to dilated cardiomyopathy: A positron emission tomography study. Legallais D, Belin A, Nesterov SV, Milliez P, Parienti J, Knuuti J, Abbas A, Tirel O, Agostini D, Manrique A. *Eur J Prev Cardiol*. 2014 Dec 18; pii: 2047487314565739. [Epub ahead of print] PMID: 25525058 [PubMed - as supplied by publisher]

6. A case of delayed oxaliplatin-induced pseudo-obstruction: an atypical presentation of oxaliplatin neurotoxicity. Vandamme M, Pauwels W, Bleeker J. *Acta Clin Belg*. 2014 Dec 19;2295333714Y0000000110. [Epub ahead of print] PMID: 25523317 [PubMed - as supplied by publisher]

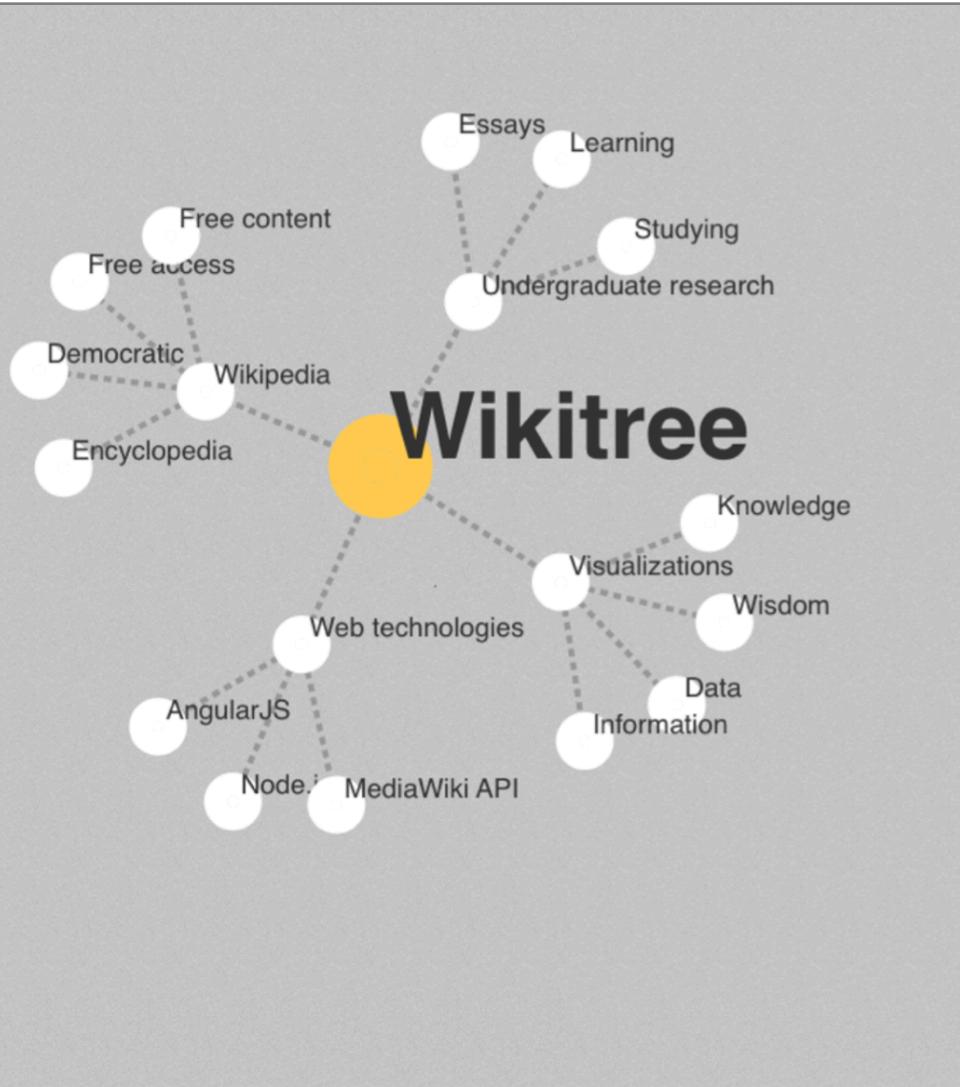
7. Products of lipid peroxidation, but not membrane susceptibility to oxidative damage, are conserved in skeletal muscle following temperature acclimation. Grim JM, Semones MC, Kuhn DE, Kriska T, Keszler A, Crockett EL. *Am J Physiol Regul Integr Comp Physiol*. 2014 Dec 17;ajpregu.00569.2013. doi: 10.1152/ajpregu.00569.2013. [Epub ahead of print] PMID: 25519739 [PubMed - as supplied by publisher]

8. Phenoplosis in arthropods and immortality of social insects. Kartsev VM.

Scale

Identifies related content

# Cognitive Offloading



W

Search for a Wikipedia article...



## Wikitree

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This article references a project that is currently unreleased. Wikitree is in active development and is planned for launch during **June of 2015**.

**Wikitree** is a web-based research tool. It's a mapping companion for [Wikipedia](#) wanderings.

### Features [edit]

- Native Wikipedia reading experience
- [Network graphs](#) of explored articles
- Interactive map visualizations:
  - Time tree for showing visit history
  - Space graph for rearranging nodes

### Why Wikipedia? [edit]

#### According to librarians

- Students apply the same methods for casual browsing and academic research
- Research is a cyclical process that involves [backtracking](#) and exploring
- Students often get overwhelmed or stuck in "rabbit holes"

#### According to undergraduates

- Wikipedia is a research first-stop, used to grasp main concepts of a new topic
- Articles have a good [information structure](#) for fast reading and comprehension
- The links and paths between related concepts are highly valued

**Wikitree**



Web address	<a href="http://wikitree.website">wikitree.website</a>
Created by	Alex Burner, Christina Xiao, James Prow
Slogan	Linked nodes, data, data, linked nodes, data, data