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*IVMOOC Teacher*

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These slides will soon be at <http://cns.iu.edu/docs/presentations>

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Mapping Science Exhibit Facebook: <http://www.facebook.com/mappingscience>

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## 20+ CNS staff and students work on 20+ projects

- **Monitoring, Modeling, and Forecasting Tools for Fostering an Innovative S&T Workforce.** NIH U01 GM098959-01 (Katy Börner & James P. Crutchfield, UC Davis)
- **Scaling Philanthropy: Providing New Insight About Million Dollar Gifts.** Bill & Melinda Gates Foundation (Patrick Rooney, Una O. Osili)
- **Mapping the Emergence and Development of Scientific Disciplines.** James S. McDonnell Foundation
- **Pathways: Sense-Making of Big Data.** NSF ISE DRL-1223698 (Katy Börner, Adam V. Maltese, Joe E. Heimlich, Stephen Miles Uzzo, Paul Martin, and Sasha Palmquist)
- **Introducing the Science of Science (Sci2) Tool to the BBSRC Policy Evidence Team.** BBSRC, UK.
- ...

### The Global 'Scientific Food Web'

Mazloumian, Amin, Dirk Helbing, Sergi Lozano, Robert Light, and Katy Börner. 2013. "Global Multi-Level Analysis of the 'Scientific Food Web'". *Scientific Reports* 3, 1167.

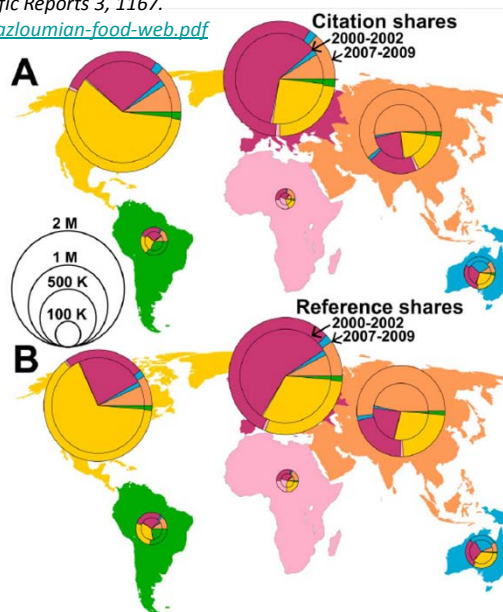
<http://cns.iu.edu/docs/publications/2013-mazloumian-food-web.pdf>

#### Contributions:

Comprehensive global analysis of scholarly knowledge production and diffusion on the level of continents, countries, and cities.

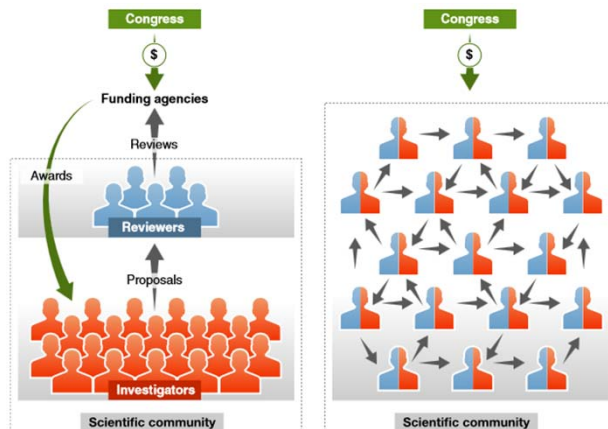
Quantifying knowledge flows between 2000 and 2009, we identify global sources and sinks of knowledge production. Our knowledge flow index reveals, where ideas are born and consumed, thereby defining a global 'scientific food web'.

**While Asia is quickly catching up in terms of publications and citation rates, we find that its dependence on knowledge consumption has further increased.**



### From funding agencies to scientific agency: Collective allocation of science funding as an alternative to peer review

Bollen, Crandall, Junk, Ding & Börner. 2014. *EMBO Reports* 15 (1): 1-121.



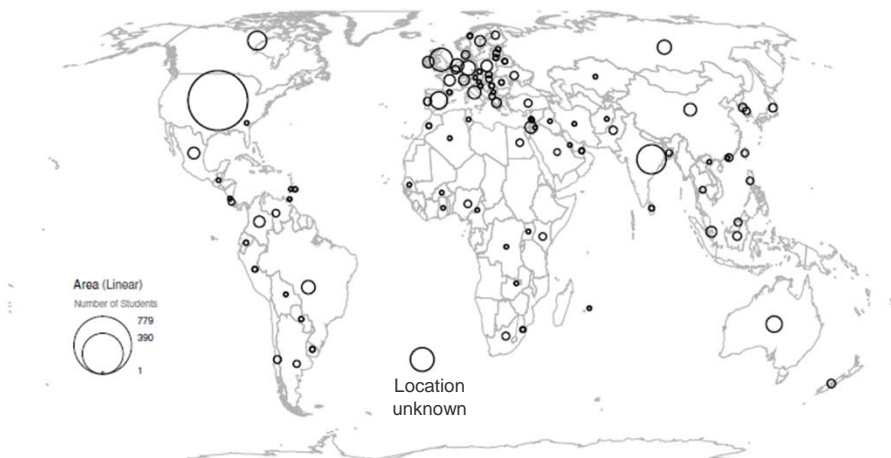
Existing (left) and proposed (right) funding systems. Reviewers in blue; investigators in red.

In the proposed system, all scientists are both investigators and reviewers: every scientist receives a fixed amount of funding from the government and discretionary distributions from other scientists, but each is required in turn to redistribute some fraction of the total they received to other investigators.

**MOOC Visual Analytics: Empowering Teachers, Students, Researchers, and Developers of Massively Open Online Courses**

*Robert P. Light, David E. Polley, and Katy Börner (2014)*

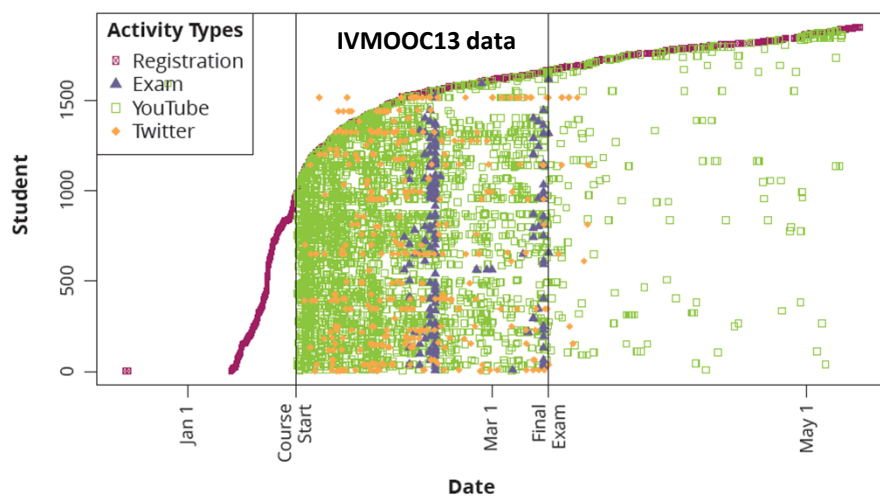
Students from the CNS Information Visualization MOOC in 2014  
 Sep 02, 2014 | 08:29:30 AM EDT



**More than 4000 unique students registered for IVMOOC13 and IVMOOC14.**

**MOOC Visual Analytics: Empowering Teachers, Students, Researchers, and Developers of Massively Open Online Courses**

*Robert P. Light, David E. Polley, and Katy Börner (2014)*



**Figure 9.2** Student registration, exam taking, YouTube and Twitter activity over time

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## References

Börner, Katy, Chen, Chaomei, and Boyack, Kevin. (2003). **Visualizing Knowledge Domains**. In Blaise Cronin (Ed.), *ARIST*, Medford, NJ: Information Today, Volume 37, Chapter 5, pp. 179-255. <http://ivl.slis.indiana.edu/km/pub/2003-borner-arist.pdf>

Börner, Katy, Sanyal, Soma and Vespignani, Alessandro (2007). **Network Science**. In Blaise Cronin (Ed.), *ARIST*, Information Today, Inc., Volume 41, Chapter 12, pp. 537-607. <http://ivl.slis.indiana.edu/km/pub/2007-borner-arist.pdf>

Börner, Katy (2010) **Atlas of Science**. MIT Press. <http://scimaps.org/atlas>

Scharnhorst, Andrea, Börner, Katy, van den Besselaar, Peter (2012) **Models of Science Dynamics**. Springer Verlag.

Katy Börner, Michael Conlon, Jon Corson-Rikert, Cornell, Ying Ding (2012) **VIVO: A Semantic Approach to Scholarly Networking and Discovery**. Morgan & Claypool.

Katy Börner and David E Polley (2014) **Visual Insights: A Practical Guide to Making Sense of Data**. MIT Press.






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## Places & Spaces: Mapping Science Exhibit

Explore 100 maps and background information at <http://scimaps.org>





## Humanexus

**Producer (Initial Story/Guidance/ Resources):** Katy Börner, SOIC, IU

**Director (Animation/Art/Design/ Editing):** Ying-Fang Shen, School of the Arts, Virginia Commonwealth University

**Sound Artist (Music/Sound Track):** Norbert Herber, Department of Telecommunications, IU

<http://cns.iu.edu/humanexus>

Join us for a screening of the movie and panel discussion with makers at the IU Cinema on Sept 8, 7pm!

