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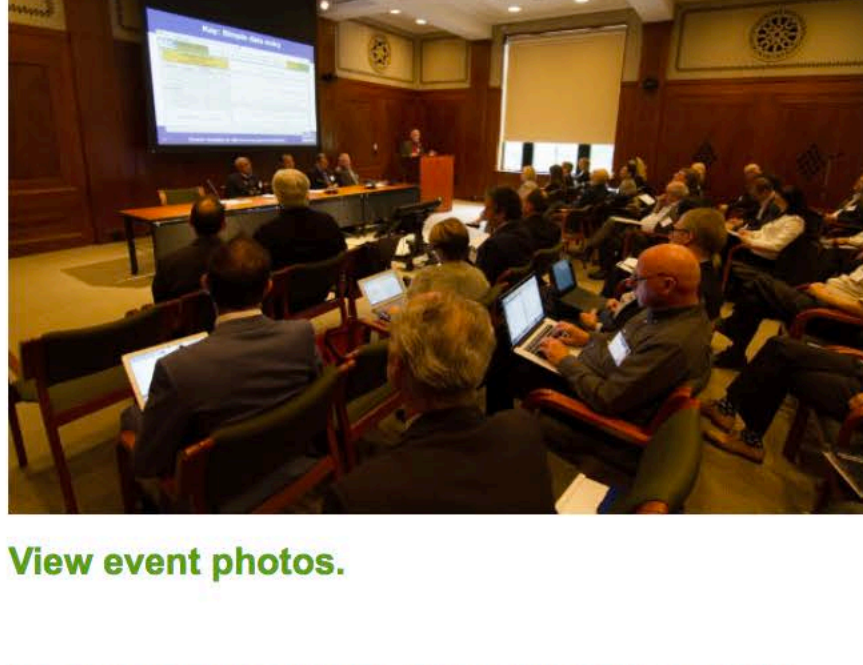
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IU experts organize NSF-funded conference on data-driven science policy

View event photos.

Dr. Katy Börner and Dr. Stasa Milojevic recently gathered experts from across the globe in the nation's capital to review opportunities and challenges associated with the use of big data, visual analytics and computational models to advance public policy decisions related to science, technology and innovation.

The **Modelling Science, Technology, and Innovation Conference** took place May 17 and 18 at the National Academy of Sciences in Washington, D.C. The two-day event is funded by the National Science Foundation's Science of Science and Innovation Policy program, the Cyberinfrastructure for Network Science Center, the IU Network Science Institute and industry.

The conference featured presentations by high-profile science policy makers from government, academia and industry, including representatives from the National Institutes of Health, Centers for Disease Control and Prevention, National Oceanic and Atmospheric Administration, European Agency of Technology and Innovation Assessment, Harvard and Stanford universities, and PayPal.

"One of the biggest challenges in science policy is the ability to effectively allocate resources — both financial and human — in ways that foster innovation. The vast amount of data now available on science and technology, combined with remarkable growth in computing power, create ideal conditions for using computer modeling to not only understand but also predict probable future directions in science, technology and innovation."

- Katy Börner

Presenters at the conference include Santo Fortunato, professor in the School of Informatics and Computing at Indiana University; Timothy Slaper, director of economic analysis at the IU Kelley School of Business' Indiana Business Research Center; and Xiaoran Yan, a research scientist at the **IU Network Science Institute.**

View the Press Release »

Places & Spaces featured at The David J. Sencer CDC Museum.

This spring the Centers for Disease Control and Prevention featured the *Places & Spaces* exhibit, including the debut of the four interactive visualizations that comprise the 11th iteration, at the David J. Sencer CDC Museum. In keeping with its commitment to public health education and disease prevention, the CDC Museum hosted this exhibit primarily because it demonstrates the power of data visualization to confront many of society's most significant challenges.

CNS Talks
As the *Places and Spaces* exhibit continues to focus on interactive macroscopes, a series of talks were held designed to initiate a cross-disciplinary discussion accessible from many viewpoints —including art, the natural sciences, data visualization, media studies, and information science. We were able to bring a select group of mapmakers and macroscope makers from the *Places & Spaces: Mapping Science* exhibit to campus to speak during the spring 2016 semester. By partnering with the Data Science program, we were able to bring additional speakers to the campus through this spring's **CNS Talks series.**

Jointly organized by the Data Science program and the Cyberinfrastructure for Network Science Center, this talk series was partially supported by Indiana University's Consortium for the Study of Religion, Ethics and Society, a consortium sponsored by the Vice President for Research Office.

IUNI Opening Celebration

View event photos.

The new Indiana University Network Science Institute (IUNI) unites 15+ researchers at IU – bringing on their world-renowned multidisciplinary expertise toward further scientific understanding of the complex networked systems of the world. Through pioneering new approaches in representing, visualizing, modeling, and analyzing diverse complex networks across levels and disciplines, IU will lead the way.

Dr. Börner served on the Scientific Leadership Team at IUNI for her expertise in science of science research. Photos of the grand opening weekend for IUNI, can be **seen here.**

WoS Enclave
The IUNI Web of Science Enclave is open and accepting applications for new IU researchers. This secure data enclave provides all IU faculty and staff the opportunity to work with the Web of Science dataset. CNS staff have been key in the establishment of the Enclave, providing early data stewardship services as well as design and implementation of the relational database that powers much of the research done within the Enclave. Interested researchers should visit **http://www.iuni.iu.edu/resources/wos.html** to learn more and apply for access.

Recent Funding

Measuring and Visualizing STEM Pathways. NCSE-1538763 Award (Adam V. Maltese, Katy Börner) Aug 15 - Jan. 17.

This project will help researchers at the School of Education study the educational directions and decisions students make toward and away from STEM education and career paths.

Innovation in an Aging Society. NIH NIA P01AG039347 Supplement Award (National Bureau of Economic Research) May - Oct 16.
This project focuses on the effect of an aging research community on the production of high impact and transformative research and will help research administrators learn how to best encourage effective collaborations.

Mapping Scientific Growth and Impact of Major IU-based Research Programs in Alzheimer's Disease. CTSI-PDT Award (Li Shen & Andrew J. Saykin, Dept. of Radiology & Imaging Sciences, IU School of Medicine, Katy Börner) Oct 15 – Sept 16.

This project proposes to use and expand the Science of Science (Sci2) Tool to perform a comprehensive analysis and visualization of scientific activities in the Indiana Alzheimer's Disease Center (IADC) and the Alzheimer's Disease Neuroimaging Initiative (ADNI) projects to support upcoming IADC and ADNI grant renewal applications.

XDMoD Value Analytics. NSF EAGER Award (Matthew Link, Katy Börner, Robert Henschel) Apr 16 – Mar 18.

This project will extend XDMoD, a tool used to measure institutional cyberinfrastructure use, to add measures of grants and publications through visualizations that allow the comparison of research computing resource use to both incoming funding and academic and research achievements.

Network for Computational Nanotechnology - Cyber Platform - Engineering Research Center Observatory. NSF Supplement (Michael McLennan, Purdue University, Katy Börner) Dec 15 – Nov 17.

This project brings together Purdue's HubZero/NanoHub experience and CNS's data and visualization expertise to create a data observatory allowing the NSF and NSF-funded ERCs to more easily understand, communicate, and manage research ERC projects and collaborations.

Upcoming Events

ATSC Panel
Dr. Katy Börner and Lisel Record, *Places & Spaces* exhibit manager, will be presenting at the annual Association of Science-Technology Centers (ASTC) conference in Tampa, Florida. The panel, titled *Data Visualization Literacy: Assessing and Improving Visitors' Abilities to Read and Make Data Visualizations* focuses on the ability of every day users to "read and write" data. The session will feature presentations and demonstrations by researchers and practitioners that develop approaches and tools which assess, exploit, and improve data visualization literacy of their users. The *Places & Spaces* exhibit will also be highlighted at the ASTC conference with a poster presentation on the new macroscope phase of the exhibit.

For more information on the ASTC Conference, please see **http://www.astc.org/.**

Blue Sky conference
Every ten years, the OECD Blue Sky Forum engages the policy community, data users and providers into an open dialogue to review and develop its long-term agenda on science, technology, and innovation (STI) data indicators. This year, the Blue Sky Forum will take place in Ghent, Belgium. Dr. Katy Börner is the co-author on two accepted papers; *High-Impact and Transformative Science* (HITS) *Mapping* and *Modelling Science, Technology, and Innovation.* Börner will travel to the forum September 19 – 21, 2016.

For more information on the OECD Blue Sky Forum, please see **http://www.oecd.org/sti/blue-sky-2016-agenda.htm.**

Recent Events

5/17 - 5/18
Co-organizer of **NSF Agenda Setting Conference: Modelling Science, Technology, and Innovation,** National Academies of Science at NAS in Washington, DC.

4/11 - 4/15
Co-organizer of **Culture Analytics and User Experience Design** at IPAM, UCLA, LA.

3/22 - 3/23
Invited talk at **Science of Science Conference,** Library of Congress, Washington, DC.

3/6 - 3/11
Invited talk at **Scientometric Maps and Dynamic Models of Science and Scientific Collaboration Networks,** DPG-SOE Meeting, Regensburg, Germany.
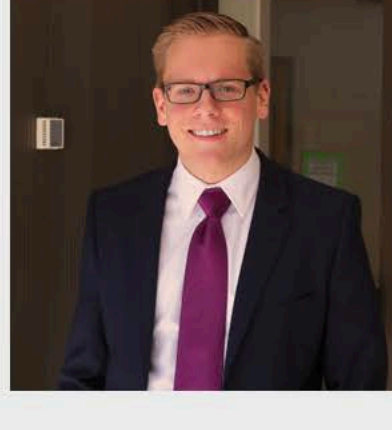
2/13 - 2/14
Invited talk at **New Science Roadmaps for Global Research Symposium,** AAAS Annual Meeting, Washington, DC.

Katy Börner named distinguished professor

Dr. Börner was recently appointed by the IU Board of Trustees as a distinguished professor. The distinguished professorship recognizes faculty who have transformed their fields of study and have earned international recognition.

The School of Informatics and Computing celebrated Dr. Börner's achievement with a reception with honored guests. Photos of the event can be **seen here.**

Staff Feature: Daniel O'Donnell

In February, CNS hired its first full-time project manager, **Daniel O'Donnell.** Daniel's background in higher education has so far focused in the areas of student programming and development. His long term career interests in higher education are in higher education finance. His responsibilities include tracking milestones and timelines of project proposals, pre and post-award management for all grants and contacts, representing the Center to major stakeholders such as the NSF and NIH, and serving as the fiscal manager for the Center's operations.

Daniel's first charge as project manager is to bring even greater efficiency to the Center for the benefit of its staff, funding agencies, and clients through the implementation of a "Development Lifecycle" which will allow for improved project management, on-time delivery of high quality work.

Recent Publications

Emmons, Scott, Stephen Kobourov, Michael Gallant, and **Katy Börner.** 2016. "Analysis of Network Clustering Algorithms and Cluster Quality Metrics at Scale". *PLoS ONE.*

Lyons, Elizabeth, E. William Colglazier, Caroline Wagner, **Katy Börner,** David Dooley, C. Dan Mote, and Mihail C. Roco. 2016. "How Collaborating in International Science Helps America". *Science & Diplomacy* 5 (2).

Ginda, Michael, Andrea Scharnhorst, and **Katy Börner.** 2016. "Modelling the Structure and Dynamics of Science Using Books". In *Theories of Informetrics: A Festschrift in Honor of Blaise Cronin,* edited by Sugimoto, Cassidy, 304-334. Munich: De Gruyter Saur.

Knepper, Rich, and **Katy Börner.** 2016. "Comparing the Consumption of CPU Hours with Scientific Output for the Extreme Science and Engineering Discovery Environment (XSEDE)". *PLoS ONE.*

Börner, Katy. 2016. "Data-Driven Science Policy". *Issues in Science and Technology* (32) 3: 26-28.

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Teaching

CDC Training
CNS Senior Research Analyst, Michael Ginda, presented "An Introduction to Open Source Tools or Data Analysis and Information Visualization" to the Centers for Disease Control (CDC) on June 14-15, 2016. This two-day tutorial prepared staff of the CDC to use the Sci2 tool to visualize the data they have to draw insights, and make data-driven decisions. This was a follow up tutorial to a 4-hour workshop that Dr. Börner gave when opening the exhibition of the *places & spaces* exhibit when it traveled to the CDC in Atlanta.

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