How can we communicate the beauty, structure, and dynamics of science to a general audience?

Debut of 5th Iteration of the Mapping Science Exhibit at MEDIA X was in 2009 at Wallenberg Hall, Stanford University.
Science Maps in “Expedition Zukunft” science train visited 62 cities in 7 months. Opening was on April 23rd, 2009 by German Chancellor Merkel.

Ingo Gunther’s Worldprocessor globe design on display at the Museum of Emerging Science and Innovation in Tokyo, Japan.
Places & Spaces *Digital Display in North Carolina State’s brand new Immersion Theater*

Exhibit Advisors and Ambassadors
Places & Spaces at Duke University
January 12 - April 10, 2015

Places & Spaces at Northwestern University
May 14 - September 23, 2015
10 iterations over 10 years

equal

10 x 10 = 100 maps!
Cartographic maps of physical places have guided mankind’s explorations for centuries.

They enabled the discovery of new worlds while also marking territories inhabited by the unknown.

Without maps, we would be lost.
A New Map of the Whole World with Trade Winds According to the Latest and Most Exact Observations - Herman Moll - 1736

Nova Anglia, Novvm Belgivm et Virginia - Jan Jansson - 1642
Science maps of abstract semantic spaces aim to serve today’s explorers navigating the world of science.

They can be used to identify objectively major experts, institutions, collections. They allow us to track the emergence, evolution, and disappearance of topics and help to identify the most promising areas of research.
The Power of Reference Systems 2006

The Visual Elements Periodic Table

Visual Elements Periodic Table - Murray Robertson, John Emsley - 2005
How would a reference system for all of science look?

What dimensions would it have?
The Power of Forecasts 2007
Can one forecast science?

What ‘science forecast language’ will work to communicate results?
What insight needs to economic decision makers have?

What data views are most useful?

Europe Raw Cotton Imports in 1858, 1864 and 1865 - Charles Joseph Minard - 1866
A Clickstream Map of Science

Literary Empires: Mapping Temporal and Spatial Settings of Victorian Poetry
John A. Walsh, Devin Becker, Bradford Demarest, Jonathan Tweedy, Theodora Michaelidou & Laura Pence - 2010

The Emergence of Nanoscience & Technology
Loet Leydesdorff - 2010
U.S. Job Market: Where are the Academic Jobs?

Science Maps as Visual Interfaces to Digital Libraries 2011
Mondothèque: Multimedia Desk in a Global Internet

Paul Otlet (1868-1934), visionary Belgian lawyer known for his work on the problems of access to global knowledge, is often considered as the pioneer of the multimedia desk. He envisioned a multimedia desk as a global information network, including multimedia tools for research and study. This multimedia desk, however, was never built.

Design vs. Emergence: Visualization of Knowledge Orders

Alkim Almila Akdag Salah, Cheng Gao, Krzysztof Suchecki, and Andrea Scharnhorst - 2011

Mondothèque: Multimedia Desk in a Global Internet - Paul Otlet - 1936/37

Design vs. Emergence: Visualization of Knowledge Orders

Wikipedia's Category Structure

Universal Decimal Classification

Wikipedia to UDC: Bar-Chart

Design vs. Emergence: Visualization of Knowledge Orders

Alkim Almila Akdag Salah, Cheng Gao, Krzysztof Suchecki, and Andrea Scharnhorst - 2011
Check out our **Zoom Maps** online!

Visit [scimaps.org](http://scimaps.org) and check out all our maps in stunning detail!

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**Science Maps for Kids 2012**

- VIII.1
- VIII.2
- VIII.3
- VIII.4
- VIII.5
- VIII.6
- VIII.7
- VIII.8
- VIII.9
- VIII.10
The Future of Science Mapping 2014
Exploring the Relationships between a Map of Altruism and a Map of Science

Explore the maps and background information at http://scimaps.org
Contact the map makers or the exhibit curators

Visit us on Facebook!

Become a fan and see many great photos of the exhibit—plus find out when it's coming to a venue near you!

facebook.com/mappingscience
The IVMOOC Companion Textbook

This textbook offers a gentle introduction to the design of insightful visualizations. It seamlessly blends theory and practice, giving readers both the theoretical foundation and the practical skills necessary to render data into insights.

The book accompanies the Information Visualization MOOC that attracted students, scholars, and practitioners from many fields of science and more than 100 different countries.

The Information Visualization MOOC
ivmooc.cns.iu.edu

Students from more than 100 countries
350+ faculty members
#ivmooc

Load **One** File and Run **Many** Analyses and Visualizations

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**Statistical Analysis:***

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Co-author and many other bi-modal networks.

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References


Themes for the upcoming iterations/years are:
- 11th Iteration (2015): Macrosopes for Interacting With Science
- 12th Iteration (2016): Macrosopes for Making Sense of Science
- 13th Iteration (2017): Macrosopes for Forecasting Science
- 14th Iteration (2018): Macrosopes for Economic Decision Makers
- 16th Iteration (2020): Macrosopes for Scholars

http://scimaps.org/call

2015 Computational Social Science Summit

“Collaborative futures”

This new annual computational social science summit is designed to create a broad community of social science researchers - academics, tech industry workers, open data activists, government agency workers, and think tank analysts - dedicated to advancing sociological knowledge through computational methods. Our goal is to foreground social science research and identify areas that can benefit from a deep engagement with computer science and related areas. The Summit will take place over three days, from May 15-17 at Northwestern University’s Kellogg School of Management in Evanston, IL.

Pre-Session:

On Friday, May 15th, we’ll start with training workshops for social science researchers and data analytics enthusiasts who are newcomers to computational methods or who simply want to broaden their computational toolkits by learning new methods and related software techniques, for example using R to do social network analysis. At the same time, we will host a day-long dataathon: an intensive team-based workshop format modeled after hackathons. During the dataathon, researchers who already have computational skills will utilize prepared datasets and computational methods to respond to sociological questions developed by our panel of judges. Judges will include Moti Gene of the University of Chicago’s Urban Center for Computation and Data and the Center for Data Science and Public Policy, Alexandre Kominos of Google, and Susan Parker of the University of Chicago’s Computation 

About
3. Forecasting science: Models of science and technology dynamics for innovation policy

Organized by:

- Katy Börner (Indiana University, USA)
- Andrea Scharnhorst (KNAW, The Netherlands)
- Stasa Milojčević (Indiana University, USA)
- Petra Ahrweller (Director and CEO, EA European Academy of Technology and Innovation Assessment GmbH, Bad Neuenahr-Ahrweiler, Germany)
- David Chavalarias (Centre d’Analyse des Mathématiques Sociales (CAMS), Ecolle des Hautes Etudes en Sciences Sociales (EHESS), Director of the Complex Systems Institute of Paris Ile-de-France, Paris, France)

Here is an extended abstract of the workshop.
All papers, maps, tools, talks, press are linked from http://cns.iu.edu
These slides will soon be at http://cns.iu.edu/docs/presentations

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