

# CICP / AnalytiXIN Communities of Practice

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## Katy Börner

Victor H. Yngve Distinguished Professor of Engineering and Information Science  
Luddy School of Informatics, Computing, and Engineering, Indiana University, USA

## Insightful and Actionable Visual Analytics

In the information age, the ability to read and make data visualizations is as important as the ability to read and write. This talk introduces a data visualization framework that aims to empower anyone to systematically render data into insights using temporal, geospatial, topical, and network analyses and visualizations. We showcase how the framework is used to map the evolving science, technology, education, and job landscape (see *Mapping Science* exhibit, <http://scimaps.org>); (2) Construct a Human Reference Atlas (<https://humanatlas.io>) within the NIH Human BioMolecular Atlas Program (HuBMAP) that support the exploration and communication of single-cell data; and (3) Teach Visual Analytics (<https://visanalytics.cns.iu.edu>) to students and practitioners around the globe. The talk concludes with an invite to visit the *Places & Spaces: Mapping Science* exhibit on display at University Collections at McCalla (<https://bit.ly/SciMaps20>) to explore 100 large-format static and 40 interactive data visualizations.

## Social media text

- A theoretical foundation of how to design effective analysis workflows and data visualizations;
- Hands-on skills in the application of visual analytics in real-world case studies;
- Expertise on how new methods and tools can create value across the product life cycle;
- An understanding of how to define, measure, and improve data visualization literacy within an institution
- Knowledge of research challenges and application areas that power data-driven decision making across industries.

## References

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## Bio

KATY BÖRNER is the Victor H. Yngve Distinguished Professor of Engineering and Information Science in the Departments of Intelligent Systems Engineering and Information Science, Luddy School of

Informatics, Computing, and Engineering; core faculty of the Cognitive Science Program; and founding director of the Cyberinfrastructure for Network Science Center (<http://cns.iu.edu>)—all at Indiana University in Bloomington, Indiana.

Börner became a Fellow of the American Association for the Advancement of Science (AAAS) in 2012, a Humboldt Research Fellow in 2017, and an Association for Computing Machinery (ACM) Fellow in 2018. Since 2005, she serves as a curator of the international *Places & Spaces: Mapping Science* exhibit (<http://scimaps.org>).

Börner's research focuses on the development of data analysis and visualization techniques for information access, understanding, and management. She is particularly interested in the formalization, measurement, and systematic improvement of people's data visualization literacy; the study of the structure and evolution of scientific disciplines; the construction and usage of a human reference atlas; and the development of cyberinfrastructures for large-scale scientific collaboration and computation.

She holds an MS in electrical engineering from the University of Technology in Leipzig, and a PhD in computer science from the University of Kaiserslautern.

