**Peter A. Hook**

http://ella.slis.indiana.edu/~pahook/index.html

**Biography (about 250 words)**

*(Please provide a photo of yourself and a link to your home page and relevant sites and publications.)*

Peter A. Hook <pahook@indiana.edu> is currently a law librarian and a doctoral student at Indiana University--Bloomington where he is a member of Dr. Katy Börner's Information Visualization Laboratory. He has a J.D. from the University of Kansas (1997) and a M.S.L.I.S. from The University of Illinois (2000). His primary research focus is information visualization. Particular interests include the visualization of knowledge organization systems, concept mapping, and the spatial navigation of bibliographic data in which the underlying structural organization of the domain is conveyed to the user. Additional interests include social network theory, knowledge organization systems, and legal bibliometrics and informatics.

Current research focuses on network derived educational visualizations of the work of the United States Supreme Court. This includes topic maps based on the co-occurrence of topics in Supreme Court cases and the use of multidimensional scaling and spring force algorithms to provide a visual representation of the ideological divide of the Supreme Court Justices based on their co-voting percentages. After researching the cognitive justification for domain maps, Peter plans to user test them in educational settings. Peter serves as a member of the advisory board of the exhibit: Places & Spaces: Cartography of the Physical and the Abstract.

**General Questions**

**What is your main interest in attending the workshop?**

To be part of the collective effort to create tools (maps & and other visualizations) that facilitate the more effective allocation of scientific resources and that can be used as cognitive scaffolding for learning.

**What is your main interest in ‘mapping science’ or ‘forecasting science’?**

My main interest is in using domain maps for teaching purposes. Thus, my research spans two domains: (1) the cognitive justification for the use of domain maps from the field of educational psychology, and (2) the creation of large scale, data driven spatial representations of inherently non-spatial scholarly data from the field of information science.
What is the best static visualization of dynamic phenomena, e.g., growth or diffusion processes, you have ever seen? Examples could come from science, art, or any other field of human endeavor.

Linear time series such as music scored on sheet music
Joseph Minard’s War of 1812, Napoleon’s March
Continental drift revealed by small multiples

Questions for Map Makers:

Please provide higher resolution images, a brief description, and if available citation references for up to three science maps you have created and are most proud of. Use one page per map.

See below.

What opportunities / solutions do maps / forecasts of science offer for what stakeholders?

With real time linked information as to who is citing who and what, science will be more efficient. Duplications of innovation may be avoided by closer monitoring of the emerging linkages between seemingly unrelated disciplines and sub-disciplines.

What main challenges do you foresee for designing effective maps of science or science forecasts?

The problems now are not technical, but rather ones of implementation and resources. Meta organization tools will have to be allowed to crawl inside diverse proprietary databases to reveal the linkages between fields. (Google Scholar is making a good start.) Citation practices will have to be standardized and the unit of citation will have to move to increasingly atomistic units such that concepts (memes) and not papers or books are the unit of scholarship being tracked. Authors will have to be disambiguated and unique international author identifiers will have to be put in place. Also, metrics will have to evolve to more accurately normalize and control for the rate of scholarly production amongst the different disciplines.

Please send the completed document by Thursday October 19th, 2006
to Katy Borner <katy@indiana.edu> and Elisha Hardy efhardy@indiana.edu
Justices of the United States Supreme Court
(1956 – 2004 Terms)

The above image represents all topics identified as doctrinal and assigned to law school class subjects. A threshold weight of in excess of 10 case co-occurrences was applied.

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