InfoVis Lab Research in 15 mins

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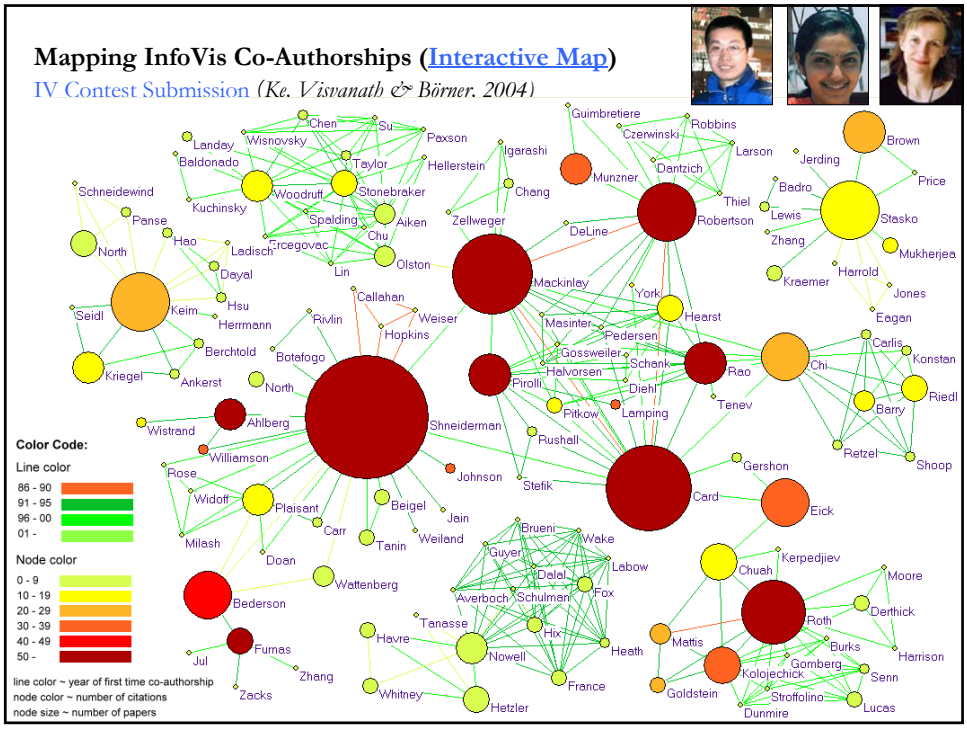
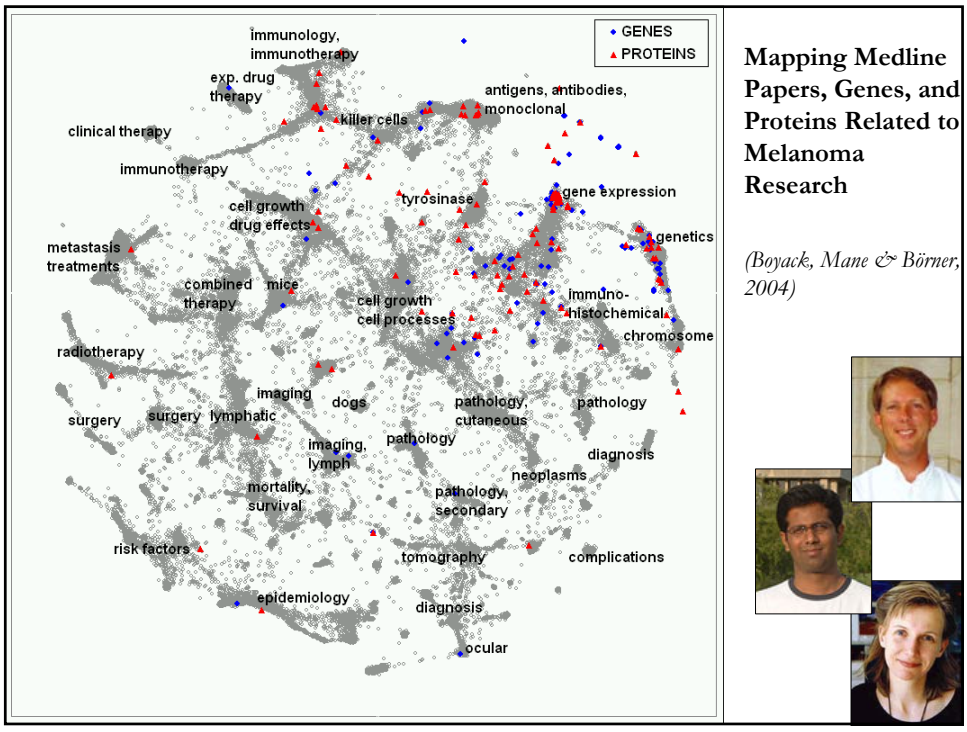
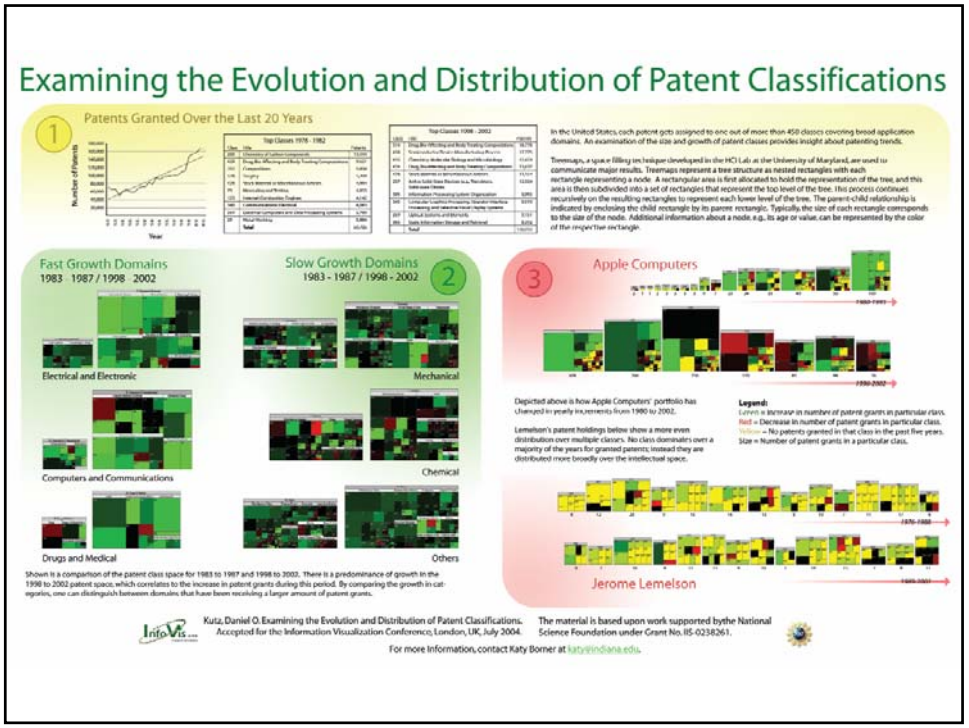
http://ella.slis.indiana.edu/~katy/gallery/04-openhouse/

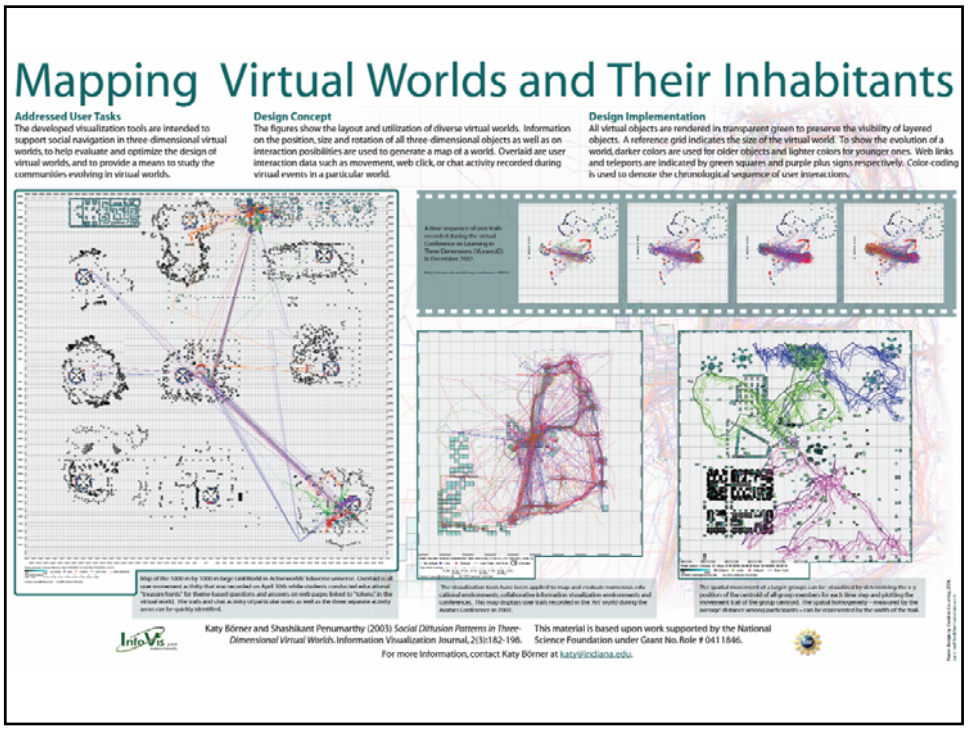


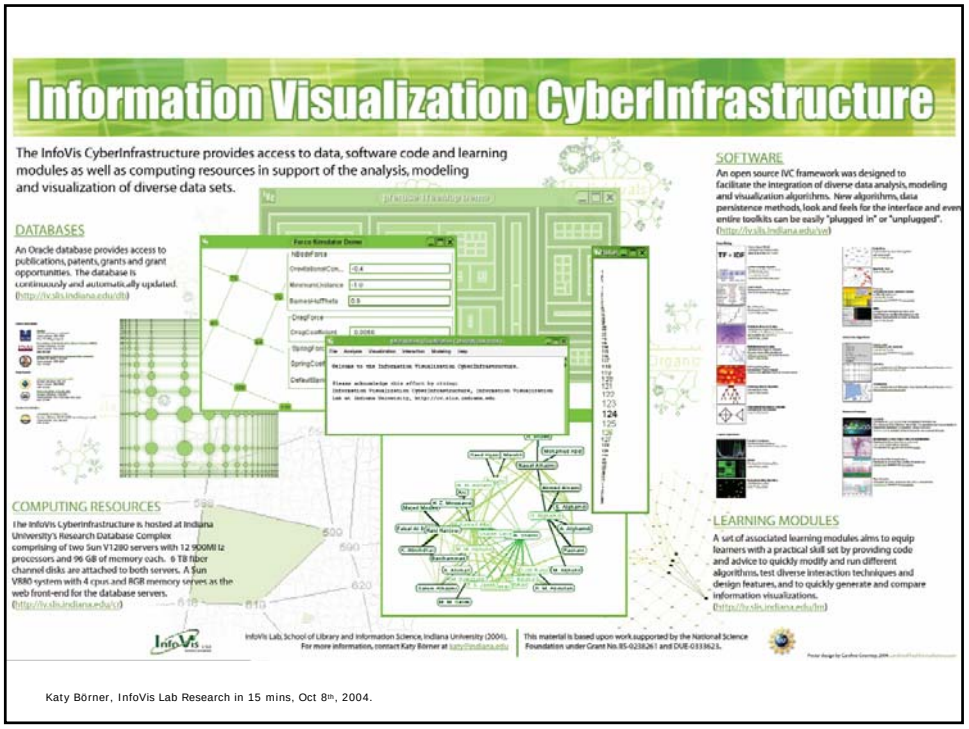


Mapping Medline Papers, Genes, and Proteins Related to Melanoma Research

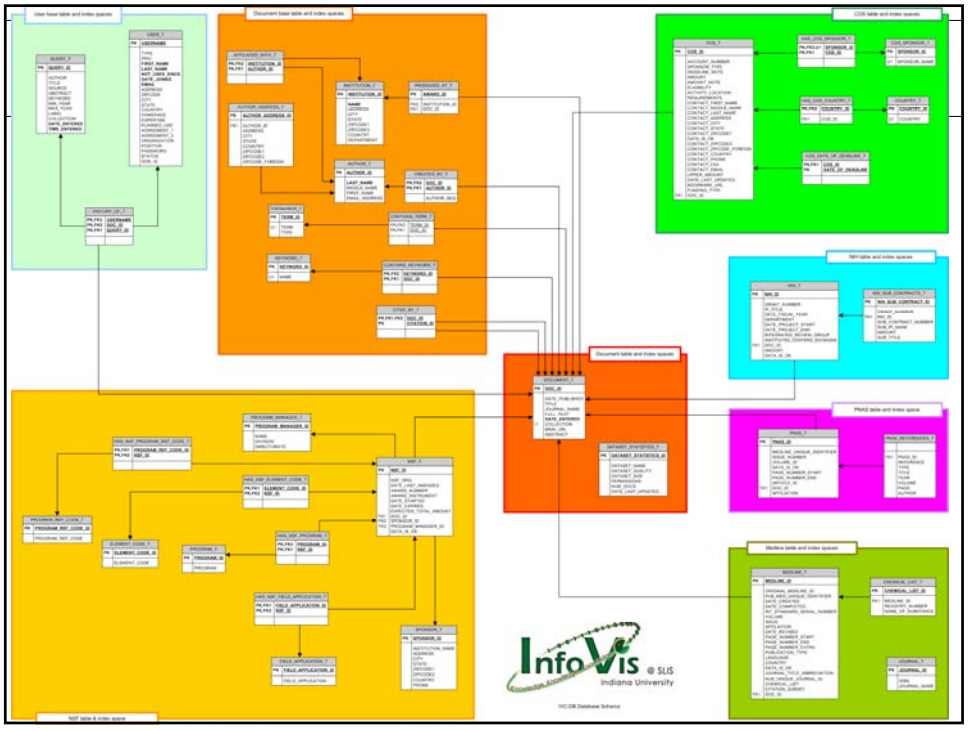
(Boyack, Mane & Börner, 2004)

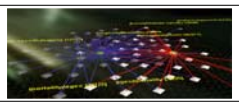

Examining the Evolution and Distribution of Patent Classifications
1
Patents Granted Over the Last 20 Years
Number of Patents
Year
Top Classes 1976 - 1982
Top Classes 1998 - 2002
In the United States, each patent gets assigned to one out of more than 450 classes covering broad application domains. An examination of the size and growth of patent classes provides insight about patenting trends.
Treemaps, a space filling technique developed in the HCI Lab at the University of Maryland, are used to communicate major results. Treemaps represent a tree structure as nested rectangles with each rectangle representing a node. A rectangular area is first allocated to hold the representation of the tree, and this area is then subdivided into a set of rectangles that represent the top level of the tree. This process continues recursively on the resulting rectangles to represent each lower level of the tree. The parent-child relationship is indicated by enclosing the child rectangle by its parent rectangle. Typically, the size of each rectangle corresponds to the size of the node. Additional information about a node, e.g., its age or value, can be represented by the color of the respective rectangle.
Fast Growth Domains
1983 - 1987 / 1998 - 2002
Slow Growth Domains
1983 - 1987 / 1998 - 2002
2
Electrical and Electronic
Mechanical
Computers and Communications
Chemical
Drugs and Medical
Others
Shown is a comparison of the patent class space for 1983 to 1987 and 1998 to 2002. There is a predominance of growth in the 1998 to 2002 patent space, which correlates to the increase in patent grants during this period. By comparing the growth in categories, one can distinguish between domains that have been receiving a larger amount of patent grants.
3
Apple Computers
1980-1985
1990-2002
Depicted above is how Apple Computers' portfolio has changed in yearly increments from 1980 to 2002.
Lemelson's patent holdings below show a more even distribution over multiple classes. No class dominates over a majority of the years for granted patents; instead they are distributed more broadly over the intellectual space.
Legend:
Green = Increase in number of patent grants in particular class.
Red = Decrease in number of patent grants in particular class.
Yellow = No patents granted in that class in the past five years.
Size = Number of patent grants in a particular class.
1976-1985
1985-1997
Jerome Lemelson
InfoVis
Kutz, Daniel O. Examining the Evolution and Distribution of Patent Classifications. Accepted for the Information Visualization Conference, London, UK, July 2004.
The material is based upon work supported bythe National Science Foundation under Grant No. IIS-0238261.
For more Information, contact Katy Borner at katy@indiana.edu.


Mapping Virtual Worlds and Their Inhabitants
Addressed User Tasks
The developed visualization tools are intended to support social navigation in three-dimensional virtual worlds, to help evaluate and optimize the design of virtual worlds, and to provide a means to study the communities evolving in virtual worlds.
Design Concept
The figures show the layout and utilization of diverse virtual worlds. Information on the position, size and rotation of all three-dimensional objects as well as on interaction posibilities are used to generate a map of a world. Overlaid are user interaction data such as movement, web click, or chat activity recorded during virtual events in a particular world.
Design Implementation
All virtual objects are rendered in transparent green to preserve the visibility of layered objects. A reference grid indicates the size of the virtual world. To show the evolution of a world, darker colors are used for older objects and lighter colors for younger ones. Web links and teleports are indicated by green squares and purple plus signs respectively. Color-coding is used to denote the chronological sequence of user interactions.
A time sequence of user trails recorded during the virtual Conference on Learning in Three Dimensions (VLearn3D) in December 2007.
InfoVis
Katy Börner and Shashikant Penumarthy (2003) Social Diffusion Patterns in Three-Dimensional Virtual Worlds. Information Visualization Journal, 2(3):182-198.
This material is based upon work supported by the National Science Foundation under Grant No. Role # 0411846.
For more information, contact Katy Börner at katy@indiana.edu.

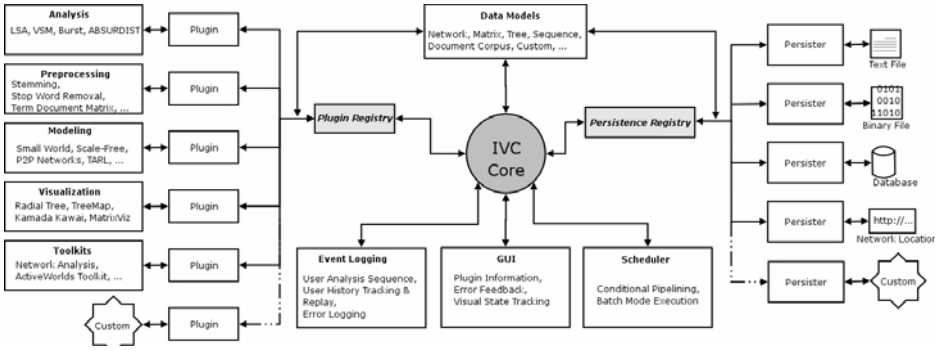


Katy Börner, InfoVis Lab Research in 15 mins, Oct 8th, 2004.

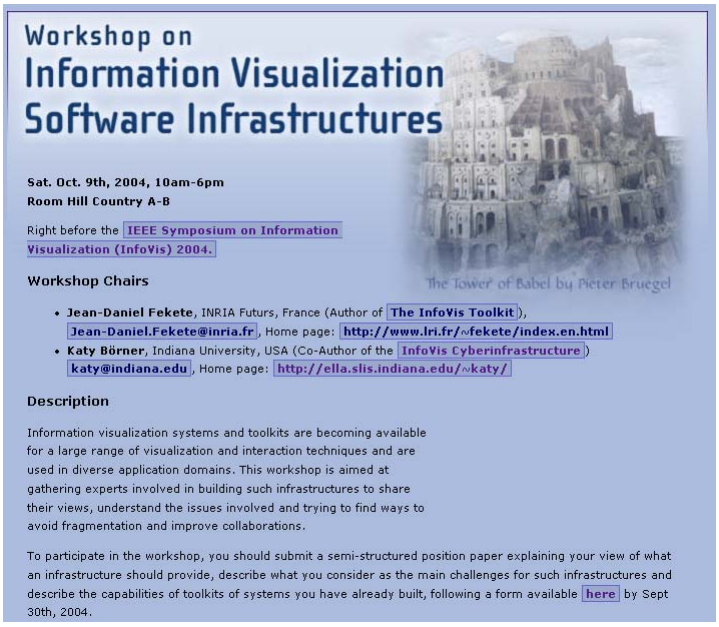




IVC Software Framework



See SLIS Colloquium talk on the *InfoVis Cyberinfrastructure* on Nov 19, 2004.



http://vw.indiana.edu/ivsi2004/

Fall 2004 Talk Series on

Networks and Complex Systems

Every Monday 6-7p, LI 001 ~ Optional Dinner Afterwards

Description
This talk series is open to all Indiana University faculty and students interested in network analysis, modeling, visualization and complex systems research.

A major intent is to cross-fertilize between research done in the **social and behavioral sciences** and research in **'hard core' sciences** such as biology or physics.

Links to people, projects, groups, students, courses and r
Indiana University are also available via the **CSN web site**

The slides of all talks will be be available online.
Most talks will be video taped.

Organizer
Katy Börner <**katy@indiana.edu**> Assistant Professor

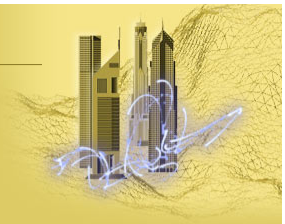
Time & Place
Every Monday 6:00-7:00pm in the **Main Library** LI 001, Ir
Science Colloquium Series.

There is an optional dinner afterwards 7-9p at **Lennie's**.

http://vw.indiana.edu/talks-fall04/

http://vw.indiana.edu/aag05/

Mapping Humanity's Knowledge and Expertise in the Digital Domain



At the **101st Annual Meeting** of the **Association of American Geographers** Denver, CO: April 5-9, 2005.

Session Organizers

Katy Börner, **Indiana University**
André Skupin, **University of New Orleans**

Sponsors

Cartography and GIS specialty groups

Description

This session will bring together leading researchers and practitioners that aim to develop techniques, tools, and infrastructures to map humanity's knowledge and expertise for the improvement of science and education.

Knowledge and expertise is typically extracted from digitally available literature, news, computer mediated communication data as well as from information about the producers and consumers of those data sets. Advanced data analysis techniques in combination with spatial metaphors, geographic principles, and cartographic methods are applied to organize, visualize, and communicate the semantic relationships inherent in the data.

The ultimate goal of this work might be an interactive cartographic map of all of science, with continents representing the major research areas such as, e.g., biology or physics, dots denoting major authors, PIs, papers or news, dynamically evolving research frontiers, blinking 'hot' papers and topics, etc. This map could be used to teach and understand the evolving structure of all of science, to identify major experts, to find and read the most relevant papers and news, to see the effects of resource allocation decisions, to study social networks, etc. Last but not least, it would provide a unique bird's eye view of major experts in specific areas and mankind's knowledge in general.

Some of the leading-edge research on this topic is found where geography intersects with information/library science, computer science, and cognitive science. We invite papers on the broad foundations, computational methods, software systems, and evaluation of such data analyses and visualizations, as they have emerged in this interdisciplinary endeavor.