Mapping Science: A new paradigm for comprehending abstract information

By Nina Haagen-Daaz

During the month of May, the exhibit Places & Spaces: Mapping Science will be featured at the Monroe County Public Library, 303 E. Kirkwood Avenue, Bloomington. The exhibit, first created in 2005, has been displayed in over 20 national and international venues, including Great Britain, Japan, Sweden, and Italy. It is described as "cartography of the physical and abstract," and it features selected maps of different areas of science.

"All the maps are created by taking large sets of data and processing them with algorithms to form an image," said Julie Smith, one of the two curators of the exhibit. According to the exhibit's Web site, www.scimaps.org/exhibit, the purpose of the exhibit is to demonstrate the power of maps to understand, navigate, and manage not only physical places, but also abstract information spaces. The Web site showcases and contrasts "regular" cartographic maps, concept maps frequently used in schools, and maps of scientific domains.

Mapping conceptual landscapes is still a relatively new idea, and it is not yet as readily understood as mapping geography. The goal of the exhibit is in part to make this information more accessible and understandable, not only to students and innovation enthusiasts, but also to the general public, including children.

One consequence of feeling crushed under the weight of information is that today's areas of science are highly focused and specialized. People can learn an enormous amount about one particular area of science, but often at the neglect of other areas.

"We are expected to know more works than we could possibly read and understand in a hundred lifetimes," writes Dr. Katy Börner, associate professor of information science at Indiana University and co-curator of the exhibit. "As a consequence, experts become highly specialized and isolated."

But the many different areas of science, despite how diverse they are, strongly depend on and synergize with each other. Today's and future developments in science will most likely draw upon many areas of research in order to piece together solid solutions, theories, and cures, and maps of science are vital tools in illustrating the connectivity and interdependence that occur among scientific disciplines.

One concept that rose out of the field of information science was the "phenomenon of 'undiscovered public knowledge,'" identified 20 years ago by Don Swanson, a library scientist at the University of Chicago, according to writer Jonathan Lethem. Swanson, too, recognized the problems with research growing more specialized and "abstracted from real-world problems." Swanson's suggestion was to interlink knowledge nuggets generated by different areas of research. The Places & Spaces exhibit is doing just that, helping to address concerns of fragmentation and support navigation across disciplinary, geospatial, and national boundaries.

The concept of mapping science will likely c to develop and might someday become an in part of elementary education, just as learning read traditional maps is now. Though the cha of understanding and using these new maps seem intimidating to those unfamiliar with th the exhibit provides an excellent opportunit about the concept. Just like visiting any art g there will be pieces that intrigue and fascina

The Places & Spaces: Mapping Science exhib display at the Monroe County Public Library, Kirkwood Avenue, Bloomington, until May 3(Learn more about the exhibit at www.scimaj exhibit.

Places & Spaces: Mapping Science