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IU gets $1.1 million grant to design dream tool for life, social sciences research

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BLOOMINGTON, Ind. -- Indiana University has received a $1.1 million grant from the National Science Foundation to develop the information technology needed to study large-scale networks in a variety of scientific domains.

When completed, the cyberinfrastructure will provide an online data-code-computing resource for researchers, educators and practitioners. It will primarily support biomedical, social and behavioral science, and physics research but can be used to study other networks as well.

Biologists are interested in using this cyberinfrastructure to analyze and consolidate data from diverse networks to better understand the dynamics of genes and proteins, to assess mutations in diseases, and to develop new drugs to treat them. It will be used by epidemiologists to more accurately forecast and visualize the spread of a pandemic influenza strain or emergent diseases such as Severe Acute Respiratory Syndrome.

Internet researchers might apply similar methods to understand the spread of viruses in technological networks. Social and behavioral scientists are interested in studying social networks or analyzing and predicting the structure and evolution of scientific disciplines.

"This project brings together a unique set of biologists, physicists, social and behavioral scientists, statisticians and information scientists," said principal investigator Katy Borner, associate professor in the School of Library and Information Science who holds an adjunct appointment in informatics. "Many of these scientists have made major theoretical contributions. They are now taking on the challenge of building a 'dream tool' for their respective research communities.

"It is our hope," Borner added, "that this shared cyberinfrastructure will provide easy access to the network science theory and tools generated in the diverse fields of sciences and help increase our understanding of the network ecology of which we are an intrinsic part."

Joining Borner are co-investigators Alessandro Vespignani, professor of informatics; Santiago Schnell,

assistant professor of informatics; and Stanley Wasserman, professor in the departments of psychology and sociology; and Albert-Laszlo Barabasi, professor of physics at the University of Notre Dame.

Craig A. Stewart, IU associate vice president for research and academic computing, is a senior collaborator on the project.

For more information about the IU School of Informatics, go to http://www.informatics.indiana.edu (http://www.informatics.indiana.edu) . More information about the IU School of Library and Information Science is at http://www.slis.indiana.edu (http://www.slis.indiana.edu) .

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