IU News Room

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Facebook for scientists: Map your expertise
IU information scientists receive $1.8 million in ARRA funding

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BLOOMINGTON, Ind. -- Indiana University has received more than $1.8 million from the National Institutes of Health to collaborate on a $12.2 million, seven-university project designed to network researchers around the country.

While the proposed new networking system will contain authentication mechanisms to protect sensitive data and intellectual property, it is being described as a Facebook for scientists.

IU Associate Dean of Library Technologies
Robert McDonald, left, School of Library and Information Science (SLIS) professor Katy Borner and SLIS assistant professor Ying Ding have received $1.8 million from the National Institutes of Health to collaborate on a $12.2 million, seven-university project designed to network researchers around the country.

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Institutes of Health to help develop a "Facebook for scientists."

IU’s portion of the project is led by Katy Börner, Victor H. Yngve Professor of Information Science and director of the Cyberinfrastructure for Network Science Center at IU. Co-investigators with Börner at IU are Ying Ding, an assistant professor of Information Science, and Robert McDonald, associate dean for library technologies at IU and associate director for the Data to Insight Center at the Pervasive Technology Institute.

Börner's team at the Cyberinfrastructure for Network Science Center will conduct research and development on data analysis and visualization, Ding will be responsible for ontology development and McDonald will be responsible for implementation at IU of VIVO, a networking template currently in place at Cornell University that brings together publicly available information on the people, departments, graduate fields, facilities and other resources that collectively make up the research and scholarship environment in all disciplines at Cornell.

Ding explained that ontology is a formally represented community consensus that enables data integration into a form that allows for machine involvement for information understanding and processing.

"One of the major VIVO ontologies models the scholarly activities of research communities, where paper, grant, teaching, research interest, organization and event are interlinked and formally represented," she said. "This could gather all the related information for one researcher into one place and further links to any other related semantic datasets. Linking and formal representation generate great power to realize more intelligent knowledge discovery."

A network visualization of the "Facebook for scientists" project, above, displays how universities using the proposed VIVOweb
would network with existing databases like the
gene ontology information center GO and
UniProt, and protein knowledge database, and
its non-redundant archive, UniParc.

In a recent announcement referencing the importance of the agency's disbursement of 12,000
American Reinvestment and Recovery Act grants that included the $12.2 million VIVO project, NIH
director Francis Collins said scientists like Börner, Ding and McDonald were committed to improving
the lives of Americans.

"We're investigating new problems with powerful new tools and looking at old problems from
entirely new perspectives," he said. "President Obama began his administration by making a strong
commitment to 'listening to scientists.' This is not just because he didn't want to hurt our feelings. It's
because he sees great opportunities to use science to improve lives, whether it's creating new
medicines, developing better prevention strategies, or devising smarter policies to do everything from
reducing greenhouse gas emissions to building a more effective health care system."

Success of the VIVO project could translate into enhancing scientific gains in each of those areas
noted by Collins, and even more broadly, Börner said.

"There are many sites that extract and serve researcher profiles, plus there are services that aim to
help people communicate and connect more efficiently," she said. "Many researchers have profiles
and evolving networks on multiple, but incompatible, sites. They try to use Facebook and Google for
their research, however, these tools and services do not completely address the needs of scholars."

McDonald said the Cornell VIVO software will offer IU significant opportunities for advancing
enhanced data mining capabilities towards discovering semantic relationships among faculty
research both within the IU system and in external comparison to other research institutions that
also use the software.

"For a multi-faceted area like translational medicine this type of enhanced researcher relationship
will strengthen research collaboration as well as provide new insights into the types of research
collections that are needed by the libraries to support researchers who work in a multi-disciplinary
framework," he noted.

As it is currently envisioned, the system will federate information about faculty and staff from
institutional repositories, listings of published articles from academic publishers, and researchers
would provide information regarding their own interests. Users will still view the information on
what looks like regular Web pages, but VIVO is designed to then collect the facts a researcher wants
and then assemble a unique page.
In addition to IU and Cornell, also involved in the project are the University of Florida, Weill Cornell Medical College, Washington University in St. Louis, the Scripps Research Institute and the Ponce School of Medicine in Puerto Rico.

To speak with Börner, Ding or McDonald, please contact Steve Chaplin, University Communications, at 812-856-1896 or stichap@indiana.edu (stichap@indiana.edu).