GPN Plays Role in NSF Big Data Spoke Award

Four Great Plains region universities, Iowa State University, Kansas State University, the University of Nebraska-Lincoln and the University of North Dakota, have been awarded nearly $1 million by the National Science Foundation (NSF) to form a Digital Agriculture Spoke as part of the Midwest Big Data Hub. NSF awarded a total of $10 million to 10 "Big Data Spokes" to initiate research on specific topics identified by the Big Data Regional Innovation Hubs. The data spokes reflect the unique priorities and capabilities of the four BD Hubs, which represent consortia from the Midwest, Northeast, South and West of the country.

The title of the project is Digital Agriculture - Unmanned Aircraft Systems, Plant Sciences and Education. Project topics range from precision agriculture to personalized education. Farmers, landowners, governments and other entities in the region now can access data from a spectrum of agricultural activities—these data are gathered from sensors in farm and related equipment, aerial imagery, survey data, management and policy models and other sources. The Midwest Big Data Hub Digital Agriculture spoke will help collaborators across institutions to build partnerships to address emerging issues, such as precision agriculture, ecosystem management and services, socio-economic impacts, and specific data-related issues.

Building on previous work and partnerships in the areas of cyberinfrastructure workforce development, the Great Plains Network will be leading the information sharing, education and training component of the project. There will also be a series of specialized webinars, workshops, meetings and other planned events related to the project topics. A digital agriculture "all-hands" meeting will occur once per project year. That meeting is scheduled to take place in Manhattan, KS, in 2020.

The Principal Investigator is Grant McGimpsey (University of North Dakota). McGimpsey is dean of the UND School of Graduate Studies. Project co-PIs, in alphabetical order, are

· Jennifer Clarke, director, Computational Quantitative Life Sciences Initiative, and associate professor, Food Science and Technology Department and Statistics, University of Nebraska Lincoln

· Joe Colletti, senior associate dean, College of Agriculture and Life Sciences, Iowa State University Natural Resource and Ecology Management; Colletti also is lead for the Digital Agriculture Spoke project.

· Travis Desell, assistant professor, Computer Science, UND John D. Odegard School of Aerospace Sciences.

· Gregory E. Monaco, Director for Research and Cyberinfrastructure Initiatives, Great Plains Network, and research associate professor, Department of Psychological Sciences, Kansas State University

"The BD Spokes advance the goals and regional priorities of each BD Hub, fusing the strengths of a range of institutions and investigators and applying them to problems that affect the communities and populations within their regions," said Jim Kurose, assistant director of NSF's Computer and Information Science and Engineering Directorate, in the NSF release. "We are pleased to be making this substantial investment today to accelerate the nation's big data R&D innovation ecosystem."

As noted in the Midwest Big Data Hub's home page, the Midwest is vital to global agricultural production. The Midwest's agriculture sector is a key player in the regional and the national economy.

Background:

In March 2012, the Obama Administration launched the Big Data Research and Development Initiative to improve the ability to solve some of the nation's most pressing challenges by extracting knowledge and insights from large, complex collections of digital data. The BD Hubs, announced last year, are one way NSF is addressing this need by fostering multi-sector collaborations among academia, industry and government, and bringing together a wide range of stakeholders to solve regional challenges.

Like the BD Hubs, the BD Spokes will take on a convening and coordinating role, as opposed to directly conducting research. Each will gather important stakeholders, engage end users and solution providers, and form multi-disciplinary teams to tackle questions no single field can solve alone. However, unlike the BD Hubs, which aim to span the full range of data-driven challenges and solutions in a geographic region, each BD Spoke will have a specific, goal-driven mission.

For more information about the overall program see:

·   https://www.nsf.gov/news/news_summ.jsp?cntn_id=189864
·   http://midwestbigdatahub.org/about/working-groups/digital-agriculture-spoke/

To become involved, contact

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