

# Midwest Big Data Hub

## Accelerating the Big Data Innovation Ecosystem



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PI (Illinois)



**Beth Plale**  
Co-PI (Indiana)

**IOWA STATE UNIVERSITY**

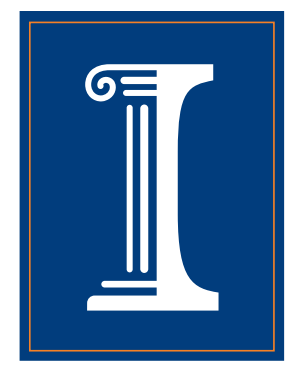
**Sarah Nusser**  
Co-PI (Iowa State)



**Brian Athey**  
Co-PI (Michigan)



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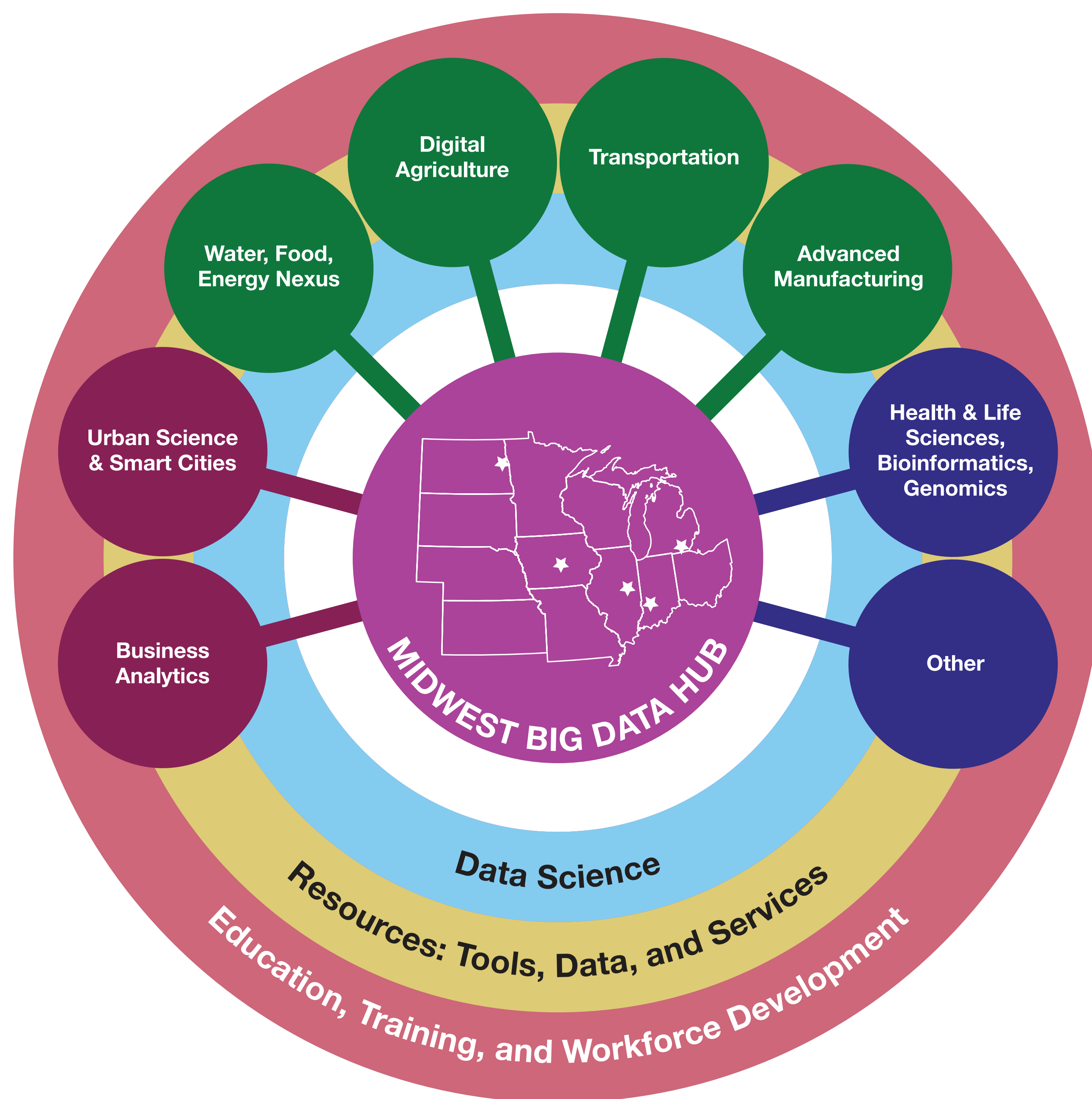


**Melissa Cragin**  
ED (Illinois)

### OVERVIEW:

The Midwest Big Data Hub (MBDH) is designed to address grand challenges by building a sustainable and enabling data environment to support evolving cross-sector networks. Our focus is on specific strengths and themes of importance to the region: **Society** (including smart cities and communities, network science, business analytics), **Natural & Built World** (including food, energy, water, digital agriculture, transportation, advanced manufacturing), and **Healthcare & Biomedical Research** (spanning genomics to patient care). The Hub supports activities that aggregate expertise, projects, and resources, enabling communities to assemble and function along multiple spokes, including specific themes of importance to the Midwest (across three broad themes of society, natural/built environments, and biomedical sciences). Integrative rings connect all spokes and are organized around data sciences, tools, and services needed to collect, store, access and analyze complex data collections; and, educational activities to advance the knowledge base and train a new workforce in the use and applications of data to create actionable knowledge and guide decision-making. The twelve states served by the Midwest Hub are: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Our early goals include:

- help our Spoke participants to acquire funding;
- build a sustainable framework to coordinate; existing projects;
- initiate 20-30 new partnerships, with a focus on public-private collaborations; and
- develop new data pilots.



### HUB AND SPOKE ACTIVITIES:

**MBDH All Hands meeting**  
March 21-22

**Univ. of North Dakota Big Data Summit and Hackathon**  
April 6-8

**Digital Agriculture Spoke All Hands meeting (Ames, IA)**  
May 16-17

**Next MBDH All Hands meeting**  
Fall, 2016

### RINGS:

Rings provide expertise and support for integrative activities across all our Spokes:

**Ring 1: Data Science**  
Lead: Beth Plale (Indiana)

**Ring 2: Resources: Tools, Data, and Services**  
Lead: Kenton McHenry (Illinois)

**Ring 3: Education, Training, and Workforce Development**  
Lead: Wolfgang Kliemann (Iowa State)

### SPOKES UNDERWAY:

THEME	SPOKE	INITIAL FOCI	INITIAL ACTIVITIES
Food-Water-Energy	Klara Nahrstedt (Illinois)	Data for policy to address emergent problems	<ul style="list-style-type: none"> <li>• Grant proposal development</li> <li>• Dataset inventory</li> </ul>
Health and Life Sciences, Bioinformatics and Genomics	Brian Athey (Michigan)	Moving knowledge from lab to clinic to patient	<ul style="list-style-type: none"> <li>• Data standards and integration</li> <li>• Data sharing</li> <li>• Data privacy and health IT security</li> </ul>
Metropolitan Sciences	Charlie Catlett (Argonne National Lab/U. Chicago)	Engaging the public sector to increase data access and discovery	<ul style="list-style-type: none"> <li>• Training for municipal leaders</li> <li>• Enabling use of data resources</li> <li>• Expanding use of the Plenario tools</li> </ul>
Digital Agriculture	Joe Colletti (Iowa State)	Developing cross-sector networks for data sharing; precision agriculture	<ul style="list-style-type: none"> <li>• Data fusion (e.g. imaging; weather; crop yield; farm management)</li> <li>• Big data lifecycles for unmanned aircraft systems (UAS) in agriculture</li> </ul>
Advanced Manufacturing	Caralynn Nowinski Collens (UI Labs)	Digital Manufacturing and Design Innovation Institute	<ul style="list-style-type: none"> <li>• Developing data use throughout supply chain</li> <li>• Fostering adoption of digital manufacturing technologies</li> </ul>
Network Science	Bernice A. Pescosolido (Indiana)	Developing the network science community to support public-private research activities	<ul style="list-style-type: none"> <li>• Developing regional partnerships to enable network-based perspectives on grand challenges</li> <li>• Training and education in network sciences and tools</li> <li>• Creating computational modeling platforms to support policy-making</li> </ul>
Transportation	H.V. Jagadish (Michigan)	Building public-private partnerships to improve the application of big data approaches to data analysis	<ul style="list-style-type: none"> <li>• Addressing big data challenges for transportation                             <ul style="list-style-type: none"> <li>o data privacy</li> <li>o data standards</li> <li>o data sharing</li> </ul> </li> </ul>
Business Analytics	Ratna Babu Chinnam (Wayne State)	Leading the way for business to take advantage of big data and data science: using data science to drive business analytics	<ul style="list-style-type: none"> <li>• Assisting partner businesses to unlock their potential                             <ul style="list-style-type: none"> <li>o Pilots</li> <li>o ROI success cases</li> </ul> </li> <li>• Developing the workforce</li> </ul>



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**Join Us!** [midwestbigdatahub.org](http://midwestbigdatahub.org)