

Midwest Big Data Innovation Hub

New Regional Initiatives for Midwest Ag Data Management

October 17, 2022

National Agricultural Producers Data Cooperative



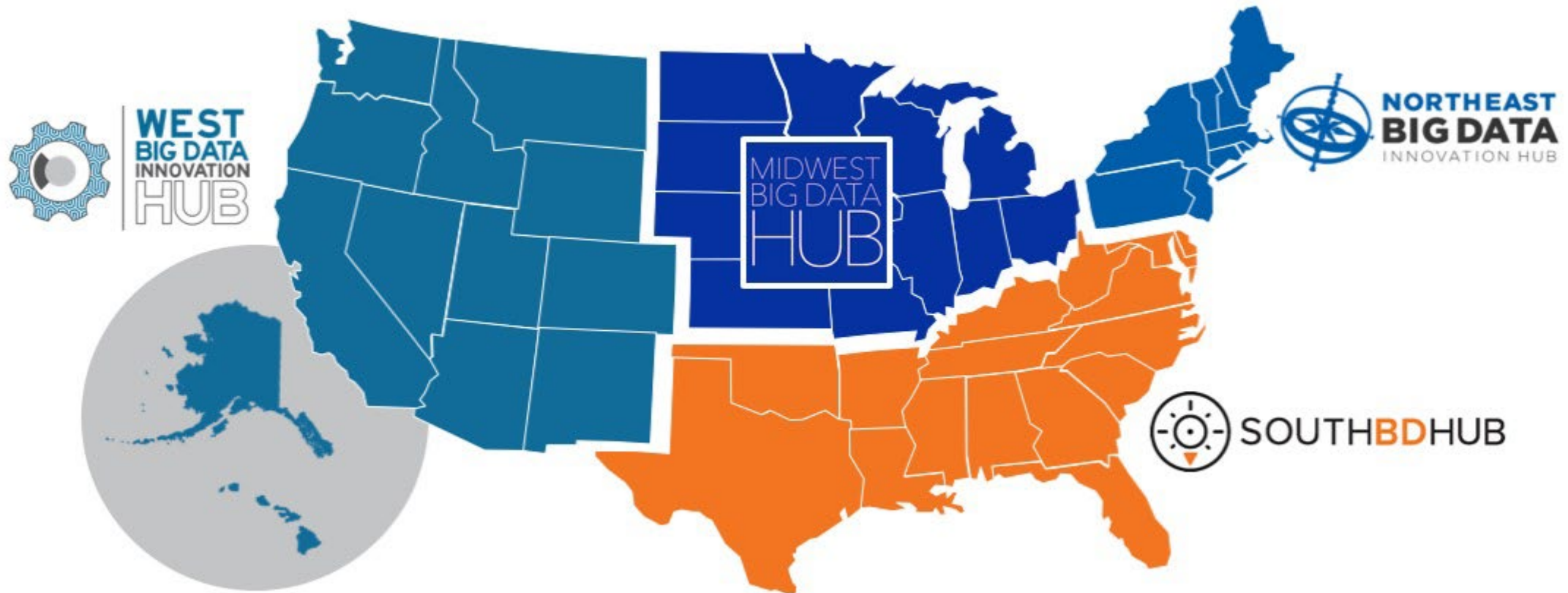
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Four regional Hubs, One national mission



What We Do

Engage communities, share resources, and build partnerships that harness data science to address societal and scientific challenges.



Priority Areas and Cross-cutting Themes



- Advanced Materials and Manufacturing
 - Big Data in Health
 - Digital Agriculture
 - Smart & Resilient Communities
 - Water Quality
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- Data Science Education and Workforce Development
 - Cyberinfrastructure and Data Sharing

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MBDH activities in digital agriculture and ag data

- Engagement and collaboration with NAPDC
- New IEEE working group on “Enabling a Smart and Equitable Agriculture Ecosystem”
- Food security and climate resilience use case co-developed with Ann Stapleton, USDA NIFA for the 2022 NSF Open Knowledge Network (OKN) community activity
- NSF BD Spokes project: “Digital Agriculture: Unmanned Aircraft Systems, Plant Sciences, and Education (UASPSE)” ; series of All-Hands meetings 2016-2020
- Tribal ag innovation workshop (2023) in partnership with the Tribal Nations Research Group (TNRG), UND, Grand Farm / Emerging Prairie, and Microsoft
- February 2022 [Collaboration Cafe](#) session on “Data in Food and Agriculture”; November 2022 session on FFAR Fellows program
- MBDH Digital Ag Community (Iowa State, UND, UNL)
- Biological Ontologies seminar series - hosted by Iowa State
- Plant Phenomics Phridays summer seminar series - hosted by Iowa State
- Midwest Big Data Summer School - hosted by Iowa State
- Machine Learning: Farm-to-Table Workshop & white paper “Agriculture Big Data (AgBD) Challenges and Opportunities From Farm To Table”

IEEE Standards Association working group



“Enabling a Smart and Equitable Agriculture Ecosystem”

- Co-led by the MBDH with Jack Marck, Managing Director of the Illinois AgTech Accelerator / Gener8tor
- Specific interest in the needs of small producers and organizations

Working Group Goals:

- Understand the current state of ag supply chain data interoperability.
- Gather information from stakeholders to identify current pain points, opportunities, use cases, and best practices
- Focus on platform-level interoperability to facilitate data compatibility and flow between key technologies across on-farm, supply chain, and end use.
- Recommend best practices and guidelines for increasing collaboration around ag data collection, security, and management.
- Propose standards and certificates for data providers and consumers to accelerate innovation.



Other Midwest Digital Agriculture activities



NSF AI Institutes

- AI Institute for Resilient Agriculture ([AIIRA](#))
 - **Iowa State University**; Iowa Soybean Association; University of Missouri; University of Nebraska–Lincoln
- AI Institute for Future Agricultural Resilience, Management, and Sustainability ([AIFARMS](#))
 - **University of Illinois at Urbana-Champaign**; Argonne National Laboratory (IL); Donald Danforth Plant Science Ctr. (MO); EarthSense, Inc. (IL); Michigan State University; The University of Chicago
- AI Institute for Intelligent CyberInfrastructure with Computational Learning in the Environment ([ICICLE](#))
 - **The Ohio State University**; Case Western Reserve University; Indiana University; Iowa State University; Ohio Supercomputer Center; University of Wisconsin
- AI Institute for Future Edge Networks and Distributed Intelligence ([AI-EDGE](#))
 - **The Ohio State University**; Purdue University; University of Illinois at Chicago; University of Illinois at Urbana-Champaign; University of Michigan; University of Wisconsin



AIFARMS
Artificial Intelligence for Future Agricultural Resilience, Management, and Sustainability



Check our community blog and list of Regional Activities for more



Other Midwest Digital Agriculture activities

- *Agronomy Journal* [special section](#) on ag data ownership and privacy; nine open-access articles (via UASPSE community)
- Feature stories on the [MBDH Community Blog](#) written by our [science communications interns](#)
- [Reach out](#) with suggestions for other projects and people we can write about and amplify!

New Precision Agriculture Initiatives in the Midwest

August 17, 2022

By Raleigh Butler Recently, there has been a large amount of U.S. federal funding directed toward next-generation precision-agriculture initiatives. This article summarizes a few such projects based in the Midwest....

Unmanned Aerial Systems, Plant Sciences and Education (UASPSE) Project Featured in Special Section of Agronomy Journal

October 6, 2022

The Digital Agriculture community of the Midwest Big Data Innovation Hub (MBDH) achieved a major milestone this week with a series of open-access publications on ag data. The Unmanned Aerial...

Building an accessible agricultural data community with the National Agricultural Producers Data Cooperative

May 19, 2022

By Raleigh Butler Entities around the world gather data focused on various aspects of agriculture. Unfortunately, this information is not always accessible or easily available for those who need it....

Midwest researchers address food insecurity and transportation access during the pandemic

October 19, 2021

By Raleigh Butler and Qining Wang This story is part of a series on coronavirus research in the Midwest region. To explore other NSF-funded research addressing the COVID-19 pandemic, please...

Collaboration Cafe webinar series

Goals:

- Building regional capacity for large-scale proposal response
- Growing a cross-disciplinary network of data science collaborators
- Elevating early career researchers
- Creating a more diverse data science community by actively engaging with non-R1 institutions, including minority-serving institutions (MSIs), tribal colleges and universities (TCUs), and predominantly undergraduate institutions (PUIs)
- Partnering with industry, government, nonprofits, and civic organizations to support translational research and transition-to-practice activities

Regular segments:

- Funding opportunity walkthroughs
- Lessons learned from prior awardees
- Researcher lightning talks
- Speed networking
- Small group discussions

Collaboration Cafe resources

- [MBDH website](#)
 - Web page with upcoming sessions
 - Short form for engagement
- [Slack community](#)
 - Networking
 - Input on future sessions
 - New solicitations
- [Shared Google Drive](#)
 - Running notes doc
 - Relevant prior awards to Midwest institutions
- [YouTube playlist](#) of webinar recordings

Cafe Ground Rules

- Multi-disciplinary team science is a core focus here - all proposal ideas are welcome for discussion
- Research proposals are competitive; some people may not be willing to discuss the details of their projects in this venue
- Private conversations in breakout rooms or Slack private messages are private
- Participating in Collaboration Cafe activities falls under our [NSF Code of Conduct](#)

MBDH engagement on proposals

There are multiple opportunities to have MBDH participate on proposals for this program, or other projects:

- Engagement partner: Communications, outreach, community assessments, participation in Hub events and activities
 - Non-exclusive Letter of Collaboration
 - Minimal to no funding to MBDH
- Collaborative partner: Engagement roles + involvement in developing and managing project activities
 - Non-exclusive Letter of Collaboration, subaward, co-PI roles, etc.
 - Funding to recover costs of MBDH staff time and other expenses
- **Note:** The MBDH is a neutral party and often provides non-exclusive Letters of Collaboration to multiple proposers to a solicitation

Get involved

- <https://midwestbigdatahub.org/cafe>
- info@midwestbigdatahub.org

November 17, 2022

MBDH Collaboration Café

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Early-Career Funding in Agriculture
- Solicitation: Foundation for Food & Agriculture Research (FFAR) Fellows Program

December 5, 2022

2022 Integrative Smart Agriculture Data Workshop

Champaign IL, iHotel

MBDH, IEEE SA, Illinois AgTech Accelerator



Get Involved ▾

MBDH Collaboration Cafe

Community Development and Engagement Program

Community Advisory Panel

Midwest Carpentries Community

Data Science Student Community

Regional Activities

Event in a Box Tool Kit

Explore Funding Opportunities

Join a Working Group



Discussion

- What gaps and opportunities exist in the Midwest around ag data that collaborators could partner to address?
- What does collaboration look like to you?
- What projects are at the right level of readiness?