

# Midwest Big Data Innovation Hub

Collaboration Cafe

October 2021



IOWA STATE  
UNIVERSITY

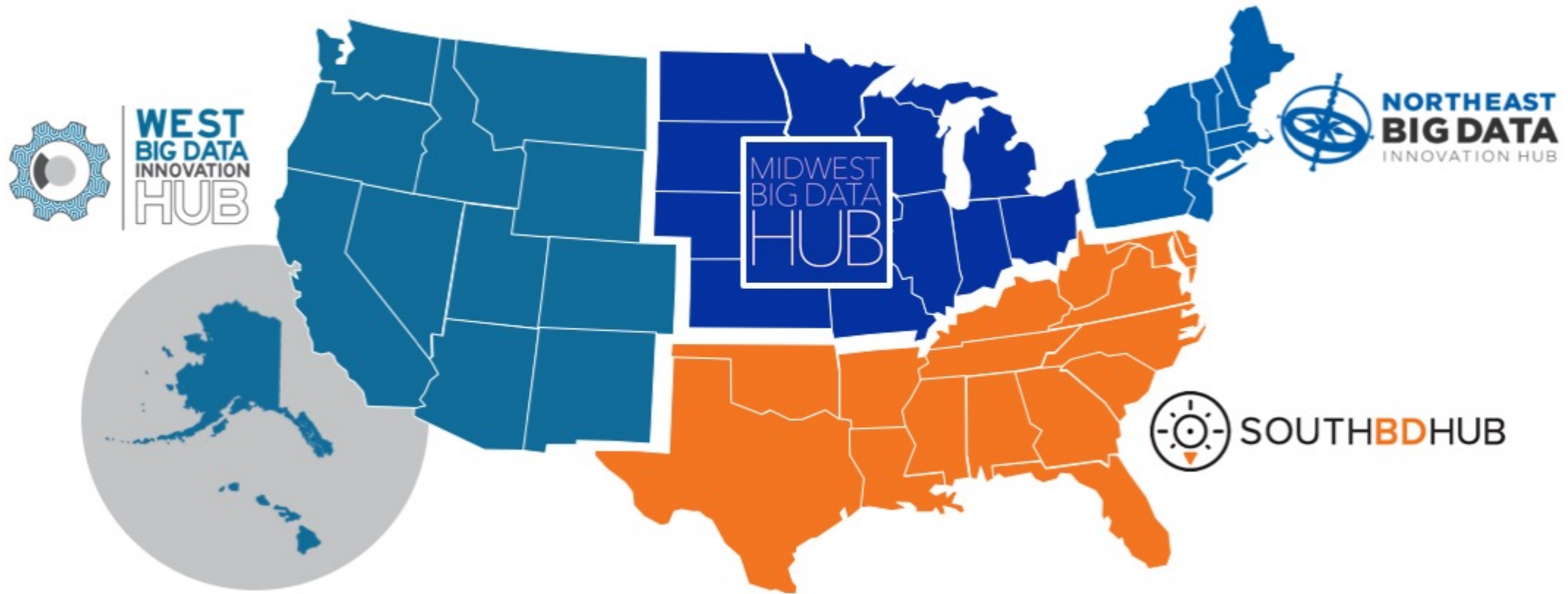


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# Four Hubs, One Mission



## 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
- Data Science Education and Workforce Development
- Cyberinfrastructure and Data Sharing

# 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
- Researcher lightning talks
- Lessons learned from prior awardees
- 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 CyberTraining, or other projects:

- Engagement partner: Communications, outreach, community assessments, participation in Hub events and activities
  - Non-exclusive Letter of Collaboration
  - Minimal to no funding
- 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 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

# October Solicitation: NSF CyberTraining



	19-524	due January 19, 2022
Tracks	Pilot, Implementation (Small or Medium), and Large-scale Project Conceptualization (planning grants for institute-level projects)	
Size and duration (max)	<b>Pilot:</b> \$300k/2y; <b>Small:</b> \$500k/4y; <b>Medium:</b> \$1m/4y; <b>Large:</b> \$500k/2y	
Estimated # of awards	12-18 (max 4 Pilot, 8 Small, 3 Medium, 3 Large-scale)	
Directorate	Multiple; interdisciplinary proposals encouraged (led by CISE/OAC) “The intent of the CyberTraining program is to stimulate co-funding between OAC and one or more “domain” directorates/divisions.”	
LOI	No, but PIs strongly encouraged to contact POs at least 1 month before due date	
Eligibility limits & guidance	PI/co-PI on only 1 Pilot or Implementation proposal; no limit on Large-scale Conceptualization “Proposals of interest to one or more domain divisions must include at least one PI/co-PI with expertise relevant to the targeted research discipline. All proposals shall include at least one PI/co-PI with expertise relevant to OAC.”	



# NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)



- New in this round:
  - "Separate submission tracks for Cyberinfrastructure Contributors, Users, and Professionals have been eliminated. However, there remains a focus on these scientific communities, and projects should target one or more of these communities."
  - Social, Behavioral and Economic Sciences (SBE) Directorate added
- See also short-term and long-term impacts in the Program Description
- See also the NSF Division areas of interest
  
- NSF official webinar: Dec. 8, 2021, 1pm CT / 2pm ET





# NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)



- “This program seeks to prepare, nurture, and grow the national scientific research **workforce** for creating, utilizing, and supporting advanced cyberinfrastructure (CI)”
- Goals:
  - Ensure broad adoption of CI tools, methods, and resources by the research community in order to catalyze major research advances and to enhance researchers’ abilities to lead the development of new CI;
  - Integrate core literacy and discipline-appropriate advanced skills in advanced CI as well as computational and data-driven science and engineering into the Nation’s educational curriculum/instructional material fabric spanning undergraduate and graduate courses for advancing fundamental research
  - “The funded activities, spanning targeted, multidisciplinary communities, will lead to transformative changes in the state of research workforce preparedness for advanced CI-enabled research in the short- and long-terms.”
  - Seeks to “broaden CI access and adoption by:
    - (i) increasing or deepening accessibility of methods and resources of advanced CI and of computational and data-driven science and engineering by a wide range of *scientific disciplines* and *institutions* with lower levels of CI adoption to date; and
    - (ii) harnessing the capabilities of larger segments of diverse underrepresented groups. **Proposals from, and in partnership with, the aforementioned communities are especially encouraged.**”



# CyberTraining Communities of Interest

Community	NSF Definition
<b>CI Professionals</b>	This is the community of research CI and professional staff who deploy, manage, and support effective use of research CI. A CIP-specific project is for technical and research CI professional skills development of future CI professionals, including undergraduate and graduate students, postdoctoral fellows, and research scientists, and for skills refinement and career development of current CI professionals.
<b>CI Contributors</b>	This is the community of computational, data, and domain scientists and engineers who research and develop new CI capabilities, approaches, and methods. A CIC-specific project is for contributor-level CI skills and advanced domain skills development; the target population spans graduate and undergraduate students, postdoctoral fellows, and researchers who are current and future CI Contributors.
<b>CI Users</b>	This is the community of domain scientists and engineers who effectively exploit advanced CI capabilities and methods for research. A CIU-specific project is for user-level core literacy in advanced CI as well as computational and data-driven science and engineering skills; the target population spans undergraduate and graduate students, postdoctoral fellows, and researchers who are current and future CI Users.



# NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)



## “Additional Solicitation Specific Review Criteria”

1. Rationale for challenges identified for research workforce development;
2. Strength of project’s plan to address one or both solicitation goals as stated in the Synopsis of Program above, namely to (a) broaden the use of CI methods and resources by the research community, or (b) integrate CI skills into institutional and disciplinary curriculum/instructional material fabric (at least one goal for Pilot and Implementation proposals, and both goals for Large-scale Conceptualization Project proposals);
3. Potential for scalability and sustainability;
4. Soundness of recruitment and evaluation plan;
5. Effectiveness of proposed “collective impact” strategy to establish a coordination network and a backbone organization (or of an alternative strategy);
6. Soundness of plans for fostering a suitable community;
7. Feasibility of plans for serving as an information hub and for creating repository infrastructure; and
8. Strength of plans to support and guide other CyberTraining and relevant projects, and the community.



# Discussion

- Existing awards in the region (see the Cafe notes doc)
- Prior experiences with CyberTraining program?
  - What would you do differently (or the same)?
- Regional cyberinfrastructure needs and opportunities
  - Where are the gaps?
  - Are there specific disciplinary drivers?
  - How does CyberTraining relate to other programs that have training elements, such as XSEDE/Access?
  - What are some of the trends that are driving the needs for the next generation of cyberinfrastructure?
    - AI
    - Quantum computing
    - Data visualization

# Get involved

- <https://midwestbigdatahub.org/cafe>
- [info@midwestbigdatahub.org](mailto:info@midwestbigdatahub.org)

November Collaboration Cafe topic:

- NSF AI Institutes program

November 18, 2021

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

