Midwest Big Data Innovation Hub

Collaboration Cafe

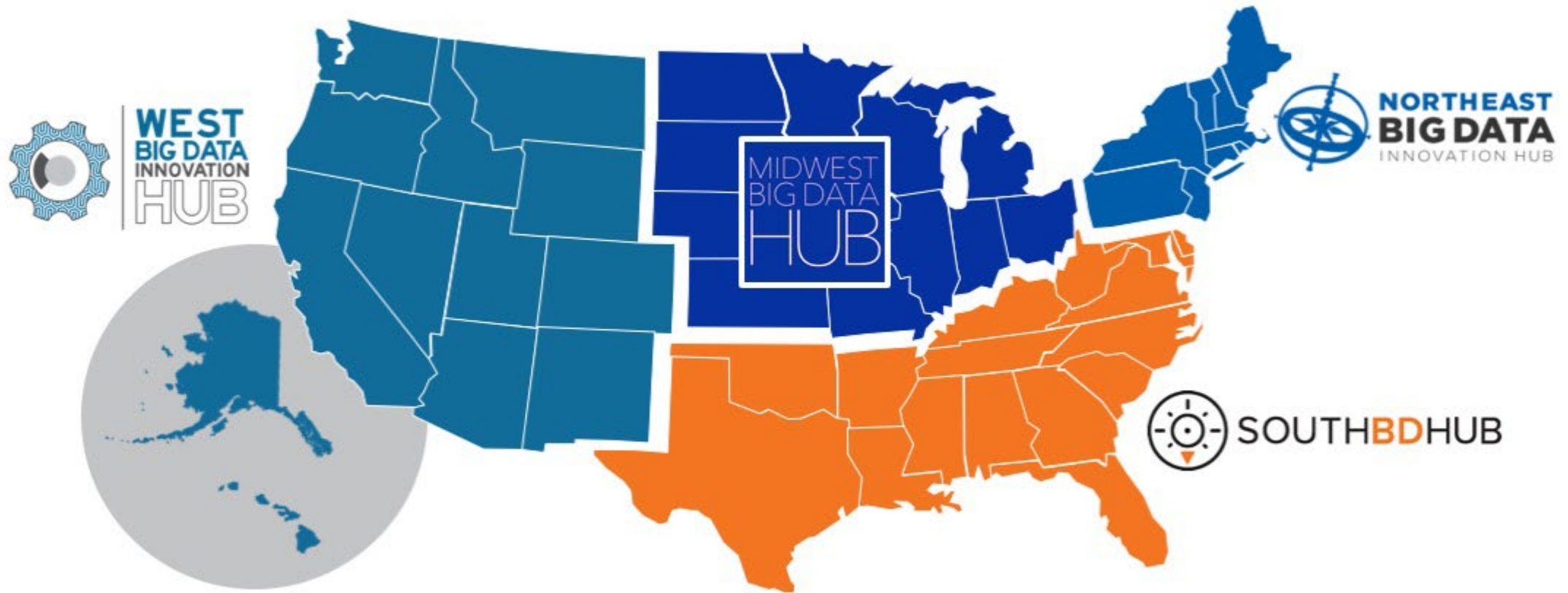**April 2023**

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.

BigDataHubs.org

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
- <mark>Cyberinfrastructure and Data Sharing</mark>

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

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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:

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

- <u>Collaborative partner</u>: 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

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April Solicitation: NSF CCRI program
CISE Community Research Infrastructure

NSF 22-509	Proposals due: July 21, 2023	[Program overview]
Program goals	• Drive discovery and learning in the core CISE disciplines covered by the three participating CISE divisions (CCF, CNS, and IIS) by enabling the creation and enhancement of world-class research infrastructure with integrated suites of tools, resources, user services, and community outreach.	
Size and duration (max)	• Planning 　• CCRI (C): $50k - $100k / 1-1.5 years 　• Mid-Scale Research (M): $100k - $250k / 2 years • Medium (two types: New and Enhance/Sustain): $750k - $2m / 3 years • Grand (two types: New and Enhance/Sustain): $2m - $5m / 5 years	
Number of awards (est)	• Up to approx. 10 Planning, 12 Medium, and 3 Grand awards per annual cycle	
LOI/preproposal?	• No; but since this solicitation is a multi-division program, consulting with a cognizant program officer in the CISE Division proposers are targeting would make sense	
Eligibility limits & other guidance	• An individual may participate in at most one proposal, across all classes (except the Planning-M category) per annual cycle, regardless of role, and only one Planning-M • Any PI, co-PI, or other senior project personnel must hold a primary, full-time appointment in a research position at a US-based campus of an eligible organization • Collaborative proposals from multiple eligible organizations are allowed	

NSF CCRI proposal guidance (from the solicitation)

Multi-division program within CISE (Directorate for Computer and Information Science and Engineering)

- Computing and Communication Foundations (CCF)

- Computer and Network Systems (CNS)

- Information and Intelligent Systems (IIS)

Program focus

- "This research infrastructure will specifically support diverse communities of CISE researchers pursuing **focused research agendas in computer and information science and engineering**."

- "Each CCRI project must provide compelling new research opportunities **for a broad-based community of CISE researchers that extends well beyond the awardee organization(s) and that are not limited to a small, closed group of universities**."

- "CCRI awards are not meant to support resources used by only a single investigator, a single organization, or a closed group of organizations pursuing a common research agenda."

- "While educational benefits are also desirable elements of successful projects, projects that do not focus on and primarily enable CISE disciplinary research are not responsive to the CCRI solicitation."

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NSF CCRI proposal guidance (from the solicitation)

Project Description elements

- See the detailed guidance in the solicitation

- 10 pages max for Planning proposals

- 15 pages max for New, Grand, and ENS proposals

Supplementary Docs

- Project roles and responsibilities

- List of individuals providing letters of collaboration

- Community outreach documentation

- Data Management Plan

- Letters of Collaboration (*different from the standard minimal template;* **must** *contain details of the collaboration*)

NSF CCRI proposal guidance (from the solicitation)

- "Each CCRI project must provide compelling new research opportunities *for a broad-based community of CISE researchers that extends well beyond the awardee organization(s) and that are not limited to a small, closed group of universities.*"

- "Each CCRI project should include a vision for future **long-term community sustainability** and operation of the infrastructure."

- "Each CCRI project should have a **project management plan**, including timeline, costs, and personnel."

- "Proposals must define **metrics** relevant to the proposal goals and address measurement and evaluation of the infrastructure."

- "The team managing the infrastructure is expected to:
  - enable unique and compelling **research opportunities** otherwise inaccessible to the CISE research community,
  - provide robust **user services and support** to the community that the infrastructure seeks to serve, and
  - implement a robust **engagement plan** that incorporates effective community outreach and periodically evaluates the needs of the community and assesses resources to determine the future needs for enhancements and to plan for sustainability."

- Medium New, Grand, and ENS proposals must describe **community outreach plans** and allocate 20-25% of their budgets to community and user engagement and outreach activities.

- Each ENS and Grand award must designate a **Community Outreach Director** (*not* the PI)

- Each Medium and Grand project must include provisions for a **Community Advisory Board** drawn from the user community

- All CCRI proposals must demonstrate that the requirements of the proposed research agenda cannot be accomplished using other existing community resources (such as cloud resources like Chameleon and CloudLab, or the FABRIC and PAWR testbeds)

- Grand proposals must plan for a **project review** ("site visit") in project year 3, and development of a sustainability plan

- All awardees must participate in the **CCRI Virtual Organization** (CCRI-VO)

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NSF CCRI review guidance (from the solicitation)

- Standard NSF "Merit Review Principles and Criteria"
  - "Intellectual Merit"
  - "Broader Impacts"
  - Project evaluation using appropriate metrics

- Additional Review Criteria for CCRI proposals
  - See extensive lists for each class of proposals in the solicitation
  - ENS and Grand proposals that involve enhancement to an existing CISE community research infrastructure must show clear evidence of:
    - Success of the initial implementation of the infrastructure;
    - Usage by a diverse population of CISE researchers that extends well beyond the organizations that have developed and are managing the infrastructure;
    - Need for and benefits of the proposed enhancements;
    - Evidence of engagement and outreach to a diverse community of CISE researchers;
    - Plans for an integrated set of user services, tools, and other resources to enhance the usability and impact of the infrastructure to the research community;
    - CISE community support for the enhancement; and
    - A realistic plan to achieve sustainability at the end of the CCRI funding.

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NSF CCRI review guidance (from the solicitation)

"Experience has shown that a successful CCRI project will:

- Provide infrastructure that enables research with a **clear intellectual focus** related to the CISE core disciplines supported by the three participating CISE divisions (CCF, CNS, and IIS). A clear research agenda that is enabled by the implementation of the infrastructure is the central element of a successful CCRI project. In particular, each CCRI project should support a research agenda associated with a group of researchers with expertise in the CISE sub-disciplinary focus area.

- Involve participation by a group of CISE-focused researchers and leadership by CISE disciplinary researchers. Projects may enable other faculty and interdisciplinary groups, but clear CISE participation, involvement, and interest in the research is essential.

- Require teams of researchers, often across collaborating organizations, with the synergistic expertise needed to develop all aspects of the project.

- Include a well-designed and integrated suite of ancillary resources and user services that facilitate optimal use of the infrastructure and enhance its value to the community.

- Make use of state-of-the-art project planning tools and resource-sharing modules.

- Catalyze CISE research that would be difficult or impossible without the infrastructure, and that advances CISE research frontiers.

- Give the research community a voice in the future directions and management of the infrastructure, including regular community meetings and Community Advisory Boards for Grand and Medium projects."

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Discussion

- What unaddressed CI needs needs exist in the Midwest (and beyond) that collaborators could partner to address?

- Who are the user communities that would be supported?

- What activities are at the right level of readiness?

Get involved

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

May 17, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Building Regional CI Capacity
- Solicitation: NSF Campus Cyberinfrastructure (CC*) (23-526)

June 21, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Data Innovations in Agriculture
- Solicitation: USDA NIFA AFRI program

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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

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