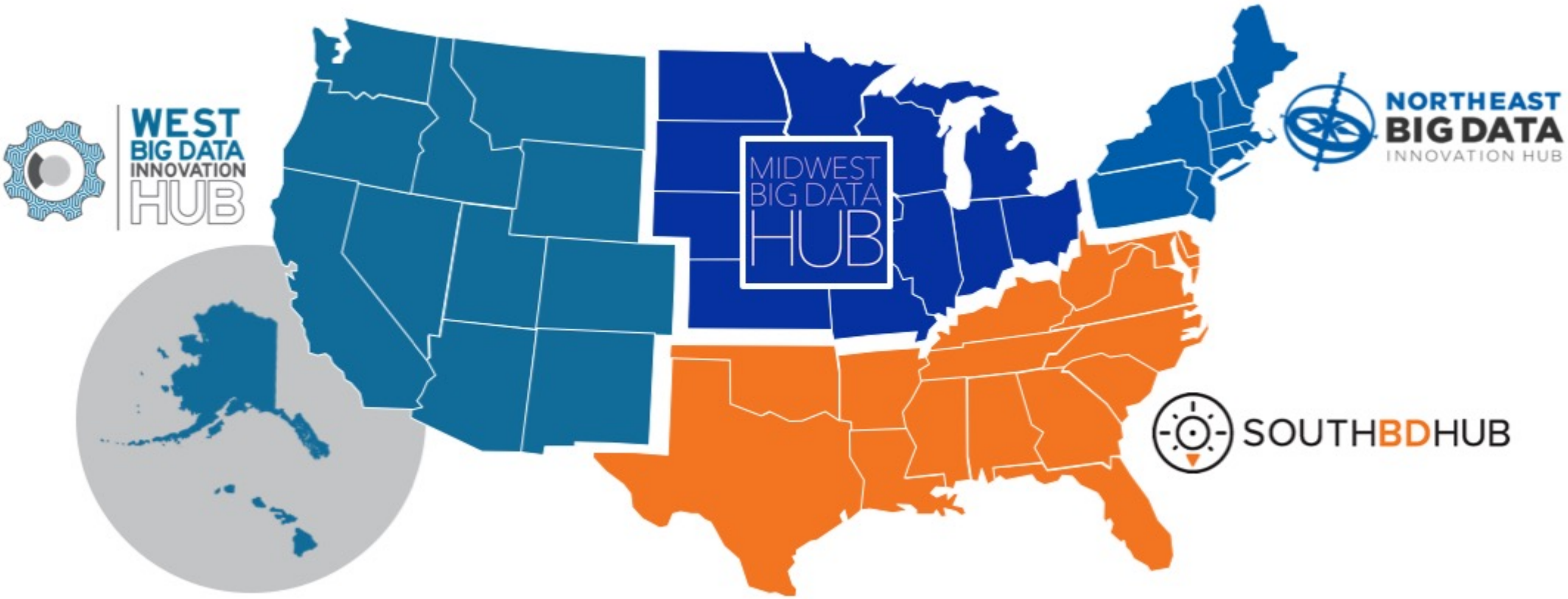
Midwest Big Data Innovation Hub

Collaboration Cafe

September 2021

supported by NSF 1916613

Four Hubs, One 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
- Cyberinfrastructure and Data Sharing

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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

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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

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MBDH engagement on proposals

There are multiple opportunities to have MBDH participate on proposals for CSSI, CCRI, 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

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September Solicitations: Cyberinfrastructure

	CSSI 21-617 due Dec 8	**CCRI** 20-610 due Jan 27
Size and duration (max)	Elements: $600k/3y; Frameworks: $5m/5y; TTS: $1m/2y	Planning: $100k/1.5y; Medium: $2m/3y; Grand: $5m/5y
Estimated # of awards	35 (~20 Elements, ~10 Framework, ~5 TTS)	25 (~10 Planning, ~12 Medium, ~3 Grand
Tracks	Elements, Framework Implementations; Transition to Sustainability (TTS)	Planning, Medium, Grand; New vs Enhance/Sustain supplement
Directorate	Multiple; interdisciplinary proposals encouraged (led by CISE/OAC)	CISE (CCF, CNS, IIS)
LOI	No, but PIs encouraged to contact POs	Due Dec 14
Eligibility	PI/co-PI/Sr Personnel on only 1 proposal across all tracks	PI/co-PI/Sr Personnel on only 1 proposal across all tracks
Additional features	May request HTC resources through PATh and cloud resources through NSF Cloud Access program	Site visit in year 3 + sustainability plan for Grand proposals

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September Solicitations: Cyberinfrastructure

CSSI	CCRI
Elements	**Planning**
Focused on “small groups that will create and deploy robust services for which there is a demonstrated need, and that will advance one or more significant areas of science and engineering”	“planning activities and community outreach to develop a full CCRI Grand or Medium - New proposal. [M]ust have a clear research vision as well as a robust set of planning activities centered on that vision and the research to be enabled by the planned infrastructure. [M]ust include significant community engagement to determine community needs, priorities, and support for the proposed infrastructure and to provide input into the design and development of the project”
Framework Implementations	**Medium**
“larger, interdisciplinary teams organized around the development and application of services aimed at solving common research problems faced by NSF researchers in one or more areas of science and engineering, and resulting in a sustainable community framework providing CI services to a diverse community or communities”	“creation of new CISE community research infrastructure or the enhancement of existing CISE community research infrastructures with integrated tools, resources, user services, and research community outreach to enable innovative CISE research opportunities to advance the frontiers of the CISE core research areas”
Transition to Sustainability (TTS)	**Grand**
Develop a “well-defined sustainability plan for existing CI with demonstrated impact in one or more areas of science and engineering”	“projects involving significant efforts to develop new CISE community research infrastructures or to enhance and sustain an existing CISE community research infrastructure to enable world-class CISE research opportunities for broad-based communities of CISE researchers that extend well beyond the awardee organization(s)”

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NSF Cyberinfrastructure for Sustained Scientific Innovation (CSSI)

- NSF official CSSI webinar: October 15, 12:00-1:30pm CT, 1:00 – 2:30pm ET
- New in this round:
  - New track: "Transition to Sustainability" for existing awards
  - Frameworks track now encourages proposals for sharable and reusable multi-disciplinary cyberinfrastructure
  - New "CI Professional Mentoring and/or Professional Development Plan" requirement for all proposals that include a variety of staff (similar to a post-doc plan)
- Success criteria (see also "Additional Solicitation Specific Review Criteria"):

- Identify science and engineering challenges where the proposed CI services enable fundamental new science and engineering advances, and describe how the proposed project fosters partnerships and community development that will have a significant impact on science and engineering research;
- Indicate how the proposed CI services build capability, capacity and cohesiveness of a national CI ecosystem;
- Clearly articulate the delivery and outreach mechanism with quantifiable targets for metrics to measure impact;
- Provide a compelling discussion of the CI's potential use by a wider audience and its contribution to a national CI; and
- Address how the benefits of the proposed CI services will be sustained beyond the funding period.

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NSF CISE Community Research Infrastructure (CCRI)

- Each ENS and Grand award must designate an individual well-connected to the related research community as the **Community Outreach Director** (cannot be a PI)
- All projects supported by the CCRI program must participate in the anticipated **CCRI Virtual Organization** (CCRI-VO), which will provide leadership and resources to the CCRI award community
- Success criteria (see also "Additional Solicitation Specific Review Criteria"):

- 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, 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

- Existing awards in the region (see the Cafe notes doc)
- Prior experiences with CSSI or CCRI?
  - What would you do differently (or the same)?
- Regional cyberinfrastructure needs and opportunities
  - Where are the gaps?
  - Are there specific disciplinary drivers?
  - What are some of the trends that are driving the needs for the next generation of cyberinfrastructure?
    - AI
    - Quantum computing
    - Data visualization

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Get involved

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

October Collaboration Cafe topic:

- NSF CyberTraining program

October 21, 2021

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

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