

Midwest Big Data Innovation Hub

Collaboration Cafe

October 2023

NSF SCIPe

”Strengthening the Cyberinfrastructure Professionals Ecosystem”



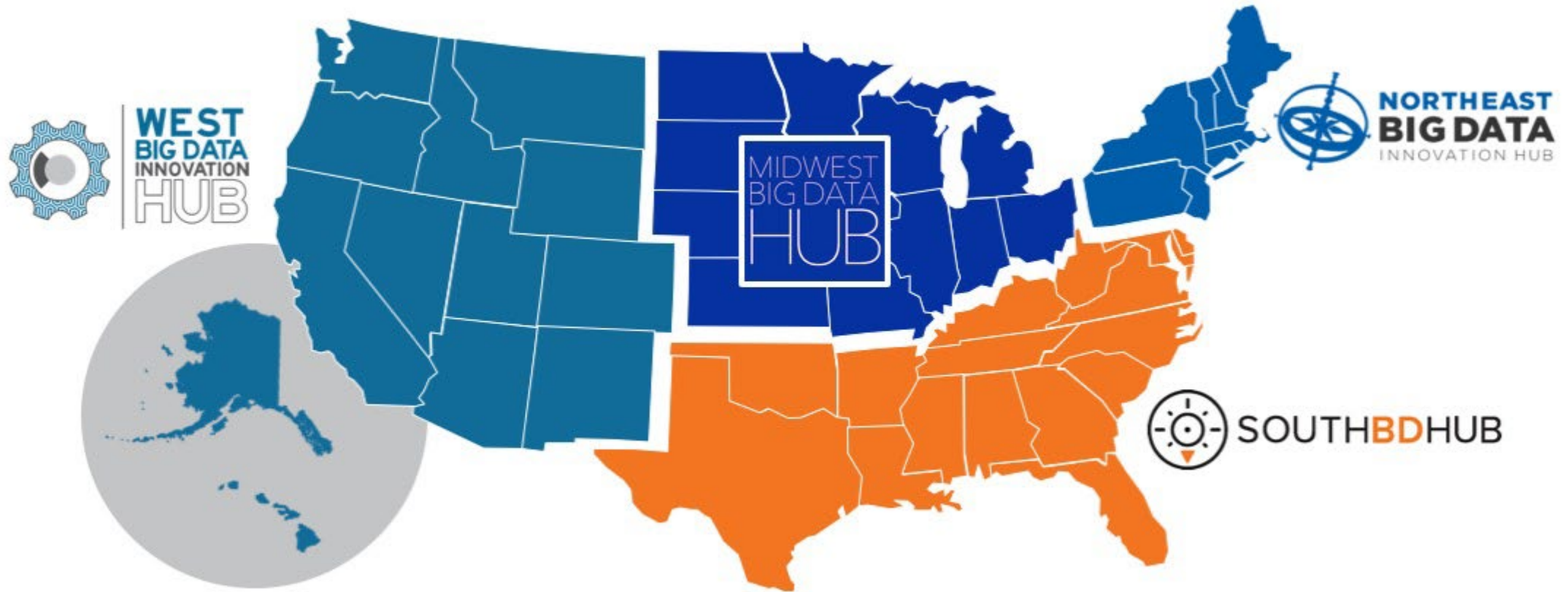
IOWA STATE
UNIVERSITY



supported by NSF [1916613](#)



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 Crosscutting 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

CI Workforce Development series

- **September 20:** NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining) ([23-520](#))
 - NSF guest: Ashok Srinivasan, CISE/OAC
 - Focused on developing training for the “scientific research workforce” around specific uses and broad adoption of CI
 - Includes undergrad and graduate level curricula
- **October 18:** NSF Strengthening the Cyberinfrastructure Professionals Ecosystem (SCIPE) ([23-521](#))
 - NSF guest: Thomas Gulbransen, CISE/OAC
 - Focused on supporting and developing sustainable career pathways for research CI professionals

Prior webinars on CI training & workforce development

- September 2021: NSF CSSI and CCRI
- October 2021: NSF CyberTraining
- June 2022: NSF CRII
 - Jenny Li, NSF
- July 2022: NSF SaTC
- August 2022: NSF POSE
 - Peter Atherton and Deep Medhi, NSF
- October 2022: NSF CyberTraining / Regional showcase of new NSF CI awards
- April 2023: NSF CISE Community Research Infrastructure (CCRI)
- May 2023: NSF Campus Cyberinfrastructure (CC*)
 - Kevin Thompson, NSF
- September 2023: NSF CyberTraining
 - Ashok Srinivasan, NSF

- Prior Midwest awards lists ([available via MBDH](#))

Collaboration Café
[YouTube playlist](#)

October Solicitation: NSF SCIFE

“Strengthening the Cyberinfrastructure Professionals Ecosystem”

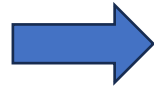


	NSF 23-521	Due January 18, 2024
Program goal	“The overarching goal of this solicitation is to democratize access to NSF’s advanced cyberinfrastructure (CI) ecosystem and ensure fair and equitable access to resources, services, and expertise by strengthening how Cyberinfrastructure Professionals (CIP) function in this ecosystem.”	
Size and duration (max)	5 year max duration; no budget limit provided May support up to 4 full-time equivalent CI professionals + other expenses	
Estimated # of awards	4	
Directorate	Multiple; interdisciplinary proposals encouraged (led by CISE/OAC)	
LOI	No, but proposers are “strongly encouraged” to contact PDs at least 1 month before due date to assess focus and budget suitability	
Eligibility limits & guidance	PI/co-PI on only 1 proposal per cycle Institutions are limited to one SCIFE proposal per cycle “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.”	



SCIPE Communities of Interest

“SCIPE projects should target CI Professionals and empower them to support the other two communities”



Community	NSF Definition
CI Professionals	This is the community of research CI and professional staff who deploy, manage, and collaboratively support effective use of research CI at colleges and universities, supercomputing and other centers, and other research institutions. The project can address technical and research CI professional skills and, more generally career development of current and future <i>CI Professionals</i> , including undergraduate and graduate students, postdoctoral fellows, non-tenure-track faculty, and research scientists. The project would target integration of current <i>CI Professionals</i> into research projects and the institutional support of long-term career paths for <i>CI Professionals</i> .
CI Contributors	This is the community of computational, data, and domain scientists and engineers who research and develop new CI capabilities, approaches, and methods, as well as architecture and middleware for extreme-scale systems, scalable algorithms and applications, software at various levels of the scientific software stack.
CI Users	This is the community of domain scientists and engineers who effectively exploit advanced CI capabilities and methods for research.



NSF SC�PE strategic and specific goals

- “The overarching goal of this solicitation is to democratize access to NSF’s advanced cyberinfrastructure (CI) ecosystem and ensure fair and equitable access to resources, services, and expertise by strengthening how Cyberinfrastructure Professionals (CIP) function in this ecosystem. It aims to achieve this by:
 - (1) deepening the integration of CIPs into the research enterprise, and
 - (2) fostering innovative and scalable education, training, and development of instructional materials, to address emerging needs and unresolved bottlenecks in CIP workforce development.
- “[T]he goals of this solicitation are to; (i) motivate the creation of researcher-facing CIP communities or affinity groups centered on S&E domains and or geographic regions with shared needs for CIPs; (ii) improve CIP workforce diversity, productivity, scalability, sustainability, and institutional career paths; (iii) promote recognition of the value of the CIP workforce to all stakeholders of S&E research; (iv) support the advancement and exchange of CIP best practices, mentoring and/or professional development and training resources across institutions; and (v) promote understanding of computation as the third pillar and data-driven science as the fourth pillar of scientific discovery.”

NSF SC�PE solicitation guidance

- Multi-directorate program – guidance in the solicitation for the interests of each directorate
- See also short-term and long-term impacts in the Program Description (section II)
- “CIPs supported by this program are expected to spend the majority of their time supporting researchers’ local or regional needs, while also being part of NSF’s advanced cyberinfrastructure ecosystem to support broader needs nationally.”
- “Proposed activities may include retraining and cross-training of CIP mentors to keep up with the dynamic knowledge landscape, as one of the ways for obtaining a multiplier effect. A key goal is to build long-term sustainable career paths for CIP within and or across institutions.”
- SC�PE proposals should emphasize researcher-facing plans to interface with the NSF-funded [ACCESS](#) program and support the ACCESS program end user support services track goal of developing and fostering the Computational Science Support Network (CSSN)
- Proposals “are encouraged to consider how the CI Professionals will interact with national CI entities (such as, but not limited to the US Research Software Engineer Association (US-RSE), the Campus Research Computing Consortium (CaRCC), and CaRCC’s implementation of the RCD-Nexus CI Center of Excellence Pilot), collaborators, participating institutions, and scientific virtual organizations where relevant.”

NSF SC�PE proposal elements

- Project Summary (1-page limit)
- Project Description (15-page limit) – must address specific elements
- Budget – include costs for participating in annual SC�PE PI meeting

Supplementary Documents

- Management and Coordination Plan (2 pages)
- CI Professional Mentoring and/or Professional Development Plan (1 page, if applicable)
- Long Term Sustainability Plan (1 page)
- Letters of Collaboration (if applicable) (standard template; no letters of support)

NSF SCIFE additional notes

“The **project description** should explicitly address the following additional items:”

1. Broadening Adoption of Advanced CI infrastructure and methods;
 2. Integration with the Computational Science Support Network (CSSN);
 3. Challenges recognizing and democratizing research CIP workforce development;
 4. Building scalable and sustainable communities of CIP;
 5. Recruitment and evaluation; and
 6. "Collective Impact" Strategy: Coordination network and Backbone organization (or an alternative strategy).
- “must contain a separate section labeled ‘Broader Impacts’”
 - “A board of expert advisors, or a network of funded/unfunded collaborators that is representative of the stakeholder communities, should provide periodic guidance and help evaluate the project methods.”

NSF SCIPe review criteria

Standard Merit Review Criteria

- Intellectual Merit: The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- Broader Impacts: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

“Additional Solicitation Specific Review Criteria”

1. Broadening Adoption of Advanced CI infrastructure and methods;
2. Integration with the Computational Science Support Network (CSSN);
3. Challenges recognizing and democratizing research CIP workforce development;
4. Building scalable and sustainable communities of CIP;
5. Recruitment and evaluation; and
6. "Collective Impact" Strategy: Coordination network and Backbone organization (or an alternative strategy).

Same topics as the Project Description sections

Discussion

- What's happening at your institution around CIP training and community building?
- What gaps and opportunities for CI training exist in the Midwest that collaborators could partner to address?
- What does collaboration look like to you?
- What projects are at the right level of readiness?



Get involved

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

October 19, 2023

12:00–1:30 p.m. CT / 1:00–2:30 p.m. ET

- [NSF CSSI \(NSF 22-632\) Program Webinar](#)



November 7, 2023

12:30–2:00 p.m. CT / 1:30–3:00 p.m. ET

- [NSF CyberTraining and SCIPe Program Webinar](#)

November 9, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Workforce Development for Biomedical Big Data
- Solicitation: NIH Education Activities for Responsible Analyses of Complex, Large-Scale Data (R25) ([RFA-DA-24-027](#))



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