

Midwest Big Data Innovation Hub

Collaboration Cafe

February 2024

Research Infrastructure for Human Networks and Data Science
via the NSF Human Networks and Data Science (HNDS) program



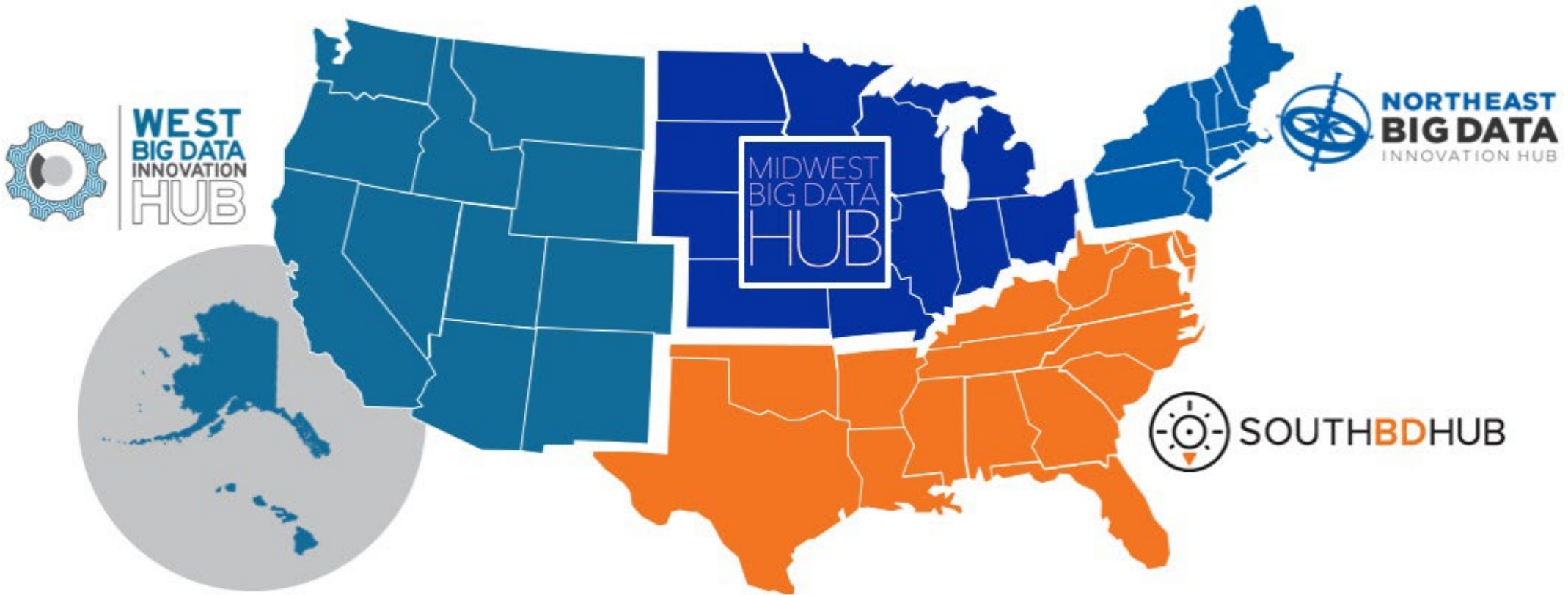
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Four Regional Hubs, One National Mission



What We Do

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



February solicitation: NSF Human Networks and Data Science (HNDS)

NSF 23-568	Due: July 11 (HNDS-R) / August 1, 2024 (HNDS-I)
Program goal	“Supports research that studies the behavior of individuals and groups by leveraging data and network science and the development of data infrastructure that makes such work possible.”
Tracks	<ul style="list-style-type: none"> • Infrastructure (HNDS-I) – “development of data resources and relevant analytic techniques” • Core Research (HNDS-R) – “advance theory in a core SBE discipline by the application of data and network science methods”
Size and duration (max)	1 – 5 years duration; “A typical HNDS-I award is expected to be in the range of \$750,000 to \$800,000. A typical HNDS-R award is expected to be in the range of \$350,000 to \$400,000.” [including indirect costs]
Estimated # of awards	5 - 25; 4 large HNDS-I and 5 - 20 HNDS-R
Directorate	SBE
LOI/pre-proposal required?	No. Proposers are encouraged to discuss concepts with HNDS program directors before submission. HNDS-R direct submission is by permission only.
Eligibility limits & guidance	A PI may serve as PI or co-PI on only one HNDS-I proposal per year

NSF HNDS program resources



- [HNDS program page](#) [NSF]
- SBE-funded [infrastructure resources](#) [NSF]
- [Program webinar](#), November 30, 2021 [NSF]
- [Prior HNDS awards](#) to Midwest institutions [MBDH]



NSF HNDS program tracks



Human Networks and Data Science – Infrastructure (HNDS-I)

- Infrastructure proposals will address the development of **data resources and relevant analytic techniques** that support fundamental Social, Behavioral and Economic (SBE) research.
- **Successful infrastructure proposals** will construct, within the financial resources provided by the award, databases or relevant analytic techniques and produce a finished product that will enable previously impossible data-intensive research in the social sciences.
- The databases or techniques should have significant impacts, either across multiple fields or within broad disciplinary areas, by making possible new types of data-intensive research in the SBE sciences.

Human Networks and Data Science – Core Research (HNDS-R)

- Core research proposals will **advance theory in a core SBE discipline** by the application of data and network science methods. This includes the **leveraging of large data sets** with diverse spatio-temporal scales of measurement and linked qualitative and quantitative approaches, as well as multi-scale, multi-level network data and techniques of network analysis.
- Supported projects are expected to yield results that will enhance, expand, and transform theory and methods, and that generate novel understandings of human behavior – particularly understandings that can lead to significant societal benefits or opportunities.
- HNDS-R encourages core research proposals that **make innovative use of NSF-supported data networks, databases, centers and other forms of scientific infrastructure** including those developed by HNDS-I (formerly RIDIR) projects.



NSF HNDS-I solicitation guidance

- The goal of the HNDS-I competition is to produce one or both of two types of finished products:
 - Databases
 - Analytic or technological tools
- Successful HNDS-I proposals will describe products that will have significant impacts by enabling new types of data-intensive research.
- These products should be fundamental and generalizable rather than narrow and specific.
- Database proposals should define or identify a resource that can be used to answer scientific questions that could not otherwise be addressed.
- Analytic tool development proposals should be directed towards the same goal of enabling researchers to address new and significant SBE science questions.
- Proposers “are strongly encouraged to include, as part of the project description, a discussion of any social and public policy issues that relate to the type, use and acquisition of data associated with their project.” [e.g., data ethics, privacy, confidentiality; and similarities to existing databases]
- “HNDS is especially interested in proposals that provide data-rich insights about human networks to support improved health, prosperity, and security.”

NSF HNDS-I solicitation guidance

HNDS-I proposers should examine the following questions in an integrated manner in their proposals, to the extent that they are relevant to their own projects:

- Science:
 - What broad, important, fundamental research questions will be addressed?
 - What research communities would be interested in exploring these questions?
- Information technology:
 - What kinds of data are to be involved, including the metadata and the broader infrastructure in which data are embedded? How will the data be collected? If the database structures are novel (e.g., not a relational database), what would be their design? What analytic or statistical approaches will be provided to analyze the data?
 - What infrastructure and financial support is required to ensure access to and long-term maintenance of these large-scale data?
- Governance:
 - How will the research communities involved in the project address governance as they relate to issues such as sustainability, access, and ethical use of data relating to privacy and data confidentiality?
 - How will issues such as interoperability and potential integration with existing resources be addressed?

NSF HNDS supplementary docs and review criteria

Supplementary documents

- Technical Plan: A specific and detailed plan and technical details must be presented for how the project goals will be achieved (2 pages max; examples in solicitation)
- Sustainability Plan: How will the product be sustained after the expiry of the award? How will it be maintained and made accessible to the research community? (1 page max)
- Data Management Plan
- Postdoc Mentoring Plan (if appropriate)

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.

No additional solicitation specific review criteria

HNDS-I prior awards (Midwest examples)

- The Digital Society Project: Infrastructure for Measuring Internet Politics
 - Daniel Pemstein, *North Dakota State University* ([2121851](#))
- Cyberinfrastructure for Human Dynamics and Resilience Research
 - Kenan Li, *Saint Louis University* ([2318205](#))
- Repository and Benchmarking Dashboard for Campus Climate Data on Sexual Misconduct
 - Rhiana Wegner, *National Opinion Research Center* ([2219283](#))
- From Stacks to Stats: Unlocking International Census Data from Print Volumes
 - Steven Manson, *University of Minnesota* ([2121891](#))
- Decennial Census Linkage Project
 - J. Trent Alexander, *University of Michigan–Ann Arbor* ([2023639](#))

Get involved

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

March 27, 2024 [tentative]

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Building Data-Enabled Climate-Resilient Communities
- Solicitation: NSF Civic Innovation Challenge (NSF-CIVIC), Track A ([24-534](#))

April 24, 2024 [tentative]

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Support for Early-Career Researchers
- Solicitation: NSF Faculty Early Career Development (CAREER) program ([22-586](#))

MidwestBigDataHub.org | [@MWBigDataHub](https://twitter.com/MWBigDataHub)



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Upcoming NSF HNDS office hours

March 7, 2024 | 9:30—11:00am

March 21, 2024 | 9:30—11:00am

April 4, 2024 | 9:30—11:00am



Discussion

- Prior awardees: What advice would you give to a colleague who is interested in developing a proposal for HNDS?
- What gaps and opportunities exist in the Midwest that collaborators could partner to address?
- What projects are at the right level of readiness?



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](#)