

Midwest Big Data Innovation Hub

Collaboration Cafe

August 2023



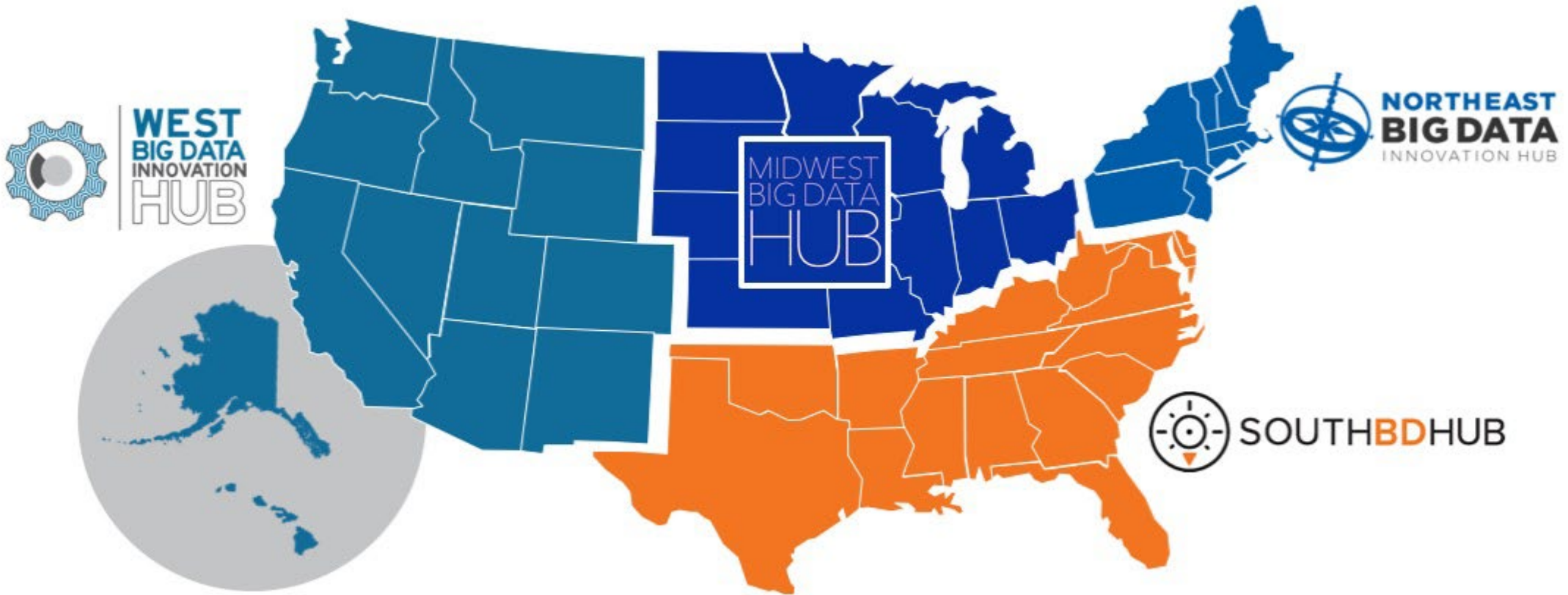
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supported by NSF [1916613](#)



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 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
- Lessons learned from prior awardees
- Researcher lightning talks
- 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 this program, or other projects:

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

August Solicitation: NIH NLM Research Grants in Biomedical Informatics and Data Science



R01 PAR-23-034	Due by: October 5, 2023* [FOA]
Program goals	<ol style="list-style-type: none"> “focuses on biomedical discovery and data-powered health, integrating streams of complex and interconnected research outputs that can be translated into scientific insights, clinical care, public health practices, and personal wellness” “with emphasis on new and innovative methods and approaches to foster data driven discovery in the biomedical and clinical health sciences” “domain-independent, scalable, and reusable/reproducible approaches to discovery, curation, analysis, organization, and management of health-related digital objects”
Size and duration (max)	\$250k/yr in direct costs, up to 4 years
LOI/preproposal	LOIs generally not required, but proposers are strongly encouraged to contact a program officer for guidance, especially those wishing to conduct a clinical trial as part of the project
Eligibility limits & guidance	<p>“Any individual(s) with the skills, knowledge, and resources necessary to carry out the proposed research”</p> <p>IHEs as well as other organizations (nonprofits, for-profits, government agencies, others; non-U.S. entities are eligible)</p> <p>All PIs must have an NIH eRA Commons account (set up via your institution’s sponsored research office; can take 2 weeks)</p>



NIH Submission Timeline



Application Due Dates			Review and Award Cycles		
New	Renewal / Resubmission / Revision (as allowed)	AIDS	Scientific Merit Review	Advisory Council Review	Earliest Start Date
February 05, 2023 *	March 05, 2023 *	May 07, 2023 *	July 2023	October 2023	December 2023
June 05, 2023 *	July 05, 2023 *	September 07, 2023 *	November 2023	January 2024	April 2024
October 05, 2023 *	November 05, 2023 *	January 07, 2024 *	March 2024	May 2024	July 2024
February 05, 2024 *	March 05, 2024 *	May 07, 2024 *	July 2024	October 2024	December 2024
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Solicitation guidance on scope

- Projects “should align with NLM’s focus for the acceleration of data-driven discovery by the advancement of human health
 - using the exposome (from the intracellular environment to the built environment),
 - broadening analytics across heterogeneous data sources including natural language processing and deep learning, and
 - increasing computable biomedical knowledge, (e.g., diagnostics), and decision-analytic models.”
- Proposal “should focus on a well-defined research problem, a rigorous research design, based on preliminary studies, and advance the field of informatics or data science to improve human health.”
- “NLM will consider supporting projects where the primary focus of informatics or data science is applied to a clinical or disease domain when the approach is novel and will benefit findings in the domain, although priority will be placed on funding applications that propose to develop tools and approaches that can be reproduced, generalized, and scaled to ensure maximum benefit is achieved.”
- “NLM will not support infrastructure or product development or continued development of existing software tools or knowledge resources as an endpoint of research”

Solicitation guidance on scope

- “Research areas of interest to NLM include, but are not limited to:
 - Development of novel approaches enabling analysis and discovery at scale across biomedical domains and health care sectors, including those leveraging high-performance cloud computing and federated learning
 - Development and demonstration of innovative informatics methods and data science techniques for informing biological, clinical, public health, and social science research.
 - Computational approaches integrating structured and unstructured data, natural language processing, automated metadata assignment.
 - Advanced information retrieval and knowledge discovery from very large and/or heterogeneous data sets
 - Multi-level, reusable, data analytic models, simulations, information visualization, and presentation approaches to enhance decisions, learning or understanding of biological and clinical processes
 - Approaches to assess and address algorithmic bias and/or fairness and health equity
 - Innovative analytic methods to advance decision support that are generalizable within and across underserved populations
 - Applying natural language processing to unstructured health-related data, including Electronic Health Record (EHR) data, to increase provider-patient health care understanding
 - Informatics approaches that translate basic biomedical research to clinical methods to support patient and provider decision making
 - Data science methods and approaches that enhance the quality, security, understandability and utility of data, information, or knowledge related to health and biomedicine
 - Informatics methods and approaches to improve public health and population-level health outcomes
 - Using biomedical informatics and data science to address health disparities and health equity”

Proposal Elements

The Research Plan must include these elements:

- Data Management and Sharing Plan
- Research Strategy
 - Significance
 - “Identify how the proposed research will fill key gaps in understanding the area of interest”
 - Approach
 - “should be innovative, scalable, generalizable, and provide a well-defined rationale for its use”
- Resource Sharing Plan
 - “a general plan for timely dissemination and sharing of data and resources, e.g., code, widely, as appropriate”
 - “any software license selected by applicants should allow for unrestricted redistribution and modification of software”

Review Criteria

Scored Review Criteria

1. Significance
2. Investigator(s)
3. Innovation
4. Approach
5. Environment

“The focus of this funding opportunity is the use and application of biomedical informatics for data-driven discovery.

Emphasis is on innovation and novel methods in biomedical and clinical health sciences that are reusable/reproducible, and use FAIR principles.

Multidisciplinary teams are expected.”

“Infrastructure development or continued development of existing software or knowledge resources as an endpoint, would be considered non-responsive.”

Additional Criteria

1. Study Timeline (for clinical trial, if applicable)
2. Protections for Human Subjects (if applicable)
3. Inclusion of Women, Minorities, and Individuals Across the Lifespan
4. Vertebrate Animals protections (if applicable)
5. Biohazards protections (if applicable)

Relevant awards in the region

- Corey A. Lester, University of Michigan–Ann Arbor
 - “Preventing medication dispensing errors in pharmacy practice with interpretable machine intelligence”
- Kellie J. Archer, The Ohio State University
 - “Penalized mixture cure models for identifying genomic features associated with outcome in acute myeloid leukemia”
- Erman Ayday, Case Western Reserve University
 - “Privacy Challenges of Genomic Data-Sharing Beacons and Solutions”
- Zachary Landis-Lewis, University of Michigan–Ann Arbor
 - “A scalable service to improve health care quality through precision audit and feedback”

See more in our shared [Relevant Awards doc](#)



Q&A and Discussion

- Please note that Dr. Dennis cannot provide feedback today on any specific proposal concepts that you have
- First-time NIH proposers: what questions do you have?
- Those with prior experiences with NIH proposals:
 - What would you recommend to first-time proposers?
- Regional needs and opportunities
 - Where are the gaps?
 - Are there specific disciplinary drivers?
 - Genomics + informatics (bioinformatics, AI, data science, etc)
 - Data science + discipline X
- Other topics

Get involved

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

September 20, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Cyberinfrastructure Workforce Development
- Solicitation: NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining) (23-520)

October 18, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Cyberinfrastructure Workforce Development
- Solicitation: NSF Strengthening the Cyberinfrastructure Professionals Ecosystem (SCIPE) (23-521)



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

