Midwest Big Data Innovation Hub

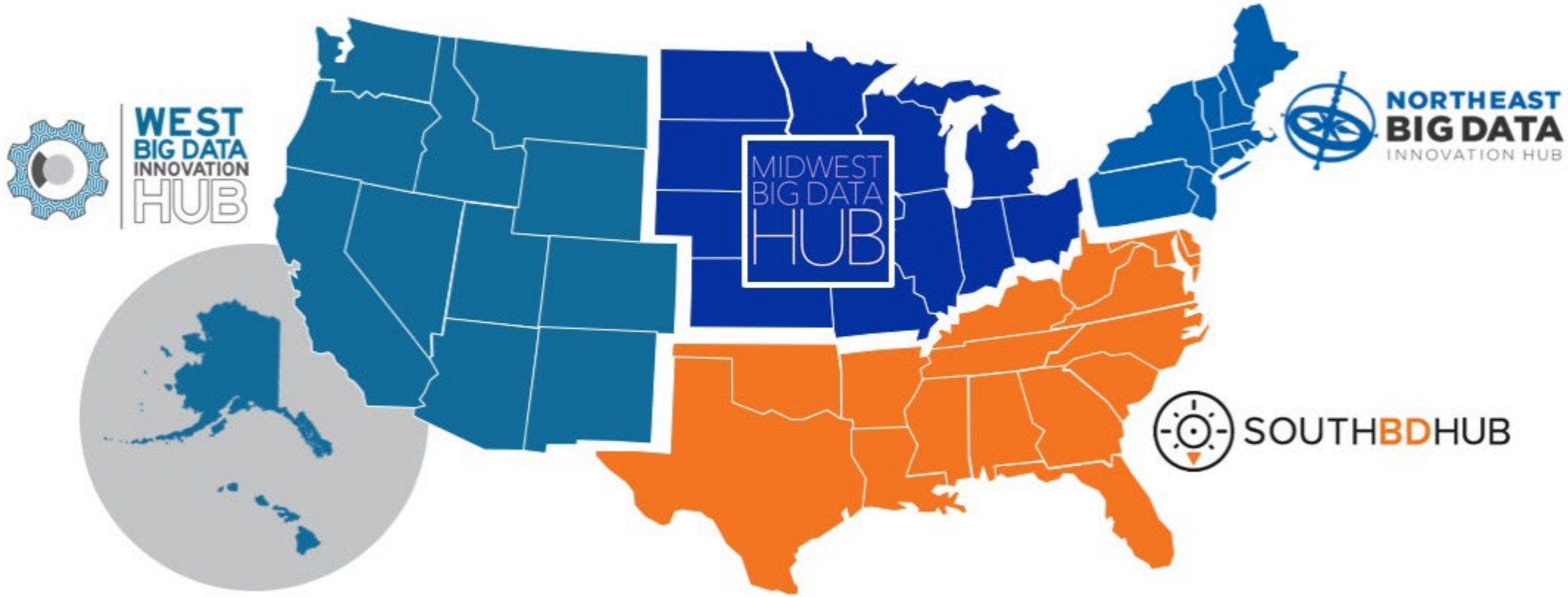
Collaboration Cafe

March 2024

Building Data-Enabled Climate-Resilient Communities
via the NSF Civic Innovation Challenge (CIVIC) program

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.

BigDataHubs.org

March solicitation: NSF Civic Innovation Challenge (CIVIC)

NSF 24-534	Due: Stage 1: May 1, 2024; Stage 2: Feb 10, 2025
Program goal	"A research and action competition that accelerates the transition to practice of foundational research and emerging technologies into communities through civic-engaged research"
Tracks	• **Track A** – "Climate and Environmental Instability - Building Resilient Communities through Co-Design, Adaption, and Mitigation" • **Track B** – "Bridging the gap between essential resources and services & community needs"
Budget size and duration	Stage 1: up to $75,000 for up to 6 months Stage 2: up to $1,000,000 for up to 12 months
Estimated # of awards	Stage 1: approx. 35-40; Stage 2: approx. 15-20
Directorate(s)	NSF CISE, ENG, GEO, SBE, BIO U.S. DOE, Vehicle Technologies Program; and DHS, Science & Technology Directorate
LOI/pre-proposal required?	No
Eligibility limits & guidance	Only Stage 1 awardees may submit to the Stage 2 phase For Stage 1: an individual may participate as PI or co-PI in at most two proposals. For Stage 2: an individual may participate as PI or co-PI in only one proposal.

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NSF CIVIC program concept

"CIVIC is uniquely designed to enable transition to practice of innovations into communities, as follows:

1. CIVIC flips the community-university dynamic, by empowering communities and researchers to jointly identify civic priorities ripe for innovation and to address these priorities as equal partners;
2. CIVIC focuses on research-centered solutions that are ready for piloting in and with communities on a short timescale, where real-world outcomes can be evaluated within 12 months;
3. CIVIC requires a coalition of communities and civic partners and a multi-disciplinary set of researchers to co-create and execute pilot projects; and
4. CIVIC organizes and fosters nationwide "communities of practice" around high-need problem areas that allow for meaningful knowledge sharing and cross-site collaboration during both the pre-development and piloting stages."

- "Civic partners" may include "local, state, or tribal government officials; non-profit representatives; community organizers or advocates; community service providers; and/or others working to improve their communities."
- "To be true partners in these activities, it is encouraged in the Stage 1 Planning Grants and Stage 2 Full Awards for civic partner(s) to receive an appropriate distribution of funds in the project budget"

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NSF CIVIC program stages

Stage 1

- Planning grants, 6 months duration
- “Each of these projects will undertake a range of planning activities in anticipation of submitting a Stage 2 proposal, such as strengthening collaborations with relevant partners and communities, solidifying the deliverables and the academic and civic partner team members' roles, and refining the vision and plan for executing the research-centered pilot project.”

Stage 2

- Full projects, 12 months duration
- “Each Stage 2 project will pursue a research-centered pilot project in either one of the two tracks specified in this solicitation. Teams will define clear roles for the civic and research organizations, describe expected research and community impacts, identify risks in execution and their possible mitigation, and provide plans for scaling the project as well as project sustainability beyond the period of the award.”

Post-award Communities of Practice

- Throughout both stages, NSF award recipient (2223449) MetroLab Network (metrolabnetwork.org, nsfcivicinnovation.org) will foster “communities of practice” through in-person and virtual activities, aimed at enhancing the teams’ capacity-building, networking, impact, and ability to create methods and solutions transferable to other communities.

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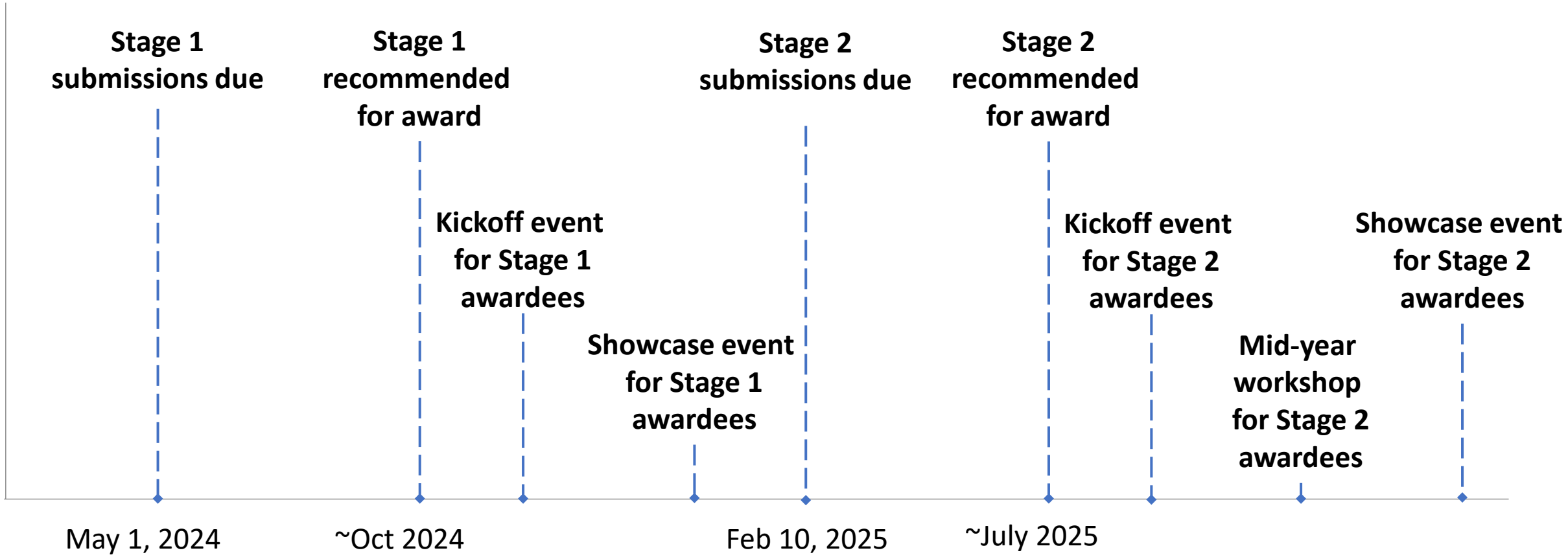
NSF CIVIC program timeline & milestones



See PAPPG Exhibit III-1 for review process details

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NSF CIVIC program tracks

Track A: Climate and Environmental Instability - Building Resilient Communities through Co-Design, Adaption, and Mitigation

- “This track supports projects that pilot community-driven, innovative, and actionable research-centered approaches and technologies that focus on strengthening the resilience of a community and its economy to climate- and associated environmentally-related instability and disasters such as extreme heat events, flooding, wildfires, etc.
- Projects may target specific function(s) and aspects of a community such as utilities, communications, and other critical infrastructure; public health; transportation and mobility, food and agriculture; water security; ecosystem services; residential and commercial buildings; financial services; education and workforce development; community planning; and other services at individual, household, neighborhood, city, or regional scales.
- Projects can involve cyber, physical, environmental, biological, and/or social components. Multi-domain teams consisting of research and civic partners should co-create scalable pilot projects that lead to measurable community impact and outcomes.
- Teams may consider and incorporate the needs of economically disadvantaged and marginalized populations that are especially susceptible to increasing climate-and environmental stress and its resulting impacts.
- Teams are encouraged to also consider a system's thinking perspective around environmental sustainability and thresholds, and implications for public safety and wellbeing.”

Track B: Bridging the gap between essential resources and services & community needs

- See solicitation

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NSF CIVIC Track A solicitation guidance

"As civic-academic teams assess impactful, local pilot projects that protect communities against climate risk and disasters, they may consider questions such as but not limited to:

- What is urgently needed for the partnering community to strengthen the resilience of its built or natural environment — or its economy and services within a specific sector, in the face of current and future climate conditions and cascading hazards?
- What novel adaption and mitigation approaches can be implemented to reduce greenhouse gas emissions and promote decarbonization, while mobilizing capital, investment, and public support at scale?
- What are the policy, health, environmental, and economic implications of the proposed pilot project on the community?"

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NSF CIVIC proposal guidance (Stage 1)

Project vision and research

- In what ways does the envisioned Stage 2 pilot project go beyond the state-of-practice and state-of-the-art?
- Is the envisioned Stage 2 pilot project suitable for the fast-paced timeline of CIVIC?
- Who are the members of the team, including academic and civic partners, and why is each relevant for the project? Are there gaps in expertise that will be addressed during the planning period?
- What are the activities to be undertaken during the Stage 1 PG to prepare the team to propose a competitive Stage 2 proposal?

Civic Partnerships and Engagement

- Who from the community should be engaged in the project? This may include city or state departments or agencies, regional councils of government, human and social service providers, city planners or land/resource managers, as well as other potential partners who are interested in addressing the specific topic, enhancing service provision, and/or creating better approaches for residents to inform a region, city, or community.
- How will the collaborative approach break down barriers between academia, civic organizations, and local and state governments to achieve desired impact?
- From the community's perspective, do the proposed activities address a problem of significance? In what ways has the community worked to address this problem previously? Why does the community believe this problem will benefit from inclusion of researchers?
- Is there a need for skill building or workforce development elements in order for the community to be an integral part of the pilot project and adopt the pilot project outcomes long term?
- What combination of civic partner(s), civic engagement activities, and research outputs will enable the project team to "close the loop" and achieve significant impact with their proposed activities?
- Does the team have the capacity to undertake a fast-paced research-centered pilot project in Stage 2, including the ability to meet regularly?

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NSF CIVIC 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

- Is it evident that the envisioned CIVIC project is (a) addressing a community priority with an impactful pilot that has the potential to be scaled and sustained, and (b) driven by strong partnerships between the necessary set of civic institutions and organizations, researchers, and other partners and other community partners?
- Is the proposed pilot project well-suited for execution in the fast-paced 12-month timeframe of the CIVIC program, including a rapid start-up at the onset of Stage 2?
- Does the proposal clearly articulate the desired impact of its planning activities or envisioned pilot, with well-defined metrics and benchmarks for evaluating progress and success?

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CIVIC prior awards (Midwest examples)

- CIVIC-PG Track A: Electric Network Disaster Mitigation for Utilities Serving Rural Communities (ENDURE)
  - Alice Alipour, *Iowa State University* (2228757)
- CIVIC-PG Track A - Developing Community-Informed Strategies for Increased Longevity of Urban Trees to Mitigate Climate Change
  - Heather Navarro, *Washington University, St. Louis* (2228703)
- CIVIC-PG Track A: Smart Watersheds for Conservation and Resilience
  - Branko Kerkez, *University of Michigan–Ann Arbor* (2228343)

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Get involved

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

April 23, 2024

2:00–3:00 p.m. CT / 3:00–4:00 p.m. ET

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

May 29, 2024 [tentative]

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Multidisciplinary Data Science in Health
- Solicitation: NSF/NIH Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH) (NSF 23-614)

Civic Innovation Challenge program webinar recording (February 22, 2024)

CIVIC Program Director Office Hours

CIVIC program FAQ

NSF Smart and Connected Communities (S&CC) program

New NSF Confronting Hazards, Impacts and Risks for a Resilient Planet (CHIRRP) program (PD 24-297Y)

New NSF FORECAST program (24-558)

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Discussion

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

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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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