



NATIONAL SCIENCE FOUNDATION
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NSF 21-037

Dear Colleague Letter: Pilot Projects for Cyberinfrastructure Centers of Excellence

January 8, 2021

Dear Colleagues:

This Dear Colleague Letter (DCL) is an update to [NSF 20-082: DCL: Cyberinfrastructure Centers of Excellence](#).

The [Cyberinfrastructure Centers of Excellence \(CI CoE\) program](#) within the Office of Advanced Cyberinfrastructure (OAC) was established to nurture the development of CoEs across the range of CI areas supported by OAC. These areas comprise computing; data; software; scientific workflows; network infrastructure; resources and services at institutional, regional, national, and international scales; and related training and workforce development for those engaged in developing, maintaining, and utilizing CI including research end-users.

The CI CoE program thus supports **pilot projects** to conceptualize or demonstrate the feasibility of eventual full-scale CoEs that aim to address identified, targeted CI needs of the science, engineering and education communities supported by NSF.

As noted in CI CoE program description, OAC-supported CI CoEs are *service-oriented* hubs of expertise and innovation targeting specific areas, aspects, or stakeholder communities, with the aims of driving advancements, expanding utilization, and improving efficiency of the national research CI ecosystem through structured, strongly community-engaging and community-serving approaches. CI CoEs provide expertise and services related to CI technologies and solutions; gather, develop, and communicate community best practices; and serve as readily available resources for both the research community and the CI community.

While scientific relevance and technical innovation are integral to successful CI CoE activities, the CI CoE program *does not support* CI or domain science research, nor does it fund projects aimed to benefit single research domains, disciplines, or fields. Principal investigators (PIs) interested in pursuing such ideas should consider other OAC funding

programs such as the OAC Core Research and Cyberinfrastructure for Sustained Scientific Innovation (CSSI) programs or other NSF funding programs as appropriate. OAC does not support industry activities with commercial aims. Refer to the CI CoE program description for further examples of appropriate activities.

Focus Areas. NSF encourages proposals to the CI CoE program for early-stage *concept definition studies* and *demonstration pilot* projects as preparatory precursor activities towards potential full-scale CI CoEs, specifically in the following topical areas:

- *Architecting and operating research CI ecosystems at regional, national, and international scales* towards the strategic goal of enhancing and accelerating scientific collaboration, exchange, and discovery, and comprising service activities such as developing and disseminating principles, approaches, and methods; building expertise and communities of practice; and addressing areas such as planning, design, analysis, integration, end-to-end performance measurement and utilization.
- *CI learning and workforce development*, comprising service activities aimed at growing and nurturing the expertise base and interactions among CI contributors, professionals, and users, towards strategic goals such as enabling broad adoption of CI tools, methods, and resources by the research community to catalyze discovery; and enhancing the ability and skills of researchers and CI developers to collaboratively develop and operate new research CI.
- *Campus-centric networking and cyberinfrastructure*, aimed at leveraging and sharing expertise across the campus CI community, through service activities such as exchange and dissemination of knowledge, best practices and solutions applied to scientific networking, CI facilitation for researchers and the research community, integrated solutions, federated scientific resource sharing and other campus-level CI challenges.
- *Software and data infrastructure practices and transition to production*, encompassing service activities that promote establishment and use of best practices in scientific software and data engineering in areas such as CI robustness and production-level quality; delivery; engagement of and responsiveness to the user community; pathways toward sustainability; and metrics assessing performance and impact in all these aspects.

Concept definition study proposals on service-oriented cyberinfrastructure topics beyond those listed above are welcome; demonstration pilot proposals on other topics are also welcome but may be considered at a lower priority. However, ***CI CoE proposals related in any way to cybersecurity are discouraged*** as [NSF already supports a CoE in this area](#).

How to Respond to this DCL. Prospective PIs are encouraged to respond to this DCL through the submission of proposals for concept definition studies or demonstration pilots.

For planning purposes, the CI CoE program typically supports concept definition studies with

total budgets of up to \$300,000 and demonstration pilots with budgets of up to \$1.5 million, both over durations of up to two years.

As stated in the program description, individuals interested in submitting a proposal for a CI CoE project are strongly encouraged to discuss their project idea with the cognizant CI CoE Program Director(s) in the relevant areas prior to submission. To initiate discussion of a project idea, prospective proposers are encouraged to send an email including a one- to two-page summary of the project idea to cicoe@nsf.gov.

As noted on the CI CoE program webpage, standard NSF policies and procedures for preparation of proposals apply, as described in the [NSF Proposal & Award Policies & Procedures Guide](#).

Proposal titles should begin with "CI CoE:" and additionally "Concept:" or "Demo Pilot:" as appropriate.

Proposals that fail to address the objectives and guidance described in the CI CoE program description and this DCL may be returned without review.

All questions concerning this DCL should be directed to cicoe@nsf.gov and not to the signatories of this DCL.

Sincerely,

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