



NATIONAL SCIENCE FOUNDATION  
2415 EISENHOWER AVENUE  
ALEXANDRIA, VIRGINIA 22314

NSF 21-117

## Dear Colleague Letter: CHE Mid-scale Research Infrastructure Planning Workshops

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September 15, 2021

Dear Colleagues:

Through this Dear Colleague Letter (DCL), the NSF Division of Chemistry (CHE) in the Mathematical and Physical Sciences (MPS) Directorate invites requests to fund workshops addressing critical needs for unique research infrastructure at the national level, with potential to significantly advance chemistry research, broadly defined. Such workshops are typically identified as conferences in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) and will hereafter be referred to as conferences. As outlined in more detail below, we are specifically interested in laying the groundwork necessary for competitive proposals for design and implementation of mid-scale infrastructure.

The Mid-scale Research Infrastructure program is representative of infrastructure programs intended to provide NSF with agile, Foundation-wide processes to fund research infrastructure capabilities in the mid-scale range between the [Major Research Instrumentation](#) (MRI; currently up to \$5.2M, including required matching) and Major Research Equipment and Facilities Construction (MREFC) thresholds (currently >\$100M). In FY 2020, the NSF released two mid-scale solicitations: Mid-scale RI-1 ([NSF 21-505](#)) for design and implementation projects requesting up to \$20 million and Mid-scale RI-2 ([NSF 21-537](#)) for implementation projects between \$20 million and \$70 million.

Mid-scale infrastructure projects directly enable advances in fundamental science, technology, engineering, and mathematics (STEM) in one or more of the research and education domains supported by the NSF. Successful mid-scale proposals emphasize strong scientific merit and *must clearly establish that the infrastructure will serve an identified need for a broad research community*. Well-developed technical and project management plans are required, as are plans for student training and the involvement of a diverse workforce during the operational phase of a midscale facility.

With this DCL, members of the academic chemistry research community, broadly defined, are

**invited to propose conferences that identify specific gaps in existing research infrastructure that are needed to address important chemistry research questions and may/will also impact other disciplines.** In contrast to earlier midscale conferences supported by the Division of Chemistry [<sup>1,2</sup>], each proposed conference should have strong science drivers relating to a specific potential project. Conference outcomes will include a written open-access report that contains recommendations that address the identified gap in research infrastructure. This public-facing report should provide evidence of broad support of the need for the proposed infrastructure and position the chemistry research community to respond to future opportunities for mid-scale research infrastructure projects. We anticipate funding up to 10 planning conferences.

The budget of a conference proposal is generally limited to \$50,000, but under exceptional circumstances may be supported up to \$100,000. The conference should involve enough in-person or virtual participants to demonstrate community need and buy-in, while retaining the breakout and in-depth interactions characteristic of a conference rather than emphasizing the formal presentations of a symposium. In addition to academic researchers, conference participants may include relevant scientists, engineers, and practitioners from industry, federal agencies, and international organizations who represent potential users of the envisioned infrastructure/facility. NSF welcomes proposals that include efforts to broaden participation of underrepresented groups (such as women, underrepresented minorities, and persons with disabilities) in the development of research infrastructure. Conference participants should include individuals with experience in the management of research infrastructure at this scale for the purpose of mentoring investigators in the development of Project Management and Project Execution Plans [<sup>3</sup>]. Key members of each team (e.g., PI and Co-PIs) should plan to attend an in-person or virtual meeting to be held in 2022, that will discuss 'best practices' for structuring, implementing, and operating a major facility. As noted above, proposals should include a deliverable of an open-access report. Funds for support staff to facilitate the conference discussion and report preparation may be included.

Prior to submitting a proposal in response to this DCL, **the PI must submit a conference outline by email to one of the individuals listed below to ensure that the proposal fits the goals of this DCL.** In three or fewer pages, the outline must describe the planned research infrastructure and broad science drivers. While a complete list of the conference participants is not required at this stage, the outline should include a list of the co-PIs and organizers of key portions of the conference, as well as a preliminary list of primary participants (virtual and/or in-person). The outline should also offer a plan to ensure broad community engagement in the conference, as well as plans for the creation and dissemination of the written report. Proposers are also encouraged to point out potential links to/interest in other disciplines. If the outline is found suitable, PIs will be directed to submit the conference proposal in accordance with the guidance contained in Chapter II.E of the NSF [PAPPG](#). The title of the proposal should begin with "MsRI-Planning Workshop:". Proposals

should be submitted for consideration by CHE Special Projects (project element code 1978) in response to the NSF PAPPG. The target date for proposal submission is **January 14, 2022, 5 pm local submitter's time**. Proposals submitted by this date will be given full consideration, while processing of proposals received after this date may be delayed. Proposals or requests where PIs have not contacted one of the listed Program Officers in this DCL, will be returned without review.

**CHE CONTACTS:**

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Dr. John Papanikolas ([jpapanik@nsf.gov](mailto:jpapanik@nsf.gov))

Dr. Kelsey Cook ([kcook@nsf.gov](mailto:kcook@nsf.gov))

Dr. Carlos Murillo ([cmurillo@nsf.gov](mailto:cmurillo@nsf.gov))

Sincerely,

Sean L. Jones

Assistant Director

Directorate for Mathematical and Physical Sciences

**REFERENCES:**

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[1] [Report on Mid-Scale Instrumentation: Regional Facilities to Address Grand Challenges in Chemistry, September 29-30, 2016](#)

[2] [Report on Mid-Scale Instrument Development for the Chemical Sciences, November 7-8, 2016](#)

[3] [NSF's Major Facilities Guide](#)