



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 22-088

Dear Colleague Letter: NSF Options to Address Helium Supply Shortage Concerns

May 24, 2022

Dear Colleagues:

This Dear Colleague Letter (DCL) is written in response to concerns about a national and global helium shortage that is increasingly impacting the NSF-funded research community. Liquid helium is required for the ongoing operation and maintenance of a range of sophisticated research instruments, especially advanced nuclear magnetic resonance (NMR) spectroscopy systems, Fourier-transform Ion Cyclotron Resonance (FT-ICR) Mass Spectrometry, and other instruments with cooled magnets. Unfortunately, the national and global supply of helium is severely disrupted, and researchers are increasingly challenged to find adequate helium supplies. The supply issues are driven by shifts in global production systems, national reserve policy and ongoing geopolitical events. So, the current supply issues may extend for the foreseeable future and are a threat to funded projects across the NSF portfolio, especially research supported by the Directorate for Biological Sciences (BIO) and the Division of Chemistry in the Directorate for Mathematical and Physical Sciences (MPS/CHE). Given that helium is essential, expensive and non-renewable, proper stewardship of this limited resource is critical. One key step to ensure responsible resource utilization is to minimize waste. Commercially available helium recovery systems can be installed to efficiently recycle and re-use helium, but such systems are expensive.

NSF BIO and MPS/CHE recognizes the significant community concerns related to the helium shortage and seeks to remind potentially impacted research facility managers that the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) has provisions to support the acquisition of specialized equipment through submission of equipment proposals (see [PAPPG Chapter II.E.10](#)). These equipment proposals are externally reviewed, usually in competition with regular research or education projects. With this DCL, BIO and MPS/CHE are inviting the submission of equipment proposals to support the acquisition of helium recovery systems in shared research instrument facilities. In BIO, proposals can be submitted at any time to the Division of Biological Infrastructure (DBI). In MPS/CHE proposals should be

submitted during the October submission window for the Chemical Measurement and Imaging (CMI) Program. Interested proposers should consider the following guidance carefully:

1. All PAPPG requirements for formatting and content of equipment proposals apply and must be carefully addressed.
2. For the purposes of this Dear Colleague Letter, the current emphasis is only on the acquisition of helium recovery systems, not new NMR systems or other instruments that require liquid helium. **Proposals requesting any such new instruments will be returned without review.**
3. Limited funds for this activity are available. BIO/DBI and MPS/CHE will prioritize funding for proposals that support a large fraction of BIO or CHE funded researchers. Most competitive proposals are expected to come from shared-use, multi-user, or core-lab academic facilities, not individual labs or commercial entities. Proposals from under-resourced institutions are especially encouraged.
4. Current helium usage, expenses and use projections with recovery systems installed should be described in the proposal. Proposers should request a 36-month project duration to allow sufficient time for reporting of impacts and efficiencies gained.
5. Vendor quotes for helium recovery systems should be included in the “Other Supplementary Documents” section of the proposal.
6. Facility usage statistics and metrics should be provided in the proposal, but letters of collaboration are not required from facility users and should not be included.
7. For proposals from institutions where the majority of users are supported by NSF/BIO, to ensure full consideration, proposals should be submitted by July 1, 2022 for consideration for FY2022 funds or by April 1, 2023 for consideration for FY2023 funds. Proposals should be submitted to the current version of the PAPPG, and proposers should direct the proposal to the Directorate for Biological Sciences, the Division of Biological Infrastructure, and Cross-BIO Activities Program.
8. For proposals from institutions where the majority of users are supported by NSF/MPS/CHE, to ensure full consideration, proposals should be submitted between October 1 and October 31, 2022 for consideration for FY2023 funds. Proposals should be submitted to the current version of the PAPPG, and proposers should direct the proposal to the Directorate for Mathematical and Physical Sciences, the Division of Chemistry, and the Chemical Measurement and Imaging (CMI) Program. Proposals submitted outside of this window will be returned without review.
9. The Equipment type of proposal should be selected.
10. The title of the proposal should begin with “Helium Recovery Equipment:” Please note that if submitting via Research.gov, the system will automatically prepend the title with “Equipment”.
11. Proposers interested in this opportunity are encouraged to contact the cognizant program officers listed below to address any questions about eligibility or allowable

expenses.

The following NSF Directorates/Programs are participating in this opportunity:

BIO

MPS/CHE

Cognizant Program Officers:

BIO: Steve Ellis (stellis@nsf.gov), Engin Serpersu (eserpers@nsf.gov), Jaroslaw Majewski (jmajewsk@nsf.gov)

MPS/CHE: Kelsey Cook (kcook@nsf.gov)

Sincerely,

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