



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 21-090

Dear Colleague Letter: International Collaboration Supplements in Quantum Information Science and Engineering Research

May 21, 2021

Dear Colleagues:

The National Science Foundation (NSF) has long supported research to advance quantum information science and engineering (QIS) from laboratory theory into practical reality and lay the foundations for the next century of quantum discovery. Building on this core investment in QIS, NSF launched a series of investments to catalyze discovery by fostering multidisciplinary collaborations connecting underlying quantum principles with future quantum systems. This multi-pronged effort is aimed at advancing the fundamental understanding of quantum phenomena, materials, and systems toward revolutionary advances in quantum information science. As the science and engineering enterprise continues to expand, global engagement is necessary to address the most complex research challenges, including those being explored through NSF awards in quantum information science and engineering, including QIS and Quantum Leap.

OPPORTUNITY

With this Dear Colleague Letter, NSF invites requests for supplemental funding from existing quantum information science and engineering research awardees to add a new — or strengthen an existing — international dimension to their award. International collaboration should advance fundamental knowledge and discovery in quantum fields and enhance the NSF Principal Investigator's (PI) own research and/or education objectives as outlined in the existing NSF award. Supplemental funding requests should represent mutual benefit and true intellectual collaboration with international partners. International collaborations may consist of short-term visits (up to 1 month) to establish relationships or mid- to long-term visits (up to 12 months) to engage in research activities. Given the status of the COVID-19 pandemic, it is expected that travel will not take place until domestic and foreign travel restrictions are eased and risk to the collaborators as related to COVID-19 has dissipated. While collaboration with Australia, Canada, Germany, Japan, the Netherlands, South Korea, and the UK are of

particular interest, requests for international supplements to collaborate with other countries will also be considered. Information on quantum initiatives in the noted countries can be found at <https://www.nsf.gov/od/oise/IntlCollaborations/index.jsp>.

ELIGIBILITY

This opportunity is open only to PIs and co-PIs of active NSF awards in quantum information science and engineering. For the purposes of this opportunity, quantum information science and engineering awards are considered those that aim to advance fundamental understanding of uniquely quantum phenomena and harness them to promote information processing, transmission, and measurement in ways that classical approaches do less efficiently, or not at all. The PI, co-PI(s), senior personnel, graduate students, and/or postdoctoral researchers currently funded under the existing NSF award may participate in the international collaboration. Supplemental funding is not intended to bring new personnel onto the grant.

PIs are strongly advised to consult with their cognizant NSF program officer of the original award to confirm eligibility prior to submitting a supplemental funding request.

HOW TO APPLY

The supplemental funding request must be prepared in accordance with the [NSF Proposal and Award Policies and Procedures Guide](#) (PAPPG) and submitted electronically via the NSF FastLane system. The following information should be included in the request (in the supplement justification document, unless otherwise noted):

- Summary of the research problem. Provide a succinct statement of the research problem pursued in the NSF award, describing both the intellectual merit and broader impacts of the proposed activities.
- Relevance and justification. Provide a justification of the need for the proposed collaborative research in the context of your NSF award, based on the aforementioned objectives. Please include a brief description of how the proposed collaboration will provide unique capabilities not otherwise available in the context of the landscape of quantum research in the U.S. and in the country of the PI with whom you propose to collaborate.
- Research plan. Summarize the major goals of the work, the scientific and technical approaches to be used, and the expected outcomes.
- Nature of research collaboration. Describe collaborative arrangements including the roles for the international investigator(s). If applicable, provide information on the history of collaborative efforts between the proposed partners (new versus existing collaborations). This description should address why the international collaboration is needed to conduct the proposed research and the benefit of the partnership to advance

the field of study. This might include — but is not limited to — specialized skills, knowledge, data, equipment, facilities, and other resources the collaborators bring to the project. The description should also describe active engagement of U.S. students and early career researchers in the collaborative research, where appropriate.

- Qualifications of the research partners. In accordance with PAPPG Chapter II.C.2.f., provide a two-page biographical sketch for each U.S. and international investigator named in the supplemental funding request (to be uploaded as a supplementary document).
- Documentation from the international investigator. Provide a letter of collaboration signed by the international PI of the foreign organization(s). This letter must indicate their role in the project and the proposed duration of the collaboration. If they will provide resources (e.g., materials and supplies, instrument time, training, housing, etc.), the letter must describe such resources (to be uploaded as a supplementary document).
- Budget and budget justification. Provide a budget for the requested amount. If the budget exceeds \$30,000, discuss the budget with the cognizant NSF program officer of the original award prior to submission. In the budget justification, provide details on the number of international trips and identify whose travel (students, postdoctoral researchers, and/or research scientists) will be supported by the supplemental funding.

WHAT MAY BE COVERED

The budget may only cover costs for the U.S.-based investigators (including students) engaged in international collaboration, such as:

- Travel expenses for the U.S. investigators and/or students;
- Research-related expenses (as allowed in the PAPPG) for the U.S. investigators and/or students to conduct the proposed collaborative research at the foreign partner's home organization; and/or
- Research-related expenses (as allowed in the PAPPG) that are necessary to conduct the proposed collaborative research at the U.S. host institution.

NSF funds may not be used to support:

- Research and training activities of international collaborators (i.e., scientists and/or their students) at non-U.S. locations;
- Travel and living expenses of international scientists and students to visit the U.S. host institution; or
- Salary or other compensation for international collaborators (i.e., scientists and/or their students).

NSF will not approve requests for supplemental support for such purposes as defraying the costs of increases in salaries, wages or staff benefits or for additional indirect cost (F&A)

reimbursement, whether caused by a change in the indirect cost rate or by changes in direct cost expenditures which affect the indirect cost base.

Funding requests for travel to international conferences or educational programs will not be considered for this supplemental funding opportunity.

Note: PIs are responsible for obtaining any required visas for foreign travel and, through the U.S. host research institution or laboratories, for providing documentation in support of U.S. visas for foreign counterpart investigators. Information about obtaining visas for foreign visitors to the U.S. can be found here: <https://www.nsf.gov/od/oise/for-travelers-main.jsp>. PIs are also responsible for obtaining research permits and import/export documents, where necessary.

WHEN TO APPLY

For consideration in a given fiscal year (running from October 1 to September 30), requests must be received before June 14 of that fiscal year. Requests received after June 14 might be considered in the next fiscal year.

Sincerely,

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