



U.S. NATIONAL SCIENCE FOUNDATION
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NSF 24-132

Dear Colleague Letter: Special Guidelines for Submitting Joint Proposals under the Quad AI-ENGAGE Collaborative Research Opportunity

September 19, 2024

Dear Colleagues:

A. BACKGROUND

The U.S. National Science Foundation (NSF), Japan Science and Technology Agency (JST), Indian Council of Agricultural Research (ICAR), and Commonwealth Scientific and Industrial Research Organisation of Australia (CSIRO) have signed a Memorandum of Cooperation (MoC) concerning Research Cooperation on the Advancing Innovations for Empowering NextGen Agriculture (AI-ENGAGE) Initiative. The MoC provides an overarching framework to encourage collaboration between U.S., Japan, India, and Australia research communities working at the intersection of emerging technologies and agriculture and sets out the principles by which jointly supported activities might be developed.

By 2050, the world's population is anticipated to increase to an estimated 9.7 billion people, with corresponding increases in food demand and pressure on land and water resources. Many of the impacts of these trends will be strongly felt in the Indo-Pacific region, but so will the hope for meaningful solutions. By collaborating on cutting edge research and innovations in areas such as artificial intelligence, robotics, communications, and sensing through this Quad AI-ENGAGE effort, researchers collaborating across the diverse environments in Australia, India, Japan and the U.S. can help transform agricultural approaches to empower farmers everywhere to increase yield and resilience. By forming research networks that span Quad countries, ideas and best practices can be disseminated quickly to all Indo-Pacific nations resulting global impact on people, our economies, and our planet.

The goals of the AI-ENGAGE partnership initiative are to strengthen research collaboration among the Quad countries – Australia, India, Japan and the U.S. and to increase the impact of critical technology research on people, our economies and in the Indo-Pacific region. The

Quad countries are major research performing countries, but research collaborations among researchers in the four countries together have been limited to date. This partnership initiative provides for a multilateral arrangement to enable researchers to collaborate more effectively.

B. OPPORTUNITY

To implement AI-ENGAGE, NSF, JST, ICAR and CSIRO invite joint multilateral proposals from researchers in at least three of the Quad countries. Proposals involving researchers from all four countries are encouraged and will be prioritized for funding. Proposers from the Quad countries collaborate to write a single proposal that will undergo a single review process coordinated by NSF, the Coordinating Agency.

It is the U.S. National Science Foundation's (NSF) intent to provide support to U.S. researchers on well-reviewed proposals. Japan Science and Technology Agency (JST), Indian Council of Agricultural Research (ICAR), and Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia will draw on a combination of funding for these new collaborative research projects (India and Japan) and leverage existing grants programs (Australia) to achieve a more effective and efficient collective pathway to impact.

C. SCOPE OF RESEARCH

Joint research should advance the field(s) of artificial intelligence, robotics, sensing, and/or communications with applications to agriculture, particularly those that empower farmers to enhance productivity, sustainability, and resilience. Examples of potential topics for consideration under AI-ENGAGE include but are not limited to: Artificial intelligence-enabled crop planning and monitoring including for diseases and pests; crop improvement through image-based high throughput phenotyping and genotyping; farm supply chain management; robotics to improve efficiency of the farm workforce; data-driven agriculture risk information and management system; assessing, monitoring, and management of land and aquatic resources; etc.

D. PROPOSAL PREPARATION

All proposals are expected to propose research in areas indicated in the scope of research (Section C). Each research team submitting a proposal must engage researchers from at least three Quad countries (Australia, India, Japan, U.S.). Proposals with meaningful collaboration among all four Quad countries are encouraged and will be prioritized for funding. For proposals requesting resources for activities and researchers based outside of the U.S please refer to the partner agency details below in Sections E.2, E.3, and E.4.

E. PROPOSAL SUBMISSION

As outlined in Section D, research teams must include researchers from at least three Quad

countries. NSF will serve as the coordinating agency for the merit review process outlined in Section F. One proposal per research team will go through merit review but additional copies of the same proposal must be submitted to the funding agency of the other international research team members. If a research team includes a U.S. Principal Investigator (PI), the research proposal must be submitted to NSF by the U.S. proposer; please see specific instructions in Section E.1. If a research team does not include a U.S. PI, the research proposal must be submitted to JST by the Japanese PI; please see specific instructions in Section E.2.

In addition, a separate copy of the proposal must be submitted by the deadlines listed in Section G by the collaborating international applicants to their country's funding agency listed at the top of this DCL in accordance with the requirements and regulations of that agency. Details and instructions on how to submit to partner agencies are available on each agency's website (please see more details below).

All proposals submitted in response to this DCL must include the following:

- a. Proposal Title beginning with "AI-ENGAGE".
- b. The Project Description of the proposal is limited to fifteen pages and must present the full scope of work, including contributions of U.S.-based and international researchers.
- c. The PIs must make clear that the proposed activities constitute a well-integrated, collaborative project.
- d. The Project Description should also explain how the proposed international collaboration will enable research advances and broader impacts that go beyond what each country's teams could accomplish on their own.
- e. The project descriptions for both the international and NSF submissions must have the same title and include the same content even if proposals are submitted in different languages.

E.1 For Proposals to NSF

NSF invites interested U.S. proposers to submit joint proposals to the Office of International Science and Engineering's "MultiPLEx", [PD 24-7298](#), Program Description. Proposals should leverage international collaboration to support potentially transformative research ideas or approaches that advance the goals of AI-ENGAGE. Proposals involving U.S. researchers must be submitted by eligible U.S. organizations (see the [NSF Proposal & Award Policies & Procedures Guide](#) (PAPPG) Chapter I.E.1) and must include international collaboration as an integral part of the work. NSF encourages proposals from diverse teams. Proposals from early career investigators are especially encouraged. A separate copy of the same proposal must be submitted by the India applicants to ICAR, Japan applicants to JST, and Australia applicants to CSIRO according to the submission deadline outlined in Section G. Proposers must check that their collaborating investigators from other countries meet respective

eligibility criteria. Instructions for submission of the proposal to NSF are as follows:

- a. NSF requires proposers to submit the proposal through Research.gov or Grants.gov.
- b. US PIs, who are part of a collaborative team submitting proposals within the AI-ENGAGE initiative, are eligible to request support from NSF.
- c. Proposals may be submitted in Research.gov or Grants.gov. Select PD 24-7298 - MultiPLEx. Research.gov will populate the relevant program information. If submitting via Grants.gov, proposers will be prompted to manually enter the program information.
- d. The proposal to NSF must include only the U.S. expenses in the Budget and Budget Justification sections. International portions of the budget should be submitted in Supplementary Documents for information only.
- e. For proposals submitted to NSF, the full names and organizational affiliations of foreign personnel should be listed in the Overview section of the Project Summary as "non-NSF funded collaborators." This listing is for administrative purposes and is not intended to characterize the level or value of the contribution of international research personnel to the project. *Guidance specific to "non-NSF funded collaborators" is as follows:*
 - i. Biographical Sketch - Required. The biographical sketches must conform to the NSF format as specified in the NSF PAPPG. The biographical information must be clearly labeled "Non-NSF Funded Collaborators" and uploaded as a single PDF file in the Supplementary Documents section of the proposal.
 - ii. Current and Pending (Other) Support and Results of Prior Research are not required for non-NSF-funded collaborators.
 - iii. Collaborators and Other Affiliations (COA) - Required.
 - iv. A copy of the proposed requested budget of each Partner Agency (JST and/or ICAR) must be included in the national currency as part of the full proposal under Supplementary Documents.

E.2 For Proposals to JST

Proposals that do not involve US researchers must be submitted to JST through e-Rad system by Japanese PIs. Proposal template and detailed instruction is available at https://www.jst.go.jp/moonshot/ai-engage/a_koubo/202409/index.html.

Japanese PIs who are part of a collaborative team submitting proposals within the AI-ENGAGE initiative are eligible to request support from the Japan Science and Technology Agency (JST). Japanese PIs must submit copy of proposals and supplemental information to JST through e-Rad system at <https://www.e-rad.go.jp/>. Details of eligibility and instructions on how to submit budget requests are available at the [JST website](#).

After awarding of proposal, the funded researchers will also have to ensure that an international Collaborative Research Agreement (CRA) is signed by representatives of each participating research institution. Please make sure that the CRA does not contradict or

undermine the Research Contract (between JST and the institution) and further that it does not disadvantage the Japanese party.

E.3 For Proposals to ICAR

Indian researchers, who are part of a collaborative team submitting proposals within the AI-ENGAGE initiative are eligible to request support from the Indian Council of Agricultural Research (ICAR). The Indian PIs should submit a copy of the joint proposal including the Indian budget as one PDF file to ICAR through aiengage.quad@icar.gov.in. For more information, please visit <https://icar.org.in/quad-cooperation>.

E.4 For Proposals to CSIRO

Australian researchers are invited to participate in the QUAD AI Engage initiative by seeking support from select existing programs to full AI-ENGAGE proposals. Programs eligible for this initiative are listed on the website below and are intended to be leveraged to expand the scope and impact of collaborative projects. Applicants should include a description of how the involvement of Australian researchers will enhance the project's objectives in the project description section of their AI-ENGAGE proposal, while also submitting an Australian grant application through the link provided below. This collaboration aims to foster innovative research and strengthen international partnerships. For more information and to submit grant proposals, please visit the [CSIRO website](#).

F. REVIEW OF PROPOSALS

The proposals will be reviewed by experts contacted by NSF, the Coordinating Agency, in competition with other AI-ENGAGE proposals using NSF's merit review process. Officials will have access to unattributed reviews and panel summaries where applicable. NSF intends to make awards to the U.S. proposers participating in the recommended collaborative proposals, and JST and ICAR, intend to make awards to their respective researchers participating in the recommended collaborative proposals. CSIRO will review the Australian grants that will be linked to full proposals, making an assessment of eligibility while the overall project merits will be reviewed through the NSF process.

Proposers are advised that all documents submitted to NSF may be shared with the agencies listed above.

Review Process

Proposals will be reviewed by ad hoc and/or panel review. NSF will organize the review process for proposals submitted to both NSF and JST in consultation with counterpart funding agency representatives.

Partner funding agencies in Japan and India will partner with NSF throughout AI-ENGAGE, including the merit review process. JST, CSIRO and ICAR will be invited to nominate

representatives to observe the review process for AI-ENGAGE proposals but will not conduct their own parallel review. Proposals and relevant information about proposals involving collaboration with Japan, Australia and India will be shared with, respectively, JST, CSIRO and ICAR. For these proposals, NSF will also invite recommended reviewers from these agencies. Final decisions on reviewers will be made by NSF.

For Australia, CSIRO will review Australian grant proposals through eligibility criteria outlined for each grant. The merits of the full application (grant and funding proposal) will be assessed through NSF's merit review process.

G. PROPOSAL SUBMISSION DEADLINE

Proposals with a U.S. PI submitted in response to this DCL to NSF must be submitted by **January 22, 2025, 5:00 p.m.** in the submitting U.S. organization's time zone.

Copies of proposals must be submitted by Australian, Indian, and Japanese researchers to CSIRO, ICAR, and JST respectively by January 23, 2025, 5:00 p.m. in the submitters time zone.

For proposals without a U.S. PI, proposal submission to JST using the e-RAD system must be submitted by January 23, 2025, 5:00 p.m. in the Japanese PIs time zone. Copies must be submitted by Australian and Indian researchers to CSIRO and ICAR respectively by January 23, 2025, 5:00 p.m. in the submitters time zone.

H. BUDGET

For the U.S. effort in the proposals, proposers may request NSF funding of up to \$400,000 and an award duration of up to three years.

For the Japanese effort in the proposal, proposers may request JST funding of up to 60,000,000 Japanese Yen (including indirect costs) and an award duration of up to three years.

For the Indian effort in the proposal, proposers may request funding of up to Rupees.30,000,000.00 for each joint proposal and an award duration of up to three years.

For the Australian effort in the proposal, no direct funding may be requested.

I. ANTICIPATED NUMBER OF AWARDS

The Quad partners expect to make 5-7 collaborative international awards, subject to availability of funds and quality of proposals.

J. CONTACT INFORMATION

Questions about this DCL should be addressed to:

- Anne Emig, Program Director, NSF/OISE, aemig@nsf.gov
- Cate Flanley, Program Director, NSF/OISE, cflanley@nsf.gov
- Questions regarding details of AI-ENGAGE submission to partner agencies should be addressed to:
 - Yuta Kobayashi, JST, Department of Moonshot R&D Program, ai-engage@jst.go.jp
 - Bikash Mandal, International Relations Division, ICAR/DARE, aiengage.quad@icar.gov.in
 - Jen Taylor, Agriculture and Food, CSIRO, jen.taylor@csiro.au

Sincerely,

Kendra Sharp
Office Head, Office of International Science and Engineering (OISE)