# CSIRO-National Science Foundation Artificial Intelligence Research Collaboration Program Guidelines

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# Introduction

The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency, and the United States' National Science Foundation (NSF), have formed a long-term strategic partnership aimed at accelerating joint research, projects, and initiatives in areas of mutual priority.

The purpose of this partnership is to further critical research in areas identified as priorities by both our governments, including in areas such as artificial intelligence (AI), low emission technologies (LETs) and sustainability. The partnership aims to establish and deepen collaborations between Australian and US researchers; assist in the identification, commercialisation and uptake of new technologies; and further societal and economic impact as a result of the research and technology adoption.

Under this strategic partnership, CSIRO and NSF will support several initiatives, open to organisations from both nations, and targeted at supporting new, bi-lateral projects and partnerships.

One of these initiatives is the **Collaboration Opportunities in Responsible and Equitable AI.** This program exemplifies CSIRO's commitment to drive Artificial Intelligence research and impact and enable global research collaborations.

*This document outlines instructions for Australian research teams collaborating with US teams on a joint application and will assist Australian teams with preparation of program documentation to be submitted to CSIRO and NSF under the initiative. Importantly, a separate NSF application must be completed and submitted by Australian applicants' US collaboration partner referencing the Australian Team and the international collaboration. More detailed information on the joint application and assessment process is provided in the Funding Application and Agreement Process section below.*

# Program overview

The **Collaboration Opportunities in Responsible and Equitable AI** will co-fund nationally competitive, responsible and equitable AI focused research projects that specifically align with and support any of CSIRO's Missions (see https://www.csiro.au/missions). These projects must be undertaken by Australian public research organisations in collaboration with US research organisations.

Proposals must present a unified research program collaboratively pursued by the US and Australian team members. CSIRO will fund the Australian project team's research and NSF will fund the collaborating US team's research to enable these international research collaborations. Australian teams will initially confirm their joint project's alignment to CSIRO's Missions with CSIRO before submitting a joint application with their US partner to NSF.

CSIRO project funding may be provided to eligible and successful Australian teams for up to a maximum of three years, and up to a maximum of $850,000 AUD of eligible Australian team's research costs for larger projects, or up to $425,000 AUD for smaller projects. See *Grant Amount and Grant Period* section for more information.

# Objectives

The purpose of the Program is to fund joint projects involving Australian and US-based researchers that aim to:

- Accelerate ground-breaking research in responsible and equitable AI.
- Undertake AI research that will support the progress of one or more of CSIRO's Missions.

- Strengthen bi-lateral partnerships and collaboration between Australian and US research teams and organisations.
- Reduce some of the barriers currently faced by researchers in working internationally by supporting focused, collaborative projects.

## Focus Themes: Responsible AI and Equitable AI

The CSIRO and NSF are pleased to offer the Program targeted at identifying bilateral research collaborations that have the **potential to deliver transformative findings in Responsible AI** and **Equitable AI.**

**Responsible AI** concerns the ethical development of AI to benefit individuals, society, and the environment, including adherence to AI Ethical Principles such as those defined by [Australia's AI Ethics Framework](#) and the [US National AI Research and Development Strategic Plan: 2019 Update](#). It should be interpreted broadly to include the design, data, and algorithmic aspects of AI systems as they relate to ethical principles (such as fairness, accountability, transparency, inclusion, promotion of the general welfare, and sustainability), as well as the systems and software engineering aspects (such as auditing and monitoring, privacy considerations, and impact of deployments) of responsibility in AI systems.

**Equitable AI** refers to eliminating discrimination, avoiding misuse, preventing unintentional harm, and protecting individual rights. The involvement of those potentially affected by AI systems in the creation of those systems sensitivity to varying cultural norms and expectations, and efforts to increase the number of people from disadvantaged and under-represented groups in AI research development are means to achieve the aims of Equitable AI.

## Alignment with CSIRO Missions

Eligible proposed research projects must focus on new approaches to equitable and responsible AI **and** be aligned with one or more of the strategic priorities listed in [CSIRO's Missions](#). Any Mission listed is eligible, including those marked "in development."

CSIRO's Missions are large-scale scientific and collaborative research initiatives aimed at making significant breakthroughs. Through missions CSIRO aims to accelerate the pace and scale at which the nation can solve each challenge and unlock a better future.

Each CSIRO Mission aims to deliver a positive impact to:

- the community and environment
- the economy and job creation, and
- scientific excellence.

The proposed work submitted under an NSF-CSIRO collaboration must be an integrated collaborative effort aligned with one of the CSIRO Mission areas as discussed above. The Project Summary and Project Description must include a description of the collaboration, including an explanation of the roles and research activities of both the U.S. researchers and the Australian collaborators, and an explanation of how the team will work together. In the Project Description this information should be set off in a section entitled "US-Australian Team".

Alignment with one or more of CSIRO missions must be discussed in a section of the Project Description with heading "Alignment with CSIRO Missions." Prior to submission to NSF, CSIRO will review proposals for alignment with its missions. The submitting organization must send the completed Cover Page (with finalized title and U.S. PI and co-PIs), Project Summary, Project Description, References Cited, list of PIs, co-

PIs and all Senior Personnel, and the Australia Budget and Justification via email to aiapplications@csiro.au by **5pm AEST September 1, 2022**.

**See the *Funding Application and Agreement Process* section regarding specific instructions on obtaining CSIRO's confirmation that your project aligns with CSIRO Missions.**

## Grant Amount and Grant Period

Grants for successful proposals will be made by NSF to the US portion of the project team and by CSIRO to the Australian portion of the team. The proposal submitted should include separate budgets each for the U.S. and Australian researchers.

Proposal budgets for research activities by the Australian team can be up to $850,000 AUD over a 3-year period. Proposals with budgets at, or near, this cap should be commensurate with the size of the project and the team, most likely for projects with established collaborations with the US researchers.

Proposals for smaller projects and teams, likely those forming new international collaborations, should have an upper limit of $425,000 AUD total for Australian team activities over 3 years.

For information regarding NSF funding for US teams please visit:
https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf22086

We expect the effort of the US and Australian team members to be comparable, but do not require the budget to be split.

Where more than one Australian public research organisation is involved in the application to CSIRO, funding will be awarded through the lead Australian organisation, who will be held accountable for the management of the funded activities to ensure effectiveness, value for money, and compliance.

**It is expected that activities will be completed within three (3) years from the time of the signing of the Grant Agreement**. In exceptional circumstances, grants may be extended beyond this time duration, subject to formal approval by NSF and CSIRO, such as where the grant has not yet been fully spent due to unexpected circumstances, but promising results are imminent. Any undisbursed funds will be returned at the end of the activity.

A schedule for transferral of funds will be negotiated with each successful project application. It is likely that tranches will be paid on commencement, on acceptance of progress reports and on conclusion of the project, including acquittal of project expenditure.

Maximum total Grant funding available per project cannot exceed:

| Grant Source | Grant Contribution over 3 years |
|---|---|
| **Australia Team via CSIRO** | Up to AUD$ 850,000.00 |
| **US Team via NSF** | Up to USD$ 600,000.00 |

## Eligible Activities and Costs

Funding to support Australian organisations' participation in selected projects is being provided by CSIRO.

Eligible activities for the use of CSIRO grant funds are research activities that meet the Australian Research Council's (ARC) definition of 'research' and are directly related to the project. The ARC define research 'as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies, inventions and understandings. This could include synthesis and analysis of previous research to the extent that it is new and creative.' Eligible activities for the use of NSF funds must meet NSF eligibility.

Eligible expenditure items which can be supported via CSIRO funding are:

- Salary support for personnel, for example research associates and assistants, technicians and laboratory attendants at an appropriate salary level, including 30 per cent on-costs, at the employing organisation.

- Expert services of a third party if the services are directly related to and essential for the project.

- Expenditure on field research essential to the project, including technical and logistical support, travel expenses (including accommodation, meals and incidental costs).

- Equipment (and its' maintenance) and consumables essential for the project. Funding will not be provided for equipment or consumables that are considered to be for broad general use; and

- Other, which may include:

  o access to national and international research and infrastructure facilities including specialist archives, collections and databases;

  o access to technical workshop services linked to and justified explicitly against the project (for example, machine tools and qualified technicians);

  o publication and dissemination of project research outputs and outreach activity costs;

  o specialised computer equipment and software essential to the project;

  o web hosting and web development specific to the project; and

  o workshops, focus groups and conferences that are essential for the conduct of the project (including reasonable hospitality costs such as morning tea, lunch and afternoon tea).

All amounts referred to in these grant guidelines are exclusive of the Goods and Services Tax (GST), unless expressly stated otherwise. Applicants are responsible for any and all financial and taxation implications associated with receiving funds.

The CSIRO funds cannot be used to fund the same research activities, infrastructure or project previously funded or currently being funded through any other Australian Commonwealth or state or territory government grant.

**CSIRO funds cannot be used for the following activities:**

- Basic facilities that should normally be funded by the applying organisation (including standard refurbishment costs of a laboratory);

- Capital works and general infrastructure costs;

- Costs not directly related to the project, including but not limited to professional membership fees, professional development courses, fees for patent application and maintenance, relocation costs, entertainment costs, insurance, mobile phones (purchase or call charges) and other indirect costs;

- Indirect costs, including basic facilities and equipment, organisational overheads, and/or infrastructure costs;

- Student stipends and top ups; and

- Teaching relief.

The following basic facilities must be provided (where relevant) and funded by the Australian applying organisation(s) and will not be funded via CSIRO funding:

- Bench fees or similar laboratory access fees;

- Access to a basic library collections;

- Work accommodation (for example, laboratory and office space, suitably equipped and furnished);

- Basic computer facilities such as desktop computers, portable computer devices, printers, word processing, and other standard software; and

- Standard reference materials or funds for abstracting services.

CSIRO may determine whether any grant funds involve items not permitted as identified above. If such a determination is made, then CSIRO or NSF may decide to not recommend part or all of the application for funding.

## CSIRO Funding Eligibility Criteria

To be eligible for CSIRO funding applications must meet the following criteria:

- Must be from an eligible organisation which is limited to Australian universities and not-for-profit research institutes that meet one of the following:

    o Universities – that is, Australian universities listed in either Table A or Table B of the Higher Education Support Act 2003

    o Approved research institutes (ARI) – that is, bodies that conduct research as a primary purpose, and which are also registered with the Australian Charities and Not-for-Profits Commission. An approved research institute is either:

        i. any university, college, institute, association or organisation that has been approved in writing by the one of the approving authorities as an institution, association or organisation for undertaking scientific research which is, or may prove to be, of value to Australia;

        ii. the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

- Must have identified and agreed to collaborate with at least one US-based research organisation to jointly develop and deliver the research project, who meets NSF eligibility guidelines for support through their grant program.  More details on NSF's eligibility guidelines can be found at this link.

- Must not include activities that have already received funding from other Australian government programs (including state, territory and local government grant or funding programs).

- Must demonstrate consideration of diversity, equity and inclusion in the development and delivery of the proposed project.

**Applicants should also review *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) to ensure project teams and applications meet NSF requirements.**

### Diversity and Inclusion

Applicants are encouraged to support diversity and inclusion in their proposed projects.

Definition of Diversity & Inclusion (D&I) Principles:

- Diversity means differing views, backgrounds and experiences which contribute to innovative problem solving.

- An inclusive leadership style means creating an open and fair culture where all participants feel respected, safe and empowered to contribute. Together with an inclusive leadership style, diversity of thought can contribute to innovative problem solving.

- Consider your university's SAGE action plan, Reconciliation Action Plan and other diversity, inclusion, belonging and equity initiatives and how the research project may contribute.

When preparing your proposal, applicants should consider:

- Inclusion of a diverse mix of Chief (Principal) Investigators, Investigators and partners.

- A multi-disciplinary program of work.

## Application Limits

There is no limit on the number of applications that a lead applicant organisation or partner organisation may participate in.

An individual Australian investigator (Chief Investigator or Investigator) may be named on no more than two applications for this CSIRO funding call.

# Program Deadlines

Proposals must be submitted to CSIRO to confirm CSIRO funding eligibility and Mission alignment by **5pm AEST 1 September 2022** by email via aiapplications@csiro.au

Proposals deemed eligible by CSIRO must be submitted to NSF by **5pm (in the US submitter's local time) 17 October, 2022** after which reviewing will begin. (Note that this is a firm deadline for this opportunity even though the general NSF CISE Core program has no deadlines for the Small category.)

# Funding Application and Agreement Process

The following application and agreement process is provided to assist Australian research teams.

**Phase 1: Project Identification and Alignment**

1. Review these Program guidelines and the NSF program guidelines.

2. Engage with one or more US research organisations to identify your US collaboration partner/s and proposed research focus area.

3. Review CSIRO's Missions to assess your project's alignment.

4. Scope the proposed collaborative research project with your partner/s.

5. Collaborators must submit the following information to CSIRO by **5pm AEST 1 September 2022** via aiapplications@csiro.au to enable CSIRO to confirm your project's eligibility and alignment to CSIRO Missions:

   a. A completed NSF 'Cover Page' (with finalised title and U.S. PI and co-PIs);

   b. Project Summary;

   c. Project Description;

   d. References Cited;

      e.   List of PIs, co-PIs and all Senior Personnel; and

      f.   The Australian team Budget and Justification of the budget.

6.   CSIRO will respond to all Mission Alignment submissions with a letter to the applicant by **23 September 2022** indicating whether the proposed project is aligned with CSIRO Missions.

*Only those projects affirmed by CSIRO to be eligible and aligned with CSIRO Missions should proceed to the next phase.*

**Phase 2: Full Application Submission**

7.   Australian teams assist their US partners to complete the NSF funding proposal by **5pm (in the US submitter's local time) 17 October 2022**. The CSIRO letter affirming Mission alignment must be uploaded with the **NSF** proposal as a **Supplementary Document**. Proposals submitted to NSF without this letter will be returned without review.

**Phase 3: Application Assessment & Decisions**

8.   Proposals will be reviewed by NSF using NSF's merit review process as described in the NSF Proposal and Award Policies and Procedures Guide ([PAPPG](#)) and will include CSIRO representatives as observers.

9.   NSF will confirm NSF funding decisions to US applicants.

10.  CSIRO will confirm CSIRO funding decisions to Australian applicants.

11.  CSIRO may undertake additional due diligence with Australian applicants and, where satisfied, may enter into a funding contract with the successful Australian research teams (the Grantee).

## NSF Application Submission

For details regarding the NSF application requirements, please visit:
[https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf22086](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf22086)

## Confidentiality

Applicants should be cognisant of their own need to retain security over actual or potential intellectual property rights.

Submitted application data will be kept in strict confidence by CSIRO and NSF appointed reviewers. Personnel engaged in review of applications are bound by confidentiality, or non-disclosure arrangements under this partnership. Applications, however, may also be reviewed by independent appraisers, where required. Applicants are reminded to consider the above prior to disclosing potentially sensitive information, and to seek their own professional legal advice.

## Application Assessment Criteria and Process

Assessment of proposals will be conducted by an Assessment Panel consisting of CSIRO and NSF appointed reviewers.

When evaluating proposals, the Assessment Panel reviewers will follow NSF Merit Review Principles and Criteria as per the *NSF Proposal and Award Policies and Procedures Guide* ([PAPPG](#)).

All applications will be subject to review under appropriate legislative compliance requirements.

Projects involving human subjects or participants, or vertebrate animals, should follow both the NSF guidelines contained in the PAPPG and the Australian Code for the Responsible Conduct of Research, along with the requirements of the individual's institutions, submitting documentation to each as appropriate.

No CSIRO funding will be granted unless a CSIRO Agreement has been entered into between the successful Applicant and CSIRO within a specified timeframe.

## Post Award Reporting

CSIRO funding recipients (Grantees) will be required to report to CSIRO. Milestones will be provided in a stage-gate fashion and project funding will be associated with each Milestone. Milestone reports will be due to CSIRO six monthly.

**Content of each Report:**

The Grantee must provide:

- Confirmation that the project is still supported and on track to deliver.
- Brief report showing progress against milestones.
- Outline of 'other activities' (e.g. pathway to impact, business development, commercialisation, IP) that are tracking in parallel (to provide confidence the translation side of activities is progressing also).
- Financial declaration – confirmation that intended funds have been expended as per the Funding Agreement.
- Other information as required by CSIRO as per the Funding Agreement.

Please note that as a condition of receiving CSIRO funding, CSIRO require successful Australian applicants to:

- develop and enter into a formal collaborative research agreement with the US partner/s.
- acknowledge both NSF and CSIRO in any reports or publications arising from the grants.

## Further information

Please contact the CSIRO Program team regarding information about CSIRO's program at
AIapplications@csiro.au

For information about the NSF program, please visit:
https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf22086