Outline NSF 21-596: Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET)

**Proposal Deadline:** January 31, 2024

January 31, Annually Thereafter

This template was revised in January 2023 to reflect NSF requirements for proposals submitted January 30, 2023.

This outline does not cover all requirements for the NSF BIO directorate. Some specialized types of grants (e.g., conference, supplements) have their own unique requirements, too.

Please do not insert page numbers for documents submitted through Research.gov, as they will be inserted automatically.

**NSF Formatting Standards:**

(1) Use Arial (not Arial Narrow), Courier New, or Palatino Linotype at a font size of 10 points or larger, or

(2) Use Times New Roman at a font size of 11 points or larger, or

(3) Use Computer Modern fonts at 11 points or larger (this is mostly symbols).

Smaller fonts may be used in mathematical formulas, equations, figures, figure captions, table labels/captions, and symbols/special characters as long as they are easily readable.

No more than 6 lines of text within a vertical space of 1 inch.

Margins in all directions must be at least 1 inch.

On the cover page, note that the “Beginning Investigator” box applies *only* to early-career proposers applying to the NSF BIO Directorate.

Note: The Project Description may not contain URLs. You should include URLs as references cited instead.

Inclusion of URLs in the References Cited section and the bio sketch is encouraged. Inclusion of URLs in the Facilities/Equipment/Other Resources section is allowed.

## Program Synopsis

Please see the Solicitation for more detailed information.

The Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET) solicitation seeks to engage members of the research communities represented among the programmatic clusters of CBET - [Chemical Process Systems](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505481&org=CBET&from=home), [Engineering Biology and Health](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505482&org=CBET&from=home), [Transport Phenomena](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505484&org=CBET&from=home), and [Environmental Engineering and Sustainability](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505483&org=CBET&from=home) - in the development of thoughtful, fundamentally-driven approaches to tackle pressing environmental challenges. Projects are expected to advance and apply fundamental processes, mechanisms, and theories to yield new materials, processes, and systems-level understanding.

***The solicitation will prioritize support of highly collaborative projects that pair at least one expert in environmental engineering or sustainability with two or more complementary experts from the chemical process systems, transport phenomena, or bioengineering disciplines*.** In addition to these three individuals, investigators having unique perspectives that serve to expand the technological and societal impact of the research, e.g. experts in manufacturing, and other sciences, including social, behavioral, and economic sciences, etc., can also participate.

ECO-CBET Senior Personnel include a principal investigator and a maximum of four co-principal investigators are permitted. A minimum of two co-principal investigators must be identified. Additional project leaders or senior personnel should be listed on the project summary page and entered in Research.gov or Grants.gov as Other Senior Personnel. Avoid the inclusion of individuals without a substantive project role.

A primary goal of the solicitation is to provide sustained research funding for truly collaborative teams working at the forefront of solving environmental and sustainability grand challenges, where the combined effort results in a more substantial product than feasible through discrete individual contributions. Successful applicants will take a holistic, systems-level approach driven by strong convergent research collaborations.

The goals of the solicitation include:

* Encouraging new ways of thinking about environmental problems through atypical and [convergent research](https://www.nsf.gov/od/oia/convergence/characteristics.jsp) collaborations and leveraging this diversity of perspectives to create innovative, holistic solutions;
* Seeding innovation by combining fundamental concepts and approaches from chemical process, transport, and bioengineering science with those of environmental engineering and sustainability research toward reducing and mitigating pollution and waste; and
* Training a future workforce that is prepared to develop and apply fundamental knowledge and approaches, including that outside of disciplinary boundaries, to solve environmental and sustainability problems.

The ECO-CBET solicitation will support activities that substantially advance the systems and technologies for addressing environmental and sustainability grand challenges by developing fundamental understanding of the underlying chemical processes, transport phenomena, or bioengineering approaches. The proposed research is expected to be compelling and broad-reaching, going well beyond that typically supported by any single CBET core program.

Projects are expected to adapt the characteristic techniques, tools, theories, and approaches relevant to the disparate CBET research communities to address an environmental or sustainability challenge. Experts outside of CBET's typical programmatic interests may also be engaged if their participation will contribute to the overall impact of the project.

Proposed activities must be of a fundamental nature; however, investigators should articulate their vision for how the project outcomes will promote or facilitate solutions to an environmental challenge at full scale or as deployed in the field.

Proposals that address the strategic challenge described below are strongly encouraged for this competition. However, any creative and transformative ideas that advance and apply knowledge from the chemical process, bioengineering, and transport sciences in the investigation of environmental and sustainability challenges, as described above, are welcome.

**Combating Climate Change and Mitigating Its Impacts** -Transformative, high-risk/high-reward approaches to attenuate the threat of climate change are sought, including strategies for sustainable capture, containment, sequestration, or conversion of greenhouse gases; solutions for decarbonizing the fuel and chemical industries; and novel methods, materials, and systems that reduce global energy demand, enable efficient thermal management, and promote interconversion between energy forms. Innovations that minimize the adverse effects of climate changes on air and water quality and water availability are also welcome, particularly those that address impacts related to major storm events, early snow melts, sea-level rise, and wildfires.

## Project Title

The title for the proposed project must begin with "ECO-CBET:". The title must clearly state the major theme(s) of the project. See solicitation for other title information.

## 

## Solicitation Specific Review Criteria

The following additional criteria will be used to evaluate all proposals:

**Responsiveness:**

* How does the research align with a topic relevant to environmental engineering or sustainability?;
* How does the proposed research apply convergent processes with iterative feedback among tasks to effectively integrate concepts from the chemical process systems, transport phenomena, and/or bioengineering research communities to solve a problem of environmental engineering or sustainability relevance?

**Collaboration Management Plan:**

* What mechanisms will the team use to promote collaborative interactions that enable new knowledge, creative approaches, and cross-disciplinary student training?
* How will the team assess the success of their collaborative processes and make changes as necessary?

**Expertise:**

* To what extent is the proposed activity comprised of a diverse, multidisciplinary group of scientists and engineers appropriate to the project?
* How does the expertise of each investigator support the solicitation goal of leveraging the concepts of the chemical process systems, transport phenomena, and bioengineering fields to promote new ideas for addressing environmental engineering and sustainability challenges?

**Feasibility:**

* Do the envisioned technologies, processes, and/or approaches have long-term potential to become industrially and/or environmentally feasible, including sustainability issues and life cycle implications? [Note: Given the expected fundamental nature of the proposed activities, feasibility should be assessed in general terms (e.g., are processes thermodynamically feasible and energy-efficient?). Techno-economic analyses and lifecycle assessments are not required.]

In the case of renewal proposals, reviewers will also evaluate:

Progress made during the previous award (as described in the Results from Prior NSF Support section of the proposal).

# PROJECT SUMMARY

<1 page max >

Project Summary must consist of three sections: Overview, Intellectual Merit, and Broader Impacts. The summary should use plain text only, and each section should be pasted into Research.gov. If it is necessary to use special characters in the summary, you can write your summary off-line and upload it as a PDF, but the three-section format still applies, and it may not exceed one page.

## Overview

The overview includes a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. Provide a summary of the objective(s) or goal(s) of the project and the planned activities and methods by which they will be achieved

## Intellectual Merit

The statement of intellectual merit should describe the potential of the proposed activity to advance knowledge. This should include the *transformative nature* of the proposed research and the *significant leap or paradigm shift* in fundamental engineering knowledge

Under the Intellectual Merit criterion, evaluators will be asked to consider:

1. The potential for the proposed activity to advance knowledge and understanding within its own field or across different fields (Intellectual Merit)

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or institution to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?

If there is anything outstanding or unusual in your data management plan, that should go in Intellectual Merit, too.

## Broader Impacts

The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes, including the potential long-term impact on a national need, a grand challenge, or both.

NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

# PROJECT DESCRIPTION

<15 pages max>

Note: As of October 5, 2020, a section called Intellectual Merit is no longer mandatory in the Project Description. It is still mandatory in the Project Summary.

Note: The Project Description may not contain URLs. You should include URLs as references cited instead.

*Recommended elements of the Project Description and suggested outline:*

The Project Description should provide a clear statement of the work to be undertaken and must include: objectives for the period of the proposed work and expected significance; relation to longer-term goals of the PI's project; and relation to the present state of knowledge in the field, to work in progress by the PI under other support and to work in progress elsewhere.

The Project Description should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to both the technical aspects of the proposal and the way in which the project may make broader contributions.

NSF reviewers will be asking:

1. What do you propose to do?

2. How do you propose to do it?

3. What is the intellectual merit of what you propose to do?

4. What are the broader impacts of what you propose to do?

5. How will you know you have succeeded?

## Suggested Outline for the Project Description

## 1. Objective

## 2. Expected Significance

## 3. Relationship of this Project to the Current State of the Art and to the PI’s Goals

## 4. Approach

## 5. Broader impacts (MANDATORY)

A Broader Impacts section is mandatory in the Project Description and must be labeled.

This section should provide a discussion of the broader impacts of the proposed activities. Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the US; and enhanced infrastructure for research and education.

## 6. Results from prior NSF support (MANDATORY)

<Page limit of 5 pages which is included in the 15 page limit of the Project Description>

The “Results from Prior NSF Support” section is mandatory in the Project Description and must be labeled.

If any PI or co-PI identified on the project has had a project with an end date within the past five years (including any current funding), information on the award(s) is required, irrespective of whether the support was directly related to the proposal or not. Funding includes not just salary support, but any funding awarded by NSF. Each PI and co-PI who has received *more than one award* (excluding amendments) must report on the (1) award most closely related to the proposal. The following information must be provided:

(a) the NSF award number, amount and period of support;

(b) the title of the project;

(c) a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award;

(d) a list of publications resulting from the NSF award. This can be a complete bibliographic citation for each publication here, or in the References Cited section and cited here. If none, then write “No publications were produced under this award”;

(e) evidence of research products and their availability, including, but not limited to: data, publications, samples, physical collections, software, and models, as described in any Data Management Plan;

**NOTE:** This is basically an audit check of statements you made in the Data Management Plan for the project. You said there that you would make data available. Did you?

(f) if the proposal is for renewed support, a description of the relation of the completed work to the proposed work.

If the project was recently awarded and therefore no new results exist, describe the major goals and broader impacts of the project.

<end 15 pp limit.>

# REFERENCES CITED

<No Page Limit>

Each reference must include the names of ***all*** authors (in the same sequence in which they appear in the publication, i.e. do not use et al.), the article and journal title, book title, volume number, page numbers, and year of publication. If the proposer has a website address *readily* available, that information should be included in the citation.

# BIOGRAPHICAL SKETCHES

<Limit 3 pages per person>

From January 20, 2023 to October 22, 2023 proposers may continue to prepare and submit this document via use of SciENcv or the NSF fillable PDF.

NSF Fillable PDF: <https://www.nsf.gov/bfa/dias/policy/biosketch.jsp>

You are encouraged to begin using SciENcv to prepare your biographical sketch because its use will be MANDATORY as of October 23, 2023.

You can use “**et al**” in Biographical Sketches, at your discretion.

Note: Collaborators & Other Affiliations is a separate document that must be submitted for each individual identified as senior project personnel.

# COLLABORATORS AND OTHER AFFILIATIONS INFORMATION

<No Page Limit>

Make a separate list for each individual identified as senior project personnel and upload them individually.

NSF requires the information to be given using this template, downloadable at: <https://www.nsf.gov/bfa/dias/policy/coa.jsp>

# BUDGET JUSTIFICATION

<Limit 5 pages>

If there are subawardees, each subawardee budget justification is also limited to 5 pages.

Please connect with your departmental analyst to complete the budget and budget justification for your proposal.

# CURRENT AND PENDING SUPPORT

<No Page Limit>

From January 20, 2023 to October 22, 2023 proposers may continue to prepare and submit this document via use of SciENcv or the NSF fillable PDF.

NSF Fillable PDF: <https://www.nsf.gov/bfa/dias/policy/cps.jsp>

As of October 23, 2023, the use of SciENcv to prepare your Current and Pending Support is MANDATORY.

List anything, funded or not, other than normal faculty activities that requires a time commitment by the person.

# FACILITIES, EQUIPMENT, AND OTHER RESOURCES

<No Page Limit>

This section of the proposal is used to assess the adequacy of the resources available to perform the effort proposed to satisfy both the Intellectual Merit and Broader Impacts review criteria. Proposers should describe only those resources that are directly applicable. Proposers should include an aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded. Such information must be provided in this section, in lieu of other parts of the proposal (e.g., Budget Justification, Project Description). The description should be *narrative* in nature and must not include any quantifiable financial information.

Reviewers will evaluate the information during the merit review process and the cognizant NSF Program Officer will review it for programmatic and technical sufficiency.

Any substantial collaboration with individuals not included in the budget should be described in the Facilities, Equipment and Other Resources section of the proposal and documented in a letter of collaboration from each collaborator.

# SPECIAL INFORMATION AND SUPPLEMENTARY DOCUMENTATION

## Postdoctoral Researcher Mentoring Plan

<1 page>

Each proposal that requests funding to support postdoctoral researchers must include a “Mentoring Plan” with a description of the mentoring activities that will be provided for such individuals. The mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, regardless of whether they reside at the submitting organization, any subrecipient organization, or at any organization participating in a simultaneously submitted collaborative proposal. Proposers are advised that the mentoring plan must not be used to circumvent the 15-page Project Description limitation. See Chapter II-31 for additional information on collaborative proposals. Mentoring activities provided to postdoctoral researchers supported on the project will be evaluated under the Broader Impacts review criterion.

Examples of mentoring activities include, but are not limited to: career counseling; training in preparation of grant proposals, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices.

## Letters of Collaboration

Note: Unfunded Collaborations

Any substantial collaboration with individuals not included in the budget should be described and documented with a letter from each collaborator, which should be provided in the *supplementary document section*.

ECO-CBET proposals involving collaborations with researchers not listed as co-PIs, proposers should include letters confirming the collaborations. These collaborators should include any other Senior Personnel.

Letters of collaboration should be limited to stating the intent to collaborate and should not contain endorsements or evaluation of the proposed project. The *recommended* format for the letter is as follows:

“If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description or the Facilities, Equipment or Other Resources section of the proposal.”

## List of Key Personnel (Mandatory)

<3 pages max>

Provide a list of key personnel involved (maximum three pages), with a description of the expertise each person brings to the project and how this expertise will be leveraged in a convergent research model. Each of the key personnel should be named as either PI, co-PI, or Senior Personnel. Excluding the PI, changes to senior project personnel, from those originally named in the preliminary proposal, are allowed.

## Collaboration Management Plan (Mandatory)

<3 pages max>

Provide a detailed Collaboration Management Plan (maximum three pages) including means of communication, data sharing or tracking, management of personnel within the project group, management of intellectual property resulting from the project, and timeline of activities. Communication approaches and tools are expected to foster immersive discussions characteristic of the convergent research model. The management plan should also describe how students will be trained to engage in and sustain collaborative relationships across a variety of disciplines;

**You must submit these documents even if the information is unchanged since the submission of the preliminary proposal.**

# Single Copy Documents

If the following situations apply see the PAPPG 23-1 II.D.1 Single-Copy Documents (pp. II 4-5, 7) or contact your Grants Facilitator.

## Authorization to Deviate from NSF Proposal Preparation Requirements

## List of Suggested Reviewers or Reviewers Not to Include

## Proprietary or Privileged Information

## Submission of Proposals by Former NSF Staff

# DATA MANAGEMENT PLAN

<Limit 2 pages max>

The text below could serve as the starting point for the data management plan for almost all NSF proposals. **The plan must include sufficient detail for evaluation of its appropriateness and feasibility during merit review**. However, there are special instructions and requirements for some divisions:

**ECO-CBET Proposals** must include a **Data Management Plan** (maximum two pages). The Data Management Plan must identify the data and digital products to be generated during the project and include a description of how these products will be managed and archived. The Data Management Plan should also describe the accessibility of data digital assets and intellectual property rights, including plans for sharing data, code, digital designs, information, and materials resulting from the award.

Additional guidance for Data Management Plans submitted to the **Engineering Directorate** can be found on the NSF website (<https://www.nsf.gov/eng/general/dmp.jsp>).

NOTE TO PIs: A Supplementary Document for the data management plan is required even if you do not expect to generate any data. If you do not expect to generate data, you say that and clearly explain why.

**SAMPLE GENERIC OUTLINE FOR DATA MANAGEMENT PLAN**

## 1. Policy and Practice

The University of California, Riverside has established a custom data management system designed to make results of our research readily and reliably accessible, in accordance with the requirements of Federal sponsors and best practices within the research community. In partnership with the UCR Library and the California Digital Library (CDL), UCR principal investigators have access to the CDL’s eScholarship system, a ready-made resource for dissemination. Researchers can submit materials to the eScholarship series site, where it is automatically given an EZID persistent identifier for long-term identification and management of data resources. All material on the site is indexed on Google, Google Scholar, and Melvyl/WorldCat. Additionally, UC Riverside is a partner of Dryad, an open-source, research data curation and publication platform. All UC Riverside researchers may publish and archive their data in Dryad at no cost. Datasets published in Dryad receive curatorial service to ensure the data are usable. All datasets in Dryad are provided a unique Digital Object Identifier (DOI) to improve the discoverability and attribution of the datasets. All records created in Dryad are searchable, with metadata indexed in Clarivate’s Data Citation Index, Scopus, and Google Dataset Search. Dryad may be used as a permanent archive with stable URLs. All deposits to Dryad are sent to a CoreTrustSeal-certified preservation repository called Merritt. Merritt distributes backup copies through cloud and physical locations globally.

## 2. Scope

This Data Management Plan addresses the NSF policy that primary data “commonly accepted in the scientific community as necessary to validate research findings” be made available at little or no incremental cost. The plan also conforms to the University of California Open Access Policy. In accordance with this policy and guidance from the Office of Management and Budget, this plan does not include preliminary analyses (including raw data), drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. Data that must be withheld long enough to enable peer review and publication/dissemination or protection of intellectual property is subject to this plan only after those steps have taken place.

The release of data about students or any other human subjects is subject to policies and restrictions in protocols adopted by the relevant Institutional Research Board (IRB) and the Family Educational Rights and Privacy Act (FERPA) regulations.

Specific to each project: Describe the types of data, samples, physical collections, software, curriculum materials, and other materials that you expect to be produced in the course of the project. Don’t go crazy – you essentially are promising to make public the things that you list here.

## 3. Data and Metadata Format and Content

Specific to each project: Describe any standards or conventions in your field for how data are labeled, stored, or accessed. Do you plan to conform to those standards? If you are not aware of any such standards in your field, you can say that. If you can share any details for how you will format data sets for future use, insert that.

A UCR librarian specializing in data services is available to assist with annotation of research data, formatting, and metadata workflows for submission to archiving.

## 4. Accessibility and Data Protection

Materials will be searchable through a number of databases and search engines, including Google and Google Scholar. As noted in Section 2 (Scope), data will be made available only after appropriate steps have been taken to protect intellectual property. Confidential material will be handled according to policies and protocols for human subjects, FERPA, and any other applicable regulations and restrictions.

Stored materials are downloadable but not editable, and they are backed up to assure no loss of data. All uploads are approved by a curator before they are published.

\*If human subjects data is involved, you can reference a current or pending IRB protocol here, and/or add a couple of sentences about how you will protect data (taken from the approved or pending IRB protocol).

\*\*If someone will be preparing the data (such as a student anonymizing it), we need to reference that here

\*\*\*For collaborative proposals, add a sentence that names the person(s) responsible for managing and maintaining the data and describe the roles and responsibilities of all parties with respect to managing the data both during and after the cycle.

\*\*\*\***For research centers and major partnerships with industry or other user communities** → address how data are to be shared and managed with partners, center members, and other major stakeholders. You can reference a Data Use Agreement here, and you can write up that agreement with the help of RED and the Office of Research Integrity.

## 5. Derivative Products

All materials will contain acknowledgement of NSF support as per NSF policy: “*This material is based upon work supported by the National Science Foundation under Grant No. (NSF grant number).*” Additionally, materials will contain a disclaimer that “*any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation*.”

In keeping with standard ethical practices, it is expected that subsequent users of the data will acknowledge the source.

## 6. Archiving, Access, and Preservation

If your proposal is to GEO, MPS, or SBE, check the requirements at: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>.

If your project is going to produce physical materials or collections (e.g., nanotubes, filter samples from an air quality study) describe how you will preserve these samples and how you will make them available to other researchers. (Remember, there is no change in policy here: you don’t have to incur extra expenses to satisfy requests; in this statement, you just have to say what your approach will be.)

If the PI leaves UCR, the products disseminated from UCR will remain stored there. The PI is free to reproduce and repost these materials at his/her new institution. If data is collected at other institutions, describe what will happen with the materials at the home institution.

## 7. Public Access to Copyrighted Materials

The PI or lead author on any publications or conference proceedings resulting from this project will comply with the NSF Public Access Policy by assuring that the materials are deposited in a public access compliant repository and are made available for download, reading, and analysis within 12 months of publication. The materials will include machine-readable metadata and a permanent identifier, and the identifier will be included in reports on products resulting from this project.

# APPENDICES

**This solicitation does not allow appendices**.

# OTHER PERSONNEL

This is optional and should be uploaded as a single PDF file in “Other Supplementary Documents”.

For the personnel categories listed below, the proposal also may include information on exceptional qualifications that merit consideration in the evaluation of the proposal. While the requirement to use SciENcv for preparation and submission of the biographical sketch is for any individual designated as senior personnel, the biographical information for ‘other personnel’ may be freeform. The biographical information must be clearly identified as “Other Personnel” biographical information and uploaded as a single PDF file in the Other Supplementary Documents section of the proposal.

(1) Postdoctoral associates

(2) Other professionals

(3) Students (research assistants)