**NSF IUSE General Guidelines**

**About**

 Improving Undergraduate STEM Education (IUSE) awards support projects to improve STEM teaching and learning for undergraduate students, including studying what works and for whom and how to transform institutions to adopt successful practices in STEM education.

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| General Information |
| NOFO | [NSF-23-510](https://www.nsf.gov/funding/opportunities/iuse-edu-improving-undergraduate-stem-education-directorate-stem/nsf23-510/solicitation#pgm_desc_txt) |
| Due Dates | Submissions are due either the third Wednesday in January (ESL Level 1, ICT Capacity Building, ICT Level 1) or the third Wednesday in July (ESL Level 2 and Level 3, ICT Level 2). |
| Project Period and Budget Limit | Project period and budget limit are dependent on IUSE track and level.Track 1: The Engaged Student Learning (ESL) focuses on design, development, and research projects that involve the creation, exploration, or implementation of tools, resources, and models. Projects must show high potential to increase student engagement and learning in STEM.* ESL Level 1: Early stage or exploratory projects (maximum of $400,000 over a maximum duration of three years).
* ESL Level 2: Intended to support design and development efforts or impact studies to improve student learning ($400,001 - $750,000 over a maximum duration of three years).
* ESL Level 3: Expected to benefit large numbers of students or broad communities of faculty and instructors through large-scale design and development studies or impact research ($750,001 to $2 million over a maximum duration of five years).

Track 2: The Institutional and Community Transformation (ICT) track funds innovative work applying evidence-based practices that improve undergraduate STEM education and research on the organizational change processes involved in implementing evidence-based practices.* ICT Capacity Building: Expected to enable institutions that have not served as the lead institution on a prior ICT award to identify a project of interest (maximum of $200,000 for single institution or $400,000 for multi-institution, both with a maximum duration of two years).
* ICT Level 1: Early-stage exploratory projects or small to mid-scale projects that build on prior work (maximum of $400,000 over a maximum duration of three years).
* ICT Level 2: Intended to support design and development work or impact research ($400,001 to $2 million over a maximum duration of five years).

See NOFO for additional guidance, including specific submission deadlines, for each track and level. |

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| Formatting Information |
| Document | PDF only |
| Font type and size | Arial, Courier New, Palatino Linotype at a font size of 10 points or larger; or Times New Roman or Computer Modern, 11 points or larger. |
| Margins | Minimum 1 inch on all sides. |
| Other formatting  | [Link to additional formatting instructions.](https://www.nsf.gov/pubs/policydocs/pappg22_1/index.jsp) |

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| Required Proposal Documents |
| Project Summary | (1 page) Concise description of the project including sections titled Overview, Intellectual Merit, and Broader Impacts.1. Overview: Provide a description of the project’s activities along with a statement of the project’s objectives and methods.
2. Intellectual Merit: Explain the innovative nature of the project, how it will advance knowledge in the research field, and describe how success will be assessed.
3. Broader Impacts: Explain how the research will more broadly benefit society. This could include detailing contributions to STEM education, enhancement of research infrastructure, preparation of the scientific workforce, or improvement of scientific literacy.
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| Project Description | (15 pages) The Project Description section should demonstrate a well-reasoned, sound, and evidence-based plan for generating and disseminating knowledge about effective STEM education, often with a clear evaluation component and collaboration.The Project Description should include the following elements:* A clear alignment with IUSE goals, namely improving undergraduate STEM education through evidence-based teaching and learning practices, broadening participation, innovative pedagogy, faculty development, or institutional change.
* A justification of the problem being addressed.
* A proposed solution to the problem that is based in sound research and theoretical frameworks (evidence-based).
* Well-articulated goals that are logical and tied to objectives.
* A robust plan for evaluating the proposed research with clear metrics.
* *Broader Impacts* – Must include a section on the broader impacts of the research. Broader impacts of research can be achieved through the research itself or through related and complementary activities. The NSF values both scientific advancement and contributions to society, including full participation of women, persons with disabilities, and underrepresented minorities in STEM, improving STEM education and public engagement, enhancing individual well-being, strengthening the STEM workforce, fostering partnerships, boosting national security and economic competitiveness, informing public policy, and advancing research and education infrastructure.
* Results from prior NSF support should be provided, if applicable.

See the solicitation and [PAPPG](https://nsf-gov-resources.nsf.gov/files/nsf24_1.pdf?VersionId=ImnVCR.NDkOKTGKuDHHmterZQY3cXEDn) for further guidance. |
| References Cited | (no page limit) Complete listing of the references cited in the Research Strategy. |
| Biographical Sketches | (5 pages per person) Required for PIs and Co-PIs Should include both research and educational activities and accomplishments. Must adhere to [specific biosketch formatting requirements](https://www.nsf.gov/funding/senior-personnel-documents#biographical-sketch-0bd). Should be prepared using [SciENcv](https://www.ncbi.nlm.nih.gov/sciencv/).  |
| Synergistic Activities | (1 page) Required for the PI and Co-PIs. Must include a list of up to five distinct examples that demonstrates the broader impact of the individual's professional and scholarly activities (both research and education) that focus on the integration and transfer of knowledge as well as its creation.Examples may include:* innovations in teaching and training;
* contributions to the science of learning;
* development and/or refinement of research tools;
* computation methodologies and algorithms for problem-solving;
* development of databases to support research and education;
* the participation of groups underrepresented in STEM;
* participation in international research collaborations;
* participation in national and/or international standards development efforts;
* and service to the scientific and engineering community outside of the individual's immediate organization.
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| Current & Pending Support | (no page limit) Required for the PI and Co-PIs. Should adhere to [specific formatting requirements](https://www.nsf.gov/funding/senior-personnel-documents#current-and-pending-other-support-5db). Should be prepared using [SciENcv](https://www.ncbi.nlm.nih.gov/sciencv/). |
| Collaborators and Other Affiliations | Provide information about collaborators and other affiliations for the PI and Co-PIs. Must use [COA template](https://www.nsf.gov/bfa/dias/policy/coa/coa_template.xlsx). |
| Facilities, Equipment, and Other Resources | (no page limit) A detailed description of the facilities (lab, computer, animal) and resources (supplies, space, time, funding) that support the capability to complete the proposed research.  |
| Budget | See above for details on the budget for different IUSE Tracks and Levels.Budgets should be drafted by the PI, refined and approved by ORSP, and submitted to the NSF by ORSP.  |
| Budget Justification | (limit 5 pages) Provides a detailed breakdown of proposed spending in each category as well as a justification supporting the numbers provided in each budget category. |
| Data Management Plan | (limit 2 pages) Detail how the data generated by the proposed research will be managed. Specifically describe the types of data expected, policies for accessing the data, and plans for archiving the data. |

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| If Applicable/Optional Proposal Documents |
| Mentoring Plan | (1 page) Required for proposals requesting funding support for post-docs or graduate students. Must describe the mentoring activities that will be provided to all post-docs and graduate students supported by the proposal if awarded. |
| Letters of Collaboration | If the project involves collaborative arrangements of significance, these arrangements should be documented through letters of collaboration. Letters of collaboration should be limited to stating the intent to collaborate and should not contain endorsements or evaluation of the proposed project. Letters of collaboration should follow the single-sentence format:“If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by the 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.” |