

# Earth System Science for the Anthropocene (ESSA) 2021 Summer Graduate Grants - Request for Proposals (RFP)

The **ESSA Summer Graduate Grants** initiative supports collaborative research among two or more graduate students in interdisciplinary and transdisciplinary research. Summer Graduate Grants can be awarded up to \$10,000 per collaborative team (teams should consist of two or more students or collaborators) or up to \$5,000 for graduate student-community partner collaborations\*. Graduate students can apply for these grants to fund the purchase of research materials, pay laboratory analysis fees, hire research assistants, pay for local travel, materials to create science communication products, and cover summer subsistence costs via a summer stipend.

We encourage students to propose partnerships with community members, organizations, or stakeholder groups within and beyond ASU. Proposals that explicitly address the three core values of ESSA (justice, equity, diversity, and inclusion; diverse knowledge systems; and solutions focus) will be given priority.

\*Up to \$1000 (in addition to the \$5000) is allowed for honoraria to a community partner or collaborator outside of ASU. Contact [essa@asu.edu](mailto:essa@asu.edu) for more details.

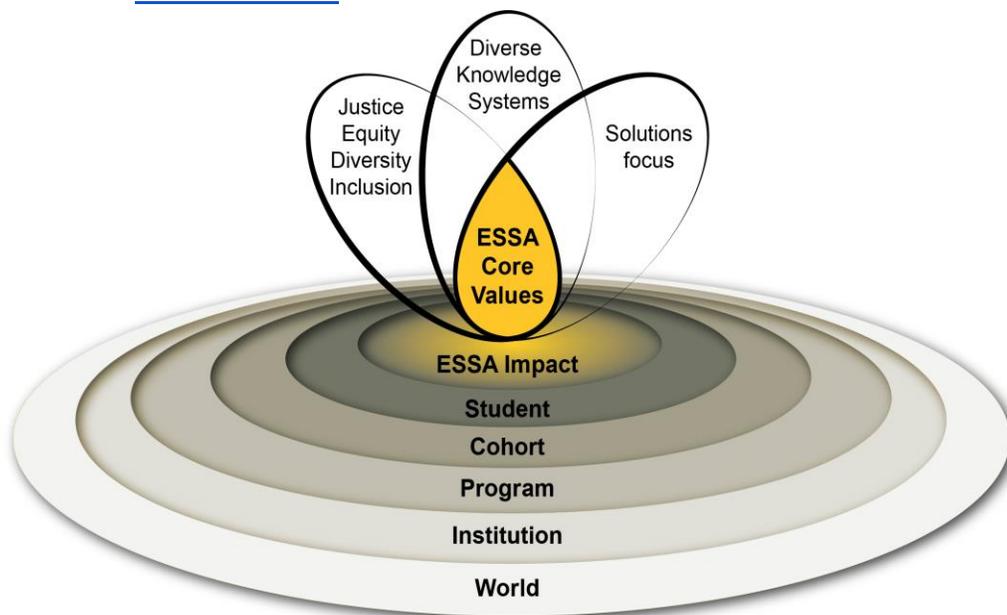


Figure. The three core values embraced by the ESSA community will have a ripple effect from the student to the global scale.

## Requirements

Register as an ESSA Scholar by completing this [form](https://forms.gle/vEgx6QdtXMK3mJyK8) <https://forms.gle/vEgx6QdtXMK3mJyK8>. We recommend that any scholar communicate their affiliation with ESSA with their formal PhD or Master's advisor.

## **Allowable Expenses**

The awards, which will be up to \$10,000 to support multi-student collaborative research projects (a minimum of 2 students per project) or up to \$5000 to support student-community partner collaborations (one student and one community partner), may be used for any category of expenditure, e.g., subsistence for self or wages for an undergraduate research assistant, materials/supplies, lab analysis, and local travel for fieldwork. Funds cannot be budgeted for expenses related to coursework at ASU (tuition, course textbooks, etc.), and graduate RA funds are also not supported under this program. Funding for conference travel will not be considered.

Funds for subsistence will be awarded as a stipend with awardees responsible for taxes. All other awards will be managed through ESSA, and awardees will work with Michele Clark to spend the awarded funds as per their budget. Awarded monies must be fully spent within one year of the award. If the proposal budget includes funds to pay other personnel, you must adhere to ASU Human Resource hiring regulations and must have a faculty member who will approve hours electronically every pay period as required by ASU Human Resources.

## **To Apply**

Applicants must submit their proposals electronically to Michele Clark ([essa@asu.edu](mailto:essa@asu.edu)) by **5:00 PM MST on Monday, April 12, 2021.** Questions regarding any of the information in this RFP can also be addressed to Michele.

Students must provide their advisor with a copy of their proposal. Shortly after April 12, advisors will be sent a short email questionnaire asking: 1) the relation of the proposed work to applicant's thesis or dissertation; 2) the student's likelihood of success with the proposed research; 3) the relationship of the proposed research to ESSA's research agenda and; 4) whether the student has other funding to support the work.

## **Application Instructions**

The text should be in 12-point font, single spaced, with 1" margins and should not exceed page limits stipulated below (not including budget or literature cited). For student collaborations, submit (A) one cover sheet per student (community-partner collaborators outside of ASU do not need to submit a cover sheet), (B) one proposed research section and (C) budget along with budget justification. The proposal should contain the following components:

A. The 2021 ESSA Summer Grad Grant **Cover Sheet** (1 page per student), which includes:

- A descriptive title for the proposed research project.
- Your name and department affiliation, along with those of your collaborator(s).
- Your advisor(s) name(s), along with those of your collaborator(s).
- An abstract (250 word maximum) of the proposed research that succinctly states the central research questions, research approach, and significance of the proposed research. Briefly, describe your collaborative partnership and the inter/transdisciplinary nature of your research proposal and your role in the collaborative partnership.

B. **Proposed Research** (under this header), a full project description, developed collaboratively, should be no more than 3 pages including tables and figures and cover the following:

- **Introduction:** This section should briefly review the current literature on the proposed topic, to provide theoretical context for (and importance of) the research question and present the research question and/or research objectives.
- **Research approach:** A description of the research design, including the methods to be used (or appropriate citations) and the research approach. We encourage approaches that engage with diverse ways of knowing or exploring research questions.
- **Expected Outcomes:** A discussion of expected results and/or outcomes of the proposed research. Outcomes can include broader impacts, community partnerships, and/or expected science communication products.
- **Significance:** A description of the significance of the proposed work to advancing solutions for research problems in the Anthropocene. Describe any partnerships you plan to establish or existing collaborations and partnerships that you will leverage as you pursue this research. We encourage applicants to describe how their research objectives advance the goals of ESSA (contact Michele if you would like a copy of the 2021 ESSA NSF-NRT proposal). The ESSA NRT project summary is attached at the bottom of this RFP for your review.
- **Literature Cited** (no page limit).

C. **Budget and Justification** (1 page maximum): Include categories of expenditures and a narrative justification of all requested expenditures. Budgets should include the following categories of expenditures:

Personnel (includes subsistence stipends and wages for assistants), Materials and Supplies, Local Travel, Publication Costs, Laboratory Fees, and Other (please provide details).

- The **budget** should just be presented as a table with one line devoted to each budget item.
- The **budget justification** or budget narrative should give details about the amount in each line item. Please include a justification for summer stipend support – why such support is necessary for the completion of the proposed research.

### **Proposal Review**

Proposals will be reviewed by a panel consisting of ESSA faculty, affiliated postdocs, and other ESSA associates. An award decision will be made and communicated by late April 2021. In the future, current or former ESSA Scholars will review proposals and share their recommendations with the ESSA Executive Committee.

All students will receive written feedback from the reviewers at that time. Reviews will be based on the following criteria:

1. Contribution of the project to the overall goals of the ESSA initiative and its clear commitment to the foundational values of ESSA.
2. Intellectual merit: overall quality of the science proposed, and feasibility of the research.
3. Demonstrated need and the reasonableness of the budget.

## ESSA NSF-NRT Project Summary

**Overview:** A convergent, multi-scaled (local to planetary) and societally embedded science is needed to understand the dynamics of a human-dominated planet and co-produce solutions to the accelerating change and rising uncertainty, injustice, and complexity brought by the Anthropocene. The capacity for systems thinking, diverse perspectives and knowledges, and convergence across a breadth of deep disciplinary expertise must be brought to the task of solving Anthropocene challenges, not only in academia but in government, non-governmental organizations, and business at local, regional, and international scales. That capacity will be developed through guided learning in team science, co-production of knowledge and solutions, and science communication. Further, the current societal moment has laid bare structural racism, inequity, and injustice throughout the country and within the academy. To understand and address this disparity, a new approach is required that focuses on recruiting those historically marginalized, training faculty in culturally sensitive mentoring and justice, equity, diversity, and inclusion to better support students, and preparing scholars to co-produce solutions-orientated science. Many of today's graduate students are keenly interested in following alternative (to academics) career pathways, but our graduate programs have not kept up with this demand. Earth System Science for the Anthropocene (ESSA) is a fundamental reconceptualization of graduate education across intellectual domains. It will leverage ongoing, community-embedded, convergent science at ASU with an array of educational elements aimed at developing in students five core competencies: 1) systems thinking, 2) teamwork, 3) co-production, 4) ethics, and 5) communication. Scholars (NRT trainees) will be selected from incoming cohorts in earth and environmental science, engineering, and social science and sustainability with the critical goal of improving representation of people excluded due to ethnicity, race, or other identities. The NRT will support 24 scholars with stipends (18 PhD, 6 MS) and 24 scholars without stipends (18 PhD, 6 MS), for a total of 48 ESSA NRT scholars in four cohorts. Throughout their graduate careers, these students will have a strong system of support from a community of peers and network of mentors, engage in an immersive team science experience, participate in annual symposia and inclusivity programming, take internships, and co-produce research on an ESSA-related topic. All ESSA scholars will embrace and enrich three core values: to center justice, equity, diversity and inclusion; to engage diverse knowledge systems; and to focus their research on solutions.

**Intellectual Merit:** The rapid change and the indelible imprint of human impact on the Earth system in the Anthropocene is increasingly cause for urgent action to transition to planetary sustainability. ESSA will meet the need for new scientific and educational approaches that emphasize knowledge co-production, interdisciplinary experience, team science, learning with real-world practitioners, and solutions-focused science, simultaneously maintaining strong foundations in core disciplines or established interdisciplinary programs. The intellectual merit of this program is demonstrated by 1) its application of transformative elements to the graduate education experience: i.e., student-centered and -designed curriculum, networked peer and team mentoring, and community-embedded research; and 2) the solutions-oriented science the scholars will co-produce, based on the conceptual frameworks of complex social-ecological-technological systems, indigenous knowledge systems, and equity.

**Broader impacts:** The ESSA graduate education model will have a substantial impact on local to global systems research by contributing 48 broadly educated graduates with deep expertise, who will engage in convergent team science with decision makers to find solutions to the most pressing challenges of our time. They will identify their position in groups of problem-solvers and integrate the diverse perspectives, backgrounds, and ways of knowing of others. This understanding will position ESSA graduates as valuable contributors when entering the workforce. ESSA will recruit and develop capacity of individuals identifying with groups historically marginalized in the academy to take on leadership roles in scientific endeavors and beyond. A focus on faculty training in justice, equity, diversity, and inclusion and culturally sensitive mentoring will influence academic culture throughout the university. Finally, the ESSA NRT will develop and evolve a training model as an overarching university initiative that can serve as inspiration for the transformation of graduate education in the United States.