

**USC Center for Sustainability Solutions (CSS)  
Undergraduate Sustainability Grand Challenge Fellowship Program (USGCF)  
AY 21-22 Call for Fellowship Proposals**

**Proposals Due: July 01, 2021  
Fellowship Start Date: August 16, 2021**

The USC Center for Sustainability Solutions (CSS) is pleased to announce the creation of the Undergraduate Sustainability Grand Challenge Fellowship (USGCF) program to support, through a competitive process, multidisciplinary research projects focused on sustainability. Funded by the CSS, and open to undergraduate students in all USC majors, the USGCF will contribute to extending to the larger USC community the values espoused by the Viterbi School of Engineering, the Price School of Public Policy, and the National Academy of Engineering Grand Challenges Scholars Program. More information can be found at <https://sustainabilitysolutions.usc.edu>.

### **Overview**

In order to encourage undergraduate interest in developing innovative solutions to important sustainability challenges, we are soliciting proposals for multidisciplinary sustainability-focused research projects, led by USC undergraduate students, and involving faculty advisors from two or more schools across USC. This program leverages the sustainability theme of the national Grand Challenges Scholar Program (GCSP) of the USC Viterbi School of Engineering (<https://viterbiundergrad.usc.edu/gcsp/>)<sup>1</sup>. It also relates to the Environmental Engineering Grand Challenges ([Grand Challenges and Opportunities in Environmental Engineering for the Twenty-first Century | National Academies](#)) as well as to the UN Sustainable Development Goals ([THE 17 GOALS | Sustainable Development \(un.org\)](#)). The new program will be separate from the GCSP and other existing USC funds such as the Provost Undergraduate Research Fellowship, URAP, and SOAR; it is meant as a streamlined process for undergraduate students specifically interested in addressing sustainability-related topics.

### **Aims**

The CSS aims to foster collaborative, interdisciplinary, innovative and entrepreneurial research with strong societal impact in all issues surrounding sustainability. The proposed USGCF program would serve to both complement that mission and also underscore USC's position as a leading university in undergraduate research and innovation for societal good. By allocating a dedicated fellowship fund for sustainability, we seek to garner student action in this important theme and contribute to the Viterbi school's mission to engineer a better world for all humanity, the Price school's quest to improve quality of life for communities worldwide, and the university's overall recent focus on sustainability initiatives. Synergistic with several other on-campus sustainability opportunities for students, the USGCSF will provide a focused path for students who want to engage in sustainability in career-oriented or hands-on, impactful environments. This new fellowship opportunity will serve all undergraduate students at USC.

---

<sup>1</sup> Fundamentally contributing to the synergy of five competencies and mindsets, namely, research and scholarship, interdisciplinarity, innovation and entrepreneurship, cultural understanding, and societal impact, the Viterbi School GCSP is a call to action to undergraduate students, across disciplines, to be engaged in the solution of sustainability challenges facing our world. It addresses key elements of higher education: Research, Innovation and Impact, and Service. It enhances both technical and disciplinary competence as well as character.

## **Structure**

The process of student applications to the USGCF is modeled on similar existing ones, such as the Provost Undergraduate fellowship and the recent Viterbi and Price summer research fellowships, but with the explicit requirements to focus on sustainability and to advance the five competencies and mindsets of the GCSP:

- Research involving practical, hands-on, or field project
- Interdisciplinary partnerships
- Enabling innovation and entrepreneurship (e.g., through student competitions such as the Min Family Challenge (<https://viterbiinnovation.usc.edu/mfc/>) and the Maseeh Entrepreneurship Prize Competition (<https://viterbiinnovation.usc.edu/mepec/>))
- Cultural understanding for the viability of the proposed solutions
- Societal impact

Students are expected to reach out directly to faculty members to express their interest and get the necessary confirmation or approval from the faculty mentor. The proposal application will be via the CSS webpage and will require a description of the proposed project, as well as how the project will advance the competencies of the GCSP listed above. It will also need a statement of support from the corresponding faculty member mentors.

The USGCF program Fellows will be expected to present their research results at an annual symposium to be organized by the CSS.

The USGCF program is open to undergraduate students of all majors and classes, with specific deadlines for the academic year and/or summer terms. Faculty mentors may be tenured, tenure-track, or non-tenure-track. Applications will be evaluated by CSS leadership and Research Advisory Board. The process will encourage diverse and inclusive cohorts to help best promote innovative and societally important solutions.

## **Funding Amount**

The fellowships will be for a one-year duration, renewable for up to 3 years based on annual proposal submission and evaluation. The maximum annual award will be \$5k: there will be \$3k allocated for the academic year and \$2k for the summer. Proposals may be for the full year, for the academic year, or for summer only. Approximately 10-12 Fellows will be selected, assuming receipt of sufficient proposals of merit.

## **Proposal Submission Instructions**

Fellowship proposals are required to have participation from at least two schools within USC. This means that there should be at least two faculty mentors, each from a different school.

Proposers can find a list of potential areas of research interest at <https://sustainabilitysolutions.usc.edu/research/>. But please note that this is not a comprehensive list and that other relevant topics may also be proposed.

The proposals should be prepared as follows:

- Technical sections: Maximum of 5 pages total, single spaced, 12-point font, no less than 12-point line spacing, 1-inch margins on all sides
- Technical sections to include with exact headings and order:
  1. Introduction
  2. Problem Formulation and Project Objectives
  3. Technical Approach
  4. Expected Significance and Relevance to the Five GCSP Mindsets
  6. Plan of Work and Milestones (specify if for whole year, academic year, or summer only)
  7. Team Members: Names, Affiliation, Role in Project
- Additionally, please include the following sections, which do not count in the 5-page limit:
  8. References
  9. Investigator Bios (no more than 1 page each)
  10. Brief statements of endorsement from at least two faculty mentors, each from a different USC school
- Proposals should be submitted via the following link:  
<https://sustainabilitysolutions.usc.edu/undergraduatefellowship/>

### **Evaluation Criteria**

1. Technical merit
2. Relevance to the solicitation
3. Quality and interdisciplinarity of team
4. Likelihood of enabling practical sustainability solutions

### **Other Considerations**

The prospective applicants are encouraged to reach out to the following USC centers with sustainability research elements:

- Southern California Environmental Health Center (SCEHC)
- Institute on Inequalities in Global Health (IIHG)
- Institute for Creative Technologies (ICT)
- Center for Artificial Intelligence in Society (CAIS)
- Equity Research Institute (ERI)
- Center for Risk and Economic Analysis of Terrorism Events (CREATE)
- Security and Political Economy (SPEC) Lab
- Center for Computer Systems Security (CSSS)
- METRANS Transportation Center
- Schaeffer Center for Health Policy and Economics
- Center for Neural Engineering (CNE)

- Ming Hsieh Institute for Engineering Medicine
- Alfred Mann Institute (AMI)
- Center for Social Innovation
- Brain and Creativity Institute
- Quantum Computing Center- Enriching Life
- Medical Virtual Reality (MedVR) Lab
- Wrigley Institute for Environmental Studies
- Schwarzenegger Institute

Please note that this may not be a comprehensive list, and that the applicants should cast their nets widely beyond these centers to consider other organizations across campus and to individual faculty members.

**Contact Information:**

Inquiries should be sent to CSS Co-Directors:  
Prof. Mahta Moghaddam, [mahta@usc.edu](mailto:mahta@usc.edu)  
Prof. Detlof von Winterfeldt, [winterfe@usc.edu](mailto:winterfe@usc.edu)