

KECK Geology Consortium Guidelines for Submission of Project Proposals 2022-2026 Projects

The Keck Geology Consortium Programs described below reflect our most recent proposal to NSF for support of the consortium through 2026. While retaining much of the historical structure of Keck projects, there are important differences, so please read the guidelines carefully.

I. Background

The new annual research programs proposed for the 2022-2026 cycle include Gateway projects for rising sophomores and Advanced projects for rising seniors (Fig 1). Both programs include common components (research, analytical and professional development) that have differing goals and activities appropriate to students in each program.

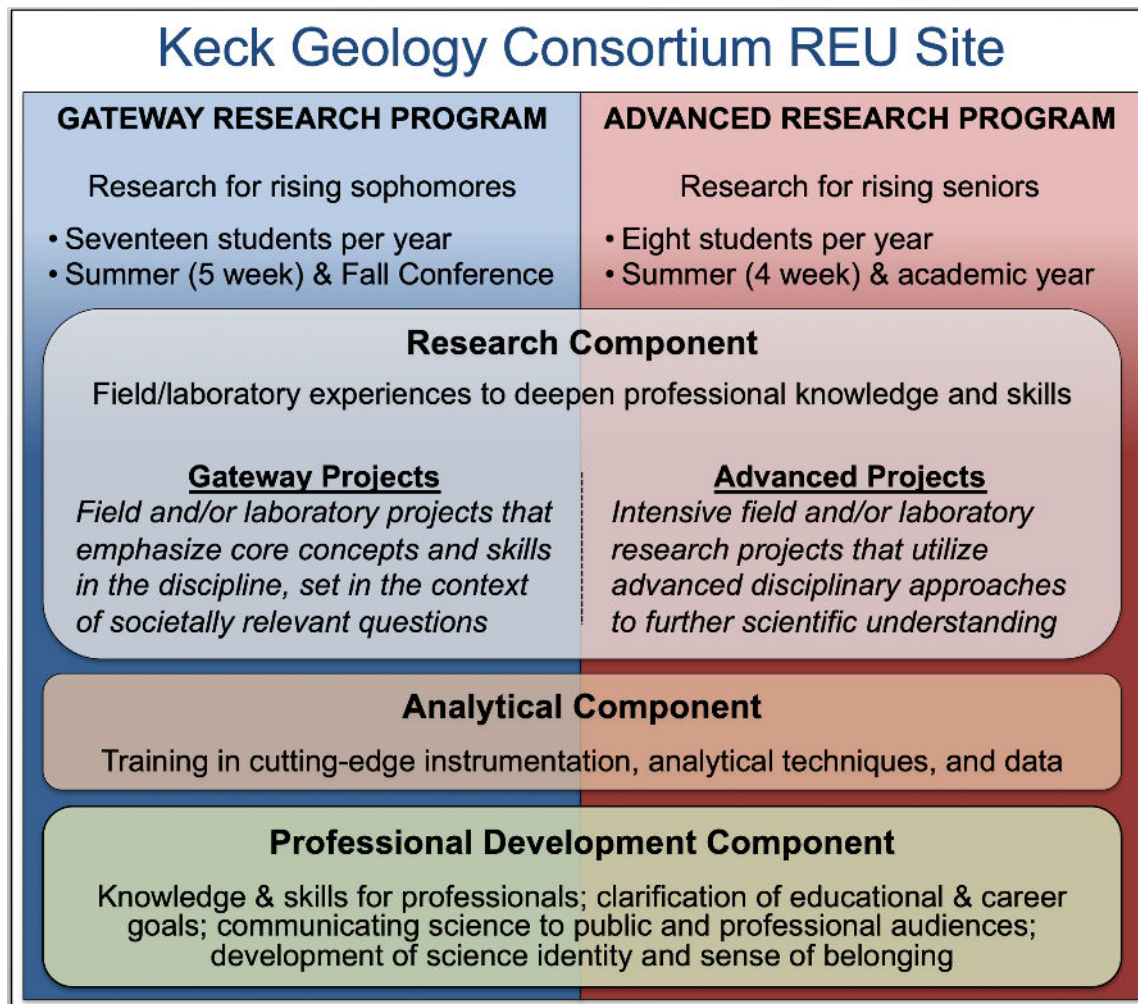


Figure 1. Diagram illustrating the goals and structure of the research, analytical, and professional development components in the Gateway and Advanced Research programs of the Keck Geology Consortium REU site. See text for detailed explanation.

The **Gateway Program** for beginning students, especially those from underrepresented minority groups, focuses on exploration of the discipline and its intersections with socially relevant issues. The research component of this program is designed intentionally to appeal to beginning students, and especially those from diverse backgrounds, to introduce them to the breadth and excitement of the discipline through authentic research experiences, to deepen

their understanding of the nature of science, to further develop their research skills and science identity, and to socialize them into a research community of practice.

The research component in the **Advanced Research Program** includes a collaborative summer field or laboratory project followed by an entire academic year of deeper questioning, data collection, analysis, and dissemination (Figure 1).

II. Research Project Details

Gateway Projects: The ideal Gateway project is designed for 10 students and two faculty directors, but we will also consider five student projects with one faculty director. In addition to research, a typical Gateway project will involve a mix of hands-on activities, problem sets and mini-lectures by project directors and perhaps a visiting scientist ("science mentor" or near-peer mentor) to help introduce students to the geosciences in general as well as to help develop some of the skills needed to be successful during the five-week research project.

- 5 weeks summer
- Rising Sophomore
- Project Directors publish a short contribution in *Proceedings of the Keck Geology Consortium* that summarizes the results of the study.

Advanced Research Projects: The ideal Advanced Research project is designed for 10 students and two faculty directors, but we will also consider five student projects with one faculty director. These projects involve students in a common four-week summer field and/or laboratory experience, followed by supervised independent work at their home campuses during the following academic year.

- 4 weeks summer
- Rising Juniors and Seniors
- Supervised research at home institution through the following academic year
- Students and Project Directors publish short contributions in *Proceedings of the Keck Geology Consortium*

The **Analytical Skills Component** supports and supplements both types of Consortium projects (Gateway and Advanced). The goals of the analytical component are two-fold: 1) to train undergraduate students in cutting-edge analytical techniques and instrumentation, and 2) to enhance student research experiences and project science goals through the use of analytical data. Project directors can request up to \$500 per student for analytical work. Note that preference will be given to projects that make use of services provided by established NSF-supported user facilities such as Laserchron, LacCore, Institute for Rock Magnetism, etc.

The **Professional Development** component is designed to support students in both Consortium programs (Gateway and Advanced). The goals of this component are for undergraduate students to strengthen their professional knowledge and skills, promote the development of a science identity, and help clarify their educational and career plans through participation in a professional meeting. Project directors and participants travel to a regional or national conference, meet together to discuss their project results, and present their findings as appropriate. Project directors will also facilitate professional development of their students at the meeting.

Before you begin to prepare a proposal to the Keck Geology Consortium REU, we encourage you to contact Cam or Karl, especially if you are new to the program.

III. Proposal Format and Contents

- **Project Title:**
- **Project Directors:** name, institution, email for each
- **Tentative Field/Laboratory Dates**
- **Number of Students**
- **Total Budget Request**
- **Project Description:** brief introduction of project goals, significance, and geology
- **Student Learning Outcomes:** (including scientific, professional, and personal)
- **Potential student projects** (e.g. scientific questions and number of students on each)
- **Project Logistics:** number of students, approximate project dates and location(s) for fieldwork, lab work, and conference travel, safety issues, expectations for students (e.g. remote camping, food flexibility, gear, physical ability). Please give a brief description of the faculty committed to or interested in working on the project and areas of expertise.
- **Analytical Component:** If your project asks for funding for analytical work (see Analytical Component above), please include a statement of the type(s) of data you plan to collect, location and why it's important to the project.
- **Professional Development Component:** If your project asks for additional funding for professional development (see Professional Development above), please include a statement of the meeting that you plan to attend, its relevance to the project goals and student professional development, and the planned/facilitated activities by the project at the meeting.
- **Budget:** Use the guidelines below (Table 1) and the [Keck Project Budget Worksheet & Form](#), keeping an eye on the bottom dollar amount for the project size you propose. The participant support costs (travel to site, travel at site, room and board) may be reallocated as long as the final budget does not change from the maximum amount indicated. If you have matching funds available for projects that are more expensive than the budget limit, please indicate the source and use of those funds.

IV. Submitting a Proposal

Proposals are accepted at any time, however, we are especially interested in receiving proposals by 30 September, before the annual GSA meeting when the proposals are reviewed by the Keck Representatives. While you do not need to have commitments from project faculty when you submit a proposal, it is best to have faculty in place if at all possible. Typical proposals are five to seven pages in length, including figures, tables, and references. Please attach a pdf of the budget (generated from the form linked above) to the end of the proposal narrative.

Please submit your proposal (PDF) to Cam Davidson (cdavidso@carleton.edu) AND Karl Wirth (wirth@macalester.edu).

Table 1. Budget Guidelines for 2022-2026 Keck Geology Consortium Projects

Example Gateway Project Budget (10 students)

| I. Stipends | Unit Cost | no. | Total Budget |
|--------------------------------------|-----------|-----|-----------------|
| Project Director | \$9,000 | 2 | \$18,000 |
| Science Mentor/Near-Peer Mentor | \$3,000 | 1 | \$3,000 |
| Student | \$3,000 | 10 | \$30,000 |
| II. Travel | | | |
| Faculty to site | \$500 | 2 | \$1,000 |
| Student to site | \$500 | 11 | \$5,500 |
| At site | \$500 | 11 | \$5,500 |
| III. Room & Board | | | |
| | \$900 | 13 | \$11,700 |
| IV. Other Expenses | | | |
| | \$500 | 11 | \$5,500 |
| V. Analytical Component* | | | |
| | \$500 | 11 | \$5,500 * |
| VI. Professional Development* | | | |
| | \$1,225 | 11 | \$13,475 * |
| Maximum Project Budget: | | | \$99,175 |

*These are maximum amounts available and calculated on a per student basis. Show actual costs in your budget and explain in the proposal narrative.

Example Advanced Research Project Budget (5 students)

| I. Stipends | Unit Cost | no. | Total Budget |
|--------------------------------------|-----------|-----|-----------------|
| Project Director | \$9,000 | 1 | \$9,000 |
| Student | \$2,400 | 5 | \$12,000 |
| II. Travel | | | |
| Faculty to site | \$500 | 1 | \$500 |
| Student to site | \$500 | 5 | \$2,500 |
| At site | \$500 | 5 | \$2,500 |
| III. Room & Board | | | |
| | \$800 | 5 | \$4,000 |
| IV. Other Expenses | | | |
| | \$500 | 5 | \$2,500 |
| V. Analytical Component* | | | |
| | \$500 | 5 | \$2,500 * |
| VI. Professional Development* | | | |
| | \$1,225 | 5 | \$6,125 * |
| Maximum Project Budget: | | | \$41,625 |

*These are maximum amounts available and calculated on a per student basis. Show actual costs in your budget and explain in the proposal narrative.