

THE KECK GEOLOGY CONSORTIUM: HISTORY AND PROGRAM 2003

BETH A. PALMER
Coordinator

INTRODUCTION

The Keck Geology Consortium brings together the institutional resources, faculty, equipment, and academic standards of excellence of the twelve member colleges plus others participating during a particular year. Summer research projects, differing each year, are sited in some of the most geologically spectacular regions of the world. Our research experience focuses student learning into a four-week, intensive data gathering experience, that is then nurtured and developed at the home institution by careful mentor supervision as students work to complete a substantial independent project (independent study, thesis) while also working with project faculty and their fellow students to achieve the overall goals of their Keck project. The full-year research experience, level of independence that the students have, and the level of faculty support are hallmarks of the program. "Keck" has tangible meaning in the geoscience community: talented students gaining field-based research experience supported by dedicated, master teachers.

Keck Facts

The Keck Geology Consortium has been a fundamental component of the undergraduate-research landscape since 1987. In the last seventeen years we've:

- Funded 909 undergraduate students from 83 schools across the nation and abroad.
- Supported 103 research projects.

- Involved 103 faculty from 46 different organizations.

PROGRAM

As an independent organization, housed at Carleton College, the Consortium establishes its program priorities based on the educational philosophies of the member colleges: dedication to excellence in undergraduate education, offering students comprehensive and rigorous educational opportunities that promote intellectual growth, integrity, responsibility, and a sense of both individuality and membership in community. The Keck REU experience displays the acknowledged characteristics of a high quality undergraduate research experience; students are involved in original research, are stakeholders and retain intellectual ownership of their research, experience the intellectual excitement of working in group and independent contexts, and engage in the scientific process from conception to completion.

Student-Faculty Research Projects

The Consortium program centers on yearlong research experiences for rising seniors. The purpose of the program is simple: to provide students with a research experience that encompasses the entire problem-solving process. Students learn the overall problem, identify an individual part of the problem for their own project, gather and interpret data, and present results at a professional style symposium. Part of the symposium experience is submission of an expanded, four-page abstract for publication in the

Symposium Proceedings. The experience of submitting an abstract gives the students a taste for the technical editing process, including incorporating editorial changes suggested by reviewers (in this case, faculty sponsors and project directors) as well as preparing a manuscript to meet specific formatting requirements.

Much of the work done by advanced students is accomplished at the home institution under the guidance of an on-campus sponsor. Many sponsors visit projects in the field to meet students and project faculty and to learn the overall research problem in order to enhance their understanding of the overall research problem and how their student's work fits in the group effort.

Introductory projects have been a part of the program since 1991. These projects give beginning students a taste of geoscience research, as well as sense of the challenge and enjoyment that comes from solving Earth Science problems. In these projects, students work in small teams to complete a project in five weeks. These are intense weeks for students as they learn not only the research problem but also the dynamics of their particular group. Students improve their communication and cooperation skills as they gather and interpret data, and produce a paper in a relatively short period of time. During the academic year, students work, via e-mail and the post, to produce an extended abstract and poster for presentation at the annual symposium.

Symposium

The symposium is the capstone of our program, serving as the focal point for maintaining community through shared goals and experiences. For the students, the symposium is an opportunity to present research results in an environment that emphasizes the importance of communication and builds self-confidence. Students share results of their work with other students, faculty, and professional geoscientists in poster sessions or talks. This experience challenges the students to present information

in a clear and concise fashion, sharpening their skills in communication.

The symposium, however, is much more than a venue to present results. The symposium fosters a sense of “Keck” community for students, project faculty, and sponsors. The pre-symposium field trip, sharing meals, and sharing science all act to stimulate the sense of programmatic belonging that is so valuable to all participants. It is at the symposium that faculty meet to discuss future collaborations and develop project ideas. Interaction among project faculty and sponsors at the symposium is responsible for the strong interconnection among our faculty.

ACKNOWLEDGEMENTS

Over the last year, a number of people supported the Consortium. Stephanie Ewing worked as Administrative Assistant and also served as technical editor for this volume. Stephanie’s work keeps the Consortium on an even keel. Barbara Fowler, Shirley Dulski, Barbara Harden, Pam Jacobs, Randie Johnson, and Judy Matson, of the Carleton College Business Office, provided the accounting, payroll, and business expertise needed to administer the program. Additionally, Doug Foxgrover at Carleton Information and Technology Services provided hours of technical assistance with office computers. The Consortium appreciates the efforts of all these people on our behalf. Special thanks go to Carleton College, the host campus of the Consortium, and the Carleton Geology Department for the many services the college makes available to the Consortium. The support of Carleton is essential to the effective and cost-efficient administration of the Consortium.