

Paper No. 74-0

## ***USING PLANETARY GEOLOGY TO ENGAGE STUDENTS IN ORIGINAL SCIENTIFIC RESEARCH AT AN UNDERGRADUATE LIBERAL ARTS COLLEGE***

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The Research Methods course at Pomona College teaches undergraduates about the scientific research process in an end-to-end fashion by engaging each student in a small original research project. The instructor and topical focus for the course vary, and writing- and speaking-intensive versions are offered alternate years. In the Spring of 2001, taking advantage of the wealth of planetary geology data now available from NASA's active Mars Global Surveyor mission, ten undergraduates (one senior, seven juniors, two sophomores) studied the geology of a California-sized region near the Uranus Group volcanoes on Mars. Each student had to formulate a tractable research problem, execute their project, and present their results in a short *Geophysical Research Letters* format paper. Each paper was written iteratively during the semester and then "submitted." Each student then prepared a final camera-ready draft in response to external reviews provided by volunteers recruited from within the professional planetary geology community. This process (a) helps prepare students for their senior thesis exercise, (b) provides practical insight into how the scientific community operates when conducting and appraising original research, something most students don't gain exposure to until graduate school, and perhaps most importantly (c) serves as a mechanism for translating the educational benefits of a focused summer internship experience, typically available to only a handful of privileged students, into a semester-compatible format which reaches all the students in our department. In this presentation I will demonstrate how the course is organized and how it compares to a topically similar summer internship experience (the "Mars 2000" sophomore Keck project). In addition, I will present examples illustrating the caliber of the student research performed in each setting. For further details on both summer and academic year planetary geology projects at Pomona College, see [http://www.geology.pomona.edu/research\\_grosfils.html](http://www.geology.pomona.edu/research_grosfils.html).

[GSA Annual Meeting, November 5-8, 2001](#)

[General Information for this Meeting](#)

Session No. 74

[Models of Successful Undergraduate Research Programs in the Geosciences \(Posters\)](#)

Hynes Convention Center: Hall D

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