

Paper No. 134-19

Presentation Time: 8:00 AM-12:00 PM

***DIFFERENT MODES OF COLLABORATIVE RESEARCH
WITH UNDERGRADUATE STUDENTS DURING AN
INVESTIGATION OF THE GEOLOGY IN THE NEMESIS
TESSERA (V14) QUADRANGLE ON VENUS***

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Radar images and topography data collected by the Magellan spacecraft are currently being used by NASA-funded investigators to interpret the geological history of Venus. As part of a global 1:5M scale mapping effort the planet has been partitioned into sixty-two quadrangles. The Nemesis Tessera quadrangle (25-50N, 180-210E), approximately 75% the size of the United States, contains a complex array of geological features, many of which have not previously been studied in detail. The rich diversity of the area's geology, the accessibility of the NASA datasets, and the ease with which the data can be manipulated using desktop software (e.g., Photoshop, ArcView) combine to yield exciting opportunities for students with different levels of geological background to engage in defining and exploring original research problems.

During the past year (6/01 to 5/02) I have explored several different ways of collaborating with students on the Nemesis Tessera mapping project. First, in the summer of 2001, four students (2 rising sophomores, 1 rising junior, 1 '01 graduate) worked on the project as a closely knit group for an eight week period which initiated with a compressed introduction to the geology of Venus, radar, and manipulation of the datasets. Second, in the Fall of 2001, one student (a junior with remote sensing experience) tackled a mapping project for full Independent Study (I.S.) credit, requiring 10 hrs/wk. Third, in the Spring of 2002, seven students (2 freshmen, 3 sophomores, 2 juniors; three had participated the previous summer) formed a loosely knit research group, with experienced students helping to train those new to Venus research. All seven were asked to work 5 hrs/wk; three students were paid, three received an I.S. half-credit, and one took part as a volunteer. In this presentation I will explore some of the advantages and pitfalls of these different collaborative strategies, and will present examples illustrating the caliber of the student research performed in each situation, which often yielded results suitable for professional conference presentation (four students have already authored or co-authored meeting papers, others may as well). For further details on planetary geology research at Pomona College, see http://www.geology.pomona.edu/research_grosfils.html.

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Session No. 134--Booth# 168

[Undergraduate Research in the Geosciences: Faculty and Student Perspectives \(Posters\)](#)

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