Increasing Underrepresented Students in Planetary Science through the Educational Internship in Physical Sciences (EIPS)

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Abstract

The Educational Internship in Physical Sciences (EIPS) at the University of Texas at El Paso (UTEP), in collaboration with El Paso Community College (EPCC), is an undergraduate research internship program for students pursuing STEM careers to enhance their skills through interdisciplinary research projects in geological sciences, teach self-created laboratories in the classroom and gain academic credit for their accomplishments through UTEP’s Career Center. This past year, interns participated in planetary themed projects which exposed them to the basics of planetary geology, and worked on projects dealing with introductory digital image processing and synthesized data on two planetary bodies; Pluto and Enceladus respectively. The goal was to have them gain experience in planetary geology investigations and networking with professionals in the field; further promoting their interests and honing their abilities for future endeavors in planetary science.

Highlights

Frankie Enriquez - EIPS Intern
- El Paso Community College (EPCC) graduate
- Undergraduate geology major at UTEP
- Learning MATLAB basic digital image processing techniques in Planetary science (Pluto)
- Interned with NASA - Marshall Space Flight Center (Aerospace Scholar) studying Journey to Mars - mission planning with robotics
- Participated in the EarthTech outreach program run by UTEP’s Geology Department
- Working in AY-PREP and analyzing images of Pluto

Sophia Terrazas - EPIS Intern
- Graduated from Da Vinci School for Science and the Arts
- Undergraduate geophysics major at UTEP
- Interested in planetary geology
- Participated in the Innovative System Project for the Increased Recruitment of Emerging STEM Students, NASA Program - Geochronological research on Titan (Saturn's largest moon)
- Current EIPS intern
- Cryovolcanism research on Enceladus (Saturn's icy moon)

Lab Visual

The importance of this lab is to demonstrate the effects of tidal forces on fault movement and subsequent geologic formations, and the interaction of light with volatiles being emitted from the cryovolcano. The wooden blocks represent the fault system and the air compressor demonstrates the geyser affect. The sand and the cornstarch ascending from the air compressor represents the volatiles being emitted. The laser will then be pointed through the material that is being emitted into the air; demonstrating the disruption of light simulating a substance is being detected.

Lab Visual

Intern Feedback

"Without hesitation, it is a program we would return to." - Frankie and Sophia

Student Feedback

The following comes from an undergraduate student that, because of the interaction with the EIPS program, has begun the process of pursuing a degree in geology at UTEP.

"...important abilities we acquired from EIPS was being able to come up with creative methods to make learning more interactive and interesting for students not majoring in geological sciences."

"...enriching program that could probably improve by being extended to two semesters..."

"Without hesitation, it is a program we would return to."

- Frankie and Sophia