Alivia Eng

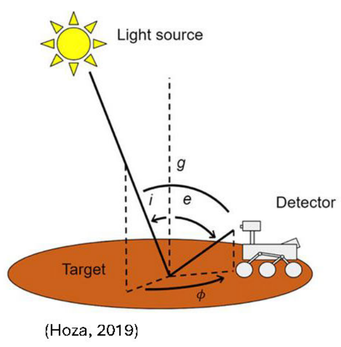
David, Helen and Marian Woodward Award
Ph.D. Student, Earth and Atmospheric Sciences
First Year ARCS Scholar

Georgia Tech

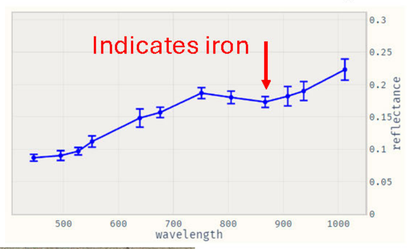
Using Spectroscopic Techniques at Different Scales to Characterize Planetary Surfaces

Spectroscopic techniques involve different measurements of how light interacts with a surface and are often utilized by planetary missions. I collect and analyze data from the lab, rovers, and orbiters to clarify our understanding of the geologic history of Mars.

Light reflects off of planetary surfaces, cluing into mineralogy

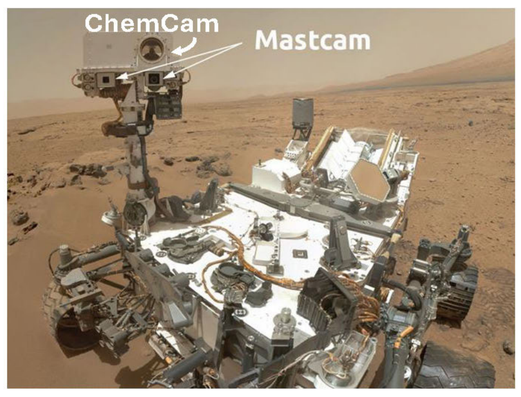


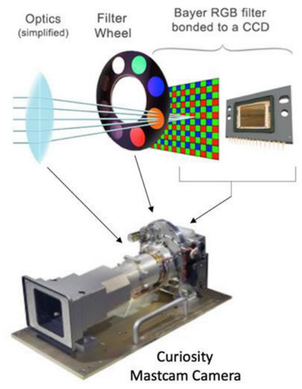
(Hoza, 2019)



Left: Enhanced color image taken by Mastcam on sol 3558 (NASA/JPL/ASU/MSSS)

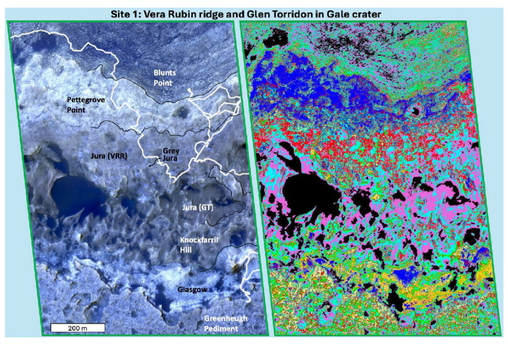
Two instruments on the Curiosity rover collect reflectance data (spectra)

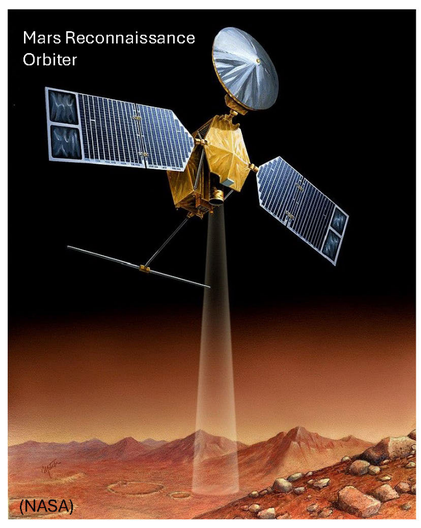




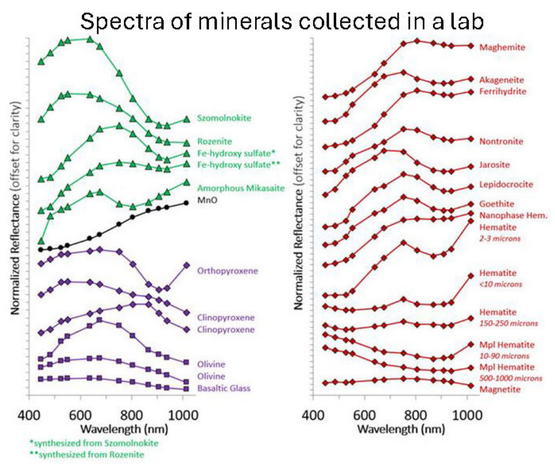
NASA / JPL / ASU / Jim Bell / H. Kline

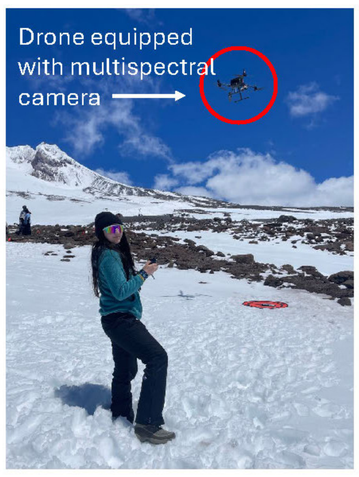
Extrapolating rover data using orbiter data will help constrain the extent of rock-water interactions



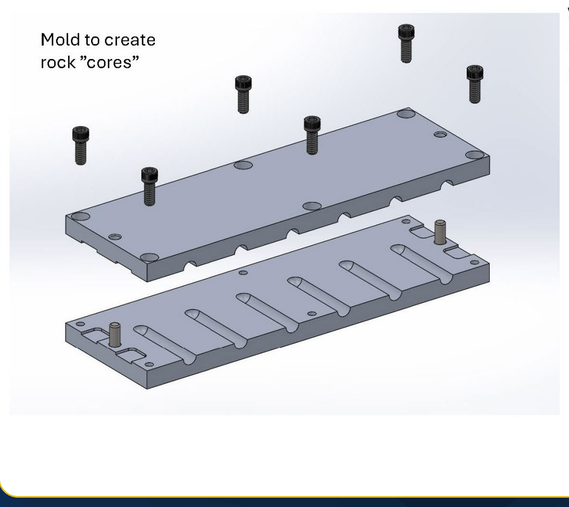


Simulating methodologies on Earth



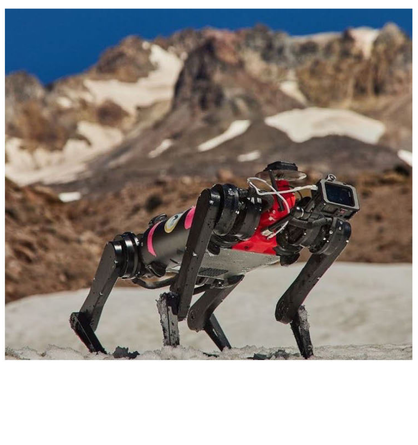


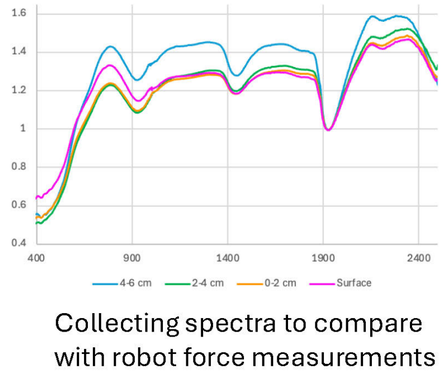
Simulating sample caching by the Perseverance rover



What kind(s) of alteration may occur while the samples remain in a sealed tube on the surface of Mars?

Providing scientific insight to support the development of LASSIE





Collecting spectra to compare with robot force measurements

Scholar Awards Celebration
November 13, 2024

SCHOLAR AWARDS CELEBRATION
ARCS FOUNDATION ATLANTA

Igniting Innovation in Georgia