

Eduardo Martinez

2025-2026 GRO

I am currently pursuing a Ph.D. in geoscience from the University of Nevada Las Vegas with a focus on geochemistry and astrobiology. As a Ph.D. student, I am gaining knowledge in a wide range of analytical methods, techniques, and instrumentation to investigate the interactions between clay minerals and potential past life on Mars. I am interested in the mineral preservation of biosignatures on Mars. My current research focuses on understanding the oxygen isotopic fractionation of phosphate adsorbed onto Mars-analog clay minerals as a potential biosignature in returned Mars samples. I am also applying my experimental results to a model that simulates phosphate behavior in samples that are cached by the Perseverance rover, to assess whether a sample onboard could yield results that are consistent with past life. By simulating martian environments in both the laboratory and computational models, I seek to contribute to and help interpret the findings of the Mars Return Sample mission.

My long-term career goal is to work as a research scientist in the field of planetary science with a focus on life detection, mission development, and the interpretation of returned mission data. Ultimately, I aspire to obtain a position at a space agency or a national laboratory, where I can contribute to solving fundamental questions about the origin of life, planetary habitability, and biosignature detection in Mars and beyond