

David A. Giovannetti-Nazario, University of New Mexico, Albuquerque, NM, for his project: *The role and dynamics of glendonite pseudomorphs after ikaite in Miers Valley, Antarctica*.

David Giovannetti is a PhD student at the University of New Mexico's Earth and Planetary Sciences Department supervised by Dr. Tyler Mackey. He holds two bachelor's degrees in Geology and Linguistics from the University of Puerto Rico at Mayagüez and Master's degree in geology focused on garnet geochemistry in a Puerto Rican iron skarn deposit.



Currently, David's project focuses on the stratigraphy and geochemistry of perennially ice-covered lakes in the McMurdo Dry Valleys, the largest ice-free region in Antarctica. Specifically, he's interested in using petrography and stable isotopes to characterize carbonate facies in paleolake deposits from Miers Valley, which comprise various carbonate phases, including calcite (var. glendonite) pseudomorphs after ikaite. Ikaite is a hydrated calcium carbonate ($\text{CaCO}_3 \cdot 6\text{H}_2\text{O}$) stable under frigid conditions and subsequently breaks down to a stable calcite phase under ambient conditions.

The presence of these pseudomorphs in Miers Valley provides the opportunity to understand paleolake evolution in the valley, assess lake conditions conducive to ikaite growth in the past, and better understand ikaite-to-calcite decomposition processes. The Lipman Student Research Award will support the use of x-ray μCT scanning of crystals to document morphology and volume loss as well as secondary ion mass spectrometry (SIMS) to characterize oxygen isotope variability across pseudomorph crystals to better understand fluid evolution involved in ikaite decomposition.