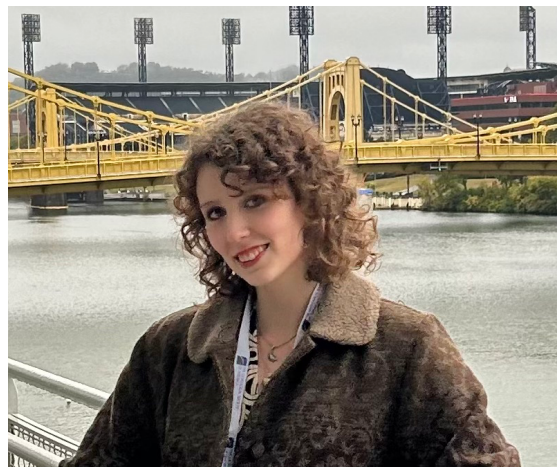


Mary (Mae) Roach, Louisiana State University, Metairie, LA for her project:
Enhanced tourmaline provenance determination using machine learning.

Mae Roach is a second year M.S. student at Louisiana State University working with Professor Barbara Dutrow. Her work combines mineral chemistry and metamorphic petrology to explore tourmaline's ability to track the geochemical evolution of complex crustal environments. Her current research project, funded by the Howard and Jean Lipman Foundation, focuses on enhancing the use of tourmaline as both a provenance indicator and a detailed recorder of metamorphic reactions in metapelitic rocks. This funding will support the acquisition of high-quality tourmaline chemical data through electron probe microanalysis. This chemical data is essential to the characterization of tourmaline within the context of its host environment.



Mae completed her bachelor's degree in geology at Louisiana State University. Her undergraduate thesis project, advised by Professor Barbara Dutrow, focused on the chemical and textural characterization of complexly zoned tourmaline from Cornwall, U.K. in order to understand the evolution of fluid-mineral interactions in an open system. This summer, Mae was awarded the 2025 Hevey Graduate Student Fellowship in the Department of Mineral Sciences at the Smithsonian National Museum of Natural History. Her research, advised by Dr. Gabriela Farfan, investigates the link between crystallographic parameters, mineral chemistry, and morphological heterogeneity of biogenic calcite microstructures in Eastern oyster shells.

Mae's main scientific interests are mineralogy, fluid-mineral interactions, and metamorphic petrology. Her professional aspirations are to pursue a Ph.D. in geology and ultimately a career in academia. Outside of the lab, she enjoys reading, creative writing, and visual arts.