

Thomas Anderson, University of Cincinnati, Cincinnati, Ohio, USA for their project: *Tracing Calcite Sources in Western Kentucky Fluorspar District Lamprophyres: A Sr–Nd–Pb Approach*.

Thomas Anderson is an M.S. student in Geology at the University of Cincinnati, where he works with Dr. Craig Dietsch. He earned his B.S. in Geoscience from the University of Iowa in 2024. His academic and research experiences have included field geology, igneous petrology, mineralogy, geochemistry, and isotope geochemistry, with a growing focus on unusual alkaline magmatic systems and their associated mineralization. Thomas has also served as a teaching assistant for Mineralogy, Petrology, and Structural Geology at the University of Cincinnati and received the department's Outstanding Teaching Assistant Award.

Thomas's master's research investigates ultramafic lamprophyres and associated calcite veins in the Western Kentucky Fluorspar District. These unusual igneous rocks occur within a region better known for its extensive hydrothermal fluorite mineralization, raising questions about the relationship between magmatism, carbonate-rich fluids or melts, and later hydrothermal activity. His work focuses on determining whether calcite veins associated with the lamprophyres record carbonatitic or magmatic-hydrothermal processes, later alteration, or Mississippi Valley-type fluid activity. To distinguish among these possibilities, Thomas is combining field and petrographic observations with Sr-Nd-Pb isotope geochemistry and trace-element and rare earth element analyses of calcite.

More broadly, Thomas is interested in igneous petrology, alkaline and carbonatitic magmatism, isotope geochemistry, magmatic-hydrothermal systems, and critical mineral deposits. He plans to pursue a Ph.D. following completion of his master's degree, with the goal of continuing research that integrates field geology, petrology, and geochemistry to better understand magmatic systems and their relationships to economically important mineral resources.

