Kathleen Stepien, University of Maryland, College Park, MD, for her project *Evidence for fluid flow in the Tianshan subduction complex from analysis of hydrogen in garnet*.

Kathleen is a PhD student in the Department of Geology at the University of Maryland. She is advised by Dr. Sarah Penniston-Dorland and Dr. Megan Newcombe. Kathleen is researching how water in garnet can be used as a tracer of fluid flow in metamorphism. She is working with garnet crystals from localities that have previously been studied and demonstrate evidence for fluid flow. The water content of these garnet crystals will be measured in situ in core-rim traverses, and the water profiles will then be compared to other tracers of fluid flow such as lithium and oxygen isotopes, as well as major and trace elements. This project will allow for experience with many analytical techniques, including FTIR, SIMS, EPMA, and LA-ICP-MS. Kathleen also had the opportunity to travel to Tasmania in January 2025 to collect skarn garnets alongside her research group.

The support provided by the Lincoln S. and Sarah W. Hollister Graduate Student Research Award is greatly appreciated. The funding will allow for the analysis of garnet crystals from the Tianshan Mountains. This locality features a blueschist host rock that has been crosscut by quartz-garnet-rich veins, which are surrounded by an eclogite selvage. Samples have been obtained from increasing distances to the vein, which will allow for a comparison of how the fluid-rock interaction varied with increasing distance from the vein.

Kathleen received her BA from Franklin & Marshall College in 2020, where she majored in Chemistry with a Geoscience minor. Throughout her four years at F&M, she worked with Dr. Claude Yoder to study how the incorporation of carbonate in calcium hydroxylapatite affects the crystal structure. During that time, Kathleen took several geoscience classes with Dr. Stanley Mertzman, who played a large role in inspiring her to apply for a PhD that would combine her interests in mineralogy and petrology.