

Alaina Helm, Virginia Polytechnic Institute and State University, Blacksburg, VA for her project *Experimentally Constraining a New Trace Element Barometer in Garnet*

Alaina Helm is a third year Ph.D. student at Virginia Tech advised by Dr. Mark Caddick. Her research uses petrologic techniques to better understand fluid-rock reactions at convergent margins. In this study, she grows garnet in equilibrium with Li, Na, K, Rb, and Sr rich fluids at different pressures to identify trace element ratios that could potentially function as a geobarometer. Experiments are being conducted using a piston cylinder apparatus working with Dr. Megan Duncan in Virginia Tech's experimental petrology lab. Alaina is very grateful for the financial support from the MGPV Division and GSA, who are providing funds for electron microprobe and ICP-MS analysis of experimental results. Alaina's other active research projects focus on thermodynamic predictions of fluid compositions equilibrated with subducted lithologies and identification of metasomatic signatures within the rock record.



Alaina received a bachelor's degree from Oberlin College in Geology and Archaeological studies. While there, she completed a senior honors thesis focused on the petrology of the San Onofre Blueschist with Dr. F. Zeb Page. She also completed a senior capstone project working with Dr. Amy Margaris and the Smithsonian to digitally reunite Alaskan ethnographic items collected by Edward William Nelson in the late 1800's and subsequently dispersed across the globe through museum trades by the Smithsonian.