

Elizabeth Ashby, Virginia Tech, Blacksburg, Virginia, USA for their project:
Overprinting in Metamorphic Rocks: Are we Misreading Earth's Earliest Rock Record?

I am a PhD student in Virginia Tech's Department of Geosciences, working with Mark Caddick. My research focuses on how disequilibrium is preserved in the rock record through overprinting of metamorphic rocks. I am studying Archean granulites from the Superior & Wyoming cratons, looking for textures and mineral relationships in thin sections that indicate partial or cryptic disequilibrium. The Lipman Research Award will allow me to collect bulk compositions for my samples, and to run Electron Probe Microanalysis (EPMA) on polished thin sections of these rocks. These analyses will allow me to compare expected equilibrium textures and mineral assemblages to what is preserved in the rock. I will then use this to discern why these rocks may or may not record cryptic signals, and the extent by which partial overprinting further complicates the study of Archean geology.



I received a B.S. in Geological Sciences and a B.S in Chemistry from Michigan State University in 2025. During my time at MSU, I devoted much of my time towards undergraduate research. In 2024, I received the Goldwater Scholarship for my research in Dr. Angela Wilson's group and Dr. Tyrone Rooney's group. I also organized outreach activities within MSU's Department of Earth and Environmental Sciences that were geared towards earth science education. I arrived at Virginia Tech in 2026, and I've continued to volunteer in earth science education outreach. I also have gained teaching experience as a Teaching Assistant for Virginia Tech's Department of Geosciences. I am grateful for the Howard and Jean Lipman foundation and the Geological Society of America's Mineralogy, Geochemistry, Petrology, and Volcanology Division for supporting my research.