

Baylee McDade, Western Washington University, Bellingham, WA, USA for her project *Examining crystal mush systems beneath the high threat Mount Baker volcano, northern Cascade arc*.

Baylee McDade is an M.S. candidate at Western Washington University and is working with advisor Dr. Susan DeBari. She is using geochemistry and mineral textures to describe co-crystallizing assemblages carried in the ~70 ka Portals Andesite lava flow at Mount Baker. She aims to investigate the longevity of crystal mush systems over the last hundred thousand years and create a transcrustal magma system model of Mount Baker's subcrustal architecture. The objectives of this research project are to: (1) characterize mineral populations and co-crystallizing assemblages, (2) constrain magma storage conditions with trace element data and thermobarometry, and (3) compare storage conditions through time by applying the same methods to eruptive products from ~100 ka, 48 ka, and 6.7 ka.



With the grant from the Howard and Jean Lipman Foundation, Baylee can fund the sample preparation of her thin sections, use of the Electron Microprobe and the Laser Ablation Inductively Coupled Plasma Mass Spectrometry to obtain quantitative chemical data. This data is critical in determining co-crystallizing assemblages and needed for thermobarometry.

Baylee earned her B.S. in Geology from the University of Hawai'i at Hilo in 2023. Her undergraduate research involved working on eruption response efforts in collaboration with the Hawaiian Volcano Observatory. She would prepare and run samples for ED-XRF analysis. This experience kindled her interest in volcanoes, geochemistry, and petrology. After completing her master's degree, Baylee plans on pursuing a Ph.D. in igneous petrology.