

Sophia Ioli, Western Washington University, Bellingham, Washington, USA
for their project: *The Relationship Between Bulk Lava and Melt Inclusion $d^{37}\text{Cl}$ Data of the Southern Cascades.*

Sophia Ioli is an M.S. student at Western Washington University under the advisory of Dr. Kristina Walowski. She received her B.S. in Geology from Miami University of Ohio where her undergraduate research on the three most recent eruptions of La Palma, Canary Islands, Spain sparked her interest in geochemistry, and volcanology.

Her research compares $\delta^{37}\text{Cl}$ values measured in olivine-hosted melt inclusions by Secondary-Ion Mass Spectrometry (SIMS) to the bulk $\delta^{37}\text{Cl}$ of the tephra (from which the olivine hosts were picked) by Pyrohydrolysis Isotope Ratio Mass Spectrometry (Pyro-IRMS).



She focuses on melt inclusions in basaltic scoria from three locales in the Lassen region that have been analyzed previously for other volatile element concentrations, stable isotope ratios, and radiogenic isotope ratios (Walowski et al., 2016). The Lassen region is the southern end of the Cascade volcanic arc, a “warm” endmember subduction zone, where abundant cinder cone vents have erupted calc-alkaline basalts and low potassium tholeiites throughout the Pleistocene. She compares the $\delta^{37}\text{Cl}$ of both calc-alkaline and tholeiitic endmembers, and one sample with evidence for crustal contamination of the bulk magma after melt inclusion entrapment. The addition of $\delta^{37}\text{Cl}$ measurements to these previously measured volatile elements captures a more complete picture of magma formation processes and volatile evolution in the Lassen region and helps assess the impact of degassing and crustal contamination on $\delta^{37}\text{Cl}$ systematics.