Rachel Collins, Portland State University, Portland, Oregon, USA for their project: *Petrology and metallogeny of the Ladycomb Layered Mafic Intrusion*.

Rachel Collins is a Ph.D. candidate in geology at Portland State University whose research focuses on intrusive igneous systems, magmatic differentiation, and the processes that concentrate metals into economically significant deposits. Her work combines field geology with petrology, geochemistry, geochronology, and numerical modeling to investigate how magmas are emplaced and evolve within the shallow crust, how crystal accumulation and melt differentiation produce the internal architecture of intrusive bodies, and how these processes influence the distribution and enrichment of metals.

Her doctoral research examines these questions through the study of the Ladycomb Layered Mafic Intrusion in southeastern Oregon, which she discovered while conducting geologic mapping for her M.S. research. The intrusion provides an opportunity to investigate the evolution of a differentiated mafic system from emplacement and crystallization through later hydrothermal alteration and mineralization. Her broader interests center on the connections between intrusive magmatism and metallogeny, particularly why some magmatic systems develop significant concentrations of Fe, Ti, Cu, Ni, precious metals, and other critical mineral resources.

Rachel earned her B.S. and M.S. in geology from Portland State University and works professionally as an engineering geologist in the Pacific Northwest. She is a field geologist at heart, drawn to the challenge of reconstructing processes that occurred beneath ancient landscapes from the rocks now exposed at the surface - and understanding how those processes ultimately shape the mineral resources on which society depends.