

**Carli Schmidt**, Northern Illinois University, for her project: *An experimental investigation of gold incorporation into bornite, intermediate solid solution (ISS), and pyrrhotite: Implications for constraining gold distribution in porphyry ore deposits*

Carli Schmidt is a 2<sup>nd</sup> year MS student working under the mentorship of Dr. Mark Frank at Northern Illinois University. Frank's unique experimental research drove her to pursue a masters. Her research examines Cu-Fe sulfide minerals found in the porphyry ore environment. The sulfides have been subjected to various porphyry-replicating conditions using gold capsule experiments and cold-seal pressure vessels. Post-experiment sulfides will be examined using Electron Probe MicroAnalysis (EPMA), Scanning Electron Microscopy (SEM), X-Ray Fluorescence (XRF), and Laser Ablation (LA-ICP-MS).



Some of the questions she hopes to answer are – Which assemblages is gold most associated with? Which variable condition has the biggest influence on gold concentrations? And what is the amount of gold these can carry?

With this research, she hopes to place constraints on bornite, chalcopyrite, and pyrrhotite's ability to sequester gold in porphyry systems. This thesis will provide data to best model gold deposition in porphyry environments and add to a more robust knowledgebase for placing constraints on the economic potential of a porphyry prospect.

During summer breaks Carli has worked in Carlin-type Au-deposit exploration and hopes to continue a career in the mining industry post-graduation. Carli has loved the outdoors since she was a child. She thanks her parents, Steve and Lisa, for cultivating a science-loving childhood with constant kitchen test tube experiments and family hikes. On weekends she enjoys knitting, gardening, eating, and traveling with her sweetie Joe.

Carli is grateful for the support from The Lipman Research Fund and the Geological Society of America's Mineralogy, Geochemistry, Petrology, & Volcanology Division for the support and looks forward to using these funds for completion of analyses of her thesis.