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**Project Geochemist**

**Expertise** Geochemistry, Stable Water Isotope Analysis

**Education** Ph.D. (Geology), 2021  
University of Colorado Boulder, Boulder, Colorado, USA

B.S. (Chemistry, Applied Mathematics), 2015  
Ohio Northern University, Ada, Ohio, USA

**Honors** NSF Graduate Research Fellowship Program (2015)

**Professional Experience**

2023 – Present ITASCA Denver, Lakewood, Colorado  
Project Geochemist

2021 – 2023 ITASCA Denver, Lakewood, Colorado  
Staff Geochemist

2015 – 2021 University of Colorado Boulder, Stable Isotope Laboratory, Boulder, Colorado  
Graduate Research Assistant

**Project Experience**

**Pit-Lake Modeling:** Simulated the evolution of water quality in pit lakes expected to form after mine closure. Work required incorporating a predictive pit-lake model with water-quality data, the *PHREEQC* thermodynamic geochemical model, and a groundwater flow and solute transport model.

**Characterization of Mine Waste:** Analysis of static and kinetic geochemical testing results for acid-generating and metals-leaching potential of mine ore and waste rock. One project included utilizing a database of mine site samples to provide recommendations on sample selection for static and kinetic geochemical testing and subsequent analysis of results.

**Analysis of Stable Water Isotopes:** Collected and analyzed water isotope data from two Greenland ice cores. Work included three field seasons in northeast Greenland to drill and recover ice core samples. Resulting water isotope data were used to study polar climate dating back 50,000 years.

**Quantifying Water Isotope Evolution:** Completed experimental work to characterize evolution processes occurring at the snow surface over short timescales and how these processes influence the water isotope signal recorded in ice cores. Data were used to develop a numerical model to describe water isotope evolution.