11+ graduate student opportunities in climate-related science at Colorado School of Mines

We are excited to announce that we are recruiting at least 11 funded graduate students for Fall 2023 enrollment in climate-related sciences across multiple departments and interdisciplinary programs at Colorado School of Mines. These opportunities span a range of climate disciplines and research questions, including physical oceanography, paleoclimate, hydrology, atmospheric science, glaciology, geophysics, and technology development. The priority application deadline for Mines is December 15, 2022, and more information about our graduate programs can be found here.

The opportunities are detailed below with contact information for each research direction. General questions about Mines, Climate@Mines, and Cryo@Mines can be directed to Matt Siegfried (siegfried@mines.edu).

Opportunities:

- Mines Oceanography is recruiting **two funded students (1 MS, 1 PhD)** interested in exploring air-sea interactions with a focus on waves, winds, and currents. The projects will leverage tools including coupled numerical modeling, observations, and theory to further our understanding of how coupled interactions between winds, waves, and currents affect the Earth system. Prospective students can apply through the Department of Geophysics or the Hydrologic Sciences & Engineering Program. Contact: Bia Villas Bôas (villasboas@mines.edu).
- The Rates and Dates Laboratory is recruiting **for two funded graduate students (1 MS, 1 PhD)** interested in reconstructing deglacial retreat in West Antarctica and/or Colorado. Prospective students can apply through the Geochemistry Program, the Hydrologic Sciences & Engineering Program, or the Department of Geology and Geological Engineering. Contact: Ryan Venturelli (venturelli@mines.edu).
- The Marshall Lab Group is recruiting **one or more funded PhD students** to work on projects related to climate change impacts on water in the western U.S. Specific research areas will include the use of macroscale hydrologic models to better understand climate change impacts on hydropower, with potential additional projects addressing snow hydrology and model evaluation. Prospective students can apply through the Hydrologic Sciences & Engineering Program or the Department of Geology and Geological Engineering. Contact: Adrienne Marshall (adriennemarshall@mines.edu).
- The Martin Group is recruiting **one funded PhD student** to work on projects related to large-scale, autonomous geophysical monitoring of permafrost and glacier regions. Specific research will focus on creating new fiber-optic-based sensor techniques (seismic and electromagnetic) and high-throughput data analysis methods. Prospective students can apply through the Department of Applied Math and Statistics, the Department of Geophysics, or the Hydrologic Science and Engineering Program. Contact: Eileen Martin (eileenrmartin@mines.edu).
- The Surface Processes Group is recruiting **one funded PhD student** to work on an NSF-funded project examining the impacts of climate change-driven shifts in wildfire frequency on hillslope sediment transport processes and long-term erosion rates. Prospective students can apply through the Hydrologic Sciences and Engineering

Program or the Department of Geology and Geological Engineering. Contact: Danica Roth (droth@mines.edu).

- The Mines Glaciology Laboratory is recruiting **one funded PhD student** to work on a new NSF-funded project investigating Antarctic ice stream slow down and stagnation processes using geodetic, seismic, and data science techniques. Prospective students can apply through the Hydrologic Sciences & Engineering Program or the Department of Geophysics. Contact: Matt Siegfried (siegfried@mines.edu).
- The Mines Surface Hydrodynamics Laboratory is recruiting **one funded PhD student** to investigate climate-driven changes in hydrodynamic and ice conditions in Earth's largest lakes. Prospective students can apply through either the Hydrologic Science and Engineering Program, the Department of Civil & Environmental Engineering, or the Department of Geophysics. Contact: Eric Anderson (ejanderson@mines.edu).
- The Dugan Geomechanics Group is recruiting **one funded PhD student** to investigate the dynamics of onshore-offshore aquifers and their response to sea-level rise. Prospective students can apply through the Hydrologic Science and Engineering Program or the Department of Geophysics. Contact: Brandon Dugan (dugan@mines.edu).
- The Mines Glaciology Laboratory is recruiting **one funded MS student** to work on a collaborative NASA project aimed at quantifying and characterize the major sources of measurement bias and uncertainty in NASA remote sensing tools used to investigate cryospheric processes and change at the Earth's poles. Prospective students can apply through the Hydrologic Sciences & Engineering Program or the Department of Geophysics. Contact: Matt Siegfried (siegfried@mines.edu).
- The Hogue Group is recruiting **one funded MS student** interested in exploring the connections between natural forest disturbances (e.g., wildfire, beetle kill, drought) and surface water availability. This project will use geographic information systems (GIS) to process both ground-based and remotely sensed hydrologic and land-cover datasets for hydrologic modeling of forested basins in southwest Colorado. Prospective students can apply through the Hydrologic Science and Engineering Program. Funding can support hourly independent study positions or an MS thesis research assistantship depending on student interest and availability. Contact: Terri Hogue (thogue@mines.edu).