

DEPARTMENT OF GEOPHYSICS

GEOPHYSICS.MINES.EDU



HELPING SOLVE SOCIETY'S GRAND CHALLENGES

Geophysicists address climate, water and energy challenges through remote sensing at and beneath the surface of the earth. This is done using a variety of tools collecting information at the surface to build a 3D image of the subsurface, resembling those in medical imaging.

CHALLENGES OF THE 21ST CENTURY

- Locating reliable natural resources, energy and minerals
- Understanding the impacts of a changing climate
- Minimizing the threat of geohazards such as earthquakes and tsunamis
- Ensuring clean, reliable and abundant water supply

Spotlight: HUMANITARIAN GEOPHYSICS



Humanitarian engineering allows engineers to serve society while co-creating equitable and sustainable solutions for communities. The humanitarian engineering program at Mines seeks not only to accomplish humanitarian goals, but also to involve next-generation scientists in worthy causes of societal relevance.

Through the Society of Exploration Geophysicists, Geoscientists Without Borders (GWB) supports humanitarian applications of geoscience around the world. Faculty in the Mines Geophysics Department actively participate in GWB and natural disaster response and recovery, as well as in sustainable development applications.

The Department of Geophysics is proud to have a diverse undergraduate program: 48 percent of students identify as women and 30 percent are international students or are from underrepresented groups.

Since 2017, 90 percent of students have graduated in 4.5 years or less and about 30 percent of graduating seniors are enrolled in the combined bachelor's and master's program.



AREAS OF STUDY

DEGREES OFFERED

- ✓ **Geophysical Engineering**
Bachelor's, master's and PhD offered
- ✓ **Geophysics**
Master's and PhD offered

MINORS

- + **Geophysical Engineering**

FIELD SESSIONS

We operate a four-week field program designed to give students hands-on experience at conducting geophysical field investigations.

POTENTIAL UNDERGRADUATE RESEARCH TOPICS

- Water resource exploration
- Climate studies & glaciology
- Earthquakes & volcanoes
- Computing & big data analytics
- Energy resource development
- Mineral resource development
- Space resource exploration