What is Geochemistry?

Geochemistry is the study of:
- the chemical composition of the Earth and other planets
- the chemical processes and reactions that govern the composition of rocks, water, and soils
- the cycles of matter and energy that transport the Earth's chemical components in time and space

Geochemistry encompasses research of:
- the solid Earth
- the hydrosphere (oceans, lakes, rivers)
- the biosphere
- the atmosphere
- the solar system

Geochemistry helps increase our understanding of:
- climate change
- mantle evolution
- planet formation
- the origin of mineral deposits
- the human impact on the environment
  (...just to name a few.)

Did you know?
There are 90 naturally occurring chemical elements. 8 of them make up 99% of the mass of the Earth: Fe (32%), O (30%), Si (15%), Mg (14%), S (3%), Ni (2%), Ca (1.5%), Al (1.5%).

“geochemistry makes chemistry fun!”

A geochemist’s toolkit:
Geochemists use elemental abundances (major elements: percent range; trace elements: parts-per-million range) and isotopic ratios (like “fingerprints”).