I love collecting real-world data and making use of it. Just like a kid that disassembles the family toaster to see how it works, I have always been interested in how earth processes work.

Sally Letsinger – Hydrogeologist, Indiana University

I love the quiet library work of cataloging the geology collection. Most people get into geology because of a love of the outdoors, but there are still jobs available if you find that you prefer more of an indoor pursuit.

Peggy Fisherkeller – Curator of Geology, Indiana State Museum

My job has the potential to impact decisions made by world leaders in relation to global warming mitigation efforts. You should look at this career as a chance to give back to society.

Cristian Medina – Reservoir Geologist

My favorite part of my job is being outside and working in stone quarries. Try to find a job that you love to go to every day.

Jon Havens – Geologist, Irving Materials, Inc.

I use the fossil record to learn the deep and complicated history of the evolution of life on this planet. What's not to love?

Gary Motz – Paleontologist, Indiana University

IS GEOSCIENCE RIGHT FOR YOU?

If you enjoy being outdoors, seeking new answers to society's problems, and exploring how the Earth works, a career in the geosciences may be right for you. To learn more and explore internships and career paths, contact the organizations below.

- Indiana Geological and Water Survey
- Indiana University Dept. of Earth & Atmospheric Sciences
- IUPUI Dept. of Earth Sciences
- Indiana University Paleontology Collection
- Indiana State Museum
- Indiana Department of Natural Resources
- Geography Educators' Network of Indiana Inc.
- Indiana Earth Science Teachers Association
- Indiana Mineral Aggregates Association
- Professional Geologists of Indiana
- Geological Society of America
- American Geosciences Institute

Learn as much as you can about as many things as you can. Having a diverse, broad base of knowledge helps you understand all the processes that influence the Earth.

Henry Loope – Glacial Geologist, Indiana Geological and Water Survey

When I travel, I find myself looking at the landscape and thinking about how it has evolved through time. I will never be able to go back and see what a place was like 10,000 years ago, but I can rediscover these sites through geologic analysis. That's a very powerful thing.

José Luis Antinao – Geomorphologist, Indiana Geological and Water Survey

INDIANA GEOLOGICAL & WATER SURVEY
INDIANA UNIVERSITY

Careers in Geoscience

Explore exciting careers in the Earth sciences

Indiana Geological & Water Survey | Indiana University | 1001 E. 10th Street, Bloomington, IN 47405-1405
812.855.7636 | igwsinfo@indiana.edu | igws.indiana.edu

WHAT IS GEOSCIENCE?

Geoscience is the study of Earth and the dynamic systems that have shaped the planet's landforms and surfaces. It addresses all aspects of the earth sciences, including the study and exploration of energy, mineral, and water resources, how earth processes have occurred in the past, how living things interact with the Earth, and the role of Earth in the universe.

Geoscientists seek to understand the Earth's natural processes, including its oceans, soils, rocks and minerals, glaciers, lakes and rivers, and atmosphere. They gather and interpret data about the Earth in order to investigate the past and model the future.

JOB ENVIRONMENTS

Geoscience is an intellectually challenging, diverse, and wide-ranging career. It offers the opportunity to work in a variety of settings.

I spend a lot of time in the field, in the lab, and at the microscope. My research allows me to travel and to collaborate with amazing geologists from a variety of different fields, and I am constantly learning more about the history of the Earth.
Alyssa Bancroft – Biostratigrapher

Collecting data and making on-site observations is a critical part of understanding Earth systems. Many geoscientists conduct fieldwork to collect samples that are later analyzed in a laboratory. They integrate the data into computer models, maps, and written reports for the identification of mineral and groundwater resources, geologic hazards, landuse planning, or advancement of scientific understanding.

TYPES OF GEOSCIENTISTS

- **Sedimentologists** study the nature, origin, and distribution of sediment and sedimentary rocks.
- **Glacial geologists** study the movement and timing of glaciers and their effects on the Earth's topography.
- **Paleontologists** study preexisting life through fossils and their changes through geologic time.
- **Hydrogeologists** study the distribution, abundance, and movement of groundwater.
- **Geochemists** study the chemical elements in minerals, rocks, water, and the atmosphere.
- **Geomorphologists** study landforms and their relationships to geological structures and climatic processes.
- **Stratigraphers** study the relationships between rock strata and geologic time.
- **Mineralogists** study minerals, their properties, composition, and occurrence.
- **Geophysicists** study the Earth's interior through quantitative, physical methods.
- **Seismologists** study earthquakes and the behavior of seismic waves within the Earth.
- **Mining geologists** study mineral deposits for economic exploration.
- **Petroleum geologists** study the origin, migration, and accumulation of oil and gas for economic exploration.
- **Petrologists** study the origin and distribution of rocks through mineral composition and grain relationships.
- **Environmental geologists** study the interactions between humans and the geologic environment.
- **Geoarchaeologists** study human history and prehistory through geological analysis.
- **Climatologists** study climate and its changes over geologic time.
- **Planetary geologists** study the structure and composition of planets and other celestial bodies.

BECOMING A GEOSCIENTIST

Geoscientists must possess a strong interest in science and a college degree. High school courses related to Earth science, chemistry, physics, mathematics, and biology can prepare aspiring students for their education. College students can gain practical experience by assisting a professor or geological survey with a research project. Field camps offer the opportunity to learn basic field mapping skills.

It was my undergraduate research experience that led me to believe a career in paleontology could be right for me.
Gary Motz – Paleontologist, Indiana University

Communication, critical-thinking, and geographic information system (GIS) skills are essential for geoscientists. While some entry-level positions accept a bachelor's degree, most geoscientists begin their careers with a master's degree or a Ph.D.

GEOSCIENCE CAREERS

According to the Bureau of Labor Statistics, the demand for geoscientists will increase in the near future. Geoscientists will be needed to investigate alternative energy resources and study the Earth's dynamic processes as population expands.[1] Below is a list of some of the careers you can explore as a geoscientist.

- Geologist
- Cartographer
- GIS technician
- Remote sensing analyst
- Environmental planner
- Soil scientist
- Park ranger
- Teacher
- Collections manager
- Outreach coordinator
- Water resources specialist
- Science advisor
- Astronaut
- Exploration geologist

[1]Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2016-17 Edition*, Geoscientists, on the Internet at https://www.bls.gov/ooh/life-physical-and-social-science/geoscientists.htm (visited August 1, 2017).