



“Be ready for the experience of a lifetime.”

— Pablo Garcia del Real,
Geological Sciences

STANFORD SCHOOL OF EARTH, ENERGY & ENVIRONMENTAL SCIENCES AT A GLANCE

COMMUNITY

60 faculty members in four departments
8 members of National Academies (Science and Engineering)

Approximately 600 students

- PhD 50 percent
- MS 20 percent
- BS 30 percent

RESOURCES

Advanced computational and technological facilities, including Spatial Analysis Center, plasma lab, nanocharacterization lab, Stanford USGS Microanalytical Center, Stanford Center for Computational Earth and Environmental Sciences and SLAC National Accelerator Laboratory.

Branner Earth Sciences Library, with 125,000 volumes and 270,000 sheet maps.

Research stations include Jasper Ridge Biological Preserve at Stanford and the Hopkins Marine Station and Monterey Bay Aquarium Research Institute, both on the Pacific Ocean’s Monterey Bay.

PHOTO CREDITS

Front cover: NASA Goddard Space Flight Center

This panel: Gert van Dijken, Benjamin Shaw

Back cover: Linda Cicero, David I. Kline

Inside left: Andrew Stefaniak, Kim Steel

Inside center: Stacy H. Geiken, courtesy Laura Erban, Kim Steel

Inside right: Kim Steel, courtesy Ashish Jhina, Tamer Shabani, John Todd Photography



“At Stanford, I’ve made friends for life.”

— Marine Denolle,
Geophysics





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“Many of my
heroes are here.”

— Joann de Zegher,
Emmett Interdisciplinary
Program in Environment
and Resources

Stanford EARTH

STANFORD SCHOOL OF EARTH, ENERGY
& ENVIRONMENTAL SCIENCES
GRADUATE PROGRAMS





EARTH CHALLENGES. STANFORD SOLUTIONS. YOUR FUTURE.

Are you intrigued by the science of earthquakes, volcanoes or tsunamis — and interested in translating science into solutions that save lives? Are you fascinated by questions about the history of Earth or the challenges of food or freshwater, oceans or climate change? Are you called to address the energy needs of Earth's rapidly growing population? Are you passionate about exploring the complex interface between humans and their environment and resources?

If your answer to questions like these is “yes,” consider a future that begins with graduate studies at the Stanford School of Earth, Energy & Environmental Sciences. Part of the bedrock of Stanford University, the School of Earth, Energy & Environmental Sciences is cultivating a new generation of Earth and environmental scientists and engineers who will play a critical role in our rapidly changing world. And you can be part of it.

SEEKING KNOWLEDGE AND SOLUTIONS Our school reflects the diversity and complexity of Earth issues through disciplinary programs, as well as interdisciplinary programs that bridge Earth and environmental sciences, increasingly with social sciences. Our graduate students bring diverse educational and cultural experiences, perspectives, ambitions and backgrounds to their work. They come from all over the world — roughly 40 percent are from the United States — and from all kinds of undergraduate institutions: small liberal arts colleges and research-intensive institutions, state colleges and large, publicly-funded universities. Women now make up 41 percent of our enrollment.

These talented students go on to careers that reflect the many ways Earth, energy and environmental sciences make a difference in academia, government, industry and environmental policy. Many use their expertise to contribute in their own communities, as well as regionally and globally.

RESOURCES FOR IMPACT As a master's or PhD student at the School of Earth, Energy & Environmental Sciences, you become part of a close-knit group of peers and faculty mentors engaged in groundbreaking research and its translation into high-impact solutions. You'll have access to exceptional analytical facilities, from a plasma lab to a linear accelerator, and high-performance computing capabilities, including those that are expanding the frontiers of computational geoscience. Field research can take you almost anywhere in the world.

You will also benefit from the unparalleled home base Stanford university provides. With its strong track record for discovery and innovation, Stanford positions you to advance your research in collaboration with world-renowned centers, institutes and departments, including the Precourt Institute for Energy and the Stanford Woods Institute for the Environment. Opportunities abound for truly innovative work at all seven schools at Stanford. And with Silicon Valley in Stanford's neighborhood, a spirit of entrepreneurship pervades the campus — ideal for cultivating the leadership and learning you will need to address complex global issues and advance next-generation technologies.



“Members of our research community bring a wide range of talents, interests and ideas to their work. Add Stanford's spirit of collaboration and innovation, and you have an ideal incubator to solve Earth, environment and resource problems.”

— Pam Matson, Dean,
School of Earth, Energy
& Environmental
Sciences

DEPARTMENTS, PROGRAMS AND DEGREES

“The School of Earth, Energy & Environmental Sciences is a huge family of people studying the same planet in its different aspects.”

— Orhun Aydin,
Energy Resources
Engineering



ENERGY RESOURCES

ENGINEERING teaches courses and performs research relevant to the production and transformation of energy resources. Disciplines include petroleum engineering, clean energy conversions, carbon capture and storage, energy systems analysis and optimization, geothermal reservoir engineering and other renewable energy technologies. This area of study and research focuses on the design of processes for energy production, transformation and storage as well as design and optimization of repositories for the long-term storage of energy by-products, such as carbon dioxide. The department is well positioned to influence and adapt to the changing energy landscape.

Degrees

MS, PhD

Energy Resources Engineering
or Petroleum Engineering

Learn More

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EARTH SYSTEM SCIENCE seeks to understand, predict and respond to human caused and natural environmental change from local to global scales. The program investigates the complexity of the global system, including interactions, synergies and feedbacks that link oceans, atmosphere, land surfaces and freshwater systems. Graduate students explore the multiple facets of environmental processes and learn to think as they evaluate change in oceans, water, air and land processes as part of an integrated and connected system.

Degrees

MS, PhD

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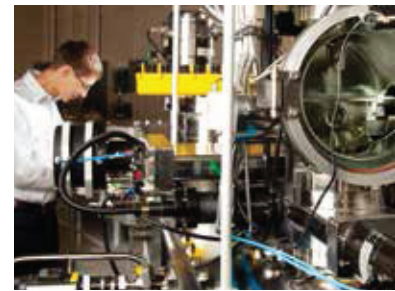
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“The resources available to students for their research are phenomenal.”

— Saurav Bista,
Geological Sciences



GEOLOGICAL SCIENCES studies the entire planet, from its deep interior to the surface, throughout the long span of geological time up to the human timescale, at spatial scales from global to atomic. Physical, chemical and biological processes as well as Earth's unique history are within the broad scope of this naturally interdisciplinary field, which is critical to the study of basin analysis and sedimentology, geobiology, geochemistry, major extinction events, mineral sciences, surficial processes, tectonics, natural hazards, environmental science, geological engineering, surface and groundwater management, remediation of contaminated water and soil, geological mapping, land use planning, human health and the environment and exploration and extraction of energy, mineral and water resources.

Degrees

MS, Engineer, PhD

Learn More

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FINANCIAL AID The School of Earth, Energy & Environmental Sciences is committed to making exceptional training accessible to promising graduate students. We fully support all doctoral candidates (with stipend and tuition) for at least three quarters of the first year. Subsequent years of support are guaranteed, contingent on satisfactory academic progress. Support usually consists of a combination of fellowships and research and teaching assistantships. Funding for students who receive external awards is supplemented to department levels as needed.

We have a strong track record of providing support for master's students. Although financial support is not guaranteed, the vast majority of our master's students are able to secure funding from their departments or advisors.

Graduate students with internal or external support are also eligible for a university health insurance subsidy based on their level of support.



“The culture of the school fosters independent thinking and initiative.”

— Taylor Dahlke,
Geophysics

GEOPHYSICS integrates geology, mathematics and physics to understand how Earth works. Geophysicists study Earth processes through a combination of laboratory experiments, computational and theoretical modeling, remote imaging and direct observation. Research, which has both fundamental and strategic elements, can be grouped in three broad categories: energy, environment and hazards. Research topics include measuring crustal deformation using precision geodesy, high-resolution imaging of the shallow crust using active source seismology, studies on the feasibility of carbon sequestration, earthquake source studies and hazard analysis, radar remote sensing of Earth and other bodies in the solar system, rock physics of petroleum reservoirs and for environmental remediation, state of stress and mechanical behavior of the crust, passive imaging of the crust and upper mantle, and regional tectonics and continental evolution.

Degrees
MS, PhD

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THE EMMETT INTERDISCIPLINARY PROGRAM IN ENVIRONMENT AND RESOURCES (E-IPER) develops the knowledge, skills, perspectives and ways of thinking needed to understand and help solve the world’s most significant environmental and resource sustainability challenges. E-IPER strives to be a model for interdisciplinary graduate education, drawing on faculty from all seven Stanford schools. The program combines academic disciplines — including natural and Earth sciences, engineering, economics, humanities, social sciences, law, health, policy and business — to yield new insights and novel solutions to urgent global problems, such as climate change, energy use, food security, freshwater availability, depletion of ocean resources, land degradation and biodiversity loss.

Degrees

PhD in Environment and Resources, Joint MS in Environment and Resources for students concurrently earning degrees in Stanford’s Graduate School of Business, School of Law or School of Medicine (MBA, JD or MD)

Learn More

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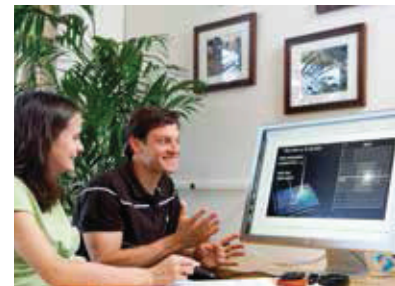


“Stanford is truly driving interdisciplinary work.”

— Jennifer Wang,
Emmett Interdisciplinary Program in Environment and Resources

“I became a geologist so I could see as far ahead — and behind — as possible.”

— Michael Osborne,
Earth System Science



COMPUTATIONAL GEOSCIENCES

is a relatively new, 45-unit master’s degree track designed to offer a solid foundation in computational and mathematical methods, with a specialization in Earth sciences. The program engages Earth sciences students who want to develop expertise in computational research and students interested in computation who want to work in this specific focus area. Program graduates are prepared to work as scientific computing professionals in industry and government, or to continue to a doctoral program. CompGeo is a collaboration between the School of Earth, Energy & Environmental Sciences and the Institute for Computational & Mathematical Engineering, and resides in the School of Engineering.

Degree
MS

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