

RESEARCH THEMES

Our research encompasses all parts of the Earth's dynamic systems, investigating the linkages between the Earth's interior, surface, hydrosphere, cryosphere, biosphere and atmosphere, and how they are coupled with chemical, physical, biological and geological processes. Our research spans across deep time and present day. It seeks to understand the long term consequences of short term processes and how they shape the evolution of our planet and impact society.

SURFACE & HYDROLOGIC PROCESSES

Research topics include watersheds, aquifers and source-to-sink sediment transport. We focus on the processes that shape the Earth's surface and how they interact with hydrologic systems.

SOLID EARTH & TECTONIC PROCESSES

Research topics include plate tectonic and deformation processes, mantle evolution and dynamics, and volcanism. Research spans tectonics and deep crustal processes.

ENERGY GEOSCIENCES

Research topics include subsurface basin analysis, reservoir characterization and unconventional resources. We focus on hydrocarbon energy research as well as resource extraction's environmental effects.

MARINE GEOSCIENCES

Research topics include the geophysics of active plate margins, clastic sedimentation and carbonate systems in the marine environment.

CLIMATE & THE ENVIRONMENT

Our climate and carbon research topics include climate dynamics and the carbon cycle. Our geobiology research includes biotic changes through time, evolutionary morphology, systematics and geomicrobiology.

PLANETARY SCIENCES

Research topics include chemical and dynamic evolution of planets, solar system materials and planetary surface processes.

RESEARCH DISCIPLINES

Our research in individual geosciences disciplines remains strong, addressing fundamental questions in each field and providing a firm foundation for our interdisciplinary research themes. Graduate students can pursue their studies in any of nine disciplines. Interested students should explore potential graduate supervisors through our website. Faculty and research scientists are listed under each discipline, along with descriptions of related student opportunities, facilities, and research centers.

SEDIMENTARY GEOLOGY/GEOMORPHOLOGY

A discipline with a long tradition of excellence continually sharpened by strong ties to industry.

GEOPHYSICS/SEISMOLOGY

One of the largest and most diverse academic geophysics groups.

STRUCTURAL GEOLOGY/LITHOSPHERIC

GEODYNAMICS Spans entire spectrum from continental to oceanic and upper crustal to mantle tectonics, a range only a handful of programs can cover.

HYDROLOGY/GLACIOLOGY

Strengths in hydroclimatology, groundwater and surface water, physical hydrogeology, karst hydrogeology and glacial dynamics.

PETROLOGY/MINERAL PHYSICS Strengths in volcanic eruption dynamics, metamorphic processes, mineral physics and ore deposits.

GEOCHEMISTRY/THERMO- & GEOCHRONOLOGY

Major growth in stable isotope geochemistry, thermochronology and geochronology combined with mantle geochemistry and aqueous geochemistry.

PALEONTOLOGY/GEOBIOLOGY

Long tradition of excellence in vertebrate paleontology, plus evolutionary morphology and geomicrobiology.

CLIMATE DYNAMICS

Strengths in global and regional climate modeling, uncertainty quantification and integrated Earth system science.

COMPUTATIONAL GEOSCIENCES

Focus on large-scale simulations of tectonic plate boundary interactions and earthquake dynamics, regional and global climate change, movement of ice sheets, subsurface flow, mantle convection and crustal evolution.

LEARN MORE & APPLY

SUPERVISORS

View a list of the Jackson School's graduate student supervisors: www.jsg.utexas.edu/education/graduate/supervisors

APPLYING

Apply to the Jackson School following the standard procedures for The University of Texas at Austin: www.utexas.edu/ogs/admissions

For more information on applying to the Jackson School: www.jsg.utexas.edu/education/graduate/admissions

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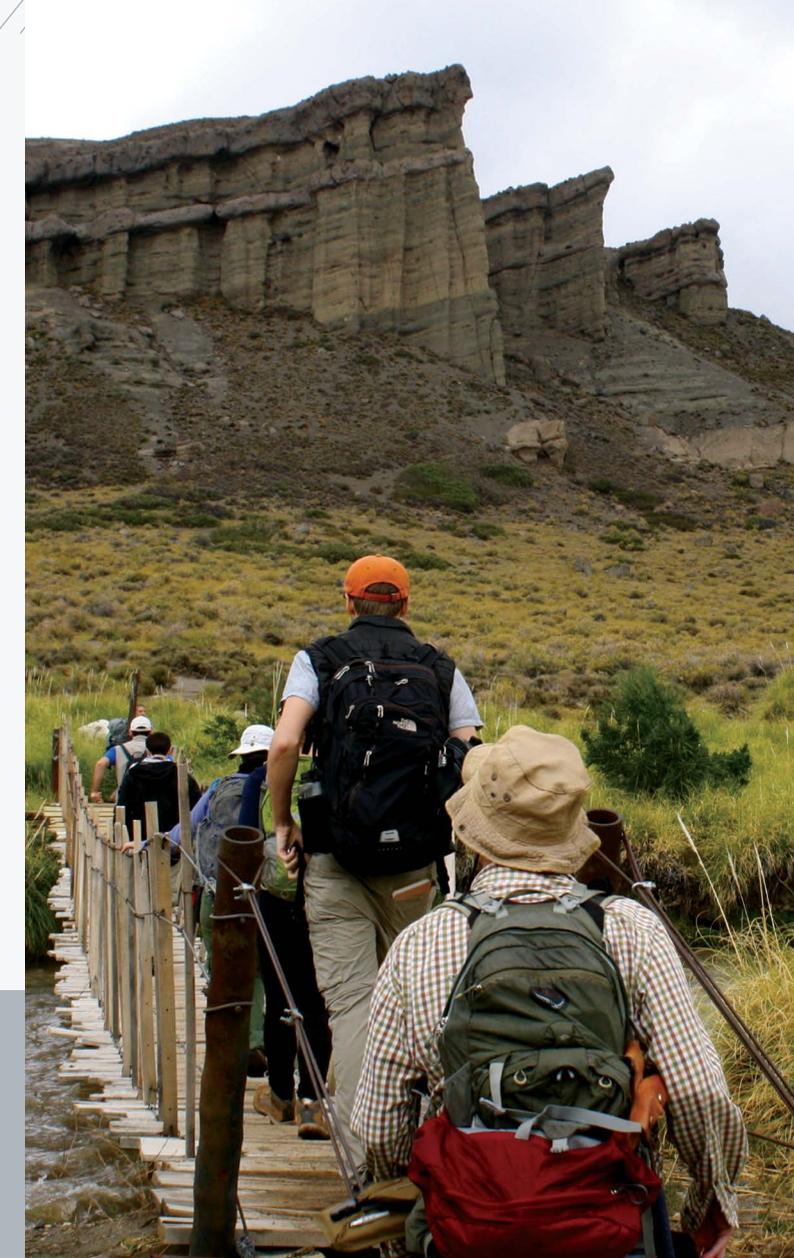
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GEOSCIENCES GRADUATE PROGRAMS



TEXAS Geosciences

The University of Texas at Austin
Jackson School of Geosciences

Updated June 2019, based on most current data.



DEVELOPING LEADERS IN THE GEOSCIENCES

This is a great time to pursue graduate studies at the Jackson School of Geosciences, one of the largest, most-prestigious and well-funded schools of geosciences in the world. Geosciences is at the root of many of the critical issues facing our world today, from developing sustainable energy and water supplies, to better understanding climate change and natural disasters.

The Jackson School is dedicated to developing leaders to take on these 21st century challenges while advancing the understanding of the Earth, its resources, systems and environment for the lasting benefit of humankind.

For ambitious students, the opportunities abound. We have six broad research themes that explore the linkages between Earth processes and systems, and nine research disciplines that address fundamental questions in Earth science. Our top-rated Department of Geological Sciences, Bureau of Economic Geology and Institute for Geophysics offer students the opportunity to work on projects with major societal impact, such as carbon sequestration, the fate of the West Antarctic Ice Sheet and development of unconventional hydrocarbons.

For students interested in academic careers and fundamental research, we've dramatically expanded our doctoral programs in all areas from the core to the atmosphere and to planetary bodies throughout the solar system.

Our industrial associates programs, in areas like exploration geophysics and reservoir characterization, expose students to industry standards and help them make valuable contacts. And no matter your career path, you will find our vast alumni network a great asset.

We believe future advances in the geosciences will come at the interfaces of traditional disciplines. For this reason we are a highly collaborative school. We seek faculty, research scientists and graduate students pursuing the grand challenges in their disciplines and aiming to be leaders in their fields. We welcome your interest.


Sharon Mosher, Dean

JACKSON SCHOOL DISTINCTIONS

FACULTY & RESEARCHERS

Students have the opportunity to work with over 100 faculty and research scientists at the Jackson School's Department of Geological Sciences, Bureau of Economic Geology and Institute for Geophysics. The researchers across these units are leaders in their fields and often work on the frontiers between disciplines where major developments are taking place. Ongoing work includes:

- NASA collaborations to explore Mars and Jupiter's moon Europa and help forecast floods and droughts here on Earth;
- The most comprehensive public study of the nation's largest shale plays;
- Research of natural disaster areas soon after they occur through the school's Rapid Response Program;
- Research on potential fuel source methane hydrate in the Gulf of Mexico, funded by an \$80 million DOE grant;
- Creating and operating a seismic monitoring network (TexNet) across Texas to track earthquake activity;
- Sampling the Chicxulub crater in the Gulf of Mexico, the impact site left by the asteroid that wiped out the dinosaurs;
- Extensive carbon sequestration research;
- Mapping the substructure of vulnerable ice sheets in Antarctica and Greenland;
- Researching the evolution of birds and dinosaurs through fossils and genetic analysis.



SUPPORT AND SCHOLARSHIPS

Our highly competitive support packages are among the best in the country and are guaranteed for two years (M.S.) to five years (Ph.D.) for students in good standing. They are available to both domestic and international students. In addition, the school's dozens of endowed scholarships offer additional support for students and their research.

RESEARCH AND INDUSTRY OPPORTUNITIES

While earning a degree, graduate students have a wealth of opportunities to work at our three major research units: the Bureau of Economic Geology, the Department of Geological Sciences, and the Institute for Geophysics. For those seeking a professional track, the school has a major on-campus recruiting presence.

2019 U.S. GRADUATE SCHOOL RANKINGS

- #1 in Geology, *U.S. News & World Report*
- #7 in Earth Sciences (#3 among public universities), *U.S. News & World Report*
- #7 in Geophysics & Seismology (#2 among public universities), *U.S. News & World Report*

RECENT GLOBAL RANKINGS

- #3 Geology, *2017 Center for World University Rankings*

ACADEMIC AND RESEARCH COMMUNITY

Students benefit from being part of the larger research environment of The University of Texas at Austin, with Jackson School students and researchers participating in cross-collaborative centers and programs across campus. Examples include: the UT Austin Energy Institute, the Environmental Science Institute and the Latin America & Caribbean Energy Program. Jackson School research is often international as well as interdisciplinary, with students and researchers investigating fundamental geosciences questions with colleagues at institutions across the world. Recent examples include:

- Sarah Davis (Ph.D. expected 2021) researches how certain species of birds got their bright colors and how color might have been expressed in extinct dinosaur relatives. Her research has taken her on fossil hunting trips to Patagonia, China and France.
- Sophie Goliber (Ph.D. expected 2022) conducts research on glaciology and multispectral remote sensing. In June 2018, she attended the International Summer School in Glaciology in McCarthy, Alaska, with students from Norway, India, Germany and other countries.
- Stefano Nerozzi (Ph.D. expected 2019) studies the geologic history of Mars and the planet's past climate by studying ice deposits on the Red Planet. He works closely with data collected by NASA and the Italian Space Agency.

SIZE & SCOPE

The Jackson School hosts one of the largest geosciences communities in the world, with more than 30 research programs and centers, over 50 faculty members, more than 100 research scientists, and hundreds of research locations around the globe. Our roughly 4,800 alumni represent the Jackson School across industry and academia. Our network includes presidents, CEOs, and chairs of major energy, mining and exploration companies, as well as current and former presidents of major geological societies.