

Earth and Human Connections Cluster Hire

Department of Geosciences, Texas Tech University

The Department of Geosciences at Texas Tech University invites applications for **four** tenure-track faculty positions at the level of assistant professor, beginning Fall 2022. The positions are part of a cluster of hires themed “**Earth and Human Connections**” that focuses research and education on the interactions among human activities and processes occurring on Earth’s surface and in its subsurface. The ability to link science with risk-mitigation and resource-management strategies necessitates assessing vulnerabilities while promoting measures that enhance resiliency and sustainability. Climate change will continue to shape our environment, and society must adapt to changing energy resource demands.

The four positions are described below. Applicants are encouraged to link across them, for example, by describing complementary contributions in the other areas of their research, or opportunities for collaboration, as well as to the existing departmental strengths, which include programs of research and teaching in atmospheric sciences, geography, geology and geophysics. Applicants must explain how they actively promote diversity, equity, and inclusion (DE&I) efforts in support of their research, mentoring, teaching efforts: these are important to the department and university, particularly as a Tier 1, minority-serving institution (MSI). Further, applicants should demonstrate how they will contribute to excellence in education for undergraduate and graduate students.

(26206BR) Physical Geography and Climate: We seek applicants with research interests in **Earth system processes**, broadly defined, who specialize in quantitative approaches to understanding the environment, biogeography, surface water, and/or ecohydrology. Scientific methodologies could include a combination of fieldwork, experimental work, remote sensing, and/or data analytics. Applicants should complement existing research areas in the Department of Geosciences, including land-change science, geomorphology, and human-environment interactions. The successful applicant is expected to contribute to teaching in the geography, GIST, and environmental science programs. *Links to the E-HC theme:* Processes that shape Earth’s surface, and impact resource distribution and sustainability. Quick link: <https://bit.ly/3jRGQfo>

(26130BR) Human Geography and Climate: We seek applicants who specialize in **human-environment interactions**, particularly under the influence of climate change. They should be able to assess community vulnerability and resilience, political ecology, risk perception and environmental change, environmental justice, race, gender and indigenous community outcomes, and health and social environmental studies. Candidates need to demonstrate expertise in mixed-methods research, as well as in the collection, analysis and/or integration of big data. The hire is expected to contribute to teaching in the geography program. *Links to the E-HC theme:* Access to strategic resources, assessing geohazards, and evaluating societal resiliency in the face of climate change and shifting demands for energy and earth materials. Quick link: <https://bit.ly/3nGMsu7>

(26129BR) Strategic Mineral and Metal Resources in Igneous Systems: We seek applicants who work in igneous petrology and trace-element geochemistry, and who assess the origin, distribution, active circulation and behavior of **mineral and metal resources**. The applicant should indicate how they examine resources of known strategic value. The new hire is expected to contribute to teaching in the fields of igneous and metamorphic petrology, trace element geochemistry, and strategic mineral deposits. *Links to the E-HC theme:* Mineral and metal resources are critical to new technology and improving resource utilization, including metal mobility from mineral surface-water interactions, to improve resource extraction and recycling. Quick link: <https://bit.ly/3bq36Zb>

(26203BR) Shallow and Crustal Geophysics: We seek applicants with expertise in **near-surface geophysical processes**, to study resource distribution and geohazards. Scientific techniques should use electromagnetic, electrical, and/or seismic investigations in combination with experimental and computational approaches. Science outcomes that assess environmental processes, geohazards, distribution and circulation of water resources, resource identification and quantification to improve sustainability practices, and/or energy initiatives including carbon sequestration and energy-storage, are encouraged. Teaching responsibilities may include: surface seismology, potential-field geophysics, environmental geophysics, and petrophysics. *Links to the E-HC theme:* Understanding of environmental processes, geohazard challenges and resource distribution in the shallow and crustal Earth to bolster geophysical studies. Quick link: <https://bit.ly/3jPkSto>

Other Information: The Department of Geosciences at Texas Tech University offers B.S., B.A., M.S. and Ph.D. programs in Atmospheric Science, Geology (with concentrations in Geophysics and Environmental Sciences), and Geography, and offers a Graduate Certificate in GIST. *The University is a Carnegie Tier 1 Minority (Hispanic) Serving Institution (MSI), and we seek candidates who have an ongoing commitment to serving our diverse >40,000 student population.* Applicants who demonstrate experience in mentoring and teaching minoritized students, leading grant-funded research with minoritized colleagues and students, and proactively seeking opportunities to engage with DE&I in the geosciences, will be prioritized. Service to the department, college, university, and community is expected.

Applicants will be encouraged to leverage existing research infrastructure, and to build new resources that enhance institutional capacity. The Department and University support an array of physical and computational resources that include: 1. Microbeam instruments (SEM, FIB-SEM, TEM), X-ray (XRD, XRF), geochemical (LA-(MC)-ICP-MS, ICP-AES, IRMS) facilities, and extensive sample preparation facilities (rock preparation, mineral separation, thin section, fusion, acid dissolution and column chromatography); 2. Intensive computational needs are provided by the university High Performance Computing Center (HPCC); 3. Texas Tech maintains an Esri university site license providing access to the full suite of ArcGIS software for instruction and research. Opportunities for collaboration exist through the Climate Center, Center for Geospatial Technology, National Wind Institute, Water Resources Center, Health Science Center, Environmental Engineering Group, USGS Water Science Center, National Weather Service (Lubbock), USDA-ARS, Departments of Environmental Toxicology, Plant and Soil Sciences and Biological Sciences.

A Ph.D. in relevant or related disciplines at the time of appointment is required. For full consideration of your application, completed applications should be submitted by December 5, 2021. Applications will be continually evaluated until the positions are filled.

A complete application package will include **(a) letter of application**, **(b) curriculum vitae**, and **(c) three equally important statements** (2 pages each) that describe: 1) research experience and future goals, including a 5-year plan for establishing and maintaining a recognized and well-funded **research** program; 2) a plan for excellence in **teaching** that recognizes the value of self-reflective professional development; and 3) a description of ongoing and expected future contributions to **diversity, equity and inclusion** and how research, teaching, mentoring and professional service may foster and advance DEI goals in the University and our communities.

These documents can be uploaded at <http://www.texas-tech.edu/careers/> using the **BR** requisition numbers (see position titles) or via the quick links for each position. Questions should be emailed to Dr. Moira Ridley, Search Committee Chair (moira.ridley@ttu.edu) or Dr. Callum Hetherington (Chair, Department of Geosciences, callum.hetherington@ttu.edu). As an Equal Employment Opportunity Affirmative Action employer, Texas Tech University is dedicated to the goal of building a diverse faculty

committed to teaching and working in a multicultural environment. We actively encourage applications from all those who can contribute, through their research, teaching, and service, to the diversity and excellence of the academic community at Texas Tech University. The university welcomes applications from minorities, women, veterans, persons with disabilities, and dual-career couples.