Discover what we’re all about!

For more information on our Geophysics Program, please contact our Graduate Student Coordinator:

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The University of Texas at El Paso

UTEP is located in El Paso, Texas, on the border between the United States and Mexico. UTEP students live and study in the world’s largest binational metropolitan area, pursuing cultural, social, and academic opportunities not available on most university campuses. In recognition of our success in creating educational opportunities for non-traditional students, the National Science Foundation designated UTEP as a Model Institution for Excellence, one of only six in the country. The Carnegie Foundation also ranks UTEP in the Doctoral/Research University-Intensive category, placing us among the top 7% of all colleges and universities in the United States.

As UTEP was founded in 1914 as the Texas College of Mines, the geological sciences have played a key role in the institution since its inception. Concrete examples of this role are the fact that the Department of Geological Sciences has the oldest Ph.D. program in the university and is housed in a well-equipped 90,000 sq. ft. building that dominates the center of the campus. The department has evolved greatly over the years, but has a long tradition of excellence in both teaching and research. We invite you to tour our campus and get to know us first hand. You will always receive a warm welcome from the UTEP Community!

UTEP Geophysics Faculty

**Dr. Aaron Velasco** (Professor, Chair) (Ph.D., Univ. of California Santa Cruz)  
Research interests:  
Earthquake Seismology, Seismic data acquisition, field geophysics.  
Currently funded projects include:  
Computational Seismic Imaging, Educator/Outreach activities  
(velasco@geo.utep.edu).

**Dr. Diane Doser** (Professor) (Ph.D., Univ. Utah)  
Research interests:  
Earthquake Seismology, Seismic Tectonics, Environmental Geophysics.  
Currently funded projects include:  
Studies of seismicity of southeastern and interior Alaska, studies of intraslab earthquakes near Anchorage, AK, shallow geophysical studies in Carlsbad Canyon National Park and the El-Paso region  
(doser@utep.edu).

**Dr. Kate Miller** (Professor) (Ph.D., Stanford Univ.)  
Research interests:  
Reflection Seismology, Seismic Processing, Crustal Structure, Plate Tectonics.  
Currently funded projects include:  
Seismic investigations of British Columbia  
(miller@geo.utep.edu).

**Dr. Laura Serpa** (Professor) (Ph.D., Cornell Univ.)  
Research interests:  
Reflection Seismology, Potential Fields, Tectonics, & Shallow Earthquakes.  
Currently funded projects include:  
St. Elias Erosion/Tectonics Project (STEEP) and educational/outreach activities  
(lserpa@utep.edu).

**Dr. Bridget Smith-Konter** (Assistant Professor) (Ph.D., Univ. of California San Diego)  
Research interests:  
Crustal deformation modeling, Seismotectonics, & Planetary Physics.  
Currently funded projects include:  
Stress rate modeling of the San Andreas Fault System, integration of EarthScope CGPS and InSAR data  
(brkonter@utep.edu).

Research Staff

**Dr. Steven Harder** (Senior Research Scientist) (D.Sc., UTEP)  
Seismic Anisotropy, Seismic Data Acquisition, Field Geophysics.  
Dr. Ra’ed Aldouri (Director, Geospatial Information Center) (Ph.D., UTEP)  
GIS, Database Management.  
Galen Kaip (Technical Staff) (M.S., UTEP)  
Field Geophysics.  
Carlos Montanta (System Administrator) (M.S., UTEP)  
Computer Systems and Database Management.

Cooperating Faculty

Dr. Ann Q. Gates (Computer Sciences)  
Software Engineering, Geoinformatics.  
Dr. Vladik Kreinovich (Computer Sciences)  
Interval Computations, Geoinformatics.  
Dr. Soheil Nazarian (Civil Engineering)  
Geotechnical Engineering.
**Graduate Program**

UTEP’s graduate program in Geophysics is substantial in size, currently with 5 M.S students, 17 Ph.D. students, 4 full professors, and 1 assistant professor. Our program emphasizes efforts to provide an opportunity for personalized, high quality graduate education, meaningful research experiences, and good employment opportunities upon graduation. The majority of UTEP geophysics graduate students receive support through research or teaching assistantships.

Graduate course offerings in geophysics include: geophysical field methods, inverse theory, seismology, reflection seismic data processing, computational methods, remote sensing, digital image processing, plate tectonics, well logging, and digital signal processing.

**Field Equipment & Databases**

UTEP’s Geophysics group maintains a seismic observatory and field equipment for magnetic, gravity, seismic refraction (430+ portable seismographs), broad-band seismology (14 state-of-the-art broadband seismometers and digital acquisition systems), borehole seismology, radioactivity, microearthquake, conductivity, slim hole logging, ground penetrating radar, GPS and DC/AC resistivity surveys. We presently have 16 handheld GPS units, 2 high-precision handheld GPS units (Trimble Pro XR Mapping Differential GPS), ~20 handheld computers, and 6 tablet PCs used for geologic field mapping.

UTEP’s Geophysics group maintains an extensive database of gravity data, magnetic data, and a well log library. A large database of remote sensing images and data are also available through the Pan American Center for Earth and Environmental Studies (PACES), housed within the Department of Geological Sciences.

**Computational Facilities**

UTEP’s Department of Geological Sciences runs a network of Unix workstations, including an 8-node Sun server, terra-byte disk capacity, and two computer labs comprised of 25 Windows NT PCs and several Mac workstations. We recently acquired a 4-node dual core Itanium cluster enabled for image-processing and computational modeling, as well as a 3D monitor for visualization display. We are currently developing a geophysical visualization computer lab and a multi-panel visualization display wall.

We maintain a wide variety of commercial seismic data processing, interpretation, and modeling applications, including ProMAX 2D, ProMAX 3D, and Seisworks. We have a variety of geophysical software packages, including RAYINVR, FAST, and codes for tomography, reflectivity, gravity, crustal deformation, and finite difference waveform modeling. Also accessible are licenses for ESRI GIS software (ArcView and ArcInfo), ORACLE database software, and four different image processing packages. We maintain a variety of high-end visualization software packages, such as 2D Move, 3D Move, 4D Vista, and IVS Fledermaus Professional.

**Research in Geophysics**

Our program offers research in earthquake seismology, reflection seismology, treaty verification seismology, gravity & geomagnetism, seismotectonics, planetary physics, crustal deformation, environmental geophysics, & remote sensing.

**A history of success.......**

Since the beginning of our program in the 1970s, nearly 100 students have received graduate degrees from UTEP in (or emphasizing) geophysics. Our graduates have gone on to pursue successful professional careers in academia, industry, and in government laboratories.

**Cyber-ShARE**

UTEP was recently awarded a $5M NSF grant to create the Cyber-ShARE Center of Excellence, to be housed in the Department of Geological Sciences. Cyber-ShARE will address innovative, synergistic collaborations involving cyber infrastructure, scientific research, and data visualization.