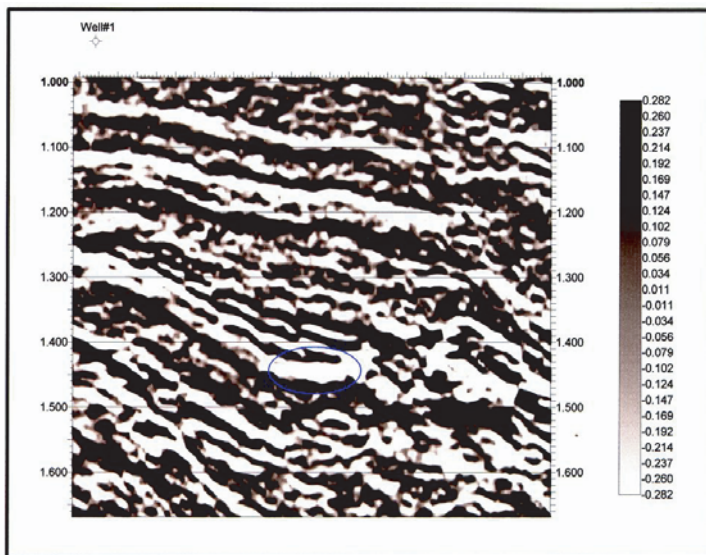


The main emphasis of geophysical research at the University of New Orleans is seismology for exploration of hydro-carbon. The current focus involves both developing new processing algorithms for imaging the interior of the Earth and using state-of-the-art technology for interpretation of seismic data. The UNO geophysical research has collaboration with the major oil and geophysical companies. These companies provide data, software and equipments, give scholarships and funds, and support students as interns and co-ops.

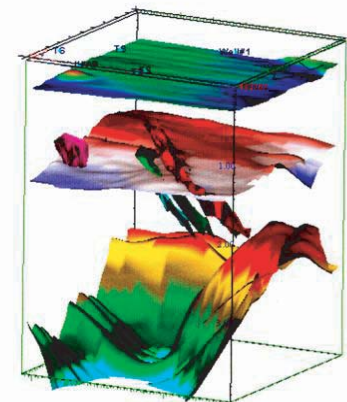
Dr. Mostofa Sarwar is the resident geophysicist at the Department of Earth and Environmental Science. His research experience involves the general area of exploration seismology (software, processing, and interpretation) and physical acoustics including inverse theory, tomography, migration, modeling, deconvolution, complex trace analysis, slant stack, three dimensional interpretations, multiple suppression, curvelet transform for seismic imaging, and genetic algorithms.

Sarwar's five recent publications (2005-2006) are on seismic wave scattering and on three-dimensional interpretation of seismic data. The images of the subsurface hydrocarbon traps are reconstructed by reducible transformations of mathematical sciences. Radon transformed surfaces and deterministic-stochastic muting are applied for partial annihilation of multiple reflections, which cause serious problems for interpreting oil reservoirs below Gulf of Mexico salt domes and overhangs. Recently some of Sarwar's research with graduate students has studied three dimensional seismic data from the Garden Banks of Gulf of Mexico and presented an alternative subsurface view. Research papers from this work also suggested the possibility of new hydrocarbon traps in the area. Graduate students with these projects worked as co-ops in oil companies. Some graduate students are supported by multinational oil company of foreign origin. Dr. Sarwar was a Visiting Scientist at Shell Oil Company Research Laboratory at Houston during summer 2006. The university and industry partnership is a key component of a successful exploration seismology research at the University of New Orleans.

Geophysics students and faculties take active roles in professional societies such as the Society of Exploration Geophysicists (SEG) to keep them abreast of the recent research trends in the industry and academia. There is a SEG student chapter at UNO and Dr. Sarwar has been the Chairman of the SEG Global Affairs Committee and an Associate Editor of the journal 'GEOPHYSICS.'



N-S cross-section showing the flat and bright spot that has been suggested as a new hydrocarbon target in the Gulf of Mexico basin.



3-D geological visualization of water bottom, top of 4500 feet sand, faults, and top of salt using recently implemented seismic processing methods.