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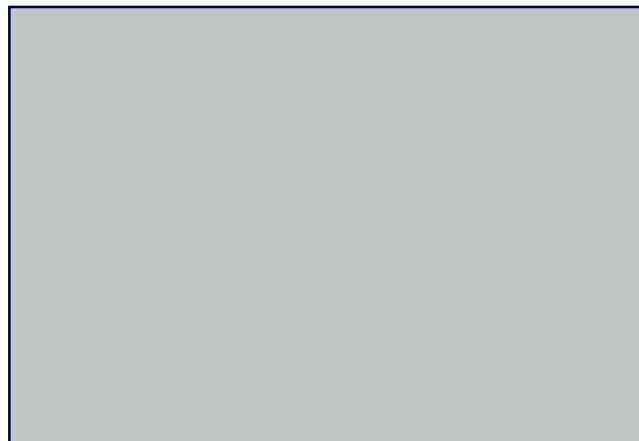
Presidential Scholar Karen Gutierrez Receives PRF Support

The Petroleum Research Fund of the American Chemical Society recently awarded a summer supplementary grant to support undergraduate Presidential Scholar Karen Gutierrez, a 3rd year geology major from Albuquerque. Her study expands upon the ISEM sponsored project, "Geology and Paleontology of Coastal Angola," funded by the

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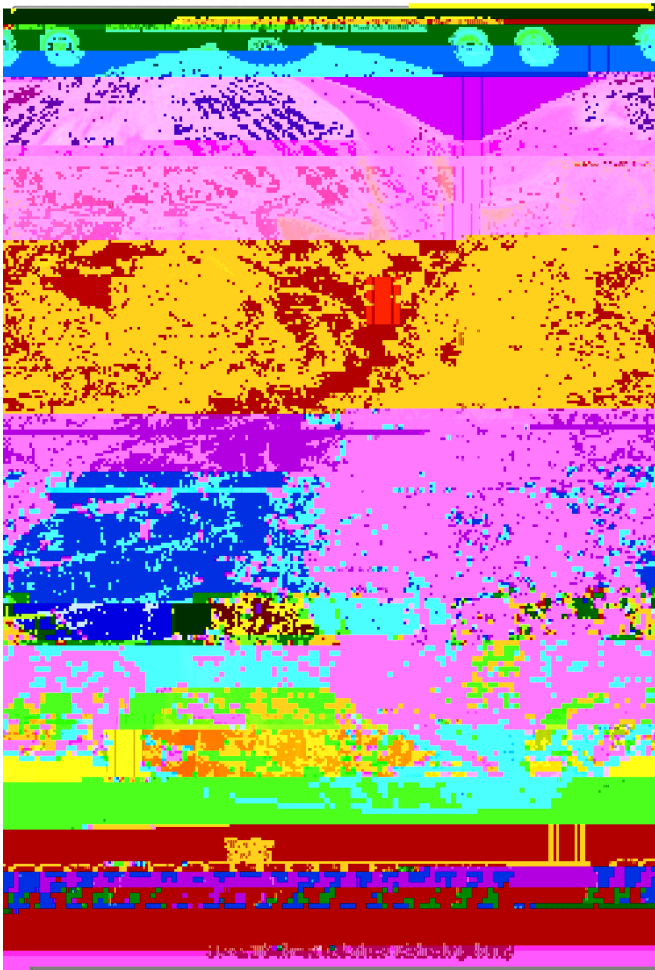
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A n g o l e . l o n t h e



OCEAN DALLAS Rises Again

In conjunction with the 2005 National Earth Science Teachers Convention held in Dallas, Richardson Independent School District's Kathy and Norm Poff teamed up with the ISEM to lead a field trip through the Woodbine, Eagle Ford, and Austin Chalk formations. The accompanying field guide, called Ocean Dallas served to instruct and inspire teachers during their hands-on experience with rocks and fossils. Since that time, the Ocean Dallas guidebook has resided on the SMU webpage of the Department of Geological Sciences, where it has been utilized

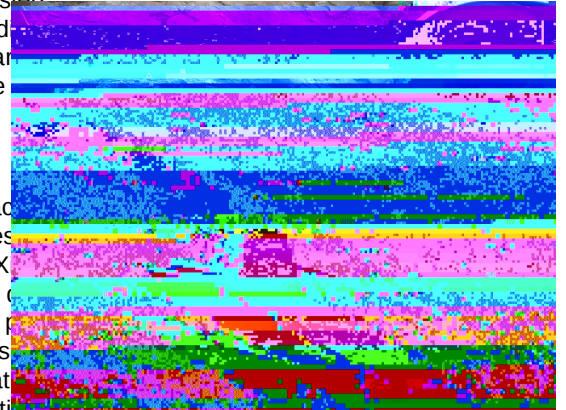


“In my opinion, the most creative research at a university is done by the most energetic investigators, by which I mean graduate students. Those are who we can support best.” Dr. Louis L. Jacobs, President

What some of our students say...

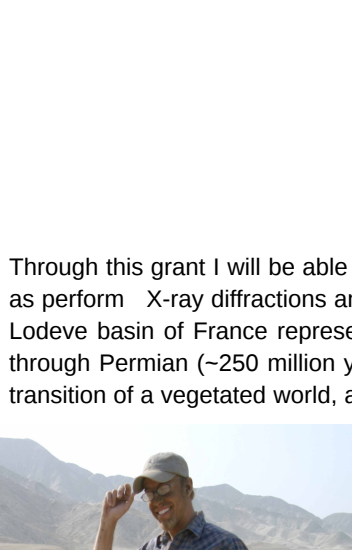


The funding offered by the ISEM supports the stable isotopic research that comprises my dissertation work on the analysis of silicate lithics from archaeological sites on the Northern Channel Islands, California. The tools used by Native Americans that are found in Holocene age sites on the islands were primarily created from cherts, volcanics, and meta-volcanics that are found throughout the islands and on the mainland. By comparing the isotopic “fingerprints” of the lithics found in these sites to stones from quarries they were possibly collected from, models of land use and the extent of trade on and between the island can be produced. Collection of quarry rocks is the essential first step in determining these models. Funding from the ISEM makes this research possible and I greatly appreciate the support. Thank you **John Robbins**

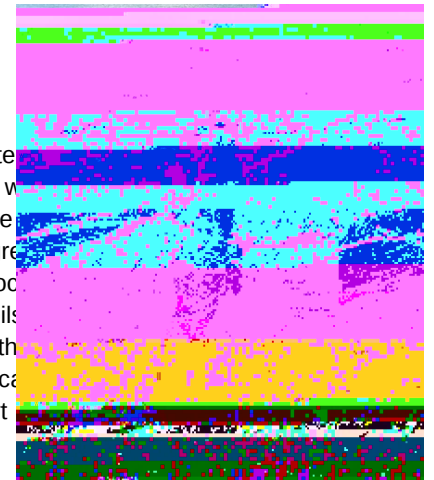


My research focuses on understanding paleoenvironmental and paleoclimatic variability across the Permian-Triassic Boundary (~251 million years ago), which marks arguably the largest extinction of the Phanerozoic. Exposures in the Turpan-Hami and Junggar Basins of Xinjiang Uygur Autonomous Region contain abundant, well-developed paleosols that show clear stratigraphic trends in the paleosol morphologies across the boundary. Furthermore, the paleosols preserved contain abundant soil-formed minerals like calcite and goethite, which will be studied for geochemical analysis. Geochemistry will lead to a quantification of paleoclimatic and paleoenvironmental conditions, including precipitation, temperature, and concentrations of atmospheric gases during the Late Permian and Early Triassic. Initial petrographic, mineralogical, and chemical analyses of the rocks within the study area appear to have undergone little diagenetic alteration, which provides a unique opportunity to examine environmental parameters using multiple proxy records. This work will allow a better understanding of the timescales under which changes within the carbon cycle and permit a more mechanistic understanding of the carbon cycle. The results of this work will be used to compare with global paleoclimate reconstructions models. Thank you so much for supporting my research **Stephanie Thomas**

I am investigating Late Pleistocene and trans-Holocene vegetation changes on California's Northern Channel Islands, including how climate change and human activities influence vegetation change. Thank you **Stephanie Thomas**



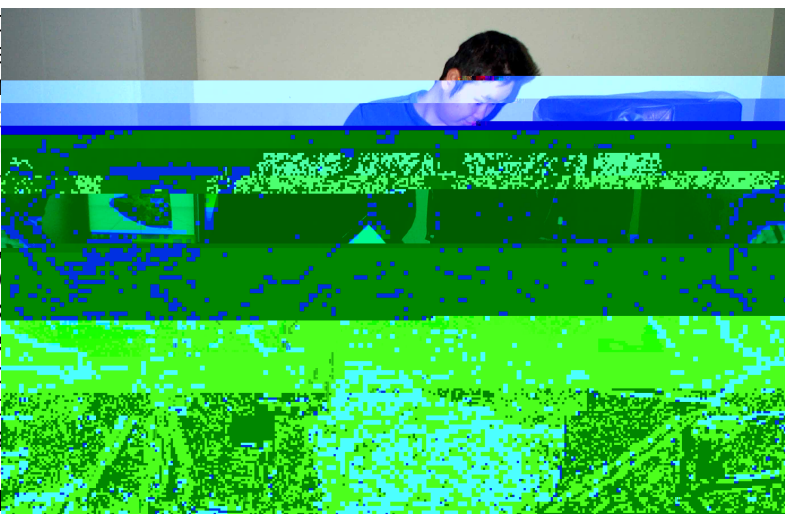
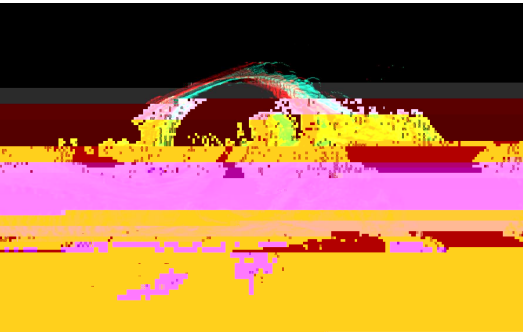
Through this grant I will be able to perform stable isotopic analyses of carbonates and organic matter as well as perform X-ray diffraction analyses of clay minerals gathered from paleosols. The studied strata within the Lodeve basin of France represent a time span from mid-Pennsylvanian (~320 Million years before present) through Permian (~250 million years before present), which includes the last known icehouse to greenhouse transition of a vegetated world, and therefore is a possible analogue for future climate changes associated with global warming. The paleosols in the Lodeve basin are fossil soils that preserve morphological, mineralogical, and geochemical records that will permit reconstructions of paleoprecipitation, paleoatmospheric carbon dioxide concentrations and paleotemperature. Without the support of the ISEM this work would not be possible. Thank you **Lauren Michel**



I would like to express my gratitude to the ISEM for its financial support of my mapping work at the Castillo de Huaricanga mound complex on the north-central coast of Peru. The Fortaleza Valley is known for the Preceramic (3000-1800 BC) mound complexes that have been mapped and dated in the last few years, but little is known about the Initial Period (1800-900 BC) in the valley. The funding from the ISEM will permit me to collect high-resolution geospatial data on surface architecture and artifact distribution. In addition, geospatial data will provide information on geomorphological impacts on the site. The data collected this summer will structure the future research on this important ceremonial mound complex that will illuminate the socio-political developments in the valley between the Preceramic and Initial periods. Thank you for your generous financial support **Martin Aurtherier**

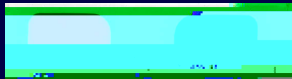
glasses to teachers that click a button on the web p Requests have come continuously for the 7 years the has been up on the web, with requests coming from countries. Most are from the U.S., of course, but t have also come from Canada, South America, Eur Asia, Australia, New Zealand, and most recently fr Estonia.

Other technical studies on other subjects followed. equally important, this work led to the establishment Visualization Laboratory in room 345 Heroy Hall, stock with new laser scanners and a point scanner to comple the data that can be obtained through CT studies. Po was tapped to teach the “Computer Methods in Geolo course, which utilizes his expertise and organizational s



to convey to geology and anthropology students a variety of imaging, surface rendering, analytical manipulation, and GIS techniques that are relevant at high levels in any field that needs and uses three-dimensional data. This is an important step for SMU and its students.

Most recently, the geology imaging group has teamed up with Dr. Wei Tong a materials scientist in the School of Engineering at SMU, to submit a National Science Foundation proposal in the amount of nearly \$400,000 to obtain a C scanner that can image at finer scales than currently possible.



If you would like a free pair of 3-D glasses, visit the ISEM website, www.smu.edu/isem.

Jack Rogers received ISEM financial support as an SMU graduate student and now teaches as a tenured faculty member at Valencia College in Orlando, Florida. Mike Polcyn is an adjunct with the Department of Geological Sciences at SMU, and is a strong supporter of the ISEM.



Our Mission: To benefit the SMU community by promoting and supporting interdisciplinary research at the interface of people, Earth, and the environment.