

Research presented at the  
2009 annual meeting of the  
Geological Society of America

**Contact:**

Kim Cobb  
Southern Methodist University  
News and Communications  
Dallas, Texas  
214-768-7654  
[cobbk@smu.edu](mailto:cobbk@smu.edu)

**Portable 3D laser technology preserves Texas dinosaur's rare footprint**

Using portable 3D laser technology, scientists have electronically preserved a rare 110 million-year-old fossilized dinosaur footprint that was excavated in 1933 and built into the wall of a bandstand at a Texas courthouse.

The track of the ichnospecies *Eubrontes glenrosensis* was embedded in the 1930s into a stone bandstand constructed by the citizens of Glen Rose. The track had been excavated from a main track layer in a nearby riverbed in what is now 1,500-acre Dinosaur Valley State Park.

The bandstand track is a popular draw for tourists in the town of Glen Rose, an hour southwest of Dallas. The nearby Dinosaur Valley State Park boasts the ancient shoreline of a 113 million-year-old sea and is renowned for some of the best preserved dinosaur footprints in the world.

Now the recent laser image preserves the type specimen footprint — the original specimen from which the description of the new species was made. The track was described in 1935 by Ellis W. Shuler, the first geology professor at Southern Methodist University in Dallas.

“It’s scientifically very important,” says paleontologist Thomas L. Adams, who is earning his doctoral degree in paleontology at SMU. “But it’s also a historical and cultural icon for Texas.”

The results demonstrate the advantages of using portable laser scanners to capture field data and create high-resolution, interactive models that can be digitally archived and made accessible via the worldwide web for research and education.

In an effort to preserve the specimen in the bandstand, as well as to compare its present state with the original description, Adams used a portable 3D laser scanner to perform *in situ* digitization of the track. The scans were post-processed to generate high-resolution 3D digital models of the track. Finally the

models were rendered in various media formats such as QTVR and tiff for viewing, publication and archival purposes.

Adams is making the raw scan data and industry-standard 3D object files format available for download at various resolutions.

"It's a nice way to share scientific data," Adams says.

Portable 3D laser scanners capture original fossil morphology and texture, making it possible to use the data for rapid 3D prototyping in foam or resin for research or educational purposes.

The track was made by a three-toed, bipedal, meat-eating dinosaur, Adams says, with the most likely candidate being the theropod named *Acrocanthosaurus*, found mostly in Texas, North Carolina and Oklahoma.

The footprint embedded in the bandstand has been exposed to the elements for nearly 75 years, causing portions of it to erode, Adams says. Erosional loss has affected the outer edge of the toes and heel, altering the initial shape of the track impression, he says.

Adams will present the research at a scientific session of the 2009 annual meeting of The Geological Society of America in Portland, Ore., Oct. 18-21. His co-researchers are Christopher Strganac, Michael J. Polcyn and Louis L. Jacobs in the Roy M. Huffington Department of Earth Sciences at SMU.

SMU: A private university located in the heart of Dallas, SMU is building on the vision of its founders, who imagined a distinguished center for learning emerging from the spirit of the city. Today, nearly 11,000 students benefit from the national opportunities and international reach afforded by the quality of SMU's seven degree-granting schools.

For more information see [www.smuresearch.com](http://www.smuresearch.com). Images available.

#### When & Where

Topic 163651: Adams, Thomas L., presenter

"Three-Dimensional laser-scanning: Implications for digital archiving and preservation of the type specimen of *Eubrontes* (?) *glenrosensis* Shuler, 1935 From the lower Cretaceous of Texas"