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## UTM STUDENTS DISCOVER FOR DISCOVERY

MARTIN, Tenn. – Far from the green wooded landscape of west Tennessee, 11 college geology students and two faculty stared across a seemingly infinite expanse of plateau dotted with short spurts of grass. A closer view of the panorama revealed canyon-like cuts in the terrain, cuts that concealed artifacts never seen by human eyes.

It was May when the 11 geology students from the University of Tennessee at Martin arrived at the Dighton, Kan. farmland. It was hot as they assessed the dry crumbly earth, a fine dust covered their shoes and the bottoms of their jeans. Sunglasses protected their eyes from the beating sun, but their eyes were constantly tilted toward the ground, searching, searching ... and then there was the discovery.

“They uncovered fossils buried for millions of years, some of which are new and significant finds to science,” said Dr. Michael Gibson, UT Martin professor of geology.



He was referring to the Mosasaur, a prehistoric marine lizard, and two prehistoric fish fossils from the Cretaceous period that the group found and excavated to be displayed in a museum.

“I mean, to walk along these weathered chalk layers and to find an ancient creature fossilized in time is really just awesome. To think that these specimens were from the Cretaceous period and would date at around 73 million years old; it’s nuts!” said UT Martin senior geoscience major, Aaron Scott, who was part of the excavation group.

“I hear and I forget. I see and I remember ...” goes the old saying by Confucius, a notion that museums usually heed with displays, images and videos as they attempt to educate visitors. Education is generally the occasion for visiting a museum, or building one for that matter; but not so often are museums able to sympathize with the completing words of the phrase, “I do and I understand.”

Ironically, and perhaps appropriately, the great prehistoric discovery was for and financed by none other than Discovery Park of America, the large educational and entertainment complex presently being erected in Union City. It is funded principally by the Robert E. and Jenny D. Kirkland Foundation, and upon its scheduled opening in 2013 will feature an expansive array of exhibits including an extensive natural history section, where the fossils will be featured.

The Kirklands are long time supporters of educational pursuits in the rural region around Union City. So it's no surprise when Gibson, who has been responsible for planning the natural history exhibits, proposed the idea to the Kirkland Foundation in the fall of 2010 to finance an excavation trip for the area's college students, it was readily accepted.

"Robert and I are delighted with the results achieved by the UTM students and Dr. Gibson on their search for fossils," said Jenny Kirkland, president of the Kirkland Foundation. "Their project is a good example of the educational benefits that Discovery Park will bring to this region."



"Mr. Kirkland really wanted to be able to have some real fossil specimens," Gibson said. "So the idea I pitched to them was rather than go buy everything, why don't we go and collect some things that would then be on display, and they would own the originals."

By the following spring the trip was a go and the hunt on.

"The first day, I couldn't even see the dig site from where we stopped. We were all set up on a ridge that overlooked a lower valley, but there

were plants covering most of what I could see, so I assumed the site was somewhere else," said senior geoscience major, Angela Reddick, who was also on the excavation trip.

Gibson chose the site in Kansas, rented by Triebold Paleontology Inc., for its reputation as a large fossil hot spot. Still, the first two days of the dig were slow as the students only came across small insignificant fossils.

"I believe it was on the third day we were out there, everyone was starting to feel a little let down because we hadn't found very much," Reddick said. She then described the excitement she felt when she found out that other members of her group found the first large specimen, a huge fish. "It was so exciting then. I just wanted to be a part of digging it out."

Scott, however, was lucky enough to be one that originally spotted a large fossil.

"As I was topping a rise in the chalk I saw jaws sticking out of the ground, called over our group leader, and we began the excavation process on what would turn out to be a *Cimolichthys* fish," he said.

The *Cimolichthys* fossil was not one of the two fish that were excavated, but it will be excavated next year, Gibson clarified.

The students were then able to apply various methods of excavation to dig out the other three fossils, first taking GPS coordinates, and removing sediment from the top of the specimens with fine whisk brushes, xacto knives and dental pick type instruments. They then dug out the sediment encasing the specimens and prepared them for transportation with a process called jacketing.

The three fossils are worth roughly \$250,000 in their jacketed form but will be worth more after they are finally prepped, which is the second part of the project. In March of 2013, Discovery Park will be paying for several of the same geology students to fly to Triebold's laboratory in Colorado to finish readying the fossil samples.

"A vast majority of paleontologists will go through their entire career and never find these," Gibson said.

The large fossils will be but a small part of the vast Natural History Gallery of Discovery Park, that will showcase roughly 4½ billion years of geologic past. The gallery will include a suspended 42-foot replica of the Mosasaur reptile fossil that the students discovered as well as several dinosaurs, including an 80-foot *Apatosaurus* and a *Tyrannosaurus rex*; plus, displays of rocks, minerals and gems.

"The gallery will be a big 'walk through time,' which goes from the earliest life forms on earth up to where we are today," Gibson said, adding that he recently returned from a trip to the Smithsonian's Natural History Museum in Washington, D.C. where he negotiated the loaning of a 30,000 year old fossilized pig for display at Discovery Park that was originally found outside of Paducah, Ky.

The educational benefits of Discovery Park will be immeasurable, but "I do and I understand," really comes into play for UT Martin students across a variety of majors who will be reaping the benefits from the relationship between their university and the museum.

Three broadcasting students from UT Martin's communications program, with broadcasting instructor, Rodney Freed, accompanied the geology students on the dig to film a documentary of the discovery. The film may be featured in the museum, and there could be more opportunities for similar fieldwork in the future. Dr. Lionel Crews, associate professor of physics, has also been highly involved in technology and astronomy exhibits. Additionally, Gibson mentioned other proposed student trips for the spring or next fall to obtain rocks and minerals for the museum.

Later in the museum's development, Gibson added, it will move into a phase that includes designing curriculum for schools and the public. This will highly involve the science, history and education departments.

"For us to be able have this relationship with the Kirklands, so that they came to us to do this park, it's fortuitous ... they've been really good about allowing us to go ahead and supply some student work," Gibson said. He went on to say that internships with Discovery Park will hopefully be a future part of the UT Martin/Discovery Park relationship.

"We hope to find many ways for UTM and Discovery Park to collaborate for the mutual benefit of both organizations and especially for the benefit of the thousands of people who will visit Discovery Park," Kirkland said.

If the amount of education it has offered nearly two years before its opening is any indication, Discovery Park should impress. But at this point, 11 geology students are still reeling.

"The difference of a trip like this and a classroom experience, it is huge," Scott said.

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