

For immediate release
July 11, 2005

Ohio State Students Help Bring Jane the Dinosaur to 'Life'

Jane the dinosaur may have lived 66 million years ago . . . but a group of students from The Ohio State University's Advanced Computing Center for the Arts and Design (ACCAD) have helped bring the young *Tyrannosaurus rex* to "life."

The students, led by ACCAD Director Maria Palazzi and Graphics Research Specialist Matthew Lewis, were engaged by a small museum in Rockford, IL, to help create a technological-savvy, interactive exhibit spotlighting the museum's remarkable new inhabitant. Jane – an incredibly well-preserved skeleton of a juvenile *T. rex* – was discovered in 2001 in Hell Creek, Montana, by staff members and volunteers from Burpee Museum of Natural History. The group returned a year later and began painstakingly excavating the dinosaur bones to take them back to Rockford. Over the next two years, they spent more than 10,000 hours gingerly picking Jane's bones out of rock, and planning a new, permanent exhibit that would tell Jane's story and feature her fully restored skeleton.

That exhibit – "Jane: Diary of a Dinosaur" -- opened June 29 at Burpee Museum in Rockford, about 60 miles west of Chicago. The 2,000-square-foot exhibit tells visitors Jane's tale, and features hands-on interactive stations, computer-generated animation, colorful graphics and, as its centerpiece, Jane's fully restored skeleton, which is the most complete juvenile *T. rex* on display anywhere in the world.

For about six months before the exhibit opened, Ohio State graduate students studying at ACCAD worked in tandem with museum experts and paleontologists to develop the high-tech exhibit components. ACCAD students – including Keith Kelley, Katie Lynch, Cara Christeson, Shana Burns, Brent Zorich,

Danny Guinn, Tyler Ayres and Min Lee – did everything from careful research about Jane’s world millions of years ago to touch-screen design, 3-D computer animation, model building, surfacing, lighting, texturing and sound design. Their significant involvement was supported by a grant from the Institute of Museum and Library Services.

According to Palazzi, the students and museum staff formed a productive partnership. “The teamwork that existed among the ACCAD students and the museum people was incredible,” she says. “They came together striving for a common vision. The museum representatives fostered the exploration of the dinosaur’s life, and turned to us for advice on computer generated animation. In turn, our students had to figure out how to use our advanced technology to really teach people about Jane in a museum setting. It was a great learning experience.”

Adds graduate student Keith Kelley, “I was particularly amazed at the collaborative aspect of this project. The people at the museum were very much open to our collaboration and they were very creative. Going back and forth with them using videoconferencing was a real benefit from an animator’s perspective – it really helped to have that direct visual interaction with them.”

Specifically, the ACCAD students helped create numerous components of Jane’s exhibit, including:

- Interactive touch-screen stations, which invite visitors to explore information about dinosaurs and about Jane. One station explores theories about dinosaur extinction by letting visitors “hunt” for meteorite craters. Another is an in-depth investigation about what Jane’s bones can tell us about her age and how she lived and died. Still another shows how CAT scans work. The students researched each topic, created the graphics and animation, and carefully programmed the touch-screen stations to be accessible, user-friendly and fun for visitors.

- A 1 ½ minute 3-D computer animated film that appears on a plasma screen monitor. This film, *Jane’s World*, shows viewers the barren Montana landscape of today. With a touch of a button, the scene changes to the lush

forest it was 66 million years ago when Jane lived there. ACCAD students used computer graphics and animation to create the transformation, placing the proper plants, trees and other vegetation into the setting. They also added computer-animated animals that may have lived with Jane, including *Didelphodon*, a furry possum-like mammal, and the alligator-like *Champsosaurus*.

“Students had to research what types of animals lived there, what they looked like, what their fur or skin was like. . . and then recreate them,” explains Palazzi. “They built the models, applied surface textures and added realistic, animated movement. They also did the backgrounds, lighting and sound for the film.”

- A colorful graphic display, created by the students, with fossils found near Jane’s bones.

The exhibit also includes the recreation of a rustic Montana camp and, of course, the dramatic, fully restored skeleton of Jane herself.

“One of the cool things about this project was there was so much work to do in so many areas, so we all got to get involved in ways that matched our career goals,” says graduate student Cara Christeson. “I was able to work on the asteroid animation (on one of the touch-screens). Special effects is one of my career goals, so it was a great chance to dig into special effects and end up with a portfolio piece. It was a great experience.”

As the students worked on each part of the exhibit, they had to keep in mind the viewing habits of museum visitors. “It was a fascinating experience. Here these students had this incredible technology, but we are using it in a museum environment where we don’t want people to stay at any one place too long,” says Barbara Ceiga, museum project manager. “We want visitors to keep moving on to something else, to the next part of the exhibit. The students adapted to those (parameters) really well.”

Ceiga says she is thrilled with how Jane’s exhibit turned out. “Maria and her students exceeded every expectation we had. They were incredibly professional every step of the way,” she says. “Each part of the team had its strengths and we had weekly videoconferences to discuss progress and provide

feedback. It was truly a collaboration -- the kind of team you hope for but rarely achieve.”

Palazzi and the ACCAD students are planning a trip to Burpee Museum later this month to see the exhibit – and meet Jane – firsthand.

The Advanced Computing Center for the Arts and Design (ACCAD), is known around the world for pioneering computer and visualization technology. It is an interdisciplinary research center at The Ohio State University, fostering collaborative technology-related research experiences with visual and performing artists, computer scientists, engineers, designers and architects. ACCAD has a documented reputation for providing exceptional research and educational experiences for students who wish to pursue careers in the animation and graphics fields. Graduates who have studied at ACCAD make a huge impact on the American film industry in special effects and computer graphics. Former students lent their talents to movies like *Robots*, *The Incredibles* and *Shrek II*, and many of them work at major studios like Dreamworks Animation, Pixar and Disney. For more, see ACCAD’s website at <http://www.accad.osu.edu>.

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