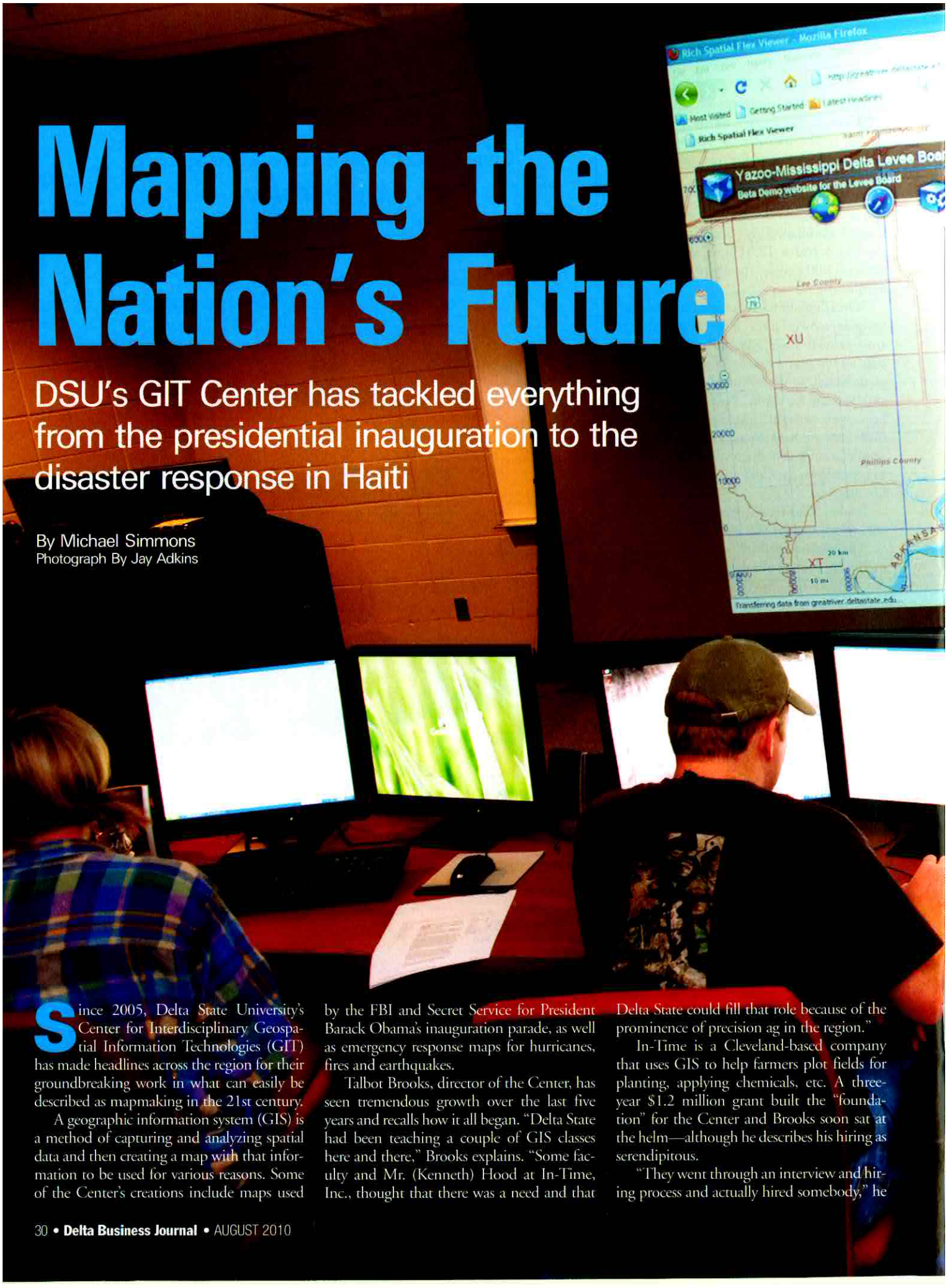
Mapping the Nation's Future

DSU's GIT Center has tackled everything from the presidential inauguration to the disaster response in Haiti

By Michael Simmons
Photograph By Jay Adkins



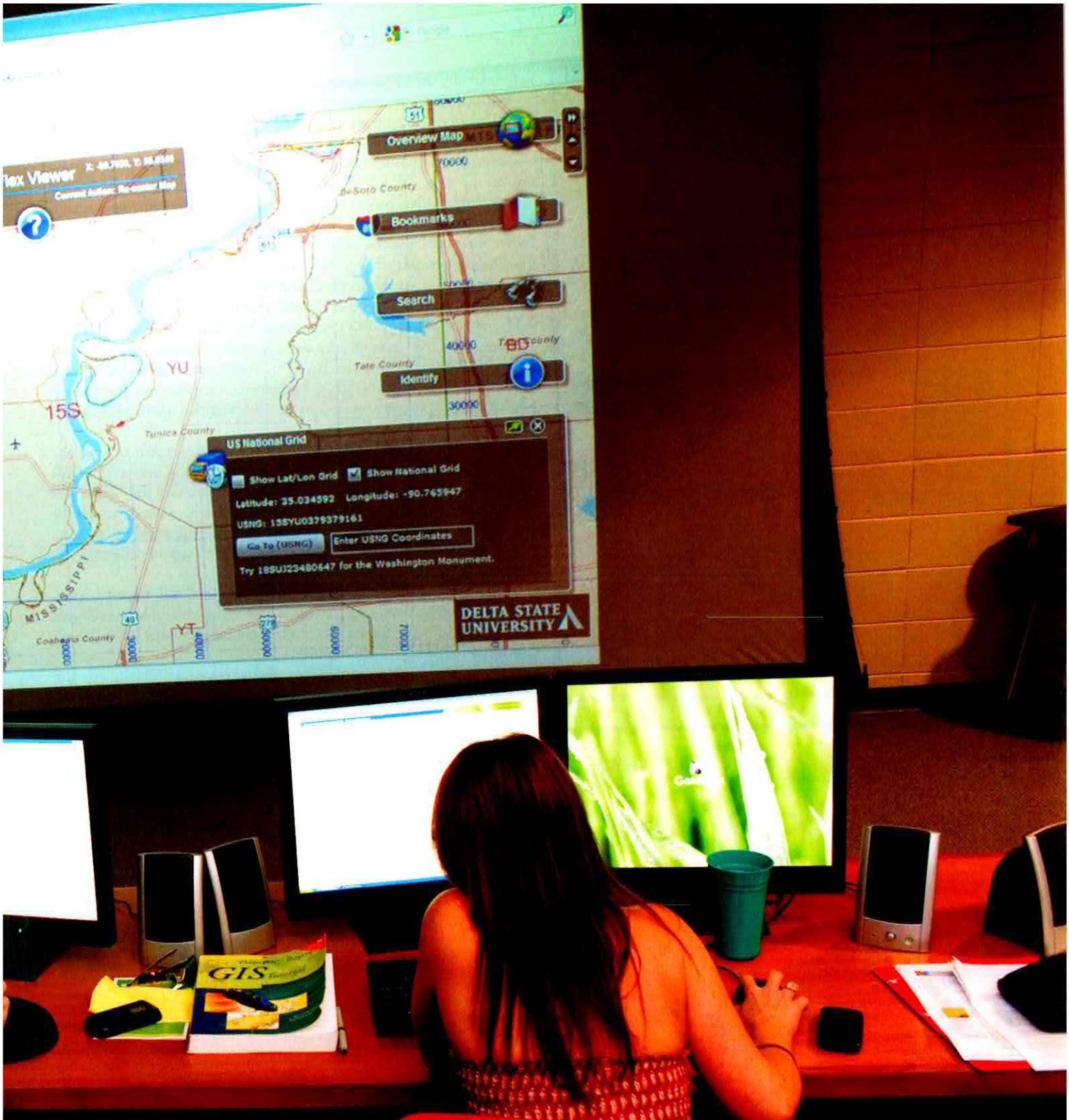
Since 2005, Delta State University's Center for Interdisciplinary Geospatial Information Technologies (GIT) has made headlines across the region for their groundbreaking work in what can easily be described as mapmaking in the 21st century.

A geographic information system (GIS) is a method of capturing and analyzing spatial data and then creating a map with that information to be used for various reasons. Some of the Center's creations include maps used by the FBI and Secret Service for President Barack Obama's inauguration parade, as well as emergency response maps for hurricanes, fires and earthquakes.

Talbot Brooks, director of the Center, has seen tremendous growth over the last five years and recalls how it all began. "Delta State had been teaching a couple of GIS classes here and there," Brooks explains. "Some faculty and Mr. (Kenneth) Hood at In-Time, Inc., thought that there was a need and that Delta State could fill that role because of the prominence of precision ag in the region."

In-Time is a Cleveland-based company that uses GIS to help farmers plot fields for planting, applying chemicals, etc. A three-year $1.2 million grant built the "foundation" for the Center and Brooks soon sat at the helm—although he describes his hiring as serendipitous.

"They went through an interview and hiring process and actually hired somebody," he



laughs. "The school made them an offer, he accepted, and then they were a no-show. He didn't write, didn't call. At that time I was teaching at Arizona State University and I received an email from Collier (Parker) inviting me to apply for the position. The next thing you know I was talking with people in Cleveland and the rest is history."

Brooks, a native of Connecticut, holds a Bachelor's in Biology and a Master's in Plant Biology with a specialization in environmental physics. It was through his coursework and entry-level jobs that Brooks steered away from pre-medicine and on to GIS.

"I was working for the U.S. Department of Agriculture," Brooks explains. "I started there as a research technician at the U.S. Water Conservation Lab. We used remote sensing to investigate the effects of CO_2 on climate change and agriculture.

"That's how I came to learn GIS," he continues. "I worked with the people who invented it. "One of the forefathers of remote sensing was Dr. Sherwood Idso. I worked with him for a very long time and with other people who essentially invented remote sensing."

Brooks explains that agriculture is the reason why GIS has grown so much over the years. "Some of the first satellites were done to monitor crop growth of places like the Soviet Union," he says. "When people look at Google Earth, 85-90 percent of the images

were taken by the Department of Agriculture."

With 21 years of experience in the field, Brooks says that GIS has expanded from its roots in the agriculture fields and has a place in the daily lives of most everyone on the planet.

"Everybody knows what GIS is now, they just don't know it by name," he says. "A lot of people use spatial technology somewhat unknowingly. What people don't realize is how technology plays such a dramatic role in managing their lives. If you receive a package from FedEx then GIS was the reason you were able to receive it. The same thing goes for people that use Tom-Toms in their vehicles. The congressman you vote for is in a specific district and those boundary lines are created using GIS," he continues. "If you ever pick up the phone and dial 9-11, they are aided by GIS to get to your location."

Now, after five years of operation, the Center continues to expand exponentially. "The obstacles facing us today are money and space," Brooks says. "We started with 24 students the first year I started and we were in the old provost's office. Last year we provided instruction to 483 students."

Brooks estimates that 90 percent of the funding spent on student workers, travel, hardware, etc. is generated outside the university—and these are not always guaranteed. However, the reputation the Center has earned over the past couple of years has helped keep a steady stream of projects rolling in and student workers busy with real-world experience.

"It is beneficial for our students because they engage in real projects," Brooks says.

And these "real" projects have been done on the local, regional, state, national and global level. "We have had a lot to do with crisis and disaster mapping and that stemmed out of our volunteerism and work during Hurricane Katrina," Brooks explains.

The Center has prepared maps for disaster response in Haiti after the devastating earthquake in 2009. They have prepared maps for emergency responders in several large cities such as Baltimore. They have also prepared maps for school districts and police departments to use in case of hostage situations or school shootings.

The Center doesn't deal exclusively with natural disasters and national security measures. They have created maps used by levee boards and utility companies, planning commissions and zoning boards. "We have a lot of expertise in how utility companies use GIS," Brooks says. "GIS can be used for land management."

Currently the Center is helping Coahoma Electric and Three Rivers Planning and Development District.

Center officials consider the department to be one of the best in the nation when it comes to U.S. National Grid mapping—the national standard for emergency response and asset management. This has led to multiple trips across the country in the last two years.

Michael Maloney, USNG coordinator for the Center, says that two years ago they were contacting people and offering their services. This year, the Center has been flooded with numerous requests. "We've been contacted by several state and federal organizations including search and rescue teams, utility companies, fire departments, public works departments, etc. who are interested in using USNG as a means of keeping track of their assets and conducting operations in the most efficient way possible.

"We can do a county the size of Bolivar County within four hours if it was for an emergency situation," Maloney continues. "That's a basic map book with base layers such as boundaries, streets, major infrastructure and several points of interest."

Maloney and others have given training sessions to various groups in Las Vegas, Denver, Phoenix, St. Louis, Baltimore and Sarasota, Florida, to name a handful. They recently returned from the ESRI International Users Conference where Maloney placed third for Best Atlas.

Still in its infancy, the Center housed on the DSU campus continues to grow, becoming a signature asset of the university and region. **DBJ**