

## Locus Technologies makes move to Asheville for data visualization

Todd Pierce understands how easy it is to drown in the torrents of data washing over us in a digital age.

Imagine a bookshelf running a mile long, stacked with thick volumes of information. That's how much new data — about 224 gigabytes — that downloads every day from orbiting satellites and radar towers into the National Climatic Data Center in downtown Asheville.

NCDC already has stored 6 petabytes of data — the rough equivalent of 120 million file cabinets crammed with weather records and climate numbers.

In 2010, the Digital Universe (a fancy term for all the data created by consumers and businesses on Earth, including video, audio and documents) grew by 1.2 zettabytes, or 1.2 million petabytes.

Gigabytes, terabytes, petabytes, zettabytes. Pierce makes his business turning those unfathomable numbers into something people can see with their own two eyes.

Instead of math, he offers a map.

### Locating Locus in Asheville

Pierce heads the new branch office of Locus Technologies, the Silicon Valley-based company that has offices in Phoenix, Boston, Orlando and now at Biltmore Park.

But Pierce is no newcomer to Asheville. He moved here from New Orleans 12 years ago. "I traded the swamp for the mountains, the heat for seasons. I love it here."

Pierce is part of a growing cadre of professionals around Asheville who specialize in data visualization, helping people actually see larger patterns in the massive databases about water quality, chemical spills, climate change and other information.

Pierce and his colleague, Jeff Hicks, are veterans of the National Environmental Modeling and Analysis Center, the UNC Asheville research group based in downtown. Their expertise is in Global

Information Systems, the science that can pinpoint numbers not in the abstract but on a map of downtown Asheville or anywhere in the world.

“Think of all the emails in your inbox,” Hicks said. “Now imagine getting 1,000 emails filling up your inbox every second. How do you pick out what’s most important?”

Locus helps its customers — large companies and utilities with nuclear power plants, for example — keep track of environmental conditions in required reporting to federal and state regulators.

The company has focused on cloud computing, storing massive databases in the invisible network that can be accessed from many computers instead of storing data on a single mainframe machine.

Locus has just launched its first software tool for public use with the Los Alamos National Laboratory, allowing people to track the environment and any history of contamination near that site.

Pierce could envision such tools coming in handy locally for concerned residents living near Buncombe County’s CTS site, contaminated decades ago by chemicals used in electroplating manufacturing.

Pierce, 44, had previously worked for Locus out of his home basement before he saw an opportunity with NEMAC in helping to visually map the data associated with weather, climate and environment around

Western North Carolina.

“Locus persuaded me to come back, but I wanted to have an office and some co-workers. I would like to make Asheville the GIS center for Locus,” Pierce said.

He quickly recruited Hicks, 28, who had started as an intern at NEMAC and cut his teeth creating a contouring program that allowed a casual observer to see how a chemical plume could spread through the water table. Pierce also called up Marion Wing, a UNCA graduate and former NEMAC intern, who was working in Boston. “I was really excited to hear something was opening up in Asheville,” said the 25-year-old.

Wing had been smitten with the possibilities of GIS, working with Pierce at NEMAC.

“Todd is such an amazing mentor,” she said. “I’m a visual person and, with GIS, you can take so much data and put it together in a form you can do so much more with.”

## A pool of tech talent

Jim Fox, who heads NEMAC offices in downtown Asheville, isn't sorry to see some of his top people go into the private sector. That's part of UNCA's goal in economic development, seeding the ground to grow new companies and jobs, especially in technology.

"We're not looking at them as competitors, but as collaborators," Fox said. "We're building a local stable of really good technical professionals."

He pointed to early efforts such as the Meet the Geeks networking group, which boasts some 800 members, and the Media Arts Project of the mid-2000s, which touted Asheville as a mecca for digital arts.

The 5X5 jobs initiative of the Asheville Area Chamber of Commerce focuses on science and technology as one of the five key sectors that could add up to 5,000 jobs in the next five years.

The next stage could be the Tech Accelerator, which Asheville-Buncombe Technical Community College proposes opening downtown next year. That could attract more tech companies like Locus to the area, launching new startups in the local market.

But both Pierce and Hicks see that more companies like Locus are needed in town to build a bigger labor market for tech pros.

"I do worry about my kids staying here as far as careers. We do need more opportunity," Pierce said.

In many ways, Asheville is still a BYOJ town—Bring Your Own Job. Hicks shared this with his brother, who was thinking of relocating from the Research Triangle Park area.

"Asheville feels like a much bigger market than it is," Hicks said. "We have so many tourists that our city can support restaurants than a much larger city would be proud of. That kind of hides the fact that we are a small town."

Meanwhile, working in cooperation with NEMAC, Pierce and Hicks hope to open up new business opportunities for Locus, particularly with weather and climate records. "We have the same goals of helping improve the decision-making process for organizations," Pierce said.

Engineers at Japan's Fukushima nuclear plant could have used data to see the

potential for flooding with last year's massive earthquake and tsunami. Those involved in the cleanup should take advantage of cloud computing to store the massive amounts of data on contamination, water and soil quality, making them available to researchers and a concerned public, argued Neno Dulplan, the founder of Locus Technologies.

"Our CEO is a real visionary," Pierce said. "He sees the potential to stay ahead of the competition, by offering these GIS tools."

Pierce would like to hire more people and put Asheville on the map as a place to find fulfilling careers in technology, now and in the future.

"We are especially interested in water quality and quantity — ensuring there is enough clean water for everyone — and tracking potential contamination," Pierce said. "We are hoping NEMAC student interns, as well as other UNCA students who might have projects or research with faculty, could also use the software."

