

NEWS

New Orleans researchers fight to salvage work from submerged labs

Hurricane Katrina has apparently devastated research laboratories in New Orleans. Rescue teams last week discovered that many frozen specimens and cell cultures had thawed, making them useless, and laboratory animals had drowned.

"This was a real disaster for research," says pharmacologist Joseph Moerschbaeher, vice chancellor for academic affairs at the Health Science Center of Louisiana State University (LSU) in New Orleans.

Academic rescue teams may have saved some projects, entering flooded buildings and topping up dewars of liquid nitrogen to keep specimens cold. But the full scientific loss may not be known for weeks or months.

The catastrophe may trigger debate over how prepared academic institutions ought to be for natural disasters. Four years ago, a storm destroyed similar facilities at a medical center in Houston (see *Nature* 411, 874; 2001).

With more than half a dozen colleges and universities effectively out of commission along the US Gulf Coast, scientists and students have begun scattering across the country to try to salvage their careers and studies. Dozens of institutions opened their doors last week to displaced researchers, who had often lost their homes as well as their bench space. Scientists based in Louisiana or Mississippi have moved as far as California to maintain their projects.

The National Science Foundation, the National Institutes of Health (NIH), and the Department of Energy are extending grant deadlines, offering to match affected researchers with academic hosts, and generally doing what they can to help along recovery from Katrina.

Late last week, Katrina's flood waters began to recede in New Orleans as the US Army Corps of Engineers patched breaks in the city-protecting levees and started pumping the water back into the neighbouring Lake Pontchartrain. On 6 and 7 September, more than a week after Katrina

hit the region, researchers made their first trips into the medical and research complexes of LSU and Tulane University in downtown New Orleans. Accompanied by rescue workers and armed military personnel, small teams assessed the damage to labs that had been underwater or without power for many days.

Trying to keep cool

At the LSU centre, the flood water was too high for a Humvee to navigate, so the team climbed aboard trucks, says pharmacologist Wayne Backes, LSU's assistant dean for research and lead academic on the survey team. Once inside, the researchers found that a dozen buildings were flooded with two metres of water.

The team walked the dark hallways with flashlights, searching for research material that could be saved before they had to evacuate by the nightly curfew. "It was hot, humid and smelled like mouldy refrigerators," Backes says. "All the -70°C freezers were at room temperature. A lot of samples were destroyed."

The team searched for liquid-nitrogen dewars to replenish, particularly those containing transgenic cell lines. "It was very difficult to find things in labs we were not familiar with," Backes says. "We pulled out stuff as best we could."

LSU's four animal research facilities, containing rodents, dogs and primates among others, were on the flooded ground floors. "100% of those lab animals were lost," says Moerschbaeher.

At the Tulane centre, the animals were located on the eighth floor, well beyond the reach of the flood waters. A survey team there also discovered freezers without electricity, but didn't have the chance to fully explore because of the high waters.

John Clements, head of microbiology and immunology at Tulane, said the 6 September expedition was so harried that he could not check on his own home, just three blocks off the truck caravan's path. Tulane's main campus, located on higher ground uptown, survived Katrina in relatively good shape.

The Katrina disaster will raise questions about how scientific institutions should prepare for storms and who should take responsibility for emergency measures, especially given past experiences in the region. In 2001, the tropical storm Allison swamped the Texas Medical Center in Houston, drowning research animals and destroying years of cell lines.

Together LSU and Tulane have about 300 researchers who are annually funded by \$130 million of NIH money. Shortly after Katrina hit, NIH director Elias Zerhouni said it was not his agency's responsibility to help universities weather catastrophic storms. That task, he argued, belonged to the Federal Emergency Management Agency. But as the agency struggles to feed and house tens of thousands of people caught in Katrina's path, research is a low priority. ■

Rex Dalton



Residents were still struggling to leave as scientists headed for their labs.