

SPECIAL REPORT

What happens after the water recedes?

New Orleans universities are still struggling to recover from the ravages of Hurricane Katrina.

Heidi Ledford examines how researchers at one leading institution are coping.

On a grim day last September, a ten-car convoy of researchers drove into the putrid waters of downtown New Orleans. Scientists fanned out across the Tulane University health-sciences campus, salvaging computers and research samples from buildings flooded in the aftermath of Hurricane Katrina.

Today, the university campus buzzes with activity of a different sort. Undergraduate classes resumed in January, with 93% of students returning for the spring semester. Research experiments are again under way. And preliminary numbers suggest that Tulane earned \$133 million in sponsored research last year — a mere 3% drop from the previous year.

Tulane has emerged relatively unscathed compared with other institutions in New Orleans (see 'Around New Orleans', opposite). Yet even at Tulane, Katrina has left a permanent mark in the form of low morale, lost equipment and laid-off faculty members.

On 29 August 2005, Katrina separated Tulane's two campuses by more than just geography. Floodwaters barely reached the stately buildings of the university's historic uptown campus for undergraduates. Science departments there were up and running after a few rough months of limited electricity and minor



As Hurricane Katrina headed for New Orleans, few were anticipating the flood it left in its wake.

repairs. "On the undergraduate campus, you'd be hard pressed to find any evidence that there was a storm," says Robert Garry of the department of microbiology and immunology. "But other parts... well, it's not so good."

These other parts of Tulane are located downtown, nearly 5 kilometres away, on the health-sciences campus. There, the waters rose to 2 to 3 metres, flooding electricity supplies and maintenance rooms on the lower floors. Some research labs began operating again as early as November, but others didn't

reopen until January (see 'Winds of change: three stories from Tulane's faculty', below). Even then conditions were difficult: in the J. Bennett Johnston Health and Environmental Research Building, the first health-sciences building to reopen, some researchers were left warming their hands over Bunsen burners when temperature controls failed last winter.

Back in August last year, electricity losses also doomed many experiments. It is safe to say that no one working in the biomedical sciences at Tulane will ever again take refrigeration for granted. Power failures and warm temperatures destroyed stem-cell lines, tissue cultures and antibodies, some of which were the products of years of specialized work. Only some samples were saved through emergency rescue efforts.

"We lost in excess of \$100 million of biological assets," says John Clements, dean of research at the medical school. "But we also saved \$100 million of biological assets." Researchers credit the National Institutes of Health and the National Science Foundation with providing resources for recouping their losses, and Tulane itself has dedicated \$20 million to research grants to be awarded over the next two years.

Others lost far more — their jobs. The university, having sustained property damage

Winds of change: three stories from Tulane's faculty

Tyler Curiel: Leaving

After the storm, the flood, helicopter rescues amid gunfire and a four-month exile in Colorado, cancer researcher Tyler Curiel has made a decision he says is "very painful". He is about to leave New Orleans for good.

In September, he will become the director of the University of Texas Health Science Center in San Antonio. Curiel says that in New Orleans, the poor conditions of his lab facilities and of the rest of the city are hindering his research too much. His Tulane lab



still lacks emergency power for its freezers, and he can't find enough candidates to take part in clinical trials because the university hospital has so few patients.

"What worked before Katrina does not necessarily work post-Katrina," Curiel says. "And my kind of research just does not work here."

Prescott Deininger: Staying

The associate director of Tulane's cancer centre knows he was lucky. His house did not flood. His lab was one of the first at the university



to reopen. His lab members all returned. Now Prescott Deininger is back to writing papers and applying for grants.

But his job has changed a little. He has had to go from lab to lab talking to investigators to find out what it will take to convince them to stay at Tulane. It's hard for him not to take it personally when faculty members leave. "It tears the guts out of me," he says.

Cesar Fermin: Recovering

In December 2005, Cesar Fermin was a tenured faculty member at the Tulane medical school, studying hair cells of the inner ear. The next month, he was a handyman at Fermin's

Handy Works, repairing damaged homes.

After 15 years as a professor of pathology, Fermin was laid off in December. Unable to leave New Orleans for financial reasons, he decided to pick up the tools in his garage to earn a living.

Fermin soon began to miss the intellectual challenge of academia. "When you're going to put 40 sheets of Sheetrock [plasterboard] on a house," he says, "you start on Monday and on Wednesday you're still hanging Sheetrock." He is applying for academic positions outside New Orleans. **H.L.**





INTERNATIONAL ASTRONOMICAL UNION
Check our website for news as astronomers debate the definition of a 'planet'.
www.nature.com/news

G. BACON/NASA/JESA
D. PHILLIP/EMPCS/AP



More than a week after the flooding began, Tulane University's athletics track was still under water.

of \$160 million, sacked 180 medical-school faculty members on 8 December. Another 50 faculty members were laid off uptown, and the departments of mechanical engineering, civil engineering and computer science were eliminated altogether. Even today, the firings are perhaps the sorest spot for Tulane faculty members, with many questioning the decisions.

Prescott Deininger, associate director of Tulane's cancer centre, says that the disaster demanded drastic action. He adds that he was consulted before the lay-offs were finalized, and he feels that his recommendations were taken into consideration before final decisions were made by the president's office and approved by the university's board of administrators.

Tyler Curiel, chief of haematology and medical oncology, agrees that the situation was dire but says that the process of deciding which jobs to cut was not transparent enough. Although

he was consulted early in the lay-off discussions, he says that he was not involved in any final decisions, nor was he ever clearly told how decisions were to be made. Meanwhile, he was fielding frantic phone calls from faculty members asking if they were going to be 'let go'.

"It was a very frustrating time for all of us," says Curiel, who is leaving Tulane this month for the University of Texas Health Science

Center in San Antonio. "It just wasn't handled well from a human standpoint."

The American Association of University Professors (AAUP) has been investigating the firing decisions at Tulane. Jordan Kurland, the association's associate general-secretary, says that

Tulane mostly abided by the AAUP's recommended standards, which allow tenure to be cancelled in cases of extreme financial need. But more could have been done, he suggests. "Tulane authorities have provided general information as to the financial health of Tulane," says Kurland. "But they have not, despite urg-

"If you're on a ship and the ship is sinking, the captain doesn't want to poll the deckhands to figure out what to do."

Around New Orleans

Tulane University fared better than most academic institutions in the city.

Louisiana State University

The medical school started up again at the university's Health Sciences Center in January, despite damages worth some \$200 million. All but 1 of 22 campus buildings will be at least partially reopened by this autumn. The centre lost 170 faculty members to resignations, retirement and temporary lay-offs. An additional 1,900 staff members were also laid off.

University of New Orleans

Nineteen faculty members in the sciences have resigned since last autumn, and numerous others retired or were temporarily laid off. The loss is expected to cost the university about 40% of its revenue from scientific research grants.

Loyola University New Orleans

In early August, Loyola sued its main property insurer for more than \$20 million in unpaid Katrina losses. Projected freshman enrolment for this autumn is down about 40%.

Xavier University of Louisiana

Post-Katrina flooding submerged Xavier's campus under more than 2 metres of water, and the university says it needs to raise \$50 million to cover the damages. Autumn undergraduate enrolment is down about 40%.

ings to do so, taken the next step and explained why they fired these particular people."

Clements says that critics don't understand the magnitude of the crisis. "If you're on a ship and the ship is sinking, the captain doesn't want to poll the deckhands to figure out what to do," he says. He also notes that Tulane has offered its laid-off clinical faculty members a one-year severance package — which amounts to a better deal than those provided by other institutions in New Orleans.

Including lay-offs and voluntary resignations, Tulane University has lost 17% of its full-time faculty members in the past year. Many of the remaining faculty members have been approached by other universities.

Administrators hope that the faculty exodus is now over and that those who have stayed this long are committed to staying. But Curiel predicts that there may be another wave of resignations on the horizon. Pharmacologist Bruce Bunnell says he couldn't help but entertain the thought of leaving. "Tulane's been fantastic to me, but science is one of these things where you make your own way," he says. ■