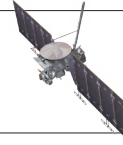


NEWS IN FOCUS

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GERMANY Where scientific success comes from strong funding and leadership **p.18**

WIN MCNAMEE/GETTY



Now that the rains have cleared over southeast Texas, including Houston (pictured), the long journey to recovery can begin.

FACILITIES

Labs cope with Hurricane Harvey's historic flooding

Advance planning has kept some Texas facilities safe during the catastrophic storm.

BY EMMA MARRIS

Hurricane Harvey swept ashore on 25 August and dumped record-breaking amounts of rain on Houston, Texas, and the surrounding regions. Now that the storm is spent, scientists in its wake are starting to take stock of the personal and professional toll.

Many institutions in Houston were relatively well prepared for Harvey, having put precautions in place after suffering major losses when Tropical Storm Allison flooded the city in 2001. Facilities in other parts of the state have not

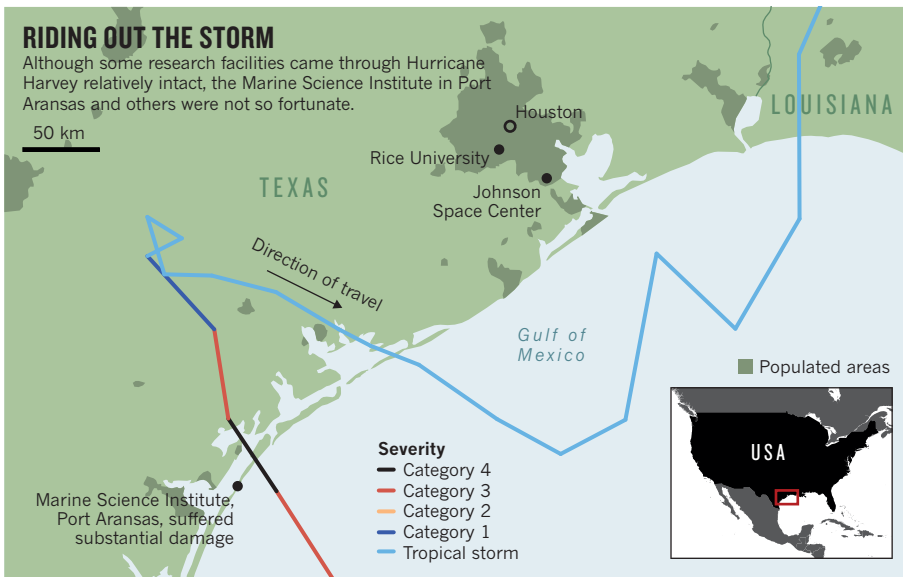
been so lucky, but researchers hit by Harvey are not being left to fend for themselves. As of 4 September, almost 300 scientific laboratories across the country have offered computer time, lab space, animal care and spare rooms to researchers displaced by the storm, using the hashtag #SciHelpTX on Twitter.

When Harvey made landfall as a category 4 hurricane, it hit facilities at the Marine Science Institute in Port Aransas, part of the University of Texas at Austin, particularly hard, ripping the roof off Brett Baker's microbial-ecology lab. Baker says that one of his graduate students has already arranged to transfer to a lab

at the University of California, Berkeley, and a postdoc is heading to Uppsala University in Sweden. "Our institute is on a barrier island," Baker says, and it took a direct hit from the storm. Baker spent some time crying, he adds, but is now so busy with logistics that he hasn't fully processed everything (see 'Riding out the storm').

LESSONS LEARNT

Most of the biomedical-research facilities in Houston, including those at Rice University, MD Anderson Cancer Center and the University of Texas Health Science Center, ►



► had installed special doors and floodgates to hold back storm waters after Allison. Those precautions saved equipment and animals, says Anirban Maitra, a pathologist at MD Anderson. “I think they prevented a mega-catastrophe,” he adds.

Baylor College of Medicine in Houston lost 60,000 breast-cancer specimens in the 2001 storm. But the lessons learnt from that event have paid off, says spokesperson Lori Williams. “We built a wall around the entire campus,” she says. “We’ve had no animals lost, no research lost.”

The University of Houston (UH), by

contrast, has no special flood infrastructure. So the institution has been dealing with flooded basement labs, and has struggled to keep animals dry and fed. Forty baby rhesus monkeys had their formula milk rationed, says Amr Elnashai, vice-president for research and technology transfer at UH. A few had to be weaned a week early. Supplies of liquid nitrogen and helium are also running low, and frozen samples will be in danger if they cannot be restocked soon. “If the worst is over, then we are fine,” says Elnashai. “If there is another hit, then we are in deep trouble.”

Meanwhile, staff at the Johnson Space Center in Houston are camping out at mission control to keep the International Space Station and the James Webb Space Telescope (JWST) programmes going. Flight director Courtenay McMillan arrived for a shift on 25 August and stayed for days. Staff have been sleeping on makeshift beds and air mattresses, and subsisting on provisions supplied by co-workers and friends. “We have not run out of coffee, which is the most important thing,” McMillan says.

The JWST was in the middle of a 100-day test in a thermal vacuum chamber when Harvey struck, but is unharmed. And a Soyuz capsule landing in Kazakhstan — which the space centre helped to coordinate — went ahead at the weekend with only minor modifications to the plan, says McMillan.

Although many institutions have fared relatively well despite the storm’s ferocity, researchers and staff are still dealing with personal losses. The storm destroyed thousands of homes across the region and has been responsible for at least 60 deaths. Maitra says that one administrator on his team has been evacuated to a hotel. “She had to leave in a hurry with her kids in the middle of the night. They were stuck on the third floor of her complex for three days. It is just heartbreaking.”

Louise Prockter, director of the Lunar Planetary Institute in Houston, was travelling when Harvey swept into town. She has been trying to support her staff remotely from Washington DC. “Some of our staff have lost all their property,” she says. “It is a mess. For some people, normal is a long, long way off.” ■

PALAEOANTHROPOLOGY

Stolen skeleton is one of the oldest in the Americas

Dating of rock-encased bone shard shows human remains are probably 13,000 years old.

BY EWEN CALLAWAY

A human skeleton that was stolen from an underwater cave in Mexico in 2012 may be one of the oldest ever found in the Americas. Scientists have now put the age of the skeleton at more than 13,000 years after analysing a shard of hip bone — left behind by the thieves because it was embedded in a stalagmite.

Cave divers discovered the remains in February 2012 in a submerged cave called Chan Hol near Tulum on Mexico’s Yucatán peninsula, and posted photos of a nearly

complete skull and other whole bones on social media. The posts caught the attention of archaeologists Arturo González González at the Desert Museum in Saltillo, Mexico, and Jerónimo Avilés Olguín at the Institute of American Prehistory in Cancún.

By the time researchers visited the cave in late March, the remains were gone — except for about 150 bone fragments and a pelvic bone that had been subsumed by a stalagmite growing up from the cave floor. On the basis of these bones, the researchers think that the skeleton belonged to a young man who died when sea levels were much lower

and the cave was above ground.

To determine the age of human remains, researchers often measure levels of a radioactive isotope of carbon in collagen protein within bones. But in this case, most of the collagen had been leached out by water while the bones were submerged, making this method unreliable, says Wolfgang Stinnesbeck, a palaeontologist and geoscientist at the University of Heidelberg, Germany, who led the efforts to date the remains.

Instead, Stinnesbeck’s team collected a fleck of the pelvis bone and surrounding stalagmite, which contains a mineral called calcite. The