

# THIS WEEK

## EDITORIALS

**WORLD VIEW** Why nuclear power must survive as an energy source **p.411**

**CELL BIOLOGY** X-rays capture first drug binding to receptor protein **p.412**



**TITAN** Rain on moon's plains is mainly methane **p.413**

## The long road back

*For now, Japan's scientists have higher priorities than rebuilding their research infrastructure, but when they do get to it, they will need help from the international scientific community.*

The Japanese prime minister, Naoto Kan, has called this month's earthquake, tsunami and devastation at a nuclear-reactor plant the worst disaster to hit the country since 1945. The death toll has soared past 20,000, and the full extent of the damage won't be known for some time (see News page 420).

The situation also been a catastrophe for science in Japan. Laboratories have been destroyed, and Tohoku University in Sendai, one of Japan's premier research institutions, will be closed until at least the end of next month. Many buildings can't be entered, and broken equipment and destroyed samples fill those that can. The impact stretches down the east coast to Tsukuba Science City, where 40% of the country's researchers are based. Even in the greater Tokyo area, where most facilities escaped physical damage, much research has come to a halt because of blackouts and an exodus of expatriate researchers, who have left because of worries about radiation.

Alongside the humanitarian aid that has poured in from dozens of countries, scientists around the world are offering to help their Japanese colleagues. Some have approached acquaintances, whereas others are taking more formal approaches.

The US National Institutes of Health is planning to provide temporary scientific homes for those who have lost research facilities in Japan. The Nippon Science Support Network, supported by Nature Network, is helping to coordinate scientific relief efforts from Germany; as of Tuesday, the site had 18 offers of scientific positions and other services such as computer-server space, many of them fully funded, ranging from mathematics to molecular pharmacology and plasma and astrophysics. An international grass-roots initiative is collecting small-scale support in the form of accommodation, funding, lab space and server space. The German national academy of sciences, the Leopoldina in Halle, the German Academy of Science and Engineering in Berlin, and the Berlin-Brandenburg Academy of Sciences and Humanities have offered €5 million (US\$7.1 million) to support Japanese science. A group at the Chinese National Center for Nanoscience and Technology in Beijing has offered to host scientists. And institutions within Japan are discussing loans or donations of instruments.

Those making these generous offers shouldn't be surprised if they are not taken up just yet. Many affected scientists don't have consistent access to the Internet, and most are more concerned with the necessities of daily life. Before going abroad, scientists are trying to work out what they can salvage of their laboratories at home. And although the best thing for their research might be to move to a facility where basics such as water and electricity are not a problem, many — especially senior researchers — have work or family obligations in Japan.

This will change as researchers size up what they need to do to reconstruct their research. The best thing the scientific community can do is to keep these offers open. Young Japanese researchers, especially, should be ready to take advantage, and this could be a timely boost for the

nation's science: in the past ten years, the number of young researchers travelling abroad has fallen dramatically, producing an insular research community that could benefit from more outside contact.

The destruction also brings research opportunities. The devastation shows the power of tsunamis and earthquakes and the seriousness of energy shortages, and associated medical problems could bring home

***“Before going abroad, scientists are trying to work out what they can salvage at home.”***

the importance of science to a generation of uninterested school children, whose curriculum currently contains less science than at any time in recent history. Ryoichi Matsuda, a biologist at the University of Tokyo, suggests that the tragedy could be used to re-emphasize “science education for survival”.

Rebuilding also has its benefits. Scrapping of old nuclear reactors will open discussions of other options, such as the introduction of geothermal energy. Tohoku University administrators are talking about improving the institution's infrastructure, which could see wider refurbishment of outdated facilities.

In a time of such death and devastation, the scientific infrastructure will, of course, not be the country's first priority. Scientists throughout Japan are preparing for cuts to help the northeast get back on its feet. But the nation cannot survive without science and technology.

The Japanese government will, no doubt, step up to the challenge of rebuilding its science, but there will be a long struggle to build a solid foundation, and many research lives could fall through the cracks. Those who are creating windows of opportunity for Japan's needy scientists should keep them open. And others might want to think about opening more. ■

## Contact your MP!

*British readers should help to change libel laws that suppress global scientific discussion.*

Britain's Houses of Parliament were earlier this month the scene of a gathering by an array of campaigning and media organizations, who came together to press for reform of the libel laws of England and Wales. Amnesty International UK, Global Witness, Facebook, Mumsnet, the *British Medical Journal* and *Nature* were among those represented, urging a group of Members of Parliament (MPs) to support the introduction of new legislation.

The few dozen MPs at the meeting needed little persuading — but there are more than 600 others, and more proposed legislative issues