

# News in focus



Many academic laboratories are instituting strict cleaning protocols in response to the coronavirus pandemic.

## RETURN TO THE LAB: SCIENTISTS FACE SHIFTWORK, MASKS AND DISTANCING AS LOCKDOWNS EASE

As scientists around the world return to work, they're encountering new safety rules and awkward restrictions – and sometimes writing the protocols themselves.

By Nidhi Subbaraman

**A**fter her university closed in March, Jeannine Randall sat down to adapt her research plan for a pandemic. Her project to monitor tree swallows through the spring and summer with a team of three scientists would now require travelling to the nesting sites in separate vehicles, using individual work kits, staying 2 metres apart and, of course, sanitizing regularly. When she realized hand sanitizer was in short supply, she made her own batch using ethanol from her lab.

Now, as the university resumes some services, she is putting the plan into action: counting eggs, waiting for hatchlings and watching the birds from daybreak to sundown.

“I think scientists are very well placed in some ways to come up with a protocol that makes sense and then follow it,” says Randall, an avian ecologist at the University of Northern British Columbia in Prince George, Canada.

As countries around the world begin lifting pandemic lockdowns, researchers are entering a new phase of work – donning masks with their lab coats, staggering hours in laboratory

spaces and taking shifts on shared instruments. Some universities have created detailed plans to track and test staff, and many have limited the capacity of indoor spaces and the flow of people through hallways and entrances. For others, plans are still taking shape. And whereas some universities have worked in lockstep with governments to formulate safety plans, others have charted their own paths.

University associations in the United States estimate that research there will need a boost of at least US\$26 billion to get back up to speed. Among them, the Association of

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American Universities (AAU) in Washington DC is drafting a set of priorities for university leaders to consider as they tackle reopening.

Of more than 3,000 researchers who responded to an online *Nature* reader poll last month, just under half said that they are still on lockdown. Following national policy trends, scientists in the United Kingdom, United States and Brazil were among the most likely to report restrictions, whereas only about 7% of respondents in Germany did so (see 'Getting back to business'). "Now, we are mostly back to normal, apart from wearing face masks and having to maintain a certain distance between each other," says Boyan Garvalov, a cancer researcher at Heidelberg University, who juggles his career with monitoring his children's online learning.

### Gloves and masks

In Italy, which was hit particularly hard early in the global pandemic, nearly 30% of roughly 90 respondents to the *Nature* poll said that they had returned to work, and another 18% reported having worked throughout lockdowns. Cell biologist Paolo Bernardi went into the University of Padua nearly every working day to oversee a skeleton staff and teach his pathophysiology class over Zoom. "Now we are seeing better days," Bernardi says. His lab is at about 50% capacity. University guidelines for resuming work, in effect since 26 April, require distances of 1 metre between people in brief contact, or 2 metres for those in the same room for more than 15 minutes; masks are to be worn at all times and gloves are compulsory in the lab. Capacity is limited to three people to a room, conference rooms are closed and meetings must still take place through calls or videoconferencing. Bernardi is comfortable with the university's balance of safety and flexibility.

At the University of Groningen in the Netherlands, researchers have been asked

to avoid working with hazardous chemicals when they can, to minimize the risk of spills that would require medical attention, says Jana Volaric, a synthetic organic chemist. But for her, the biggest impact is the diminished conference schedule. She had hoped to be networking in anticipation of being on the job market next year, and she says that meaningful interactions are harder to come by at online conferences. "This is the most disappointing part."

### 'Singing from the same song sheet'

Organic chemist Kirsty Anderson lost about four weeks of work when the University of Auckland in New Zealand closed down along with the rest of the country. It reopened

**"The situation is changing pretty rapidly and the stakes are very high."**

partially a few weeks ago, and instituted many of the restrictions seen in Europe. But it also required people who entered the building to mark their time of entry and location on time sheets, and maintain a distance of 2 metres between people at all times. With lift access restricted to one person at a time at first, she often climbed the seven flights of stairs to get to the lab. With more services opening in mid-May, the check-in database is now online.

She and her colleagues are taking odd- and even-hour rotations at their office desks to meet the university's spacing requirements. Shared instruments such as the nuclear magnetic resonance and mass-spectroscopy tools are run by designated operators to minimize contact – Anderson hands over samples, wiped before drop-off, and sends codes and

instructions through a shared document.

Winston Byblow, a neuroscientist at the University of Auckland who studies motor function after strokes, says the government and university are united in their safety messaging and pandemic response. "Everyone is singing from the same song sheet," he says. He's worried, however, that experiments with human participants might take a hit for a while. People are going to be wary about taking part in trials for many months, because of concerns about being in enclosed spaces with others, he says. "If recruitment rates drop because of uncertainty or fear, then it just means that it's going to take a lot longer to complete the research, and that comes at a cost."

### Charting their own path

Other universities are striking out on their own. Jorge Huete-Pérez is a molecular biologist and vice-president at the University of Central America in Managua, a private university with about 8,000 students. The institution formulated its own lockdown plan – reducing the number of people on campus by about 90% – independently of the Nicaraguan government, which put in place no measures to mitigate the virus's spread. The pandemic arrived late in Central America, and reports put the total number of cases in Nicaragua at less than 800. But Huete-Pérez thinks the real number is higher, more in step with or perhaps higher than the 1,000 cases reported in neighbouring Costa Rica, and the roughly 5,000 in Honduras. "We don't really know the real dimensions of the COVID situation," he says. When it is time to reopen, he anticipates that he will look to independent medical organizations and the World Health Organization to inform the university's plan.

In the United States, as the presidential administration and the Centers for Disease Control and Prevention clashed over the plan for a post-pandemic return to work, the University of California, San Diego, drafted a detailed one of its own, including an ambitious screening and testing regime for staff and students. The plan will come into effect in the autumn, and relies on campus labs to process samples. The pilot phase, begun on 11 May, tested more than 1,000 students and ended last week.

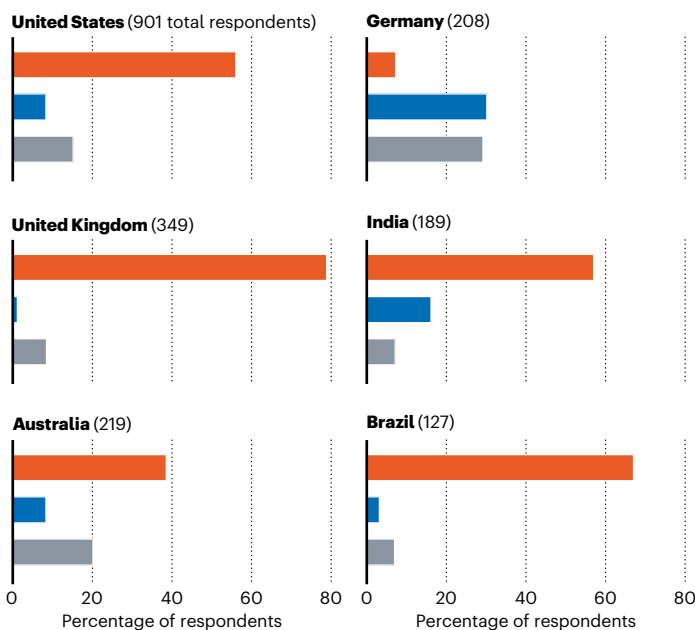
But that approach is something of an anomaly. In the United States, policies and priorities can differ drastically between states. "The situation is changing pretty rapidly and the stakes are very high," says Peter Schiffer, a physicist and former vice-provost for research at Yale University in New Haven, Connecticut, who is a senior fellow at the AAU. A number of universities have adjusted their schedules or delayed students' return to campus until next year, but have yet to firm up plans for researchers.

The logistics are unparalleled says Tobin Smith, vice-president for policy at the AAU. "This is all new territory."

### GETTING BACK TO BUSINESS

In an online poll, more than 3,000 researchers shared their current working status. Less than 13% said that they had returned to the laboratory; others reported that they had been going to the lab throughout their lockdowns or could do most of their work from home. Among the countries with the most respondents, Germany had the highest proportion back in the lab.

■ On lockdown  
■ Already returned  
■ Still going in during pandemic



**Correction**

This news story erroneously stated that Peter Schiffer is vice-provost for research at Yale. In fact, he stepped down from the post earlier this year.