

This is partly because distributing data is very expensive. “Fibre optics to connect two points in urban areas cost thousands of US dollars per mile,” says Ugo Varetto, acting executive director at Australia’s Pawsey Supercomputing Centre in Perth, which crunches and stores data from existing radio telescopes dotted over Australia. “In extreme environments or underwater, that’s hundreds of thousands of dollars.”

Astronomers also highly value the data produced by their telescopes and don’t want to send them elsewhere, says J. J. Kavelaars, group leader at the Canadian Astronomy Data Centre in Victoria, British Columbia. “All the effort of collecting the observations is expressed in those data files. Sending those data out of your jurisdiction is like shipping diamonds overseas for cutting,” he says.

Because the astronomy data sets will be very large and will sit in geographically separate databases, scientists need to develop software tools to access them and bring them together in an efficient manner, says Mattia Vaccari, a data scientist at the University of the Western Cape. Taylor says he hopes that other African countries could use the same tools to develop their own cloud-based infrastructure.

EXPLORING APPLICATIONS

Within South Africa, others seek to take advantage of the data-crunching capabilities that the country is developing. These could be used for applications such as monitoring water resources or urbanization across the continent, says Val Munsami, head of the South African National Space Agency in Pretoria.

Health-care officials would also like to get involved. Glaudina Loots, director of health innovation in the South African government’s Department of Science and Technology, says that her unit plans to “piggyback” on the astronomy investment and data infrastructure. “Part of that is earmarked for precision medicine. If you can’t handle the data, and have to export it out of the country, then you start running into problems,” she says.

“South Africa has one of the best hands in the game at this point,” says Tony Beasley, an astronomer and head of the US National Radio Astronomy Observatory in Charlottesville, Virginia. “In terms of deployed science infrastructure, South Africa is way ahead.” ■

POLICY

US agency targets sexual harassment

The National Science Foundation says institutions must disclose when grant recipients have violated policies.

BY ALEXANDRA WITZE

Any institution receiving grant monies from the US National Science Foundation (NSF) must now inform the agency if it finds that anyone funded by the grant proposal has committed sexual harassment. The policy will take effect once a 60-day public-comment period has ended.

Until now, “we haven’t had a requirement on universities to report a [harassment] finding or when they’ve put someone on administrative leave” during a harassment investigation, says France Córdova, the NSF director. “We didn’t have the channel to find out what’s at the end of an investigation.”

The reporting requirement comes in the wake of numerous sexual-harassment scandals in the sciences. It is a rare move among US federal research agencies, which generally do not require grant recipients or their employers to disclose sexual-harassment allegations or findings.

“It’s a big step in the right direction,” says Erika Marín-Spiotta, a biogeochemist at the University of Wisconsin–Madison who is co-leading a US\$1.1-million initiative funded by the NSF to combat sexual and other forms of harassment in the sciences. But Marín-Spiotta says that agencies must do more to develop truly protective policies. Among other things, the NSF policy does not address what happens if an institution never completes an investigation.

“At the end of the day, if the employing institution doesn’t do its job, those who are affected will still be in a very difficult situation,” says C. K. Gunsalus, who specializes

in research integrity at the University of Illinois at Urbana-Champaign.

The NSF notice, dated 8 February, is addressed to the heads of universities and colleges and other organizations that receive NSF funds. It requires them “to report findings of sexual harassment, or any other kind of harassment regarding a PI [principal investigator] or co/PI or any other grant personnel”. And it requires the institution to report if the PI or co-PI is placed on administrative leave relating to a harassment finding or investigation.

The notice also says that the NSF expects awardee organizations to lay out clear stand-

“If the employing institution doesn’t do its job, those who are affected will still be in a very difficult situation.”

ards for harassment-free workplaces, and processes by which students and others can report problems. Workplaces are defined to include conferences and remote fieldwork sites, where students and young researchers are often most vulnerable. The agency will solicit public feedback on the new rule in the coming weeks, through a posting in the *Federal Register*.

Córdova says that the burden of investigating harassment complaints typically rests with the institution that employs the person in question. The NSF accepts voluntary reports through its Office of Diversity and Inclusion, but “we get vanishingly few complaints”, she says.

Others note that institutions have differing policies on what constitutes sexual harassment; behaviour that might be ▶


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► punished at one university — such as sexual relationships between faculty members and students — might not be at another. In 2016, investigators at the University of Rochester concluded that cognitive-sciences professor Florian Jaeger did not violate university policies on sexual harassment. A separate university-commissioned investigation reported last month that Jaeger had had sexual relationships with four prospective, current or former students, and that these did not violate university policies.

In a response to that report, Jaeger said the relationships were consensual and that he did not sexually harass any students.

UNDER SCRUTINY

Like other federal agencies, the NSF is under pressure from the US Congress to strengthen its response to sexual harassment. In January, the House of Representatives' science committee asked the Government Accountability Office to look into sexual harassment involving federally funded researchers at agencies including the NSF, NASA, the Department of

Energy and the National Institutes of Health.

The action in Congress was prompted in part by an investigation at Boston University in Massachusetts. The university found that one of its professors, David Marchant, had violated campus policies on sexual harassment while on NSF-funded fieldwork in Antarctica. (Marchant denies that he engaged in inappropriate behaviour, and he is appealing against the university finding, his lawyer says.)

Some scientific societies have stepped up their policies against sexual harassment in recent years. Last September, the American Geophysical Union (AGU) changed its integrity and ethics policy to classify discrimination, sexual harassment and bullying as professional misconduct.

The fact that a funding agency is taking action is crucial, says Robin Bell, a geophysicist at the Lamont-Doherty Earth Observatory in Palisades, New York, and AGU president-elect. "Linking reporting of harassment to funding is the next step the scientific enterprise can take to stop bullying and harassment by making the consequences clear," she says.

Meg Urry, an astronomer at Yale University in New Haven, Connecticut, agrees. "I think it will make a big impact," she says. "Grant money is very important to scientists and their institutions, so this policy will

definitely help change the culture."

But much remains to be done to further protect those who have been harassed and to lessen the roadblocks to reporting, says Marin-Spiotta. "You could imagine a postdoc thinking, my advisor's going to lose all the funding I need to do my work," she says.

One possible solution, she says, could be to route funding directly to students or postdocs, or to their academic department, rather than to their principal investigator. ■

CORRECTIONS

The News story 'Super-invasive crayfish revealed to be a genetic hybrid' (*Nature* **554**, 157–158; 2018) incorrectly stated that Julie Jones was the first to identify marbled crayfish in Madagascar. In fact, another team made the discovery; Jones and her team were the first to survey the species there.

The News story 'Israeli fossils hint at early migration' (*Nature* **554**, 15–16; 2018) gave the wrong URL for reference 1. It should have been <http://dx.doi.org/10.1126/science.aap8369>.

The Editorial 'Maths revision' (*Nature* **554**, 146; 2018) mistranslated the name of the Leibniz Institute. It is actually the Leibniz Institute for Information Infrastructure.