



Bethany Wiggin leads a data-rescue session in January, held at the University of Pennsylvania.

“Scientists, in many ways, over the centuries, have always been a bit of a persecuted group,” says Andy Yen, who spent several years at CERN, Europe’s particle physics laboratory near Geneva in Switzerland. Imagine, he says, if the Church had gained access to Galileo’s or Darwin’s correspondence as they worked on their revolutionary ideas about the Universe and evolution. “Those were things that wouldn’t have come to pass had the prevailing governments of those times had their way,” he says.

That rationale is part of what drove him and a team of fellow physicists to launch Proton-Mail, an encrypted e-mail service, in 2014. “If you want to search for the pure truth, it’s very important to be able to conduct your scientific enquiry without concerns of government censorship or any sorts of government suppression of your work,” Yen says. The service automatically encrypts and decodes e-mails on users’ computers, meaning that there is no central server storing message content that could be vulnerable to hacking.

Using a secure e-mail service is not necessarily secretive or at odds with open science, Yen points out. Scientists need to be able to control the stage at which the public sees their data, and to make sure any sensitive or personal information is kept private. “It’s one thing to keep your data secure, but whether or not you share your data — that’s something that’s completely different,” he says.

FUNDING FEARS

Perhaps the most pressing concern for early-career researchers is funding. Many postdoctoral researchers in the United States are funded by federal grants to university researchers, or directly through federal agencies such as the US National Institutes of Health and the EPA, which could face major cuts. That’s prompting some scientists to look elsewhere for money.

Joy Buongiorno, a graduate student at the University of Tennessee in Knoxville, studies how Arctic microbes are responding to climate change, and her lab gets funding from US philanthropic foundations, including the Alfred P. Sloan Foundation and the Simons Foundation. These and other private organizations offer early-career fellowships and other awards. “They are all about supporting basic-science research,” Buongiorno says. “I’m going to look to them if I decide to stay in research.”

Notably, however, Trump did sign two bills into law in February directing federal science agencies to recruit and support more women in science. And, besides, concerns about funding are a perennial worry in academic science, says Casey Theriot, an infectious-disease researcher at North Carolina State University in Raleigh. Researchers have always had to be creative in sourcing funds, and she notes that large companies such as pharmaceutical manufacturers can also provide support for research.

But Theriot still worries that severe budget cuts could create an atmosphere that stifles scientific progress. “If the funding climate is not good, I think it’s going to prevent people from taking risks,” she says.

That prospect troubles many researchers, who say that good science remains crucial to the future of humanity and the planet. “We need the best and brightest more than ever to be committed to a scientific career,” Palen says.

Kutsch counsels that early-career scientists just need to find a way to hold on until the pendulum swings back in the other direction. “A presidential term is much shorter than a scientific career,” he says. “There will be other presidents coming and, with them, new opportunities.” ■

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HARASSMENT

University transparency

The vice-chancellors of Australia’s 39 universities have pledged to release data on sexual assaults and harassment at their institutions. Belinda Robinson, chief executive of Universities Australia in Deakin, which represents the nation’s institutions, said on 6 April that data relating to individual institutions would be released in mid-2017, the same time as an independent report about student experiences of sexual assault and harassment. The report is being compiled by the Australian Human Rights Commission and will include recommendations for action and reform. As part of its research, the commission is examining how individual universities responded to specific incidents. In a February submission to the commission, the Australian branch of the advocacy group End Rape on Campus accused universities of covering up sexual assaults. Responding to students’ dismay over the slow pace of change, sex-discrimination commissioner Kate Jenkins wrote in an opinion piece published on 5 April in the *Sydney Morning Herald*: “We absolutely share these concerns.”

PHYSICS

Degrees of progress

The number of women receiving US physics PhDs is at an all-time high, according to the latest trend data from the American Institute of Physics (AIP) in College Park, Maryland. AIP figures show that in 2015, 365 women received PhDs, accounting for one in five of the total awarded. In 1975, just 47 physics doctorates (about 5% of the total) were conferred on women. By 2004, that number had risen to 175, about 16% of the total. The AIP’s statistical research centre also examined primary sources of financial support for students who began physics graduate programmes in 2013 and 2014. It found that 1% of PhD students funded themselves, compared with 35% of master’s students, and that 52% of PhD students worked as teaching assistants to support themselves financially. Another AIP report listed the skills most used by bachelor’s graduates who pursued careers in science, technology, engineering and maths. The top skills cited by respondents were solving technical problems (97%), team working (95%), technical writing (79%), project management and quality control (both 77%), and programming (76%). Just one in five were asked to manage budgets.