students in his lab this summer, and hopes that one will stick around once the autumn semester starts.

He has, however, been able to avoid one of the more odious aspect of scientific life: grant writing. "My institution doesn't require it," he says (although in 2014, he did win an NSF Major Research Instrumentation grant that allowed him to buy an infrared scanner to detect proteins). He thinks that his time is best spent on teaching and whatever research he can afford. "If you do win a grant, you're left with a bunch of work that you promised to do that you have to squeeze into your teaching," Sandquist says.

Indeed, small US liberal-arts colleges generally emphasize teaching above all else. "If you don't love teaching, you're going to be pretty miserable here," Johnson says. He spends 7–13 hours in class every week, and that's just a part of the load, which can include assembling a syllabus and selecting textbooks; developing lectures and lab sessions; and assigning and marking exams, papers and lab reports. "A lot of teaching takes place outside of the classroom," he says. And for Sandquist, even when he's in the lab, his highest priority is not necessarily churning out data and papers to further his own research career. "At a liberal-arts school, you're using your lab to train future scientists," he says.

Over the years, Johnson has given several presentations to early-career scientists about life as a small-school researcher, often as part of a panel on 'alternative' careers. "Some scientists see this as a non-traditional career," he says. "But it's funny. I'm more traditional than someone at an R1 [top research] school. I'm teaching, and I'm at the bench. A lot of people at major research institutions don't set foot in the lab any more."

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Some researchers might once have viewed small universities as a 'plan B' in case they couldn't land a job at a big-name institution. But that idea needs an update. "We get more than 200 applications for every faculty position," Johnson says. With so many applicants, Pomona and similar institutions can afford to be picky. Increasingly, they are looking for people who fit the small-school mould. It's another example of specialization in science. Young researchers should already be thinking about what size workplace would suit them best. ■

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TURNING POINT
Reef inspector

Since 2015, Terry Hughes has monitored coral bleaching — a result of rising ocean temperatures — at Australia's Great Barrier Reef. When reefs bleach, they expel crucial algae and can die. Hughes describes how, as director of the Australian Research Council's Centre of Excellence for Coral Reef Studies in Townsville, he is trying to save the reef, vital for marine life.

ARC CENTRE OF EXCELLENCE FOR CORAL REEF STUDIES/ANDREW RANKIN

What have the past two years been like?
It's been a whirlwind. The US National Oceanic and Atmospheric Administration and the Australian Bureau of Meteorology have each developed near-real-time maps to forecast the likelihood of mass bleaching. We saw it in 1998 and 2002. We knew by May 2015 that there could be a third event. The National Coral Bleaching task force — consisting of 300 researchers from universities and government agencies — formed in November 2015 to coordinate research into a potential third mass bleaching. We booked research stations, vessels and aeroplanes. I spent March to April 2016 and this past March aerially surveying the bleaching along the Great Barrier Reef.

Was aerial surveillance a risky approach?
Yes. That's why we also put 100 divers in the water in March and April 2016, who confirmed that our scoring of the extent of bleaching was highly accurate. We published a paper on that data — featured on the cover of the 16 March *Nature* issue (T. P. Hughes *et al. Nature* **543,** 373–377; 2017) — and then, two days after its publication, we boarded an aeroplane to assess coral bleaching for the second year in a row.

Can you publish findings before the next field season?
No. The back-to-back bleaching we are now seeing has overtaken our capacity to keep up.

What is the most difficult part of the research?
The uncertainty. We hoped that a bleaching event wouldn't happen, and there was a period in 2015 when the forecast said that it was unlikely. But that was followed by a period of rapid heating, so we had warning of only 2–3 weeks before we needed to conduct reef-bleaching surveys. Luckily, I had kept the bookings for the boats, so it was easy to fire up again.

How do you have such flexibility?
I direct a Centre of Excellence, a consortium of four universities funded by the Australian Research Council, equivalent to the US National Science Foundation. Our graduate programme has 210 PhD students. Because we have a seven-year block of funding, we can set up ambitious projects.

What was your best move as director?
Since 2005, when we established the centre, I've hired more than 100 postdocs. And I've hired more social scientists and people who work on the dynamics of institutions, governance, legal frameworks and international treaties. Knowing everything about the biology of coral reefs won't improve their governance.

Does the dire situation affect student interest?
Most of our PhD students and postdocs come from abroad. People are galvanized by this problem and the urgent need to address it. Still, it has the potential to be overwhelming. Many PhD projects have been disrupted by the heavy reef mortality.

Is there an upside?
It is, dare I say it, a research opportunity. I don't want to come across as taking advantage of ecological disaster, but we are learning a lot. In Australia, we have a lot of science around bleaching events but lack science-based policy responses. The elephant in the room is climate change.

Do you focus more on outreach to the public or to policymakers?
Both. We routinely give government briefings. In addition, when the National Coral Bleaching task force that I formed began gathering data, we put out press releases and blogposts about bleaching. We've taken some flak over releasing findings that haven't yet been peer reviewed. But we will continue to put out important preliminary results that we feel the government or the public should know about. ■

INTERVIEW BY VIRGINIA GEWIN

This interview has been edited for length and clarity.