

Correspondence

Opportunity in 'Anthropocene' rejection

After a decade and a half of discussion, the International Commission on Stratigraphy (ICS) has rejected the proposed definition of an Anthropocene geological epoch based on markers recorded in the sediments of Crawford Lake near Toronto, Canada (see *Nature* **627**, 249–250; 2024).

Although the Anthropocene remains (geologically) undefined, the legacy of these debates is an ongoing, vibrant and valuable examination of the effects of human activity on the Earth system (see *Nature* **627**, 466; 2024). In a time of unprecedented climate and environmental change, the Anthropocene concept has captured the zeitgeist, and been interpreted and used academically well beyond the Earth and environmental sciences by social scientists and humanities scholars. The term features prominently across public-facing discourses, having entered the lexicon of science communicators, authors, artists, architects, musicians, politicians and activists (G. T. Swindles *et al.* *J. Quat. Sci.* **38**, 453–454; 2023).

The rejection of formalization of the Anthropocene represents an opportunity. Released from the constraints of strict geological definition, it will remain open to interpretation and critique, and can flourish as an informal and inclusive concept that crosses disciplines, cultures and world views.

Thomas P. Roland University of Exeter, Exeter, UK.
t.p.roland@exeter.ac.uk

Graeme T. Swindles, Alastair Ruffell Queen's University Belfast, Belfast, UK.

Zero tolerance for toxic lab culture

Your News feature on the conduct of superconductivity researcher Ranga Dias (see *Nature* <https://doi.org/mmm2>; 2024) highlights a concerning issue: how his university neglected his PhD students in its investigations. This situation is not isolated, but reflects a widespread lack of concern for doctoral students' welfare.

Although many places have feedback mechanisms for lectures given to undergraduate students, there is no equivalent process for assessing the impact of researchers on their PhD students. This allows some researchers to gain recognition for their work regardless of any adverse conditions they create for their students. At best, this gap risks alienating academically gifted students; at worst, it fosters an environment ripe for scientific misconduct.

Graduate schools should recognize and act on this issue by conducting regular, anonymous interviews with PhD students to detect and address any form of harmful behaviour by senior researchers. A PhD is hard work, but it should never be a training course in survival in a toxic environment. One great advantage we have as humans and scientists is our capacity to transfer knowledge and motivate the next generation; laboratories with an abusive culture do the opposite. Universities and funding agencies should have zero tolerance for them.

Juan Pablo Fuenzalida Werner Technical University of Munich, Straubing, Germany.
e-mail: jpf.werner@tum.de

Postgraduate cuts threaten Brazilian science, again

Brazil's scientific community is facing yet another setback: the National Council for Scientific and Technological Development (CNPq) has decided to slash graduate scholarships after the 2024 budget cut university funding by 310 million reais (US\$62 million).

Changes in scholarship allocation mechanisms by a second federal agency, the Coordination for the Improvement of Higher Education Personnel (CAPES), are not helping. A model based on municipal human development indexes and average thesis or dissertation defence numbers, implemented in 2021, risks diminishing the quality of well-established graduate programmes.

These changes come in addition to large cuts to funding under the regime of former president Jair Bolsonaro (see *Nature* <https://doi.org/g77w>; 2021). The impact on Brazil's scientific output will be considerable, and will almost certainly push many scientists to reconsider their career aspirations.

We urge federal stakeholders to reconsider these cuts and advocate for not just restoring, but expanding graduate fellowship funding. As a global economic and scientific player, Brazil cannot afford to abandon an entire generation of students and researchers. It would jeopardize the country's future scientific development.

Marcus F. Oliveira, Adriane R. Todeschini Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.
maroli@bioqmed.ufrj.br

The rising threat of coastal groundwater

Ohenhen *et al.* highlight that the mid-century risk of floods in US coastal cities owing to sea level rise might be greater if land subsidence is factored in (L. O. Ohenhem *et al.* *Nature* **627**, 108–115; 2024). But there is another, underappreciated component: rising coastal groundwater (S. Habel *et al.* *Annu. Rev. Mar. Sci.* **16**, 81–103; 2024).

Coastal water tables tend to rise as sea level does, expanding the area likely to be prone to flooding. Furthermore, groundwater flooding has two characteristics that make it particularly problematic. First, it comes from below, putting basements, sewers and other buried infrastructure at risk long before there is water in the streets. Second, it depends on the geology of the region, so conventional flood protection systems such as dunes, levees, and seawalls will be mostly ineffective in cities with highly permeable bedrock, such as Miami.

As a result, many coastal cities could be both underestimating the risk of floods and overestimating how useful their resilience measures are. Future assessments should include potential groundwater flooding to formulate the best mitigation strategies. Depending on local geology and economic resources, some cities will opt for groundwater pumping, whereas others might need to elevate their structures. For many coastal communities, however, retreat from the shoreline will be the most practical solution.

Daniel J. Rozell Stony Brook University, Stony Brook, New York, USA.
daniel.rozell@stonybrook.edu