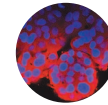


THIS WEEK

EDITORIALS

PUBLISHING The many positives of producing negative results **p.414**

WORLD VIEW Use ozone treaty to safeguard geoengineering **p.415**



TUMOURS Mini livers made in a lab offer cancer scrutiny **p.417**

Research health required

The creation of a US Research Integrity Advisory Board is long overdue. Such a leadership body would mitigate bad practices and strengthen good research.

Research integrity is often taken to mean misconduct and its prevention. But the integrity of research enfolds much broader dimensions that represent the health — technical, ethical, social and psychological — of research activity. Each of these aspects can be too easily undermined, whether at the level of a university or company department, a research group leader, a research group or an institute. Efforts to preserve integrity need more support.

Many officials in universities and funding agencies increasingly acknowledge how the pressures of academic life undermine the capacity of their researchers to provide due diligence, such as checking the validity of results and mentoring younger scientists. This is compounded by the ever more acute pressures on those younger scientists to deliver high levels of achievement. This combination yields a potentially toxic environment for research, all too ripe for shoddiness or even fraud — and one that an increasing proportion of excellent researchers are voting against with their feet. The costs in wasted research funds are substantial. The United States can take a step forward to help redress the situation, a move that is urgently needed and that can also inspire research leaders and communities in other countries.

Committees at the US National Academies of Sciences, Engineering, and Medicine have twice looked at how to support research integrity (in its more conventional, fraud-busting definition). And both times — in 1992 and 2017 — their recommendations included a proposal for a Research Integrity Advisory Board (RIAB). This year's report, *Fostering Integrity in Research*, recommends that the RIAB should be independent of government or other institutions, and funded by subscriptions from stakeholder bodies such as universities and funders (see <https://www.nap.edu/catalog/21896/fostering-integrity-in-research>).

Such a body would indeed be valuable, and even more so if it were to pursue a broader research-health agenda. It could establish best practices and improve research environments, develop new approaches to incentives and to documenting contributions to research, and develop consensus over standards and penalties for various types of misconduct. It could produce training resources on ethics, and other topics that would help new research-group leaders. It might also encourage funders to introduce conditions of compliance on grants. And it could push for more funds to support efforts by research groups to deliver good research and good mentoring. Funders will jib at the challenge of monitoring compliance, but this important work must start somewhere, and they have remarkable leverage. The RIAB would need a small staff, who would work with others in the research system. It would not take on the role of adjudicating particular cases of misconduct.

One might argue that it is the job of heads of universities and their departments and institutes to develop standards. But the realities of economic and other pressures on institutional leaders divert attention that many would wish to devote to this challenge. Indeed, a functioning RIAB would help to provide university leaders

with the clout needed to develop positive changes in culture and practice that are too often resisted by researchers.

The bad news is that, despite the consistent and strong recommendations and the evident need for such a body, there is no discernible gathering of momentum that would help the research community to create one. And the political environment hardly suggests that the federal government will take the lead.

But there are ways forward, nevertheless. By focusing on the broadest agendas, which include support for good research 'health' and leadership, alongside measures against bad conduct, the emphasis can be placed where it should be: on a significantly better return in robust research results per dollar of research investment, with researchers better trained to meet today's demands.

The US National Academies should take the lead. They should propose a working group to develop the agenda and practicalities of an RIAB. The necessary funds should be solicited from federal funders, including the National Institutes of Health and the National Science Foundation, and from private foundations. The group's deliverables would include a set of priorities, evidence of buy-in from stakeholders, and a timeline for achievements over five- and ten-year timescales.

The RIAB is a necessary step towards a culture of research health that can counteract the adverse pressures that so many researchers currently face. We all need it to happen. ■

"It could push for more funds to support efforts by research groups to deliver good research and good mentoring."

Bonn chance

UN climate talks finesse details as disconnect grows between rhetoric and real-world trends.

It will not go down in history as a great moment of climate diplomacy. But the United Nations climate talks in Bonn, Germany, that ended last week did have their moments. One was the indignant jeering with which audience members and protesters met a White House delegation attempting to justify US President Donald Trump's take on climate and energy policy. Otherwise, two years after the triumph of reaching the Paris agreement on climate change, delegates were largely preoccupied with the important work of finessing the rules and technicalities of that landmark deal.

Few expected the 23rd Conference of the Parties — the first since the United States announced its intention to quit the Paris accord — to