

Good practice from the grass roots

Community-led efforts – not just global ones – are key to research integrity.

When it comes to research integrity, scientists use the language of aspiration, whereas policymakers talk about hard rules and enforcement.

That's one conclusion from an in-depth analysis of published research and policy documents in research integrity (S. P. J. M. Horbach and W. Halfman *Sci. Eng. Ethics* **23**, 1461–1485; 2017). There are other disconnects, too. Countries, disciplines and sectors often approach integrity in different ways. For some, it can be confined to preventing data fabrication, falsification and plagiarism. But integrity is much broader, encompassing quality and relevance, as well as recognition of diversity and inclusion.

The need for a unified approach is slowly gaining recognition. The World Science Forum, a biennial meeting of researchers and policymakers from different countries, issued a declaration at its November conference in Budapest that called for, among other things, “harmonisation and enforcement of standards of conduct of scientific research across borders and across public and private research”. The declaration also supported processes by which scientists “can report suspected research misconduct and other irresponsible research practices, without fear of reprisal”, and it urged clearer procedures for responding to such concerns.

These proposals echo many national and international guidance documents that have been produced since 2010, when the Singapore Statement on Research Integrity billed itself as the first international effort to unify approaches to integrity. Subsequent guidelines have included the Bonn PRINTEGER Statement, the All European Academies Code of Conduct for Research Integrity, the Netherlands Code of Conduct for Research Integrity and many more.

But none yet has the globally respected status of, say, the 1964 Declaration of Helsinki, which is widely accepted as the standard for the ethical treatment of human participants in medical research. And that raises the question: how can the burgeoning official declarations actually enhance research integrity in the lab?

For the working researcher, complying with a research-integrity policy can sometimes feel like another unwelcome burden – yet another form to fill in, set of data to record or online system to feed. And because these policies are often handed down from the directors, that can make workers unwilling to accept that these practices are something that everyone benefits from and needs to engage with.

That's where local, community-driven efforts are offering a way forward. On page 183, Marcus Munafò at

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the University of Bristol, UK, describes how one network of universities and journal publishers is enabling members to exchange ideas on integrity, which could lead to consensus about practices such as promoting transparency and data sharing. And on page 210, a multinational team of researchers and publishers presents a consensus definition of predatory journals. This is a welcome and genuinely collaborative effort, the result of many rounds of discussion between researchers, institutional leaders and patient representatives, among other stakeholders.

Networks for integrity are emerging in the global south, too, such as the African Research Integrity Network, which was established in 2017, and the Asia Pacific Research Integrity Network, set up two years earlier, in 2015.

Perhaps some of the most exciting grass-roots efforts are those that connect researchers to each other and to policymakers. The Embassy of Good Science is one such platform. Established under the European Union's Horizon 2020 research programme, it styles itself as a ‘public square’ where researchers can find guidance and share knowledge. It contains links to national ethics codes and articles explaining good practice.

Official declarations about research integrity can sometimes be perceived by researchers as statements of the obvious, particularly because researchers regard the pursuit of science itself as upholding values of fairness, honesty and scepticism. Policy documents, moreover, can be viewed warily by researchers as a list of commandments handed down from on high, chiselled into stone tablets.

But rules and policies are needed – and they can be most effective when they arise as a result of engagement with grass-roots communities. Local efforts might not produce the global unity and consistency of high-level statements, but they have a much higher chance of changing researchers' daily practices, and thus making a genuine difference to integrity in research. The lesson here is familiar: change will come when we work alongside the communities we wish to change.

Space for dialogue

Sustainability calls for collaboration between architects and behavioural scientists.

There was a time when ‘sustainable development’ meant economic development, or perpetual economic growth – not, as we know it today, environmentally sustainable development.

The change in meaning can be traced to the 1987 report *Our Common Future*, chaired by Norway's then-prime minister, Gro Harlem Brundtland. The report involved social scientists, natural scientists, industrialists, environmentalists and policymakers emerging from their silos to talk to each other to understand how humans alter the global environment. The report helped such collaborative

processes to become mainstream, alongside the idea of treating the environment and development as one issue.

Some fields quickly grasped that interdisciplinary work is essential to understanding environmental change, and to mitigating – or adapting to – its effects. Confirming a human cause for climate change required the combined efforts of meteorologists, oceanographers and geographers, among others. Replacing the ozone-depleting chemicals used in spray cans and refrigerators needed chemists to talk to product designers. But, as a report this week in *Nature Sustainability* shows, other fields have not got so far in their interdisciplinary journey (L. Kotz *et al. Nature Sustain.* 2, 1067–1069; 2019).

In a project convened by the journal and the Convergent Behavioral Science Initiative at the University of Virginia in Charlottesville, an international group of architects, designers and engineers spent a year with behavioural scientists, investigating how their disciplines could better work together, and why they needed to do so.

Behavioural science has an existing and essential relationship to the built environment: we have to study how people live, work and move to create liveable buildings and towns. But the group established that, when it comes to sustainability, there's room for closer working, and the report amounts to an agenda for joint research. Potential questions include: how do architects and designers make decisions? To what extent can behavioural science in other contexts be applied to sustainable design and architecture? Do architects feel a duty to promote responsible energy use?

Cross-disciplinary working requires careful communication and confidence-building. As the example of defining sustainable development shows, disciplines have their own languages and can interpret terms differently.

Lessons in interdisciplinarity can also be learnt from the 'science wars' of the mid-1990s, a tense time in the relationship between natural scientists and the sociologists who study how research is done. Part of the ambition for sociologists of science is to place a mirror before researchers, to demonstrate potential flaws in their methods. But some eminent researchers saw these studies as an intrusion, and thought that natural scientists had little to learn from them.

One way to ease disciplinary tensions could be to underscore that sustainability calls for behavioural change at all levels – necessitating more research across all sectors. Governments, for example, often interact with independent researchers who study how to improve policy, including how government itself needs to adapt if it is to drive sustainability more effectively. Similarly, business schools produce case studies on how companies can adapt to facilitate that change. Behavioural research could help all of us – individuals and communities – to make changes to how we behave, whether it is taking more public transport or just turning the thermostat down a degree.

Along with governments, industry and individuals, the built environment consumes energy and produces waste, which makes it just as pivotal to sustainability. As the *Nature Sustainability* report says, collaborating effectively and learning from each other can be tough. But considering the planetary situation, not doing so has much higher costs.

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No more 'manels'

***Nature's* new code of conduct strives for more diversity at research meetings and events.**

That women from under-represented minorities receive few speaking invitations to the world's largest Earth-science conference has again shone a spotlight on science's diversity deficit (H. L. Ford *et al. Nature* 576, 32–35; 2019).

Conferences are essential for research communication, and taking part is important for career progression. But turning the dial on diversity – and stopping it from slipping back – is proving difficult. Our investigation this year of 'manels' and 'manferences' – panels and conferences dominated by male speakers – showed that sometimes a heroic effort to diversify them one year is followed by business as usual the next (*Nature* 573, 184–186; 2019).

At *Nature*, we are aware of our own shortcomings – that our authors and referees, for example, include too few women – and of our responsibilities to turn things around (*Nature* 558, 344; 2018). This week, we begin a more concerted push to promote diversity across our editorial and publishing activities, including concrete commitments in the events that we organize (see go.nature.com/36jtfr).

In 2019, *Nature* and other journals in the Nature Research portfolio hosted, or co-hosted, more than 30 events in a range of disciplines. But despite informal efforts to make our conferences more inclusive, women and people from minority groups still make up only a small proportion of our speakers. We are therefore formalizing our efforts into a published code of conduct. This will apply not only to Nature Conferences but to all scholarly events organized or co-organized by Springer Nature.

The code commits us to having no male-only organizing committees for Nature Conferences planned from this point. We will invite equal numbers of women and men as speakers, whether we're selecting for keynote presentations or from abstract submissions. We also commit to having no manels at our events, and to monitor and report progress against these goals at the end of each calendar year. Planning for most of our events in 2020 is already advanced, so the full effect of our commitment will be seen from 2021.

Nature Conferences must be welcoming, safe, collaborative and productive for all attendees. Our code states that we expect participants to be considerate of diverse views and cultures, and respectful and collaborative in their discussion and critiques of ideas. Appropriate sanctions will be applied where the code is not followed.

We also commit to supporting diversity more broadly, including in geography, ethnicity, culture, career stage, disability and sexual orientation. With time, we aim to develop our code further to address this explicitly.

Scientific events must be more inclusive. We hope that this initiative – like similar ones in many other organizations – goes some way to reaching that goal.