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17 Feb 2022

Pollution — Bring The Field Into The Lab

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Recommended Citation

A. von Mikecz and A. Scharf, "Pollution — Bring The Field Into The Lab," *Nature*, vol. 602, no. 7897, p. 386, Nature Research, Feb 2022.
The definitive version is available at https://doi.org/10.1038/d41586-022-00444-5

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China: reform research-evaluation criteria

As Chinese researchers, we strongly agree that a broader range of research-evaluation criteria could help a greater diversity of institutions to perform well (*Nature* **601**, 166; 2022). In our view, China's research would benefit from the SCOPE initiative — the inclusive evaluation framework developed by the International Network of Research Management Societies (see go.nature.com/34t5).

In 2020, the Chinese government's Ministry of Science and Technology released the Evaluation of Representative Outcomes (ERO; see go.nature.com/3sue and go.nature.com/3ubj), in line with the government's policy to promote diversity of evaluation criteria in research and education.

However, this ERO document restricts researchers' interests to a designated sphere and downplays the importance of international publications (see *Nature* **579**, 8; 2020). For instance, only papers published in a few academic journals with the highest impact factors are regarded as 'representative outcomes', which are rewarded under the ERO framework. In our view, this risks narrowing the range achievements considered high-quality and obstructing openness, cooperation and innovation in scientific research.

The SCOPE framework would recognize academic scholarship at a global level. Chinese universities could then guarantee that their research-evaluation criteria would be more diverse, transparent and dynamic.

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Brazil opens highly protected caves to mining, risking fauna

Brazil's government has changed the designation of caves that warrant top priority for conservation (see go.nature.com/3gy5). Constituting some 13–30% of the country's 22,000 protected caves, these will now be open to commercial exploitation, which could seriously affect their vulnerable fauna.

The expansion of the mining sector, driven partially by the growth in cement production and agriculture, has exerted increasing pressure on caves. The new decree dispenses with four criteria for protection and alters others (see go.nature.com/3gwy).

Although the decree forbids cave exploitation that leads to extinction of any existing species, it will inevitably increase pressure on endemic cave-dwelling fauna by destroying their ecosystems and disrupting their life cycles. Known collectively as troglobites, many of these species — such as the fishes *Trichomycterus itacarambiensis* and *Eigenmannia vicentespelaea* — are restricted to just a few caves.

Furthermore, protected caves contribute to ecosystem services such as aquifer supply, soil formation and nutrient cycling.

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See go.nature.com/3suw2ae

Catapult network busts biomedical bottlenecks

Medicines Discovery Catapult, where we work, is an example of a non-profit organization focusing on research that benefits the scientific community but falls outside the remit of academic or commercial institutions (see A. Marblestone *et al*. *Nature* **601**, 188–190; 2022). It forms part of the UK Catapult network, which translates research into products and develops solutions to industrial problems.

In our experience, success in galvanizing innovation depends on following best-practice approaches to collaboration across the charitable, academic and business sectors (P. B. Simpson and G. F. Wilkinson *Nature Rev. Drug Discov.* **19**, 737–738; 2020). In the four years since its inception, Medicines Discovery Catapult has helped to unlock new areas for investment, such as psychiatry, healthy ageing and emerging complex medicines (see, for example, go.nature.com/336ahgg). Our partnerships tackle strategic sectoral challenges and make their solutions available to the small and medium-size enterprises that form the majority of the UK biotech sector (see, for example, https://www.petnetwork.org.uk/cipi).

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Pollution — bring the field into the lab

In a reversal of Edith Heard's call to take molecular biology into the field (*Nature* **601**, 9; 2022), we bring the field into the laboratory. We test the biological effects of environmental pollution on the wild counterparts of the model nematode roundworm *Caenorhabditis elegans*.

Wild invertebrates such as *C. elegans*, *Drosophila* spp. and *Daphnia* spp. live in air, surface waters, sediment and soil. Pollutant concentrations can be modelled for these different habitats (D. M. Mitrano *et al*. *Nature Nanotechnol.* **16**, 491–500; 2021). Coupling this information with proteomics studies of *C. elegans* means that gene expression can be compared between wild nematodes and controls that live in an unpolluted environment. Wild populations and their ecosystems can also be recreated in the lab to study the effects of pollutants on other biological variables.

The results from such experiments could help to validate the 'one health' concept (P. Gao *Environ. Sci. Technol.* **55**, 2790–2799; 2021). Such interdisciplinary research will demand new flexibility from journal editors, funding agencies and referees to bridge the many large gaps between nature, environmental science and molecular biology.

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