

Correspondence

Cold war lessons for Arctic diplomacy

Russia's threat to withdraw from the Arctic Council is a matter for global concern, with burning cold-war security issues becoming hot again. Since 1996, the council has been the high-level forum dealing with common Arctic issues through science and dialogue. But, as stipulated in its founding Ottawa Declaration, it "should not deal with matters related to military security".

This wisdom was abandoned nine days after the full-scale Russian invasion of Ukraine in February 2022, when the seven other Arctic Council states issued a joint statement "pausing participation in all meetings of the Council and its subsidiary bodies". This pause in dialogue is becoming permanent, undermining open science along with climate and other research in the Arctic. But more than that, the continuing lack of dialogue among allies and adversaries alike is the beginning of conflict.

Lessons from after the Second World War should be heeded now. The third International Polar Year (IPY), which became the International Geophysical Year (IGY) 1957–58, led directly to cooperation between the United States and Soviet Union in Antarctica as well as space throughout the cold war. The IGY facilitated the 1959 Antarctic Treaty, which became the first nuclear-arms agreement and template for the Arctic Council, with continuous cooperation among superpower adversaries. The fifth IPY, in 2032–33, offers a practical time horizon to reverse the deterioration of East–West relations, again with science diplomacy and common-interest building.

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Long COVID needs novel clinical trials

Diagnostic biomarkers and effective therapies are urgently needed for the millions of people living with long COVID. But the challenges of designing and conducting clinical trials mean that only large, well-funded academic centres can engage with the problem.

We propose an alternative approach, based on interactions between clinician–patient pairs and researchers. Before clinical trials, an online platform could enable the peer review of trial designs and plans for statistical analyses. After recruitment, the focus would shift to clinician- and patient-reported outcomes and biomarker read-outs, ideally from wearable technologies.

During treatment, a cloud-based system could be used to report adverse events and real-time biomarker read-outs, with general practitioners providing an untapped source of data. After treatment, the peer-review system could make data accessible to all relevant researchers.

We are confident that this 'grassroots' system would avoid long COVID problems that can plague clinical trials: low enrolment, late or missing trial reporting and faked or fatally flawed results.

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Europe must join forces to monitor its forests

Last November, the European Commission proposed a regulation to establish a coordinated monitoring framework for resilient forests using a combination of imagery from the European Union's Copernicus Earth-observation satellites and *in situ* data, mainly from national forest inventories. The proposal is based on the premise that forest monitoring in Europe is "fragmented and patchy", with no fully developed "consistent, transnational data-gathering approach".

This premise, however, is misleading. In 1986, the commission launched a coordinated forest monitoring scheme, which evolved in cooperation with the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests), which I currently chair. The programme now covers 37 European countries and has a comprehensive portfolio of harmonized, quality-assured methodologies, databases and governance.

Such infrastructures can provide essential data to explain changes in forest conditions and to understand processes, both key aspects when aiming to build resilient forests. At a time of increased signals of forest vulnerability, it would be a missed opportunity not to take advantage of all the available resources for the future European forest monitoring system.

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Train taxonomists to save biodiversity

Species extinctions are speeding up worldwide. Biodiversity monitoring and assessment must underpin efforts to tackle this crisis (E. Tekwa *et al.* *Phil. Trans. R. Soc. B* 378, 20220181; 2023). Yet expertise in taxonomy, the scientific basis for biodiversity research and management, has been in decline.

University credit hours in taxonomy that have been reallocated to fields such as molecular biology or biotechnology should be reinstated. Training in technologies such as digital and virtual-reality herbaria, wildlife camera traps and environmental-DNA analysis should be combined with schooling in empirical research practices. Community scientists and Indigenous people play an important part in conservation, and trained members of local groups could bolster volunteer efforts to monitor biodiversity.

Artificial intelligence can also help: trained on large taxonomic data sets, it could be used to recognize plant morphologies or animal audio recordings to aid species identification, for example. Such initiatives could fill gaps in expertise and help to achieve the United Nations Sustainable Development Goals for biodiversity conservation by 2030.

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