

rebuilding of Europe after the Second World War.

There should always be a place for emergency help for Ukrainian scientists who have had to leave the country. But it's also time for deeper efforts to go towards displays of solidarity with researchers who remain in the country. The international science community should start planning how best to prepare the country's research infrastructure for the end of the war. Long-term partnerships that focus on capacity-building will be crucial, particularly in the areas of management, monitoring and policy. These collaborations must try to sustain day-to-day research as much as possible now, so that the research community can hit the ground running and be much more effective as soon as the conflict ends.

Nature welcomes Registered Reports

From this week, *Nature* will be publishing an additional type of research paper – designed to encourage rigour and replication.

This year marks the 50th anniversary of *Nature*'s decision to mandate peer review for all papers. It's an appropriate time to introduce readers and authors to Registered Reports, a research-article format that *Nature* is offering from this week for studies designed to test whether a hypothesis is supported (see go.nature.com/3kivjh1).

The fundamental principle underpinning a Registered Report is that a journal commits to publishing a paper if the research question and the methodology chosen to address it pass peer review, with the result itself taking a back seat. For now, *Nature* is offering Registered Reports in the field of cognitive neuroscience and in the behavioural and social sciences. In the future, we plan to extend this to other fields, as well as to other types of study, such as more exploratory research.

Why are we introducing this format? In part to try to address publication bias, the tendency of the research system – editors, reviewers and authors – to favour the publication of positive over negative results. Registered Reports help to incentivize research regardless of the result. An elegant and robust study should be appreciated as much for its methodology as for its results.

Submitting a study

As for how it works, authors of Registered Reports are asked to make a pre-submission enquiry with their research plan before they embark on a study. Typically, this plan should include the research question being asked, an explanation of why this work fits the Registered Reports format and a brief explanation of the methods to be used and how

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data will be collected. The research question must meet *Nature*'s existing editorial criteria for scientific impact and the strength of the underpinning evidence. If these criteria are satisfied, the plan will be sent for peer review. Reviewers will judge submissions on the basis of a question's importance, either to a research field or more broadly (to an economy, the environment or society, for example). They will also assess the robustness of a study's design and analysis. If the reviewers are satisfied, the journal will commit to publishing the findings, as long as the methodology does not change during the course of a study.

To be clear, Registered Reports are not new. They have been around for at least a decade¹. The format is already offered by a number of Nature Portfolio journals, including *Nature Human Behaviour*, *Nature Methods*, *Nature Communications* and *Scientific Reports*. According to the Center for Open Science (see go.nature.com/3xhimm6), more than 300 journals already offer this format, up from around 200 in 2019. But despite having been around for a while, Registered Reports are still not widely known – or widely understood – among researchers. This must change. And, at *Nature*, we want to play a part in changing it.

The lack of awareness is partly the result of systemic factors that favour the conventional research paper. Studies in which the main emphasis is on results are valuable – and are used in assessing promotions and grant applications. They are also important to institutions, which can use them to obtain funding, for example.

Clearly, more needs to be done to emphasize the benefits of Registered Reports. The format helps to reinforce the necessity of rigour in study design and methodology. At the same time, it provides in-built opportunities for feedback. Both of these help researchers to spot problems in studies before it is too late to fix them. Registered Reports are becoming a marker of quality – peers, institutions and funders are beginning to realize that the format represents a high standard of work². Moreover, the format can make the peer-review process more constructive and amicable.

Collaborative potential

Registered Reports (along with other formats) might also have a role in helping to resolve disagreements within disciplines. For example, psychology researchers have disagreed on whether individuals' subjective experiences of emotion are influenced by their own facial expressions. Researchers with different views saw the Registered Reports format as a way to collaborate to test the hypothesis. Their findings³ were published last October.

A decade ago, *Nature* developed a reporting summary for authors of manuscripts – a checklist in which authors are asked to state, for example, whether experimental findings have been replicated or whether a sample size is appropriate. Registered Reports are a progression towards greater emphasis on rigour and study design. They are also a format that recognizes both how science is done and that good research starts well before the paper is written.

1. Chambers, C. D. & Tzavella, L. *Nature Hum. Behav.* **6**, 29–42 (2022).
2. Soderberg, C. K. et al. *Nature Hum. Behav.* **5**, 990–997 (2021).
3. Coles, N. A. et al. *Nature Hum. Behav.* **6**, 1731–1742 (2022).