



Fostering a responsible research culture: Perspectives from the Royal Society of Chemistry

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Emma Wilson, Director of Publishing, Fostering a responsible research culture: Perspectives from the **Royal Society of Chemistry**

The science research eco-system is multifaceted and complex, with strands that are interconnected and interdependent. At the centre of it sits research culture, which is about how research is conducted – so it is about the behaviours, values, expectations, attitudes, and norms of science communities. Research culture influences career paths and the way that science and innovation are designed and delivered. A positive science culture is essential to foster quality science - which is what everyone involved in research wants - and many organisations and communities are working to improve research culture.

My interest in research culture has been a long one, and I have been immersed in aspects of it all my career - first as a young researcher (many moons ago) and then as a society publisher. This interest is matched by the organisation I work for, and the Royal Society of Chemistry has been active in aspects of science culture since its origins in 1841. For me, a real focal point and wakeup call, for both the society and community, was the evidence that was uncovered by speaking to our community around aspects of career progression. This was published in our [Breaking the Barriers](#) report, shining a light on the challenges faced by researchers in progressing their careers and reaching their potential. These were difficult messages, but the research was clear, and once the voices are heard then action must be the next step. This report spurred much action at the RSC, and led to our [wide range of influential work](#) promoting inclusively and accessibility, pushing to improve diversity in the chemical sciences.

But research culture expands far beyond gender equality and indeed beyond inclusion and diversity, so what else was needed? To answer this, we brought together a team with expertise and networks across research integrity, research funding, research policy, rewards and recognition, to collectively work with our chemistry community to develop a vision and practical frameworks and initiatives to make science culture better and better.

All of this culminated in September 2023 when we launched [our vision for a great science culture](#). It outlines the key qualities and foundations of a positive science culture, as well as

the underpinning role of recognition in incentivising individuals, teams, and organisations to contribute to an enabling community and quality science (outlined in the schematic).

The three foundations are:

- Scientific practice
- Participation in science
- Wellbeing and development

Spanning these three foundations are five qualities of a great science culture:

1. Rigorous
2. Safe and supportive
3. Ethical and responsible
4. Open and collaborative
5. Accessible and inclusive

Finally, recognition, which plays such a critical role in incentivising the behaviours that align with and foster a positive science culture.

As a society publisher, we recognise the part we play in that collective effort, and we've made progress under each of the five qualities of positive science culture. Below is a round-up of our recent and ongoing work in these areas.

Rigorous

We need the right journal policies and processes to incentivise practices that ensure research is conducted rigorously and with integrity. One example is our commitment to supporting our community to meet best practice in both [the sharing and archiving of research data](#). We believe that, where possible, all data associated with the research in a manuscript should be Findable, Accessible, Interoperable and Reusable (FAIR). That's key to enabling other researchers to replicate and build on that research.

Safe and supportive

We have a range of support for early career researchers to navigate their way through the publishing ecosystem by providing resources and tools through our [author and reviewer hub](#). We also play our part in events such as Peer Review Week, a fantastic opportunity to amplify our efforts and reach a broader audience through our social media channels and [webinars](#).

I'm proud of the efforts our editors put in to deliver peer review that balances being high-quality and rigorous with being fair and inclusive – that means making sure critical reviews are equally constructive and helpful.

Ethical and responsible

We really emphasise the growing importance of ethical publishing practices. That means ensuring that ethical standards are applied to research we publish, as well as taking decisive, transparent action to correct the record when misconduct is uncovered. We continue to invest in our specialist ethical publishing team, which enables us to take a leading role in collaborative efforts across our sector, including the [STM integrity hub](#).

Open and collaborative

We have made a number of commitments on the importance of [open science](#), including data sharing and [transparent peer review](#), while earlier this year we published our intention to transition all fully RSC-owned journals to [Open Access within five years](#). We believe open access is a crucial way of supporting a truly global community, enabling research to reach the widest possible audience, while maintaining the highest standards of peer review and publication ethics. Open Access is at the core of our mission to help the chemical sciences make the world a better place.

But we can't do that alone – we're partnering with institutions around the world to develop new Open Access models that work for them, that don't rely solely on authors paying processing or publication charges. We know these can present a barrier to researchers, especially in the least developed countries where funds, even to conduct research, are limited.

Accessible and inclusive

Our teams at the RSC have delivered a [wide range of work](#) to promote inclusivity and accessibility, in publishing. In 2019, our own research showed that there are [gender differences](#) at each stage of the publication process, which drove us to develop our [Framework for action in scientific publishing](#), setting out the steps we are taking to minimise bias in our publishing. One of the successes of implementing that framework has been the significant improvement in the gender balance of our editorial boards, which are now over 40% women.

We initiated and continue to lead the [Joint commitment for action on inclusion and diversity in publishing](#), as a powerful way to accelerate progress, bringing together over 50 publishing organisations who have worked together to deliver a set of [minimum standards](#) for scholarly publishing, and [standardised questions](#) for diversity data collection.

Recognition

As signatories to [DORA](#), we're advocating for a broader range of indicators to evaluate research impact. This includes assessing the societal relevance of research, its influence on policymaking, and its contributions to addressing real-world problems. We're signed up to the [UN SDGs Publishers Compact](#), to ensure that we're doing our part to accelerate progress to achieve the Sustainable Development Goals (SDGs) by 2030.

Our own review of recognition in 2019, led us to [reform RSC Prizes](#) to better recognise the part played by those in a variety of roles and career stages, and by teams and collaborations

There's no question that societies and scholarly publishers have a crucial role to play in fostering a truly great science culture and recognise the strength of working hand-in-hand

with our communities and stakeholders in this joint endeavour. I'm positive that gives us a unique opportunity to make a lasting difference, throughout the research ecosystem.

If we can support any of the work that you are doing in this area, please do get in touch.

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