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Science must break its silence to rebuild public trust

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This Comment calls on scientists to acknowledge how insufficient communication and limited engagement beyond academia have deepened the divide between science and the public. Restoring trust requires a paradigm shift in which scientists accept that the responsibility to champion science lies with us. We propose a new model in which public communication and advocacy are considered as essential to our mission as rigor and reproducibility — critical not only for safeguarding science, but also for ensuring that its benefits reach all segments of the societies we serve.

The current political climate, particularly in the US, is undeniably shaking the foundations of our scientific and academic institutions; the future is shrouded in uncertainty. However, one thing is clear: change is here.

Understandably, the scientific community has responded defensively, but this moment also demands reflection. We must ask ourselves how we have contributed to widening the gap between scientific purpose and public perception. Not only has public support for science declined, but so has enthusiasm. More concerning is that polling data highlight how trust in science has become a contentious, partisan issue[1–3]. How have our own actions — and inactions — contributed to this divide? The answers may not change the immediate challenges that science is facing today, but reckoning with them now can help to prevent lasting damage.

What went wrong?

One possible explanation for the diminishing public support of scientific research is that we became overconfident that the importance of science is obvious to everyone and forgot that one of the most fundamental responsibilities of scientists is to share knowledge, always with the humility to admit that we do not have all the answers and that sometimes we are wrong. After all, research is a process driven by the scientific method, a self-correcting engine of discovery that advances through iterative hypothesis testing and depends on failure. This method is not infallible and often progresses in fits and starts, but it has an exceptional track record.

Over the past century, biomedical research has profoundly transformed the human experience. We have eliminated deadly diseases such as smallpox and polio through vaccination campaigns, developed antibiotics such as penicillin to treat once-fatal infections, and pioneered organ transplants — from kidneys and hearts to faces and hands — that have saved and restored lives. More recently, scientists have mapped the entire human genome, laying the foundation for precision medicine to target cancer mutations and inherited diseases, while advances in brain–computer interfaces (BCI) have enabled paralyzed individuals to control robotic arms or type with only their thoughts. Thanks to these collective efforts, the global average life expectancy has nearly doubled since 1925. These real, measurable and often lifesaving impacts on people's lives should be enough to earn public trust in science.

Excellence, however, often comes at a cost. It can foster an insular mindset in which we assume that the value of our work is undeniable. Great success can breed self-assurance that keeps us on an unwavering path, even when evidence indicates that a change is needed — convinced, sometimes blindly, that the solution to a scientific problem lies just ahead. Confident in our brilliance, we tend to dismiss challenges to research findings or existing research priorities, especially from outside the established scientific community, assuming that those with less expertise have less valid perspectives. These assumptions have, to an extent, segregated us from fruitful public discourse and prevented us from connecting to a changing society. This self-imposed isolation has also proven to be one of the scientific community's greatest vulnerabilities.

A vacuum in science advocacy

For decades, the responsibility to advocate for science has largely fallen to well-meaning scientific societies and advocacy groups (such as the National Association for Biomedical Research (NABR), Understanding Animal Research (UAR), Rare Diseases Europe (EURODIS), the Association of Medical Research Charities (AMRC) and Americans for Medical Progress (AMP)). But these efforts have often been overshadowed by powerful special interest groups with alternative narratives that blur the distinction between evidence and ideology, such as Cruelty Free International (CFI), the Family Research Council (FRC), People for the Ethical Treatment of Animals (PETA) and the Informed Consent Action Network (ICAN). Meanwhile, the overwhelming majority of scientists have remained on the sidelines, with only a few outspoken colleagues advocating for science beyond the comforts of university campuses and existing science-friendly communication forums.

An absence of scientists in the broader public conversation has made it easier for critics to cast us as out-of-touch elites, more focused on serving our own interests than addressing public concerns about research priorities and funding. The decline in the breadth of views held by students and faculty on college campuses has reinforced the public perception that science is not wholly objective but instead pursues a narrow cultural and political agenda that is out of step with broader public interests. By failing to both advocate for science and embrace

open debate, we have allowed our institutions to be framed in divisive 'us versus them' narratives that are easily exploited by politicians and activists.

Consequently, critics have been able to take advantage of this divide and the uncertainty inherent in interpreting data – especially in complex fields such as human biology, where simple answers are rare but the implications for the public are profound. Distrust in science most often emerges from its intersection with public policy, not only because some politicians cherry-pick findings to push their own narratives, but also because at times we scientists have done so as well.

Public engagement: building common ground

How can we help to bridge this divide? Simply producing more exceptional science will not be enough to rebuild public trust. Rather, we must adopt a new model that recognizes communication and advocacy as core pillars of science, on a par with rigor and reproducibility. Public engagement efforts should be valued for faculty promotions, much like obtaining grants and publishing our findings in scientific journals. Researchers should be recognized and rewarded for activities such as giving public talks, working with local schools, engaging with policymakers, developing social media campaigns and platforms or writing accessible articles for general audiences. Developing these skills must be an integral part of scientific training, reinforcing the notion that the responsibility to champion science lies with us. Courses that teach graduate students and postdocs to communicate complex ideas clearly, to use social media effectively and to advocate for evidence-based policies must be deemed critical and supported by our universities. These efforts should not be viewed as distractions from research but woven into the fabric of what we do as scientists. Rebuilding public trust requires a cultural paradigm shift: scientists must see themselves not just as producers of knowledge, but also as its ambassadors and translators. Such a fundamental change will occur only if it is embraced by our scientific leaders and institutions, emphasizing the critical role of public engagement for science to succeed.

This vision for science discourse would realize generational success through open engagement with both the public and elected officials – particularly those with opposing views. The more we step outside our intellectual, ideological and geographical silos, the better we can connect with people who see the world differently. We must not only communicate our perspective; we also need to listen, understand and appreciate the perspectives of others in our communities in order to form lasting relationships.

Such outreach serves our nations by inspiring the next generation to pursue scientific careers and by helping to build a domestic workforce with the technical skills needed for the jobs of the future. Brilliant minds can come from any town, school or family, from rural villages to the biggest cities, and from countries around the world. Talent knows no borders – but it is up to us to extend the invitation and find those rising stars, not just wait for them to make their way to us.

Science and medicine can unite us, because the challenges they address affect everyone. Cancer and dementia strike indiscriminately, regardless of who you voted for or whether you have ever voted. That our lives are now on average twice as long – thanks to scientific and medical advances – means we each have more time for the simple pleasures in life, such as holiday dinners and watching our children and grandchildren grow. Although politics may deepen our divisions, science connects us all, grounded in our shared human experiences.

We must learn from our mistakes. Science cannot thrive if we are willing to engage only with those who share our views. The sources of our national culture wars extend beyond science, but we have played a part in deepening these divides – increasingly isolating science and our institutions from the public, like a castle surrounded by an ever-widening moat. The road ahead will be long and challenging, but the first step is something we can all do: pick up a shovel and help fill in the moat.

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Competing interests

The authors declare no competing interests.