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COMMENT

Walking the line: balancing benefits of public engagement against the risks of harassment and attack

Commentary on

Scholars under attack — Navigating the dark side of public engagement and science communication in a politicised (online) environment

Jana Laura Egelhofer, Niels G. Mede, Fabien Medvecky, Thomas James Carruthers, Alice Fleerackers, Miguel Garcia-Guerrero and Bernard Okebe

Abstract

Harassment, political interference, and violence against science communication are on the rise and pose considerable challenges for scientists, journalists, communicators, and institutions. In this commentary, we — an international group of researchers and practitioners — reflect on how scientists, science communicators and their institutions can balance the increased demand for meaningful public engagement while also appropriately responding to escalating harms of backlash. Drawing on existing literature and lived experience, we interrogate the consequences of attacks on science communication and review available support structures for scientists and practitioners. We propose ways to improve preparedness for and responses to public and political backlash, while considering the challenge of mitigating harassment without silencing valuable public feedback. In doing so, we aim to contribute to a resilient environment for scientists and communicators engaging with publics and to promote a more constructive discourse on socially contested issues in science and technology.

Keywords

Social inclusion; Bridging research, practice and teaching; Science communication and social justice

Additional Keywords

Harassment; Attacks; Support Measures; Science Communication; Commentary

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1 ▪ An ethical tension: calls for more engagement despite growing risks

Academics, journalists and institutions are increasingly called upon to bridge the gap between expert knowledge and the public, especially on issues of social relevance [Jucan & Jucan, 2014]. This is mostly appropriate as effective science communication has desirable outcomes of sharing knowledge, informing public policy and improving scientific research. Moreover, many scientists and practitioners are intrinsically motivated to engage in communication and gain personal and professional fulfilment from doing so [Mede & Volk, 2026; Yeo & Brossard, 2017].

However, this drive for dialogue and engagement contrasts with a reality of increased public and political backlash, particularly around issues with high social relevance and the potential to inform policymaking, such as climate change, public health and gender identity [Väliverronen & Saikkonen, 2021; Valiverronen & Saikkonen, 2021]. Such backlash spans several dimensions. It includes verbal attacks ranging from harsh criticism to hateful or discriminatory comments and threats of violence. It also involves political interference with academic freedom, such as budget cuts, and, in extreme cases, physical assaults — including sexual violence and even murder [e.g. Barlow & Awan, 2016; Nogrady, 2021; Scholars at Risk Network, 2024].

This creates a tension between loud calls for public engagement and public arenas rife with hostility towards science communicators, who, in turn, often have inadequate support. We claim that this is an *ethical* tension because, as a science communication community, we actively encourage scientists and communication professionals to participate in public discussions (indeed, many of us teach them how to do so). Yet we often fail to consider how to prepare for or respond to hostility. This tension becomes even more apparent, in cases where institutions actively decide against supporting backlash-facing employees, because the institutions fear reputational damage, amplification of follow-up backlash, and do not share the views of backlash-facing employees. Importantly, the salience and consequences of this ethical tension vary across different modalities of science communication — such that university communication tends to invite less ad-hominem attacks than scientists' individual communication — and across country contexts, as the imperative for public engagement is more institutionalised in some countries than others [e.g. Fischer et al., 2025].

In this commentary we reflect on this tension, discussing the context-specific nature of how attacks impact individuals, highlighting the worsened experience of those from marginalised groups, and discuss how the broader cultural, sociopolitical context can influence how communicators experience and navigate such attacks. We turn this context-sensitive lens to the support structures currently available to science communicators, reflecting on different national contexts and calling attention to regions of the world where data is scarce.

We focus on impacts on individuals, but fully addressing this phenomenon requires organisational and systemic changes. We conclude with four propositions on how the science communication community can collectively support productive public engagement without sacrificing the wellbeing of the individuals behind it.

2 ▪ The repercussions of public engagement

Public engagement is often portrayed as unreservedly positive. It promises an effective way of engaging with the knowledge, methods and actors of science, integration of scientific evidence into policy decisions and tangible benefits for science itself through new inputs, civic participation in the production of knowledge and greater responsiveness to societal needs [e.g. Biermann et al., 2025]. Engagement may also bring personal fulfilment for scientists and practitioners [Mede & Volk, 2026; Yeo & Brossard, 2017]. From this vantage point, calls for 'more engagement' seem almost self-evident.

Yet public participation may also involve negative feedback, aggression and backlash from members of the public as well as political decision-makers. Backlash to communication and engagement activities has repercussions at the micro-, meso- and macro-level. Most research focused on the micro-level: studies show that the risk and nature of attacks vary depending on both the communicator's personal characteristics and the topic. Although hostility occurs across disciplines [Blümel, 2024], researchers and communication practitioners addressing controversial or politicised topics such as climate change, vaccination or gender are particularly vulnerable [Valiverronen & Saikkonen, 2021]. Those from marginalised groups — based on characteristics such as race, ethnicity, gender identity, sexual orientation, disability and religion — tend to be disproportionately targeted in many countries [Gosse et al., 2021; Valiverronen & Saikkonen, 2021]. External attacks compound the well-documented abuse and inequity within the scientific system itself, ranging from persistent micro-aggressive to (sexual) assault. They disproportionately target the same minoritised groups most affected by online harassment, further undermining their wellbeing and capacity to engage in research and communication [Espinoza & Hsiehchen, 2020; Mattheis et al., 2022].

For those targeted, psychological effects such as stress, anxiety and sleep disturbances are frequently reported alongside professional impacts such as impaired concentration and fear of reputational damage [Global Witness, 2023; Gosse et al., 2021; Mede & Volk, 2026]. Some scientists report being motivated to continue or even intensify their public engagement despite attacks [Nölleke et al., 2023; Van Eck, 2023], whereas others react with a 'chilling effect,' self-censoring or avoiding controversial topics either in response to harassment or preventively, out of fear of future attacks [Céspedes et al., 2024; Nogrady, 2021; Seeger et al., 2024]. Disturbingly, some communicators are blamed for attacks, with institutions suggesting it is their fault for speaking publicly on sensitive topics [Veldkamp, 2021]. Even when reporting abuse, they may encounter dismissive authorities who consider scientists to not be genuine targets of violence, as in the case of Austrian physician Lisa-Maria Kellermayr, who faced extensive threats from opponents of vaccination and COVID-19 measures, spent more than €100,000 on security, and ultimately died by suicide [Connolly, 2022]. Such victim blaming and gaslighting intensifies negative individual-level effects of backlash.

Importantly, consequences depend on the nature of attack and on individual and contextual factors [Mede & Volk, 2026]. Attacks against men often aim to discredit their work, while women experience gender- and appearance-based harassment and are more likely to receive threats of sexual violence [Gosse et al., 2021]. Public harassment of trans science communicators is understudied — but likely common given the prevalence of attacks received within their own institutions [Udesky, 2025]. Furthermore, scholars who belong to marginalised groups frequently are attacked based on personal characteristics [Barlow &

Awan, 2016; Gosse et al., 2021; Nogrady, 2021]. While individual tolerance varies ('having a thick skin'), being attacked on such a personal level likely provokes more severe impacts and intentions to avoid any further attacks than being criticised on a professional level.

At the meso-level, backlash targets scientific institutions rather than individual communicators. Compared to individuals, institutions are more resilient to harassment as they do not suffer any emotional distress. Furthermore, they generally enjoy greater credibility, having accumulated institutional authority to speak in the name of science [e.g. Aradau & Huysmans, 2019]. Yet research highlights growing concern about rhetorical attacks that seek to undermine institutional integrity and authority. For example, during the COVID-19 pandemic, Jair Bolsonaro repeatedly attempted to delegitimise the World Health Organization in line with his policy agenda [e.g. Edler Duarte et al., 2024]. Citizens have been supporting and amplifying institutional attacks like these on social media, and even one-time exposure to such rhetoric can impact public trust in institutions [e.g. Lee, 2025]. Backlash may also extend beyond verbal delegitimisation to political interference and pressure. In Mexico, President Andrés Manuel López Obrador's administration sought to pursue criminal allegations — including claims of 'organised crime' — against members of the Scientific and Technological Advisory Forum, an autonomous body advising the federal government on science and technology policy. Although these efforts did not succeed, they reportedly generated fear among scientists, with potential chilling effects on dissent and possible reputational damage to the Forum [Reardon, 2021]. Lastly, meso-level consequences can include personal, time and administrative costs for organisations when they support employees who are targets of backlash, and they also take up resources that could otherwise be used for constructive outreach and engagement.

At the macro-level, backlash has system-level consequences that extend beyond institutions, shaping the wider discourse and political conditions under which science is communicated, funded and governed. Disproportionate attacks on marginalised individuals can reduce their representation in public-facing science communication and in research itself, thereby undermining epistemic diversity, with implications for research quality and innovation [Desikan et al., 2023; Efimov et al., 2024; Vincent-Ruz, 2025].

Moreover, emerging research suggests that public and political backlash can have negative effects on public perceptions of science [Egelhofer, 2023; Egelhofer et al., 2024; Hameleers & van der Meer, 2021; Lee, 2025], which may, in the long run, undermine the legitimacy of science more generally and may be mobilised to justify political interference, thereby threatening academic freedom.

Consequences are further dependent on the national and political context. For instance, political systems shape the extent to which science is tied to the state and thus exposed to political influence [Fischer et al., 2025]. In authoritarian settings, where protections for academic freedom and speech are weaker, communicators may be more vulnerable to intimidation, and backlash is more likely to originate not only from publics but also from political actors. Furthermore, in contexts where citizens hold more positive attitudes towards science and value science communication, the risk of public backlash may be lower. Countries also differ in the legislation and prosecution of online harassment. For example, in Germany, platform rules have mandated comparatively swift removal of illegal content, whereas in the United States broader speech protections can limit regulatory responses. Where perpetrators face fewer meaningful consequences, harassment may be more intense and persistent, with correspondingly greater costs for targets.

Taken together, the available evidence paints a troubling picture, where backlash appears to have become an 'occupational risk' — underscoring the urgent need for effective support structures.

3 ▪ Are we prepared for the occupational risk? Available support structures

Current knowledge of available support structures for scientists and practitioners facing attacks remains mostly limited to studies and initiatives in the Global North. The evidence suggests that scientists and communicators primarily rely on micro-level support — most often from family, friends and close colleagues [Gosse et al., 2023; Houlden et al., 2022; Seeger et al., 2024]. Meso-level support — provided by institutions — is often poorly advertised or absent in the first place [Mede & Volk, 2026]. Here, we distinguish support provided by employing institutions (e.g., universities) and by external institutions, i.e., organisations that provide support to scientists and practitioners. Support by employing institutions tends to be deficient because they are often overwhelmed by the speed, anonymity and intensity of online attacks on their staff [Gosse et al., 2023]. In contrast, qualitative evidence suggests that in countries like Germany, Austria, Sweden and the Netherlands, some higher education and research institutions have established well-functioning support mechanisms [Mede & Volk, 2026]. However, even in these cases, responses are often improvised, intuitive and ad hoc, and staff are unaware of the support available to them.

Additionally, institutions sometimes deny support for reputational reasons, highlighting tensions between the interests of organisations and the individuals they employ [e.g. Bucchi & Schäfer, 2025]. For example, institutions may pressure scientists to remain silent so as not to displease political leaders [Rustin, 2011] or avert lawsuits by companies [Voorhoof, 2022].

Another line of institutional support comes from external organisations and initiatives, such as *SafeScience* in the Netherlands,[1] *Scicomm Support* in Germany[2] and the *Researcher Support Consortium* in the U.S.A. [for an overview see Mede, 2026].[3] These initiatives provide assistance to institutions and individuals facing attacks by offering informational resources, training and telephone consultations, filling crucial gaps in available support structures in these countries. Academic member associations such as the Association of Internet Researchers (AoIR)[4] and several Science Media Centres[5] have also provided guidelines on responding to attacks. Research suggests that such institutional support structures are particularly important when backlash comes from politicians and other influential actors, as institutions can better withstand reputational damage and buffer individual harm, such as stress and anxiety [Mede & Volk, 2026]. It is therefore concerning that these initiatives are largely confined to countries with higher academic freedom and democratic stability.

1. https://www.wetenschapveilig.nl/en.
2. https://scicomm-support.de/en/.
3. https://researchersupport.org/.
4. https://aoir.org/riskyresearchguide.
5. Australia: https://www.smc.org.au/news/helping-experts-handle-online-abuse, Spain: https://sciencemediacentre.es/en/advice-researchers-facing-harassment-after-media-exposure, U.K.:https://www.sciencemediacentre.org/wp-content/uploads/2019/10/Advice-for-Researchers-Experiencing-Harrasment-2019.pdf.

Importantly, most existing support remains reactive, addressing individuals' situations after attacks have already occurred [Mede & Volk, 2026]. Little is known about the availability or effectiveness of preventive measures, despite growing calls for better preparation of scholars and communicators for the risks of public engagement [e.g. Branford et al., 2019; Hotez, 2020; Veletsianos et al., 2018]. We join these calls, encouraging institutions to invest in preventive measures, such as:

- *Risk Assessment Tools:* to help individuals self-assess their vulnerability based on individual characteristics, topic, visibility and context. Depending on the assessment outcome, context-appropriate institutional supports should automatically be made available (such as pre-briefing, follow-up and monitoring).
- *Digital Safety Practices:* such as limiting the public availability of personal information of staff, filtering of abusive online communication and actionable codes of conduct.
- *Response Protocols:* that explain how to document and report attacks, when to disengage and whom to contact for institutional, legal or psychological support.

On a macro-level, societal and policy efforts can also play a role. Raising awareness of the prevalence of attacks and harassment — especially of marginalised communicators — is crucial for ensuring scholars do not individualise these experiences as 'exceptional' incidents but as part of a wider structural problem, thereby reducing tendencies towards victim blaming [Mattheis et al., 2022]. Such awareness is key to dismantling the norms and social structures that enable these attacks. It is also crucial for fostering pro-social bystander interventions in the context of online harassment [Egelhofer et al., 2026]. Other preventive measures could include stronger state regulation and persecution of harassment and violence such as Denmark's Hate Crimes legislation [Anklage Myndigheden, 2022]. However, care must be taken to ensure such laws cannot be reframed by future governments or autocracies to stifle free thought and expression — a topic discussed extensively within Law and Political Science [e.g. Alkiviadou, 2025], and a space where the specific implications could benefit from more consideration in the science communication literature.

Finally, it is important to recognise that public comment and critique are vital to a society grounded in free thought and expression. A clear distinction must be made between legitimate criticism — such as exposing funding bias or scientific misconduct — and illegitimate attacks that do not advance understanding or improve science. However, the line between legitimate and illegitimate backlash is not always clear-cut; balancing openness to genuine critique with protection against harassment therefore remains challenging and requires context-sensitive, inclusive response strategies.

Overall, there remains limited systematic understanding on how well individuals and institutions manage backlash — especially beyond European and North American contexts. Yet it seems like measures at the micro-level currently seem to bear the brunt of the backlash. At the same time, measures on the meso-level — the level where we as community have the most leverage for coordinated effective measures — are in need for development. This is especially true for regions where scientists are more likely to face severe or politically motivated attacks and would thus especially benefit from external support initiatives and resilient institutions, associations and networks backing them up.

4 ▪ Conclusion: four propositions on how to move forward

Public outreach and engagement are integral to the science-society relationship, enabling diverse publics to both learn from and contribute to research. Such engagement has become an implicit public expectation and an explicit demand in the research governance and funding. While this imperative offers benefits, it also risks exposing communicators to public and political backlash — with serious personal consequences. In this commentary, we argued that this ethical tension has received insufficient attention, as reflected in continued blanket calls for increased science communication despite limited institutional preparedness to handle public backlash. These challenges are further complicated by the context-specific nature of backlash, which varies across communicators, national settings and political environments. Consequently, we call for science communication scholarship and practice to engage with four fundamental propositions:

First, blanket calls for more science communication that ignore potential drawbacks can risk causing more harm than good. Such calls place the burden on individuals, rather than institutions, to manage harassment and disproportionately affect marginalised communicators. They also often overlook systemic, sociopolitical factors that shape who can speak out without facing violence or attack.

Second, further countermeasures need to be developed, implemented, tested, improved and institutionalised. These countermeasures should not only focus on reactive solutions but also on preventive strategies and tools. Institutional responses and systemic mandates are especially key, including those from universities, national support structures, funding bodies and international associations (such as the PCST Network or the World Federation of Science Journalists).

Third, in developing these countermeasures it is necessary that legitimate public criticism is carefully distinguished from harmful attacks. True criticism of science is necessary for a democratic science-society dialogue. Protecting the public's right to challenge science requires careful, context-sensitive consideration of the line between productive scrutiny and harmful personal attack. Accordingly, we strongly condemn 'victim blaming' and external appropriation of targets' perceptions and emotions.

Fourth, research and practice must attend to the intersectional nature of how public backlash against scholars is experienced and addressed. Such awareness requires considering how personal characteristics, cultural contexts, forms of science communication and research fields interact to produce particularly severe quantities and qualities of backlash for researchers from marginalised communities, working in polarised and politicised science communication contexts and engaging with controversial science issues. Research in this area should situate backlash against scientists within the broader literature on digital harassment to examine how intersectional dynamics shape both similarities and differences across public-facing targets [e.g. Valente, 2026].

Overall, we call for a culture shift that recognises and understands public backlash as an 'occupational risk' of science communication that requires appropriate mitigation and protective supports. This shift will require more thoughtful, reflexive and intersectional approaches when developing science communication incentives, policies and best practices, as well as more meaningful involvement from the higher education, research institutions and funding bodies who increasingly mandate public engagement.

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