nature biotechnology

Standing up for science

Smear campaigns against those speaking out against scaremongering on genetically modified (GM) crops highlight why support for scientists involved in public outreach is so important.

A new front has opened in the public relations war over GM crops. Forty US scientists have been barraged with Freedom of Information requests by activists—requests that the Union of Concerned Scientists claims are little more than harassment and intimidation, with the intent of disrupting and delaying their work. These scientists have been targeted because they speak inconvenient truths about GM technology. But whether in GM crops, vaccines and autism, climate science or nuclear power, scientists who speak out need to get used to being targeted by mudslingers; it is part of today's 24/7 world of spin and instant controversies. If outreach from scientists can counter misinformation, the communicators need to be equipped for that job.

The views of the public and scientists on GM food are worlds apart: a Pew Research Center report in January 2015 showed that only 37% of the public believe that GM foods are safe (whereas 89% of scientists do). Anti-science activists want to maintain that gap.

Earlier this year, the activist organization US Right to Know (USRTK), bankrolled largely by a $47,500 donation from the Organic Consumers Association, submitted Freedom of Information requests asking certain US academics for e-mails dating back to 2012. This was to ascertain whether their 'messaging' was being coordinating with 14 companies, including Monsanto, Syngenta, DuPont, Dow and other biotechs, food industry trade groups and their communication firms. The academics had all contributed to an industry-backed website called GMOanswers.com and/or had spoken out against California's GM food labeling proposition. Over the summer, the activists broke their 'news'.

These headlines focused on Kevin Folta, a University of Florida researcher, because USRTK leaked his e-mails to three journalists. Two of them co-posted a *PLOS* blog (now removed), while the third wrote a front-page *New York Times* news story highlighting a $25,000 donation from Monsanto to Folta's institution. In both cases, the reporters cherry-picked sentences from several thousand e-mails, highlighting Folta's communications with Monsanto, often out of context, to insinuate that he is an industry shill—and thus presumably unfit to talk to the public.

Folta broke no laws. The Monsanto funds were a donation to his university's Foundation outreach program. They were tied neither to him directly nor to his research. His conflict of interest disclosures were wholly compliant with his university's rules. He never used industry funds for personal gain. Yes, he did have interactions with companies, and he is involved in a communications program that receives funding from industry (as well as from numerous private individuals, foundations, farmer bureaus and the US Pork Board, etc). None of this is shocking or, indeed, unusual.

What Folta didn't realize, however, is that compliance with legal requirements for transparency is still not enough to stay clean in the GM 'debate'. Industry has been blamed for everything from farmer suicides to lacing milk with growth hormone and pesticides and Monsanto has accrued more slung mud than most. Any association with Monsanto makes Folta dirty in the eyes of journalists and their public.

Folta is a gifted communicator—one of the rare scientists who has engaged the public, with over 12 years experience behind him. Not someone who merely discusses public engagement; but someone who actually communicates directly with non-expert audiences—at science fairs, in schools, at retirement homes, in blogs and podcasts. The tragedy is the harassment that he and his family have experienced in recent weeks will cause many potential researcher/communicators to duck back under the parapet.

This is how demagogues and anti-science zealots succeed: they extract a high cost for free speech; they coerce the informed into silence; they create hostile environments that threaten vibrant rare species with extinction.

The dominance and nature of online media undoubtedly contributes (>50% of Americans now get their science news online). Word-bites and click-bait mean less space and shallower coverage of anything scientific. Internet access has meant that science desks are apparently not needed in news organizations (except, oddly, in the UK). In truth, the public has never read science journals—but search engines and apps that prioritize content by popularity and immediacy mean that gravity in news is superfluous. Misinformed propaganda now floats unfettered across the globe at the speed of electrons.

Industry hasn't helped itself much in media management, either. Scandalous corporate bias in research has fomented suspicion from both the media and the public about any academic ties with industry, as Kevin Folta can attest. This means that industry funding of science communication is a nonstarter.

So what about increasing non-industry funding for real public engagement? It would certainly be difficult to decrease it: most UK and US research funders already spend <1% of their budget on engagement, with 0.1% being more typical (the Wellcome Trust, a charity, is an exception, spending around 5% of its budget). Without incentives, the science community will not divert scant research funding to outreach. Funders must reward outreach or make continued funding contingent on it; communication training will, in many cases, be essential.

And scientific publishers can help, too. The likes of Elsevier, Wiley and Springer Nature struggle in the internet age to justify themselves as essential arbiters and disseminators of science: why not strengthen their roles as organs of outreach or academies of engagement? Nature's original mission, after all, is to "place before the general public the grand results of scientific work and scientific discovery."If we are to have a thriving science-based society, there is an urgent need to work on the public understanding of science. But it may be prudent to start by improving scientists' understanding of the public and what it means to 'go public'.