



Stand up for science

This year showed that good communication can make you a leader, and a better scientist, says **Nancy Baron**.

Back in 2001, I sat at the rear of a classroom with Jane Lubchenco, co-founder of the Aldo Leopold Leadership Program, while scientists stepped forward to share their fears and failures concerning communicating with the media and policy-makers. “I get a lot of calls from the press, and I don’t return most of those calls,” confessed Margaret Palmer, a restoration ecologist at the University of Maryland in College Park. A wave of sympathetic

laughter rippled through the audience.

After that two-week communications training workshop, Palmer decided to change her ways. Earlier this year, she co-authored a paper challenging US government policies that allow irreversible ecological damage through mountain-top mining in the pursuit of cheap coal¹. An avalanche of attention included an invitation to appear on the satirical television show, *The Colbert Report*. This time Palmer returned the call.

Despite Stephen Colbert’s bombastic efforts to disarm her, Palmer laughed, leaned in and scored a series of carefully prepared points while 1.2 million viewers watched.

GRACIA LAM

Palmer has become well known not just as a scientist, but as a leader. Her prominence has helped the University of Maryland become the finalist, pending formal approval by the review board, for a prestigious US National Science Foundation-funded (environmental synthesis research) centre to produce policy-relevant science with the active participation of decision-makers. In other words, science designed to make a difference.

This year, more than ever before, a chorus of voices has been summoning scientists to emerge from their laboratories and become better communicators. Little has been said about one important reason for doing so: the intrinsic link between communication and leadership. It’s no coincidence that environmental scientists who lead the pack, both within academia and beyond, are good communicators. These scientists know how to articulate a vision, focus a debate and cut to the essence of an argument. They can make a point compelling, even to those who disagree. They talk about their science in ways that make people sit up, take notice and care. After a decade of working with scientists as a communications coach and trainer, I am encouraged by the increasing number of scientists who are now chiselling doors and windows in the ivory tower to reach out. A new breed of communication-savvy researchers is emerging — albeit perhaps not fast enough.

For scientists who would be agents of change, communication is not an add-on. It is central to their enterprise. They begin with a goal in mind, frame their research questions to produce useful results and think about how they will disseminate the information. Yet learning to communicate is a critical life skill not typically taught as part of scientific training. It should be.

SPOTLIGHTS OR HEADLIGHTS?

This year, during the ‘Climategate’ affair, climate scientists froze in the face of scandal, only to become the piñatas of sceptics and deniers. Bashing these scientists continues to be a favourite pastime of the Tea Party politicians in the United States, despite those involved being cleared of wrongdoing by several independent review panels. Any vindication has been largely ignored because, as Mark Twain purportedly said: “A lie can make it half way around the world before the truth has time to put its boots on.” Now, after losing ground in the court of public opinion, climate scientists are finally rallying — stepping up to answer questions, address misconceptions and actively counter misinformation and deception². One group of scientists has set up a rapid-response team promising quick turnaround to queries from

government officials or the media³. The American Geophysical Union relaunched a climate question-and-answer service for the United Nations climate talks in Cancún, Mexico, earlier this month — to address questions of science, not policy⁴.

These are valuable steps to try to ensure scientific accuracy in the face of heated political rhetoric and wild conspiracy theories. But alone, they aren't enough. It's important to remember that not answering what policy-makers want and need to know leaves a void — one that contrarians are only too happy to fill. I concur with the late Stanford University climatologist Stephen Schneider's view: "Staying out of the fray is not taking the 'high ground'; it is just passing the buck." He believed that it is both possible and important to comment on policy without compromising scientific integrity. He would often say: "If you are asking me as a scientist, I would answer it this way ... If you are asking me as a citizen, I would say ..." In this way he made his point without overstating his science, and became extremely influential.

The Deepwater Horizon oil spill in the Gulf of Mexico illustrates how other scientists who have devoted time to thinking about communication have risen to positions to help lead policy. Lubchenco, now the administrator of the National Oceanic and Atmospheric Administration (NOAA), was an early advocate for scientists to communicate (see page 1024). In her call to arms — a 1998 paper in *Science*⁵ — she entreated scientists to be more forthcoming and share their research to benefit government, managers, policy-makers and society at large. Next she helped launch the Aldo Leopold Leadership Program and the Communication Partnership for Science and the Sea (COMPASS). Both of these initiatives help scientists connect with the media and policy-makers and deliver a bottom line to those with little time or patience.

As the first marine ecologist to lead NOAA, an agency of about 12,800 employees, Lubchenco knew her task was daunting. The oil spill provided a real test. Even this veteran communicator could not control how the media presented mixed messages and rapidly unfolding events. In August, Lubchenco was criticized for painting too rosy a picture of how fast the oil was being dispersed. Her message of "do not prematurely prejudge the impacts" was lost in the media clips. Lubchenco persevered, consistently reiterating what was and wasn't known about the oil, its effects and its final fate. By November the message was picked up. Her experience gave her the patience and persistence needed.

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Scientists with a history of interest and practice in communication continue to have important roles in the oil

spill's ongoing saga. Donald Boesch, president of the University of Maryland Center for Environmental Science, is one of only two scientists on US President Barack Obama's seven-member commission on the Gulf of Mexico oil spill and offshore drilling. He was probably chosen from many qualified scientists because of his communication skills. Boesch is known for his ability to talk to people — from all walks of life — in a way that compels them to act. He is sympathetic, analytical and adaptive rather than superior, doctrinaire and inflexible. And he readily admits that he learns from his failures as well as from his successes.

Boesch has taken criticism from some peers for being too much in the public eye. He says the rewards of knowing that he is making a difference are worth it. On numerous occasions, a governor has told him about a recent piece of scientific work in the news, not realizing that Boesch had brought it to the media's attention in the first place. Boesch knows that the media helps to set the agenda of policy-makers and the public, and uses that system accordingly. Boesch hopes he can help guide the commission with a rigorously documented report that recommends actions to improve human and environmental safety. But

"It's important to remember that not answering what policy-makers want and need to know leaves a void."

it is his ability to communicate those recommendations, rather than his ability to help compile a report, that will ultimately make a difference. Pursuing communication as a high priority sometimes brings turbulence to academic careers. When something gets widely reported, the subsequent discussion in talk radio, television and the blogosphere can distort the facts like a funhouse mirror. Defending oneself can eat up valuable hours. Attacks can come from industry, ideologues or even colleagues.

Boris Worm, a marine ecologist from Dalhousie University in Halifax, Canada, for example, faced critiques that he had 'overreached' his results in two papers^{6,7} about fish depletion that got a lot of public attention. Instead of getting defensive, he engaged with his critics — and ultimately ended up collaborating with them⁸.

Most scientists I know who have felt such backlashes have few regrets. They dust themselves off and respond with more and better science. Their concern for the environment trumps their fear of criticism, and the progress they see in policies justifies their efforts.

Not every scientist wants to step up to the microphone — nor do they all need to. But for those who aim to change the world — and many graduate students and postdocs

do — some changes to the academic system would help. If young scientists are going to hone communication skills, they need the support of senior scientists to protect their interests and reputations at crucial junctures in their careers. In choosing an adviser, they should align themselves with scientists who have solid credentials and who share their values about outreach. Increasingly, many senior scientists are developing communication courses for their students that range from one-day workshops to accredited courses.

TIME WELL SPENT

In my work with scientists, I often hear that they cannot afford the time to work on their communication skills, with their hectic, research, publishing and teaching schedules. I see it another way: they cannot afford not to.

Many of the most prolific and accomplished scientists have risen to the top of their field by conducting significant, relevant research and working out how to communicate it within their discipline and beyond. They know the value of being quizzed by Congress or the media, even if at times it can be uncomfortable. Going public forces them to distil the essence of their work and to think harder about the questions — what is known and what is left to discover. Worm's philosophy is that engaging with thoughtful criticism — even if it seems harsh in the media spotlight — "makes everyone think more deeply and makes us push harder against the limits of the unknown".

That's why sharpening communication skills has value beyond increasing public understanding. It can breach interdisciplinary boundaries within science and help colleagues with different viewpoints catch a glimpse of a bigger picture. Articulating vision and common goals has long been a cornerstone of leadership on the battlefield. Scientists would be wise to adopt a similar strategy. Being a good communicator is not a trade-off. It makes you a better scientist. ■

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1. Palmer, M. A. *et al. Science* **327**, 148–149 (2010).
2. Bowman, T. E. *et al. Science* **330**, 1044 (2010).
3. <http://www.climateapidresponse.org>
4. AGU Release No. 10–37 (2010); available at <http://go.nature.com/av9xng>
5. Lubchenco, J. *Science* **279**, 491–497 (1998).
6. Myers, R. A. & Worm, B. *Nature* **423**, 280–283 (2003).
7. Worm, B. *et al. Science* **314**, 787–790 (2006).
8. Worm, B. *et al. Science* **325**, 578–585 (2009).

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