Scientist Citizens

PRESIDENT OBAMA’S INAUGURATION SPEECH DELIGHTED SCIENTISTS WHEN HE STATED, “WE WILL restore science to its rightful place.” But he went on: “What is required of us now is a new era of responsibility…. This is the price and the promise of citizenship.” For scientists, one often-overlooked responsibility is explaining their work to people. This is not an unreasonable price for receiving public funds to do research. And it promises to combat ignorance, guide sound policymaking, and garner more support for science, while simultaneously inspiring and recruiting new young scientists. Now more than ever, issues such as climate change, obesity, stem cell research, green technology, and evolution are migrating from scientific journals to the non-science community, from school halls to the halls of Congress. It’s critical that scientists venture beyond their laboratories to put these issues into the correct contexts and help the public understand what is known, unknown, and under debate.

But the walls of the ivory tower remain formidable. Just last month, for example, an editorial in Analytical Chemistry commented that federal funding agency requirements for outreach detract from young scientists’ ability to conduct research and think deeply. Lack of time is an obstacle for young scientists, but scientists are no more overtaxed than many professionals are. A more entrenched obstacle is that the academic tenure process claims to evaluate research, teaching, and service, but in practice, service is rarely expected or rewarded. In fact, reviewers are well versed in recognizing good research but have little ability or data to evaluate outreach.

Universities must begin to give more than lip service to the service component in tenure evaluations. Land-grant universities, for example, specifically make cooperative extension work part of some faculty members’ jobs. At the least, universities and professional organizations should devise detailed guidelines for evaluating the amount, quality, and effectiveness of outreach, so that peers can recognize it when they see it. Universities should also integrate communications into young scientists’ basic training. Like lawyers in courts, physicians in hospitals, or baseball players on the field, scientists speak an insular language that is unknowable and intimidating to the uninitiated. As the former Editor-in-Chief of this magazine, Donald Kennedy, wrote: “Science and technology are increasingly relevant to public policy, and unless those who speak for science can be understood, the policy decisions are likely to be wrong.”

At Stockholm University, all new Ph.D. students in environmental and climate sciences are now offered training in speaking with the media. Stanford University’s School of Earth Sciences has launched an innovative program to train graduate students in similar skills. The Woods Hole Oceanographic Institution offered a graduate student course co-taught by scientists and journalists called “How Not to Write for Peer-Reviewed Journals: Talking to Everybody Else.” For more established scientists, professional programs exist: The Aldo Leopold Leadership Program, for example, has provided media training to a growing nucleus of more than 100 mid-career environmental scientists.

Such programs would provide incentive (or at least diminish the disincentive) for scientists to participate in outreach. Rather than viewing funding agency outreach requirements as annoying and vague, scientists can view them as opportunities to find ways to inspire young minds (and themselves), encourage underrepresented groups to enter science, establish collaborations between academia and industry, or otherwise enter the messy fray of democracy. The means by which the public and policymakers get scientific information have changed dramatically. The once linear transmission of research findings from the scientific community to the media, public, or policymakers has been transformed into a chaotic realm in which information (and disinformation) and opinions are voiced through traditional and electronic sources (real-time blogs, chat rooms, and wikis) and not necessarily by the scientific community. Thomas Jefferson wrote, “An enlightened citizenry is indispensable for the proper functioning of a republic.” If we believe that science has a rightful role in our society, then it is the scientific community’s responsibility to enlighten the public as to why and how. That doesn’t mean scientists need to be celebrities, politicians, or lobbyists—just citizens.

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