

# Act for science

This year's American Association for the Advancement of Science (AAAS, the publisher of *Science*) Annual Meeting in Boston (16 to 20 February) promises again to be one of the world's most recognized forums for communicating the excitement, beauty, power, and relevance of science. Attendees from dozens of countries, from nearly every field of study, and from all sectors will share ideas and build collaborations. Attendees share a cherished understanding that science practiced with diligence and reverence for evidence illuminates the human condition, leads to measurable progress, and provides the best insurance against error and deception. These amazing benefits depend on open communication as a fundamental ingredient of science. This is why President Trump's recent immigration ban has been a jolt across the global scientific enterprise.

Although the ban may not become permanent, its effects are already being felt, even in the world of science. Some expected participants will not be attending the annual meeting. As I write this, I understand that a Sudanese scientist who is to be recognized for excellent work by women in developing countries will not be present for her award. Furthermore, the head of The World Academy of Sciences, also from Sudan, has cancelled his trip to Boston. There are an unknown number of other such cases. The denial of entry is a detriment for the individuals, and it is also an affront to science. To me, the very real damage to science outweighs the very thin claim of enhanced national security.

For science to be effective and provide its benefits to people, some fundamental principles must be observed and defended—among them, the freedoms of open communication, collaboration, and diversity of perspectives, all of which are disrespected by such travel restrictions. Scientists and others see a variety of troubling signs surrounding science, such as the exclusion from meetings of scientists with certain profiles (e.g., individuals from

any of countries specified in the ban), the unwarranted restrictions on communication by federal scientists with other scientists and the public, and most troubling, policy-making that is based on ideological assertion rather than on verifiable evidence. Public officials citing “alternative facts” leave scientists dismayed.

Nevertheless, in my experience, many scientists are hesitant to do anything beyond expressing general dissatisfaction. Their hesitation has several roots: fear of jeopardizing research funding, lack of time due to demands of their jobs, and not knowing how to bring about change. However, perhaps the greatest source of hesitation is the traditional scientist's unwillingness to venture beyond the comfort zone of the technical world she or he knows. To fight the immigration order would mean stepping into political terrain, a scientist will say; taking part in a public event to promote science could tarnish science or appear confrontational. Based on a long career in science, with a substantial interlude in elected office, I say that these are excuses for inaction. Taking action is the best course when science is threatened or when science can illuminate public issues. Scientists should



***“Taking action is the best course when science is threatened..”***

not fool themselves with the misconception that politics is dirty compared to the scientific enterprise, and they should therefore avoid the fight. Nor should scientists think that by standing back and letting the facts speak for themselves, they allow reason to prevail and proponents of flawed policies to wilt.

A scientist must take great pains to prevent ideology, bias, or wishful thinking from contaminating the collecting or analyzing of evidence—that is, one must avoid politicizing the science. But it is a fallacy to say the converse is true. One need not avoid—indeed, should not avoid—applying relevant science in political or societal situations where it can help address problems. The need to maintain the purity of the majestic scientific enterprise should not be used as an excuse for inaction.

**—Rush Holt**



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Editor's Summary

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