



LETTERS

Edited by Jennifer Sills

Political priorities

In October, we asked young scientists how political priorities affect their ability to do and communicate science. We received a range of answers, some frustrated by political interference, others optimistic about the ability of political attention to effect change. Although many submissions focused on pleas for more science funding, we have focused our selection below on more specific examples. Because of the

NEXTGEN VOICES

potentially sensitive nature of the question, we agreed to withhold the names of respondents upon request, after verifying their identities, to allow them to speak freely. In some cases we have printed excerpts of longer submissions (indicated by ellipses) and lightly copyedited original text for clarity. To read the complete versions, as well as many more, go to <http://scim.ag/NG17R>. Follow *Science's* NextGen VOICES survey on Twitter with the hashtag #NextGenSci.

NEW ZEALAND IS known for its unique biodiversity and the efforts that are put into conserving it. We cherish and protect our native species and we are merciless in our fight against introduced species. However, political sensitivity toward hunting and fishing groups in New Zealand can interfere with conservation efforts. Whitebait are the juveniles of five native species of Galaxiid fish that migrate from the sea upstream in spring. Three of them are considered as declining, and a fourth species is classified as threatened. Unfortunately, they are also delicious and a traditional spring meal. Because of the pressure to maintain the seasonal fishing activity and the associated market for this highly praised fish, conservation laws fail to protect them. At the other end of the spectrum, millions of dollars are spent every year to eradicate or control introduced mammalian species in New Zealand. But when mammals are big, tasty, and fun to shoot, as is the case for



ILLUSTRATION: JOHN HOLCROFT

feral pigs and deer, then there are no plans to eradicate them. The fact that these species can disrupt native ecosystems and facilitate the spread of other invasive species seems trivial compared to the value of the hunting industry.

Stéphane Boyer

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...THERE IS A story in Argentina that illustrates the attitude of the government toward science: Twenty years ago, the Minister of Economy sent a researcher to “wash the dishes” because she was studying the effect of their policies on society (and because she was a woman). Until recently, many scientists left the country for better conditions. Luckily, science has now become a political priority; the number of Ph.D. students and researchers has increased, more than 1000 researchers have returned to the country, and we have seen an extraordinary investment in infrastructure and scientific projects. Argentina’s political priorities are essential for encouraging science.

Lilén Yema

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IN THE FIELD of microbiology...funding priority is given to projects that research the small subset of microbes that cause disease. This narrow mindset has impeded the search for industrially relevant microbes. Nonpathogenic microbes have revolutionized disease theory and treatment. For example, the discovery of restriction enzymes in the humble bacteriophage spawned the recombinant technology revolution and has allowed us to affordably produce drugs such as insulin in *E. coli*. Another example lies in the unicellular pond critter *Tetrahymena*, in which telomeres—the age-monitoring caps on DNA—were discovered. The regeneration of telomeres is a hurdle all cancer cells must overcome. By studying this microbe, we are unlocking the mysteries of aging and oncogenesis. I would implore others to see the importance of discovering what understudied microbes have to offer us....

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SUBMIT NOW: MEASURES OF SUCCESS

Add your voice to *Science*! Our new NextGen VOICES survey is now open:

Do publications (number and impact) convey the true value of an early career scientist? If so, how should these numbers be used? If not, how should young scientists be evaluated?

To submit, go to http://scim.ag/NG_18

Deadline for submissions is 12 February. A selection of the best responses will be published in the 1 April issue of *Science*. Submissions should be 100 words or less. Anonymous submissions will not be considered.

IN MEXICO, RESOURCES are biased toward “renowned” universities. For renowned universities, rules and regulations are more relaxed. Favored universities cover the costs of research and attendance for researchers and students, whereas those universities that do not receive enough resources prioritize certain areas or departments, neglecting many others....

Rigoberto Medina Andrés

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...THE POLITICAL LEADERS of the local government of Chongqing, China, vigorously promote a low-carbon economy and sustainable development to mitigate environmental pollution. Accordingly, research grants focused on this issue were supported by the government, and our group obtained a grant for a project about industrial park planning and design....In my view, political priorities based on correct decision-making and market requirements are beneficial for researchers.

Jingzheng Ren

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...PHARMACISTS POSSESS the scientific background and training to educate the public on health-related scientific matters....However, American pharmacists are ineligible for reimbursement for these services under Medicare Part B. Legally, pharmacists are not recognized as providers under Section 1861 of the Social Security Act. Instead, the majority of their compensation

is tied to drug sales and their traditional dispensing role. This political issue, unknown to many, limits patient access to these services. As a pharmacy student, I believe that we could do more, given our extensive clinical and scientific training, and that our patients would see that benefit through fewer unnecessary hospitalizations, better quality of care, and decreased health care costs.

Joseph M. Cusimano

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I BECAME AN expatriate to learn to do science. Simply, the Dominican Republic does not offer graduate studies in my field. The crude reality is that, to do science, I might have to remain abroad after finishing my studies. “We have neither conditions nor support for doing research here,” the director of a national research institute once told me. I want to believe that things are changing, albeit slowly. For example, a few years ago, the Ministry of Education was split into two institutions. The new ministry specializes in higher education, science, and technology, and it funds small scientific projects. Still, there is much to do, starting with having good education in science just as we have for baseball....

Luis B. Gómez Luciano

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...IT IS NO SECRET that Canada’s previous government was blatantly accused of “muzzling” government scientists, reducing and reallocating funding to research institutions, and directly limiting and dictating how much research was conducted and in what areas research funds would be allocated. The previous regime’s attitude toward research led to scientists who had less money to work with, research that was disproportionately skewed toward certain sectors of the economy, and most troubling of all, restrictions on communication....I don’t think that prioritizing research to drive political agendas is what science is all about....

Abraham Munene

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...THE TOXIC ENVIRONMENT of political brinksmanship that has grasped U.S. federal politics has caused anxiety for countless scientists, regardless of funding source.... Yet when I read of Syrian scientists forced to withdraw seeds from the Svalbard Global



Seed Vault or Iranian scientists juggling a web of political and budgetary hurdles, I cannot help but be grateful. Although we may have a politically volatile climate here in the United States, the amazing consistency and reliability of resources and personnel is something to be treasured.

Keith C. Heyde

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AS A PH.D. student in genetics, I am concerned about the political decisions being made in response to public sensitivity that extends beyond a layperson's awareness of science. For example, a national debate about genetically modified food (GMF) has arisen in my home country, China. At the beginning, it was simply about safety. However, due to inefficient communication between scientists and the public, many people began to be firmly convinced that GMFs are potentially hazardous to health. Shortly, it became a public crisis of trust in scientists, especially agriculturists and geneticists....The consequences are so serious that funding from various sources has been cut, many laboratories have been closed, and many scientists are obliged to change their research focuses....

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I HAVE TWO choices when doing my research. I can do a plant sciences project in which the final product is a transgenic. I cannot use it as a technology because the government policies are against genetically modified organisms, so all my funding and hard work will be wasted from an

applicability standpoint. However, I will publish a high-impact research paper that will be lauded and I will be promoted with merit. On the other hand, I could use institutional funds to develop a technology as mandated by the organization and government policies. The work may have low international publication impact, and my promotion will be delayed, but it will be highly applicable to a marginal population. Which option would you take?

Name Withheld

India

IN MAINLAND CHINA, the use of the Internet is limited in the name of "maintaining stability" or "cyberspace purification"... Quite a lot of academic information on the Internet is free to access abroad but inaccessible in mainland China. Even Google is disabled. The country's largest search engine, Baidu, which is extensively used by the Chinese, fails to find much foreign information. Internet regulation supposedly contributes to the unified leadership in politics, ideology, and cognition. However, such a situation can harm academia, resulting in a decrease of pluralism and screening potentially valuable information that could foster creative and critical thinking....

Xin Miao

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THE CONSTRUCTION AND operation of dams is often politically charged, and related controversies have fueled important scientific inquiries. What are the ecological effects of dam removal? How do dams affect fish populations? Policy-makers and managers can help scientists ask nuanced, management-relevant questions that work

toward addressing these controversies. For example, studies that quantify ecological responses to different dam management regimes are more meaningful when the dam operations tested are feasible in a larger policy context. Cooperation and collaborative exchange between scientists and policy-makers can be mutually beneficial in this way; scientists formulate policy-relevant questions, and policy-makers get policy-relevant scientific information. I have experienced this type of exchange, and I believe that my research is better for it...

Bridget R. Deemer

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AS A CLIMATE ADVOCATE working for a political organization, all of my communication has to be carefully constructed to work with political messaging priorities. Although we, as scientists, would hope that a sufficiently well-supported and clearly communicated argument would regularly convince policy-makers, this is simply not the case. In order to effect change, we have to work with the system we have, not the system we want, and that means communicating politically. Results that would be objectionable to certain groups need to be minimized through careful framing of studies, and we select only projects that are very likely to produce a politically beneficial result.

Name Withheld

United States

FOR VARIOUS HISTORICAL reasons, the Southeast region of Brazil is privileged in terms of financial resources and therefore responsible for most scientific publications, led by the University of São Paulo. However, for the past 10 years, the National Council for Scientific and Technological Development requested that at least 30% of the total amount granted for science projects should go to institutions placed in less privileged regions. This political priority made a huge impact in expanding science production and graduate programs, giving opportunity to younger and talented scientists to make high-quality science in an environment of more equality, and decreasing the educational deficits in less advantaged areas. Northeastern institutions are now listed among the best national institutions, publishing in the most prestigious journals, filling a growing number of patents, and receiving international awards of excellence.

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