LETTERS

Assembling the future

U.S. Under Secretary of State for Global Affairs Timothy Wirth points to "recent successes" in international science and technology policy-making, including progress on the international space station (above, artist's depiction of the first space shuttle assembly flight for the space station, scheduled for July 1998). Other writers lament what they see as "profound lack of interest" in international science and technology policy on the part of U.S. "junior foreign service officers" and "ivory-tower academicians." A leading ecological economist comments on economic models that "do not inform us of the consequences of exercising our passions." And readers discuss aspects of habitat conservation plans, including funding and the rights of private property owners.

Science, Technology, and Foreign Policy

I am writing in response to James Watkins' Policy Forum "Science and technology in foreign affairs" (1 Aug., p. 650). Since the end of the Cold War, the United States has made necessary shifts in our foreign policy agenda, which enable us to focus much more on vital global issues, such as the environment and science and technology. Science plays a critical role in our foreign policy by providing the foundation for our initiatives and negotiations on forests, chemicals, oceans, health, climate, and many other issues. Science informs and defines our foreign policy in these areas, undergirding our ability to serve as effective international actors.

The State Department, as the President's representative on U.S. foreign policy, represents U.S. science and technology interests in the international arena. Some of our recent successes in international science and technology policy are as follows:

- On climate change, new scientific knowledge over the past 5 years has led to broad international acceptance that human activities have an impact on the global climate. This, in turn, has provoked a series of international negotiations, led for the United States by the State Department, to solve this critical problem.
- The international space station and other important space programs are moving forward, with more international partners than ever before. The State Department plays a critical role in facilitating the international agreements that were the foundation for these activities.
- The common agenda with Japan, which President Clinton has called "the most successful partnership in the world," has led to joint efforts in conservation, the eradication of polio and other diseases, and studies of zero-emission technology. This is a State Department–led effort, in coordination with many other agencies.
- Last year, an international treaty on databases was being considered in the World Intellectual Property Organization (WIPO) that the U.S. research community feared would harm their access to data. The State Department initiated the effort to ensure that the science community's concerns were heard, and, as a result, the draft treaty was never even discussed formally at WIPO (D. Normile, News, 15 Nov. 1996, p. 1074; J. Liedes, Policy Forum, 11 Apr., p. 223).

Although we have had many successes, we can do better. I have asked both my staff and the Bureau of Oceans and International Environmental and Scientific Affairs (OES) to focus even more specifically on integrating science and technology into our foreign policy agenda. Over the next few months, we will more actively engage the domestic science and technology community to better understand their goals and to determine how the State Department can become more involved in helping achieve them.

The recent reorganization of OES shifted the responsibility for science to a higher level within the OES and redistributed—not eliminated—the science and technology functions. Nonetheless, we are reviewing the current organization of that bureau to ensure that the priority issues of the science and technology community are dealt with at an appropriately high level and with sufficient staff resources.

Finally, we are considering a variety of incentives to attract more of our talented, experienced foreign service officers to environment, science, and technology positions at our posts overseas and here in Washington.

We take our responsibilities in the area of science seriously, and we are pursuing ways to ensure that the United States continues to be the world's preeminent player in science and technology.

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Watkins' Policy Forum is a much needed reminder of the lamentations contained in a 1992 Carnegie Commission report (*1*). Scientists and science policy experts alike lament the lack of science and technology input in our foreign policy, and we can recount an unending list of the ills and consequences of this neglect. But we will have to do more than seek mandates to overcome these deficits.

Within the foreign policy establishment, from political appointees down through the senior executive service, it appears that there is a profound lack of interest, preparation, and resources concerning science and technology in both national and international affairs. Even if the President directed the implementation of all of the Carnegie Commission's 1992 policy recommedations, there would likely not be enough staff, expertise, or will to follow through. The majority of junior foreign service officers have little preparation in science policy, the macroeconomic dimensions of science and technology, the structure of the international scientific enterprise, and related issues. And it would probably take a generation to institute changes in education programs and university curricula to provide for this type of training.

As we seek to justify the national science enterprise to our political leaders, we must cast a wider net to demonstrate the filigree of linkages that sustain us internationally. We need more studies, more data, more expertise, and more commitment to uncovering and characterizing the benefits of an enlightened international science and technology policy.

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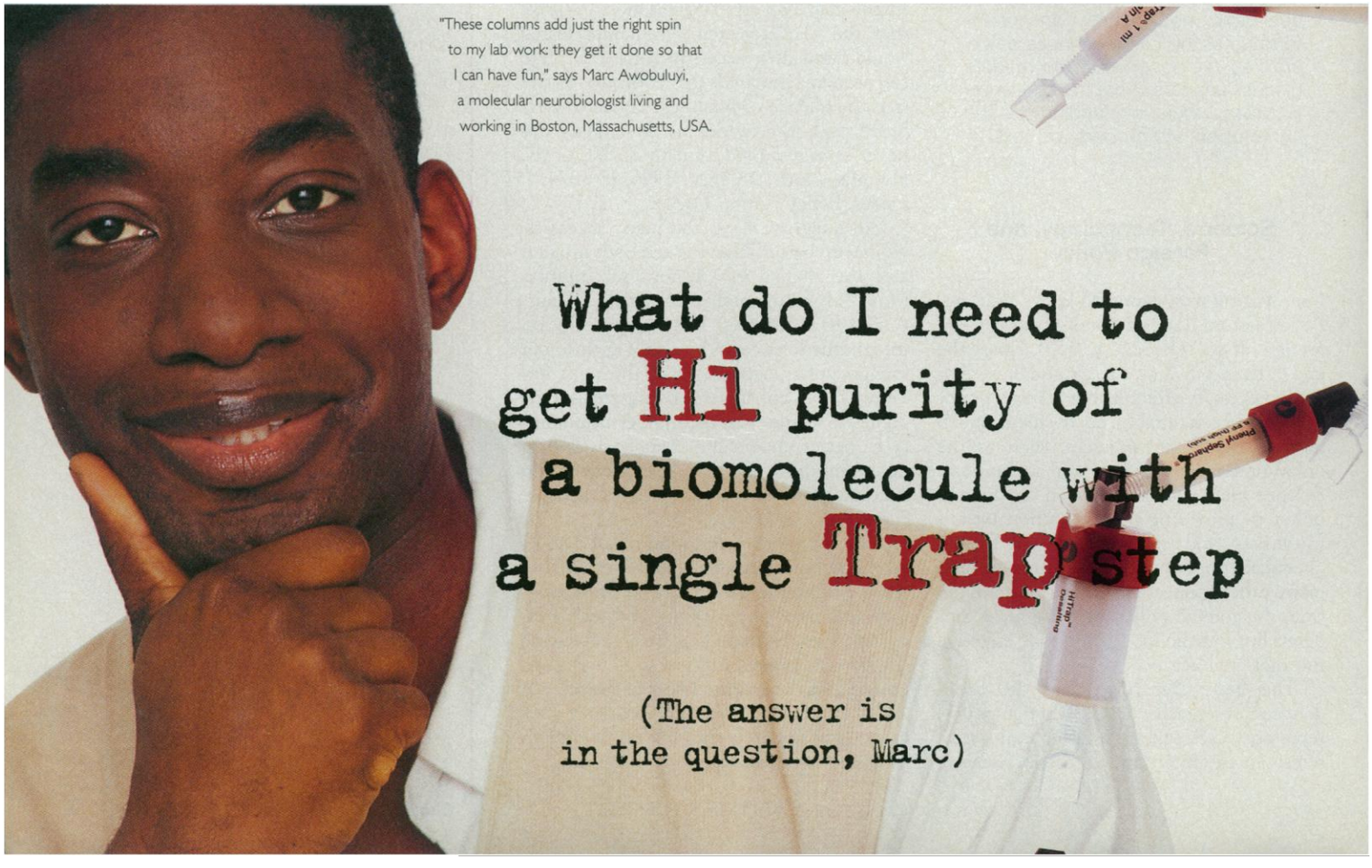
References

1. *Science and Technology in U.S. International Affairs* (Carnegie Commission on Science, Technology, and Government, New York, 1992).

I read Watkins' Policy Forum with keen interest. It should come as no surprise that the deterioration in foreign affairs and international science policy as an intellectual, as well as diplomatic, endeavor is a direct consequence of the pervasive mercantilism that has afflicted institutions from universities to "think tanks" to the State Department itself. The United States continues to hire "diplomats" who are political appointees and have little (or no) foreign language experience related to their positions. When our core of foreign affairs experts are essentially bureaucrats; when our science attachés at major embassies around the world are primarily neither research scientists nor international affairs experts; when our graduate students and postdoctoral fellows read scientific articles only in English (if that) because our ivory-tower academicians preach that international studies and foreign languages are solely necessary for humanities or business majors; and when the pervasive anti-intellectualism afflicting our society, govern-



ment, and institutions leads to the corrupting of our foreign policy endeavors, what *is* to be expected from an American contribution toward globalization, environmental conservation and management, and the reduction in nuclear materials that is ostensibly supposed to satisfy a widely desired, but rarely honored, belief in how science, technology, and foreign affairs, in tandem, can lead to the betterment of our planet?

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Economics and Informed Passions

In the letter "Environmental economics and ecological economics" (18 July, p. 300), Trudy Ann Cameron argues that economists " 'fiercely resist' . . . the temptation to make value judgments regarding the choices that people ought to make" and that "[s]ome aspects of ecological economics do not fit this mold." Economists, by the very nature of their training and the assumptions behind their dominant model, value individual choice over collective choice. This and other shared values among economists affect the "objectivity" of their work, but, because they are shared, they may not be recognized. We ecological economists are a diverse group of economists, ecologists, and systems thinkers who are very aware of the values associated with the multiple models we use. Environmental economists' "dispassionate" "focus on matters of fact" have led them to focus on models which assume that current generations hold the rights to resources and environmental services and that the current distribution of such rights between rich and poor is the one we would choose if given the choice. Their models, in short, do not inform us of the consequences of exercising our passions, should we wish to do so.

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Critical Habitats on Private Land

The Policy Forum by Fraser Shilling (13 June, p. 1662) criticizes the U.S. habitat conservation plan process, but also provides potential solutions. Shilling suggests that the endangered species listing process be speeded up and critical habitat be defined at the time of listing. He also suggests that the goal of a listing a species as threatened or endangered be recovery at a level higher than the minimum viable population. These suggestions assume that adequate and scientifically defensible data are available on wild populations and habitats. This is, in fact, rarely the case. Few species, even those that are fairly common game, have been studied enough to produce with good scientific data on population dynamics, habitat use, and so forth. The real solution is to have adequate available funds to conduct basic research on any and all species, no matter what the status of the species. Section 6 endangered species grants are rarely adequate to fund sound scientific research and are generally available from the U.S. Fish and Wildlife Service only "in the eleventh hour," contingent on congressional approval. The Teaming with Wildlife initiative is an example of a workable funding mechanism that—like the Pittman-Robert-