in an especially precarious position. In this decade, local support for infectious disease surveillance and studies has diminished as a result of budget restrictions.

In order for the transfer of technology initiatives to keep functioning, continuous foreign support for collaborative work between local and outside academic institutions, including aid for graduate studies, is of utmost importance. The long-term health of science and education in Nicaragua will depend on the continued influx of talented and well-trained young scientists, and this poses new demands for substantial and well-organized monetary support.

As a Nicaraguan citizen I have been approached by several researchers at the University of California, San Francisco, who have requested information about science and education in my country, and some have even offered personal contributions. As Nicaragua begins to set up a research agenda, it must be strongly supportive of these individual efforts.

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External Ethics for Scientists

Bruce Alberts, Kenneth Shine, and the national academies are to be commended for the June 1994 convocation at the National Academy of Sciences and for the attempt, through their Policy Forum of 9 December (p. 1660), to raise our consciousness about ethics internal to the practice of science. Some of their examples were penetrating and illuminating. On most major university campuses, the science, technology, and society programs are running regular courses for engineers and scientists on such topics. My guess is, though, that fewer than 100 students per year take them on any campus.

By far the more important aspect of ethics in science is not internal to science at all; the damage one can do by painting mice or forging a few data points is seldom long lasting and has little impact in time or space. What society is demanding is ethical behavior by scientists when they deal with society. Specifically, I refer to the increasingly common examples of egregious exaggerations about the value of some tiny bit of science to society, especially when reported by the mass media. The most dangerous duo in the world of science ethics is the combination of a scientist with few scruples and a headline-hungry reporter. My involvement with the Superconducting Super Collider debate taught me that a large fraction of Congress simply doesn't believe our rhetoric any more. The damage done to all of science by such exaggerations—internally, by shifting attention and finite budget resources, and externally, by confusing the public and policy-makers—is incalculable. Recall the high T_c superconductor flap even involving the President of the United States. Now, more than a billion U.S. dollars of research later, has the public gotten its money's worth? No! Preserving our ethics demands more than courses for students; we must act on them.

Shouldn't every single professional society have a "small claims court," where egregious errors in scientists' claims could be quickly adjudicated and corrected and the results passed on to the public? I have urged the national academies to deal with "external ethics for scientists." I trust they will do so.

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