for; (ii) higher rates of productivity and greater efficiency are better than moderation; and (iii) if it can be done, it probably should be.

In order to meet Lane's expectations of our long-term leadership and having "a civic role to play for the nation," we must first examine ourselves, as practitioners of science and technology. I propose we do this by asking ourselves simple questions that fit into the theme of contributing to a dream (American or otherwise). What have been the real effects of manufacturing and industry on the general well-being of the living things of our world? Do we operate in a sustainable manner (taking only the excess and leaving the rest to regenerate and produce more)? Do we expect to be able to continue growing (in rates of production and consumption) in a world of finite resources? If our current scientific and technologic practices constituted a threat to the well-being of human (and other) societies, would we advocate not using them?

Lane speaks of a one-third cut in nondefense research and development spending as "a rather risky experiment." A far riskier experiment is the one we are now engaged in: rapidly increasing our technological abilities and production-consumption without a concurrent long-term plan addressing sustainability and degree of impact on life. Scientists are notoriously skeptical and analytical. We would serve our civic role best by questioning the very technologies we have helped create. This could lead to guiding principles for sustaining the life of humans and other species. For what is a dream in a future with little promise?

Fraser Shilling
Chair, Committee on Conservation, Society for Integrative and Comparative Biology, (formerly the American Society of Zoologists), and Section of Molecular and Cellular Biology, Division of Biological Sciences, University of California, Davis, CA 95616–8535, USA

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Characterizing Math Education

With respect to the Random Samples item "Chinese math puzzle" (19 Jan., p. 297) concerning the poor math performance of U.S. children relative to their Chinese counterparts, we suggest there is one important reason, a different educational system. The Chinese system is "passive and intensive." Students do not have much freedom to choose what and how to learn. Most students in the same grade have to take the same courses at the same time. This is the passive part. The intensive part is related to an extensively systematic course content and homework. The two parts are designed, when combined, to enable a student to achieve a solid understanding and mastery of fundamental concepts and skills. This is possible because all students in the same classroom have a similar background. The American educational system, which could be described as "active and extensive," has its own advantages, but may be disadvantageous at the place where the Chinese system is the strongest.

Jian-Yun Fang
Department of Chemistry, University of California, Irvine, CA 92717, USA

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Research Productivity

In reviewing the National Academy of Sciences (NAS) report *Allocating Funds for Science and Technology* (*1*) to a Congress bent on cutting costs and taxes, I find no serious recommendation to improve the

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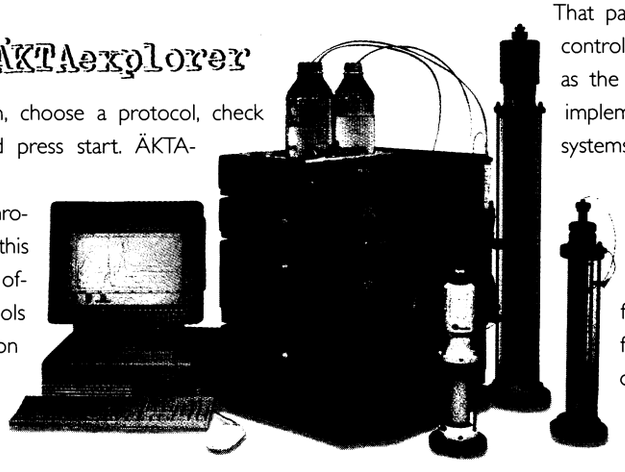

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