Letters

Stimulating Research

I want to publicly thank Richard C. Atkinson, director of the National Science Foundation, for his editorial in the 2 May issue of *Science* (p. 449) outlining a good case for tax incentives for research.

As is generally known, I have personally supported this position since I came to the Senate. I have openly argued that an improved economic climate for research in the private sector, where the after-tax rewards must justify risks, will benefit science and society in the long run.

Expanding a bit on Atkinson's well-stated analysis, I would like to emphasize that incentives for private sector R & D need not, ipso facto, hinder federally sponsored research activity. Perhaps what is needed to elevate our country out of a serious decline in innovation and productivity is a concerted two-track effort. Our problem is not a shortage of ideas, but removal of the many barriers to both private and public research and development undertakings.

It is clear that government cannot bear the entire R & D load by itself; reliance only on the federal sector to pull us out of our national technological malaise would, I believe, be a shortsighted policy and one which could not produce results matching the great potential of our nation's scientific community.

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Planning for Nuclear Accidents

The general point raised by M. Levenson and F. J. Rahn (Letters, 11 Apr., p. 131), namely, that evacuation after nuclear reactor accidents may not always be the best policy, is certainly valid. But they ignore reactor accident studies that already weigh staying indoors as a useful technique along with evacuation and other protective actions. For example, the state of New Jersey's nuclear accident planning effort has long since resulted in assessments of the potential plume release distance and dose regime for a variety of accident scenarios. Since doses differ over distance as a function of release rate, wind and weather, and other factors, the New Jersey plan includes different actions at different distances downwind from the release point, including specific attention to staying indoors for certain periods as the most effective way to reduce the radiation dose to people. In addition, the Environmental Protection Agency has commissioned technical studies on sheltering as one means to reduce radiation dose; I believe these are widely distributed to the relevant nuclear accident planning teams around the country.

There are often subtleties in the planning. For example, it may make sense, under some accident conditions, for people to be told to stay indoors during the time the radiation cloud (a major beta and gamma source) is passing overhead but then to be evacuated later to avoid an increasing dose from the (beta and gamma) radiation due to deposition of radioactive particles from the cloud onto ground and building surfaces.

Finally, Levenson and Rahn do a major disservice to the radiation planning teams in many states when they say "the public official faced with an evacuation decision has no technical basis for making such a decision." State emergency plans approved by the Nuclear Regulatory Commission before the Three Mile Island accident show that technical analyses are available to such officials. If anything, Three Mile Island has spurred additional work, so that the choices are probably better defined now than they were a year ago. That is not to say that nuclear accident planning is all that it should be. Improvements can and should be made. But to state that no relevant technical analysis has been done, is to mislead.

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Human Rights: Effective Measures

Many readers of *Science* may agree with Weisskopf and Wilson (Editorial, 30 May, p. 977) that—more often than not—U.S. scientists should choose to participate in Soviet-American exchanges rather than cut off contacts. But with that choice there is a serious obligation to use those contacts to help free the persecuted among our Soviet colleagues.

There have been vigorous protests on behalf of Orlov, Sakharov, Shcharansky, and several other prominent scientists. In addition to these there are the less visible Irene and Viktor Brailowsky, Aleksandra and Eitan Finkelstein, Yuri Golfand, Yuri Kalenov, Vladimir Kislik, the (separated) Lozhanskys, Naum Meiman, Grigory Rosenstein, Lev Shapiro, Evgeny and Rimma Yakir—and many others—on whose behalf we have not yet made enough systematic effort. Those of us who choose to participate in exchanges can protest the abuse of these Soviet scientists in the following effective way.

On the occasions when we meet Soviet colleagues, we should urge the release of a *particular* refusenik or improved treatment of a *particular* human rights activist. In addition, when we are in the Soviet Union, we should insist on visiting at least one Soviet dissident and, if possible, attending one of the dissidents' seminars.

In this advocacy we should be quite friendly, but we should insist on a rational discussion of these issues and on access to dissidents within the Soviet Union. When an insistence on recognition that dissidents do exist, and do have serious troubles, becomes a practice of American scientists, a strong message will get through to the Soviet leadership, if by no means other than the reporting of conversations by the monitors assigned by the Soviet government to scientific interchanges.

We believe that those who undertake even such limited confrontations will make their most useful contribution by refusing to participate in Soviet-American scientific meetings and by including among the reasons for their refusal the oppression of a particular Soviet colleague.

The AAAS Clearinghouse on Science and Human Rights will be glad to provide the curricula vitae of one or more Soviet scientists whose cases can most appropriately be advocated by us in a particular professional encounter. Write them at 1515 Massachusetts Avenue, NW, Washington, D.C. 20005, or call 202-467-5237, in preparation for any meeting you plan with Soviet scientists.

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