

LETTERS

Cancer Advisory Board

Some time ago, we wrote (Letters, 13 Aug. 1982, p. 585) expressing our concern about the appointment of new members to the National Cancer Advisory Board without due attention to the Board's scientific competence and its broad, balanced representation of scientists involved in cancer research and treatment. While the Cancer Act sets an upper limit on the number of members (12 of 18) who are to be scientists or physicians, it requires that those who are appointed be among the leading scientific or medical authorities in the study, diagnosis, or treatment of cancer or in fields related thereto. They should "by virtue of training, experience, and background be *especially qualified to appraise the program*" (italics ours).

We write again as the six 1984 Board appointees are being selected. In the past, names of candidates for Board membership were sought out by the Executive Committee of the National Cancer Institute (NCI) from the scientific community, with thoughtful attention paid to maintaining a balanced but diverse group of outstanding scientists. A slate of these candidates, approved by the National Institutes of Health (NIH) and by the Secretary of the Department of Health and Human Services (DHHS), was submitted to the President for appointment. Thus, with rare exceptions, new Board members proposed by NCI to meet the National Cancer Program's scientific needs came from the list of candidates approved by NIH and by the Secretary. In 1982, not a single candidate proposed by NIH and by the DHHS Secretary was appointed. Among appointees, the four members selected to represent scientists were practicing physicians, and only one held a faculty appointment at an academic institution. No member continuing beyond 1984 will have a Ph.D., and very few will have had experience as a principal investigator on an R01 or P01 program. None has served on a Division of Research Grants (NIH) study section. Yet, by law, the primary and the legal responsibility of the Board is to monitor the quality of the grant review process and to approve grants that may be funded by NCI.

Another important function of the Board is to advise the director on future directions of the institute. Of the \$1.022 billion budgeted for 1984, \$312,531,000 will support investigator-initiated research through R01 and P01 grants. This

funding will support a wide variety of basic research efforts relevant to cancer, including fundamental problems of gene expression, cell differentiation, basic pharmacology, and carcinogenesis. The continuing membership has an adequate representation of physicians but a most inadequate representation of leading scientists. For the health of the national cancer research program, as well as to comply with the legislative mandate of the Cancer Act, it is essential that the 1984 appointees be outstanding scientific authorities in the study of cancer or related fields. The list of candidates proposed by NCI and approved by NIH and by the DHHS Secretary includes investigators who meet this requirement. We urge concerned investigators, as well as concerned scientific societies, to express their views so that the appointment of quality scientists to the Board is ensured. The quality and objectivity of the review of cancer research proposals and the future direction of cancer research are at stake.

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Defensive Weapons Development

I learn through R. Jeffrey Smith's article "Star Wars plan gets a green light" (News and Comment, 25 Nov., p. 901) that I have made a proposal "along [the] lines" of "studying or developing a de-

fensive weapons system jointly with the Soviets."

I have repeatedly urged the joint development of defensive systems with our *allies*, but never have I suggested such an effort with the Soviets. In August 1983, Eugenij Velikhov, Antonino Zichichi, a physicist with the European Organization for Nuclear Research (CERN) and director of the E. Majorana Centre for Scientific Culture in Italy, and I did sign a joint resolve on a related but distinctly different subject.

The results of Soviet and American research on the effects of a large-scale nuclear war, ascertained on the basis of different computer models and, perhaps, different descriptions of variables, showed a marked disparity of results. Since a detailed and accurate report of these consequences is of utmost importance, we determined to make an extensive joint effort to identify and clarify the divergent factors. We also propose to undertake a joint discussion to differentiate between aggressive and defensive weapons systems, a point that in press coverage has given rise to unnecessary confusion.

To my mind, cooperating with the Soviets to obtain the most rigorous scientific data on effects of nuclear war is both extraordinarily necessary, completely feasible, and totally dissimilar from attempting joint military research. Clarification of weapons technology on the basis of its potential utilization is also important. But joint work with the U.S.S.R. on weapons systems beyond the discussion of generalities has none of these benefits.

I congratulate the editors of *Science* on the marked improvement, during the past year, in their coverage of the potential of defensive systems research. Perhaps in another year, they may even give up the misnomer "Star Wars" in discussing the advanced technology of deterrence based on protection.

EDWARD TELLER

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Teller proposes to limit the scope of any joint U.S.-Soviet study in a manner that is not clearly indicated by the text of the statement he signed. The relevant portion of the statement is as follows:

There is a new important point which has emerged . . . namely the problem of defense weapons. The guiding philosophy of this new point is the problem of studying if it is possible to identify new means to get out from the present balance of terror. One such way is the reduction of nuclear armaments. The second is the idea of new defense weapons. Here are

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some questions: Is it possible to identify the characteristics and the properties for a weapon to be considered clearly of defensive nature as opposite to offensive? Second: Is it true that an advanced defense system produces destabilizing effects? And if so, why and how? Third: Why not study new ways out of the present equilibrium of terror?

We propose to establish a joint USA-USSR and European research group . . . in order to study in collaboration the above mentioned two topics, i.e.: 1) The simulation and the evaluation of the global consequences of a USA-USSR nuclear confrontation. 2) The way out of the present balance of terror; and, in a specific way, if it is possible to conceive a new type of defense system against nuclear destruction.

The joint research group is composed of scientists from US, USSR, Europe (and possibly other countries) chosen by the three parties.

—R. JEFFREY SMITH

Biological Backwaters?

I suggest that you consider publishing a "Biological Backwaters" issue. This is intended to complement your recent "Biological Frontiers" issue (18 Nov.), which contained no articles pertaining to ecology, ethology, population genetics, plant or animal taxonomy, evolutionary biology, whole-plant or whole-animal anatomy, physiology or morphology, the biology of any major plant or animal group, and a variety of other disciplines. Those of us who work in what appear to be the diverticula of a great science would appreciate an opportunity to discover what other backward spirits are up to.

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Basic Research and the Public

Recently, two very different groups (1) were independently given the same message: those involved in the research enterprise must make their results known to the public-at-large. If the public is not convinced of the usefulness of basic scientific research, there will be a further, potentially disastrous, drop in funding for such activities.

Many scientific societies look askance at persons who are consistently in the public eye, whose lists of publications include numerous books and articles for popular consumption. There is, however, a small step that those of us in

graduate education might consider. We could require of each of our doctoral candidates that, before receiving a degree, a lecture emphasizing the significance of their particular piece of research to the development of the field as a whole be presented to a general audience and that a written exposition be made available for publication in an appropriate popular outlet. If, at an early stage, we could foster in this manner a feeling among our graduates of their indebtedness to the general public for directly or indirectly supporting their research, it might become traditional for them to proceed in such a way throughout a career.

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Notes

1. The Council for Advancement and Support of Education promoted a conference on the theme of communicating university research. Attendees included science writers, public information specialists and directors, and staff writers. Two days after this Washington, D.C., meeting, the Council of Graduate Schools in the United States convened a workshop in Toronto entitled "Graduate education: Courses and programs for practicing professionals." Here the audience consisted mainly of graduate deans.

Dissolution of Kroc Foundation

Gina Kolata, in her article of 11 November (News and Comment, p. 596), writes about the dissolution of the Kroc Foundation. In particular, the statement that the foundation assets will be assigned "to a new foundation to support research on alcoholism and drug abuse" has prompted numerous inquiries.

The new foundation has a very broad charter, but the only activity to which it is now committed is Operation Cork, the alcoholism education program which Joan Kroc founded in 1976. No decision has been made as to whether any kind of research will be funded.

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Erratum: In the report "Malaria parasites adopt host cell superoxide dismutase" by A. S. Fairchild *et al.* (19 Aug., p. 764), the caption for figure 2 on page 765 was incorrect and should read as follows: "Comparison of host and parasite SOD's (9) by (A) polyacrylamide gel electrophoresis (8) and (B) isoelectric focusing (7). Gels were stained for SOD activity (10), and bovine erythrocyte SOD (Sigma, type 1) was used as a reference [$pI = 4.95$ (13)]. Lane 1, rat-derived *P. berghei* SOD; lane 2, rat erythrocyte SOD ($pI = 5.1$); lane 3, mouse-derived *P. berghei* SOD; lane 4, mouse erythrocyte SOD ($pI = 5.7$); lane 5, bovine erythrocyte SOD." The pI 's of mouse and rat erythrocyte SOD's cited in the text should also be corrected to the values given above.