

relatively minor cost.

Further assessments of the biomedical possibilities of antiproton use would benefit from comparative evaluations by experts in other imaging and therapy techniques of the less widely known antiproton applications. It is not uncommon to hear those who have investigated antiproton applications express the belief that antiprotons can become the future's brightest choice for manifold biomedical purposes.

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## The World Has Room for Two $\phi$ Factories

A news story in your July 1992 issue (page 54) discussed the report of the subpanel of DOE's High Energy Physics Advisory Panel that was charged with setting program priorities for high-energy physics. While it is clear that any Federally funded field requires an occasional priority review, it is also clear that such reviews can be very dangerous if they serve in place of, or pretend to be, peer reviews. The reason for this is that such panels do not have the time to analyze carefully any single project, let alone two dozen or more, as the HEPAP subpanel did. The panel's conclusions are also directly linked to the input it receives from the funding agency, and this can introduce a different bias into the study—that is, the agency may want to protect some projects.

Let me take the example of the proposed  $\phi$  factory at the University of California at Los Angeles as a specific case. The subpanel simply commented that it didn't believe there was a reason for having two  $\phi$  factories in the world. (The subpanel did not specifically reject the UCLA project.) In a previous peer review that lasted three days, chaired by Edward Temple, the reviewers, with full knowledge of the  $\phi$  factory being built in Frascati, Italy, reached an opposite conclusion about the physics interest.

To my knowledge, the subpanel made no comparative review of the Frascati and UCLA  $\phi$  factories. The proposed machine design and construction techniques are entirely different (UCLA would use a superconducting quasi-isochronous storage ring), and the UCLA group is emphasizing the search for *CPT* symmetry violations—for example, by looking for a tiny fractional mass difference between the  $K^0$  and its antiparticle, on the order of  $10^{-18}$  or  $10^{-19}$ , which

is the ratio of typical quark masses to the Planck mass. This is, in my opinion, an extremely important scientific goal that might be carried out at more than one place on Earth! There was no comment by the subpanel on this scientific goal, possibly because it is unfashionable.

The UCLA project also involves US industry, national laboratories and international collaboration (Novosibirsk and Milan). There is no evidence from the subpanel report that this was appreciated or even considered.

The history of similar panels over the past 20 years or so shows a noticeable trend: Innovative projects proposed by nonestablishment groups normally have a difficult time. One notable example is the rejection of the proposal by Carlo Rubbia, Peter McIntyre and myself in 1976 to convert Fermilab into a  $\bar{p}p$  collider to discover the W and Z bosons. A direct consequence of that rejection was the discovery of the W and Z at CERN in 1983—the last major discovery in particle physics. Other examples could be cited to indicate this trend. I seriously doubt that Ernest Lawrence could have gotten the cyclotron approved in similar circumstances.

We believe the HEPAP subpanel judged our project unfairly. However, since it was not a real peer review, the conclusions of the subpanel are apparently not subject to any questions or alternative viewpoints. This is a dangerous precedent for our or any field of science!

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## A Physics Center Grows in Ukraine

It is with great interest that I follow *PHYSICS TODAY* reports on physics developments abroad, especially in the former Soviet Union. In this respect, the article "Soviet Science in Danger," by Evgenii L. Feinberg (May 1992, page 30), is of signal importance. Feinberg suggests that the best path to large-scale collaboration of scientists from the FSU with Western scientists will be through international research centers based at the leading research institutes of the FSU.

Already in the late fall of 1991, steps were taken in Ukraine to establish one such center. It is called the International Center of Physics and is based at the Bogoliubov Institute for Theoretical Physics in Kiev. The primary aims of the new center

closely parallel those envisioned by Feinberg. They are collaboration with other countries in programs of fundamental research; organization of advanced workshops, topical symposia and schools; sponsorship of a series of lectures by eminent physicists from Ukraine and from abroad; and assisting in the publication and dissemination of English translations of papers and monographs on some of the more significant physics research in Ukraine.

The first workshop held under the aegis of the newly established international center was on turbulence and nonlinear processes in plasma and took place in Kiev from 11 to 26 April 1992. It was attended by 40 participants from Ukraine, Sweden, France, Yugoslavia, Georgia and Russia. Three more international workshops were held in 1992: Current Problems in Quantum Field Theory, New Trends in Nuclear Physics, and Hadron Physics. An international congress of physics has been scheduled for 22–27 June 1993 at the center. The purpose of the congress will be to acquaint physicists from other countries with the outstanding work performed in Ukraine and to open avenues for future cooperation.

The center's advisory council has discussed the possibility of expanding the opportunity for foreign graduate students to pursue research leading to a PhD degree in physics in a very attractive program established in Kiev jointly by the University of Kiev and the Institute for Theoretical Physics.

The center will be supported financially by the Ukrainian Academy of Sciences, but for the foreseeable future this support will be in the form of the local, nonconvertible currency. Avenues for securing hard-currency support from Western foundations and other sources have been explored. Such support is particularly needed for participation in American and West European conferences and workshops, for journal subscriptions and books, and for electronic mail.

Members of the pool of physicists in Ukraine are ready and willing to join their Western and Japanese colleagues in collaborative efforts in fields not only of academic but also of industrial interest. One of the missions of the International Center of Physics in Kiev is to serve as a clearinghouse for such contacts. The center's address is International Center of Physics, Bogoliubov Institute for Theoretical Physics, 252130 Kiev, Ukraine; telephone: (044) 266-5362; fax: (044) 266-5998; e-mail: nmakovsky@glas.apc.org. or