Letters

Biotechnology Regulation

In her article "Biotechnology's regulatory tangle" (News and Comment, 17 Aug., p. 697), Marjorie Sun attributes the following statement to me: "Furthermore, the guidelines only cover experiments conducted in the laboratory, not the environment." That is not correct and is not what I said. The *NIH Guidelines for Research Involving Recombinant DNA Molecules* (*1*) do in fact cover "deliberate release into the environment" in section III-A-2. I was commenting on the licensing agreement under the Stanford University patent, from which Sun quotes the key phrase that the licensee "specifically expresses its intent to comply with the physical and biological containment standards set forth in the NIH Guidelines. . . ." I pointed out that, while the guidelines specify physical and biological containment standards for many types of experiments, for "deliberate release" experiments there are in fact no physical and biological containment standards set forth.

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References

1. *Fed. Regist.* **48**, 24556 (1 June 1983).

SURA Accelerator

I wish to comment on Eliot Marshall's article "A second look at Virginia's accelerator" (News and Comment, 17 Aug., p. 699). The article describes the recent history surrounding the funding of the Southeastern Universities Research Association (SURA) accelerator. Nowhere is there mention of the urgent scientific need for such an accelerator or of the science that would remain undone without it. A GEV electron accelerator has been seen as opening major new frontiers for nuclear physics by a series of national committees. It was first identified in 1977 in the report of a national panel on the Future of Nuclear Science chaired by Gerhart Friedlander, before the Nuclear Science Advisory Committee (NSAC) was established. The scientific need for such a facility was reiterated by the first NSAC *Long Range Plan for Nuclear Science* prepared in 1979 under the chairmanship of Herman Feshbach of MIT. Later subcommittees were active in specifying the properties of an electron accelerator, and finally the SURA facility was selected in 1983 by an NSAC panel chaired by Allen Bromley. This panel's recommendations were endorsed and transmitted by NSAC under my chairmanship. The panel said: "The highest priority for new accelerator construction in the U.S. nuclear physics program is for an electron accelerator of high duty factor capable of producing beams in the energy range from 500 to 4000 MeV."

Later in 1983 the Department of Energy and the National Science Foundation asked NSAC to prepare a new long-range plan to provide a "framework for the coordinated advancement of the Nation's basic nuclear research program over the next decade" and suggested that it should look beyond the electron accelerator. Our report, *A Long Range Plan for Nuclear Science*, was issued in December 1983. The very first paragraph of the initial summary states, "From these discussions and studies, we reaffirm our earlier recommendation for the earliest possible start on the construction of a national electron accelerator laboratory," and this is followed by a summary of new recommendations for the future. There are a number of references to the physics to be done with the electron accelerator in the text of the report in discussions of specific scientific issues. In the final section we again summarized: "The new 4-GeV electron facility . . . is clearly the major near-term new initiative in nuclear physics. Its completion is awaited eagerly by our community." The observation of *Science* that the commitment of NSAC to the SURA facility in the long-range plan was left "untested and slightly cloudy" is certainly inaccurate.

A great deal of dust has been raised about the politics surrounding this project that has obscured the real scientific need for a continuous-beam (to allow all-important coincidence measurements), high-intensity electron accelerator in this energy regime. The cleanliness of electromagnetic probes is necessary to resolve a number of questions *in* nuclear physics as well as important questions that go *beyond* conventional nuclear physics to areas where excited states of nucleons and mesons and their underlying quark structure play an increasing role. The nuclear or many-body aspects of our current understanding of the strong interaction (contained in QCD), are not well understood or explored at present. Thus Marshall's article misstates the science of the 4-GeV accelerator (it has nothing to do with a new phase of nuclear matter or a quark-gluon plasma).

The issue of a major costly facility will inevitably raise some political controversy. *Science* should certainly report what is happening. On the other hand, by concentrating on political hearsay and by selecting information to make for a juicy story, such articles also have an influence on shaping events. The political aspects are important and newsworthy, but what most of us want is to see an effective facility built. The scientific need far outweighs any feelings of regional or institutional rivalry.

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We would like to comment on Marshall's 17 August article on the Continuous Electron Beam Accelerator Facility (CEBAF). The need for a high-energy-factor, high-duty-factor electron accelerator for nuclear physics was recognized in the late 1960's. Since then virtually every study of the future of the field has reiterated that need. The decision in 1982 to pursue such a machine was thus the culmination of many years of consideration. After this decision, the choice among competing proposals to construct the machine involved one of the most intensive peer reviews ever conducted by the U.S. nuclear science community. In 1983 the Southeastern Universities Research Association (SURA) proposal was chosen primarily because its design was cost effective, was deemed to have the highest probability of successful completion, and possessed the greatest flexibility. The situation relative to these events remains unchanged today.

During the past year substantial progress has been made on the project in both technical and organizational areas. Design work has been pursued, the staff has been increased, managerial and administrative systems have been established,