

KNOWLEDGE *PER SE* IS STILL REASON TO FUND RESEARCH

During the past year there has been much discussion throughout the country at all levels about the future of science in our changing society, and in particular about the future of basic research and physics. In the recent report put together by the National Science Board and the National Science Foundation about the future of NSF (see *PHYSICS TODAY*, December 1992, page 70) and in the roundtable discussion in the February 1993 issue of *PHYSICS TODAY* (page 36), there seems to be a feeling of restrained confidence and a very strong continued commitment to the importance of basic research. Those sentiments are also being echoed more frequently in Washington, despite large budget cuts. This is very encouraging.

However, while basic research has, at least temporarily, survived the restructuring of NSF and the popularity of "technology transfer," I believe it is endangered by a much more insidious problem. In the panic to convince elected officials and the public of the importance of basic research to the well-being of the country, I believe scientists themselves are abandoning the fundamental goal of basic research, which is the advancement of the body of human knowledge. The NSF-NSB report made a strong point of the economic impact of basic research but did not mention knowledge for knowledge's sake even once as a supplemental motivation. And in the recent *PHYSICS TODAY* roundtable discussion, students and faculty were criticized for believing that the public should fund their research because they find it exciting strictly from a knowledge point of view. I question the observation on which that criticism is based, as I have witnessed in several graduate students' letters to various professional newsletters and in private conversations a growing sentiment among scientists that we are wasting our time and the taxpayers' dollars doing very fundamental re-

search. I believe this trend is largely a "trickle-down" effect from the attitudes in Washington.

Many of my colleagues have told me that to believe in knowledge for knowledge's sake is too idealistic and that I must face the reality of "selling science" during a time of economic recession and budget cuts. This criticism misses my point. I fully acknowledge the need to "sell" basic research using promises of future economic and standard-of-living gains. To ignore those aspects of basic research would be disastrous and incorrect. But to ignore totally the quest-for-knowledge aspect is equally disastrous. One small additional paragraph in a document such as the NSF-NSB report, giving some acknowledgment of the merits of knowledge for knowledge's sake, not only would provide additional merit to the report but also would provide encouragement to discouraged young researchers. Without the curiosity, ingenuity and innovation that are fueled by the desire for knowledge, there may someday be no basic research over which to debate.

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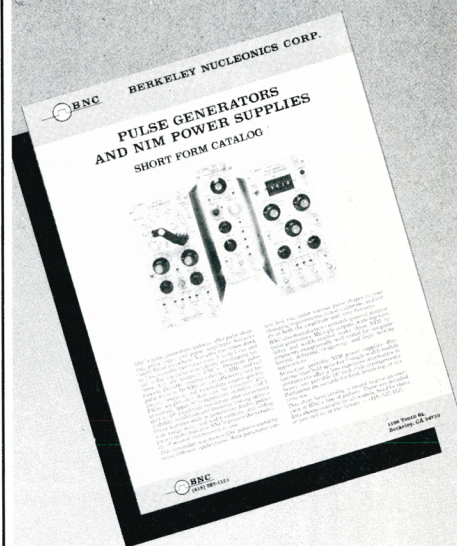
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Why Do Nobels Come Less and Less to US?

Certainly Nobel Prizes should not be the principal goal of physics research policy, but at the same time they are some kind of measure of science in our country. In the period 1976-83, 15 out of 19 winners of the Nobel Physics Prize were Americans. In the period 1984-91, only 7 of 18 were, and the work that earned those 7 people the prize was carried out in earlier times. What has changed?

A suggestion comes from the fact that during the period when Americans were receiving most of the Nobel Prizes, almost all of the American

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