Letters

Private Sector: A Proven Record

More than two-thirds of U.S. research and development is accomplished in the laboratories of private companies. But journalistic coverage of the administration of scientific progress would make it seem that academic and government spokesmen yield better copy than industrial observers ("Science policy: Daddario panel urges new study, changes in OST," 6 Nov., p. 612). Particularly we urge that opinions from industry should be sought in contemplating the growing promise and popularity of "technology assessment." Unfortunately, the initial evaluations in Washington have found the private sector conspicuous largely by its silence.

To keep the record straight, technology assessment is far broader in concept than simply to establish an early warning system which would help avoid environmental pollution. For example, it could appraise what is being done in private and public laboratories with regard to cellular bioengineering. The discovery of truth and basic research support—having no immediate objectives—could be among the subjects considered by technical assessors. Moreover, such evaluations could not avoid economic implications, such as related employment problems and the allocation of taxes, even including the implied warnings in George Orwell's fictional approach to "1984."

Be assured, the realization up and down the company ladder is that better products for better living rings increasingly hollow as a total objective. Industry has more of a social commitment to perform. Company spokesmen in communities throughout the country want a piece of the action that is stirring the minds of social planners.

In 1971, the question we will find confronting us is: What purpose is to be served by institutionalizing technology assessments with an expanded Washington bureaucracy? The answers to that question, especially in this period of devising methodology, will be enhanced by well-rounded industrial input—not tokenism. The American private sector, it should be underscored, has a proven record for assembling multidisciplinary teams of outstanding individuals to solve the most pressing technological challenges in all history. Let's enlist this expertise in assessments.

REYNOLD BENNETT
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Equal Work—Unequal Pay

In the 11 September issue (p. 1115) there appeared an advertisement under "Positions Open" of research appointments in the Division of Land Research, Commonwealth Scientific and Industrial Research Organization, Australia. This specifies that "Salary rates for women are $A428 p.a. less than corresponding rates for men." Perhaps one might argue that blatant discrimination is to be preferred to the more common, covert discrimination. Nevertheless, I find such an ad completely out of keeping with the principles of the AAAS and *Science*. I would hope that you would refuse such discriminatory advertisements. Would you accept an ad which read "Salary rates for nonwhites are $A428 p.a. less" or "Blacks and Asians need not apply"? I think not. I hope not.

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. . . I feel that it is outrageous for a distinguished journal of science to be a party to the oppression of women by carrying advertising such as this. Although the Australian government is immune from the laws of the United States which prohibit hiring practices that are discriminatory, the Australian government still violates the spirit of the American law, and even worse, the spirit of the times.

I am a male researcher, but nevertheless, I feel that any woman, who knows as much as I, ought to be paid as much as I. It would be very gratifying to hear that, in the future, *Science* will not carry any ads that do not reflect equal opportunity for women, even if they are placed by foreign employers.

HOWARD H. ROTHMAN
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. . . *Science* is the official organ of the AAAS and in some respects speaks for all American scientists. I am sure that neither the AAAS nor American scientists in general support discrimination based on religion, sex, or color in hiring practices. Your publication of such an ad indicates that *Science* condones such discrimination.

I suggest that *Science* should inquire when accepting advertising whether the positions involved are open to all qualified candidates on the same basis. If they are not, *Science* should do one of two things: either refuse to accept such advertising, or publish such ads in a separate, clearly labeled section and with the grounds for discrimination clearly noted in the ad. *Science* should also state editorially either that the AAAS does not approve such hiring practices and is therefore rejecting such advertising, or that it believes in allowing each applicant to make his or her own decision.

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Boston Science Museum: No Political Hotbed

"The Boston Museum of Science" is indeed a "Point of View" (9 Oct., p. 145), but one constrained by blinders. It is an excellent representation of the clichés that the antiscientific Left applies to anything that is not oriented to their politicocentric view of man's many and diverse activities and interests.

The first thing the reader notices (or rather, doesn't notice, because the authors missed it) is that the Boston metropolitan community, which the museum serves, is in fact to a great extent suburban; in any event it is a varied constituency, including a large number of tourists. The second omission is any relevant observation as to the source of support for the museum.

The money comes to a great extent from suburbans, who pay museum dues and make gifts, greatly exceeding their cost of admission. In other words, both the constituency and support are largely "middle class." The third error in the article (maybe the first) is a balanced presentation of what there is to see and do in the museum. There is no mention of the library, no mention of the free exhibits associated with the planetarium, no mention of such things as live animal exhibits and demonstrations, a working beehive, the many cutaway models of familiar objects, the dioramas, the many "hands-on" experiments demonstrating scientific principles. There is no mention of the excellent anatomical and reproductive exhibits, or of the new wing, currently being completed, that will allow the museum to greatly increase and diversify its exhibit program. Considering that it is a museum of *science*, objections to the space program exhibits, which cover only a small part of the museum's total square footage, somehow deny that the space program has some connection with science. It is, indeed, of great importance and relevance to modern science and technology.

Nevertheless, there are weaknesses and contradictions in the museum. Certainly, no one who cannot pay should be turned away; no doubt a parking charge would be willingly paid by the great majority of those who drive to the museum; many of the exhibits need freshening, and those that are merely self-serving commercials (and there are some) should be removed or made more *scientifically* relevant; there should be many new exhibits on ecology, the environment, and pollution, on drugs and drug abuse, and perhaps there should be exhibits on what science and technology have accomplished on man's behalf. Maybe there should be exhibits on the history of science's development, and its relationship to the state of the world.

There is much room for improvement, but it is important that the museum remain a museum of science, not a political hotbed. The kids come to see, to learn, to enjoy, to handle things, and—by and large—the museum does a good job of challenging their curiosity, enlightening and entertaining them.

DANIEL H. SHEINGOLD
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If the original contributions from private enterprise and government had not been forthcoming, there would not be a great museum there today. . . . It is open to school groups free of charge throughout the week, and thousands, if not millions, of school children have had the advantage of seeing many worthwhile exhibits, such as open heart surgery, an appendectomy, birth by cesarean section, the Wang display where children can actually demonstrate the new calculators, and many animal and anthropological displays.

The Boston Museum of Science is one of the best in the country and is available free to poor and rich kids alike. Now we can ask, how can we make it better?

EDWARD E. SPINNEY
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I am not in any way connected with the Boston Museum of Science, but I do have some knowledge of their activities, and I feel that the impression given by even printing such a scurrilous excerpt is an unfortunate one. If you really felt obliged to print this article, then I think you should not have censored the obscenities and other extraneous matter, but should have let your readers judge for themselves the total contents of the article.

I hope it was your intention to indicate how foolish some extremists have become, but I fear this has not been the result. It has served to legitimatize unreasonable points of view held by some individuals who would not otherwise have attained a national forum.

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How to Approach Dwindling Funds

The drastic and sudden cutbacks in government support of scientific research have been the object of much moaning and groaning in *Science* and elsewhere. I am inclined to moan myself. I was told—too late, of course, to use the information for my current application—that "we aren't supporting that big a research project anymore." It was suggested that it would be more sensible to cut up my broad application into a number of smaller ones and submit those next time. "And add lots more detail about the planned experiments," I was urged.

Think of the implications of these suggestions. Instead of sending in the 20 copies required by the National Science Foundation for one broad research proposal, I now must send in five to six different proposals, each in 20 copies. And, of course, with the military research units forbidden to support basic research and with money so scarce in the few remaining units that are allowed to support research, one cannot any longer figure it is sufficient to apply to only one agency. Each small application must go to three to four agencies. That makes about 480 copies of research proposals to be read, just from me, instead of 20. If one multiplies this 480 by the number of scientists around the country who are likely to want support for their research, the product makes it quite clear that the current administration has solved the unemployment problem in the proposal-reading industry, at least. The only flaw is that it has so far been an essentially unpaid industry.

So my first suggestion is that all members of reviewing panels (who now get a trifling sum for a day's work) and all outside reviewers (who now get nothing) insist upon a decent pay for their labors—$200 per day plus expenses seems fair. I think it is unconscionable of a government agency, whose members are paid, to ask outsiders to do work for them at no pay. . . .

My second suggestion is to protect the scientist from this vastly increased number of readers of his research proposals—particularly when we are told that we must give much more detail of exactly what we are planning for our experiments. The names of members of the panels are listed but not so the names of outside reviewers. I am most reluctant to describe my best ideas for research to a faceless, nameless horde of "outside reviewers." (It is not that I think any of them might be so unethical as to deliberately use the "privileged information" of a research proposal; it is merely that it seems to be a quality of the human mind to remember an excellent idea much more easily than it can remember the name of the person who proposed it.)

Perhaps it is time to get away completely from these inanities and for the government to give block grants to the universities instead of individual grants to individual applicants. It would save an incredible number of man-hours.

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