"let the politicians worry about whether the politics are outrunning the technology."

SDI is touted as a positive initiative, in contrast to the intrinsically negative policy of deterrence. But any such major DOD policy decision must be evaluated by its potential long-term effects on the arms race and the risk of nuclear war. In this light, SDI is profoundly negative. It is clear that the USSR must reply to SDI by increasing its armaments and developing techniques to defeat SDI. Whether or not the USSR chooses to implement its own version of SDI as well, the US will respond to the increased Soviet strength with a build-up of its own.

On the technical side, most scientists agree, if pressed to think about it, that neither a near-perfect nor an undefeatable system can be developed even though huge sums are spent.

Even while conceding both political and technical arguments against SDI, it is sufficient for some to invoke the inevitable spinoffs from the program as justification for it. They do not stop to consider that there are much more direct routes to realizing the benefits of these spinoffs, or that a different allocation of public funds might provide mankind with even greater benefits.

Scientists have an opportunity to make a statement that can have an unparalleled influence on the future: We can refuse to support SDI. I am a senior scientist at a laboratory operated for the Department of Energy. I have divorced myself from engaging in or promoting SDI work. I encourage others to consider the possibility of doing likewise.

DONALD G. DORAN
11/85 *Richland, Washington*

LLOYD REPLIES: My views on the Strategic Defense Initiative program have not changed since my letter appeared in the October issue of PHYSICS TODAY. Nevertheless I believe that Donald Doran's letter deserves comment from a Congressional perspective.

I reject his argument that "policy makers in Congress . . . are not getting a straight story from US scientists." I have participated in debate on the DOD authorization bill in the House Armed Services Committee and in consideration of both authorization and appropriation bills containing SDI funding on the floor of the House. Members of Congress constantly receive pro-and-con SDI briefings from the Departments of Defense and Energy, Congressional committee staff, Congressional Research Service staff, industry representatives, university professors and researchers from the national laboratories. In addition the Office of Technology Assessment has performed two SDI-related studies on ballistic-missile defense and antisatellite weapons, both of which, incidentally, have received much criticism from the more zealous wing of the SDI community. I simply don't see how any policy maker could have avoided getting both sides of the story from this spectrum of information sources.

I also believe that SDI can be a constructively positive element of a policy of deterrence as long as one does not equate that policy, as Doran does, with the doctrine of mutually assured destruction. As with Wolfgang Panofsky's SDI criticism in October, I am troubled by the extent of Doran's blatant technical pessimism and apparent inflexibility with respect to modifying US arms-control policy.

As I noted in my letter, I agree with most scientists that an SDI "missile-defense system would not be completely impenetrable," but that in no way translates to a basis for not going ahead with R&D on missile-defense technologies.

As regards arguments about benefits of spinoffs from SDI, I don't accept the simple transferability hypothesis that the funds might be better spent through "different allocation of public funds," although some of that will undoubtedly take place under the Gramm–Rudman deficit-reduction mechanism. In any event, it does appear that the high-energy physics community's Superconducting Super Collider project will not be a viable candidate for such transfer. However, I do have a strong opinion that focused R&D aimed at specific new components and systems is a desirable way to push technological advances, with corresponding potential for transfer to the civil sector.

In summary I would say that the Congressional debate on SDI has become more rational, while SDI R&D goes forward with some significant achievements and an improved understanding of desirable systems requirements. I, for one, will remain as skeptical about the "captive" contractor who is overly optimistic about SDI's technical prospects as I am of those disciples of MAD whose conventional arms-control wisdom blinds them to the past decade of progress in new defense technologies.

MARILYN LLOYD
3/86 *US House of Representatives*

Aharonov–Bohm effects

In the January Search and Discovery section, an important reference was omitted from the story (page 17) about Aharonov–Bohm effects in disordered systems. The work of A. Douglas Stone

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(*Physical Review Letters* **54**, 2692, 1985) should have been inserted as reference 7 in the discussion on conductance fluctuations. As mentioned in the Physics News section (page S-20) of that issue, it was Stone who clarified the effects of the magnetic field on the conductance fluctuations in the wires, and his calculations were critical to the interpretation of the experiments.

SEAN WASHBURN
IBM Thomas J. Watson Research Center
2/86 *Yorktown Heights, New York*

Physicists' terminology

Over the years there has been a steady accumulation of properties that help to distinguish physicists from mathematicians. I wish to add to this list by defining a physicist as someone who uses the word "finite" when he really means "nonzero." I have discovered that while physicists universally acknowledge the incorrectness of this choice of words, they are just as universally surprised when it is pointed out to them. The use of expressions such as "finite temperature" and "finite frequency" is extremely widespread even though the point of these expressions is not the exclusion of infinity. This implied meaning of "nonzero" comes through quite clearly in the phrase "small but finite temperature," which is taken directly from a conversation I overheard yesterday.

I can offer no theory on how this misuse of words might have arisen. I also doubt very much whether the awareness raised by this letter will change the situation; the probability of that event I confidently predict to be "not finite"!

VEIT ELSER
AT&T Bell Laboratories
9/85 *Murray Hill, New Jersey*

Extraterrestrials

Apropos of Eric Jones's letter (August, page 11) I propose an answer to Enrico Fermi's alleged question in reference to extraterrestrial intelligence, "Where are they?"

Being more intelligent than we, "They" have long ago achieved population equilibrium on their own planet and implemented an economy in harmony with their environment based on recycling nonrenewable resources, and thus need not export surplus population into space nor seek raw materials. They are, of course, motivated by scientific curiosity to explore, but (unless our estimates of interstellar distances are drastically wrong, and assuming relativity—and a lot of other physics as well—cannot be "beat") simply have not made it this far—at least not with "manned" vehicles. Having achieved planet-wide respect for "human" rights besides, they have no volunteers willing to spend lifetimes in space cooped up on craft that, whatever advance amenities they might be equipped with, are about as interesting as sealed-in shopping malls on a spring day, just to look for life on other planets.

On the other hand, "We" have a long history of always fouling one nest and then moving on to another: Old World–New World, Snow Belt–Sun Belt, Cities–Suburbs–Exurbs. Are we now to have space refuges from our polluted planet, "undesirable" races (the ultimate in apartheid) or perhaps fallout shelters for those who can pay (they won't be cheap)?

The more appropriate question is, "Where are we?"

JAMES B. COLE
University of Maryland
9/85 *College Park, Maryland*

APS instrument group

Devlin M. Gualtieri's comment (December, page 11) regarding the formation of the Instrument and Measurement Science Group, to the effect that this topic should be the province of IEEE, would be appropriate if instruments and measurements were limited to those that are electrical. Important classes of instruments and measurements are not, although electrical and electronic techniques may be useful in their implementation.

HENRY ERNST SOSTMAN
Yellow Springs Instrument Co
12/85 *Yellow Springs, Ohio*

Journals for the needy

In the January 1985 issue of PHYSICS TODAY (page 125), there was a brief letter from William Foland offering his back issues of journals free to anybody for the cost of packing and shipping. As I wrote to him, informing him of the longstanding program of shipping such surplus journals to libraries in the developing countries, I had a feeling of discouragement and futility.

The program for channeling such journals to developing countries, managed by the International Centre of Theoretical Physics in Miramare 34100, Trieste, Italy, and at present handled there by H. Dalafi, has been successful to the extent of tens of tons of journals. The tens could, however, be easily hundreds or more except for one factor: publicity.

Those of us interested in placing science on an equal footing around the world have been asking PHYSICS TODAY for years to place, perhaps three or four times a year, an inch or two of reminder of this journal distribution program. We have been unsuccessful in our request. Isn't it discouraging that a professional organization like AIP, whose member society APS even has a committee for international activities, is unwilling to take full advantage of such a ready opportunity to benefit both the donor and the recipient of much-wanted back issues of journals?

MICHAEL J. MORAVCSIK
Institute of Theoretical Science
University of Oregon
2/85 *Eugene, Oregon*

THE EDITOR REPLIES: This magazine does not have sufficient space to cover many worthwhile activities repeatedly.

Scientific communication

A recent editorial by Robert R. Wilson (July, page 128) begins with the sentence "The American tradition of freedom of scientific communication is seriously threatened." The threat, he claims, is due to the restraints placed on the scientific community by the US government. It seems that Wilson has not been reading the Letters columns concerning the restraint of communication by the reviewing process of this scientific community.

Most recently, Robert C. Stabler (February 1985, page 107) complained that he had lost a seven-month battle with *Physical Review Letters* without receiving a single comment on the accuracy of the results in the manuscript. In a rebuttal letter the editors claimed that "the refereeing his paper received, which was expert and thorough, was also unanimous in recommending that it not be accepted." This is an interesting statement, considering that Stabler received no comment on his results.

Stabler can take comfort that it took him only seven months to lose. I recently lost a 17-month (February 1984 to July 1985) battle with *Physical Review*, also without seeing a single comment on the results in the manuscript. It began with a three-sentence "review," one sentence of which was the rejection. With the first "review" in hand, the second referee agreed that it should not be published. In the formal appeal process, the editorial-board member could not bring himself to give a signed opinion for a year. The editor in chief finally sent it to a second board member, who submitted an opinion not on the manuscript, but rather on my published work upon which the