

\$3.5 million committed to research tasks already in progress in fiscal year 1989. This was the amount that Hunter required us to commit to his initiative in High Resolution Underground Imaging Using Acoustic Means in fiscal year 1989, and he wanted this initiative to grow to \$10 million in fiscal year 1990, with no additional funding available. The Geosciences Program staff responded by pointing out that (i) it was already supporting underground imaging with approximately 20% of its total budget; (ii) the projects supported had been judged most competitive by scientific peer review; and (iii) his last-minute requirement would have an adverse impact on important research already committed to. Hunter's reply, impersonally transmitted down the DOE chain of command, ignored the points above and made the general statement that "orders of magnitude improvement in resolution" could be achieved by adopting advances developed by the antisubmarine warfare (ASW) community. This statement was thoroughly investigated by the Geosciences Program staff in a series of consultations with representatives of the ASW, seismology, and electromagnetic sounding communities and found to have no basis. Hunter would not meet with us or them to discuss

the technical merits of his proposed initiative and simply insisted that we do as he asked. That may be "high energy management," but it is not the scientific leadership that the nation and DOE need, in my opinion.

As a result of the Hunter-imposed initiative, we have funded additional imaging work, most of it along lines already supported and none of it claiming to achieve "orders of magnitude improvement in resolution." Underground imaging-related research now makes up about 40% of our total budget and will be much larger in fiscal year 1990 if Hunter's recommendations are followed. The underground imaging program that "received positive review" by the JASONs was already in place before the Hunter-imposed initiative. I do not know whence Hunter's vision of dramatic improvements in resolution in underground imaging. I do know that it is not consistent with the best advice available from experts in the field.

In summary, I feel that Hunter's directive significantly underestimated the contrasting nature of energy transmission in the earth and oceans and, perhaps more important, underestimated the ability of solid-earth scientists to effectively cross discipline boundaries and bring new and relevant technolo-

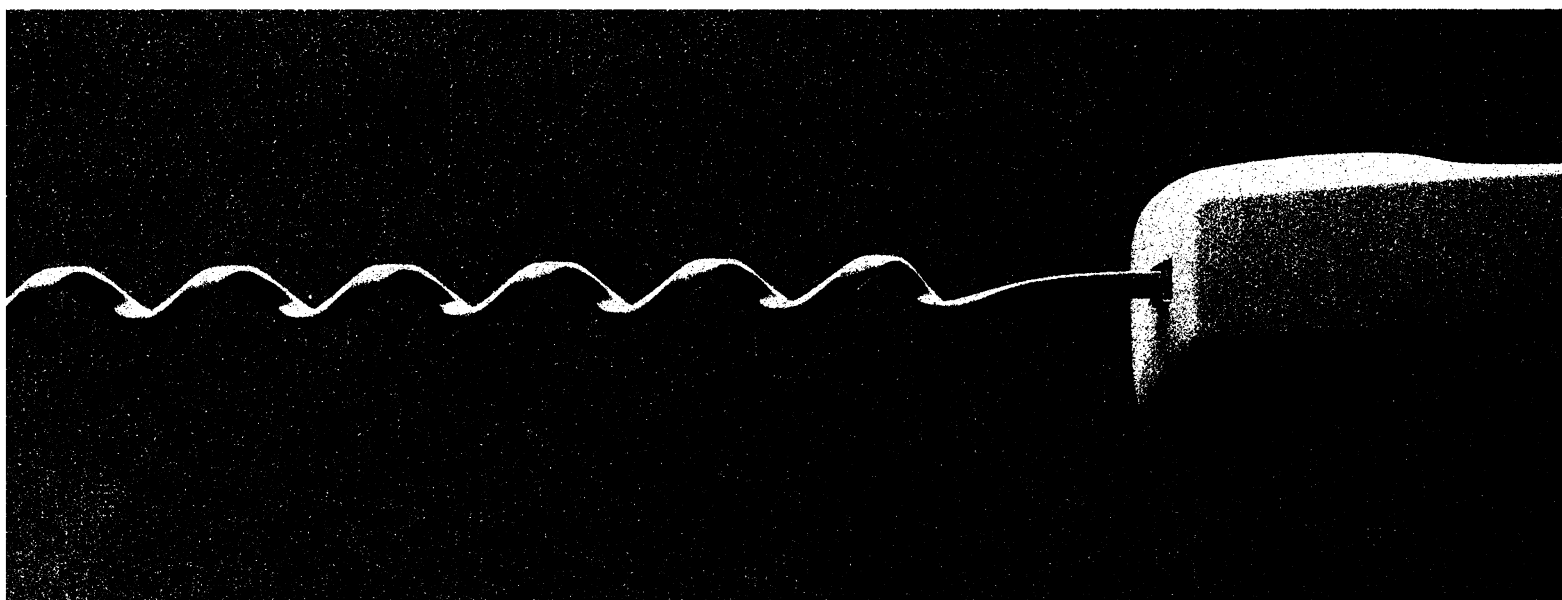
gies to bear on their research. The situation was further confounded by Hunter's treating genuine technical misgivings about the initiative, relayed by his subordinates, as the stalling tactics of a stodgy bureaucracy. In the final analysis, I believe the productive research programs of scores of scientists have been threatened by a technically flawed, poorly defined initiative.

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Erratum: In the article by B. F. Chmelka and A. Pines, "Some developments in nuclear magnetic resonance in solids" (6 Oct., p. 71), several references were transposed. Figure 1 was adapted from (6) [C. A. Fyfe *et al.*, *J. Am. Chem. Soc.* **110**, 3373 (1988)], not (10) and (14), as printed. Figure 2 was adapted from (7) [H. B. Cole, S. W. Sparks, D. A. Torchia, in preparation], not (11), as printed. The reference, to rotational resonance (p. 74, col. 2, line 22) should have been (10) [D. P. Raleigh *et al.*, *J. Am. Chem. Soc.*, in press], not (7), as printed. The authors in reference (55) should have been D. R. Nelson and F. Spaepen.

Erratum: In the Briefings section of 22 September (p. 1332), the credit for the x-ray image of the sun should have included Eberhard Spiller of IBM's Watson Research Center.

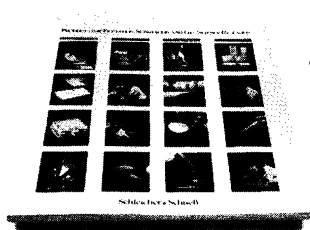
Erratum: In Eliot Marshall's News & Comment article "Old bones solve new problems" (15 Sept., p. 1185), the term "pubic symphysis" was misspelled in the third sentence of the sixth paragraph.



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