LETTERS

University Budget Cuts

Colin Norman, in his excellent survey of proposed budget cuts at the University of Michigan (News and Comment, 15 Apr., p. 283), does not discuss a straightforward solution: stop teaching, working, and living in sieves. Nearly every building we visited while lecturing at Michigan this January had gaping cracks around single-glazed windows, doors, and penetrations. Windows were wide open on a bitterly cold day because the heat could not be turned off. For lack of caulking that would pay back in weeks, state and tuition money was flying out the window in what Lee Schipper calls "space heating"—heating outer space. We estimated for President Harold Shapiro that simple weatherization could save, *this year*, several times the $0.8 million proposed to be cut from the School of Natural Resources.

Why isn't this happening? As on most campuses, energy is not shown as a budget line item, so nobody can track it; instead, many state budgets include an automatic utility cost escalator. Savings paid for from one budget (Buildings and Grounds) accrue to others. People are not rewarded for saving energy and fear that they may even be penalized. Students' ingenuity is not being harnessed. If, instead, each department could keep part of the money it saves, then use it to strengthen academic programs or to capitalize a revolving fund for bootstrapping successively longer-payback efficiency gains without dipping into capital budgets, or both, the university could quickly save at least $5 to 8 million annually. Longer-term retrofitting of state-of-the-art glazings, heat recovery, superinsulation, and passive solar measures could save far more. Campuses with cogeneration plants could rebalance steam and electric loads by saving both: new bulbs and ballasts, for example, could quadruple the efficiency of the University of Michigan's 1950's-vintage lights, yet pay back in a year or two.

Although the University of Michigan will appoint energy-saving task forces in May, many universities are no faster to mine their rich lodes of energy waste than California public schools were before the now abolished California Office of Appropriate Technology publicized spectacular achievements. A $100,000 investment saved Mount Diablo High School $700,000 in the first year. San Jose East Side Union High School saved $2000 per day, yielding a 1 percent raise for teachers in the first year and 2 percent for all staff in the second year. Fourth- to sixth-graders in Laguna Beach used computer monitoring to save 50 percent of their school's electricity and 60 percent of its gas. According to one story—perhaps apocryphal, but plausible—when some students were offered half the money they saved by being "energy monitors," their Southern school district had to give them $40,000 in the first year!

Some colleges spend more per student for energy today than for tuition 10 years ago. This expands the opportunity for using energy (and food and water) in a way that saves money. Tight funding does not yet require our great universities to balance the academic merits of one program against the political strengths of another, just to give their knowledge more practical effect.

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Nuclear Tests

Harold Agnew notes (Letters, 8 Apr. p. 142) that "[i]n the 1970's," the United States estimated yields of some Soviet explosions nearly as high as 400 kilotons by "existing criteria" or by "detection criteria that were in effect at the time." The implication of Agnew's statements is that the technique used for estimation of yield of those Soviet explosions was supported by scientific analysis. Such an implication is not correct. In the mid-1970's, the procedure followed by the United States when estimating yields of Soviet explosions was to use the curve of yield versus m_b (magnitude based upon 1-second P body waves) appropriate for the Nevada test site but uncalibrated for regional bias of m_b. As early as 1971, John Filson and I (*1*) pointed out the need for such calibration and described the proper procedures for doing it. Don Clark and I (*2*) earlier had documented the reality of regional bias in m_b. Before the mid-1970's, many authors had published articles on all aspects of this problem, a synthesis of much of the work having been submitted by me to the Arms Control and Disarmament Agency at the time of the discussions leading to a change in government procedures. While Agnew suggests that the change in procedures for estimating yields of Soviet explosions was dictated by bureaucratic efforts "to keep the Soviet tests within the 150-kiloton testing limit," in reality, the change was in response to massively documented scientific fact.

I think it safe to say that the Soviets have centered their testing somewhere below 150 kilotons, as there is no evidence that they have as yet exceeded yields of 150 kilotons.

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References

1. J. F. Evernden and J. Filson, *J. Geophys. Res.* **76**, 3303 (1971).
2. J. F. Evernden and D. M. Clark, *Phys. Earth Planet. Inter.* **4**, 1 (1970).

EPA Funds

Eliot Marshall, in his article "EPA's troubles reach a crescendo" (News and Comment, 25 Mar., p. 1402), writes that I, as head of the Environmental Protection Agency's (EPA's) Office of Administration, a unit that handles the agency's internal operations, reached across organizational lines and took away or somehow sequestered funds belonging to EPA's Office of Research and Development and to EPA's Superfund. Anyone having a remote familiarity with EPA's strict organizational structure, bureaucratic turf, and close congressional oversight knows this to be an impossibility. These events did not take place, and they could not have taken place.

For the information of *Science* readers, here are some relevant facts.

As Assistant Administrator for Administration, I had neither the authority nor the capability to withdraw funds to create a reserve or "confiscate" rescinded funds from the Office of Research and Development or any other program office.

Also, I had neither the authority nor the capability to control Superfund expenditures, with the exception of those Superfund administrative costs in the Office of Administration's allowance. The record shows that stringent accounting and review processes by the Budget and Control staff ensures that Superfund expenditures by the Office of Administration are proper and in accordance with agency policy.

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Erratum: The first two sentences of the report "Asian dust: Seasonal transport to the Hawaiian Islands" by J. R. Parrington *et al.* (8 Apr., p. 195) should have read as follows: "Transport of vast quantities of Sahara desert dust westward across the Atlantic Ocean to Bermuda has been known since the late 1960's (*1, 2*). Strong evidence now exists for transport of large quantities of Asian dust eastward across the North Pacific (*3–7*)."