

Precautionary principle cuts costs as well as risks

Even allowing for false alarms, erring on the side of caution makes good financial sense.

Sir— In his Book Review of *Politicizing Science*, “Science exiled” (*Nature* **425**, 663–664; 2003), Paul M. Grant repeats the views expressed by several of the book’s contributors that science is often subverted by politics and that the precautionary principle is widely overused. Such an uncritical reading is not helpful to *Nature* readers.

Contrary to the alarms raised in the review about “political interference”, none of the book’s authors have been cowed by their encounters with politics. All remain outspoken, and it is hard to see even Fred Singer as marginalized when the president of the United States has rejected Kyoto and

forsworn any action to slow carbon dioxide emissions in the near future.

It is also strange that Grant points to quantitative risk analysis as a necessary antidote to overuse of the precautionary principle. In environmental regulatory practice, cost–benefit analyses rarely account for the cost of waiting for better data before acting. A recent economic study argues that a more liberal application of the precautionary principle in environmental regulation would pay for itself despite the greater rate of false alarms (S. W. Pacala *et al.* *Science* **301**, 1187–1188; 2003). The United States Office of Management and Budget has also

recently reported that the benefits of the country’s environmental regulations exceed their cost by a factor of six.

The frustrations of making public policy in a democracy have been with us since ancient Athens and will not disappear soon. In my view, a warmer embrace of both politics and the precautionary principle would do a world of good for scientists who presume to instruct the public and its representatives.

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Middle East: university funding for Palestinians

Sir— Your recent News Feature described how Israeli and Palestinian scientists link “Across the great divide” (*Nature* **425**, 444–449; 2003). I work at the Hebrew University of Jerusalem, in the department of physical chemistry, and I have been surprised by the increasing number of Palestinian graduate students (and applicants) in our department. One such student, for example, is about to conclude his postdoctoral work in experimental physical chemistry, and has recently accepted a position at Al-Quds University of East Jerusalem, where he is constructing a modern nano-chemistry laboratory.

These promising individuals are struggling not only with the impossible political situation of the Middle East, but also, and predominantly, with the hardships of everyday economic conditions. With the deep budget cuts imposed by the Israeli government, the Hebrew University has had to cut 20% of its support to all graduate students. While all our students were adversely affected, our Palestinian students are among the hardest hit. Owing to language barriers, they usually cannot assume teaching positions within our university, nor do they have affluent families to carry them through. One Palestinian student of quantum chemistry had to postpone his graduation in order to make a living through an extramural teaching position.

The Hebrew University is currently exploring several practical routes for enlisting potential contributors to assist these students. It is remarkable that the academic community which suffered most from the recent wave of terror (as reported

in your News Feature) responds in this noble manner. One hopes that when its Palestinian students graduate and assume leadership positions in Palestinian academic institutions, they too will contribute towards bridging “the great divide”.

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Middle East: nothing to fear except terrorism

Sir— With a colleague, I supervise a group of five graduate students at the Hebrew University’s Department of Pharmacology on the Hadassah Hospital campus. One of this group is an Israeli Arab. In fact, some 20% of Israel’s population is Arab, although this was not mentioned in your News Feature (*Nature* **425**, 444–449; 2003) about the status of Israel–Palestinian science cooperation and related issues.

If you visit our campus you will hear Arabic spoken and see many Arab students at all stages, including many doctoral students, some of them Palestinians from East Jerusalem and elsewhere. They come and go without any problem; no one bothers them at all. The only thing they have to fear is being blown up on a bus or in a cafe by a Palestinian suicide terrorist. The Hebrew University has a proud reputation of academic openness with regard to the Arab minority. Any boycott of Israeli academic institutions is likely to hurt these Israeli Arabs more than the Jews.

As someone who worked between 1994 and 1996 towards Israeli–Arab cooperation in biotechnology as a US member of a Trilateral (United States–Jordan–Israel)

Science Group, I cannot even visit a Palestinian university campus because of the extreme danger. In my view, until the Palestinian culture of violence changes, all attempts at scientific cooperation are illusory. Instead of supporting one-sided boycotts against Israeli academics and institutions, which are in any case in favour of peaceful solutions, any well-meaning academics who would like to see peace should be demonstrating against the terrorist groups.

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Casting light on mystery of auroral flashes

Sir— There may be a simple explanation for the puzzling auroral flashes seen by astronaut Ed Lu (*Nature* **425**, 888; 2003). They could be due to an electrical discharge between regions of the atmosphere containing different electrostatic charges.

The fact that the flashes were visible only in the direction of the aurora suggests that the charged particles in the aurora are important. It is well known that ionizing radiation can trigger an avalanche breakdown of an insulating gas; this is, in fact, one of the ways of detecting ionizing radiation, as in a Geiger counter. The resulting burst of energy will release the built-up charge, and create a flash of light in the process. Some explanation for the initial build-up of charge is also needed, and could arise from the frictional forces of the high-speed winds in the upper atmosphere.

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