

covers GMOs, but no other organisms, no matter how pathogenic or otherwise dangerous to the environment.

Ironically, the protocol would burden with unscientific, expensive and unnecessary regulation environment-friendly products that can be produced by recombinant DNA technology, and which are needed by developing countries.

US negotiators at the talks in Cartagena could have argued persuasively that the proposed regulations lack scientific and common sense, but their position instead focused exclusively on trade considerations, aiming to protect agribusiness interests.

The United Nations' proposed protocol would make GMOs artificially expensive to test, produce and use. According to a US Department of Agriculture study, the prices of wheat and coarse grains (corn, barley and sorghum) could increase worldwide by an average of 2 per cent and 5.6 per cent, respectively. Developing countries would spend more on food and be prevented from participating in technological trends.

Future talks should be based on scientific principles, actual product risk and the public interest, rather than politics, expediency and narrow self-interest.

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## Others should follow the US line on bioweapons

*Sir* — Your article on the controversy surrounding destruction of the smallpox virus presented well the difficult and complicated issues facing international policy-makers (*Nature* 398, 741; 1999). But one statement attributed to me was seriously in error. It is alleged that I said that the US Department of Defense wished to see stocks of variola virus retained in order to retaliate in kind should the United States be subjected to a bioweapons attack. From this, it might be implied that the United States was not intent on meeting the obligations of the Biological Weapons Convention that ban offensive weapons. That would be a serious matter indeed.

The US stock of offensive weapons was destroyed more than 20 years ago. During my years of government service, I know of no one who ever suggested using biological weapons in retaliation or in any other manner. One would hope that this might one day be the accepted norm for all countries.

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## There's still a place for physics out west

*Sir* — Tony Reichhardt's article, "Wyoming physics faculty faces closure", grossly overstates our recommendations on the future of the Department of Physics and Astronomy at the University of Wyoming (*Nature* 398, 357; 1999). Since the article appeared, we have further refined our recommendations, which will clarify the future of physics instruction.

It was never suggested that the university should not teach physics. The academic plan did, however, raise serious questions about the health of the Department of Physics and Astronomy. These in turn raise questions about the number of degree programmes we will try to support. Currently, we offer bachelors, masters and doctoral degrees in physics, and a bachelors degree in astronomy/astrophysics.

Physics and astronomy is a troubled department. Last year, with a budget of more than \$1 million, it produced only one graduate with a baccalaureate degree. We have an obligation to ask whether a budget of this magnitude is justified.

There are additional problems. Our recommendation to eliminate the department's graduate programmes and to question the future of the baccalaureate degree was based largely on a 1998 peer review of the mathematics and physical sciences divisions within the university's College of Arts & Sciences.

The reviewers, representatives from other University of Wyoming colleges as well as from other regional universities, examined six departments. Five were rated 'very good' or 'acceptable'; only physics and astronomy was rated 'unacceptable'.

The review found that, between 1992 and 1996, undergraduate enrolment fell by 44 per cent, graduate enrolment by 29 per cent, and degrees granted by 53 per cent. Enrolment in many undergraduate courses was lower than the university's standard minimum. About half the faculty members were inactive in research. Collegiality among at least some faculty members was low, and communication was a major problem. The Wyoming Infrared Observatory (WIRO) appeared to be underused and underequipped, owing in part to the staff's inability to communicate and work together.

Both this review and an evaluation of WIRO by leading astronomers also indicated that changes must be made in the administration of the observatory, to improve its cost-effectiveness, and in the quality of its instruments to improve the science. Given the many calls on this

institution's limited funds, it was imperative that the academic plan should question whether this is a sensible continuing investment. To treat any discipline as a sacred cow would make a mockery of any planning process.

Since the article in *Nature*, we have completed our second draft of the plan. We received thousands of comments on the draft. Many comments dealt with the Department of Physics and Astronomy.

The comments did not change our view that the department is troubled. However, we were convinced that we could not have a credible department without offering at least a bachelors degree in the subject.

The new draft plan says the university's intention is to maintain a baccalaureate programme in physics, but it also places the responsibility where it belongs — on the faculty members — to rebuild the programme, beginning with the undergraduate programme. Graduate students will be able to complete their studies, but the plan suggests a moratorium on accepting new graduate students. Whether the masters or doctoral programmes are restored in the future will depend upon the progress made at undergraduate level. We will continue to look at new creative ways to manage the underused infrared telescope.

We believe that the people of Wyoming want a stronger, more focused university. We asked tough questions about every programme, including physics. The article raised the spectre of whether Wyoming would be shamed by being the only state-run university without a physics degree programme. In fact, we will maintain our baccalaureate programme and will rebuild the department, but only progressively and in response to specific benchmarks of performance. We know of no other way to preserve the quality educational experience we offer our students.

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*Reichhardt replies* — My News report said, in fact, that the university would still teach physics, and that not offering the bachelor's degree was only an option. I wrote: "The plan recommends that consideration be given to scrapping the bachelors degree programme and offering physics courses only as a 'service function'..." The university later chose to keep the bachelor's degree, but it was still a possibility that it would be killed off when the article was written.

**Tony Reichhardt**

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