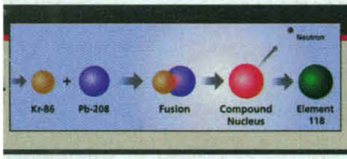
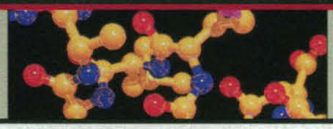
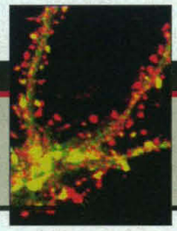



1751 Extending the periodic table

LEAD STORY 1752 Fallout from a $1 billion patent suit



1755 Memories are made of this



EDUCATION

## Scientists Block NIH Plan to Grant Ph.D.s

National Institutes of Health (NIH) director Harold Varmus would seem to have everything he needs to create a world-class graduate school in biomedical science—about 1150 tenured and tenure-track researchers, the country's largest clinical research center, and scores of experts in the hot new discipline of bioinformatics. Only one element is missing: acceptance of the idea by outside scientists. But that may be a deal-breaker.

**At odds.** Can NIH's Gottesman (*left*) persuade Princeton's Tilghman to support grad school plan?

Last week, for the second time in 6 months, opposition from several scientists on Varmus's influential Advisory Committee to the Director forced him to withdraw a plan to establish a small graduate school on the NIH campus. He and Deputy Director for Intramural Research Michael Gottesman will advance the idea again only if they can find a way around "some central crevasses," Varmus told his advisory panel on 3 June. "Negative votes here count pretty heavily," he said.

Gottesman and Varmus were seeking the advisory panel's endorsement of a Ph.D.-granting program in disease-oriented, integrative biology that would enroll 15 students a year for a 5-year course of study. The curriculum is still "in a rather preliminary stage," Gottesman said, but instruction would be mostly tutorial or in small classes, and the program would emphasize areas of NIH strength in bioinformatics, clinical research, and genomics.

NIH already has about 700 graduate-level students on campus under a variety of training and outreach programs. But Gottesman said the course preparation and teaching involved in a degree-granting program would "add to the intellectual excitement in our laboratories," foster more interdisciplinary contact, and help NIH recruit top-level academic scientists who want to keep teaching. "We don't intend to use any extramural funds," Gottesman pledged. But that didn't mollify the critics. They called the grad school plan inadequately thought out and the wrong move at a moment when universities are already turning out too many life sciences Ph.D.s.

"We right now in this country have an excess of Ph.D.s trained in the biological sciences," said molecular biologist Shirley Tilghman of Princeton University. "For the NIH to turn around and start a graduate program sends the wrong symbolic message to the community." Tilghman has long been concerned about worsening job prospects for newly minted Ph.D.s. She chaired a National Research Council study last year that urged universities to freeze the size of graduate programs and forgo developing new programs "except under rare and special circumstances" (*Science*, 11 September 1998, p. 1584).

Philip Needleman, chief scientist of Monsanto Co. in St. Louis, said the NIH plan sounded neither focused nor unique. Cell biologist Marc Kirschner of Harvard Medical School in Boston not only echoed those concerns but also stated bluntly a consideration that usually goes unspoken at NIH advisory council meetings. "It's hard to see NIH proposing a program in these very important areas at the same time that NIH is not supporting, for example, a [training] program that we had at Harvard, which basically had this terrific cohort of graduate students," Kirschner said.

Neurobiologist Eric Kandel of Columbia University in New York City chided Kirschner a few minutes later. "I think our function on this committee is to make sure that NIH is as strong as possible, not that Harvard or Columbia is as strong as possible," said Kandel, who enthusiastically supports an NIH grad school. "I think we all sense that, from an academic point of view, this place could be stronger as a result of a Ph.D. program."

On a show-of-hands vote, Varmus won what he called "a partial vote of endorsement." A majority of the panel voted that he and Gottesman should keep trying to develop a grad school plan, particularly a more detailed curriculum. Tilghman, Needleman, and Kirschner voted "no."

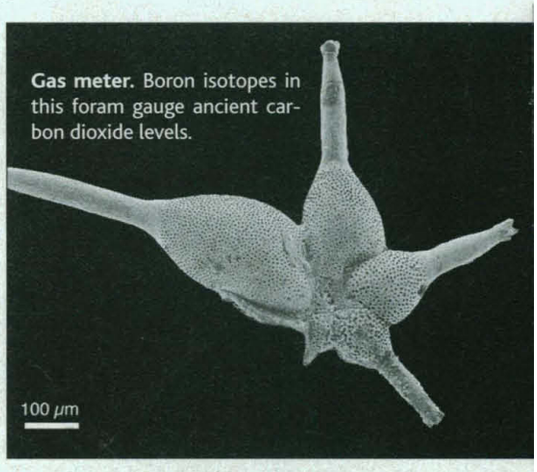
Varmus won't try to cram the idea down the throats of extramural scientists. He noted that if U.S. research universities object, Congress would likely raise questions, too. "This is not the issue over which we would want to put the entire NIH at risk," he said. But he indicated he may make one last try by naming a subgroup of the advisory committee to help refine the proposal. It might not be a bad idea for him to invite Tilghman to join in. At the end of the day, she left a possible opening. Although NIH's plans at this point don't look "terribly different" from other graduate programs, Tilghman said, "I would be extremely enthusiastic about a true Ph.D. in bioinformatics." **–BRUCE AGNEW**

Bruce Agnew is a writer in Bethesda, Maryland.

PALEOCLIMATOLOGY

## Slide Into Ice Ages Not Carbon Dioxide's Fault?

As an agent of climate change, the carbon dioxide in the atmosphere gets a lot of respect. It's famous as the force behind the predicted greenhouse warming fueled by human activities. And in research circles, falling levels of carbon dioxide are the presumed culprit behind the recent 100 million years of climatic cooling—a long, bumpy slide that started in the balmy age of the dinosaurs and plunged the world into an ever-deepening chill, culminating in the ice ages of the past 2 million years. But two independent studies now raise questions about whether this big chill really can be blamed on carbon dioxide.




**Gas meter.** Boron isotopes in this foram gauge ancient carbon dioxide levels.

In this issue (p. 1824), paleoceanographers Paul Pearson of the University of Bristol in the United Kingdom and Martin

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