Bioterrorism becomes one of the hottest US research fields

President Bush unveiled his proposed health budget for FY2003 during a visit to the University of Pittsburgh last month. Its centerpiece is $11 billion in new spending to combat bioterrorism, an issue that has preoccupied America since anthrax-tainted mailings killed five people last year.

The budget is part of a raft of recent government activities related to bioterrorism: Congress appropriated nearly $3 billion in additional FY2002 spending on bioterrorism preparedness after the 11 September terrorist attacks—a ten-fold increase over the previous year. The first installments of that money were released to states at the end of January.

UPMC Health System

A Presidential visit to Pittsburgh

If approved by Congress, the President's budget—which would begin this October—would give $1.75 billion in new money for bioterrorism research to the National Institutes of Health and provide $5.9 billion for bioterrorism-related improvements in the nation's public health system.

Although this would be the largest infusion of money for US public health in decades, some allocations seem to make little sense. Even supporters of increased biodefense spending point to one particularly vexing move: "It's crazy to put all this money into public health and at the same time cut money at the CDC for emerging infectious diseases. Those kinds of tradeoffs make no sense strategically," says Tara O'Toole, director of the Johns Hopkins Center for Civilian Biodefense Strategies. And Hillel Cohen, an epidemiologist at the Albert Einstein College of Medicine and an outspoken critic of bioterrorism spending, points out that "even as the overall budget was increased, the non-bioterrorism budget was decreased, and this conforms to the warning that we've been making, which is that rather than providing extra public health resources, these types of programs will be a drain on the public health programs that really affect huge numbers of people."

Others are concerned that public hysteria over bioterrorism is threatening legitimate research. For example, Congress approved legislation in January curtailing access to laboratory stocks of nearly 40 pathogens and toxins. The regulations will require research centers to pay for strict new security measures, even for laboratories that only work with DNA fragments from the restricted agents.

While agreeing that access to potential bioweapons should be controlled, Glen Gaulton, vice dean for research at the University of Pennsylvania Medical School calls the legislation "a little misguided." Gaulton points out that most newer research facilities are designed like those at Penn, where "you can look from one end to the other through ten different labs. It's great for collaborative science, but it's impossible to make that secure."

In addition, the legislation bars researchers from any of the US government's list of 'states of concern' from working in the restricted labs. According to Gaulton, "The only way it may be possible to obey those regulations is to simply not accept any trainees from those countries," but because the list changes frequently, "it's a tremendous problem."

Meanwhile, the Bush administration has identified biological weapons proliferation as a key concern, but has abandoned international talks on an enforcement protocol for the Biological Weapons Convention (BWC). The administration has "made some [alternative] proposals for the international community, not a single one of which addresses what we have said is the main issue, which is proliferation," says Mark Wheelis, a microbiologist at the University of California (at Davis) who is involved with the Federation of American Scientists' efforts to bolster the BWC.

Indeed, current biodefense research being conducted by the US Army may be the major reason the administration sought to sink the BWC. Wheelis says that revelations about classified research, which have come to light during the investigation of the anthrax attacks, suggest that the military committed at least three violations of the treaty while producing weaponized pathogens. "It's my suspicion that the US torpedoing of the BWC negotiations was not because we felt it *would* not be effective, but because we felt it would be effective." In this respect it is interesting that a letter sent by the FBI to members of the American Society for Microbiology in mid-January suggests that the anthrax used in the attacks may have come from one of the laboratories doing biodefense research.

Alan Dove, Philadelphia

Hopkins Dean criticizes smallpox research

Bioterrorism research appears to be the hottest lab activity in the US at the moment, and virtually every university website carries a special focus on the field. But not everyone is enamored of the types of investigation taking place. Alfred Sommer, Dean of the Johns Hopkins Bloomberg School of Public Health, has broken ranks and gone public with criticism of smallpox studies at the US Army Medical Research Institute of Infectious Diseases (USAMRIID) in Fort Detrick, Maryland.

Sommer objects to the development of a primate model of variola (smallpox) virus infection being perfected by USAMRIID's Peter Jahrling. Rather than produce a model on which to test potential new compounds and vaccines, Sommer says, "Public health workers, particularly those who have experienced smallpox 'in the raw', would like to see this virus eliminated from the face of the earth. If the virus isn't around, we don't need to 'learn' more about it. There are plenty of other things to study."

The world's two known stocks of variola virus, held in Russia and at the Centers for Disease Control and Prevention in Atlanta, were due to be destroyed this year. But in mid-January, the World Health Organization's Executive Board voted to retain the stocks for further research.

Jahrling's team had previously succeeded in infecting cynomolgus macaques with variola virus, but failed to produce a course of illness consistent with human smallpox infection. New research has yielded a technique for infecting monkeys such that virus dose correlates with severity of disease course with a fatal outcome. Animals that die have profound leukocy-