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The Biodefense Buildup: Fallout for Other Research Areas?

BARTON REPERT

Massive expansion of the US biodefense program since 2001 has yielded fresh career opportunities for thousands of American scientists handling infectious disease work. With the Bush administration determined to develop better countermeasures against bioterrorism, this trend is likely to continue for the next several years.

However, the rapid buildup of new laboratories, personnel, and funding for biodefense could have a significant downside for other important areas of research—and, some scientists contend, may actually contribute to the erosion of this country's public health infrastructure.

The fiscal year (FY) 2006 federal budget, sent to Congress on 7 February, signaled President George W. Bush's intention to keep pouring money into biodefense. "We have spent or requested nearly \$19.2 billion since September 11, 2001," Secretary of Health and Human Services Mike Leavitt told reporters, "and that investment is showing tangible results."

According to research analyst Ari Schuler at the University of Pittsburgh Center for Biosecurity, in the current fiscal year, combined spending for civilian biodefense by seven federal departments and agencies is estimated to total about \$7.647 billion—approximately 18 times more than FY 2001 outlays of \$414 million.

One of the results of the steeply ramped-up biodefense effort is a network of new, high-security laboratories for research on infectious diseases. The network, funded by the National Institute of Allergy and Infectious Diseases (NIAID), a part of the National Institutes of Health (NIH), will comprise two large national biocontainment laboratories (to be built at Boston University's Medical Center and at the University of Texas Medical Branch

in Galveston), along with 14 to 17 smaller regional biocontainment laboratories. The two national facilities will include a substantial amount of biosafety level 4 (BSL-4) laboratory space, while the regional facilities will feature BSL-3 and BSL-2 labs. In addition, NIAID is funding the establishment of 10 Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases Research, each of which comprises a consortium of universities and complementary research institutions, to support the NIAID biodefense research agenda.

Proponents of that agenda, including Dr. Anthony Fauci, director of NIAID, argue that biodefense research represents money well spent because it is dual-purpose: it is valuable not only for developing better vaccines, diagnostics, and therapeutics against bioterrorist agents but also for coping with naturally occurring infectious diseases. Several critics within the scientific community, however, contend that the biodefense effort is largely a politically motivated overreaction—following the fall 2001 anthrax-by-mail incidents—to a limited threat.

One outspoken critic, Richard Ebright, a molecular biologist and professor of chemistry and chemical biology at Rutgers University, has initiated and circulated to colleagues an open letter to Elias Zerhouni, NIH director, charging that the priority placed on biodefense research since 2001 has been accompanied by "a massive efflux of funding, institutions, and investigators from work on non-biodefense-related microbial physiology, genetics, and pathogenesis."

The letter, signed by more than 750 researchers, says the number of grants awarded by NIAID referencing "prioritized bioweapons agents" has increased by 1500 percent, from 33 in 1996–2000 to 497 since 2001. By contrast, grants

awarded to study non-biodefense-related model microorganisms have decreased by 41 percent over the same period, from 490 down to 289, while grants to study non-biodefense-related pathogenic microorganisms have decreased by 27 percent, from 627 down to 457.

"The diversion of research funds from projects of high public-health importance to projects of high biodefense but low public-health importance represents a misdirection of NIH priorities and a crisis for NIH-supported microbiological research," declares the scientists' letter, urging that Zerhouni "take corrective action."

Another critic of the biodefense buildup, Mark Wheelis, an expert on biological weapons at the University of California at Davis, says he believes that "the threat of a mass-casualty bioterrorist attack has been greatly overestimated. The possibility of such an attack is clearly not zero, but it's probably quite a bit less likely than many people think." Regarding the new network of biocontainment laboratories, Wheelis observes that "a small increase in our capacity to do work on very serious pathogens under high containment is reasonable.... But plastering the country with BSL-3 and BSL-4 labs is going to degrade our public health infrastructure more than it will aid it."

The Bush administration has renewed its resolve to move ahead with a heavily funded fight against the perceived threat of bioterrorism. At the same time, it is clear that the continuing biodefense buildup will not only involve "hot zone" pathogens but also generate a substantial amount of heated debate within the American scientific community.

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