

BIOLOGICAL WARFARE

SOME BIOLOGISTS WANT DoD OUT OF BIOTECH

WASHINGTON, D.C.—Department of Defense (DoD) officials have been building the U.S. research program in defensive biological warfare (BW). They claim such efforts are vital for national security, particularly because new biotechnology techniques pose novel threats. Critics, including some prominent biologists, counter that DoD's expanding programs are an unsettling threat to international relations, and that putting biotechnology to such use is wrong.

BW issues were raised on several occasions during the summer in the nation's capital, including the following key events:

- The Committee for Responsible Genetics (Boston, MA) announced that more than 500 scientists have signed a "pledge against the military use of biological research."

- The DoD presented a voluminous draft programmatic Environmental Impact Statement (EIS) for public comment. The EIS is being prepared as part of a settlement of a 1986 lawsuit against DoD (*Bio/Technology* 5:1006, Oct. '87).

- Senator Carl Levin (D-MI), who chairs the Subcommittee on Oversight of Government Management, held a hearing to examine the safety of chemical and biological warfare (CBW) research. Several reports were released at the hearing—one from the subcommittee, another from the U.S. General Accounting Office (GAO), and a third by critic Jeremy Rifkin of the Foundation on Economic Trends (Washington, DC).

The biologists' pledge not to do BW research was announced at a press conference sponsored by the Committee for Responsible Genetics. "The new technologies of biology have not yet been tainted from being put to warfare use," says Jonathan King of Massachusetts Institute of Technology (Cambridge, MA). "Recombinant DNA [methods] are so limitless and one could make any number of variables, so defense is literally impossible," adds Nobel Laureate Christian Anfinsen of Johns Hopkins University (Baltimore, MD). To put the new tools of biomedical research to such use "would be a perversion of our goals as biologists," says Jane Koretz from Rensselaer Polytechnic Institute (Troy, NY).

King, Anfinsen, Koretz, and others who have signed the pledge say that DoD-sponsored research should be halted and that DoD biomedical research programs be shifted into civilian agencies, such as the National

Institutes of Health (NIH). "I see no justification of BW research for defense—it's neither a threat nor a deterrent," says Richard Novick, director of the Public Health Research Institute (New York, NY). The four scientists recommend that other biologists refuse to accept DoD funding, but point out that expansion of such research within DoD has come when biological research budgets at other federal agencies are either at a standstill or falling behind.

The DoD BW research program, all of which is unclassified, includes development of pathogen detection systems, vaccines, and biological safety suits to protect against potential BW agents. DoD's research is conducted in many facilities across the country, with a sizable fraction being done under contract at universities or in small companies. From 1980 to 1987, annual spending (for combined CBW research) increased more than 500 percent, from about \$63 million to about \$334 million, Senator Levin said at the hearing late in July.

DoD's draft environmental impact statement considers the two most obvious alternatives for the whole program—continuing BW research or halting it. Continuing "would pose no unacceptable risks to the associated work force and no significant risks to the public or to the environment," the draft document concludes. Although halting the program "would eliminate perceived risks," it would also "eliminate significant scientific benefits...and significantly impair national defense." Hence, the report recommends continuing BW research, essentially without changes.

"The legal burden on the draft EIS is very, very heavy," says Andrew Kimbrell, an attorney with the Foundation on Economic Trends, which brought the lawsuit against DoD several years ago. He says the description of work being done at most DoD BW research sites is "inadequate." Also, the discussion of alternatives within the draft, such as shifting some DoD research activities into other agencies, is incomplete, he contends. Procedures for testing vaccines in other countries also appear "murky," he adds.

DoD officials say the BW defense program is essential for national security, particularly because new research methods in biotechnology could be used by hostile governments or terrorists to pose novel threats. They also argue that the programs are an essential component of current

U.S. defense efforts, sometimes referring obliquely to classified intelligence reports to bolster this contention. And they dismiss the notion of shifting DoD biomedical research to civilian agencies, calling the idea impractical from a management standpoint and unjustifiable because of statutory restrictions on the agencies.

The concern for safety standards in biological warfare research was the central theme at the July Senate subcommittee hearing. When it comes to lab safety, the "biological side has been in even worse shape" than chemical warfare research, Sen. Levin and his staff report. "There has been no readily identifiable organizational structure within DoD for overseeing safety; contractor facilities were not pre-screened; there was a confusing and patchwork system of safety regulations; and no DoD safety inspections." DoD has responded to these claims and is developing a "comprehensive safety regulation," Levin says, but he is not yet altogether satisfied with DoD's response, and he has pointed misgivings about recent practices.

Similar concerns appear in the GAO report, "DoD's Risk Assessment and Safeguards Management of Chemical and Biological Warfare Research and Development Facilities," that was also discussed at the hearing. "The lack of a formal DoD risk assessment and safeguards management process in the biological area makes it difficult to determine whether contractors are using recommended safeguard guidelines," the report notes. GAO recommends that DoD "take a more active role" and adopt a "centralized approach" instead of relying on the system developed by the "biomedical and microbiological research establishment implemented individually by research investigators and institutions."

According to Jeremy Rifkin, DoD has ambitious plans to build its BW program and make it appear more acceptable through aggressive public relations activities. For instance, a DoD document calls for establishment of "red teams" to create "realistic threat scenarios," he says. The gist of such efforts is to make biological warfare research more acceptable in the wider community, particularly among academic researchers, he told Senator Levin at the hearing. However, he warns, the efforts could "lead to...an expanded genetic arms race [and]...an increase in environmental and safety hazards."—**Jeffrey L. Fox**