RUSSIA

An Antidote to Bioproliferation

Hoping to deter Russian biological-weapons specialists from being lured to countries that sponsor terrorism, a U.S. National Academy of Sciences (NAS) committee last week urged the Department of Defense (DOD) to help provide them work. The panel called on DOD to launch a 5-year, $38.5 million initiative to fund collaborations between the Russian experts and their U.S. counterparts.

Five years ago, Russian President Boris Yeltsin confirmed long-standing suspicions that the Soviet Union had maintained a substantial bioweapons program and that some of its projects had violated the Biological Weapons Convention. About 10,000 workers are thought to have been engaged in bioweapons research at Russian institutes, and many of them have been trying to eke out a living since Russia drastically cut research spending in the wake of the Soviet breakup. The main concern is with "the much smaller group at the top of the pyramid who are able to go somewhere else and make mischief," says NAS panel member Frederick Murphy, a virologist at the University of California, Davis.

To help thwart the possibility that top bioweapons researchers might be lured to countries such as Libya or Iraq, DOD in 1995 asked the academy to design a program to expand collaborations between U.S. scientists and Russians in the decaying Soviet bioweapons complex. In its report, the NAS panel, chaired by Joshua Lederberg of Rockefeller University in New York City, recommends that the Pentagon spend $38.5 million on about 70 joint projects on pathogens linked to bioweapons research, such as anthrax, plague, and viral hemorrhagic fevers. Because many of these bugs are serious health threats, the panel says, the initiative would beef up research aimed at treatment and prevention. After the initiative runs its course, the panel suggests that DOD commit another $10 million a year to perpetuate collaborations.

The NAS panel acknowledges that the program could backfire if Russia were to become hostile again to Western interests, as the initiative will prop up work that could be applied to developing bioweapons. "Any one of these projects that doesn't entail looking at *Paramecia* in pond water has a certain level of risk," says panel member Peter Jahrling, a virologist at the U.S. Army Medical Institute of Infectious Disease in Fort Detrick, Maryland. But compared to the possible consequences of doing nothing, says Murphy, "it's an absolutely acceptable risk."

To minimize the risk of "dual use" research, the academy has already agreed to help oversee six pilot projects at two former weapons labs: the State Research Center for Virology and Biotechnology "Vector" near Novosibirsk, and the State Research Center for Applied Microbiology near Moscow. DOD has committed $500,000 to these projects, which include sequencing the monkeypox virus and cataloging the range of hantaviruses in the Asian part of Russia.

Most of the work under the proposed initiative would take place in labs run by Biopreparat, a government body that cooperated with the NAS panel and which the report says was principally responsible for the hard-core science in the Soviet bioweapons program. So far, however, neither DOD nor the academy has been able to involve Russia's Ministry of Defense in pilot projects or discussions of future work. In Soviet times, the ministry focused on weapons production, and an estimated 150 to 200 scientists still work on biological defense-related projects at four centers. But Murphy, for one, hopes that the ministry will eventually be brought into the fold—that is, if the Pentagon backs the proposed initiative.

–Richard Stone

AUSTRALIA

Major Changes Proposed in Antarctica

MELBOURNE—Australia's Antarctic research program needs to be modernized by consolidating its three bases into a single research station and using planes instead of ships to ferry scientists and their equipment throughout the continent. That's the conclusion of a report by a committee asked to develop a 30-year plan for doing science in the region. The changes are aimed at preserving a strong research program and responding more quickly to rising commercial interests.

Australia's program is "very rigid and fixed" and reflects policies framed during the Cold War, says Michael Stoddart, chair of the Antarctic Science Advisory Committee, which delivered the report last week. Australia claims 41% of the continent, and its three permanently occupied stations—Mawson, Casey, and Davis—were built on the assumption that effective occupation of uninhabited territory would strengthen those claims. "But owning territory is not the important thing anymore," says Stoddart, deputy vice chancellor at the University of New England in Armidale, New South Wales. "Antarctica is about science, peace, and international cooperation."

The committee recommends that Australia lease two of its three permanent bases and set up a year-round intercontinental air link for scientists and other visitors. Transforming the operating infrastructure, which consumes two-thirds of the program's $45 million annual budget, is seen as a key move. The lease for an Antarctic icebreaker, which now carries personnel and supplies several times a year, alone runs to $15 million. Replacing this arrangement with a single staffed base and a year-round intercontinental air link, coupled with intracontinental flights, it says, would provide far better access and flexibility at no greater cost.

AUSTRALIAN ANTARCTIC DIVISION

Frozen out? Report calls for leasing of Australia's Mawson Base.

"If any simple thing goes wrong, it can wipe out our program for the year," says Pat Quilty, chief scientist at the Australian Antarctic Division, about the program's reliance on the *Aurora Australis*, whose lease expires in 2000. The ship's schedule also locks scientists into one of two schedules, the 2.5-month summer program or the 9-month winter program. Adds Ron Johnston, deputy chair of the Australian Science and Technology Council, "To do better science, we need to be able to assemble targeted teams for specific projects and fly them in for 4 weeks and then out."

Such improved access, notes Stoddart, will help Australia cope with the expected increased interest in the region over the next 30 years: "We'll inevitably see an increase in adventure tourism; biotechnology companies are interested in the very cold, clean conditions; and there will be commercial pressures on fishing."

The air link, possibly a blue ice or gravel strip, has already spawned some controversy among environmental groups. "To our mind, that's going the wrong way, escalating human activity and impact," says Margaret Moore of the World Wildlife Fund in Melbourne. An official with the U.S. Antarctic program calls such plans "a radical departure from some of the principles that underline the treaty."

–Elizabeth Finkel

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