EMERGING DISEASES

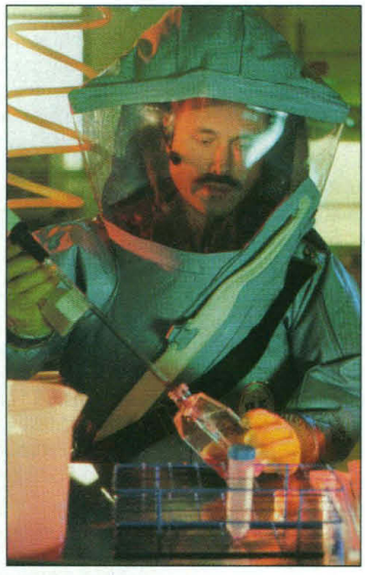
Canada Dedicates New Human, Animal Labs

The world health community has a new weapon in the fight against emerging infectious diseases. Last week the Canadian government dedicated a $100 million facility in Winnipeg, Manitoba, that features side-by-side maximum containment laboratories for the study of viruses that kill animals and humans. The labs are Canada's first biosafety level 4 facilities and represent the only site in the world where scientists will be able to work with livestock to study both the medical and veterinary aspects of zoonotic diseases—diseases that hop from animals to people, including such recent pathogens as the Ebola, Nipah, and Hendra viruses.

"It's an outstanding facility, well designed and constructed," says Jonathan Richmond, who oversees the level 4 lab at the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta and has served as a technical adviser for the Canadian lab. Typically, level 4 labs specialize in either human or animal diseases; as a result, the animal labs lack medical expertise, whereas the medical labs lack the capacity to work with large animals such as pigs and cattle. "What's exciting is that [the Winnipeg lab] will bring together a critical mass of people to understand the pathogenicity and progression of diseases that affect both animals and humans," says Richmond.

The lab complex, called the Canadian Science Center for Human and Animal Health, grows out of a political promise made in the 1980s by then–Prime Minister Brian Mulroney to spur economic development in the western provinces. The center, which also contains several level 2 and 3 labs for less hazardous organisms, is operated jointly by two federal agencies, Health Canada and the Canadian Food Inspection Agency. Both agencies have transferred personnel from Ottawa to the new facility in the past year.

The human level 4 lab is headed by Heinz Feldmann, a 40-year-old German physician and virologist trained at CDC and the University of Marburg in Germany who has spent the past decade studying viral hemorrhagic fevers such as Ebola and Marburg. Feldmann hopes to continue his research on those and other pathogens, collaborating with partners in the United States, Germany, and elsewhere. But first he must assemble a six-person staff to set up the lab and win approval to open shop, a process he hopes will be completed before the end of the year. Then the lab must demonstrate its ability to work with other research labs in diagnosing infectious agents from around the world. "It will take some years to get the research program up and running," says Feldmann, who adds that the government so far has given him "sufficient support … even though I don't yet have a budget."



His colleagues wish him well, but some say it won't be easy. "It's a wonderful facility, and an engineering marvel, but it could be tough for him to get people to come out there because of where it's located," says Susan Fisher-Hoch, director of the level 4 lab under development at Fondation Marcel Mérieux in Lyon, France. "Then he has to draw up his protocols and get ready for business. It'll be a real challenge."

At the same time, Fisher-Hoch and others say that the Canadian center offers scientists a unique opportunity to work with such zoonotic diseases as Nipah virus, a newly identified pathogen that is transmitted from pigs to humans and recently caused a spate of deaths in Malaysia (*Science*, 16 April, p. 407). And Brian Mahy, director of viral and rickettsial diseases at the CDC, says the location is an advantage for U.S. scientists. "If the CDC wants to study Nipah in pigs, we have to work with [the Australian Animal Health Laboratory at] Geelong. It would be a lot more convenient to work with Winnipeg."

Tony Della-Porta, head of technical services for the Geelong lab, says there's more than enough business to go around. "There's a real need for all of us to work together against these newly emerging diseases," he says. "We really don't know what will pop up next. And we have to be ready to fight it with everything we've got." —JEFFREY MERVIS

Virus fighter. Heinz Feldmann will head level 4 lab at Canada's new center for human and animal health.

KOREA

Spending Boost Aims To Reform Academia

SEOUL—Undergraduates taking a biology course at Seoul National University (SNU), Korea's top university, may choose from among offerings by five departments. Such duplication adds to the teaching load of faculty members and leaves less time for research. The large number of departments offering courses also lowers research productivity by imposing additional barriers to joint projects that require a pooling of resources. This month the Korean government unveiled an ambitious plan that addresses those and other problems facing academic researchers as part of a $1.17 billion, 7-year program to reform higher education.

The new effort, called Brain Korea 21 (BK21), is intended to raise the country's ranking among global scientific powers by shaking up an overly centralized and hidebound system. It aims to improve graduate training by giving money in selected areas to new research consortia that cross institutional boundaries. It also promises to ease the teaching load for those researchers by lowering the number of undergraduates in their departments. At the same time, the government hopes to strengthen the country's capacity to do research by funneling undergraduate students and more resources into promising provincial universities.

Announced on 4 June, the project is the country's latest attempt to make more efficient use of its rising investment in science and technology (*Science*, 2 January 1998, p. 24). Government officials hope that BK21 will begin to remove the barriers between departments, end inbreeding and cronyism among faculty, and reduce the intellectual gap between a handful of elite universities and dozens of provincial institutions. "BK21 is aimed at changing the basic structure of universities in Korea," says policy analyst Chung Sung Chul of the government's Science and Technology Policy Institute in Seoul.

Brain 21 will pour money into such burgeoning fields as medical and agricultural biotechnology, information technology, chemical engineering, and materials science

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