lobbied hard for tax relief, saying that high taxes have driven Canadian high-tech talent across the 49th parallel. Chrétien has resisted that argument, declaring just last month that such flight is "a myth." Indeed, demographers say that Canada actually enjoys a favorable intellectual trade balance, and that the outflow to the United States in particular has shrunk by one-third since the 1950s. But last week, Chrétien appeared to acknowledge the existence of a brain drain without endorsing the business community's solution. Rather than lower taxes, he reasoned, why not give universities the wherewithal to attract the necessary talent to compete in a global market. "Our goal is for Canada to be known around the world as the place to be," Chrétien told Parliament. "That's particularly [true] at a time when U.S. universities benefit from both permanent endowments and the generosity of private foundations out of all proportion to those of our universities."

The new investment—400 new research chairs in each of the next 3 years and an additional 800 "as soon as possible thereafter"—couldn't have come at a more critical moment for universities, science administrators say. "It's like having the capacity to build a hockey team with several [Wayne] Gretzkys on it," says Social Sciences and Humanities Research Council president Marc Renaud. "It gives [universities] the feeling that they can grow and compete with the Americans." Medical Research Council president Henry Friesen called it "a stunning announcement in positioning Canada's economy to compete on a world stage."

Each research chair will be awarded for 5 to 7 years and will be renewable. The allocation will be based on an institution's success in obtaining competitive research grants. To prevent major research universities from gobbling up all the funds, however, small institutions will be guaranteed at least one chair. The biomedical and natural sciences are each projected to receive a 40% share, while the social sciences have been promised 20%.

Two types of chairs will be created. The first, intended to liberate senior scientists from teaching duties, will provide roughly $140,000 a year for "star researchers with a proven track record." Universities can spend the money to hire a new investigator, to top up an existing salary, or to absorb costs associated with replacing the star in the classroom. They may also funnel it into indirect costs such as lab operations and utilities. The second category, which provides about $70,000 for so-called "rising stars," is intended to attract younger faculty to aging departments.

Whether the new monies will actually stem the brain drain is not clear, however. In fact, some argue that the problem may not even exist. Only 1.5% of postsecondary graduates in 1995 went to the United States for some period of time, says Statistics Canada director of education statistics Scott Murray, and only one in eight of them held a Ph.D. Overall, Canada is a net beneficiary of university graduates, gaining 33,000 university-educated immigrants annually while losing 8500 to the States. Immigrants are also three times more likely to hold a master's, doctoral, or medical degree than the Canadian-born population. "All of us know some people who've left," says Canadian Association of University Teachers executive director Jim Turk, noting the impact of budget cuts on university staffing. "But the plural of anecdote is not data. At most you can argue there's a trickle, primarily in the area of health care."

But there's no doubt that Canada has lost some exceptional talent over the years. For example, seven Canadians who moved south have subsequently collected Nobels. One of them, Stanford physicist Richard Taylor—an Alberta native who came to the United States in the 1950s for graduate school and never returned to work in Canada—takes issue with the notion that his career path is a "myth." Taylor, who shared the 1990 Nobel prize for electron scattering experiments that documented the existence of quarks, says the factors underlying the exodus are complex. They include insufficient spending on research, a relative lack of major research facilities, an unwillingness by Canadian industry to invest in research, and a culture that disdains elitism and risk. "It's not greed that drives people to the United States, it's ambition," he says. If the U.S.–based Canadian Nobelists had stayed in Canada, he says, "few of them would have won the prize."

Although he welcomes the additional chairs, Taylor says they will be insufficient without a change of attitude. "It's very hard for a government, especially a Canadian government, to be elitist," he says. "But that is what you should be if you want to do a good job." –WAYNE KONDRO

NUCLEAR SAFETY

Secret of Soviet-Era Nuclear Blast Revealed

MOSCOW—For the past 3 decades, rumors have circulated here that in the early 1970s an accident at the Kurchatov Institute of Atomic Energy, in a residential suburb of Moscow, released a cloud of gas that drifted over the city, exposing the population to potentially harmful radiation. Late last month at a nuclear safety conference in France, a senior Kurchatov researcher discussed these events in public for the first time: There were two blasts at the institute in the early 1970s, he said, but although two technicians were killed, as far as Kurchatov scientists could tell, no radionuclides were released over the

ScienceScope

Double Vision? India now has two science ministers. Last week Prime Minister Atal Bihari Vajpayee retained physicist Murli Manohar Joshi, left, as cabinet minister overseeing the civilian science portfolios and education; the space and atomic energy agencies still report directly to Vajpayee. At the same time, the PM appointed lawyer Santosh Kumar Gangwar, right, to the new junior post of minister of state for science and technology.

Joshi says the ministry plans a 2-day brainstorming session later this year to prepare an S&T agenda. The plan may tilt toward applied projects: Gangwar, who will tend to the science portfolio on a daily basis, told *Science* that research institutions must work harder on problems that address national needs.

Dead End Kennewick Man, the 9000-plus-year-old remains found on the banks of Washington's Columbia River 3 years ago, does not appear to be related to modern-day American Indians or Europeans. The skeleton's analysis, released last week by a government panel, weakens Native American claims to the remains, which are at the center of a court case brought by researchers who have been denied access to them. Kennewick Man was probably part of "an early migration of Asian Pacific peoples into the Americas who left no descendants," says panel member Jerome Rose of the University of Arkansas, Fayetteville.

The government, which last month finally sent out some bone samples for more exact radiocarbon dating, must now settle the question of Kennewick's "cultural affiliation." That's going to be a tough task, because the only cultural evidence is a broken basalt projectile point embedded in the pelvis. And if officials want DNA tests to shed more light on Kennewick's lineage, they'll have to act fast: A court order requires a custody decision by March.

Polygraph Retreat Protests from scientists at the nation's three nuclear weapons research labs have apparently convinced Energy Secretary Bill Richardson to scale back controversial plans to polygraph some 5000 employees in a bid to boost security (*Science*, 3 September, p. 1469). But protest leaders are withholding comment until they see the new rules, which are due out on 1 November and reportedly cover fewer than 1000 people.

CREDIT: PALLAVA BAGLA

that don't contain the full-length Ebola genome," says Vincent Deubel of the Pasteur Institute in Paris, who announced the group's findings at an institute retreat.

Virologist Albert Osterhaus of the Erasmus University Hospital in Rotterdam notes that it is still unclear whether these particles, if confirmed to be Ebola, indicate that the animals could harbor the infectious virus. But the study suggests that "animals in a much more accessible habitat [than the deep rain forest] have definitely been in contact with Ebola," says Osterhaus.

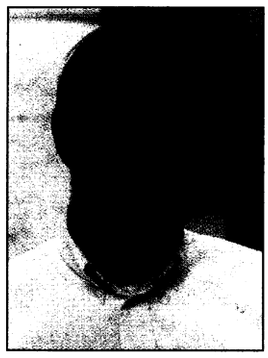
Others say the study raises more questions than it answers. The researchers "have found traces of Ebola in about 3% of the most common species around. Yet when an epidemic occurs it can usually be traced back to a single [infection]. So why don't we see more [human or primate] outbreaks if so many animals are infected?" asks Clarence Peters of the Centers for Disease Control and Prevention in Atlanta. But Peters welcomes any contribution that may help pin down the elusive Ebola hideout. "People are continually testing various hypotheses. And they should be, because it's an extremely important issue," he says.

–MICHAEL HAGMANN

SCIENCE PUBLISHING

PNAS to Join PubMed Central—On Condition

PubMed Central, a free archive of research reports planned by the National Institutes of Health (NIH), reached a milestone last week when it signed up an important contributor: the *Proceedings of the National Academy of Sciences* (*PNAS*). *PNAS*'s overseer—the governing council of the National Academy of Sciences in Washington, D.C.—voted on 13 October to donate full-text research articles to PubMed Central starting next year. The move follows a similar decision in September by the American Society of Cell Biology, which publishes *Molecular Biology of the Cell*. Both will allow PubMed Central to release their papers on the Internet after a brief postpublication delay. The academy council also added important conditions, one of which is that everything else in PubMed Central be peer reviewed, contrary to NIH's original plan to include unreviewed material.



Charter member. *PNAS* editor Nicholas Cozzarelli.

CREDIT: (RIGHT) DARESBURY LABORATORY

PNAS editor Nicholas Cozzarelli, a molecular biologist at the University of California, Berkeley, says "*PNAS* is proud to be one of the charter members of PubMed Central," which he views as "a major advance for science." Cozzarelli was an early supporter of the project, conceived by NIH director Harold Varmus and several colleagues earlier this year (*Science*, 3 September, p. 1466). Although some other journal editors are concerned about the possible loss of journal income, Cozzarelli says: "We have an obligation to take a leadership role for the good of science," and "we do not foresee a significant economic impact on *PNAS* for the next few years." In addition to releasing its reports 4 weeks after publication, Cozzarelli says, *PNAS* aims to give PubMed Central copies of "all of our research content back to 1990."

The academy council placed several restrictions on the agreement, however. It set a 1-year limit on the experiment, ruled out any commercial use of *PNAS* material, and insisted that authors not be charged fees for participation in PubMed Central. In addition, the academy said that participation "is contingent upon [PubMed Central] not including" unreviewed submissions or "reports that have been screened but not formally peer reviewed," a phrase Varmus used earlier in describing how some of the material would be vetted for publication. The outlet for non–peer-reviewed reports, according to the academy, "must be completely separate."

David Lipman, director of NIH's National Center for Biotechnology Information and developer of the PubMed Central plan, sees this as no big problem: "We had always planned" to build a wall between the peer-reviewed and the non–peer-reviewed parts of the Web site, he says. He adds, "Virtually all of the potential participants that have contacted us have been interested in the peer-reviewed component." He aims to come up with a name for the unreviewed section soon.

As planning for PubMed Central continues, a private company has announced plans to launch a Web-based biomedical publication in an unspecified field that would use PubMed Central as its distribution network. Huntington Williams III, CEO of the Community of Science, a private outfit sponsored by Johns Hopkins University in Baltimore, says the proposed journal will conduct all of its editorial work, including peer review, through the Internet. Rather than making money on author charges or subscriptions, the company plans to sell Web-based advertising that will "frame" the contents on the Community of Science Web site, which will include reviewer access to papers under review. Final reports would be deposited on PubMed Cen-

ScienceScope

Crozemarie Guilty A French court this week sentenced Jacques Crozemarie, former president of France's Association for Cancer Research (ARC), to 4 years in prison and a $250,000 fine for his role in a scandal that nearly bankrupted one of Europe's leading medical charities. The 74-year-old defendant will remain free while his lawyers mount an appeal.

Crozemarie and two dozen other defendants allegedly siphoned off $50 million from the charity, which once spent about $60 million a year on research (*Science*, 9 February 1996, p. 750). But after the scandal broke in 1996, grants nearly dried up, rebounding to $40 million this year. The guilty verdict may help boost that total, ARC president Michel Lucas, a former government inspector who exposed the scandal, told French TV station LCI. "Donors have told us they would start giving more once there was a judgment," he said.

Diamond Desire Tension is rising as researchers in the United Kingdom compete for DIAMOND, a next-generation synchrotron source. Most scientists had assumed the $290 million machine, which will allow researchers to study the atomic structure of everything from proteins to ceramics, would replace the current Synchrotron Radiation Source at the Daresbury laboratory near Manchester. But this summer the Rutherford Appleton Laboratory near Oxford surfaced as a contender.

The competition marks the newest twist in DIAMOND's 6-year history. Financing problems had put the project—the biggest single investment in British science in 15 years—on hold. Then, last summer, the charitable Wellcome Trust pledged $184 million to get construction started, with the British and French governments supplying the rest (*Science*, 6 August, p. 819). But instead of speeding things up, Wellcome's involvement "opened up the site issue again," says Susan Smith, a scientists' union representative at Daresbury. If DIAMOND ends up in Oxford, she fears her lab could close. Where Secretary of State Stephen Byers will decide to place the scientific jewel, however, won't be known for at least a few more weeks.

Contributors: Pallava Bagla, Constance Holden, David Malakoff, Michael Balter, Michael Hagmann