neurons and accessory cells called Schwann cells make a molecule called vascular endothelial growth factor (VEGF), which is found in a variety of tissues and has been shown to spur blood vessels to sprout and grow. In test tube experiments, the team found that VEGF compels undifferentiated blood vessels to take on characteristics of arterial cells. Anderson hypothesizes that VEGF secreted by nerves first attracts primitive blood vessels, then tells them to become arteries.

Although people have long noted the anatomical similarities between arteries and nerves, there has been little evidence that their development is coordinated, says molecular geneticist Peter Carmeliet of the University of Leuven in Belgium: "Until now there have been no molecular clues."

The research could also help explain a number of disorders that have baffled physicians, according to Folkman. Children with Möbius syndrome, for example, fail to develop several cranial nerves and have improperly formed arteries. The link between nerve and artery development could be a step toward an explanation, Folkman says.

–GREG MILLER

CANADA

Act Seen as First Step In Protecting Species

OTTAWA, CANADA—Canada's House of Commons last week approved the country's first law to protect endangered species. But although federal officials say the legislation, which relies on incentives rather than punishments, sets a new standard for cooperation between public and private sectors, environmental groups grumble that the approach leaves much to be desired.

"We want to get ahead of the curve, with stewardship programs," says Environment Minister David Anderson. But that approach "is just a starting point," complains the International Fund for Animal Welfare's national director, Rick Smith. "It will still leave the majority of species in the country without mandatory protection."

The parliamentary vote caps a decade-long debate over how best to protect Canadian plants and animals and their habitats (*Science*, 24 August 2001, p. 1417). In addition to first-ever mandatory protection on federal lands, the Species at Risk Act will offer incentives and compensation to landowners and industry to do the right thing, says Anderson. Those inducements will amount to $29 million this year and an expected $38 million next year. The government can wield a big stick if necessary, he adds, including arrests and fines of up to $650,000.

Despite giving private landowners financial incentives to cooperate, the new bill seemed headed the way of its predecessors until Anderson struck a compromise with all sides. He appeased the rural caucus of his own Liberal party by promising that property owners will receive adequate compensation if their lands are declared protected areas because of their value to at-risk species. He mollified the environmental caucus with a pair of olive branches. The first gives slightly more power to scientists on the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). If the committee declares a species endangered, its decision will now be final unless politicians vote within 9 months to overturn it and put their reasons in writing. The second makes habitat protection mandatory on federal land (about 6% of Canada's land mass) and waters, and on all land north of the 60th parallel not governed by aboriginal land-claim agreements.

For private lands, the bill relies on a different model of governance from what he calls the "coercive command-and-control approach" of the U.S. Endangered Species Act, says Anderson. Pressure from U.S.-linked environmental groups for more stick and less carrot "have not been helpful to the debate," he adds.

Others hold a decidedly less rosy picture of the bill. "I really don't think it will do the job," says ecologist David Schindler of the University of Alberta in Edmonton, who says that the legislation defers to the provincial governments, which have a mixed record of species and habitat protection. "I would be surprised if we saw any slowdown whatsoever in the rate at which new species are added to the list."

Wise decision? A new Canadian law will try to help endangered friends of this great owl.

Environmentalists calculate that the bill leaves about two-thirds of the 402 species within various COSEWIC risk categories without any form of mandatory habitat protection. "If we're going to save species, we have to save spaces for them, and the government is only delivering on federal lands and for aquatic species," says Kate Smallwood, endangered species program director of the Sierra Legal Defense Fund. Migratory birds are at special peril, she says, "unless the nest and its habitat are in a post office, military base, an airport, a Coast Guard station, or a national park." Anderson disagrees. An existing agreement with the United States already obliges Canada to protect migratory fowl habitat, he points out.

The bill's final parliamentary hurdle—Senate approval—is a low one, because only once in the past decade has the upper chamber overturned legislation. And that's fine with an exhausted Anderson. "I'll be glad to have it over with," he says.

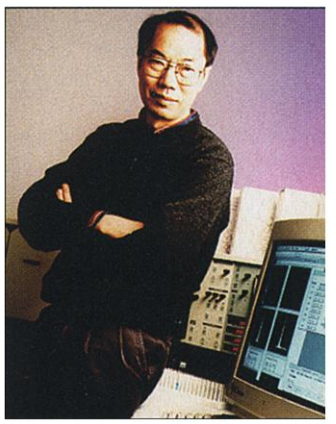
–WAYNE KONDRO

Wayne Kondro writes from Ottawa.

CANADA

Amgen Splits With Lab, But Its Money Lingers

OTTAWA, CANADA—Amgen has decided to sever its ties to the University of Toronto (UT)–based research institute it has funded for nearly a decade. But in an unusual twist, it's going to continue paying millions of dollars a year for work to which the university will hold all intellectual property rights.



New deal. Toronto's Tak Mak says "we're happy to be on our own."

The Amgen Institute was created in 1993 by the California biotechnology company, and the agreement was updated in 1999 to run through 2008. But soon thereafter the company installed a new management team, which last month decided that the institute's basic research into the functions of similar genes in mice, *Drosophila*, and *Caenorhabditis elegans* didn't fit into its new corporate strategy to focus on applied research. Earlier this month it negotiated a settlement with the university, and last week the lab set up shop under the umbrella of UT's network of teaching and research hospitals.

UT officials say that they are precluded from discussing the terms of the settlement. But both sides agree that the company negotiated an end to paying indirect research costs—administrative overhead, utilities, and the like—in exchange for renouncing any commercial claims to discoveries. "We have a contract with them to

CREDITS: (TOP TO BOTTOM) BABAK; GUY LELIÈVRE/SCF

2008 [that includes an annual payment of $6.5 million], and we are living up to that contract," says Amgen spokesperson Jeff Richardson. "We're ending our affiliation with them, but if someone were to pay me until 2008, I would think they were still supporting me."

The institute's director, molecular geneticist Tak Mak, says that he's grateful for Amgen's support but that "we are happy to be again on our own, concentrating on the science." Although he says that the settlement "is not consistent" with Amgen's previous level of support, he acknowledges that there's little he can do about it: "If you're the boss, you can call the shots."

The institute is now part of the new Advanced Medical Discovery Institute within Toronto's University Health Network. UHN research vice president Christopher Paige says the settlement buys the university enough "breathing room" between now and 2008 to raise an estimated $65 million needed to maintain the institute's current level of operations, including a half-dozen or so principal investigators and as many as 90 technicians, students, and support staff. One investigator, Josef Penninger, had previously announced that he was moving his lab to his native Austria.

Both parties agree on one thing: The new setup gives scientists more freedom to pursue their research and disseminate the results. "Having those researchers in a university setting doing proprietary research did not allow them to speak with their colleagues about what they were doing," says Richardson. "Now they have academic freedom, and they really didn't have that before."

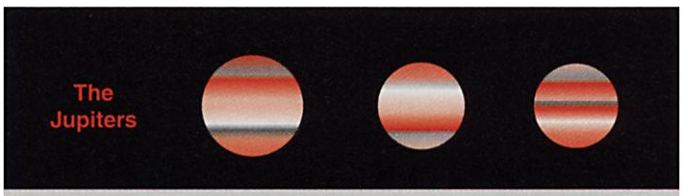
Mak says that he's relieved to be shedding 10 years of corporate ties and that having UHN own the intellectual property rights to any discoveries "allows us to be more free in terms of giving away animals and reagents, without six lawyers signing off." Mak has been criticized in the past by colleagues for being unresponsive to such requests (*Science*, 23 June 1995, p. 1715). **–WAYNE KONDRO**

Wayne Kondro writes from Ottawa.

EXOPLANETS

Jupiter's Brother Joins the Family

Last week American astronomers announced the discovery of a new yet familiar-looking planetary system—not "a sibling of the solar system," but "a first cousin." The distant relation made front-page news, but in the hour before the Americans' televised press conference got under way at NASA headquarters, European astronomers were discreetly spreading the word via e-mail that they had uncovered a nearer relation: an exoplanet that more closely resembles Jupiter in a planetary system far more like our own, "a younger brother" of Jupiter, as one of the discoverers put it. The find marks the true beginning of an expected string of discoveries of planetary systems in which Earth-like planets might be hiding.



	55 Cancri's	HD 190360's	Jupiter
Mininum mass	4.3 x Jupiter's	1.1 x Jupiter's	1.0
Mean orbital distance	6.0 AU	3.7 AU	5.2 AU
Eccentricity	0.16	less than 0.1	0.05

Do the numbers. When the two Jupiter-like planets are compared, the one orbiting HD 190360 announced this week is closer to Jupiter in mass and orbital eccentricity.

Both discoveries came as astronomers searched for telltale stellar wobbling, a sign that the gravity of a massive unseen planet is tugging the parent star back and forth. Before last week, 76 exoplanets had been discovered, but none resembled Jupiter, the solar system's most massive planet. All either were "hot Jupiters" orbiting closer to their stars than Mercury does to the sun or were on wildly elongated orbits.

Last week astronomer Geoffrey Marcy of the University of California, Berkeley, and his colleagues announced their "near analog to our Jupiter" (*Science*, 14 June, p. 1951). It is a body at least 4.3 times the mass of Jupiter. It orbits the star 55 Cancri at a distance of 6.0 times Earth's orbital distance (6.0 astronomical units, or AU). And it is in an orbit "just a little out of round," having an eccentricity of 0.16 (Jupiter's eccentricity is 0.05).

Unfortunately, planet 55 Cancri d hangs out in a distinctly un-Jovian neighborhood. The American team had already found one hot Jupiter orbiting 55 Cancri and announced a second last week. Like all hot Jupiters, these must have formed farther out and drifted inward, driving everything before them into the star and vaporizing any inner, Earth-like planets. "It's not like our solar system," says exoplanet searcher William Cochran of the University of Texas, Austin, "which is what people are looking for."

Now astronomer Michel Mayor of the Geneva Observatory in Sauverny, Switzerland, and his colleagues believe they have discovered a true Jupiter orbiting the star HD 190360. The new planet, which they formally announced this week at a meeting* in Washington, D.C., has a minimum mass just 1.1 times that of Jupiter and orbits at 3.7 AU. In the solar system, that would put it outside Mars between the asteroid belt and Jupiter. And its eccentricity is less than 0.1, indistinguishable from Jupiter's. Best of all, Mayor's HD 190360 has no hot Jupiters. In Doppler-shift observations, its planetary system looks nearly identical to what alien observers would see if they looked at ours. Astronomers are welcoming both discoveries as the vanguard of a coming Jupiter bonanza. "I think it's great," says astronomer David Trilling of the University of Pennsylvania in Philadelphia. "In the next few years, there will be dozens and dozens more."

–RICHARD A. KERR

* "Scientific Frontiers in Research on Extrasolar Planets," 18 to 21 June, sponsored by NASA and the Carnegie Institution of Washington.

JAPAN

New Program to Aid Smaller Universities

TOKYO—Like most of Japan's smaller universities, Fukui University doesn't have a big research budget. But a new program to help universities build up strengths in specific areas will give scientists there a chance to compete against the scientific heavyweights at Tokyo, Kyoto, and Tohoku universities for precious government funding.

Last week the Ministry of Education launched its 21st Century Centers of Excellence program and invited all universities, public and private, to compete. The $160-million-a-year program will concentrate resources, in contrast to Japan's traditional approach of scattering small grants across the academic research enterprise. Another novel wrinkle is that applications must be submitted by the president of the university, rather than by a research group or individual scientist. The idea is to ensure the institution's commitment to the project. "From now on, universities will have to begin thinking strategically," says Yoshihide Akatsuka of the ministry's University Reform Office.

The ministry hopes to fund 20 or so centers in each of five areas: life sciences,