

ZOO NEWS**Penguins in boots**

Penguins at the International Antarctic Centre in Christchurch, New Zealand, were getting calluses and infections on their feet from spending too much time waddling on the land. So staff have begun a vigorous foot-treatment regime, including giving the birds rubber-soled shoes.

**Panda poo**

A Thai zoo has been turning bamboo pulp pooped out by its two pandas into paper. According to project manager Prasertsak Buntrakoonpoontawee, the zoo has been earning about US\$8,200 a year from selling fans, cards and bookmarks made from the excrement paper — all with panda faces on course.

NUMBER CRUNCH

String theory according to *Esquire* magazine:

20 years have passed since string theory became dominant.

10⁵⁰⁰ is the number of potential string-theory solutions.

0 is the number of testable solutions.

ON THE RECORD

“We don’t want to jeopardize the iconic nature of the French fry.”

McDonald’s chief executive Jim Skinner explains why the fast-food chain isn’t ready to switch to a healthier oil for its signature fries.

“I feel guilty about the huge hole in the ozone layer my haircuts created. It’s my responsibility to right the wrongs of the Eighties.”

Rocker Jon Bon Jovi (below) prepares to save the planet.

Sources: National Geographic, Reuters, AP, Radio Times



FOTOS INTERNACIONAL/REX FEATURES

Universities urged to do more for poor nations

This month sees the fifth anniversary of the Doha declaration, an international agreement signed by the world's trade ministers that was aimed at broadening poor countries' access to medicines. But in the intervening five years, the main provisions in the declaration have not been used and access to treatments remains dire. So activists are changing tactics. Instead of leaning on governments and corporations, as they have in the past, they are now pressuring universities to guarantee access to drugs and medical products invented on campus.

This idea — labelled socially responsible technology transfer — has already notched up some key victories. For instance, in 2001, after student protests, external pressure and heavy media coverage, Yale University and Bristol-Myers Squibb agreed to an unprecedented arrangement. The company said it would allow companies in developing nations to produce a generic version of a key AIDS drug, d4T (stavudine), which had been invented at Yale and licensed to the company.

And last year, the University of California, Berkeley, issued a royalty-free licence on a process invented by one of its scientists, Jay Keasling, in which engineered yeast churn out the malaria drug artemisinin (see *Nature* 440, 852–853; 2006). The deal was supported in part by grants from the Bill & Melinda Gates Foundation, and was one of 15 that has been handled

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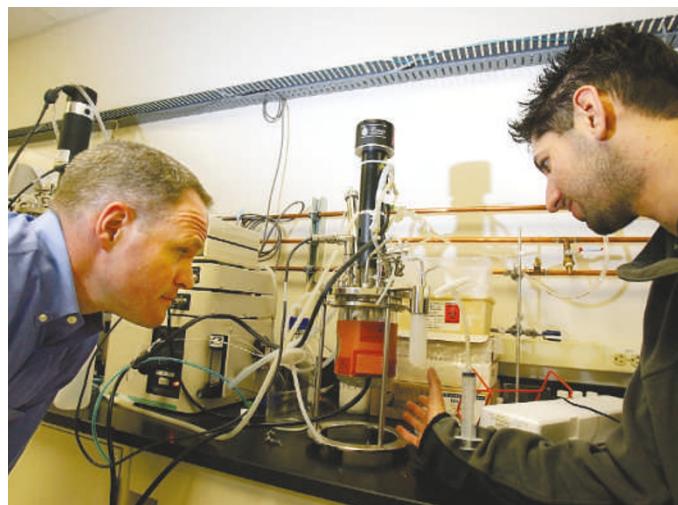
by a technology-transfer programme at Berkeley dedicated to socially responsible licensing.

The concept of socially responsible technology transfer has also found a potentially influential political backer in US Senator Patrick Leahy (Democrat, Vermont), who is expected to head the powerful Committee on the Judiciary in the next Senate. In September, Leahy introduced a bill that would require federally funded research institutions to ensure that their drugs and novel medical devices are supplied cheaply to the developing world.

But the movement now faces several difficult tests, and the next year could see the answer to a key question: can socially responsible technology transfer gain permanent traction?

Its proponents say yes — and they are backed by a host of prominent supporters. On 14 November, a group of students called Universities Allied for Essential Medicines (UAEM) released a manifesto that it calls the Philadelphia Consensus Statement. This has been signed by some 400 scientists, lawyers, public-health specialists and students. The list boasts four Nobel laureates, as well as Paul Farmer, founder of the medical justice group Partners in Health; and the Justice Edwin Cameron, the first high-ranking South African leader to disclose that he had HIV.

The consensus statement calls on universities to promote equal access to the fruits of their



Success story: the technique for generating an antimalaria drug from yeast, developed by Jay Keasling (left), has been given a royalty-free licence.

M. J. SANCHEZ/AP



CALIFORNIA CAUGHT OFF GUARD BY TSUNAMI
Find out why warnings were called off, despite accurate predictions.
www.nature.com/news

SNAPSHOT

A night out in the park

These startled tigers were captured on film by a camera trap in Nagarhole National Park in India, as part of a nine-year monitoring study by biologist Ullas Karanth and his colleagues.

This month, the researchers report the astounding result: an average of one in four tigers living in the park dies or leaves each year — and yet, the tigers there are thriving. The study was conducted and analysed by Karanth's team from the Wildlife Conservation Society in India and by scientists from the US Geological Survey (K. U. Karanth et al. *Ecology* 87, 2925–2937; 2006).

How can the tigers survive despite such high annual losses? Karanth says the results bolster his hypothesis that tigers reproduce fast enough each year to make up for deaths due to poaching outside the park — as long as the big cats have enough prey to eat and are protected inside park boundaries.

Other conservationists want governments to place more emphasis on curbing the trade in tiger parts and skins, which are in high demand in



Tibet and China. But to Karanth, trade controls aren't as crucial as efforts to secure healthy habitats for the tiger. So measures such as better park patrols and voluntary resettlement of people living in parks are the best way forward, he says.

Erika Check

research, to step up work on diseases that disproportionately affect the poor, and to measure research success according to its impact on human welfare. The group has delivered its statement to an influential group of technology-transfer officers from prominent US universities. And last week, it submitted the statement to a World Health Organization working group that is mapping a more sustainable strategy to develop drugs for neglected diseases.

"Universities have this lofty language in their mission statements about creating and disseminating knowledge for the public good," says Dave Chokshi, a medical student at the University of Pennsylvania in Philadelphia and a member of UAEM. "If they want that to mean anything, they have to take up these types of issues and show it's not just lip-service."

But technology-transfer officers at universities say that it's not always easy to do the right thing. Some argue that the socially responsible technology-transfer movement doesn't understand the pressures involved in marketing university inventions to potential investors.

In a deal announced this June, for instance, Yale licensed a new AIDS drug, Ed4T, to a Japanese company called Oncolys BioPharma.

Ed4T is chemically very similar to d4T. But UAEM has criticized the deal, alleging that the licence doesn't do enough to secure access to the drug for the poor. The students claim that Yale seems to have reversed the course it set with the 2001 d4T agreement.

The Clinton Foundation HIV/AIDS Initiative, based in New York, has also questioned Yale about the terms of the Ed4T licence. In a response to the foundation on 26 October, Yale president, Richard Levin, outlined steps that the university has taken to promote access to Ed4T. For instance, the university does not plan to enforce its patents on the drug in some low-income countries, such as India. And it will not grant licences for companies that want to sell the drug in these nations, adds John Soderstrom, managing director of Yale's office of cooperative research.

Soderstrom says that Yale would have liked to do more, but that its hands were tied in this instance, adding that Ed4T was "a very difficult case". "We marketed this for years before anyone showed any interest in it," Soderstrom says. In fact, he argues, Yale is lucky if it can get one company interested in an invention — and that limits the university's ability to negotiate terms

that ensure broad access to drugs.

"We were very excited because the company was willing to make a commitment to develop the technology and bring it to the marketplace, but we clearly weren't able to get every single term and condition into the licence agreement that we would have liked," Soderstrom says.

This is why Carol Mimura, head of Berkeley's socially responsible licensing programme, says the third plank of the Philadelphia Consensus Statement is so important. Universities must be open both to new types of arrangements, and to new ways of measuring success in partnership ventures, she says. Simply looking at the current metrics of deals done and dollars earned doesn't capture the full spectrum of benefits that universities reap from socially responsible technology transfer.

"If you measure success in terms of social impact or awareness and you count things such as gifts, research collaborations, global impact and boost to your reputation, it changes your orientation," Mimura says. "If you measure success only by the amount of royalties and fees you bring in, then your licensing practices will reflect that."

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