

**NUMBER CRUNCH**

**89,826** people attended the FA Cup Final on 19 May, the showcase event of the English football season.

**688** food and drink outlets served hot dogs and beer to the hordes of fans at the brand new Wembley Stadium.

**3,000** football pitches would fit into the ecological footprint of the event, according to researchers at Cardiff University — an estimate of the land area needed to make the food and drink, and to generate the energy for getting everyone and everything to the game.

**ZOO NEWS****Soft shell**

Conservationists have found “an abundance” of Cantor’s giant soft-shelled turtles (*Pelochelys cantorii*) at a former Khmer Rouge stronghold on the Mekong River in Cambodia, calming fears that the creature is nearly extinct.

**SCORECARD****Office workers**

If your deskbound existence is making your waistline spread, never fear — the inventors of the ‘office treadmill’, which lets you work and walk at the same time, promise that users could lose up to 30 kilograms in a year.

**Estonian businesses**

The small Baltic country seems to be the victim of the world’s first large-scale act of cyber war, as almost all government computers and many banking facilities were recently paralysed for several weeks by hackers. The highly coordinated nature of the disruption, coupled with recent tensions with Russian expatriates in Estonia, has led some to say that Russia was behind the attack.

## Japan centres aim to put science in premier league

Japan’s top researchers are this week putting the finishing touches to their applications to run a World Premier International Research Center, the grandiose title of the latest government effort to boost Japanese scientists’ links with their colleagues overseas.

There will be some five centres, each of which will receive base funding of between US\$4 million and \$16 million for up to ten years. They are the latest in a long line of efforts to make Japanese research more flexible and international in outlook.

Isolation is a major factor weakening Japanese science, says neuroscientist Takao Hensch, who last year moved to Harvard University after ten years at the RIKEN Brain Science Institute in Wako, north of Tokyo.

“To be competitive there must be constant communication ensuring that Japanese scientists are respected participants in their fields,” Hensch says.

Japanese policy-makers, including officials at the science ministry, accept that the country’s science is isolated as a result of its culture, geography and language. They also suspect that Japanese science is underperforming as a result.

The new institutes, which will be selected in September by an international review panel, are expected to serve as ‘globally visible’ research centres and to attract top-level researchers from around the world. To prevent the centres from

merely paying lip-service to these goals, the application stipulates that 30% of the roughly 200 researchers expected at each centre and 10–20% of the 10–20 principal investigators must be foreigners. Lack of progress towards these goals could lead to closure.

Such attempts to make Japanese research more international are not new. The Okinawa Institute of Science and Technology, for example, which officially opened this year, had said that it would hire half of its research staff from abroad and looks set to meet that target. At the RIKEN Center for Developmental Biology (CDB) in Kobe, which opened in 2002, 10% of the staff and principal investigators are foreigners. And 20% of the staff at the RIKEN Brain Science Institute, which was set up in 1997, are also from overseas.

But these institutes have remained exceptions in a conservative Japanese system that is generally not regarded as being welcoming to non-Japanese scientists.

Some of the problems lie outside the institutes themselves. Douglas Sipp, who heads the CDB’s international-relations office, says that although all research material is available bilingually, the ministries tend to send documents such as grant-programme notices in Japanese, with English versions sometimes arriving too late to be of use. Sipp also says that the difficulty foreign researchers have in paying for international schools for their children or

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## NIH presents the mind of a child

A US National Institutes of Health (NIH) study into brain development during childhood is creating a database as a benchmark against which researchers on other studies can compare their data.

Scientists will be able to apply to the NIH for access to the database once it is ready, probably before the end of the year. They could, for

or behavioural data from their studies of a mental disorder against those for children with ‘normal’ brains.

The study, called the MRI Study of Normal Brain Development, is building a database of what constitutes a ‘normal’ child. Five hundred children aged from 7 days to 18 years, and representative of US society, have been



A database of scans will offer a picture of a normal child’s brain.

Those with, or at risk of, any



Despite massive investment, Japan still lags behind other developed nations in scientific productivity.

finding posts for their spouses makes recruitment hard.

Hensch says the situation in the universities remains a major stumbling-block. "Although it is fine to provide great resources, autonomy and accountability for talented young researchers, without similar openings in the traditional hierarchical university system there can be no culture of mobility and turnover."

Tasuku Honjo, an immunologist at Kyoto University, agrees that the universities must change. Honjo is a member of the country's highest scientific decision-making body, the Council for Science and Technology Policy, which introduced the latest initiative. Reform of the universities in 2004 (see *Nature* 419, 875–876; 2002) was meant to give them the freedom to compete both with each other and internationally for top talent. "In actuality, nothing has changed," Honjo says.

The problem, Honjo adds, is that Japanese institutions continue to place fairness above

excellence. "The important thing is being equal," he says. "It's hard to change these things with compulsory rules." But the new centres are intended to become models for how freedom should be exercised.

Officials hope the centres will play a major role in boosting Japan's scientific productivity. Figures released by Thomson Scientific on 15 May ranked Japan second in the world for the number of scientific publications between 1996 and 2006. But Germany, which over that period invested half the funds in science compared with Japan, had only 6% fewer papers. And for the number of high-impact papers, Japan ranked only fifth.

The interpretation of such data is, of course, open to debate. Some observers point out, for example, that Japan's research investment may be bearing more fruit through its highly successful and innovative industrial corporations than through its number of publications. ■

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disorders were screened out of the study. All were given a magnetic resonance imaging (MRI) scan, which shows the size of the brain's structures and the densities of grey and white matter, as well as tracks of fibres connecting areas in the brain. The children also took behavioural and cognitive tests.

The first results of the study, on neuropsychological tests in 6–18-year-olds, were published on 18 May (D. P. Waber *et al.* *J. Int.*

S1355617707070841; 2007). They show that cognitive skills improve between the ages of 6 and 10 but level off during adolescence — contradicting a widespread belief that cognitive development 'spurts' during adolescence.

Researchers also confirmed that children's abilities in some cognitive tasks differ between boys and girls, and that cognitive performance correlates positively with parental income. But the differences were smaller

"We don't know why," says NIH project officer Katrina Gwinn. "It may be the way we selected our sample, or we may know less about biases in our psychological tests than we like to think."

More data will be added when later parts of the study are analysed. First data from another part of the study, involving around 100 babies aged up to 4.5 years scanned at more frequent intervals, will probably be published before the end of the year. ■