

**ON THE RECORD**

**“We need to turn scientists back into the rock stars they are.”**

Morgan Spurlock is making a movie of *The Republican War on Science*.

**ZOO NEWS****Hope and prey**

In case you were wondering, male praying mantises do know they could be eaten after sex, and they don't like the idea. Biologists at New York State University have found that males can assess how hungry females are: if the risk seems high, males approach more cautiously and mount from a greater distance. How exactly they manage the latter isn't clear.



NOBUA IIDA/GETTY IMAGES

**Pulling the wool...**

The trial of disgraced stem-cell scientist Woo Suk Hwang continues to amaze. He is accused of accepting 2 billion won (US\$2.1 million) in private donations, but Hwang insists none of it went to him personally. He told the court last week that part of the money was used in an attempt to clone mammoths.

**NUMBER CRUNCH**

How fast does the eye transmit information to the brain?

**6** bits of information, at least, are sent every second by each cell in a guinea pig's optic nerve.

**875,000** bits are calculated to be sent each second by the whole nerve ( $10^5$  cells).

**8,750,000** bits would thus be sent every second by a human optic nerve... about the same as a standard Ethernet connection.

**SCORECARD****Russian rockets**

A Dnepr rocket, based on the Soviet RS-20 missile, has crashed carrying 18 satellites, including 14 'microsats' made by students. NATO dubbed the original missile Satan; it's now being called worse names in classrooms around the world.

Sources: Time, Am. Nat., Curr. Biol.

# NASA threatens to axe science on space station

**WASHINGTON DC**

In a move poorly received by key members of the US Congress, NASA last week said that it might shut down scientific research on the International Space Station for at least a year, to save money.

NASA is struggling to fund its mission to send astronauts back to the Moon, while spending around \$200 million a year on research in the station.

But Congress has mandated, as part of the 2005 NASA Authorization Act, that the agency should carry out “to the maximum extent practicable, basic, applied, and commercial research aboard the International Space Station”. The act also specifies that NASA should allocate at least 15% of the funds budgeted for space-station research to experiments not directly related to the human exploration programme.

**“I can't believe they are discussing this with a straight face.”**

“The International Space Station is first and foremost a space laboratory,” says Katie Boyd, a spokeswoman for Senator Richard Shelby (Republican, Alabama). His state hosts the Marshall Space Flight Center, which manages science work aboard the space station. “To suggest that NASA would not take advantage of this unique laboratory is shortsighted.”

A NASA spokesman, Grey Hautaluoma, said that he could not comment on ongoing budgetary discussions. “Right now, that funding is still there,” he says.

About three dozen experiments are currently under way on the station, from biology set-ups that use the astronauts as guinea pigs, to aeronautics experiments that use polyhedrons to test flight-control algorithms.

A year-long hiatus from research would mean more than missing data points. Restarting stalled projects will require staff to be rehired and equipment replaced. In the end, taking time off from research would probably cost more than it saved.

“I can't believe that they would discuss this with a straight face,” says former NASA employee Keith Cowing, who broke the story on his website, NASA Watch.

Some of the 16 other partners in the station agree that the idea doesn't have legs. “If they were really going to, I think they would announce it to us first, before the press,” says Marc Heppener, head of the station science programme at the European Space Agency. ■

**Heidi Ledford**

With additional reporting by Geoff Brumfiel and Jenny Hogan

NASA



Lost in space: the space station is using up cash that NASA needs to fund its Moon mission.

## The proof is in the product

It's pretty standard to find syntheses in a chemistry journal. But a paper published online last week by the international edition of *Angewandte Chemie* has got the world of organic chemistry humming. It is the second time this year that the journal has published a complete synthesis for a molecule called

hexacyclinol — yet each paper claims a different structure for its final product.

Hexacyclinol is extracted from a mushroom and has some medical potential. The first synthesis of the molecule was published in February by chemist James La Clair of the Xenobe Research Institute in San

Diego (J. J. La Clair *Angew. Chem. Int. Ed.* 45, 2769-2773; 2006).

But La Clair's work raised a few eyebrows. For instance, he said his 37-step synthesis made 3.6 grams of hexacyclinol. “I've never heard of a synthesis of that length producing that much material,” says Larry Overman, an organic chemist at



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J. GUEZ/AFP/GETTY

## Singapore pulls plug on US collaboration

The Singaporean government is known for its generosity in pumping money into international research projects. But it can apparently be ruthless if these projects do not please it. The city-state is shutting down a medical research arm of Johns Hopkins University in Singapore, claiming it has not delivered as planned.

The decision has sent shock waves through other universities and research institutes, some of which are in the initial stages of collaborating with Singapore.

On 20 June, the 60 faculty members and staff of the Division of Biomedical Sciences, Johns Hopkins Medicine in Singapore, were given official notice that as of 1 June 2006, the facility was being wound down. The process will take 12 months, with researchers and staff receiving salaries until the facility closes on 31 May 2007.

"We thought it unwise to continue putting money into something that is not working," says Andre Wan, director of the Biomedical Research Council at the Agency for Science, Technology and Research (A\*STAR). He claims that Johns Hopkins failed to meet key requirements in its contract.

The split is the first major failure of Singapore's recent push into biomedical research, which includes building the ambitious Biopolis research centre.

Singapore and Johns Hopkins Medicine first got together in 1998, to set up Johns Hopkins Singapore as the university's base for medical research, education and clinical studies in southeast Asia. In 2003, the two parties restructured the organization, making it the first full division of Johns Hopkins Medicine outside its US home in Baltimore, Maryland.

Under the five-year contract begun in February 2004, A\*STAR agreed to provide S\$75 million (US\$47.5 million) to cover salaries, facilities



L. ASCUI/REUTERS

Singapore has the funds for grand research ventures such as Biopolis, but it demands results.

and research equipment. For its part, according to A\*STAR, Johns Hopkins aimed to build a centre of immunology, experimental therapeutics and cancer research, to establish a PhD programme and to bring senior researchers with international reputations to Singapore.

Wan alleges that Johns Hopkins has failed to meet 8 out of 13 key performance indicators in the past two years. For example, it agreed to hire at least 12 full-time senior researchers with residence in Singapore by the end of the second year. So far, Wan says it has hired seven, only one of whom fulfils all the requirements.

Gary Stephenson, a spokesman for Johns Hopkins Medicine, declined to comment, saying the university plans to issue a joint statement with A\*STAR soon. But on 22 July, a

Singaporean newspaper reported a Johns Hopkins official as alleging that Singapore failed to meet its financial and educational obligations under the agreement; A\*STAR denies those claims.

The break-up has reminded other universities not to take their collaborative projects with Singapore for granted. For instance, in 2005 Duke University School of Medicine in Durham, North Carolina, established a graduate medical school with the National University of Singapore, as part of a seven-year contract. "The major lesson I'm taking from this is to seek great clarity of how performance in our exciting new venture will be defined," says Sanders Williams, founding dean of the new school. ■

Ichiko Fuyuno

the University of California, Irvine. "There was quite a bit — a lot — of scepticism in the community."

The sceptics included Scott Rychnovsky, also of Irvine. La Clair claimed that the structure of his compound matched a prediction made in 2002. But Rychnovsky worked out that hexacyclinol should resemble another mushroom compound, panepophenanthrin.

Rychnovsky teamed up with John Porco of Boston University, who

came up with a new synthesis (J. A. Porco Jr *et al.* *Angew. Chem. Int. Ed.* doi:10.1002/anie.200602854; 2006).

The nuclear magnetic resonance (NMR) spectrum for the product matched the 2002 data, suggesting the team had made hexacyclinol. And the crystal structure confirmed their new prediction about its structure.

Which leaves chemists wondering how La Clair got results confirming the original — apparently wrong — structure. And how such a

controversial synthesis made it into a peer-reviewed journal. "I can't see any legitimate explanation for the original work," says Rychnovsky.

La Clair now says that he and Porco may have made two different molecules that happen to have very similar NMR spectra. He has no plans to retract his paper, but has offered to change the name of the compound he says he synthesized.

Because La Clair is unaffiliated with an institution other than the privately

funded Xenobe, there is no obvious body to investigate what happened.

Peter Göllitz, editor of *Angewandte Chemie*, says La Clair's paper was recommended by three well-qualified reviewers. He declined to comment on whether the paper will be retracted. But he says he invited Rychnovsky to publish "so that the discussion and clarification can be done at the place where the original paper was published". ■

Emma Marriss