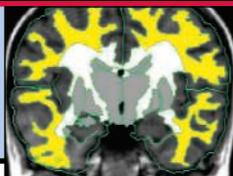


1856

Missing connections in autism



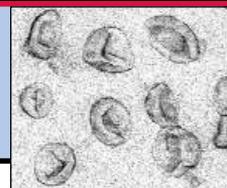
1858

The rocky road to personal medicines



1862

What role do exosomes play?



says. “This way, Europe will stagnate.”

Experts can only speculate about what might be sacrificed in a science budget that falls far short of the commission’s €73 billion proposal. One “prime target” would be the European Research Council, a new body to fund basic, investigator-driven research in a Europe-wide competition, Chichester predicts. “It’s always easier to cut something if you haven’t started it yet,” he says. But doing so would risk demoralizing and alienating the scientific community, which fought hard for the ERC; even major cuts in its proposed €1.7 billion annual budget would rob the council of its credibility, says Danish mathematician Mogens Flensted-Jensen, vice chair of the expert group that proposed the ERC in 2003.

Still, Helga Nowotny, chair of the European Research Advisory Board, does see some hope. The crisis will force politicians to rethink what European unification is all about; research, innovation, and education may well benefit if scientists keep pressing their case. What’s more, she notes that the United Kingdom is a strong proponent of shifting E.U. funds from farms to labs. Even if the British cannot foster a new agreement when they chair the union during their presidency, “they will certainly put research back on the map,” Nowotny says.

—MARTIN ENSERINK

## INFECTIOUS DISEASES

# Lapses Worry Bird Flu Experts

Global health experts trying to stave off a deadly pandemic of avian flu are alarmed by recent actions they see as counterproductive and even dangerous. Vietnam has been slow to report 10 new human cases, and farmers in China have reportedly been giving an antiviral drug to chickens that may have made the virus resistant to one of the few drugs available to fight human flu. If confirmed, China’s actions would be “very, very dangerous,” says Ilaria Capua of the Istituto Zooprofilattico Sperimentale della Venezia in Legnaro, Italy.

Vietnam has found another possible case of human-to-human transmission of the H5N1 virus among a total of 10 new cases it reported in a 1-week period—6 weeks or more after they were originally detected. The Ministry of Health officially notified the World Health Organization (WHO) of three new human H5N1 cases on 8 June, but the most recent of those had been detected on 26 April. On 14 June, Vietnam reported three more human cases



**Drug habit.** Chinese farmers routinely administered an antiviral drug to poultry, according to a news report.

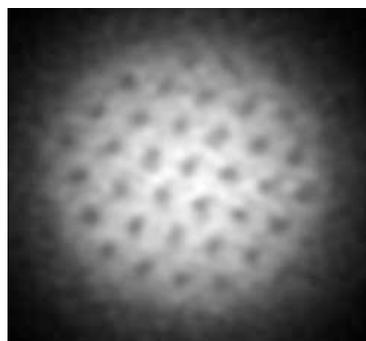
that had turned up during the last 2 weeks of May. And on 17 June, the ministry reported four additional cases that had emerged between 1 and 17 June.

Peter Horby, an epidemiologist in WHO’s Hanoi office, says Vietnamese officials have quickly asked for help when there were obvious changes in the virus’s behavior, as when numerous mild cases of the disease emerged this spring. But he says it has been frustrating that these same officials have been less forthcoming in reporting the details of what they apparently see as more routine cases.

Some bird flu experts are equally alarmed by China’s veterinary use of the human antiviral drug amantadine, as reported in the 18 June *Washington Post*. According to the article, drugmakers and other sources in China admitted that the drug has been sold cheaply to farmers and given to poultry both as a treatment and a prophylactic since the late 1990s.

Most of the H5N1 strains isolated in the current outbreak in Asia are resistant to amantadine, but establishing a firm link with China’s use of the drug would require extensive data on where, when, and how much of the drug was used, notes Klaus Stöhr, WHO’s global influenza coordinator. K. Y. Yuen, a virologist at the University of Hong Kong, says the misuse of antivirals, such as amantadine, does raise the risk of fostering resistance. But he says the genetic mutation associated with amantadine resistance has been reported in viruses not exposed to the drug, which suggests that ▶

cloud by tickling it with another laser, much as one might set a golf ball spinning by brushing it with a feather, as they report this week in *Nature*. Had the lithium-6 been an ordinary fluid, the cloud would have rotated as a whole, just as water will rotate along with a slowly turning drinking glass. A superfluid resists rotation, however, because it is essentially a quantum wave that can possess only quantized amounts of rotation. Turn its container fast enough, and a superfluid admits one quantum of rotation in the form of a tiny whirlpool, or “vortex.” Turn faster still, and the vortices proliferate and form a triangular array. That is what Zwierlein and Ketterle observed in



**Smoking gun.** Array of vortices proves that paired atoms form a superfluid.

the cloud of atoms, although not without a lot of work. “It was bloody difficult,” Ketterle says. “We were actually close to giving up.”

A Fermi condensate is a cousin of a Bose-Einstein condensate, a superfluid that forms when, instead of pairing, particles pile into a single quantum wave. By changing the magnetic field, physicists can now transform a

Fermi condensate of atoms into a Bose-Einstein condensate of loosely bound molecules and probe the connection between the two superfluids, says Henk Stoof, a theorist at Utrecht University in the Netherlands: “How you go from one limit to the other is very important.” The tunable superfluid could even mimic more exotic superfluids, such as the paired-up neutrons coursing through the hearts of neutron stars. —ADRIAN CHO

other factors might be at work as well.

Still, given the threat of a pandemic and the dearth of flu drugs—the only alternative to amantadine and a cousin is oseltamivir, or Tamiflu, which is more expensive and harder to produce—antivirals should probably not be used for animal flu infection at all, Stöhr says. They aren't licensed for use in poultry and would do little to contain the virus anyway if not accompanied by strict biosecurity measures, adds Capua.

EUROPEAN PATENTS

# BRCA2 Claim Faces New Challenge

A patent on the breast cancer gene *BRCA2*—a symbol of assertive U.S. biotechnology—faces a major challenge in the European Patent Office (EPO) in Munich, Germany, on 29 June. European clinical groups say the patent—licensed to Myriad Genetics of Salt Lake City, Utah—should be dismissed for legal and ethical reasons, including the fact that it is limited to diagnoses in Ashkenazi Jewish women. They hope this will

stall the company's licensing push in Europe. The case is being watched as a test of how enforceable human gene patents will be in Europe.

The controversial patent is a fragment of what was once a broad package of Myriad claims covering the genes *BRCA1* and *BRCA2*. Although Myriad has exclusive rights to commercialize tests based on *BRCA1* and *BRCA2* in the United States, European clinics have resisted signing up for licenses. (The patents are owned by an array of groups, including the University of Utah Research Foundation.) European opponents have chipped away at Myriad's claims; their challenge based on sequence errors in a description of *BRCA1*, for example, helped scuttle that patent in Europe.

In January, EPO approved a whittled-down version of the patent request on *BRCA2*, awarding the company "use of an isolated nucleic acid" on chromosome 13 "for diagnosing a predisposition to breast cancer in Ashkenazi Jewish women in vitro." Continuing an anti-Myriad campaign already 5 years old, the Institut Curie in Paris and 19 other groups interested in gene testing have contested the new *BRCA2* patent. (EPO is following standard practice in letting opponents argue against the patent after it has

Xu Shixing, a Chinese Ministry of Agriculture official, says the ministry never approved the use of amantadine for poultry, as was claimed in the *Post* article.

In yet another reminder of the virus's expanding geographical grip, Indonesia confirmed its first human case of H5N1 infection last week, the fourth country to do so.

—DENNIS NORMILE AND MARTIN ENSERINK

With reporting by Gong Yidong of *China Features* in Beijing.

been awarded.) Many clinics have resisted the company's efforts to sell licenses because they seemed one-sided and based on weak claims, says geneticist Gert-Jan van Ommen of the Center of Human and Clinical Genetics at Leiden University Medical Center in the Netherlands. He says doctors object to paying Myriad for something they could do themselves. (A test now costs about \$2800.) Myriad requires physicians to send patients' DNA samples to Utah, where the company keeps them. This does "not sit well," says van Ommen, because Europeans had contributed a great deal to *BRCA* research.

Last week the opponents recruited a new ally, the European Society for Human Genetics (ESHG) in Vienna, Austria. It has asked EPO to dismiss Myriad's *BRCA2* patent because it explicitly claims a mutation in Ashkenazi Jewish women. The chair of ESHG's patenting and licensing committee, human geneticist Gert Matthijs of the University of Leuven, Belgium, says that seeking ownership of a mutation in an ethnic group "is not acceptable to most geneticists."

Dominique Stoppa-Lyonnet of the Institut Curie adds that it would compel a doctor to ask a woman about her ancestry before offering a consultation: "This is discrimination," she believes. Besides, Stoppa-Lyonnet says, it is impractical: Many people of Ashkenazi descent don't know their ancestry.

Myriad declined to comment because the matter is under legal review. However, a legal brief filed last year on the company's behalf by the firm Vossius & Partner in Munich argues that Myriad and collaborators spent "millions of dollars" to characterize *BRCA2* and released the data freely for public use. Women across the globe have benefited, the brief says. It further argues that focusing on the Ashkenazi population makes testing for breast cancer risk more efficient and affordable.

If the past is a guide, the EPO technical group will make its decision known quickly, says spokesperson Rainer Osterwalder. Either side can appeal for a final high-level EPO review.

—ELIOT MARSHALL

## The Gods Must Be Angry

Astrophysicists are anxiously awaiting a federal court decision on a lawsuit that threatens a planned gamma ray telescope near Kitt Peak in Arizona. The Tohono O'odham tribe brought suit against the scope this spring, arguing that the deity they believe created the world resides near where the array is to be built.

The National Science Foundation (NSF), which is funding the \$13.1 million project with the Department of Energy, has already spent \$1 million at the site. Construction was halted after the lawsuit was filed. Under federal law, NSF must seek alternative locations for the Very Energetic Radiation Imaging Telescope Array System, which was due to be completed by next fall and would be operated by the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. "If other sites are not available, then not building [the system] is a possibility," says NSF lawyer Amy Northcutt, although she adds that offsite work on telescope components continues.

NSF last month filed a motion to dismiss the lawsuit, and the tribe is expected to respond this week. Then it will be up to the court to make a decision.

—ANDREW LAWLER

## Vessel Makes Waves in New Ranking

Ocean scientists have a sinking feeling about the new lineup of proposed large facilities at the National Science Foundation (NSF).

Last year, the National Science Board, NSF's oversight body, put a \$269 million network of instruments called the Ocean Observatories Initiative (OOI) at the top of its list of projects for fiscal year 2007. But late last month, the science board put the Alaska Region Research Vessel on top and slid OOI down to third place, behind a network of ecological observatories called NEON that NSF has been trying for years to make pass congressional muster. Third is a perilous position because NSF has said it plans to propose only two new projects in 2007.

Board president Warren Washington says "all of the projects are well worth doing" but that the need for scientists to monitor the rapid warming in the Arctic guided the board. Senator Ted Stevens (R-AK) is also a big fan of the ship, although Washington says that Stevens' support was not a factor. OOI's steering committee will discuss the reshuffling at a meeting next week.

—JEFFREY MERVIS



**Opposed.** Gert Matthijs says the *BRCA2* patent is "not acceptable."

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