Research on ulcers, organic catalysts garner Nobels

For their discovery of the bacterium *Helicobacter pylori* and its role in gastritis and peptic ulcer disease, two Australian scientists won the 2005 Nobel Prize in Physiology or Medicine. Robin Warren and Barry Marshall discovered the bacterium in 1982 and established that it causes stomach ulcers by infecting the antrum, the lower part of the stomach.

At the time of the discovery, stress and lifestyle were considered the major causes of peptic ulcer disease. To help prove their theory, Marshall infected himself with the bacteria, and then cured his condition with antibiotics.

The Nobel Prize in Chemistry went to three scientists who developed catalysts for organic reactions now used to make pharmaceuticals and plastic materials. Organic chemists Yves Chauvin of France, and Robert H. Grubbs and Richard R. Schrock of the US, discovered that an organic reaction called metathesis makes it possible for groups of atoms to switch places and create entirely new molecules.

The researchers compared the process to switching dance partners. In the early 1990s, they successfully synthesized catalysts to control the reaction, making it possible for others to use the technology.—*EW*

More women win with NIH's revised awards

The US National Institutes of Health (NIH) in September announced the recipients of its second annual NIH Director's Pioneer Awards, granted to scientists for innovative approaches to biomedical research. The winners include six women and seven men, a significant change from last year's all-male lineup.

Advocacy groups for women in science expressed dismay over the lack of diversity among last year's recipients, sending letters to the NIH and posting statements on their websites. In response, NIH officials scrambled to revamp the program and find more female judges (*Nat. Med.* 11, 912; 2005).

The groups have applauded the NIH's efforts in making the awards more equitable, but say the agency's mistake last year shows how easily gender issues are forgotten.

The 2005 recipients include neuroscientists, infectious disease experts and technology developers. More than half of the awardees are in the early stages of their careers; each will receive $500,000 every year for five years.–*EW*

News briefs written by Emily Waltz and Carina Dennis.

Australian research agency set to be independent

The Australian government announced in September that the National Health and Medical Research Council, the nation's premier biomedical research agency, will become fully independent beginning 1 July 2006. The agency's chief executive officer (CEO) will report directly to the federal Minister for Health and Ageing instead of to lower officials of the health department or the agency's advisory board.

The decision follows the government's review of all statutory agencies, which recommended that the agencies be led by either a CEO or an advisory board (*Nat. Med.* 11, 910; 2005). However, the government has decided on a hybrid, retaining both a CEO for operational and financial matters and a board to provide independent medical and health advice.

A few days later, the agency announced plans to improve its grant application process, expand grant review panels, eliminate external review, provide frequent feedback on applications and halve the processing time for applications from twelve to six months by the end of 2007.

Researchers welcome the changes but say more funds are needed. "Unless we get more money, we are hamstrung, we are losing excellent researchers to other sectors and overseas," says Bronwyn Kingwell, president of the Australian Society for Medical Research.—*CD*

New stem cell methods evade ethical concerns

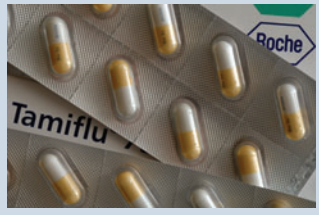
Scientists in October announced two new techniques for creating embryonic stem cells that may dodge federal rules and appease those who oppose destroying embryos for research purposes. The reports were published online on 16 October in *Nature*.

One method, dubbed 'altered nuclear transfer,' is a modified version of somatic cell nuclear transfer. Scientists at the Whitehead Institute for Biomedical Research in Cambridge, Massachusetts, disabled the *CDX2* gene, which is required for cells to form placentas.

William Hurlbut, a member of the US President's Council on Bioethics, proposed the theory in December 2004, but experts, including lead researcher Rudolf Jaenisch, dismissed the idea at the time (*Nat. Med.* **11**, 108; 2005). Jaenisch has maintained in the past that a cloned embryo has little potential to develop into a normal human being, even with a functional *CDX2* gene.

A second team of researchers announced that they had also successfully extracted stem cells without destroying embryos. Scientists at the Massachusetts-based Advanced Cell Technology separated one cell from an eight-celled embryo to grow stem cells. The remaining cells were able to grow into a viable embryo.—*EW*

Resistance to bird flu rises



Boris Roessler

Alarming reports that the H5N1 strain of the avian flu virus is developing resistance to the most readily available drugs on the market is forcing drug makers and governments to alter their strategy. Responding to pressure from generics companies and government leaders, the Swiss drug maker Roche agreed to negotiate its patent on Tamiflu, the most effective defense against avian flu.

But one of the studies, published in October, found that the virus may also be building resistance to Roche's drug. Researchers found that an isolated H5N1 strain is resistant to oseltamivir, the active ingredient in Tamiflu (*Nature* **437**, 1108; 2005). The finding underscores the importance of monitoring the emergence of drug resistance to H5N1 in individuals treated with flu drugs.

In an earlier study published in September, researchers from the US Centers for Disease Control and Prevention found that influenza viruses have developed high rates of resistance to the adamantine family of flu drugs. That class of drugs includes rimantadine and amantadine, which are cheaper than Tamiflu and are available in some countries without a prescription (*Lancet* **366**, 1139–1140; 2005). They are the most affordable options for people in developing countries.

In their pleas to Roche, government leaders argued that Tamiflu is expensive and that the company's production capacity is not enough to meet worldwide demand. Roche agreed to negotiate its patent in late October, after the Indian generics manufacturer Cipla threatened to make Tamiflu without permission.—*EW*