UK okays controversial embryo experiments

Amidst heated debate, researchers in the UK plan to create human embryos by combining the genetic material from the fertilized eggs of two mothers. The experiments are designed to help mothers with mitochondrial defects avoid passing the faulty genes to their offspring.

The UK Human Fertilisation and Embryology Authority said on 8 September that it would grant a license to researchers at the University of Newcastle upon Tyne, allowing them to conduct the experiments. The agency had initially rejected the experiments last year, but reconsidered after an appeal committee heard additional evidence on the proposed research.

Mitrochondria, energy-generating structures in the cytoplasm, contain genes that are inherited only from the mother. Compared with nucleic DNA, mitochondrial DNA represents a small fraction of a person's genes but, when damaged, can lead to a range of health problems.

The scientists plan to remove the nucleus of the donor egg, leaving the cytoplasm and its contents, and replace it with the nucleus from the egg with defective mitochondria. The resulting egg would carry nucleic DNA from the parents and healthy mitochondrial DNA from the donor. —*EW*

US group cautions against breast cancer screening

Doctors should recommend genetic testing for breast cancer–risk genes only for women with a family history of the disease, according to a new recommendation from the US Preventive Services Task Force. This is the first time that the group has addressed genetic counseling and testing for any disease.

Women who inherit specific mutations in the *BRCA1* and *BRCA2* genes have a greater risk of developing breast and ovarian cancers. But only 1 in about 500 women carries this mutation, and not all of those will develop cancer. Risk factors for the mutation include being of Eastern European Jewish descent or having first- or second-degree relatives with the disease. Testing can help women with a familial or genetic risk for cancer plan for early prevention, such as frequent screening or preventive mastectomy. However, the task force found that women without a family history are at low risk for developing cancer associated with these genes and would derive little benefit from testing (*Ann. Intern. Med.* 143, 355–361; 2005). —*ES*

News briefs written by Emily Singer and Emily Waltz.

Genetic techniques garner Lasker Awards

Two stem cell pioneers have won the 2005 Albert Lasker Award for Basic Medical Research. Ernest A. McCulloch and James E. Till, both biologists at the Ontario Cancer Institute in Toronto, identified the first stem cells in the circulatory system in the 1950s. They showed these cells could self-renew and differentiate into various types of blood cells and discovered the factors that determine how stem cells differentiate, setting the stage for current research.

Sir Edwin M. Southern of the University of Oxford and Sir Alec J. Jeffreys of the University of Leicester in England won the Albert Lasker Award for Clinical Medical Research for creating revolutionary genetic technologies. In the 1970s, Southern invented the famous blotting system to identify specific sequences of DNA within a huge genome, ultimately making it possible to identify genes linked to diseases and to sequence entire genomes. A decade later, Jeffreys used the technique to develop genetic fingerprinting, which showed that DNA could act as a unique identifier and has since become a popular forensic tool.

Each pair will share a $50,000 award, presented on 23 September in New York. The awards are often called the American Nobel prize because nearly half of the winners of the basic research prize go on to win the Nobel Prize for Medicine or Physiology. —*ES*

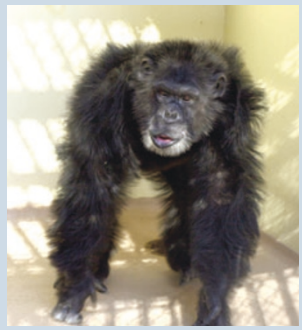
Donor countries pledge to meet public health needs

A new cash influx for the Global Alliance for Vaccines and Immunization (GAVI) announced in September is expected to help save the lives of more than five million children in developing countries over the next ten years. But another international aid organization, the Global Fund to Fight AIDS, Tuberculosis and Malaria, has fallen short of its 2006–2007 fundraising goals.

The UK, France, Italy, Spain and Sweden committed nearly $4 billion to GAVI to scale up vaccination programs for the world's poorest children. Donor countries will pay their pledges over the next ten years, but a new financing mechanism will make that money available much more quickly. The new International Finance Facility for Immunization will issue bonds against pledges, allowing the group to invest in development assistance up front, which experts say is more cost-effective than spending the money over time.

Meanwhile, the Global Fund garnered $3.7 billion in international pledges at a conference in London in September. But that figure falls far short of the $7 billion the group says it needs for ongoing and new programs over the next two years. The amount includes an estimated $600 million pledge from the US that has not yet been approved by Congress. The US has provided one-third of the fund's grants in the past. —*ES*

Chimp DNA could decode human diseases



Yerkes National Primate Research Center

Humans and chimpanzees are remarkably similar, but the few genetic differences between them could help scientists solve some of the most troubling puzzles in human disease. Following the publication of the chimp genome in August, researchers say that comparing chimps with humans could help pinpoint factors important in, for instance, susceptibility to malaria and the progression of HIV to AIDS.

Chimps share 98% of our DNA, but scientists found, for example, three genes involved in inflammation that have been lost from the chimp genome, which may explain why chimps and humans respond differently to bacterial infections. Humans also appear to have an inactivated version of the gene encoding caspase-12, which is linked to Alzheimer disease.

Experts say it is likely to take years to fully analyze the genetic differences. Specific areas of interest include several genome regions that have been conserved in humans but not in chimps over the past 250,000 years. These areas contain the genes encoding FOXP2, which is involved in speech acquisition, and CFTR, which harbors a mutation that causes cystic fibrosis. —*ES*