

Focus

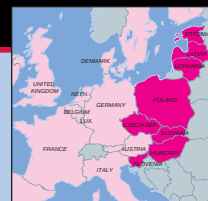
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Cell therapy for broken hearts

Image not available for online use.

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Profile: NSF's interim chief



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The E.U.'s new research pool

• A UCS accusation that the State Department abandoned a science advisory panel on arms control is inaccurate, OSTP says. The panel's charter had expired, and officials have since revitalized it and are currently recruiting new members. But that version of events "is less than a half-truth," says Richard Garwin, a retired IBM executive who chaired the panel. The report doesn't note that the agency waited more than 2 years to revive the panel, he says. "This is not a matter of ignoring scientific advice but of not seeking it."

• OSTP says UCS distorted or ignored "vital facts" in claiming that the Administration has weakened enforcement of the Endangered Species Act—a point the group at least partly concedes. Gridlock in listing new endangered species is the result of longstanding budget and legal problems, not flawed science, the two sides appear to agree. And UCS says that OSTP is at least partly correct in attributing controversial changes in the makeup of a scientific panel reviewing conservation efforts along the Missouri River to legal dead-

lines, not politics.

Marburger hopes the report "will allay the concerns of the scientists who signed the UCS statement." He'll find out soon: He expects to discuss the matter this month with a group of signers attending the annual meeting of the National Academy of Sciences. And the Senate Commerce, Science, and Transportation Committee, which last month cancelled a hearing on the UCS report, says it still plans to look into the issue.

—DAVID MALAKOFF

GENETICS

Two New Asthma Genes Uncovered

A painstaking, decade-long hunt spanning two continents has led a team of Finnish scientists to two new asthma genes. Geneticists don't yet know what role the genes play in asthma, which afflicts about 16 million people in the United States alone. But scientists say that the work, described on page 300, has uncovered some of the most compelling genetic associations yet for the disease.

Although researchers had previously linked three other genes to asthma, those studies involved fewer individuals and mostly found a relatively weak genetic effect in conferring susceptibility. Not only are the current associations strong, but one of the new genes may be a good target for novel antiasthma drugs. "One of the beauties of this is that they came up with a drug target," says Jack Elias, a pulmonary specialist at Yale University in New Haven, Connecticut.

The work also appears to validate the technique of using geographically isolated populations, called founder populations, to find genes for common complex diseases such as cancer and diabetes. These diseases are tough to trace genetically because they are apparently caused by combinations of genes, along with environmental triggers. "People have said, 'Oh, you need thousands of patients, and it's so difficult'" to identify genes for asthma and other common disorders, says Scott Weiss, an asthma geneticist at Harvard Medical School in Boston. But the discovery of these genes "shows that you can do this," he notes.

The first clue to the genes' existence came in the mid-1990s when molecular geneticist Juha Kere of the University of Helsinki and his colleagues linked increased susceptibility

to asthma to a massive, 20-million-base swath of chromosome 7. To find the culprit genes, Kere, Helsinki colleague Tarja Laitinen, and others began collecting blood samples from both healthy and asthmatic individuals in families afflicted with asthma—a total of nearly 900 samples. The Finns, he and others reasoned, were ideal for this sort of study: Geographically isolated and genetically fairly uniform, their disease genes might be easier to spot than those in more diverse populations.

By sequencing parts of the suspicious stretch of chromosome 7, Kere, now at the Karolinska Institute in Stockholm, Sweden, and his team found that both the healthy and asthmatic individuals, all of whom lived in the same Finnish province near the Russian border, carried one of seven possible variant DNA sequences, known as haplotypes, in that chromosomal region. Certain haplotypes, many believe, predispose to disease. In the Finnish case, this theory apparently held: Three of the seven haplotypes Kere's group found were associated with asthma, and more than half the asthma patients carried them as opposed to just a third of the healthy people.

To make certain these haplotypes weren't

unique to Finns, Kere teamed up with Thomas Hudson, a haplotype expert at McGill University in Montreal, Canada.

Hudson had collected nearly 400 DNA samples from asthmatics and nonasthmatics in Quebec. Close inspection revealed the same seven haplotypes in this group as in the Finns and confirmed that three are strongly linked to asthma susceptibility. The hazardous haplotypes appear to boost asthma risk by up to 2.5 times normal.

Further comparisons of the haplotypes helped Kere's team uncover two genes with alterations unique to the high-risk haplotypes. One of these is a complete mystery. It doesn't appear to code for a protein, and the scientists currently don't

know what to make of it.

But the other, which the group labeled GPRA, has generated ripples of excitement: It produces a so-called G protein-coupled receptor, which belongs to a class of molecules that have proved their usefulness as drug targets. Kere and his colleagues have launched a company, GeneOS Ltd., and filed for patents on the GPRA protein, in the hope of producing a drug to modulate its activity.

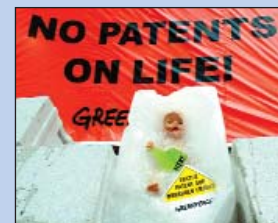
The researchers still need to pin down how a mutated GPRA gene increases



Breathless. Two asthma genes, identified in isolated populations in Finland and Quebec, may provide clues to this boy's illness.

Greenpeace Pans Patent

Baby dolls frozen in blocks of ice and chanting Greenpeace activists shut down the European Patent Office (EPO) headquarters in Munich earlier this week. Greenpeace was protesting the granting of what the group claims is the first patent ever to cover a human embryo.



In November, EPO granted a patent to structural biologist Katrina Forest of the University of Wisconsin, Madison, and embryologist Michelle Lane, now at the University of Adelaide in Australia, for a new method of "vitrifying," or flash-cooling, cells. The technique is apparently gentler than conventional methods and is especially useful for sperm, eggs, and embryos. It has already been patented in the United States and more than a dozen other countries and has been licensed to a Swedish-American firm called Vitrolife that supplies reagents to in vitro fertilization (IVF) clinics. The controversy stems from the fact that the EPO patent claims cover not just the technique but any specimens frozen using the technique—including human embryos.

Forest, who was surprised to hear of the protests, told *Science* that she supports Greenpeace's efforts to keep a close eye on patents covering human cells. "Good for them," she says. "We had no intention of patenting an embryo." She says the technique is still being tested in human IVF clinics and is not yet on the market. Greenpeace says it plans to challenge the patent.

—GRETCHEN VOGEL

Canada's New Light Source

Canadian researchers will soon be able to watch a riveting form of molecular cinema. The Canada Foundation for Innovation last week announced a \$16 million grant to build a new Advanced Laser Light Source (ALLS) in Varennes, Quebec. The five-beamline femtosecond laser system will enable scientists to track the behavior of molecules in real time.

ALLS will enable researchers to study complex molecules that don't crystallize, such as some proteins, says project leader Jean-Claude Kieffer of the Institut National de la Recherche Scientifique, which will host the facility. Overall, the project will involve 72 researchers from 32 universities in nine nations. But don't start the popcorn yet: ALLS isn't due to premier until 2006.

—WAYNE KONDRIO

asthma susceptibility and whether it's widespread in populations outside Quebec and Finland. But there are indications, Kere says, that its role may not be limited to asthmatics who carry the mutant gene. His team tested bronchial tissue from eight asthmatics with unknown haplotypes; all showed high concentrations of the protein, even though only half would be expected to carry the mutant gene. Tissues from 10 healthy volunteers did

not show elevated amounts of GPRA.

There are also hints that the GPRA gene may be linked to allergies. Human tissue samples revealed that the GPRA protein is present in the air passages of normal lungs, although at much lower concentrations than in the lungs of asthma patients, as well as in the outer layers of the skin and the gut lining—all sites commonly associated with allergic reactions.

—JENNIFER COUZIN

SCHOLARLY PUBLISHING

U.S. Eases the Squeeze on 'Sanctioned' Authors

The Treasury Department has reversed a controversial ruling that would have required U.S. scholarly journals to obtain the government's permission to edit papers from countries under a U.S. trade embargo. A new policy directive, spelled out in a 2 April letter to the Institute of Electrical and Electronics Engineers (IEEE), is expected to resolve months of confusion about how to handle manuscripts from those countries.

In 2002, citing uncertainties in trade regulations, IEEE decided to exclude papers from scientists in Iran, Cuba, Iraq, Libya, and Sudan, pending a ruling from the Treasury Department's Office of Foreign Assets Control (OFAC) on the government's position (*Science*, 19 September 2003, p. 1646). On 30 September OFAC said that a license would be required to perform any editing of manuscripts from Iran (and, by extension, other sanctioned countries) (*Science*, 10 October 2003, p. 210). But last week, after boning up on the scientific peer-review process, OFAC cleared the way for publishers to follow their normal procedures in editing papers from anywhere in the world.

"Scientific communities in sanctioned countries may publish their works in U.S. scholarly journals," says OFAC Director Richard Newcomb. In his letter to Nelson Dong, a Seattle attorney representing IEEE, Newcomb explains that IEEE is "not constrained" from having reviewers propose substantive improvements to the manuscript nor from making editorial changes before publication.

The new ruling refers to a 1988 amend-

ment to the Trading With the Enemy Act that exempts "informational materials." A senior Treasury official explained this week that "peer review and copy editing are permitted because they are exempt under the Berman Amendment." A spokesperson for Representative Howard Berman (D-CA) called it "a positive step" but warned that "we need to

look carefully at how it's applied to other things that publishers do."

OFAC's decision appears to vindicate IEEE; critics had warned that its query could force OFAC to act on a matter that it might otherwise ignore. A number of organizations refused to alter their procedures, citing the First Amendment clause on free speech, whereas the American Chemical Society temporarily suspended its review of manuscripts by authors from the sanctioned countries. A few, includ-

ing the American Society for Microbiology, applied for a license. Last month *Science* reported that OFAC was planning to relax its policy (*Science*, 19 March, p. 1742).

"Perhaps we invited some of [the controversy], so it was incumbent upon us to get a resolution," says Arthur Winston, president of IEEE, which convened a February meeting with scientific publishers on the issue and met last month with OFAC officials. Since the September ruling, IEEE has published manuscripts from the embargoed countries without making any stylistic or editorial changes. "Effective immediately," Winston said, "IEEE is returning to its normal publishing process for all authors."

—YUDHIJIT BHATTACHARJEE

With reporting by Jeffrey Mervis.



Back to normal. IEEE's Arthur Winston applauds the ruling.