Seven-year grant offers immune tolerance a boost

Translational research — research aimed at getting promising ideas out of the lab and into the clinic — is a hot topic in biomedical circles, not least because it is a favourite theme of Elias Zerhouni, director of the US National Institutes of Health (NIH). But if it is hot, it's also hard. That, at least, is the experience of the NIH's Immune Tolerance Network (ITN), a consortium of researchers trying to apply some basic immunology to making patients better.

The ITN was originally set up in 1999 with a budget of $165 million; on 2 May the NIH renewed its contract with $220 million for the next seven years. But the field is still trying to overcome substantial roadblocks, ranging from problems in setting up clinical trials to significant scientific difficulties.

M. KELLER/CORBIS

Could allergies be made more tolerable?

Immune tolerance is the process by which the body avoids launching immune attacks against its own tissues, and the ITN's idea is to harness it to curb the destructive immune reactions that underlie conditions ranging from organ transplant rejection to type I diabetes.

Not surprisingly, drug companies have shown little interest in an idea that aims at eliminating patients' long-term need for pharmaceuticals such as immunosuppressants or, indeed, insulin. Although Europe and Canada have smaller consortia devoted to the same end, the ITN, which is also funded in part by the Juvenile Diabetes Research Foundation, is the largest effort to take tolerance into the clinic.

The approach has had some successes. In one notable trial, which was already under way when the ITN began to fund it, a team led by immunologist Megan Sykes at the Massachusetts General Hospital in Boston carried out simultaneous transplants of bone marrow and kidneys from the same donor to six cancer patients with kidney failure, who in any case needed bone marrow. The idea was that the bone marrow would become integrated into the recipient's immune system and make it see the transplanted kidney as its own tissue rather than as an interloper.

Three of those patients now survive with no immunosuppressive drugs, and no patient lost a kidney (Y. Fudaba *et al. Am. J. Transplant.* **6**, 2121–2133; 2006). "This is the first time anyone has intentionally tried to induce tolerance in transplant patients, and it worked," Sykes says.

A follow-up clinical trial didn't pan out, however. Sykes could not recruit enough patients and so the ITN ended its support last year. She is now part of a team that the ITN is funding to test the same approach with the more numerous kidney-transplant patients who don't have cancer.

A follow-up to a successful ITN-funded trial of an allergy treatment was also cancelled after almost a year of planning. "Our original trial was one of two ITN-sponsored studies that got published in the *New England Journal of Medicine*," says Peter Creticos of Johns Hopkins University (P. S. Creticos *et al. N. Engl. J. Med.* **355**, 1445–1455; 2006). "We helped them win that renewal, and then they pulled the plug."

ITN director Jeffrey Bluestone, of the University of California, San Francisco, admits that the network has had to make some hard decisions. He says the trial that Creticos was involved in was cancelled because it didn't recruit enough patients. "I truly regret that we weren't able to pull it off," Bluestone says.

But of equal concern to Bluestone are the scientific difficulties the ITN has encountered. Many treatments that worked like a charm in mice haven't worked out in further tests. He thinks the future of tolerance will not rely on the use of single drugs, which will complicate future trials even further. The ITN completed just seven of its 23 planned trials during its first contract, and cancelled three. A further eight trials are now in the works. Yet Bluestone says, "I wake up every morning with this dream that we'll bring some of these therapies to fruition." It's a noble dream, and slightly closer to reality than it was seven years ago. ■

Erika Check

SCORECARD

▲ **Beer**
Australian brewer Foster's is planning to install a 2,500-litre bacterial fuel cell at its Brisbane plant, to produce clean energy from sugary waste water...

▼ **Beer**
...While German drinkers are facing the sobering prospect of a price hike for their favourite brew, as many of the country's barley farmers are switching to heavily subsidized biofuel crops.

ON THE RECORD

"A scientist by day, he is a lead Chippendale dancer by night."

Promotional material for the US reality-TV show *Pirate Master* describes John Lakness, who will compete with 15 others for a $1-million prize. Lakness reportedly studied electrical engineering at Rensselaer Polytechnic Institute.

HOBBIT NEWS

Fossil fiction

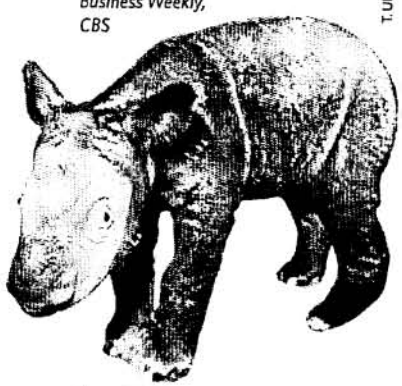
Homo floresiensis fans will be excited to learn that the tiny hominins have spawned a novel, *Flores Girl* — and it's free to download at www.floresgirl.com. Author Erik John Bertel promises that a sequel is already under way.

ZOO NEWS

Rhino record

Emi, a Sumatran rhino at Cincinnati Zoo, has given birth to a record-breaking third calf (pictured). The proud mum is the first of this species to bear more than a single calf in captivity.

Sources: Associated Press, Czech Business Weekly, CBS



T. UHLMAN/AP

SIDELINES

Scientists should promote co-operation, not boycott

SIR — Since 1931, the International Council for Science (ICSU) has upheld the principle of the universality of science, based on the right of scientists to work without discrimination on the grounds of citizenship, religion, creed, political stance, ethnic origin, race, colour, age or gender.

The entire ICSU membership, representing the scientific community in 112 countries and all disciplines, has consistently expressed its unequivocal support for this principle. This stance has stood the test of time throughout the Cold War, apartheid in South Africa and the new challenges posed by international terrorism. It is a strong expression of solidarity across the international science community: a critical reference point for individual scholars confronted with threats to their freedom.

The decision by the congress of the UK University and College Union to recommend that its members bar academic exchanges with Israeli researchers is a flagrant breach of this principle. It has rightly drawn substantial adverse comment from scientists, newspaper columnists and human-rights activists in the United Kingdom and internationally.

It is easy to understand the strong feelings generated by conflicts and people's desire to demonstrate their opposition to the actions of governments. But to do so through the medium of individual scholars is to sacrifice a profoundly important principle of freedom and solidarity. In situations of strife and conflict, it is surely the duty of scientists to promote international understanding and co-operation — not to penalize each other for the shortcomings of their governments.

Bengt Gustafsson
ICSU Committee on Freedom and Responsibility in the Conduct of Science, and Department of Astronomy and Space Physics, Uppsala University, Box 515, SE-751 20 Uppsala, Sweden

US government enforces boycott of whole countries

SIR — The US Educational Commission for Foreign Medical Graduates (ECFMG) processes the applications of foreign students for the US Medical Licensing Examination, which evaluates candidates' basic and clinical knowledge in medicine. The examination has two steps, both of which must be passed for the ECFMG to recognize the individual as a medical doctor in the United States.

As a medical student, I applied for step 1 in January 2007, entering my country (Iran) in the contact address section. A message in red letters appeared on the registration page: "It has come to our attention that ECFMG may be subject to specific Unites States federal regulations that prohibit entities from doing business with or providing a service to any individuals who have an address of residence in specific restricted countries. The country of Iran is included on this list of restricted countries. In light of this, ECFMG is not able to allow you to request this service."

The political status of Iran or any other nation is not relevant to education. The result of the restriction is that all medical students and graduates who live in Iran are prevented from taking the US licensing examination. This surely is academic discrimination against a whole country.

Sina Zarrintan
Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

Cincinnati's rhino breeders bring home the bacon

SIR — Recent welcome successes in Sumatran Rhino breeding at the zoo in Cincinnati, Ohio (*Nature* **447**,125; 2007), prompt the idea that Cincinnati's existing colloquial name, 'Porkopolis' (reflecting the city's historic importance in the pig trade), could be replaced by 'Rhinopolis'.

Martin F. Heyworth
Veterans Affairs Medical Center, University and Woodland Avenues, Philadelphia, and Department of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA

Cooling may be possible, but we need safety data

SIR — The global cooling geo-engineering ideas discussed in your interesting News Feature 'Is this what it takes to save the world?' (*Nature* **447**, 132–136; 2007) merit, in my view, further study to determine their operational viability and associated meteorological and other ramifications.

I proposed such a global cooling scheme some years ago (*Nature* **347**, 339–340; 1990), involving advertent albedo enhancement of shallow maritime stratiform water clouds, which cover about one-sixth of the global surface, by spraying seawater particles of diameter about 1 micrometre from close to the ocean surface, underneath such clouds. A significant fraction of these would be transported by turbulence into the clouds, where they would act as efficient cloud condensation nuclei, creating additional droplets and thereby increasing cloud reflectivity.

Since then, this suggestion has been investigated further (see K. T. Bower *et al. Atmos. Res.* **82**, 328–336; 2006, and references therein). One advantage of the scheme is that it constitutes a controlled version of a process that occurs naturally, in that seawater particles are continually being produced at the ocean surface by wave-breaking and bubble-bursting, and some fraction of these rise into the stratiform clouds above and produce additional cloud droplets. Other advantages are that it can be switched off immediately, with conditions returning to normal within a few days; all required energy is derived from the wind; and the only raw material is seawater.

There is no justification for deploying this or any other global cooling scheme, however, until rigorous examination of all possibly deleterious meteorological and other ramifications have been conducted and found acceptable.

John Latham
Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, PO Box 3000, Colorado 80307-3000, USA

Darwin Centre will be fit for its range of purposes

SIR — Your News story 'Anger at "unfit" museum design' (*Nature* **447**, 239; 2007) reports some people's belief that the design of the Natural History Museum's Darwin Centre Phase Two is unfit for purpose, as the building will not have room to house the entire insect and plant collection.

The crux of the issue is that the public is being given access to our science, and this takes space. Building new facilities for the entirety of our collections, research and public access in one go is not feasible, with current funding. Instead we are taking it by stages. With the completion of Darwin Centre Phase Two, we will have more than half of our 70 million specimens in high-quality storage.

Balancing the needs of collections, research and public access will help us to advance knowledge of the natural world and to communicate this to the public. It will mean some changes in how we work and it will take time to adjust. However, we think that the new building will lead to a long-term improvement in the way we carry out and communicate the museum's work in taxonomy and systematics.

We have received a high level of support for this project, and are confident that it will be a real benefit to the museum, the scientific community and the wider public.

Richard Lane
Natural History Museum, Cromwell Road, London SW7 5BD, UK

Contributions to Correspondence may be submitted to correspondence@nature.com.