



## The NIH shuffle

The US National Research Council and Institute of Medicine have issued a report recommending a series of organizational changes at the National Institutes of Health (NIH). Despite recent calls in some quarters for a wholesale consolidation of the 27 institutes and centers that make up the NIH, the report's authors recommend such a step in only two cases—the fusion of the National Institute on Drug Abuse with the National Institute on Alcohol Abuse and Alcoholism, and the fusion of the National Institute of General Medical Sciences with the National Human Genome Research Institute. A new center for clinical research is also proposed. Finally, the committee recommends a ‘trans-NIH’ initiative, which would give the NIH director authority to require each institute to participate in interdisciplinary research programs. In time, such a program could be funded by up to \$1 billion per year. The committee was led by Harold Shapiro, president emeritus of Princeton University, and the full report, *Enhancing the Vitality of the National Institutes of Health: Organizational Change to Meet New Challenges*, can be read on the website of the National Academies (<http://www.nas.edu>). AP

## Live long and prosper

Besides the long hours, low pay and chance to wear shorts to work in December, what are the perks of being a scientist? A study in the *Journal of the Royal Society of Medicine* (96, 384–388; 2003) reports that students who focused on science, medicine or engineering as undergraduates have a lower risk of ‘all-cause mortality’ than those who studied the arts, law or divinity. In the study, Peter McCarron and colleagues tracked almost 10,000 male students who attended Glasgow University from 1948 to 1968 to the present. Science students were most likely to be non-smokers, while law and medical students were most likely to be smokers (in that order). Medical and law students were also more likely to die of alcohol-related causes, as well as accidents, suicide and violence. But, along with their science-studying peers, they seemed to be more frequently spared of cardiovascular disease than the artists or lawyers. So raise a pint in celebration of your long-lived status. It seems we won't have to tell you not to drive home afterward. MH

## 100 years of PNAS

To celebrate a century of publication, the *Proceedings of the National Academy of Sciences USA* is highlighting classic PNAS papers on its website (<http://www.pnas.org/misc/classics.shtml>). So far, the offerings include Briggs & King's 1952 cloning of *Rana pipiens* by transfer of a somatic nucleus into an enucleated egg and Danna & Nathan's use

*TouchingBase* written by Monica Harrington, Alan Packer and Michael Stebbins.

of restriction enzymes to specifically cleave SV40 DNA. Also featured are Pauling & Corey's series of 1951 papers on protein structure and Edwin Hubble's 1929 account of the expanding universe, published under the modest title “A relation between distance and radial velocity among extra-galactic nebulae”. Along with the original papers, the editors have supplied helpful historical commentaries on the work, accompanied by photographs, additional reference material, quotes from the participants and other scientists, and explanations of the impact of these classic findings. Soon to come are John Nash on game theory and Meselson & Stahl on DNA replication. AP

## Mutant of the Month

Summer is coming to a close and we turn our eyes to the turning leaves of fall and *scid*, our Mutant of the Month. The *scid* mutation (for severe combined immunodeficiency) showed up in Mel Bosma's mouse colony around 1983. This little fellow is actually carrying the *scid* mutation on a NOD/LtSz (non-obese diabetic) background, which makes him an excellent host for transplanted human cells. Although he is free of both insulinitis and diabetes type 1, he is pretty much free of both T and B lymphocytes as well. The *scid* mutation is actually in *Prkdc*, which encodes the DNA-activated protein kinase (DNA-PK), catalytic subunit, an integral player in non-homologous end joining. Mutations of DNA-PK cause a deficiency in V(D)J recombination, resulting in a severely impaired ability to produce unique antigen receptors and, thus, an ineffective immune response. Although mutations in DNA-PK have not been found in humans, they have been identified in both Arabian foals and Jack Russell terriers with SCID. The severity of the phenotype correlates with the level of enzymatic activity in these animals; thus, Arabian foals have a more severe V(D)J recombination deficit than the *scid* mouse, because DNA-PK is more active in foals than in mice. DNA-PK is several times more active in humans than in horses or mice, so mutations would probably be lethal. MS



Courtesy of Lenny Shultz and Stan Short.

“...because I want to do so many things in life.

It is not just I. You are probably the same.

You say to yourself, “Gee, how can I have my family and work?” At night, I wonder how I can go to sleep plus direct a movie while in the daytime act in two movies simultaneously, go home and be with the family. Wouldn't that be wild?...

Then all my clones could get together and have a meeting, go out again and attack.”

—Arnold Schwarzenegger,

Republican candidate for Governor of California, on the benefits of human cloning.