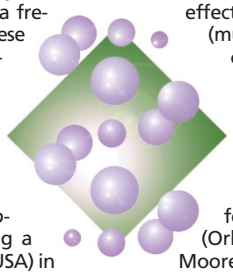
TOUCHING**base**

Alan Wolffe (1959–2001)

We at *Nature Genetics* and in the scientific community were greatly saddened by the recent passing of Alan Wolffe, a frequent contributor of both research and commentary to these pages. Wolffe, the chief scientific officer of Sangamo BioSciences, Inc., was involved in a fatal traffic accident while attending a scientific conference. A graduate of Oxford University, he completed a Ph.D. at the Medical Research Council (UK) and conducted postdoctoral research in the laboratory of Dr. Donald D. Brown at the Carnegie Institute of Washington (USA), where he studied the structure and regulation of the *Xenopus* 5S RNA gene transcription complex. After becoming a principal investigator at the National Institutes of Health (USA) in 1986, he became Chief of the Laboratory of Molecular Embryology at the National Institute of Child Health and Human Development in 1990, a position he held until moving to Sangamo BioSciences last year. He will perhaps be best remembered for his extensive work (over 100 publications) on chromatin structure and remodelling. Said colleague and co-author Marjori Matzke, of the Austrian Academy of Sciences, Alan Wolffe was "…one of the most energetic, productive, enthusiastic, communicative and broad-minded scientists I knew" and his death "…is a huge loss to the entire science community." Donations in Dr. Wolffe's memory may be made to the American Cancer Society (http://www.cancer.org) or the Rett Syndrome Research Foundation (http://www.rsrf.org). In addition, an educational fund has been established for his children. For more information, please contact Sangamo BioSciences at +1 510 970 6000.



De-evolution

In the US, it's summer movie season—an onslaught of special-effect driven epics in which plot and character development (much less scientific accuracy) are afterthoughts at best. But one of this year's entries, *Evolution*, by Ivan Reitman, strives to be different. "The science, as far as we know it, is more realistic in this [movie]," he says. The basic plot is the somewhat worn meteorite-full-of-alien-baddies-crashes—(landing in the preferred spot of all aliens, the southwestern US)—and-wreaks-havoc. This time, though, the heroes are two local professors, Ira Kane (David Duchovny) and Harry Block (Orlando Jones) and a government scientist (Julianne Moore). The academics discover a blue liquid within the meteorite teeming with single-celled organisms that divide at a phenomenal rate (*The Andromeda Strain*, anyone?), which we are repeatedly informed is due to "mitosis". The creatures quickly turn multicellular (so far, so good) and establish an underground ecosystem that expands rapidly, threatening the surrounding population. With his 'spectral analyzer' (the benchtop model), Ira determines that the rapid evolution results from the fact that the aliens contain "ten base pairs"—which only starts to make sense about five minutes later, when he explains that we have only "four base pairs". The aliens morph from flatworms to giant mosquitoes, then flying dinosaurs and eventually gorillas, culminating in a giant flatulent beast that we can only hope is not our evolutionary destiny. The humour is sophomoric and the action predictable, but the laughs are frequent enough (and the soundtrack sufficiently loud) to banish any severe criticisms of the 'science'. At least they're trying.

Something in the water

The lactose (*lac*) operator-repressor system of *Escherichia coli* holds a prominent place in the history of biology. The first—and now classic—example of gene regulation to be understood at the molecular level, it emerged from the work of François Jacob, Jacques Monod and their collaborators at the Pasteur Institute's famed attic laboratory. In recent years, the ubiquity of blue-stained cells and embryos has been a testament to the usefulness of *lacZ*-encoded β-galactosidase as a marker of gene expression. Carolyn Cronin and colleagues (of the University of Virginia) have now provided what may be the topper in *lac* studies. In a recent issue of *Genes & Development* (published online in June), they report the generation of mice that contain a fully functional *lac* operator-repressor gene regulatory system. The system depends on two lines of albino mice. The first harbors a transgene that promotes ubiquitous expression of the *lac* repressor. The second carries a tyrosinase transgene in which *lac* operator sequences have been inserted into the tyrosinase promoter. When crossed, the doubly transgenic progeny are still albino, due to repression of tyrosinase expression, which is required for melanin synthesis. If the lactose analog IPTG is added to the drinking water, however, tyrosinase expression is de-repressed, and the mice become pigmented. The effect is reversible, and it turns out that IPTG can cross the placenta, extending the control of gene expression to embryonic development. The system holds the promise of unprecedented temporal control of gene expression in mice. As gene targeting methods allow the introduction of *lac* operator sequences into the promoter of any endogenous gene, a fresh, IPTG-laced water bottle should allow for expression to be shut off—and turned on again—*ad libitum*.

Trends in genetics

The infiltration of popular culture by genetic icons shows no sign of abating. Faith Popcorn (the futurist with the felicitous name) is setting her sights on—what else?— DNA. Ms. Popcorn, heretofore best known for her book *The Popcorn Report*, and her predictions of consumer trends such as 'cocooning' and 'nesting,' was recently interviewed for an article in *The New York Times*. Apparently, her forthcoming book, *The Dictionary of the Future*, tackles the trends of the next century. According to *Times* reporter Robin Finn, Popcorn "predicts the demise of dating and the rise of 'DNA-ing,' a process where potential mates compare compatibility via computer chip implants and being 'DNA-ed' is a euphemism for being dumped." But why stop there? We can easily foresee the day when the ice-breaker "What's your sign?" is replaced by "What's your SNP?" And what of that old standby—the daily horoscope? How long before 'the daily haplotype' takes its rightful place in cutting-edge tabloid newspapers everywhere? We don't expect the next issue of *Nature Genetics* to appear on the bestseller lists, but "savvy trend-spotters" like Ms. Popcorn would be well advised to watch this space.

And this year's award for overheated journalism goes to…

"This is where Josef Peninger walks in, with his Sideshow Bob hair. He grows a few mice in his lab and fingers the little man working behind the curtain. That's CD45. Now we're only a few steps away from Dorothy, clicking her heels together and saying, There's no place like home, there's no place like home. You can wake up in Kansas, insulin-free, with that new heart splashing away inside you, as welcome as a Dunkin' Donuts on the highway between nowhere and home."

"Josef got to work and cloned the AIF gene. Then, with hands tingling, he knocked it out. The results were staggering. There is no life without AIF. Nothing grows. It's a prehistoric gene, and it's present everywhere. It's in you, and it's in worms and flowers and even slime mold. It's God."

"If Josef is right and AIF is calling the shots, then we're a heartbeat away from telling AIF what we want it to do. Genetics is all about who's boss. And we always want to be the boss. But AIF, like God, is a monster. Josef shakes a little when he talks about what could go wrong if AIF is mishandled. A drop of AIF on the cancer cells eating away at your brain will produce a miracle, but if you miss by the tiniest fraction, and AIF touches healthy cells, your brain will be destroyed. With AIF, we could blow our souls right out of the water."

—Mary Rogan in *Esquire* (July, 2001)