

TOUCHINGbase

● Gene Therapy Society goes public

With what was quite possibly a record for an inaugural gathering, the first annual meeting of the American Society of Gene Therapy (May 28–31, 1998; Seattle) was attended by over 1600 scientists (a quarter of them from abroad), including scruffy PhDs with tales in molecular biology and virology and smart-looking MDs reporting on clinical trials. And while only a subset of the participants might agree with Ted Friedman, the head of the society's public policy committee, that "gene therapy is on the verge of the clinic", the overall mood was optimistic, and the society should be congratulated for bringing together such a mixed group of investigators. Recognizing the need to supply a diverse audience with background information, the meeting started with a morning of popular (and unfortunately mostly parallel) education sessions. In addition, 400 schoolkids were invited to a high-school student symposium for a day of hands-on genetic experiments and lectures on gene therapy, while, next door, scientists shared (often unpublished) data on the various aspects of this growing field. Noticeably absent from the meeting was any discussion of the ethical, social and legal implications of gene therapy—nobody even mentioned the word 'germline'—it is hoped that this will be different next year, when gene therapists will gather in Washington, DC.

● Just add water...

... to a satchel of freeze-dried sperm, inject into oocytes, carry out a few more steps, and—presto—instant mice! Teruhiko Wakayama and Ryuzo Yanagimachi, University of Hawaii School of Medicine, Hawaii, have announced the recovery of live mice from freeze-dried, biologically dead spermatozoa, which were stored at ambient temperatures for three months (*Nature Biotech.* **16**, 639–641, 1998). Freeze-drying has the potential to revolutionize sperm preservation and shipping of transgenic strains; the liquid-nitrogen vats currently used for cryopreservation may soon be replaced with, as Monica Justice, of Oak Ridge National Laboratory, Tennessee, quips "wine cellars of freeze-dried sperm". While she hails this as an exciting preliminary result, Justice emphasizes the need for more research to establish the critical parameters that ensure the 'shelf-life' of the sperm—for example, the optimal water content of the freeze-dried samples. The researchers took advantage of advances in the technique of intracytoplasmic sperm injection (ICSI), which overcomes the difficulties of damaged, less robust, immotile—or, in this case, biologically dead—sperm. Larry Mobraaten, of the Jackson Laboratory, Maine, also finds this achievement remarkable, in light of the finding that freeze-drying does not destroy the integrity of the nuclear complex in which the sperm DNA is packaged. He indicates, however, that it will be important to establish whether the progeny develop normally and are free of any chromosomal abnormalities.

● The church, the state and the genetically modified cultivar

While the Swiss referendum has been resolved to the general satisfaction of geneticists, the debates that preceded it are reminiscent of the current dialogue on genetically-modified (GM) cultivars that is being carried out over a wider geographic scale. In contrast with the apparent acceptance of most North Americans, Europeans are less enthusiastic about the cultivation and inclusion of GM cultivars in their fields and food, respectively. In fact, according to a recent poll by *The Guardian*, only 14% of the British public are happy with the introduction of GM food. This sentiment is shared by Prince Charles, who wrote for *The Telegraph* that genetic engineering "takes mankind into realms that belong to God and to God alone". Another reservation expressed by many British subjects (in addition to Prince Charles)—and one that is more easily understood, given the mishandling of the BSE crisis by the last two British governments—concerns the fact that the long-term effects of cultivating GM crops have yet to be determined. In sympathy with this concern, the European Union has recently ruled that packets containing GM food (such as the tomato purée marketed by Zeneca) must be labelled to indicate this fact, while those containing the old-fashioned variety can be labelled accordingly—although a new round of deliberation has begun over who should be responsible for monitoring GM content and how it should be done. Whether large-scale cultivation of GM crops in Europe will come to pass remains to be determined. It is currently the subject of an advertising campaign in the UK by Monsanto, and of discussion regarding the extent to which industrial interests will affect the opinions of Tony Blair, the Prime Minister, and Margaret Beckett, the Trade Secretary.

● Sonic hedgehog digs deeper

Sonic hedgehog (SHH) is arguably a 'hot' molecule, having received 170 PubMed citations in two years. Effecting one of the more dramatic phenotypes, mutations in *Shh* and *SHH* result in holoprosencephaly in the mouse and human respectively; the human mutations were reported in these pages about one and a half years ago. While mechanistic details about SHH signalling have been forthcoming—it acts through patched (PTC), and this interaction augments signalling from another plasma-membrane protein, smoothed— a pair of studies published in June reveal further facets of SHH action. In *Science*, Philip Beachy and colleagues, of the Johns Hopkins University, have demonstrated that teratogens with structures similar to cholesterol, and known to mimic *SHH* mutations in their effect on development, inhibit, not production of SHH, but the target-tissue response. Consistent with this, the authors could not find any effect on SHH processing or cholesterol modification of SHH, by exposure of SHH-transfected cells to the teratogens. It seems likely that the teratogens act by some yet-to-be fathomed action on PTC, which contains a sterol-sensing domain and may be disrupted by aberrations in sterol homeostasis. With respect to effect of SHH expression (or not, as the case transpires), Doug Melton and co-workers at Harvard University report in June's issue of *Genes & Development* that the notochord factors activin β B and FGF2 inhibit SHH expression in endoderm that is destined to become the dorsal pancreatic bud, and that antibodies blocking SHH permit expression of pancreatic genes in the developing chick. The authors are currently investigating whether these same signalling pathways are involved in pancreatic development in mice; we wish them a smoothed ride.

● Delightful fingerprints

Art and Genetics meet in North Carolina this summer in an exhibition of works of Chicago-based artist, Inigo Mangano-Ovalle, at the Southeastern Center for Contemporary Art (SECCA) in Winston-Salem. "The Garden of Delights" examines recent developments in the genetic sciences and their potential effects upon the representation and portrayal of individual and cultural human identity. DNA samples were processed with the help of scientists at the local Genetics Laboratory at Wake Forest University's School of Medicine who transferred genetic fingerprints to computer files. The artist manipulated their shapes and colours to create a 'portrait' of an international population (see the artist's earlier "Self Portrait" above). The exhibition is on display at SECCA, 750 Marguerite Drive, Winston-Salem, North Carolina 27106, from July 18 through September 30, 1998.

