WEB WATCH

Are you policy aware?

• <http://www.humgen.umontreal.ca/en/welcome.cfm>

There is an increasing need for scientists, particularly human geneticists, to consider the social, legal and ethical implications of their work. The HumGen website is an excellent starting point to investigate these areas, as it contains a collection of authoritative policy documents on human genetics. These include legislation, directives and guidelines from international, regional and national bodies, such as the World Health Organization and the Nuffield Council on Bioethics. The website is governed by an international Scientific Advisory Board.

It is possible to compile your personal bibliography at the GenBiblio facility. This allows the browser to search and download relevant articles in a particular area of genetics, such as pharmacogenomics or cancer, and on a particular ethical, legal or social issue — for example, intellectual property or counselling. For more information, it might be necessary to contact one of the 300 organizations that are involved in formulating policy statements on human-genetics research — their contact details can be obtained from GenConnect.

The HumGen team has put together a bimonthly freely-available electronic periodical called GenInfo. This circulates new policy statements and aims to inform lawyers, policy makers, researchers, health professionals and the general public. There is also a new editorial feature — GenEdit. Its first article tackles cloning legislation and provides an overview of the science, discusses the legal, ethical, religious and cultural issues associated with this technology, and has suggestions for future legislation.

This website is a unique source of international genetic policy information and is a must for geneticists that are interested in looking into the wider implications of their work.

Catherine Baxter

EPIGENETICS

Silent connection

X chromosome inactivation (XCI) — silencing of one of the two female X chromosomes to ensure equal dosage of X-linked genes in XX and XY individuals — and autosomal imprinting — the differential expression of alleles depending on their parent-of-origin — were once considered to be distinct phenomena. Recent data indicate that these regulatory processes have many features in common, and two groups provide evidence in support of this link. Mager *et al.* show, for the first time, that the mouse Eed (embryonic ectoderm development) Polycomb group (PcG) protein is needed for autosomal imprinting, and, building on previous work that demonstrated a role for Eed in imprinted XCI, Silva *et al.* now show that Eed has a central role in random XCI.

The accumulation of *Xist* RNA along the inactive X chromosome (Xi) — the first essential step of XCI — recruits the factors that are needed for silencing, including the

PcG proteins Eed and Enx1. Silva *et al.* used immunofluorescence to show that in differentiating mouse stem-cell lines, and in mouse embryos, these proteins form transient foci on the X that is to be inactivated; this is coincident with *Xist* RNA expression. Transgenic experiments in which *Xist* is ectopically expressed in XY cell lines and mice, and studies of *Xist* mutants, have indicated that *Xist* is both necessary and sufficient for the formation of Eed–Enx1 foci on the X chromosome.

The authors monitored histone H3 modification to find out how the Eed–Enx1 localization generates the histone modifications that are needed for XCI. Strong immunofluorescence staining for methylation of H3-K9 and K27 in the regions of Eed–Enx1 foci support previous data indicating that Eed catalyses histone methylation. Moreover, in *eed*^{−/−} mutant mice, Eed–Enx1 foci no longer form on Xi, and XCI is impaired. The fact that H3-K9 and

K27 methylation is also absent in these mice shows that Eed is necessary for the XCI-associated histone modifications.

Mager *et al.* used the same *eed*^{−/−} mutant line to show that this Polycomb group protein is also required for the silencing of a subset of autosomal imprinted loci. The authors followed specific imprinted loci with different polymorphisms that were associated with maternally

EVOLUTION

No sex please, we're ostracods

Although some species might experiment with alternative methods of reproduction, most eukaryotes — including humans — are hooked on sex. Defying this

trend, a few lineages have avoided early extinction, which is a genetic hazard associated with long-term asexuality. So, how have these ancient asexuals escaped the

deleterious effects of amixis, and what can they tell us about the puzzling prevalence of sex?

Isabelle Schön and Koen Martens have examined the mutational load of the oldest extant asexual species *Darwinula stevensoni* — an ostracod crustacean that has survived without sex for more than 20 million years — to determine the genetic consequences of its unconventional private life.

They sequenced three nuclear regions of *D. stevensoni* — intron and exon regions of the single copy gene *hsp82*, interspersed regions of *ITS1/ITS2* and the calmodulin intron *CadDS* — and estimated the nucleotide divergence within and between individuals and populations, in comparison to the fully sexual ostracod *Cyprideis torosa*.

The authors found that *D. stevensoni* has exceptionally low