nature genetics

HUGO—a UN for the human genome

International agreements, and the bodies that oversee them, have taken a bit of a beating in the last few years. The current US administration's unilateral approach to global problems has seen the demise of the international community's effort against anthropogenic climate change (the Kyoto treaty), the selective adherence to international rules of trade (with the imposition of steel tariffs), the refusal to ratify the world court and, more recently, the invasion of Iraq despite opposition from the UN and most sovereign nations.

It is interesting, then, to consider the status, in this year in which the human genome project has been completed, of the Human Genome Organisation (HUGO)—the "UN for the Human Genome" (*Genomics* **5**, 385–387; 1989). Did the same "irrelevance" of unwieldy international organizations befall HUGO in the face of the might of the US and UK genome communities? And if so, does HUGO have a role now that the human genome project is complete?

The establishment of HUGO was first suggested at a 1988 Cold Spring Harbor meeting and emerged largely from the human chromosome mapping meetings that took place during the 1970s and 1980s. A meeting in Switzerland later that year led to the establishment of an academy-like organization with 220 elected members from 23 countries—a truly international (albeit exclusive) organization to coordinate collaborative research on the human genome.

The initial membership included many of the individuals who went on to lead the human genome project through to its completion, celebrated at the NHGRI in mid-April this year. However, at the recent HUGO meeting* when Francis Collins gave his appropriately triumphant address, he asked "authors of the human genome sequence publication to stand up"—in a crowd of some 400 people, perhaps 10 stood to accept the applause.

Nature Genetics highlighted the divide between HUGO, which comprised primarily human geneticists, and the genomics community in 1998 (*Nat. Genet.* **19**, 1–2). John Sulston, in his new book *The Common Thread*, states that the members of HUGO were "interested primarily in medical genetics rather than wider biological importance of genomes." As Sulston points out, ultimately HUGO had little role in the sequencing of the human genome, as the push for the genome ultimately came from molecular biologists and not geneticists. HUGO's peripheral role is evident in a recent report reflecting on the general lessons learned from the human genome project (*Science* **300**, 286–290; 2003). In the brief section on the value of international participation in that article, the 20 participant sequencing centers from six countries are mentioned, but HUGO is not.

It would seem, then, that as the human genome project evolved, HUGO went the way of other international organizations in the face of US (and, to a lesser degree, U.K.) economic, scientific and political might. But despite appearances (or lack of them), HUGO has had an essential role behind the scenes of the human genome project. With a mission to promote international collaborative effort to study the human genome and the myriad issues raised by knowledge of the genome, HUGO has had noteworthy successes in some of the less glamorous—but nonetheless vital—aspects of the human genome project.

As anyone who has published in *Nature Genetics* knows well, we will not publish a paper until new human gene symbols have been approved by the HUGO Gene Nomenclature Committee (HGNC). This is not merely a bureaucratic hurdle but part of the very important task of establishing a common language for the human genome. HUGO has also continued to actively support scientific initiatives, especially with regards to the annotation of the human genome. An example is the Human Genome Variation Committee (HGVC), which has been coordinating efforts to assess genetic variation. On a practical level, HUGO facilitates scientific research by offering travel grants for young scientists who wish to visit foreign labs to learn new methods for analyzing the genome. In addition, the HUGO Mutation Detection Training Course trains young scientists, particularly those from developing nations.

The annual HUGO meeting reflects the international nature of the organization: the last five meetings having been held on four different continents. These meetings provide the only occasion for the international human genome community to meet and also provide an opportunity for the host nation to draw local attention to genomic science. In addition to genomic and genetic science, these meetings include sessions on ethical,

legal and social issues. This provides an essential opportunity for scientists and bioethicists to meet. Outside of the annual meeting, HUGO committees have produced policy statements on issues from EST patents to cloning and benefit sharing for research participants. These statements have had important effects on policy within the European Union, although they have been less influential in the US.

As a truly international organization, HUGO has been instrumental in reaching out to groups and nations that have not actively participated in the human genome project. Following a recent circulation of its membership, HUGO has recruited scientists from 24 countries to act as ambassadors for the genome community. These individuals will do outreach work in conveying the knowledge and implications of the human genome project to teachers, social workers and educational ministries—the 'first line' of society who must be informed and ready for the changes that knowledge of the genome will bring.

With the human genome sequence in hand, a truly international body is required now perhaps more than ever. Maximizing the benefits of the human genome project for all humanity (and not just the wealthy western nations) requires international collaboration, resource sharing and continued dialogue. HUGO has evolved into an organization that is well placed to oversee the international ramifications of the human genome project and coordinate future research. If the nations that have made the largest scientific and economic contribution to the human genome project are committed to ensuring that the benefits are shared by all humanity, they need to be more active in participating in an international dialogue. Thus, there should be a recommitment to HUGO from the US (and, to a lesser degree, the U.K.) genomics community; they were conspicuously absent from this year's meeting. At the same time, HUGO needs to assert its role in a world that is expectant of the fruits of the genome. Towards that end, HUGO should look at new means of enabling international research and building on the infrastructure that is in place. More than ever, the world needs a UN for the human genome. That organization should be HUGO. ■

**HGM2003 held in Cancun, Mexico; 27–30 April 2003.*

A new look

Regular readers of *Nature Genetics* PDFs online will have known for a few weeks now that the journal has been redesigned. We trust that the most obvious changes—artwork being splashed across the entire cover and the research material being given a new layout and style—will make the journal even more attractive to look at and to read. Why the new look? For one, *Nature Genetics* has not changed dramatically in appearance since its launch in 1992, and the time seemed right for a somewhat different aesthetic. More importantly, this redesign coincides with a similar process at the other monthly Nature research journals. Although each journal is editorially independent, the 'family resemblance' should now be more evident, reflected in consistent nomenclature for each section.

This redesign has also given us the impetus to include different types of content. On page 133, readers will find a page of 'Research Notes'—short synopses of recent notable papers in genetics. Pieces that normally ran under the heading 'Progress' will now be given the more straightforward title 'Review', the first of which appears on page 135. We will continue to run reviews—authoritative, balanced and scholarly surveys of particular areas of research—as well as commentaries, which will be less technical and more opinionated discussions of any topic of broad interest to geneticists. Starting next month, we will run an occasional 'perspective,' which will be a scholarly review of the literature that is perhaps too technical to be termed a commentary or puts forward a speculative hypothesis. As always, we welcome proposals for such pieces, in the form of one-page outlines, which can be sent to natgen@natureny.com. Finally, we will run obituaries to mark the passing of prominent people in the field. Sadly, the recent loss of Ira Herskowitz has meant that this section has been introduced immediately. On page 121, Anita Sil offers an overview of the life and work of this outstanding scientist. ■