

CORRESPONDENCE

'No' to ban on stem-cell patents

The advocate-general of the European Court of Justice has recommended the prohibition on ethical grounds of patents involving human embryonic stem cells (*Nature* 471, 280; 2011). We write to express profound concern over this recommendation, as coordinators of multinational European stem-cell projects, working with both adult and embryonic stem cells.

Embryonic stem cells are cell lines, not embryos. They are derived using surplus *in vitro* fertilized eggs donated after fertility treatment and can be maintained indefinitely. As more than 100 established lines are now supplied through national and international cell banks, concern about commercialization of the human embryo is misplaced.

It is premature to suggest that human embryonic stem cells can be replaced in development of therapies. Although induced pluripotent stem cells offer additional possibilities, particularly for disease modelling, the reprogramming process is still imperfect.

Scientists working in stem-cell medicine will not be able to deliver clinical benefits without the involvement of biological industry. But innovative companies must have patent protection as an incentive to become active in Europe.

The advocate-general's opinion therefore represents a blow to years of effort to derive biomedical applications from embryonic stem cells in areas such as drug development and cell-replacement therapy. If implemented, European discoveries could be translated into applications elsewhere, at a potential cost to the European citizen. The advocate-general's opinion will now be

considered by members of the court. We trust that they will deliberate on the full implications before making a legally binding ruling.

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*A full list of signatories is available online at go.nature.com/ryt4jv. Three authors declare competing financial interests (see go.nature.com/ryt4jv).

'Plan B' for X-ray astronomy

The European Space Agency (ESA) decision to go ahead without NASA support in selecting its next large astronomy mission (*Nature* 471, 421; 2011) has dashed hopes for the International X-ray Observatory (IXO). X-ray astronomy needs a cheaper 'plan B'.

NASA might yet contribute 20% of the funding for a smaller IXO, but that would not be comparable as a flagship for NASA, ESA and the Japan Aerospace Exploration Agency (JAXA).

A radical rethink of IXO might do it. A mission is defined by its science, not its hardware. IXO spanned all three decades of the X-ray band with a single mirror. But X-ray optics need focal lengths proportional to the photon energy reflected, so each sub-band would benefit from having a very different mirror. Turning IXO into a programme of independent small satellites, each optimized for one band, could be the answer.

ESA, NASA and JAXA could each choose one and build it, without financial or technological interdependence, and space the launches over several years.

The X-ray sky is full of complex sources with much

interesting detail, but satellites dedicated to different energy bands would aim mostly at point sources, which have no discernable structure. Hence a further satellite with a high angular resolution imager would be needed.

Some inter-agency agreement would help to achieve synergy, coordinating where they should be looking and allowing for multi-telescope proposals.

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Bio-PIN could cut biobanking risks

Donors of specimens to biobanks are entitled to respect for their privacy and protection from discrimination (*Nature* 469, 156–157; 470, 169–70; 471, 159–160; 2011). So long as the identity of a donor is on record, such protection cannot be guaranteed. A new system uses a biological PIN code to get around this problem. By keeping biological specimens and data anonymous, the 'Bio-PIN' also encourages donors by offering superior protection (J. J. Niefeld *et al. Nature Rev. Cancer* 11, 303–308; 2011).

Unique to each donor, the Bio-PIN is based on one of their biological characteristics, such as a DNA fingerprint. It means that genetic or other data lodged in a biobank cannot be misused and that privacy is fully protected. As in financial banking, it allows two-way communication between bank and donor.

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Arab world needs its science diaspora

As members of the Society for the Advancement of Science and Technology in the Arab World, we strongly believe that engaging the scientific diaspora — the research community of Arab scientists working abroad — is crucial for successful science in the region.

In addition to the underlying political and societal problems and failed economic policies responsible for recent dramatic events in Arab countries, the failure of the educational systems is to blame. Academic institutions are not producing the skilled workforce necessary to meet local challenges and compete in global economies (*Nature* 470, 147–149; 2011). The domino effect of the protests and change we are witnessing today, and its potential consequences for regional stability, indicate that correcting this shortcoming should be a regional and international priority.

The international community must, through focused research and funding initiatives, assist in the areas of education, research and technology likely to have the highest impact on society. Arab scientists abroad represent a huge reservoir of talent for catalysing these efforts and strengthening partnerships with countries in the region. Investing in training and research programmes that harness the expertise, resources, networks and enthusiasm of these Arab scientists would contribute significantly to reversing the 'brain drain'. And it would encourage local efforts to establish academic and research institutions to nurture creativity and entrepreneurship.

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