

On one level, its problems are financial. The institute's international sponsors, including a number of western European governments, banks and private foundations, want the Hungarian government to bear much more of the collegium's annual cost, which runs to around €1.2 million (US\$1.6 million). The Hungarian hosts currently contribute just €100,000 per year, which goes towards the costs of accommodation and salaries for a core staff of 30 or so visiting and permanent fellows. This is little more than it paid during the relatively lean early years after the institute opened in 1992. Given the country's expanded economic potential and its membership of the European Union (EU) since 2004 — of which it currently holds the presidency — the German government and other sponsors have asked Hungary to boost its share to about half the annual costs. If Hungary does not find the money, foreign sponsors say that they will withdraw their support.

But €600,000 is apparently more than Hungary is willing to pay for an intellectual enclave of international reputation, housed in the former city hall in Budapest's historic castle district, provided rent-free by the Hungarian Academy of Sciences.

Miklós Réthelyi, Hungary's minister for national resources (and science), promised last year to examine whether EU structural funds could be used to maintain the collegium. But in December, discussion of the issue was again postponed, adding to concerns that Hungary is no longer interested in keeping the institute alive. The collegium's assembly of members, which will discuss the collegium's future at a meeting in April, is beginning to lose hope.

Perhaps the Hungarian government would not be particularly sorry to lose this academic jewel. The collegium is also known as a haven of outspokenness, and some suspect that the output of some of its

scholars is unwelcome in government circles. Hungarian economist János Kornai, for example, recently published a caustic analysis of current political tendencies in Hungary.

If the collegium is forced to close, much will be lost. Institutes for advanced study are a vital element of modern science systems — a niche in the bustle of academic routine where researchers can find the time to elaborate on thoughts and concepts, and exchange ideas with colleagues from other disciplines. In Hungary, the Collegium

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Budapest brings an international flavour to Hungarian science. Senior figures from overseas are hard to find in its other universities and research institutes.

The Hungarian government should have the courage to do the right thing and take on a fair share of the costs, even if it doesn't primarily serve current domestic needs. Doing so would help to counter the widespread impression — furthered by a new and restrictive media law, and by a badly handled row over alleged misuse of research grants by a group of philosophers with the Academy of Sciences — that Hungary's leadership is drifting towards autocracy and that critical discourse is being stifled. The political and societal challenges ahead certainly demand 'honesty and trust' — the title of a Collegium Budapest project on the post-socialist transformation process. Budapest, with its rich scholarly tradition, has been an ideal place for people to study and reconcile diverging cultures of knowledge in a reshaped Europe. The changes under way in the Arab world may reshape East–West relations on a much larger scale. The Collegium Budapest would be a good place to begin to ponder what that might mean. ■

Best is yet to come

Ten years after the human genome was sequenced, its promise is still to be fulfilled.

Former US president Bill Clinton called it the “most important, most wondrous map ever produced by humankind”. To then UK prime minister Tony Blair, it was a “breakthrough that takes humankind across a frontier and into a new era”. His science minister David Sainsbury said: “We now have the possibility of achieving all we ever hoped for from medicine.” When *Nature* published a 62-page article on 15 February 2001 titled ‘Initial sequencing and analysis of the human genome’ it is not difficult to see why the world got excited. Perhaps, even, a little overexcited. One of our editors, Henry Gee, penned a newspaper piece at the time that promised, by 2099, “genomics will allow us to alter entire organisms out of all recognition, to suit our needs and tastes... [and] will allow us to fashion the human form into any conceivable shape. We will have extra limbs, if we want them — maybe even wings to fly.”

As Eric Lander, director of the Broad Institute of MIT and Harvard in Cambridge, Massachusetts, and the first author on that 2001 paper, writes on page 187 of this issue: “The human genome has had a certain tendency to incite passion and excess.” A decade on, Lander notes, the pattern continues, with “a front-page news story on the tenth anniversary of the announcement that chided genome scientists for not yet having cured most diseases”. The 2001 sequence was always a milestone on the journey to better medical care, rather than a destination. The ten-year anniversary of the publication in *Nature* and *Science* of sequences prepared respectively by the international Human Genome Project and Celera Genomics, now of Alameda, California, provides another — as well as an opportunity to reflect on progress.

Some things have undoubtedly changed. *Nature's* Editorial page in the 15 February 2001 issue examined not the scientific and medical

promise of the genome sequence, but the challenge of public access to information gathered by the commercial genomics sector. Acrimony over the differing public and private approaches has since faded; concerns over access to genomic data now centre on privacy issues.

Has medical progress been slower than was expected at the time? In an article on page 204, Eric Green and Mark Guyer of the US National Human Genome Research Institute in Bethesda, Maryland, offer an “updated vision” of the prospects for genomic medicine. “Significant change rarely comes quickly,” they write. “Although genomics has already begun to improve diagnostics and treatments in a few circumstances, profound improvements in the effectiveness of healthcare cannot realistically be expected for many years.” Research is not enough, they say, and new policies and practices as part of an expanded global effort are needed too.

The sequencing of the human genome was in many ways a triumph for technology as much as it was for science. That technology has continued to develop over the past decade, which Elaine Mardis of the Genome Center at Washington University in St Louis describes in an article starting on page 198 as a “remarkable sequencing technology explosion”.

Massively parallel sequencing technology allows questions to be asked and answered with “unprecedented speed and resolution”, she says. “The continuing upward trajectory of sequencing technology development is enabling clinical applications that are aimed at improving medical diagnosis and treatment.” A useful example is the development of genome-wide association studies to probe the underlying genetic landscape of some common diseases.

More than a decade ago, Michael Dexter, then head of the UK Wellcome Trust, which took part in the Human Genome Project, branded the genome sequence as the outstanding achievement of human history, eclipsing the significance both of the Moon landings and of the invention of the wheel. It is too early for that history to be written. For the genome sequence to be a true success, we must yet ensure that greater achievements are built on it. ■

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