

Cloning MIT

The Massachusetts Institute of Technology (MIT) enjoys an enviable reputation as one of the most proficient research institutions in the world, and several attempts to replicate their success are under discussion in Europe.

Although the USA and Japan built their university systems in the 19th century on model institutions in Germany and the UK, the rapid success of elite research-focused institutions in the USA has turned the tables and for the last half century Europe has been grappling to learn the trade secrets of these research giants. Higher education in the USA developed alongside the industrialization of the country, resulting in a natural focus applied research. Out of the desire to nurture this type of research, MIT was founded in 1861. Since rankings began, MIT has held its place among the top US research universities and its success in applied science is illustrated by estimates that the companies founded by MIT, and its alumni, would form the 24th largest global economy.

MIT is by no means unique. In Germany, for example, the Fraunhofer Society (specializing in applied engineering research) was founded in 1949, one year after the Max Planck Society. Together with Germany's largest research institution, the Helmholtz Association, as well as a number of reputable technical universities, this forms a strong applied research portfolio. What was lost in continental Europe, as part of an all-pervasive agenda of socialization, was the relentless emphasis on nurturing research elites cultivated in the USA. Top universities became bogged down with teaching as a result of the politically motivated drive to put a significant fraction of the population through university, whereas in the USA teaching and research were kept at arms length. As a result, research competitiveness suffered and politicians did not wake to the emerging crisis until the '90s. Fresh from their hibernation they implemented 'quick fix' ideas. They declared that new universities had to be founded using previously taboo 'elite' branding. Half-hearted cash injections and the title 'elite' were expected to attract a global pool of top researchers to the country and to staunch the westward brain drain. This localized reform would have undoubtedly been easier than embarking on the necessary global reform of higher education. Fortunately, the elite university concept was quickly exposed as ill advised and instead existing universities have been invited to compete for funding to bolster their elite status (*Nature* **433**, 448 (2005); *Nature* **439**, 255 (2006)).

Austria has also woken from its beauty sleep and now seems to be embarking on a remarkably similar route: on March 2nd the cabinet approved the establishment of a new Institute of Science and Technology Austria (ISTA) with €450 million funding over 10 years. Interestingly, the project is also subtitled 'Elite-Uni'. In the spirit of MIT, the institute aims to be a graduate school with an emphasis on technology-focused

research. Although the advisory board for the project is headed by a highly capable international threesome of Haim Harari, Olaf Kübler and Hubert Markl, critics point out that the steering committee will be dominated by representatives from local universities who may have conflicting agendas. Dissent is also rife about the political decision to favour a location in a small town that would be far from existing academic centers. Any ambition to found an institute from scratch to rival MIT or ETH-Zürich must be tempered by considering the financial commitment, which lags far behind the annual expenditure of MIT. To be fair, Austria is reinvigorating research spending and, importantly, is reforming the tendency for parochial assessment of research grant applications. However, the money earmarked for ISTA, a project that could well turn into an iconic failure, would be better spent on giving existing projects world-class funding. This, together with a more explicitly welcoming policy to international researchers, would keep Austria on the research map. The industry funded Institute of Molecular Pathology (IMP) in Vienna has proven over the last decade that world-class research can be done in Austria.

A similar debate is ongoing on the European stage under Austria's presidency of the EU council: in February, the European Commission published plans for the foundation of a European Institute of Technology (EIT). The aim is to set up a network of geographically dispersed research groups across all 25 member states. Researchers and facilities would be provided by existing research centers and programmes would run for up to 15 years, but funding remains ill defined, although industrial contributions have been suggested. The plan is not only to generate a MIT competitor from scratch, but also to run it as a loosely dispersed group of researchers from academia and industry who congregate in a 'virtual institute'. The agenda is clearly rushed with hiring due to start in 2009, although the scientific agenda and finances have yet to be formalized.

The EIT has met with widespread opposition from scientists who correctly fear that its funding will divert the cashflow from existing projects, and undermine the newly formed European Research Council (ERC), whose explicit role is to administer the meritocratic distribution of 20% of the overall budget of the 7th Research Framework Programme (*Nature Cell Biol.* **5**, 433 (2005); *Nature* **440**, 8 (2006); *Science* **311**, 1227 (2006)). Current plans for EIT seem to amount to little more than a new elite-branded research grant programme for applied research, as defined by the EIT's governing board —funding many where assuming would be awarded by the autonomous ERC. If EIT funding is in addition to the €10.5 billion earmarked for the ERC last year, it would make sense to streamline all of the funding through the ERC, which would give the research council the global standing that a flagship European research organization desperately needs.

Further reading on <http://www.connotea.org/user/bpulver/tag/EIT%20ISTA>