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Open for business

If Europe is to achieve the science-investment goals it set for the decade, it must make life easier for researchers coming from abroad.

Europe says that it needs a million more researchers to achieve its aim of boosting research spending to 3% of its gross domestic product by 2020. The continent knows it must make entry easier for foreign scientists, and last week finished taking suggestions on how to do so. The European Commission formally closed a consultation exercise on how to reform its scientific visa, introduced in 2005.

This visa allows researchers to obtain a residence permit without also having to apply for a work permit. Researchers can take advantage of this streamlined process if they sign a 'hosting agreement' with an approved institution. In exchange, institutions vouch that the researchers have the financial means to sustain themselves and sufficient skills for the job. Immigration officials grant researchers a residence permit for at least one year. (The scientific-visa regulations do not apply to the United Kingdom or Denmark, which chose to implement their own rules.)

The scientific visa was a step in the right direction but there is much room for improvement. In 2010, just short of 7,000 researchers, most of them from India, China, the United States and Japan, entered Europe on the scientific visa — a far cry from the continent's 2020 goal.

There are some simple fixes the commission could make. Just obtaining a visa is time-consuming and expensive. The application process often takes more than a month and can take more than three months, according to an assessment published by the commission at the end of last year. This delay has caused top labs, such as the European Molecular Biology Laboratory in Heidelberg, Germany, to miss out on first-choice candidates, who accepted jobs elsewhere during the wait. The Initiative for Science in Europe, a science advocacy group based in Heidelberg, has suggested a sensible fix: research organizations should be able to file the visa applications on behalf of the researchers they wish to hire. These organizations often have in-house legal and administration expertise, and are more likely to be trusted by immigration officials than an individual researcher, all of which will speed up the process.

It costs, on average, €250 (US$314) to apply for a visa — prohibitive for some researchers, especially those from developing countries. And there is large variation in fees. Lower and comparable charges would make the scheme more attractive.

Few professions require individuals to uproot and move as much as science, and the benefits of such freedom can quickly wear off in the face of the mundane realities of finding digs, opening and closing bank accounts, and even just registering for electricity and water time and again. Worse, under the current scientific-visa scheme, researchers are forced to organize their next move at the same stressful time as finishing their existing research project — because their visa lasts only as long as the hosting agreement. The European Union (EU) should grant a grace period of one month, at the end of a research project, say — already done for the J-visa in the United States — to give some breathing space.

Breaking down barriers to entry and movement through the EU is crucial to allow the continent to compete globally for talent and create, by 2014, the long-awaited European Research Area — whereby scientists can collaborate seamlessly across national boarders. The EU is on the right lines, it just needs to give a little more in return. ■

Small steps

Violent opposition to nanotechnology should be countered with public awareness.

In the past two years, Mexican nanotechnology researchers have been subject to a spate of bombings and bomb threats. In the worst of the attacks, two researchers were injured. Police say that if the explosive had gone off properly, a whole building could have collapsed.

Meanwhile, Italian, Swiss and German authorities this summer arrested members of related groups whom they think were responsible for trying to bomb IBM's European flagship nanotechnology lab, and for shooting in the kneecap a nuclear engineer at a firm engaged in nanotechnology and biotechnology research. France has also seen angry protests and attempts to shut down public debates on nanotechnology.

Some policy-makers in Europe and elsewhere have long feared that research on nanotechnology could spark a public backlash — similar to those seen against genetically modified (GM) crops and animal experimentation. Has it arrived — and in a violent fashion?

As the Feature on page 576 highlights, public awareness of nanotechnology remains low and fears of widespread opposition are premature. But how it may pan out is hard to predict. Sympathy for animal-rights violence was always thin on the ground even though opposition to vivisection was quite broad: conversely, few members of the public have ever participated in anti-GM vandalism, yet there is a de facto European moratorium that has all but frozen the industry on the continent.

The more outlandish claims made for nanotechnology stir fear among the public. Opponents know this, so whereas scientists and officials want to talk about environmental and exposure risks, consumer awareness and product regulation, the extremists and some mainstream non-governmental organizations focus on nanometre-scale sensors, cyborgs and swarms of self-replicating robots.

Nanotechnology advocates have an important role here, and one that could help to determine how public awareness of nanotechnology develops. They should continue to work to make public debate informed and accurate, and do more to monitor and test the possible toxicity of novel products. And they should avoid hype. If they paint a true picture of the state of the science, then the distorted version drawn by the extremists will have a greater chance of being recognized as such. ■