

# nature cell biology

## Looking East: challenges and opportunities

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As this issue of *Nature Cell Biology* goes to press, a peace deal has been signed in Kosovo. This conflict has prompted us to look eastward, at some of the many problems faced by scientists in Central and Eastern Europe and the former Soviet Union, and to re-examine the steps taken by the scientific community to improve the situation. Many of those we have spoken to praise the excellent education of scientists from East European countries and recognize that the West may be missing out on vital scientific contributions from these nations. But financial problems and sometimes ineffective organizational structures of research institutes and universities in Eastern Europe are creating a lack of sufficient research opportunities. Most Central/Eastern European countries do not plan to increase their research budgets significantly this year (see also *Nature* 1999 397, 4), and, in many places, resources are simply inadequate, with up to 90% of the already low level of funding coming from international grants and collaborations. “Private initiative is key,” we have frequently been told. But very often, a sticking point is simply the unaffordable costs of the day-to-day laboratory supplies, which can result in working conditions unimaginable in the West. Every opportunity for funding from outside sources is therefore needed and welcome.

### In search of funding

Good examples of funding from the West that has benefited those in the East include grants from the PHARE program of the European Union (EU) and from the Deutsche Forschungsgemeinschaft in Germany, which support collaborations with East European partner laboratories (for links to relevant websites, see the Table overleaf). The fifth framework programme of the EU, which allows some non-member states to participate in all scientific programmes in exchange for a financial contribution equivalent to that from EU member states, is now open to Poland, Hungary, the Czech Republic and Slovenia. Low research budgets, however, put the contributions of these countries at risk (*Nature* 1999 397, 4). Recently, the Howard Hughes’ International Research Scholar Program allocated \$15 million in grants for East European scientists engaged in biomedical research. The Svenska Institutet (Swedish Institute), a public agency for educational and culture exchange, has announced guest scholarships for East European students and researchers, and provides another good example of an individual country’s efforts to open its doors to the East.

Indeed, many research institutes in the West welcome the often highly motivated students and postdocs from Eastern Europe. For example, thanks to its geographical position, about 15% of the students who join the PhD programme of the Institute for Molecular Pathology (IMP) in Vienna come from East European countries or the former Soviet Union. With a similar location at the heart of Europe, the new Max-Planck Institute for Molecular Cell Biology and Genetics in Dresden — set to open at the end of 2000 — plans to recruit group leaders from Central/Eastern Europe and to establish a special training programme for students and postdoctoral fellows from this region.



**View of the old city of Dubrovnik, which hosts the International Conference on Signal Transduction.**

Internet addresses
<a href="http://www.dfg-bonn.de/english/coop/middle_east_europe.html">http://www.dfg-bonn.de/english/coop/middle_east_europe.html</a>
<a href="http://www.cordis.lu/">http://www.cordis.lu/</a>
<a href="http://www.hhmi.org/grants/international">http://www.hhmi.org/grants/international</a>
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<a href="http://www.embo.org/">http://www.embo.org/</a>
<a href="http://www.embo.org/Workshops.html">http://www.embo.org/Workshops.html</a>
<a href="http://www.serono.ch/">http://www.serono.ch/</a>
<a href="http://www.bifonds.de/">http://www.bifonds.de/</a>
<a href="http://www.hr/iuc/">http://www.hr/iuc/</a>
<a href="http://www.dubrovnik.net/cst">http://www.dubrovnik.net/cst</a>

As many students seek education and research opportunities in the West, the increase in fellowship programmes now available for East Europeans is commendable. Scientists from more European countries, including Hungary, Slovenia, the Czech Republic and Croatia, are now eligible for short- and long-term European Molecular Biology Organization (EMBO) fellowships. And other countries from the region are still on the waiting list to join the EMBO conference (EMBC), such as Poland, whose application for EMBC membership has been approved by the EMBC but is yet to be ratified by the Polish government.

Prompted by their positive experience with some excellent Russian postdocs and the lack of their own graduate school, faculty members of the Fox Chase Cancer Center (FCCC) in Philadelphia, including Erica Golemis and Jonathan Chernoff, have recently approached the cardiology department at the Russia State Medical University (RSMU) in Moscow, one of the largest medical schools in Russia. The FCCC now finances a programme that allows students to work at the FCCC for a year towards a Master's degree, which they are then awarded by the RSMU. Some may later return to enter a PhD programme. For many of their Russian students, whom Golemis and Chernoff describe as highly motivated and of outstanding quality, this is the first opportunity to work full-time as researchers rather than doing additional jobs on the side to make a living. The FCCC and RSMU are also applying for joint Fogarthy grants to provide the research groups in Moscow with a much-needed stable source of income. "Our efforts, though limited in scope and motivated in part by self-interest, may provide at least this one department with more funding than they would otherwise see in many years," says Chernoff.

But many of those who have learned to appreciate the opportunities offered in more affluent states are hesitant to return to their home countries. "Maybe in five to ten years when things change," is a frequent comment. This 'brain-drain', however, has direct effects on the ability of East European countries to conduct research of a high enough quality to attract grant money. This problem is exemplified by a recent evaluation of Hungarian science by EMBO. On the one hand, EMBO commended Hungary's "remarkable achievement given the low level of funding," but it also discerned a tendency of highly qualified scientists to emigrate because of the low wages and small research grants offered in Hungary. There are also fewer opportunities in alternative careers for Eastern European scientists who are willing to return from the West — for example, the biotechnology industry is, at present, rather small. It is promising, therefore, to see the Institute for Molecular Biology in Krakow, Poland, expanding its space and creating new positions. In addition, the Nencki Institute for Experimental Biology in Warsaw has a fellowship programme (the 'Network for Molecular and Cell Biology') that is sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and which offers more competitive salaries than many other institutes in Poland can afford at present.

**Spreading the word**

Communication between scientists is essential, too. It is, therefore, a good sign that recent years have seen more high-profile international meetings being held in East European cities, such as EMBO's New Members Workshop and Workshop on the Functional Organization of the Nucleus, both of which will take place in Prague later this year. Such meetings offer Eastern European scientists with limited travel grants the opportunity to attend important conferences in their field. The first International Conference on Signal Transduction (ICST) meeting was held in October 1998 in Dubrovnik, Croatia, and proved a big success thanks to the efforts of the organizers to compile an impressive programme. Education of young scientists from neighbouring Eastern European countries was among the main aims of this conference. More than 40% of the participants of the first ICST were from Eastern and Central Europe, and their travel and registration costs were largely supported by the organizers' funds. In light of this positive experience, the ICST organizers have recently secured financial support from the Swiss-based Ares-Serono Foundation, and a grant from the Boehringer Ingelheim Foundation to sponsor participants from the East, for the second ICST, to be held in May 2000. In addition, the Boehringer Ingelheim Foundation has allocated funds to support a summer school for East European medical students, organized by the Inter-University Centre, Dubrovnik, that will be held in parallel with the second ICST conference. Commendably, other conferences, such as the yearly IMP meeting in Vienna, offer reduced registration fees for participants from Eastern Europe.

Although this list of investments supporting science in Central and Eastern Europe is by no means complete, one may ask whether enough is being done. The answer is, 'No, no yet'. With a huge intellectual potential and immense motivation waiting to be given a chance, however, there is good reason for the more affluent West to open its doors to the East and invest in common scientific programmes. And we shouldn't forget that these problems are not limited to the post-Communist countries of Eastern Europe. The same holds true for other parts of the world that are facing similar challenges. So, although there are many efforts emerging on multiple levels, more needs to be done to allow the scientific potential of these countries to be realized.