

Raw deal?

Poor exchange rate hampers European mobility for postdocs

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Spanish postdocs are finding it hard to get permanent positions

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Many US postdocs are turning their backs on academic research

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Unfavourable economics put postdocs across Europe under strain

Travel may broaden the mind, but for many postdocs taking fellowships in the European Union, it is causing financial hardship, says Natasha Loder.

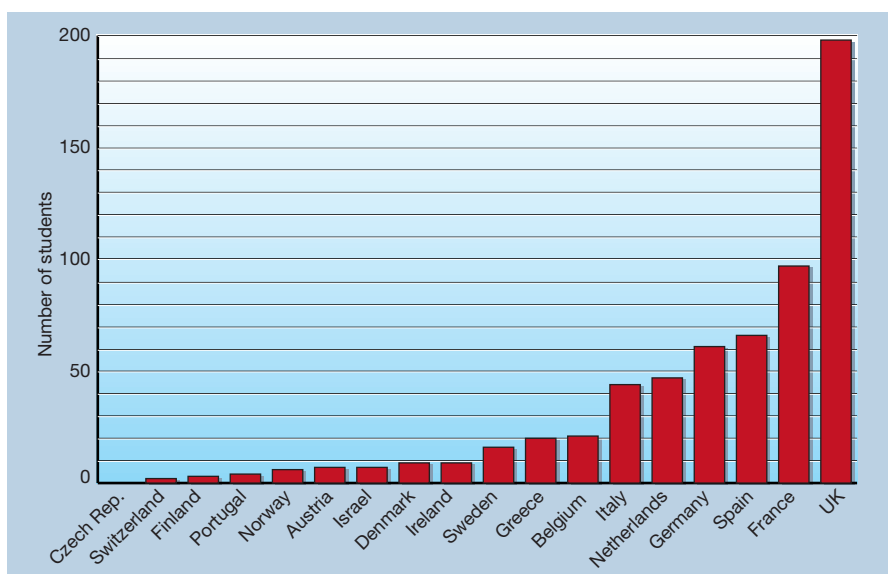
Would you accept a fellowship where currency fluctuations decreased the value of your grant by 30% by the time you reached the end of your research? Or if you were forced to pay money into a worthless pension plan? Or if you had to wait three months to be paid anything and a year before being paid in full? Then again, perhaps you would like 75% of your travel allowance to be taxed into thin air because nobody knows how to calculate what you are actually owed?

These are the realities of being a truly European young researcher in the year 2000 (see *Nature* **406**, 555; 2000), as revealed in a recent survey of Marie Curie fellows. Funded by the European Commission (EC), these fellowships are aimed at supporting the training and mobility of researchers in Europe.

That these postdoc positions can be fraught with difficulties was brought into sharp focus by the survey of 200 Marie Curie Fellowship Association members (about 10% of its membership of past and present fellows). Set up by the EC to track and support fellows, the MCFA is independent and is now actively lobbying on behalf of the postdocs.

Travel guides

Marie Curie fellowships cost the EC 168 million euros (US\$144.5) in 1999, the first



Career directions: the destinations for the Marie Curie postdocs in 1999.

year of the EC's current research programme. Almost 1,500 individual researchers applied, and around 600 were recommended for funding. Most postdocs chose to go to the United Kingdom, and then France and Germany (see chart). The median age for fellows is 28, and many (40%) work in the life sciences.

Although most fellows are satisfied with

the scientific training, experience and confidence gained by spending two years abroad, there can be a high cost attached. The mobility problems are just the tip of the iceberg. Fellows from Spain and Germany say their home countries are reluctant or unwilling to recognize titles or qualifications gained abroad. Many postdocs taking positions outside their home country struggle to

Finding a focus for European postdocs

Although US postdocs are already well organized, with associations starting up across the country, in Europe there has been something of a vacuum. The vast majority of postdocs seek permanent positions but only 5–10% will succeed; leaving most in a series of short-term contracts, little autonomy and no career development. European postdocs are getting a raw deal and, as much casual labour is employed in the science sector, this is likely to get worse.

But now it seems that there could be some good news on the horizon for European postdocs. The Marie Curie Fellowship Association (MCFA) — which has

groups in most European countries — has a bird's-eye view of both European postdocs and postdocs in different countries, and is starting to speak up on behalf of all postdocs. In November, the European Science Foundation (ESF) will hold a joint postdoc conference with the MCFA — picking up on an earlier ESF survey of the situation of European postdocs.

Tony Mayer, head of the secretary-general's office at the ESF, says that the organization has found it difficult to talk to a mass of young European researchers. "In most countries there is very little in the way of organization," he says. But the MCFA

represents an organized group of some of the more mobile European postdocs, he notes.

The ESF wants feedback from young researchers on issues for the future, such as the sixth Framework programme, and more on the plans for the European Research Area. "Inevitably the people involved in science policy are senior; it is partly time [that stops postdocs from being involved], and that we never tend to ask them," says Mayer. There will also be a web debate to allow postdocs to use the ESF as a sounding board over the European Research Area. **N.L.**
ESF ♦ <http://www.esf.org>



Trouble at home

Coming back to Spain after holding a postdoc position abroad, José Pablo Zamorano (above) finds himself at a career crossroads. Prospects for permanent employment in his native country appear bleak, and, at 35, he is approaching the age limit for a postdoc position in other EU countries.

The Spanish government has tried to minimize the postdoc 'brain drain' since 1992, when it established a scheme to find work for scientists who received postdoc training abroad. It hoped that giving them three-year 're-entry' positions would staunch the flow of Spanish scientists to other countries. But after participating in such a programme, Zamorano, like many other young Spanish scientists who sought training abroad, finds himself looking for work in other countries again — permanent public-sector jobs are still scarce in Spain.

New policies do not seem to be addressing the need for more permanent posts. Under the new National Plan for Research, Development and Technological Innovation, the government has pledged to create 2,000 new jobs in the public sector for newly qualified and senior postdocs during 2000–03. But contracts range from five years for newly qualified scientists, to ten years for more senior investigators. Jordi Petriz, a postdoc who had to leave the Cancer Research Institute in Barcelona when his temporary contract ended, received wide coverage in the Spanish media in July because the end of his contract coincided with the publication of his article in *Nature Medicine*. Petriz, an expert in the functional aspects of stem cells, believes the situation for Spanish postdocs is worsening. "There are really bright people abroad who cannot return to Spain," he says.

Spaniard Valentin Fuster, director of the Department of Cardiology at the Mount Sinai School of Medicine, New York, says that the situation in Spain is the result of "a complete absence" of long-term planning of biomedical research by the government. But he hopes that the creation of the new Ministry of Science and Technology will help to improve the scientific policy in the country.

Less bureaucracy would also help, says Zamorano. He noticed that in England, where he did a postdoc at the University of Nottingham, local research directors had far more control over how many researchers they hired. Research directors also have more autonomy in choosing their own postdocs. "Here, the contract is not decided by the group but by the state," Zamorano says. But there is one promising sign. On 8 September Rolf Tarrach took over as the new president of Spain's main research organization, the Higher Council of Scientific Research. Tarrach regards recruiting postdocs who have received training abroad as an urgent priority. ■

Xavier Bosch is *Nature's* contributing correspondent for Spain.

Many European universities still have a closed-shop attitude favouring the local candidates.

pounds, the salary is not very good and not enough to live on in the UK," he says. Fellows with dependent families in the United Kingdom are particularly hard up.

Many fellows say that dealing with the administrative issues in a foreign country was simply too great a problem and took a lot of time. "I lost too much time with administrative questions and social security problems," says one fellow who participated in the anonymous survey. "Europe is not yet ripe for such a mobility." And some fellows say host institutions, which manage the fellowship fund and pay the fellow's salary, are taking money that they are not entitled to have. Another anonymous MCFA fellow writes: "We need rigid, enforceable guidelines on what the host institution can and cannot do with the money."

Administration problems

Meinhard Ober, a researcher in the materials testing institute at the University of Stuttgart, and until recently the national coordinator of the German MCFA group, says: "Most of the problems are with the administration of the university and the foreign country. The administration problems come from the fact that the number of fellows is very small [in any one institution]." A recent MCFA conference in Germany proposed that all fellows in one country should be employed by a single company — to ensure standard terms and conditions.

Emilios Harlaftis, acting chairman of the Greek MCFA and an assistant professor at the Institute of Astronomy and Astrophysics in Athens, faced similar administrative problems when he took up his fellowship in the UK. He agrees that companies should be administering these fellowships. "Clear and practical directives to the national institutes and universities are missing," he says.

And the news is not necessarily good for fellows returning home. Many MCFA fellows complain they have lost all contacts with networks at home, face unemployment when they return, and are in a worse position than when they left because local candidates are favoured over those from abroad (see "Trouble at home", above).

Patrik Floreen, an EC scientific officer with expertise on Marie Curie fellowships, says mobility problems are not in the hands of the commission. "All these things relate to national law," he explains. Taxation and

comply with national regulations requiring residency or working permits — usually because their institution or department had issued the wrong kind of contract.

Money can also be a problem. When researchers apply for a fellowship in another country, they have no idea what their actual monthly salary will be when they arrive. The EC offers a fixed fund for the fellowship, with a monthly rate for the salary, which varies between EC member states. But the fellow's salary will be affected by local taxation, social security and pension schemes, and these in turn depend on the fine detail of the contract

that the university or research centre draws up. Although model national contracts are available, there is no obligation to stick to them. In the Netherlands, for example, contracts vary from faculty to faculty.

In Britain, where a third of Marie Curie postdocs take up their fellowships, many fellows have suffered deep salary cuts because of the decline in the value of the euro. Juan-Antonio Gilabert, a Marie Curie fellow in molecular biology at the University of Oxford, says that Oxford is one of the most expensive places to live in Britain. "After transformation of your euro salary into

social security are dealt with by the member states. "The community does not have the right to go and harmonize. We know very well about these difficulties, we have years of experience but the problems are not caused by community-level trouble," he says.

In January this year, Philippe Busquin, the commissioner for research, revealed his plans for a European scientific community dubbed the European Research Area. One of its priorities will be tackling these barriers to mobility for European researchers.

Campbell Warden, the chairperson of the European Association of Research Managers and Administrators, which campaigns to improve research management, says: "National authorities should take their responsibilities now and start working together to even out these barriers." Warden also mentions: "Many European universities

(and other research institutions) still have a very closed-shop attitude towards favouring the local candidates. This is a matter of serious concern and should be fought with all means."

What is remarkable is that despite the weight of difficulties faced by many Marie Curie fellows, the scheme has achieved notable successes. Harlaftis says the fellowship worked out very well in the end and was important to his career. "I got invaluable technical and scientific know-how in one of the major European observatories, and so made possible my return to Greece by funding a one-year return fellowship. This placed me in a very strong position. I am now competing for the director's position in my institute," he says.

Natasha Loder is a news reporter at Nature.

Marie Curie fellowships ► <http://www.cordis.lu/improving>
MCFA ► <http://www.mariecurie.org>

Postdocs reject academic research

With full-time positions in universities at a premium, postdocs are looking to government labs and industry for jobs, says Potter Wickware.

"Many are called but few are chosen" might be the epigraph of many a US postdoc's search for a tenure-track position in academic research. Although a relatively small number are successful in getting such jobs in universities, too many find themselves consigned to

an academic underclass, with low pay, inadequate benefits and no clear scientific career prospects.

The numbers paint a bleak picture. The 1998 National Research Council report *Trends in the Early Careers of Life Scientists* puts the success rate for recent PhDs at

22.9% in 1997, down from 26.6% in 1993. And the growing supply of new PhDs continues to exceed the number of available positions. A recent survey in the *Chronicle of Higher Education* estimates the number of natural sciences PhDs in 1996–97 at nearly 9,300. If every one of them claimed an existing (but filled) full-time job, they would represent more than 9% of the full-time natural sciences academic faculty.

Alternative routes

With such slim pickings, astute young scientists are looking elsewhere to launch their careers. National laboratories, technical positions and biotechnology companies all hold promise.

Steven Sloop, one of about 200 postdocs at the Lawrence Berkeley National Laboratory in California, says that government labs provide better postdoc prospects than the academic sector. Long-established collaborations between industry and the national labs give postdocs there a good view of the government-private industry interaction. They also provide opportunities to learn about companies and meet their scientific representatives, says Sloop, a chemist who researches electrolytes for lithium batteries.

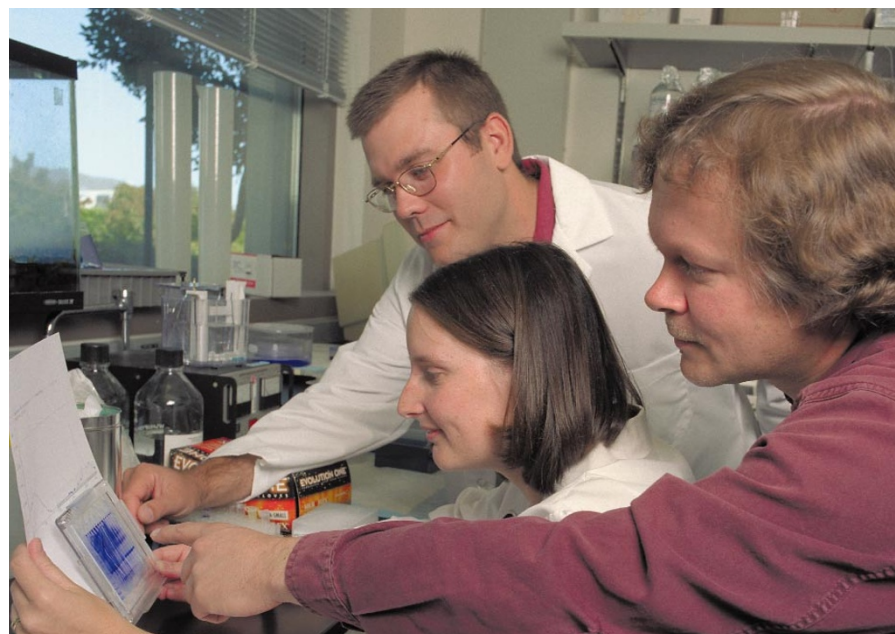
Sloop, who has been active in the lab's postdoc society, says that information sharing can break the isolation that all too easily envelops the researcher sequestered in a lab. Organizations also provide useful workshops in interviewing. And when different disciplines meet — materials scientists and molecular biologists, for example — new combinations of ideas can lead in unexpected and fruitful scientific directions.

Sloop plans to take his career in such a direction when his fellowship ends. He is making plans to move to Curitiba in southern Brazil. As the city has some of the most advanced car manufacturing plants in the world, Sloop thinks opportunities exist for hi-tech consultancy work.

The move is not without risk, but as much of the scientific talent in South America is flowing northwards, it is a calculated one. Sloop thinks his chances are good compared with those who stay at home and aim for more conventional goals. "With 200 or more applications from qualified people for a single faculty opening in a research university, any reasonable person develops a contingency plan," Sloop says. "Mine is Brazil."

Sloop's own career odyssey has placed him in a good position to give advice to new postdocs. He advises the prospective postdoc to be scrupulous about researching both the lab and the principal investigator beforehand. "This'll tell you if there is a history of problems, and even if the request raises eyebrows, how they respond will be informative about the atmosphere of the lab," he says.

Postdocs should also ask for periodic reviews of their own work, he believes. This is



Good prospects: many postdocs are turning to the biotech industry for employment.