

# Renaissance in Spain



Sunny outlook: the future of science in Barcelona looks as bright as the view from Parc Güell.

Barcelona's cultural attractions, such as Gaudí's vibrant architecture, are well known. But it was the Catalan capital's new scientific opportunities that brought Madrid-born molecular plant biologist Soraya Pelaz back to Spain after five years at the University of California, San Diego. Her new place at the Institute of Molecular Biology in Barcelona is comparable with her well-funded lab in California, she says.

It's a major change. Science was stifled during Spain's 36 years under General Ferdinand Franco, only returning to life after the dictator's death in 1975. Since then, Spain has undergone dramatic changes, politically and socially, but in science it never quite managed to make up for the lack of infrastructure.

Widespread nepotism, a succession of governments uninterested in research (except for military uses) and a diehard bureaucratic apparatus have prevented Spanish science from becoming more competitive.

The country's best young scientists migrated in droves. But during the past few years science has climbed up the political agenda.

The trend is most notable in Catalonia, where a science-friendly regional government wants to turn Barcelona into a Mediterranean science showcase. A splendid postmodern glass building by Catalan architect Ricardo Bofill hosts the Institute for Photonic Sciences (ICFO), where scientists develop laser technology for use in research and medicine. By 2006, scientific staff will have grown from 20 to 150.

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## Reasons to return

Soraya Pelaz, who investigates flower development at the Institute of Molecular Biology in Barcelona, and Jorge Russo, a high-energy physicist at the University of Barcelona, have one thing in common. Both are group leaders with permanent contracts. Unlike most professors in Spain, they are not civil servants.

They are among 85 scientists hired by the Catalan Institution for Research and

Advanced Studies (ICREA), set up by the Catalan government in 2001 to bring high-profile researchers to the region. To qualify, scientists need a strong publication record and at least three years' postdoc experience abroad — and their expertise must be needed in Catalonia. Some 25 researchers a year win these tenured positions. Free of teaching obligations, they earn at least as much as university professors.

Another effort to stop the loss of talent from Spain, the Ramon y Cajal programme, was aimed at repatriating about 2,000 Spanish postdocs over the past three years.

For foreign scientists, ICREA offers a rare chance to enter the hermetic Spanish science system, with its rigid academic requirements. "Without ICREA," says Russo, "it would have been impossible for me to come."

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“We are looking for senior researchers, young scientists and PhD students in physics, engineering and in the life sciences,” says Lluís Torner, the ICFO’s energetic director. The institute already has group leaders from Britain, Germany and Russia, and postdocs from France, Ireland and Spain. This global mix shows progress in a land that once could not keep its own talent. Scientists willing to leave a stable situation for Spain add a vote of confidence.

“You do pay a price if you stop everything and start from scratch in an empty lab,” admits physicist Majid Ebrahim-Zadeh, who came to the ICFO last October from the University of St Andrews in Scotland. But with ICFO support he can build a group in experimental nonlinear optics without worrying about funding.



High ideals: construction work on Barcelona’s Sagrada Família church.

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Caitriona Creely, a young Irish biophysicist who in January joined the ICFO’s biophotonics group, says that Barcelona now reminds her of Dublin in the 1990s, when the Irish government started pouring investment into science (see *Naturejobs* 4–5; 21 March 2002).

Hopes for a similar upswing in Spain rest mainly on the growth of the life sciences — and with several new institutes coming on line, this looks possible. The University of Navarra’s Centre for Applied Medical Research will move into a new facility in June. A centre for research into biomedicine and tissue and organ transplantation is being built in Valencia. And researchers moved into the Basque institute of clinical research in Pais Vasco last year.

These and other life-sciences facilities in Spain are looking for screening experts, organic and medical chemists, and pharmacologists, says José-Maria

Palacios, head of research at Barcelona-based Almirall Prodesfarma, Spain’s largest and most research-intensive pharmaceutical company. Almirall’s research department for combinatorial chemistry is located in the Barcelona Science Park, opened in 2001. Here academic and industrial research groups share space, services and technology.

Meanwhile, in Barcelona’s Olympic district at the opposite end of town is Miguel Beato, director of the Centre for Genomic Regulation (CRG), which was established in 2000. Beato hopes to emulate the European Molecular Biology Laboratory as a centre for independent research and training in molecular biology, bringing in young, energetic scientists from around the world. “But it is not easy to convince the best people to come to Spain,” Beato says. “The next round of recruitment will be a test to see whether we already have the reputation it takes.” The train bombings in Madrid earlier this month may complicate that test.

#### REINVENTING RECRUITMENT

Regional science initiatives are also under way in the Basque country, Castilla y Leon and Andalusia. But these sometimes clash with the central government’s plans. Rolf Tarrach, a theoretical physicist at the University of Barcelona, resigned last year as president of Spain’s Higher Scientific Research Council (CSIC) because he was frustrated about the administrative inflexibility, such as regulations that make it hard to bring in scientists who have PhDs earned outside Spain. To avoid the bureaucratic bottlenecks that keep many research institutes down, national science policies have begun exploring new avenues.

“The ability to recruit staff at any time was a condition for me to come back to Spain,” says Mariano Barbacid, co-discoverer in the United States of the first human oncogene, and now director of the Spanish National Cancer Centre in Madrid. This centre, set up in 1998, combines basic cancer research with molecular diagnostics and target-based drug discovery. Barbacid manages this flagship of Spanish biomedical research in a US style, always looking for new funding opportunities. Four new research groups will be financed by a Spanish savings bank, for example. Eight groups will be launched in the next two years — an opportunity for foreign-trained Spanish postdocs.

A centre for cardiovascular research (CNIC) is planned nearby. Like its neighbour, the CNIC is a foundation of the Spanish health ministry, which finances its infrastructure and parts of the operating costs, but leaves all groups to raise their own research money through grants and collaborations. By 2007 it is due to have more than 300 scientists, including up to 15 internationally recognized group leaders.

Honduran Salvador Moncada, of the Wolfson Institute for Biomedical Research in London, is the CNIC’s executive consultant. He is open to fresh research ideas. “Quality first, then definition of area,” he says.

Investment in quality infrastructure for Spanish science could help to define the country as a scientific showcase. But to ensure that showcase is filled, the government must also build a system that can quickly and easily convert foreign PhDs — whether earned by Spanish citizens or expatriates — into credentials recognized by Spanish research institutions.

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#### Web links

Catalan Institution for Research and Advanced Studies

♦ [www.icrea.es](http://www.icrea.es)

Institute of Biomedical Research of Barcelona

♦ [www.pcb.ub.es/homePCB/live/en/p279.asp](http://www.pcb.ub.es/homePCB/live/en/p279.asp)

Centre for Genomic Regulation

♦ [www.crg.es](http://www.crg.es)

Spanish National Cancer Centre

♦ [www.cnio.es/ing/index.html](http://www.cnio.es/ing/index.html)