

## Spain aims to grab heart-research crown

The new head of Spain's National Centre for Cardiovascular Research aims to create a world-class scientific institute by challenging traditional dogmas about funding and operations. But with two jobs straddling the Atlantic, how can Valentin Fuster succeed? Samuel Loewenberg reports.

In the early 1970s, Valentin Fuster left Spain as a young doctor to go seek his fortune. Three and a half decades later he has returned to his homeland, as one of the world's most prominent cardiologists. As the new head of Spain's National Centre for Cardiovascular Research, Fuster has brought with him the ambition and drive that led to positions as a past president of the American Heart Association and President-elect of the World Heart Federation.

Since he officially assumed the leadership of the heart research centre this spring, Fuster has brought some approaches that, especially by Spanish standards, are unorthodox. Not the least of these is that Fuster splits his time between Madrid and Manhattan. In addition to running the Spanish heart centre, Fuster is continuing his job as the director of the cardiovascular institute at Mount Sinai Medical Center in New York.

Just as his career straddles the Atlantic, Fuster has brought with him a American-style free-market, competitive approach to research. The heart centre, known by its Spanish initials, CNIC, will also be involved in a range of international collaborations with institutions like Mount Sinai and other USA and European research institutions. In addition, the CNIC will have a special focus on developing its basic research for clinical uses.

Perhaps most dramatic of Fuster's innovations has been his insistence on securing private funding for the centre. "Federal funding alone is not enough to sustain high quality research", he says. Fuster speaks with experience; he has also held professorships at the Mayo Clinic and Harvard Medical School.



Valentin Fuster plans to shake up Spain's national cardiovascular research centre

He seems to have made quite a convincing argument to the Spanish as well. The CNIC now boasts €100 million in private funding for the next 10 years, in addition to the €200 million it already receives from the government. Somewhat unconventionally, none of the private donors are health care or pharmaceutical companies. That was a condition set by Fuster in order to avoid any conflicts of interest. Instead, the 14 donor companies are drawn from the elite of Spanish business, and include the Corte Ingles department store chain, the BBVA banking group, the oil company Repsol YPF, and PRISA, the owner of Spain's largest newspaper. The companies will receive no financial remuneration for their contributions, according to CNIC's management, neither patents on research nor other proprietary claims to the centre's research.

Fuster has also introduced outside evaluators into the research scheme. Scientists working at the CNIC will have their work assessed every 5 years by independent auditors

drawn from the international elite of the cardiology field. Those who fail to produce innovative work will find their research grants being cut. "We would like to avoid a civil service mentality", says Francisco de Paula Rodriguez Perera, the heart centre's new managing director.

The research auditors, who will be drawn from Sweden, Belgium, and the USA, among other countries, will provide a much-needed incentive for the centre's team of scientific investigators to push themselves and their work. "That's going to be, from our point of view, a big incentive to keep them on the edge, to get them doing what needs to be done", says de Paula.

CNIC's leaders intend to create a world-class research centre. "We are trying to change the model, to prove that doing research with a combination of public and private money can take us through a new threshold, so that the quality of our work is comparable with the rest of Europe", says de Paula.

Indeed, the CNIC itself had an inauspicious beginning. Started by

the Health Ministry in 2002 as a more traditional basic research institution, the centre's leadership soon ran into trouble over allegations of financial mismanagement. In the wake of the dispute, the CNIC's then-chief, Salvador Moncada, an acclaimed expert in nitric oxide, left to head the Wolfson Institute for Biomedical Research at University College, London.

Time was lost in 2004 in the search for new leadership, and the CNIC's research programme was left in disarray, according to scientists there at the time. The hiring of Fuster has given cause for optimism among researchers like Carlos Zaragoza, who started at the CNIC when it first opened. Zaragoza, who works on molecular cell migration, said that he is particularly excited by the plans to make practical use of his and his colleagues' work. "There is a huge interest in applying the findings in basic research to clinical practice", he says, noting that these types of clinical applications are unusual in Spain.

Zaragoza also notes a change in the atmosphere, from a Spanish emphasis on bureaucracy to what he characterises

as a more American focus on the scientists, which he first encountered doing work at Johns Hopkins. This is at least partly because of the influence of Fuster, he says. "I think it's good he is coming from the USA because he has a very practical perspective."

As part of the CNIC's transition from a purely basic research institution to one that integrates clinical research, it is building major new facilities. Among these is a €30 million imaging centre that will be able to provide biological scans of human beings, small animals, and organisms down to the molecular level.

"This is going to allow us to move between molecular basic research to clinical and human research", says de Paula. The new installations will also upgrade the animal research facilities, which up to now only house small animals like rats, to include large mammals like pigs.

Another goal is to foster interdisciplinary work between the CNIC's different specialists. For instance, embryologists might work with specialists in cardiac regeneration, says de Paula.

In its effort to target its basic research more effectively, the CNIC is

also going to collaborate with major Spanish health-care facilities. The hospitals it will be working with are spread through the country, including the Hospital La Paz in Madrid, the Hospital Juan Canalejo in La Coruna, and, Fuster's alma mater, the Hospital Clinico in Barcelona. "We'll be asking them, 'what would you like us to do in order to help your patients?' What can we research that will help you better?" says de Paula.

De Paula also points out that the CNIC is contemplating developing specific research projects in collaboration with health care or pharmaceutical companies, but that these will have carefully drawn rules to avoid conflicts of interest. "We want to preserve our independence", he says.

Next month, the CNIC will start operating at full strength, as six new department heads take up their positions. One of the new department chiefs is coming from Mount Sinai, another from Johns Hopkins, and the other four are drawn from around Spain. The new departments will include vascular biology and inflammation, atherosclerosis and cardiovascular imaging, regenerative cardiology, cardiovascular developmental biology, and cardiovascular epidemiology, and population genetics. There will also be a separate department devoted to integrating basic and clinical research.

For Fuster, integral in building up the CNIC as a world-class research institution is the development of a new generation of researchers. That is why the Spanish heart centre is offering training not only to postdoctoral researchers, but also implementing an educational programme for secondary school students.

"In Spain research has not been a cultural priority", says Fuster. "It is a driving force for me, to discover and develop new scientific investigators in Spain."

Samuel Loewenberg



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