

Cuts in Spain fall heavily on the brain: the CIBERNED plight



Over the past 20 years, Spain has become one of the world's top ten research nations, but the credit crunch might put the brakes on its rise. What will be the future of the country's high profile neurodegenerative disease research network, CIBERNED? Adrian Burton reports.

Spanish scientific research, including neurological research, is set to suffer tough times as the credit crunch brings sweeping funding cuts to the country's 2010 research and innovation budget. With some publicly funded research bodies facing cuts of around 25%, senior scientists are extremely concerned about the stability of their colleagues' jobs and their projects, and are raising the alarm regarding the future of the country's scientific potential. Such is the case of the Networked Biomedical Research Centre for Neurodegenerative Diseases (Centro de Investigación Biomédica en Red para Enfermedades Neurodegenerativas; CIBERNED), an academic-governmental initiative that was launched with much anticipation less than 3 years ago.

"This huge reduction in funding will put at risk everything from projects and jobs to the very future of research into neurodegenerative diseases in Spain", explains Fernando Valdivieso of the Universidad Autónoma (Madrid) and a principal investigator of CIBERNED. "Once you have lost the personnel you have trained and the expertise gained over the years, you cannot just simply pick up where you left off."

The cuts come at a time when Spain's research potential was growing spectacularly. Its ranking in the top ten research powers is testimony to the huge advances made over the past 20 years. The present government—formed by the Partido Obrero Socialista Español, now in its second 4-year term—has backed scientific research, helping to produce the financial and social environment in which it could flourish. Indeed, it recently went as far as declaring that the country's outdated economic model, based largely on tourism and construction,

needed to be replaced by one based on research and innovation.

The surge in Spanish science spawned new methods of cooperation designed to streamline research efforts. CIBERNED, formed in 2007 under the auspices of the Carlos III

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Health Institute (Instituto de Salud Carlos III; ISCIII) as one of nine CIBER units in Spain, is now fashioned out of 63 groups from different institutes, universities, and hospitals working in basic and clinical neurological research. Its formation was heralded as a purpose-driven venture to stimulate excellence in biomedical investigation into neurodegenerative diseases; a development that would stimulate collaboration and make the best use of available funding. Today its projects fall into six main areas: cell death and protection in Parkinson's disease and other disorders, neurogenesis and cell/gene therapy; pathophysiology of neuronal circuits in Parkinson's disease; molecular pathology of Huntington's disease and degenerative ataxias; molecular pathology of Alzheimer's disease, neuroinflammation and neurotrophic factors; pathophysiology, diagnosis, treatment, and prevention of dementias; and clinical and experimental pathogenesis of neuromuscular disorders. The experimental ground covered is enormous, ranging from describing the potential role of herpes simplex I virus in Alzheimer's disease, to determining how stem cell microenvironments

regulate the production of new neurons, to examining the role of different layers of the visual cortex in object-recognition memory. In barely 2.5 years of operation, numerous studies led by CIBERNED principal investigators have been published in some of the world's top-ranked scientific journals (eg, *Nature Neuroscience*, *Science*, and *Cell*).

CIBERNED is also helping to partly solve one of the major problems facing neurodegenerative disease research in Spain: a shortage of top-quality clinical neurology researchers. There are simply not enough clinical researchers available to interact with basic researchers and bring advances made in the laboratory to clinical reality. One major advance made by CIBERNED has been to introduce a so-called intensification programme to stimulate clinical research on neurodegenerative diseases. The programme enables neurologists to do clinical research by paying for substitute neurologists to take on their patients. More than €1.5 million has been spent on the programme in the past 2 years, giving rise to a whole new generation of neurologists involved in clinical investigation. The concept has already attracted attention from groups in other countries.

With the present financial cuts, however, the work of CIBERNED is threatened. In an open letter to the Spanish government imploring it to reconsider the reductions, Valdivieso and 49 other CIBERNED researchers highlighted that the cuts could mean that about 40 of the Institute's so-called contract scientists (ie, scientists employed for renewable periods of a few years) would not have their contracts renewed. 190 of around 500 scientists affiliated with

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For the CIBERNED study in *Nature Neuroscience* see *Nat Neurosci* 2009; **12**: 1514–23

For the CIBERNED study in *Science* see *Science* 2009; **325**: 87–89

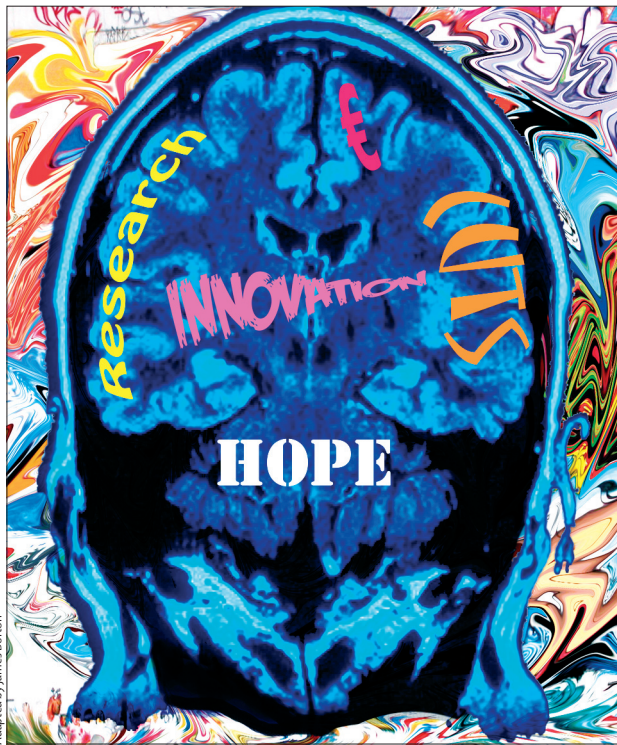
For the CIBERNED study in *Cell* see *Cell* 2007; **131**: 364–77

For more on CIBERNED see www.ciberned.es

For more on ISCIII see www.isciii.es

For more on the top ten research powers see http://archive.sciencemag.com/may-june2007/sw_may-june2007_page1.htm

For the open letter see *El País* Oct 1, 2009; http://www.elpais.com/articulo/sociedad/Carta_abierta/Gobierno/elpepusoc/20091001elpepusoc_3/Tes



Adapted by James Burton

For more on COSCE see
www.cosce.org

For the Ministry press release
see [http://web.micinn.es/01_](http://web.micinn.es/01_Portada/01-Ministerio/031Prensa/00@Prensa/201009_2.pdf)
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[refc20090813.htm](http://www.la-moncloa.es/ConsejodeMinistros/Referencias/_2009/refc20090813.htm)

CIBERNED are currently employed on such contracts. “Losing people now would mean losing much of what has been gained through years of investment in Spanish research”, insists Valdivieso. “However, I am still hopeful that the situation can be improved somewhat as Parliament continues to discuss the budget.”

“The government had an ambitious project that has been cut short with the economic crisis”, explains Jesus Ávila, another CIBERNED principal investigator, also at the Universidad Autónoma (Madrid). “Cuts in the budget will have serious consequences with regard to our contracting new researchers and in the construction of new centres such as that planned for the Cajal Institute [a neurological research centre], and we fear for other infrastructures. Trying to be optimistic, however, we hope that when the budget is [ratified] in Parliament, the cuts will be somewhat smaller.”

The government has tried to reduce fears. On several occasions the Minister of Science and Innovation, Cristina Garmendia, has publicly announced

that the competitiveness of the science and innovation system will not be affected by the cuts since financing for all projects underway is guaranteed, and that the amount of money devoted to grants and contracts has even been increased—an increase that a Ministry press release insists will allow a 13% rise in the number of research personnel. In addition, the Ministry’s press officers were quick to point out to *The Lancet Neurology* that the overall budget for science and innovation has in fact slightly increased from about €5280 million in 2009 to about €5290 million in 2010. Although conceding that large cuts to publicly funded research institutions have indeed been made, it stressed that they will only affect running costs. Importantly, a Ministry press officer told *The Lancet Neurology* that no scientist with a civil servant’s contract was in any danger of losing his or her job; although technically, civil servants in Spain are guaranteed a job for life. Unfortunately, none of CIBERNED’s 190 contract scientists fall into that category. In addition, part of the increase in the budget is in fact made up of loans to private research centres. “The problem is that the crunch is also affecting private centres, and they could not easily repay nor even find guarantors for any loan”, explains Ávila. “The future thus looks bleak with the government cutting public research funds, the opposition not against this move, and private research with its own financial problems.”

Insiders acknowledge that CIBERNED has matured and that the time has come for its groups to further combine their resources and expertise and to embark on projects in translational research on neurodegeneration. These projects include investigating whether there is a genetic programme of ageing in human beings, the role of ageing in the process of neurodegeneration, and the influence of sex in neurodegenerative diseases. However, the size and scope of such

projects—CIBERNED’s *raison d’être*—ultimately depend on the available budget.

After recent meetings of its representatives with Minister Garmendia to discuss the cuts, the Confederation of Spanish Scientific Societies (Confederación de Sociedades Científicas de España; COSCE) issued a statement in which it also called upon the government to reconsider the funding cuts and announced that a state pact for science urgently needed to be reached. “After 4 years of continuous growth, the funding for research earmarked by the Spanish Government in the 2010 budget has been slashed substantially [even though this reduction only] amounts to €500 million [about] six times what the Real Madrid Football Club paid for Cristiano Ronaldo”, explains the Confederation’s President Joan Guinovart (Institute of Biomedical Investigation, Barcelona). “[However, the COSCE] expects that the budget will be improved during its passage through Parliament.”

The budget as a whole has, in fact, already been approved, but possibilities for change in the form of amendments remain as discussions continue in the Spanish Parliament; this could see CIBERNED get a slightly bigger package. Ministry officers told *The Lancet Neurology* that extra funding for science might also be agreed through the soon to be debated Law of The Sustainable Economy and other investment funds.

Hopefully this will be the case. In a society that is getting older and thus facing the greatly increased incidence of dementias and other neurodegenerative diseases, research groups working on cutting-edge ideas, and producing results as exciting as those of CIBERNED, cannot safely be placed on the back burner.

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