

# CERCA

## Research Centres of Catalonia



Generalitat de Catalunya  
Government of Catalonia  
**Ministry of Innovation,  
Universities and Enterprise**

© Government of Catalonia  
Ministry of Innovation, Universities and Enterprise (DIUE)  
Commission for Universities and Research  
Directorate General for Research

**Edition**

March 2010

**Editorial Board**

Joan Roca, Ramon Moreno, Iolanda Font de Rubinat and  
Lluís Rovira.

**Publishing Board**

Blanca Ciurana, Glòria Vergés and Neus Aguadé.

**Technical Coordination**

Neus Aguadé and Roger Cabezas

**Design and Layout**

Ondeuev comunicació, SL

**Photography**

Escarlata Blanco, Jordi Play, Luís Montesdeoca.  
With the collaboration of CIIRC, CIMNE, ICIQ, ICRA, IC3,  
i2CAT, CRESIB, IRTA, CREA, CTFC, ICRPC, UPC.

**Translation**

T&S, Traduccions i Tractament de la Documentació, SL.

**With the collaboration of:**

Andreu Botella, Olga Porrata, Josep M. Alcoberro, Ramon  
Noguera, Laura Graells, Nati Adell and David Ballabriga.

**Legal Deposit No.:** B.11176-2010

The contents of this publication are subject to the Creative Commons license Attribution 3.0 Spain, unless otherwise indicated. The copying, distribution, public transmission and adaptation of said contents to generate a derived work is permitted, without restriction, as long as long as the copyright holder (CERCA. Catalan Research Centres, Government of Catalonia) is cited. You can consult the full license at: <http://creativecommons.org/licenses/by/3.0/es/legalcode.ca>



Further resources, links and the electronic version at:  
<http://www.gencat.cat/diue/serveis/publicacions/ur/index.html>

**Commission for Universities and Research  
Directorate General for Research**

Via Laietana, 33, 6è 2a  
08003 Barcelona  
Tel. +34 93 552 67 00  
Fax. +34 93 552 69 22



# CERCA

## Research Centres of Catalonia

<b>Introduction</b>	<b>Scientific Talent and Knowledge, the Key to Competitiveness</b> Josep Huguet i Biosca <i>Minister for Innovation, Universities and Enterprise</i> .....	<b>7</b>
<b>Article</b>	<b>The Government of Catalonia's Research Centres in the Catalan R&amp;D System. A Decade of Progress</b> Joan Roca i Acín <i>Director General of Research</i> .....	<b>9</b>
<b>Article</b>	<b>CERCA, the Catalan Model of Research Centres</b> Ramon Moreno i Amich <i>Director of the CERCA Programme</i> .....	<b>15</b>
<b>The centres by topic area</b>	.....	<b>22</b>
<b>Science and Engineering</b>	CIIRC – International Centre for Coastal Resources Research .....	<b>24</b>
	CIMNE - International Centre for Numerical Methods in Engineering .....	<b>26</b>
	CRM – Centre for Mathematical Research .....	<b>28</b>
	CTTC – Catalan Telecommunications Technology Centre .....	<b>30</b>
	CVC – Computer Vision Centre .....	<b>32</b>
	IBEC – Institute for Bioengineering of Catalonia .....	<b>34</b>
	ICFO – Institute of Photonic Sciences .....	<b>36</b>
	ICIQ – Institute of Chemical Research of Catalonia .....	<b>38</b>
	ICN – Catalan Institute of Nanotechnology .....	<b>40</b>
	ICP – Catalan Institute of Palaeontology .....	<b>42</b>
	ICRA – Catalan Institute for Water Research .....	<b>44</b>
	IIEC – Space Studies Institute of Catalonia .....	<b>46</b>
	IFAE – Institute for High Energy Physics .....	<b>48</b>
	IG – Institute of Geomatics .....	<b>50</b>
	IC3 – Catalonia Institute for Energy Research .....	<b>52</b>
	IREC – Catalan Institute for Energy Research .....	<b>54</b>
	i2CAT – Internet and Digital Innovation in Catalonia .....	<b>56</b>

<b>Health and Life Sciences</b>	CMRB - Centre of Regenerative Medicine in Barcelona .....	<b>60</b>
	CREAL - Centre for Research in Environmental Epidemiology .....	<b>62</b>
	CRESIB – Barcelona Centre for International Health Research .....	<b>64</b>
	CRG – Centre for Genomic Regulation .....	<b>66</b>
	CTFC - Forest Technology Centre of Catalonia .....	<b>68</b>
	ICCC – Catalan Institute of Cardiovascular Sciences .....	<b>70</b>
	IDIBAPS – August Pi i Sunyer Biomedical Research Institute .....	<b>72</b>
	IMPPC – Institute of Predictive and Personalised Cancer Medicine .....	<b>74</b>
	IRB Barcelona – Insitute for Research in Biomedicine .....	<b>76</b>
	VHIO – Vall d'Hebron Institute of Oncology .....	<b>78</b>
	IRTA – Institute of Food and Agricultural Research .....	<b>80</b>
	CRAG – Centre for Research in Agricultural Genomics .....	<b>82</b>
	CReSA – Centre for Animal Health Research .....	<b>84</b>
	CREAF – Centre for Ecological Research and Forestry Applications .....	<b>86</b>
	AGROTECNIO – Centre for Research in Agrotechnology .....	<b>88</b>
	IDIBGI – Girona Biomedical Research Institute .....	<b>90</b>
<b>Social and Human Sciences</b>	CED – Centre for Demographic Studies .....	<b>94</b>
	CREI – Centre for Research in International Economics .....	<b>96</b>
	ICAC – Catalan Institute of Classical Archaeology .....	<b>98</b>
	ICRPC – Catalan Institute for Cultural Heritage Research .....	<b>100</b>
	IPHES – Catalan Institute for Human Palaeoecology and Social Evolution ...	<b>102</b>
	MOVE – Markets, Organizations and Votes in Economics .....	<b>104</b>
<b>Methodology</b>	.....	<b>106</b>
<b>If You Want to Know More</b>	.....	<b>108</b>
<b>Table of Initials and Acronyms</b>	.....	<b>110</b>



## Scientific Talent and Knowledge, the Key to Competitiveness

**Josep Huguet i Biosca**

Minister for Innovation, Universities and Enterprise



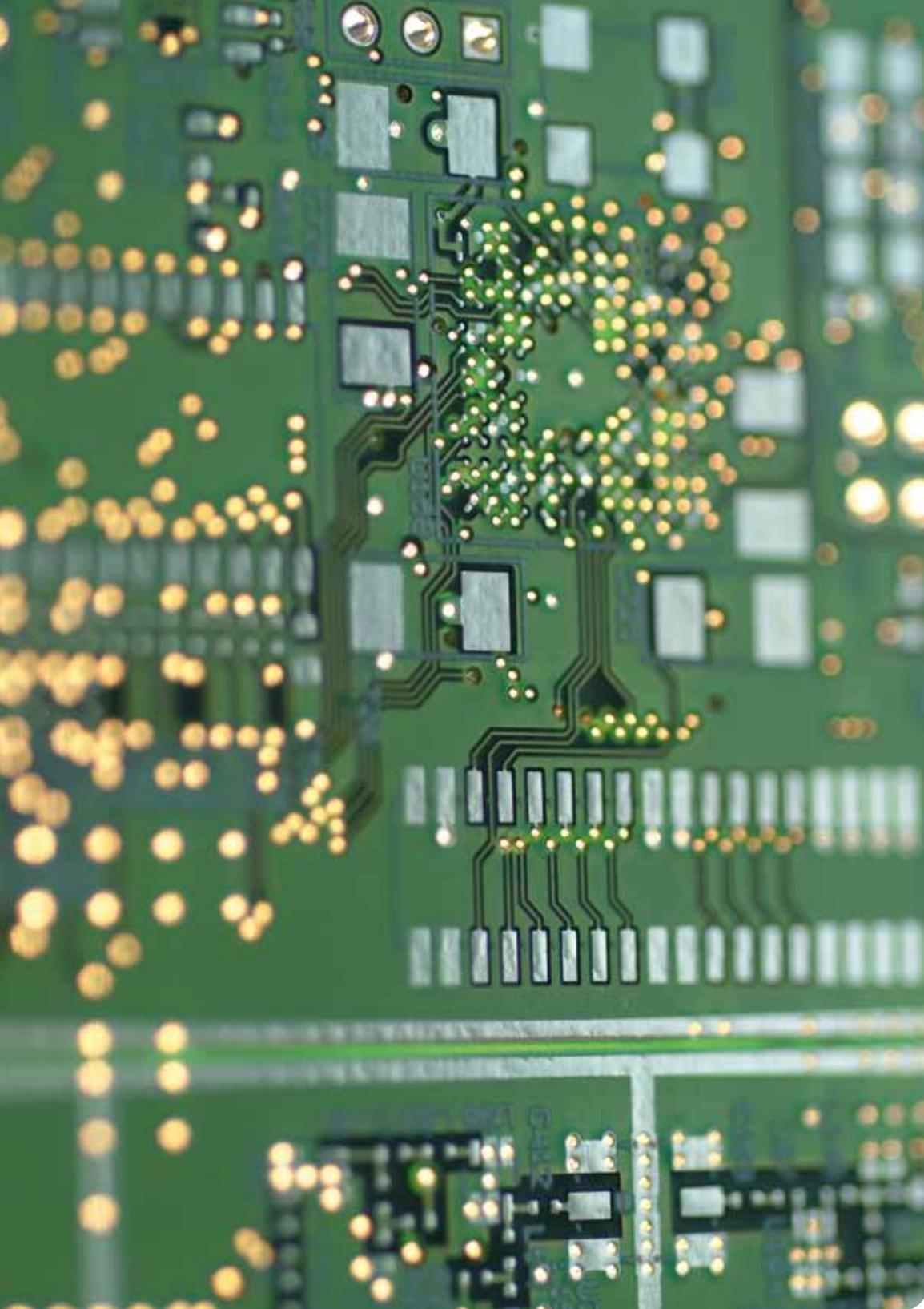
**T**he Government of Catalonia believes that attracting scientific talent and promoting knowledge-generation is the key to beating the recession, change our current economic model and further the knowledge-based society. For this reason, reforming our research system so that it becomes an international benchmark has been one of the Ministry of Innovation, Universities and Enterprise's top priorities. Major R&D infrastructures, together with the research centres detailed in this publication, play an important role in ensuring that the country becomes highly developed in this area.

The main new measures undertaken are, first and foremost, the Catalan Agreement on Research and Innovation (PNRI, in its Catalan acronym), a roadmap that places research and innovation at the heart of Catalonia's development; second, the Research and Innovation Plan which, within the framework of the PRNI, sets out the 17 key strategic themes along which research and innovation policies are to be prioritised; third, the Catalan research agency, Talència, which implements policies

to promote research and develop talent. Last but not least, CERCA coordinates and raises awareness of the activities of the network of independent research centres created over recent years, which have not, until now, had a common agent to represent them. Current results are highly encouraging, as demonstrated by the success achieved by Catalonia in the European Research Council programmes, the European Union Seventh Framework Programme, and the progress of the ICREA Programme for the promotion of scientific talent.

It is worth noting that the research centres have made very significant progress in approaching and getting closer to the business sector. There is however still room for improvement, and both need to work even more closely together and with the Government.

We must all work together to ensure that Catalonia becomes a knowledge hub for Southern Europe and the Mediterranean. I would like, therefore, to thank everyone involved in this common project for all their efforts and dedication. ■



## The Government of Catalonia's Research Centres in the Catalan R&D System.

### A Decade of Progress

**Joan Roca i Acín**  
Director General of Research

Catalonia accounts for a small area in the European Union. It occupies 6.35% of the area of Spain and accounts for only 16% of its population. It generates, however, 18.7% of the Spanish GDP, 22% of its research production and 32% of its high-technology exports. Today, it is a Southern European scientific and technological hub, which aspires to achieve a high level of development through the knowledge-based economy. This is reflected in trends such as the growth in the proportion of Catalonia's GDP spent on R&D, according to data from the National Statistics Institute of Spain (INE).

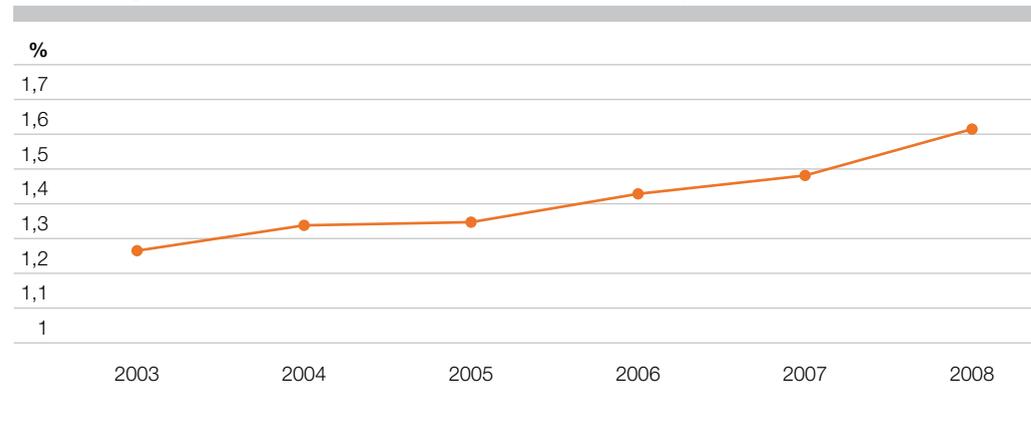
### The Catalan model for R&D centres

In Catalonia, there are nearly 10,000 innovative businesses, 227,000 university students and 12 universities, around 26,000 researchers, 23 science and technology parks, 12 large-scale research infrastructures, and a series of research centres. 39 of these research institutes are supported by the Government of Catalonia, forming the CERCA system of centres.

External data confirms that the initiatives undertaken are delivering the desired results. In recent years, researchers in Catalonia have attracted approximately 2% of the total financing available from the European Union Seventh Framework Programme for R&D, although the size of its population as a proportion of that of Europe is significantly less than 2%.

The CERCA research institutes are major players in this system, which adds value in many ways through the generation of knowledge and the development of new ideas. As of 2009, 22 researchers working in CERCA institutes had received grants from the European Research Council (ERC), through

## Overall investment in R&D Percentage of GDP allocated to research and development



both the Starting Independent Researcher Grant and Advanced Investigator Grant programmes. To put this figure in context, a total of 40 researchers in Catalonia have received such awards, while the number for the rest of Spain is 26.

Today, after 9 years of active policy by the Government of Catalonia, creating new research centres, it is possible to speak of a Catalan model for R&D centres. As a model, it differs significantly from those in neighbouring regions. For starters, it has been developed over a short period of time, and as a result of the weight given to it in the scientific system, has a number of distinctive features. There is a high degree of permeability between Catalan universities and the CERCA institutes, with many university researchers involved in the scientific activities of the centres, through affiliation mechanisms or other formulae.

The CERCA institutes represent an important competitive advantage that makes it possible to enhance the results and impact of research in Catalonia qualitatively and quantitatively. It also helps to

prevent the drain of researchers to other countries and to attract talent. Having research centres with an international profile means that we are in a position to compete in attracting international researchers who are leaders in their own disciplines.

The network of CERCA institutes should help us to tackle the challenges posed by the increasingly international character of the Catalan RDI system: consolidating mechanisms to attract talent; aligning with EU and Spanish policy on science; defining the focus and priorities of research and innovation plans; leading and coordinating major projects and scientific and technological platforms; and creating public-private partnerships. In short, the challenge is to improve the growth model and increase productivity based on research and innovation in Catalonia.

The CERCA institutes are mainly located on university campuses and in science and technology parks. They occupy a total area of approximately 95,000 m<sup>2</sup>. 13 spin-off companies have been set up based on research work in these centres. At present

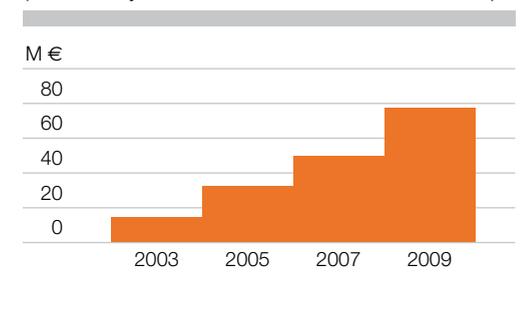


over 4,000 people work in them, most doing work directly linked to research. They have taken part in nearly 500 projects under the Spanish National Plan and are leading 28 European projects under the 7th Framework Programme, 22 CONSOLIDER projects, and 2 CENIT projects. One recent indication of the success of these centres is the participation of the Catalan Institute for Energy Research (IREC) in the European consortium Innoenergy, recognised as a knowledge and innovation community (KIC) in sustainable energy by the European Institute of Innovation and Technology (EIT).

## Growth in investment and activity

In 2009, the Directorate General for Research provided 75 million euros for the running costs of existing CERCA institutes. This is equivalent to 40% of the total operational budget of the centres, in line with the rising trend of recent years. Other funding is obtained via competitive funding allocations, service contracts, the exploitation of patents and patronage.

## Operational spending CERCA research centres (financed by the Directorate General for Research)



Great efforts have been made not only in financing, but also in organisation. Recently the centres have drawn up strategic plans which detail their scientific objectives, together with information about the financial and organisational support needed to achieve them. These strategic documents also identify key stages in the projects and the scope of each. This system is leading to the signing of new programme contracts between the Government of Catalonia and the CERCA research centres, cover-



12

ing each centre's activities and resources, ensuring stability for four year periods.

Under the terms of the Catalan Agreement on Research and Innovation, the Institution of Catalan Research Centres Foundation (CERCA Institution) has been set up. It is intended to optimise the functioning of the CERCA research centre system, raise its profile and establish its position as an international leader. This organisation is continuing the work of the CERCA Programme, extending its scope while bringing the CERCA centre system up to speed with state public research organisations in Europe.

### Looking to the future

In the immediate future, the Directorate General for Research needs an assessment of each of the CERCA institutes that can provide objective support for the Government's confidence and financial backing. This is essential to evaluate public spending in this area of scientific policy and in particular to make an accurate projection of the

targets are achievable in each case and what the scientific expectations are.

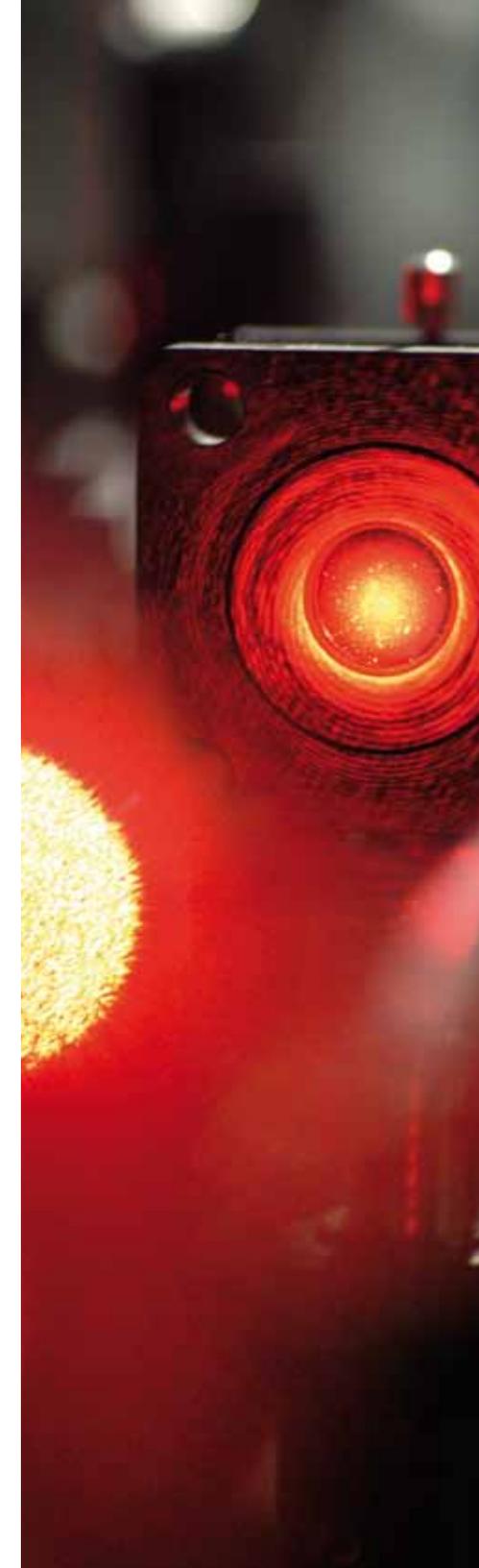
The special features of our system of centres have attracted the interest of the OECD's Territorial Development Policy Committee, which has produced a report entitled *OECD Reviews of Regional Innovation: Catalonia, Spain*. It analyses the CERCA research centre model as a distinctive initiative leading to the development of a solid research infrastructure. The report also draws attention to a number of other considerations, such as the difficulty of achieving a critical mass for each centre and the complexity of controlling the system.

Action by the Directorate General for Research in response to this analysis is mainly focused on making a detailed study of programme contracts and carrying out a brief review of the centres. Objective data on the quality and scientific output of the research centres can help to optimise the way in which each of them functions, guide their objectives, and adjust their focus, if necessary, ensuring the maximum efficiency of the research centre system.

The Government of Catalonia plans to transform the system of production so that it is more firmly rooted in knowledge. This calls for diversification and the creation of a system in which researchers have different professional outlets for their creativity.

It is important to obtain the best return on the results of the research generated by the system. Research must be valued as highly as possible and knowledge and technology transferred to all research groups and the institutions to which the latter are assigned. It must, of course, be borne in mind that not all research can be exploited to the same extent. Industrial property rights also need to be rationalised and more benefit be obtained from them when they stem from ideas generated in the public system or which the system has helped to generate. We also have to overcome the obstacles facing spin-off companies, which are created not having sufficient incentives or motivation to grow. These are problems that arise in a changing world, which the CERCA structure must help to resolve. ■

13





## CERCA, the Catalan Model of Research Centres

**Ramon Moreno i Amich**

Director of the CERCA Programme

Ten years ago, Catalonia started a process of transformation of its research landscape that has proved crucial in defining the foundations of the current Catalan system of research and innovation. The launch of the 3rd Research Plan, 2001-2004, and the evaluation of the work carried out up to that date by the universities and the research centres supported by the Government of Catalonia, clearly indicated that the development of these institutions was proceeding along different lines and at different rates.

At the initiative of the then Minister for Universities and Research, Andreu Mas-Colell (2000-2003), the Government of Catalonia put in place a policy oriented towards the attraction of scientific talent (ICREA) and the creation of research centres of excellence with their own legal identity and a flexible structure, such as already existed in other European countries. This policy was adopted and continued by the Ministers Carles Solà (2004-2006), Joan Manuel del Pozo (2006) and Josep Huguet (2007-2010), and enriched with a plan for large-scale research infrastructures, the most significant of which are the ALBA synchrotron light facility and the MareNostrum supercomputer. The result of these policies, in the last 10 years, has been the creation of 24 new research centres, and a further 15 which were originally created within the university system have been expanded and transformed.

It is important to recognise here the strong coordinated effort by the Ministry of Health to create biomedical research centres, among which one finds the 9 hospital-based research centres which are currently being incorporated to the system .

### What is the thinking behind the CERCA model?

The evaluation of the Catalan research system had highlighted the fact that university research centres

and public research organisations suffered from a lack of flexibility, together with over-complex governance.

This system of management, under which the institute's director is appointed by the same people he or she will be directing – usually his or her own colleagues – often compromises the autonomy that the post holder should have in order to make strategic decisions. Often in these circumstances decisions are taken on the basis of internal considerations rather than those of international competitiveness.

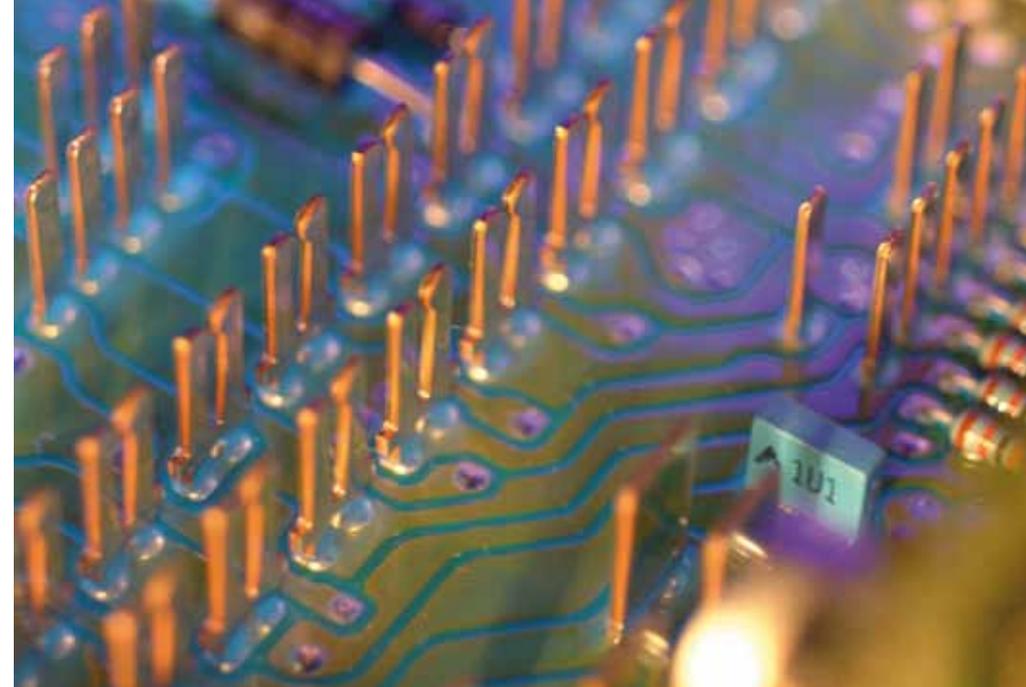
Another problem which often affects public research organisations lies in the difficulty in implementing an efficient system for the management of scientific talent. The egalitarian ethos of the civil service model in place for staff can act as a very significant barrier for the implementation of effective recruitment and promotion policies. Attracting high-level scientific talent requires a high degree of flexibility in the negotiation of individual contractual conditions, which is not possible in a civil service-type system.

Finally, these same circumstances can make the direct management and strategic planning of research activities difficult or impossible, severely compromising the effectiveness and efficiency of the system. It must be borne in mind that the scientific and economic impact of the research results of an institute relies, to a great extent, on developing an approach that focuses on challenges and problems, precise planning of targets and resources, and well-qualified executive management.

To overcome these problems, the Government of Catalonia initiated the transformation of existing research centres, as well as the creation of new independent research centres, giving rise to CERCA, the Catalan system of research institutes.

All the institutes in the CERCA system are organised according to a governance and operations model that ensures efficient and flexible management, the attraction and promotion of scientific talent, strategic planning and executive management. The CERCA governance model can be summarised in the following principles:

- Research centres in the CERCA system are independent entities with their own independent legal status (as public consortia or foundations), participated by the Government of Catalonia, and tasked with excellence in scientific research.
- They follow a private sector management model that is totally flexible and self-monitored, based on multi-year activity programmes within the framework of a strategic plan, and ex-post supervision that respects the autonomy of each centre.
- Their governance is based on an executive management with broad powers devolved to it from the centre's governing body, to which it reports.
- These centres have been designed to have a critical mass of research staff with an international profile, organised in research groups headed by internationally renowned scientists, with a high turnover of post-doctoral researchers, so that they can develop groundbreaking research with significant scientific and economic impact and which improves the wellbeing of society and individuals.
- They have significant and stable structural funding through programme contracts with the Government of Catalonia, and apply a policy of attracting talent based on the scientific careers of their research staff, in accordance with the specific features of each field and the recruitment strategies chosen by each centre.



- It is an essential feature of the system that each centre receives regular advice and assessment from a top-level international scientific committee that ensures practices and criteria are implemented in accordance with international standards of excellence in research.

### Managing diversity. The CERCA Institution

The growing complexity of the system of research centres led to the creation in 2005 of the Programme of Catalan Research Centres (CERCA), under the purview of the Catalan Government's Directorate General for Research. The CERCA Programme's role to date has been to monitor the CERCA institutes, support them, disseminate and implement good management practices, and structure the model to which existing and new centres must adapt.

Over a decade since the initial impulse, and in accordance with the directives of the Catalan Agreement on Research and Innovation (2009-

2020), the Ministry of Innovation, Universities and Enterprise (DIUE) takes the Programme one step further, with the creation of the Institution of Catalan Research Centres (CERCA Institution), which brings together all the centres in the CERCA system within a loose, facilitating structure.

The CERCA Institution is a technical service of the Administration of the Government of Catalonia tasked with supervising, supporting and facilitating the activities of the research centres in the CERCA system. It has been constituted as a public sector foundation, under the supervision and control of the Ministry of Innovation, Universities and Enterprise. CERCA's purpose is to ensure that the Catalan system of research centres is fully developed; to encourage and maximise synergies, co-ordination and strategic co-operation between institutes; to improve the positioning, visibility and impact of the research carried out and to facilitate communication between public and private agents.

To summarise, the activities of the CERCA Institute focus on:



1. Raising the corporate, institutional and scientific profile of the research centres, to enable them to develop and consolidate positions of international leadership.
2. Acting as secretary to the governing bodies and monitoring the research centres' operations and investments from a budgetary perspective.
3. Disseminating and promoting good practices with regard to strategic planning, recruitment of talent, research management and fund-raising.
4. Identifying and making best use of synergies and economies of scale.
5. Encouraging the transfer of technology and knowledge to the private sector and civil society so it has a greater economic and social impact.
6. Promoting interdisciplinary R&D and research in networks, with an approach based on the focus and challenges defined in the PNRI.

7. Implementing a system for evaluating the centres and the impact of the R&D work carried out.

### What is the outcome of all this effort?

The system of CERCA institutes has developed into a driving force based on quality and demanding standards, which complements Catalonia's rich science and technology culture. It is worth remembering that, in addition to the 2,767 researchers working in the CERCA institutes, there are a further 21,000 researchers in Catalonia's public universities and another 1,300 in the 21 centres of the Spanish High Council for Scientific Research (CSIC) located here.

Spectacular results have been achieved in terms of attracting and producing talent, raising the visibility of the sciences in our society, making the system more efficient, and significantly increasing the volume and quality of scientific work generated.

### EFFICIENCY

The funds received in the form of direct grants from the Government of Catalonia by the CERCA research institutes to cover basic structural expenses represent approximately 40% of their operating budgets. The remaining funds come from competitive funding allocations, service contracts, the exploitation of patents and patronage.

### TALENT

In 2007, the European Research Council (ERC) set up a system of grants for emerging and consolidated researchers, the Starting Independent Researcher Grant and the Advanced Investigator Grant, to help finance the best and most competitive groundbreaking research projects in Europe.

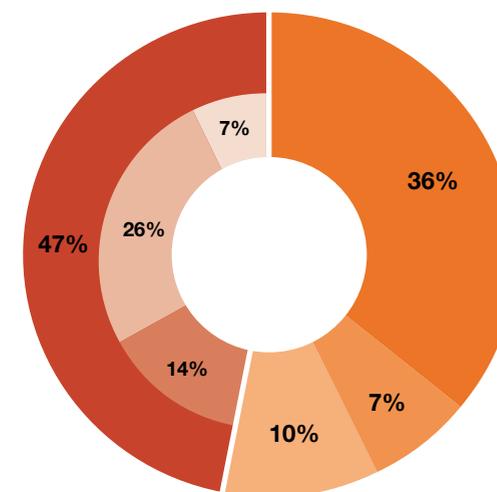
In the four funding allocations made to date, the ERC has made awards to 40 projects in Catalonia, 22 of which are being carried out in CERCA institutes. The rest of Spain has received 26 awards.

### European Research Council grants

Aggregated data of the four funding allocations up to date, according to resolution. Starting Independent Researcher Grants 2007 and 2009. Advanced Investigators Grants 2008 and 2010



### Revenues by source of funding

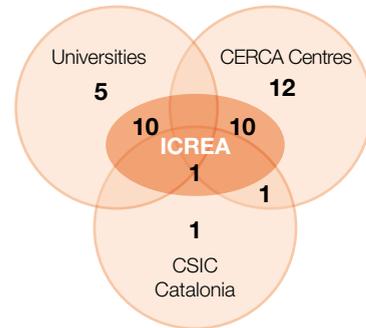


- Competitive public funds
  - Non-competitive private funds
  - Competitive private funds
  - Non-competitive public funds
- Non-competitive public funds:
- Government of Catalonia (other ministries)
  - Ministry of Innovation, Universities and Enterprise (DIUE)
  - Other government agencies

Catalonia			
CERCA Centres	CSIC	Universities	
22	3	15	
Other Autonomous Communities			
CNIO	Others	CSIC	Universities
7	4	8	7
Catalonia		Other AC	
Life Sciences		14	14
Physical Sciences and Engineering		13	8
Social Sciences and Humanities		11	4
Interdisciplinary Research		2	0

As well as creating centres, the Government introduced a policy to attract talent through the Catalan Institute for Research and Advanced Studies (ICREA). Its purpose is to recruit top-level international researchers for the Catalan research system through open competition. There are currently 217 ICREA researchers, 78 of whom work in CERCA institutes. Furthermore, 21 of the 40 researchers who have received ERC awards belong to this body.

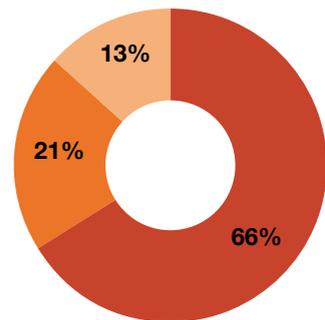
### Researchers with ERC awards



### ATTRACTING TALENT

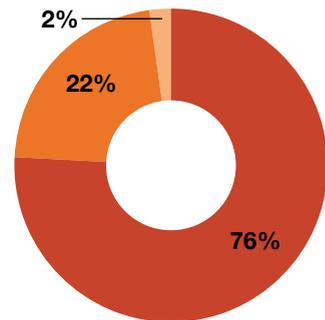
One of the most important features of the CERCA model is the international nature of its centres, not only in terms of the impact of the research carried out, but in terms in attracting staff from elsewhere, especially the rest of Europe.

### Staff according to position



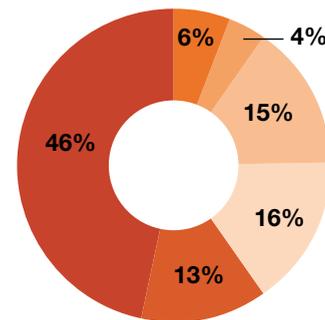
- Research staff
- Technical staff
- Administration & management

### Staff according to contracting entity



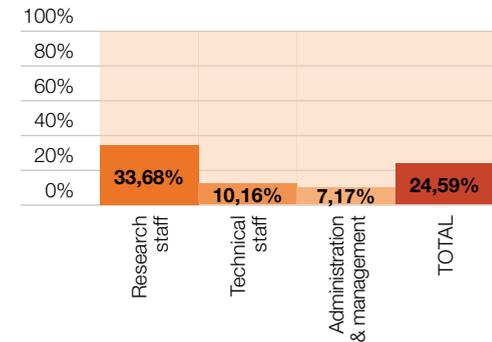
- In-house
- Affiliated
- Visiting

### Staff financed via competitive funds

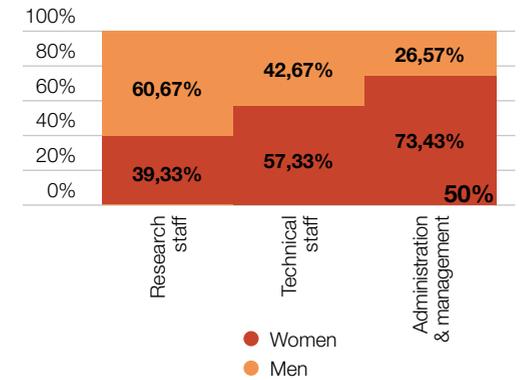


- Marie Curie Programme (FP7)
- Beatriu de Pinós Programme
- ICREA
- Ramón y Cajal Programme
- Juan de la Cierva Programme
- Pre-doctorate (FPI, FPU, FIS, INIA)

### Percentage of foreign staff



### Gender according to staff position



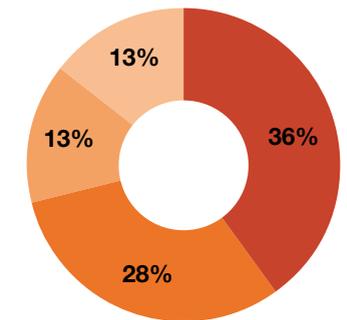
### IMPACT

The CERCA institutes have, over the last ten years, earned their place in the Catalan R&D system.

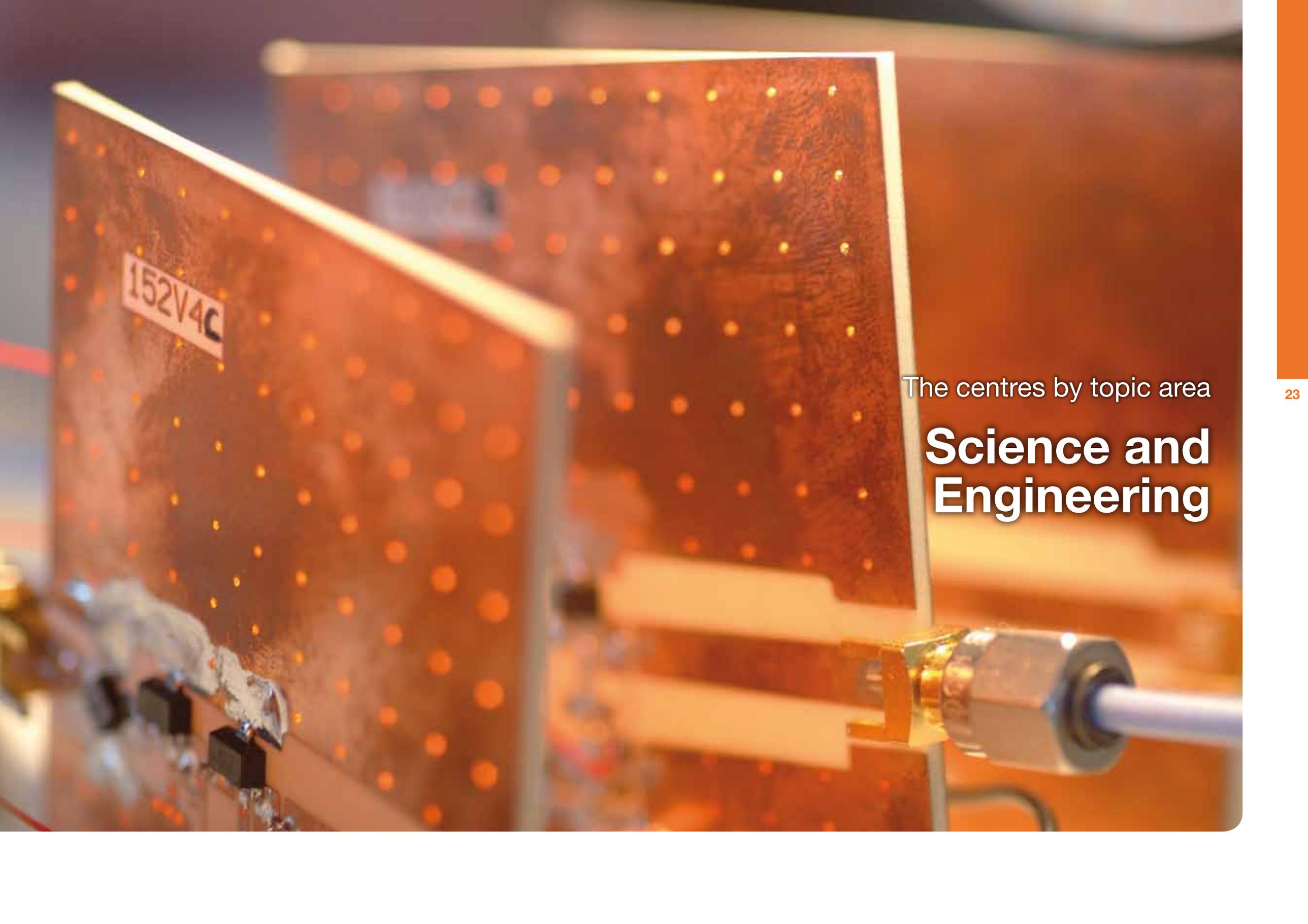
### Impact of the activity, 2000-2008

Indexed articles	3081	
Patents	Spanish patents	58
	PCT	49
	Patents pending	80
	Patents licensed	22
	Patents granted	5
Spin-off companies	Created up to 2008	13
	With centre participation	9 69,23%
R&D project underway in 2008	Led	
	European Research Council grants	22
	7PM	97 28,87%
	CIBER	19 15,79%
	CONSOLIDER	31 32,26%
	GENIT	27 7,41%
	Plan Nacional	473

### Location of CERCA centres



- University campus
- Science and technology park
- University hospital
- Other



The centres by topic area

# Science and Engineering



# International Centre for Coastal Resources Research **CIIRC**

Identifying, analysing and finding solutions for the problems affecting coastal areas and their resources

The CIIRC aims to make the latest research, carried out internally or by leading research centres around the world, available to coastal communities and, in particular, to the Government of Catalonia.

The centre addresses the pressures on coastal resources in terms of the timescales and spaces involved (from storms to rising sea levels due to the potential

effect of climate change), focusing on multidisciplinary studies with a significant international component.

The centre's research is structured along five main lines: the dynamics and quality of coastal and estuary waters; engineering and coastal dynamics; maritime climate and structures; oceanography and oceanographic engineering; and cross-disciplinary research into coastal areas and their resources. ■

<b>Director:</b>	Agustín Sánchez-Arcilla Conejo
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Technical University of Catalonia (UPC). Institute for International Assistance and Solidarity (IFIAS).
<b>Founded:</b>	1993
<b>Contact:</b>	<a href="http://lim-ciirc.upc.es">http://lim-ciirc.upc.es</a> Jordi Girona, 1-3. 08034 Barcelona Tel. +34 93 280 64 00 · <a href="mailto:ciirc@upc.edu">ciirc@upc.edu</a>



## Operating budget 2008: € 558,924

25% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€ 402,580	€ 15,500
Non-competitive resources	€ 140,844	€ 0

## Centre staff

	Men	Women	Total
Research staff	12	-	12
Technical support staff	2	-	2
Administration & management	1	4	5
Total	15	4	19

coastal areas  
development resources  
problem management  
maritime engineering

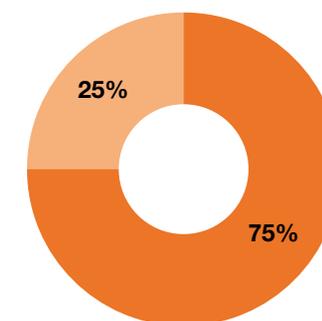
## Main competitive resources currently awarded

- 2 international projects under the Sixth Framework Programme of the EU.

## Facilities and services

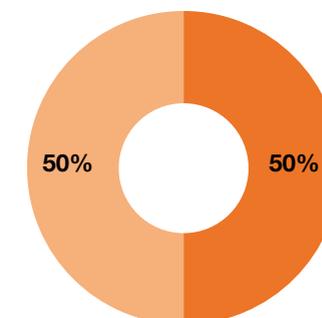
- Large-scale experimental wave flume (100 m long, 5 m deep and 3 m wide).
- Small-scale experimental wave flume (18 m long, 0.75 m deep and 0.5 m wide).

## Source of funds



- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated





# International Centre for Numerical Methods in Engineering **CIMNE**

## Solutions in engineering

The International Centre for Numerical Methods in Engineering is an autonomous research centre dedicated to promoting advances in the development and application of numerical methods and computational techniques for the solution of engineering problems in an international context.

CIMNE organises a wide range of activities aimed at teaching and spreading knowledge, such as courses, conferences and publications. Additionally, CIMNE carries out various research and development activities and has participated in a large number of technology-transfer projects in co-opera-

tion with over one hundred and fifty businesses and other organisations from different countries.

The centre's activities involve a large number of knowledge-transfer projects in collaboration with more than one hundred and fifty businesses and institutions worldwide. It is worth noting, furthermore, the high level of internationalisation of CIMNE as a congress organiser in its area of activity, as well as a wide spectrum of formative activities such as courses, conferences and publications through its network of CIMNE Classrooms, distributed in 9 different countries. ■

<b>Director:</b>	Eugenio Oñate Ibáñez de Navarra
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Technical University of Catalonia (UPC)
<b>Founded:</b>	1987
<b>Contact:</b>	www.cimne.com
	Gran Capità, s/n, Building C1
	08034 Barcelona
	Tel. +34 93 205 70 16 · cimne@cimne.upc.edu



**Operating budget 2008: €9,617,189**  
4% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€3,042,050	€3,985,832
Non-competitive resources	€620,000	€1,969,307

### Centre staff

	Men	Women	Total
Research staff	116	24	140
Technical support staff	3	-	3
Administration & management	6	22	28
Total	125	46	171

**structures** **new materials**  
**fluid dynamics** **bioengineering**  
**electromagnetism** **aerospace**  
**artificial intelligence**

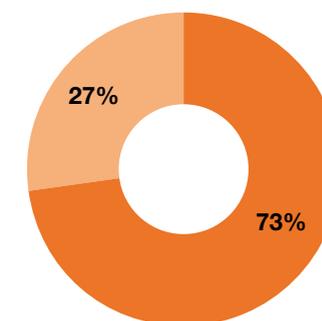
### Main competitive resources currently awarded

- 1 Advanced Investigators Grant (European Research Council).
- 1 ICREA researcher.
- 1 grant from the Marie Curie Programme (FP7).

### Facilities and services

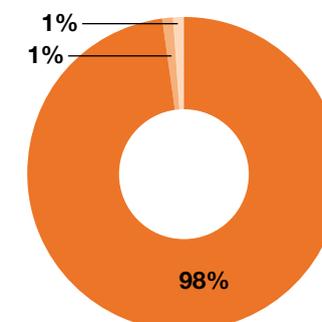
- 2,000 m<sup>2</sup> of own and rented premises on the UPC campus and in the Mediterranean Technology Park (PMT-UPC). A further 200 m<sup>2</sup> in Terrassa and Madrid.
- 23 CIMNE study centres in 9 countries.
- It has two offices with own legal entity in Argentina and the USA and has two more in progress in Singapore and China.
- Three spin-offs created.

### Source of funds



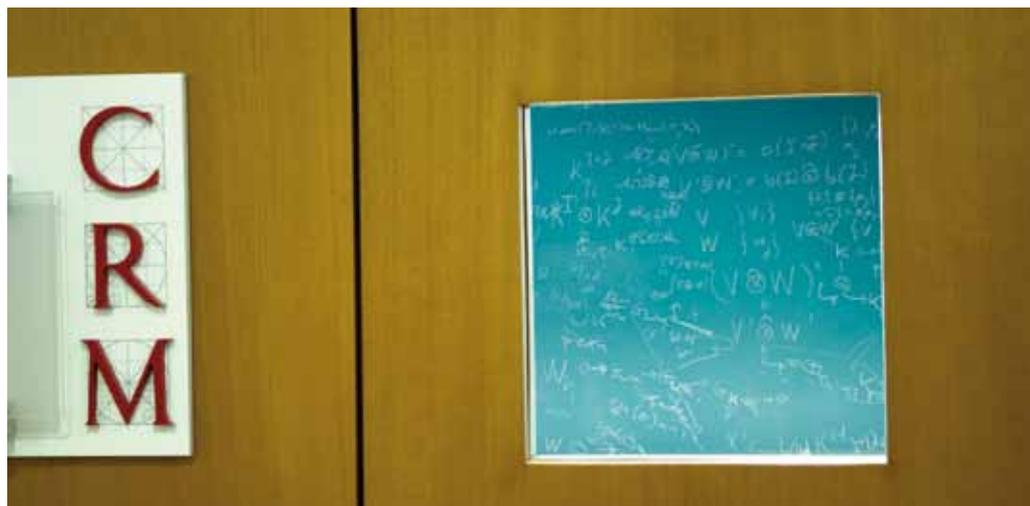
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting





## Centre for Mathematical Research CRM

26 years serving the mathematical community

The CRM was founded in 1984 to foster advanced research and training in mathematics through co-operation and synergies with universities and other research organisations, with the goal of becoming an internationally recognised scientific institution.

The CRM organises six-month and yearlong research programmes on specific subjects and hosts recognised researchers and post-doctoral students

for long-term stays. It organises advanced specialist training courses, congresses and conferences and has its own publications. Its role is that of a driving force and impetus for mathematical research in Catalonia and Spain. Over 1,100 researchers from more than 60 countries have worked with the centre and over 4,000, including PhD students, have participated in the activities organised by the centre during the 26 years since it was founded. ■

<b>Director:</b>	Joaquim Bruna Floris
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Institute of Catalan Studies (IEC).
<b>Founded:</b>	1984 (consortium since 2002)
<b>Contact:</b>	www.crm.cat
	UAB Campus – P.O. Box 50
	08193 Bellaterra (Barcelona)
	Tel. +34 93 581 10 81 · crm@crm.cat



**Operating budget 2008: €1,706,174**  
39% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€723,190	€0
Non-competitive resources	€845,179	€137,805

### Centre staff

	Men	Women	Total
Research staff	40	5	45
Technical support staff	-	-	-
Administration & management	1	7	8
<b>Total</b>	<b>41</b>	<b>12</b>	<b>53</b>

Fourier analysis industrial  
financial mathematics  
computational neurosciences  
biomathematics

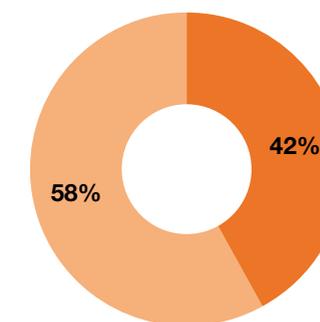
### Main competitive resources currently awarded

- 1 ICREA researcher.
- 1 grant from the Marie Curie Programme (FP7).

### Facilities and services

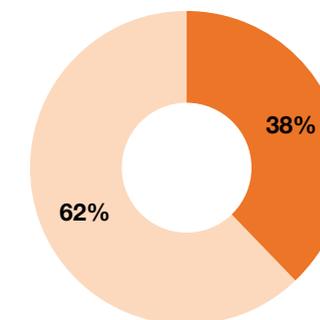
- 1,250 m<sup>2</sup> premises on the UAB campus.
- Organisation of advanced courses and workshops, focusing on recent advances in any field of mathematics.
- Master's degree in Financial Mathematics, in co-operation with the UB, the UAB and the Barcelona Stock Exchange.

### Source of funds



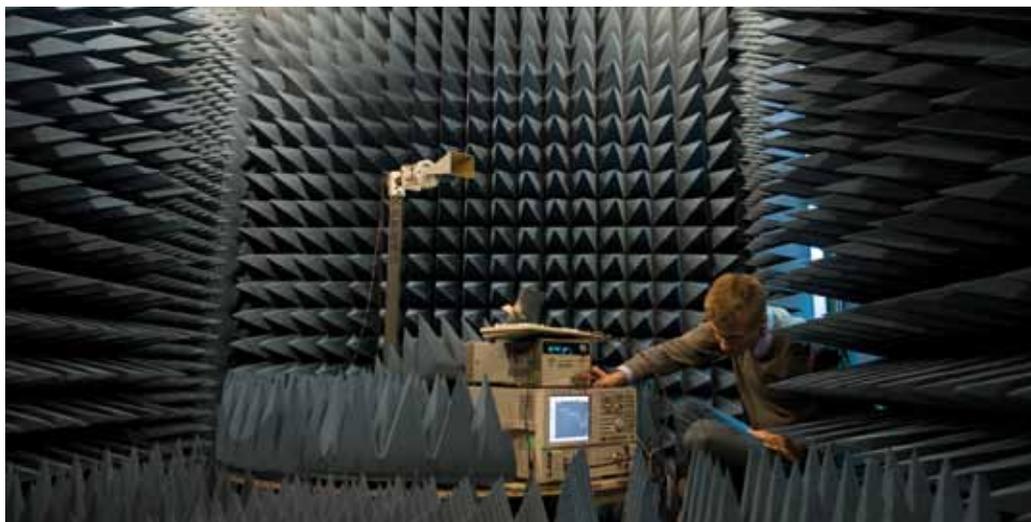
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated





# Catalan Telecommunications Technology Centre **CTTC**

Research and innovation in telecommunications

The pure and applied research activities carried out at the CTTC focus on technologies related to the physical, linking and network layers of the OSI communications protocol stack. R&D activities are carried out by the research and engineering units. The Research Unit contains five areas: Radio Com-

munications, Optical Networking, Communications Subsystems, Access Technologies and IP Technologies. The Engineering Unit carries out the horizontal development of hardware and software prototypes and demonstration models, and carries out most of the Centre's technology transfer activities. ■

## Operating budget 2008: €4,625,738

56% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,245,995	€779,743
Non-competitive resources	€2,600,000	€0

## Centre staff

	Men	Women	Total
Research staff	49	9	58
Technical support staff	19	2	21
Administration & management	2	9	11
Total	70	20	90

communications subsystems  
 access technologies  
 radio communications  
 optical networks  
 IP technologies

## Main competitive resources currently awarded

- Six European projects financed under the Sixth and Seventh Framework Programmes, lead centre for a European Space Agency project, seven projects under the Spanish National R&D&I Plan, of which the CTTC is the lead centre for six, three COST Actions, one of which the centre is leading, and three CENIT projects.

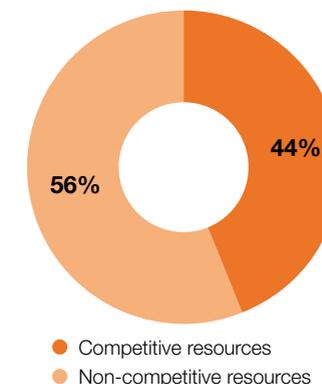
## Facilities and services

- 3,400 m<sup>2</sup> dedicated building on The Mediterranean Technology Park (PMT-UPC).
- The centre currently has six laboratories, one for each research unit, and an additional hardware engineering laboratory, an engineering workshop and an anechoic chamber.
- The centre has its own pre- and post-doctoral training programmes.
- 14 patents currently in progress, 8 of which have been published internationally and 1 granted.

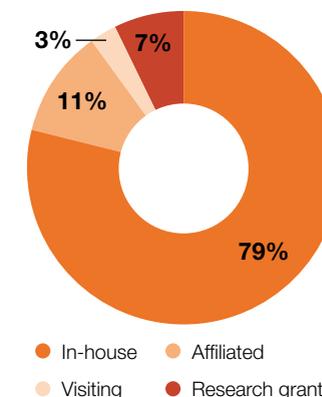
<b>Director:</b>	Miguel Ángel Lagunas Hernández
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Technical University of Catalonia (UPC). Ramon Llull University (URL)
<b>Founded:</b>	2001
<b>Contact:</b>	www.cttc.es The Mediterranean Technology Park (PMT-UPC) Av. Carl Friedrich Gauss, 7. 08003 Castelldefels (Barcelona) Tel. +34 93 645 29 00 · info@cttc.es



## Source of funds



## Research staff





## Computer Vision Centre **CVC**

Research and development of artificial vision systems

Meeting the scientific and technological challenge of computer vision requires coordination between different fields of research including visual sciences, optics, IT, mathematics and electronics. It is hoped that computer vision research, as well as helping us to understand how biological sight

works, will have a major impact on our daily lives.

The CVC, based at the Autonomous University of Barcelona (UAB) main campus, is working to ensure that the development of computer vision becomes one of Catalonia's key scientific, technological and industrial activities. ■

<b>Director:</b>	Josep Lladós Canet
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB)
<b>Founded:</b>	1994
<b>Contact:</b>	www.cvc.uab.es UAB Campus. Building O 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 581 18 28 · cvc@cvc.uab.es



### Operating budget 2008: €2,907,526

13% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,421,446	€960,080
Non-competitive resources	€526,000	€0

### Centre staff

	Men	Women	Total
Research staff	83	20	103
Technical support staff	10	1	11
Administration & management	3	9	12
Total	96	30	126

colour texture **vision** artificial robotic  
document analysis image sequencing  
object recognition **medical image**

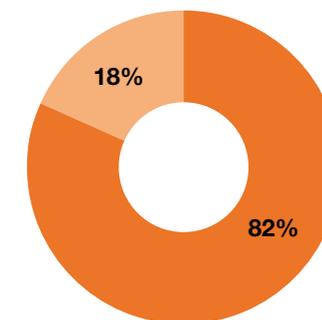
### Main competitive resources currently awarded

- 3 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 2 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).
- 1 Marie Curie grant.
- 2 international projects (FP7).

### Facilities and services

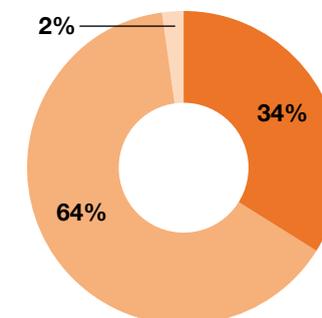
- 2000 m2 dedicated building on the UAB campus.
- Laboratories equipped with lighting systems, cameras and optical systems, image hardware and software, and workstations.
- Pre-doctoral and masters degree programmes, courses and seminars.
- Portfolio of 1 Spanish and 3 international patents (PCT).
- 5 companies created (one every 2-3 years).

### Source of funds



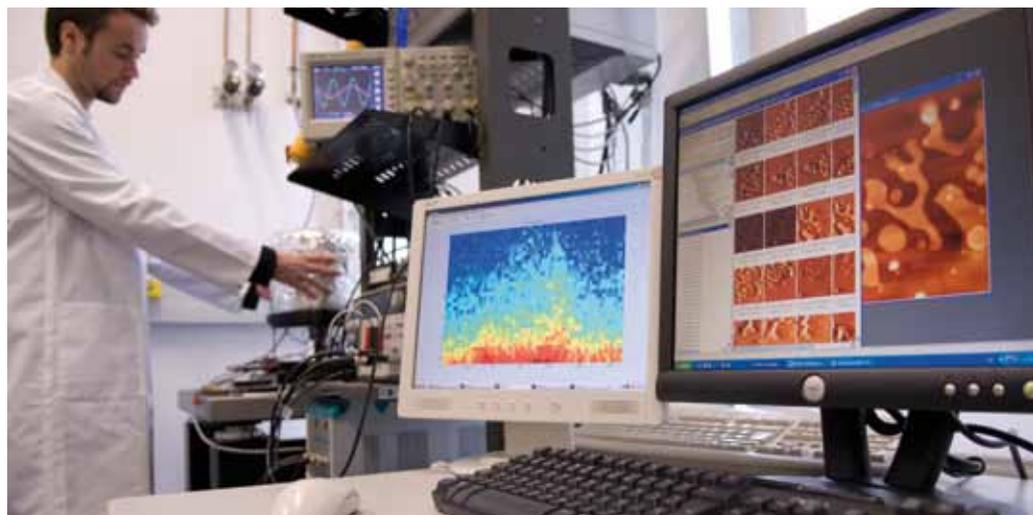
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting





# Institute for Bioengineering of Catalonia **IBEC**

Research, technology and life

The Institute for Bioengineering of Catalonia (IBEC) is a multi-disciplinary research centre in Barcelona, specialising in nanomedicine and bioengineering. Its mission is to develop multi-disciplinary research at the highest international level, which, via the creation of knowledge, can help to improve health and the quality of life and generate wealth. Its closeness and links to the univer-

sity and business worlds are assets that facilitate the pursuit of this objective. Its scientific work is divided into six research programmes: cellular biotechnology; biomechanics and cellular biophysics; nanobiotechnology; biomaterials, tissue engineering and implants; medical instruments and signal processing technology; and robotics and biomedical images. ■

<b>Director:</b>	Josep Anton Planell Estany
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Barcelona (UB). Technical University of Catalonia (UPC)
<b>Founded:</b>	2005
<b>Contact:</b>	www.ibecbarcelona.eu Barcelona Science Park (PCB). Baldiri Reixach, 10. 08028 Barcelona Tel. +34 93 403 97 06 · info@ibecbarcelona.eu



**Operating budget 2008: €2,881,840**  
66% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€911,950	€79,890
Non-competitive resources	€1,890,000	€0

### Centre staff

	Men	Women	Total
Research staff	99	55	154
Technical support staff	5	7	12
Administration & management	4	11	15
Total	108	73	181

cellular biotechnology  
tissue engineering  
biophysics  
biomechanics  
biomedical robotics  
nanobiotechnology

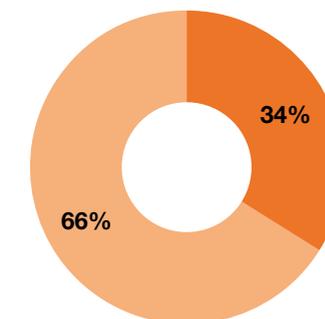
### Main competitive resources currently awarded

- 1 Starting Independent Researcher Grant (European Research Council).
- 4 ICREA researchers.
- 4 grants from the Marie Curie Programme (FP7).
- 5 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).

### Facilities and services

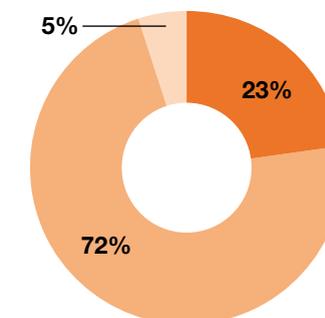
- 2500 m<sup>2</sup> in the UB's Barcelona Science Park (PCB).
- Spin-off: Aleria Biodevices.
- Nanotechnology Platform, Spanish Nanomedicine Platform.

### Source of funds



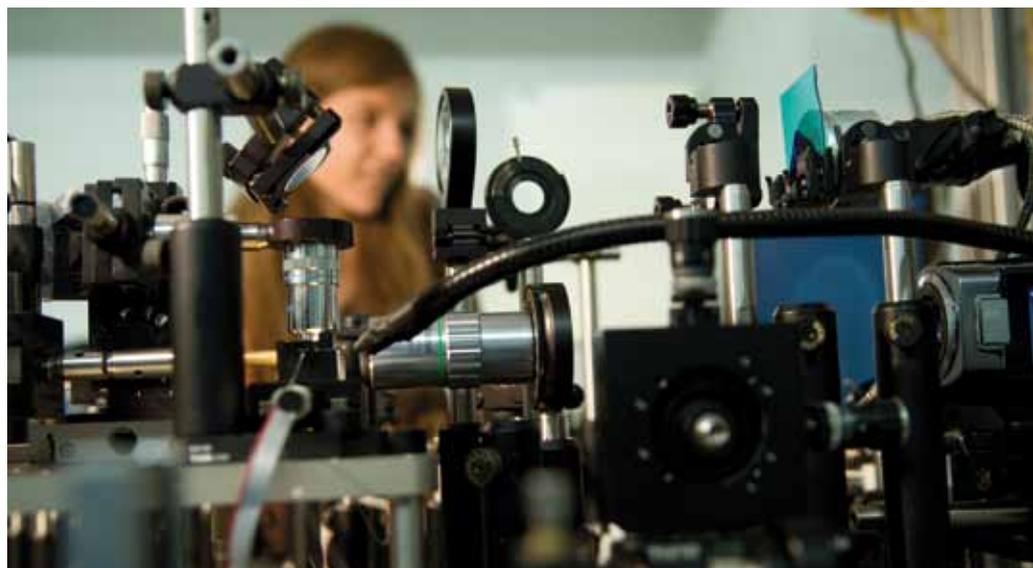
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting





# Institute of Photonic Sciences ICFO

The science of light

The ICFO's research and training activities focus on the various branches of the optical sciences and technologies

It carries out broad-based, groundbreaking research across a range of fields in the science of light, from optical telecommunications to biotechnology, including remote detection, sensors, quantum information and industrial photonics.

On the educational side, the centre offers the opportunity to obtain a PhD in optical sciences with a broad coverage of its basics and applications.

The centre establishes working partnerships with industry and the private sector in general, and fosters the creation of spin-offs by its researchers and, particularly, by its graduates, thus contributing to economic development and the generation of wealth. ■

<b>Director:</b>	Lluís Torner Sabata
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Technical University of Catalonia (UPC)
<b>Founded:</b>	2002
<b>Contact:</b>	www.icfo.es
<b>ICFO<sup>R</sup></b>	The Mediterranean Technology Park (PMT-UPC) Av. Canal Olímpic, s/n. 08860 Castelldefels (Barcelona) Tel. +34 93 553 40 01 · secretaria@icfo.es



## Operating budget 2008: €9,003,045

44% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€4,840,475	€0
Non-competitive resources	€4,000,000	€162,570

## Centre staff

	Men	Women	Total
Research staff	120	21	141
Technical support staff	11	1	12
Administration & management	7	20	27
Total	138	42	180

energy nanophotonics  
environment photonics  
safety quantum optics information  
biophotonics health

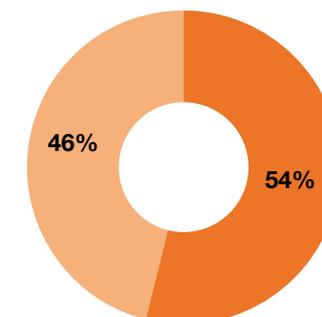
## Main competitive resources currently awarded

- 1 Starting Independent Researcher Grant (European Research Council)
- 2 Advanced Investigators Grants (European Research Council).
- 8 ICREA researchers.
- 3 grants from the Marie Curie Programme (FP7).
- 8 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 11 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

## Facilities and services

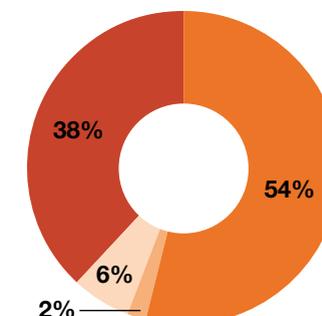
- 8400 m<sup>2</sup> dedicated building on the UPC science and technology park, PMT-UPC.
- Nanophotonics Laboratory.
- PhD programme in Photonics in cooperation with the UPC.

## Source of funds



- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated
- Visiting
- Research grants





## Institute of Chemical Research of Catalonia ICIQ

For quality research in chemistry

The ICIQ's multidisciplinary, high-quality research model focuses on the fields of chemical catalysis, renewable energies and supramolecular chemistry with reference to molecular nanotechnology.

The aims of this model are to find solutions to problems related to the wellbeing of the region and its inhabitants, ensuring sustainable development and contributing to improving the competitiveness of the chemical and pharmaceutical industries. ■

<b>Director:</b>	Miquel Àngel Pericàs Brondo
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Rovira i Virgili University (URV). Bayer Polímeros, S.L. Repsol YPF, S.A. Basf Española, S.A. Laboratoris Esteve, S.L.
<b>Founded:</b>	2000
<b>Contact:</b>	www.iciq.es Av. Paisos Catalans, 16. 43007 Tarragona Tel. +34 977 920 200 · iciq@iciq.es



### Operating budget 2008: €10,648.022

59% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€2,726,000	€1,475,000
Non-competitive resources	€6,327,022	€120,000

### Centre staff

	Men	Women	Total
Research staff	76	45	121
Technical support staff	12	14	26
Administration & management	13	25	38
Total	101	84	185

chemistry supramolecular  
molecular nanotechnology  
industry catalysis  
renewable energies

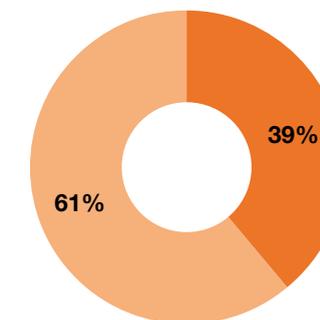
### Main competitive resources currently awarded

- 1 Starting Independent Researcher Grant (European Research Council).
- 1 Advanced Investigators Grant (European Research Council).
- 6 ICREA researchers.
- 1 grant from the Marie Curie Programme (FP7).
- 1 grant from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 8 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

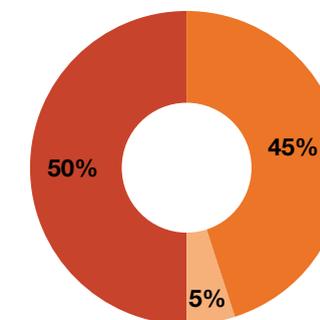
- 12,812 m<sup>2</sup> dedicated building on the URV campus.
- Research support services: X-ray diffraction, high-resolution mass spectrometer, nuclear magnetic resonance, parallel synthesis – process chemistry, heterogeneous catalysis and photophysics.

### Source of funds



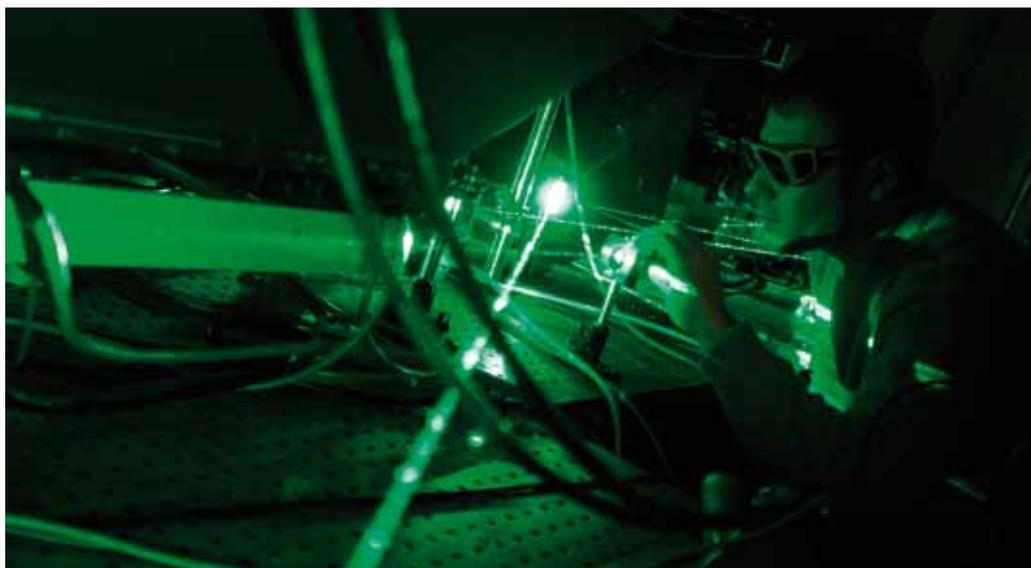
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Research grants





# Catalan Institute of Nanotechnology ICN

Towards a revolutionary new technology

The range of sectors that can make use of nanoscience is very broad and has benefited in recent years from the strategic orientation of research and technology policies in Catalonia.

The ICN carries out cutting-edge research in nanobiology and nanobiomedicine. The Institute's work gives priority to the physical and chemical aspects of nanoscience, i.e. the synthesis, manufacture, uses

and study of the properties and applications of nanometric materials. The subsequent applications of this work respond to social demand in areas such as metrology, instrumentation, energy and the environment.

The Institute maintains its commitment to the university by taking an active part in the teaching of students and entrepreneurs and giving masters and doctorate courses. ■

<b>Director:</b>	Jordi Pascual Gainza
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB)
<b>Founded:</b>	2003
<b>Contact:</b>	www.nanocat.org UAB Campus, Building CM7 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 581 44 08 · icn@uab.es



## Operating budget 2008: €4,110,563

54% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,878,210	€0
Non-competitive resources	€2,147,573	€84,780

## Centre staff

	Men	Women	Total
Research staff	43	17	60
Technical support staff	2	2	4
Administration & management	9	8	17
Total	54	27	81

nanotechnology  
nanophysics nanoscience  
nanobiology revolution  
nanostructures  
nanobiomedicine

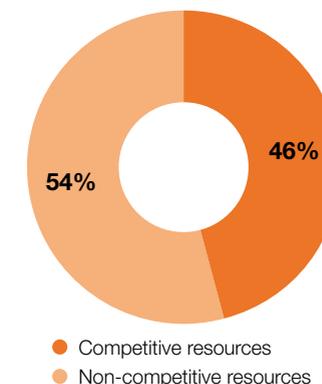
## Main competitive resources currently awarded

- 2 Starting Independent Researcher Grants (European Research Council).
- 6 ICREA researchers.
- 1 grant from the Marie Curie Programme (FP7).
- 5 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 1 grant from the Juan de la Cierva Programme (Ministry of Science and Innovation).

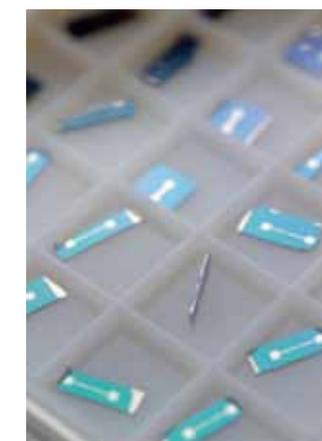
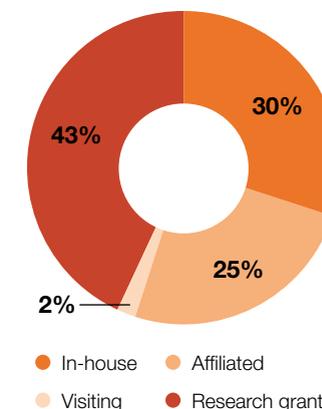
## Facilities and services

- 1,804 m<sup>2</sup> of own and rented premises on the UAB campus.
- Portfolio of 4 Spanish and 2 international patents (PCT).

## Source of funds



## Research staff





## Catalan Institute of Palaeontology ICP

100% palaeontology

The Catalan Institute of Palaeontology (ICP) is a leading centre for research, conservation and the dissemination of knowledge about vertebrate and human palaeontology. Its work focuses on mammal palaeobiology in limited energy ecosystems; research into the Mesozoic era; the fauna of the Neogene and Quaternary eras, taking advantage of the rich fossil deposits found in Catalonia; palaeoprimatology; and virtual pal-

aeontology, used to produce three-dimensional models and simulations.

The institute places particular emphasis on the dissemination of knowledge about our palaeontological heritage and its significance. Researchers' findings are therefore on display to the public at the Crusafont Museum in Sabadell, near Barcelona, and the centre is helping with the development of a network of local palaeontological interpretation centres around Catalonia. ■

<b>Director:</b>	Salvador Moyà Solà
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB)
<b>Founded:</b>	2006
<b>Contact:</b>	www.icp.cat
	Escola Industrial, 23 08201 Sabadell (Barcelona) Tel. +34 93 726 17 69 · icp@icp.cat



### Operating budget 2008: €1,786,454

41% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€977,631	€15,000
Non-competitive resources	€793,823	€0

### Centre staff

	Men	Women	Total
Research staff	14	4	18
Technical support staff	1	7	8
Administration & management	4	4	8
Total	19	15	34

palaeobiology  
neogene and mesozoic  
quaternary fauna museum  
virtual palaeontology  
palaeoprimatology

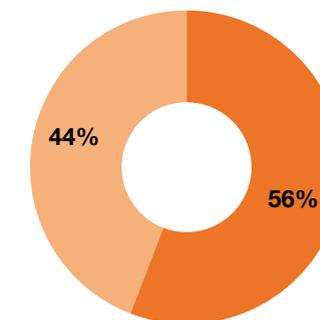
### Main competitive resources currently awarded

- 2 ICREA researchers.
- 1 grant from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

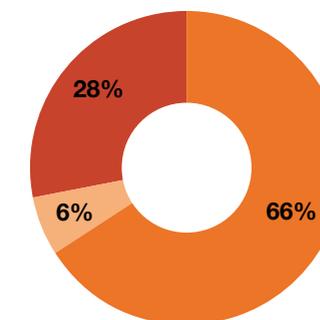
- 1,600 m<sup>2</sup> dedicated building in Sabadell including museum, exhibition hall, classrooms, library and Crusafont historical archive.
- The centre provides a consultancy, events management and materials preparation service.
- 400 m<sup>2</sup> temporary building on UAB campus with optical and microscopy services.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Research grants





## Catalan Institute for Water Research ICRA

Research into the water cycle and its management

The importance of water as a basic resource and the wide range of problems related to it have led to the creation of this organisation whose purpose is research in all fields related to water. It particularly focuses on those concerned with the rational use of water and the effects of human activity on hydrological resources.

The ICRA hopes to become a benchmark institution for all the public and private bodies working with water and a meeting point between the research it conducts and society. ■

<b>Director:</b>	Damià Barceló Culleres
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Girona (UdG). Catalan Water Agency (ACA)
<b>Founded:</b>	2006
<b>Contact:</b>	www.icra.cat Building H <sub>2</sub> O. University of Girona Science and Technology Park Emili Grahit, 101. 17003 Girona Tel. +34 972 183 380 · info@icra.cat



### Operating budget 2008: €1,007,937

63% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€248,500	€9,437
Non-competitive resources	€750,000	€0

### Centre staff

	Men	Woman	Total
Research staff	2	0	2
Technical support staff	0	2	2
Administration & management	2	3	5
Total	4	5	9

climate change ecological  
water quality society  
economy pollutants

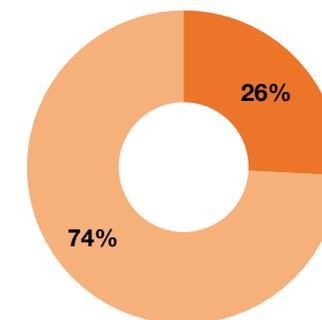
### Main competitive resources currently awarded

- 2 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 1 grant from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

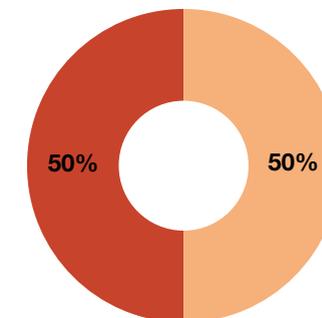
- 6,770 m<sup>2</sup> dedicated building in the UdG Science and Technology Park. Contains laboratories, sample preparation room, pilot and transfer floors (1,422 m<sup>2</sup>), offices (875 m<sup>2</sup>), common areas and meeting hall (3,087 m<sup>2</sup>).

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- Affiliated
- Research grants





# Space Studies Institute of Catalonia IEEC

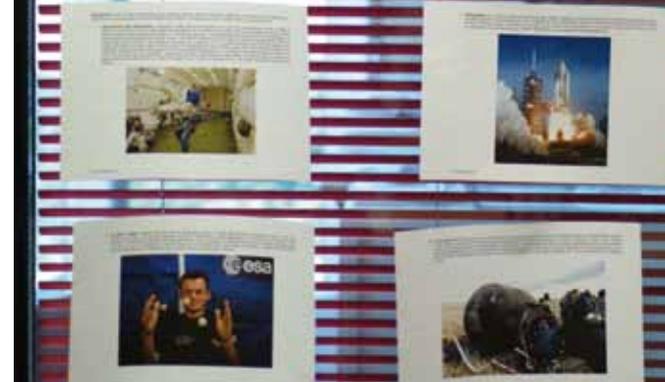
Fourteen years of research from space and into space

The IEEC carries out research from space (and with some terrestrial instruments) into the cosmos, including studies of the earth. Its aim is to develop basic human knowledge and to develop new technologies that put Catalonia at the cutting edge of international research. An additional and no less important function is its role in transmitting this knowledge to both specialist audiences and the general public.

Its research work focuses on earth sciences, astrophysics and cosmology, fundamental physics and astrodynamics.

The IEEC is structured as a confederation of 4 institutes: The Institute of Space Sciences (CSIC), the Institute of Cosmos Sciences (ICC-UB), the Aeronautics and Space Research Center (CRAE-UPC) and the Space Research Centre (CERES-UAB). ■

<b>Director:</b>	Jordi Isern Vilaboy
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia , University of Barcelona (UB) Autonomous University of Barcelona (UAB) Technical University of Catalonia (UPC) Spanish National Research Council (CSIC)
<b>Founded:</b>	1996
<b>Contact:</b>	www.ieec.cat
<b>IEEC<sup>R</sup></b>	Nexus Building, Office 201. Gran Capità, 2-4. 08034 Barcelona Tel. +34 93 280 20 88 · ieec@ieec.cat



## Operating budget 2008: €1,724,951

35% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1.123.151	€0
Non-competitive resources	€601.800	€0

## Centre staff

	Men	Women	Total
Research staff	128	48	176
Technical support staff	26	2	28
Administration & management	0	6	6
<b>Total</b>	<b>154</b>	<b>56</b>	<b>210</b>

sciences earth space  
fundamental physics  
astronomical observatories navigation systems  
terrestrial

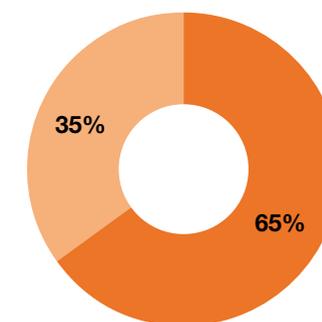
## Main competitive resources currently awarded

- 4 grants from the Marie Curie Programme (FP7).

## Facilities and services

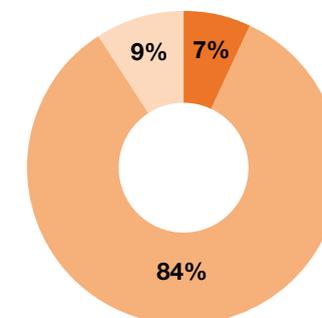
- 233 m<sup>2</sup> in the Nexus Building, Campus Nord, and 800 m<sup>2</sup> on the UAB campus.
- The IEEC participates in the scientific and technical management of the Montsec Astronomical Observatory.
- Campus affiliated with the International Space University.

## Source of funds

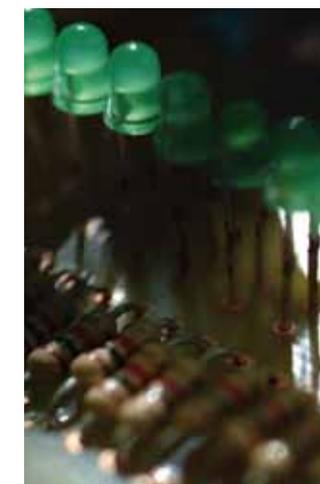


- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated
- Visiting





# Institute for High Energy Physics IFAE

At the frontier between microcosm and macrocosm

The IFAE conducts research at the frontiers of fundamental physics, namely in particle physics, astrophysics and cosmology. The centre has two divisions: experimental and theoretical research.

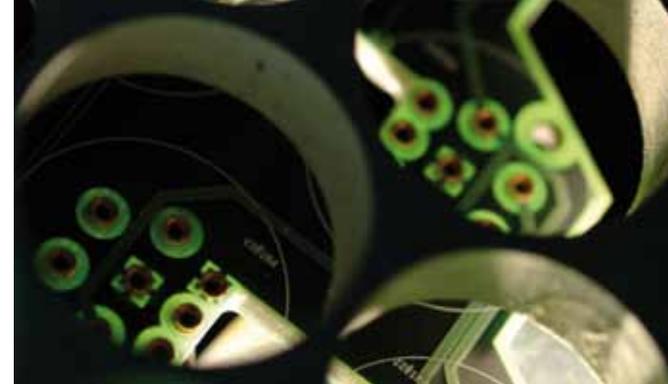
The research activities of the theoretical division focus on the standard model and theories that go beyond this model, in particle astrophysics and cosmology. The experimental division carries out experiments using particle accelerators in Europe, such as CERN; in the US, Japan and the Canary Islands,

using gamma ray telescopes such as the MAGIC telescope; and cosmological observations in Chile.

The medical physics group meanwhile is developing digital imaging techniques for diagnostic purposes.

The IFAE is also a training centre, recognised as a university institute affiliated with the Autonomous University of Barcelona (UAB), enabling it to develop masters' programmes and supervise doctoral theses. ■

<b>Director:</b>	Matteo Cavalli-Sforza
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Autonomous University of Barcelona
<b>Founded:</b>	1991
<b>Contact:</b>	www.ifae.es
	UAB Campus. Faculty of Sciences, Cn Building 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 581 19 84



## Operating budget 2008: €3,688,683

25% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€2.755.783	€0
Non-competitive resources	€932.900	€0

## Centre staff

	Men	Women	Total
Research staff	71	11	82
Technical support staff	13	1	14
Administration & management	2	3	5
Total	86	15	101

astrophysics  
particle physics  
theoretical  
experimental  
CERN  
medical physics  
cosmology

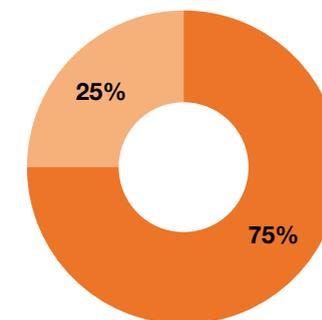
## Main competitive resources currently awarded

- 1 Advanced Investigators Grant (European Research Council).
- 8 ICREA researchers.
- 1 grant from the Marie Curie Programme (FP7).
- 5 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 4 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

## Facilities and services

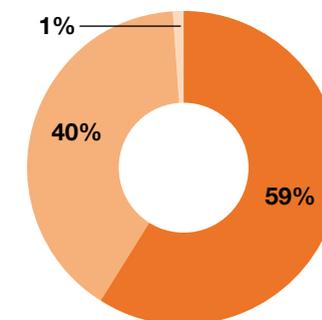
- 2,000 m<sup>2</sup> located on the UAB campus.
- 2 international patents (PCT) currently being extended to the EU, US and China.
- Spin-off: X-Ray Imatek.

## Source of funds



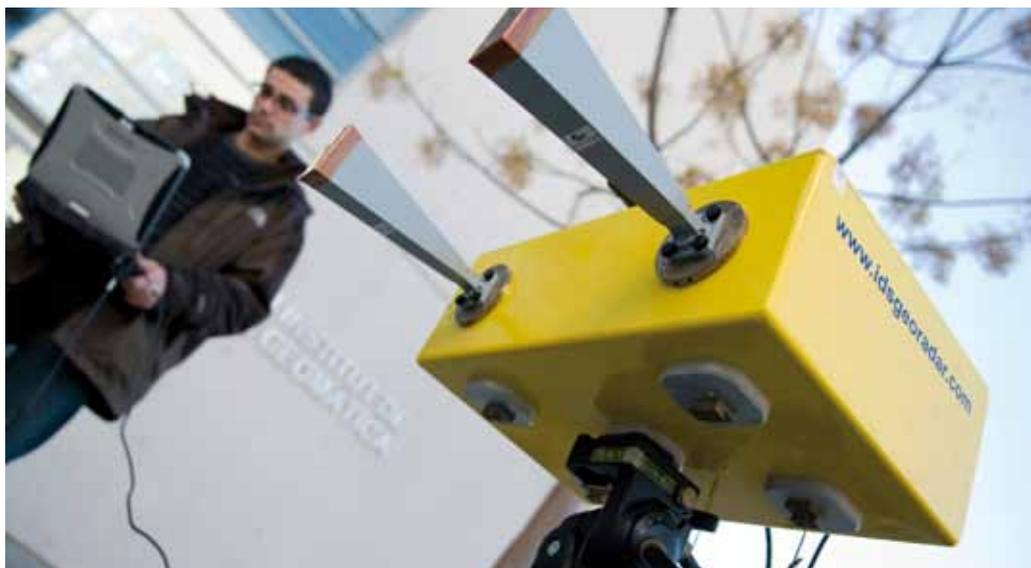
- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated
- Visiting





## Institute of Geomatics IG

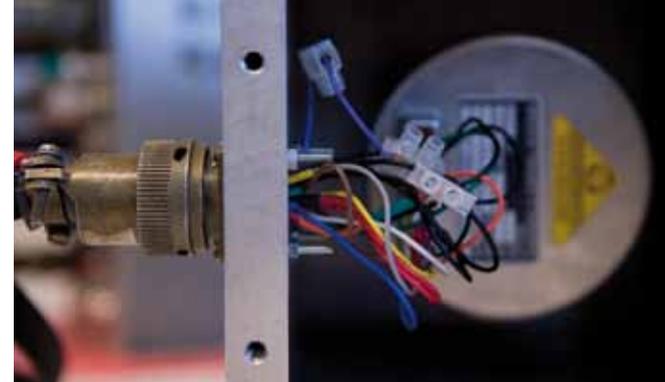
Developing a unique combination of science and technology

**G**eomatics is a multidisciplinary set of sciences and technologies that deal with the study, acquisition, storage, organisation, analysis, dissemination, management and use of geographically referenced spatial information.

The IG's mission is the development of the discipline through applied research and teaching, to the benefit

of society. Its work involves the transfer of knowledge to support and foster technological innovation in the fields of cartography, photogrammetry, remote sensing, sensor calibration and orientation, geodesy, topography and industrial metrology, geographical information systems, deformation measurement and navigation. ■

<b>Director:</b>	Ismael Colomina Fosch
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia , Technical University of Catalonia (UPC)
<b>Founded:</b>	1997
<b>Contact:</b>	www.ideg.es
 <b>INSTITUT DE GEOMÀTICA</b>	The Mediterranean Technology Park (PMT-UPC).
	Av. Carl Friedrich Gauss, 11, 08860 Castelldefels (Barcelona)
	Tel. +34 93 556 92 80 · info@ideg.es



### Operating budget 2008: €1,469,705

32% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€452.144	€542.21
Non-competitive resources	€475.345	€0

### Centre staff

	Men	Women	Total
Research staff	5	5	10
Technical support staff	4	2	6
Administration & management	1	3	4
Total	10	10	20

remote sensing GNSS  
deformation measurement  
sensor calibration and orientation  
photogrammetry  
geodesy

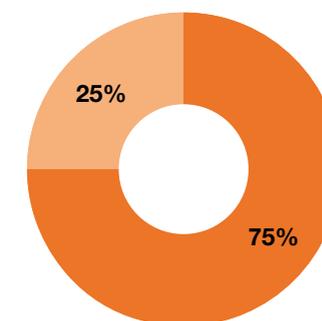
### Main competitive resources currently awarded

- The centre is involved in two projects under the EU's Seventh Framework Programme and a further six under the Spanish National R&D&I Plan, four of which it is leading.

### Facilities and services

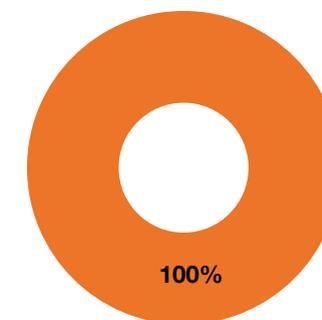
- 980 m<sup>2</sup> dedicated building in the UPC science and technology park, Parc PMT-UPC.
- The centre contains 20 offices, two classrooms, a computer centre, a geomatics and electronics laboratory, a library and a meeting room.

### Source of funds



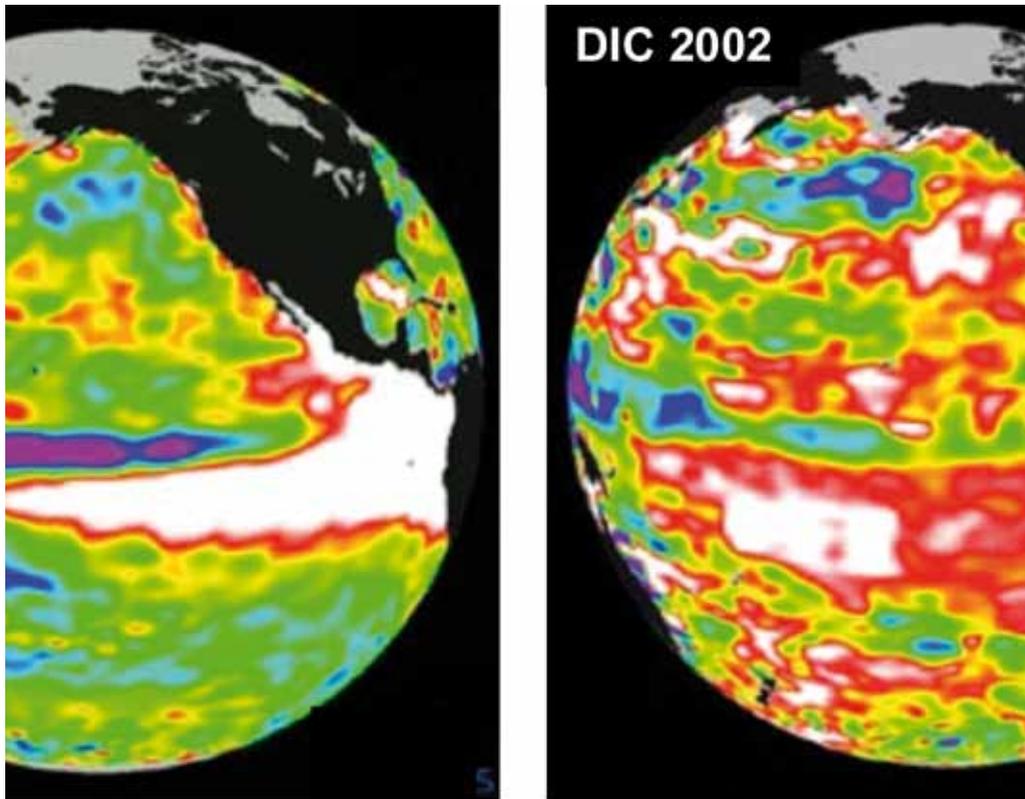
- Competitive resources
- Non-competitive resources

### Research staff



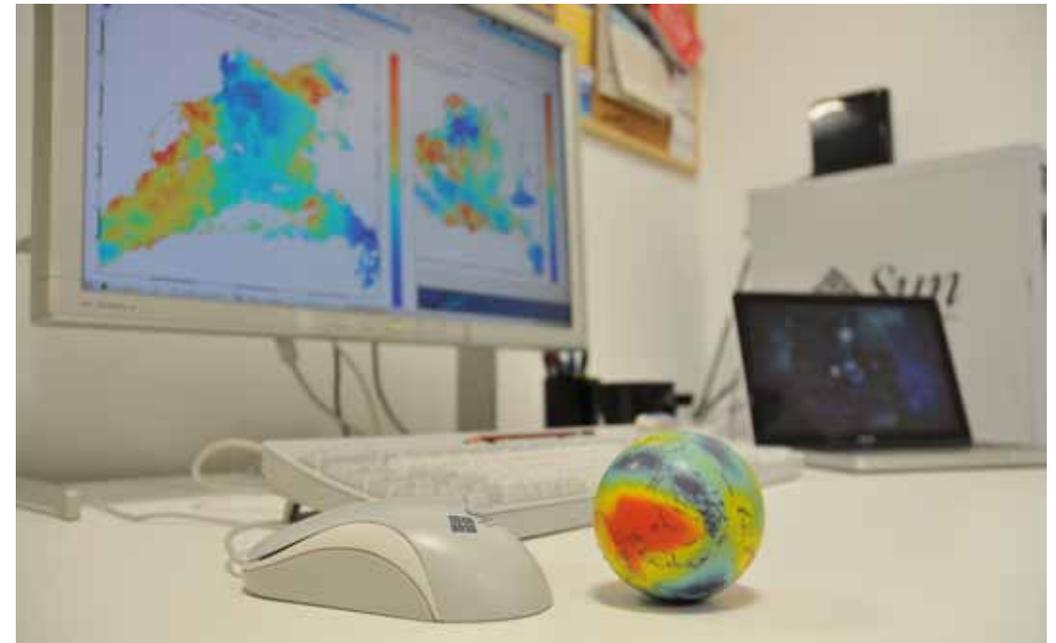
- In-house





## Catalan Climate Sciences Institute IC3

<b>Director:</b>	Xavier Rodó i López
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Barcelona (UB)
<b>Founded:</b>	2008
<b>Contact:</b>	www.ic3.cat
	Dr. Trueta, 203, 3r
	08005 Barcelona
	Tel. +34 93 567 99 77



### Understanding climate and the biosphere for the benefit of future generations

**Operating budget 2008: €500,000**  
100% Contribution from the Government of Catalonia

IC3's main aim is to generate high-quality knowledge about climate sciences, focusing on the Mediterranean area, based on advanced research techniques, education and the development of applications and tools for evaluating present and future climatic risks. The research benefits the government bodies involved, the business sector, other interested parties and society in general.

IC3 aims to be a leading research centre into the climate of the Mediterranean, playing a major role as an international centre in the field.

It is the first research institute dedicated to climate issues in Spain and fills a gap that previously

biogeochemistry  
**climate** dynamics  
forecasting  
**climate change**  
modelling  
palaeoclimatology

existed in the region and in southern Europe in general.

Its main lines of research include climate dynamics and impact, forecasting and regional models, and climate biogeochemistry. ■



## Catalan Institute for Energy Research **IREC**

<b>Director:</b>	Antoni Martínez García
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Barcelona (UB). Technical University of Catalonia (UPC). Rovira i Virgili University (URV). Research Centre for Energy, Environment and Technology (CIEMAT). Institute for Diversification and Saving of Energy (IDEA). ENDESA Servicios, S.L. Gas Natural SDG, S.A. Societat General de les Aigües de Barcelona, S.A.
<b>Founded:</b>	2008
<b>Contact:</b>	www.irec.cat C/Josep Pla 2, B2, Ground floor 08019 Barcelona Tel. +34 933 562 615 · info@irec.cat



### Contributing to a more sustainable energy future

The Catalonia Institute for Energy Research (IREC) carries out research and develops technology in the field of energy and its production, transformation, transportation, distribution and use, with a particular focus on technologies that will facilitate the transition to a new, more sustainable energy model, especially technologies that promote energy efficiency and saving, and technologies to produce and use clean and renewable energies.

The IREC's mission is to contribute to the sustainable development of Catalan society and the competitiveness of its businesses via innovation and the development of new technological products, medium- and long-term research, and the development of scientific and technical knowledge in the field of energy.

**Operating budget 2008: €1,400,000**  
40% Contribution from the Government of Catalonia

**energy efficiency**  
bioengineering  
CO<sub>2</sub> capture  
wind and wave energy  
**networks**  
advanced materials

The Institute's activities focus on two areas:

- A market-oriented approach involving the development of technologies, new products and new solutions for companies in the energy sector.
- Long-term research and the generation of knowledge within the Institute's groups and units, which may have commercial applications for the industry in the long term.

The Institute's approach can be defined as the balance between these two lines of work. ■



## Internet and Digital Innovation in Catalonia **i2CAT**

56

<b>Director:</b>	Sebastià Sallent Ribes
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Technical University of Catalonia (UPC). Pompeu Fabra University (UPF). Ramon Llull University (URL). Corporació Catalana de Mitjans Audiovisuals. Centre de Telecomunicacions i Tecnologies de la Informació. Centre d'Innovació i Desenvolupament Empresarial (ACCÍÓ-CIDEM). Servei Català de la Salut. Institut de Ciències Fotòniques. Centre Tecnològic de Telecomunicacions de Catalunya. Ajuntament de Barcelona . Tradia (AbertisTelecom). Al-Pi Telecomunicacions. Media Pro. Alcatel España, SA. Fujitsu España Services SA. Vodafone España, SA. Cisco Systems, SA. Interoute Iberia, SAU. Cromosoma TV Produccions. Juniper Networks.
<b>Founded:</b>	2003
<b>Contact:</b>	www.i2cat.net UPC Campus Nord. Gran Capità 2-4, 2nd Floor. 08034 Barcelona Tel. +34 935 532 510 · fundacion@i2cat.net



57



### Research and innovation in networks

**Operating budget 2008: €4,344,260**  
33% Contribution from the Government of Catalonia

The work of the i2CAT research centre focuses on technological developments for the Internet of the future.

Its main goal is to create, develop and transfer to industry and society new internet tools, developing a new network of networks that is ever more widespread, rapid, open to all kinds of information, that penetrates across all economic and social activities and allows communication between people, physical devices and nature.

i2CAT is based on a partnership between the university, the government, businesses and users to carry out strategic research into advanced Internet networks, services and new applications. Its exper-

**Internet**  
audiovisual services  
Internet architectures  
e-culture e-health  
the Internet of things  
optical networks  
e-education wireless networks  
sensor networks

imental infrastructures include a network and audiovisual platform that forms the heart of its research and innovation, providing the physical interconnection between all those involved, both in Spain and internationally. ■





## Centre of Regenerative Medicine in Barcelona **CMR[B]**

Research into the regenerative treatments of the future

The CMR[B] carries out research into regenerative medicine, the use of cell and tissue therapy to replace cells and tissues damaged or lost as a result of degenerative diseases. Potential fields of clinical application of the results of this research include cardiovascular medicine, neurodegenerative diseases, osteoarticular degenerative pathology, and certain endocrine diseases such as diabetes.

The centre is divided into two main areas: the Research Centre and the Stem Cell Bank, dedicated to the derivation, maintenance, characterisation and preservation of embryonic stem cells. The two areas work together to develop cell therapies for the treatment of a range of degenerative disorders. ■



### Operating budget 2008: €6,195,565

27% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,365,071	€207,556
Non-competitive resources	€3,400,000	€1,222,938

### Centre staff

	Men	Women	Total
Research staff	13	18	31
Technical support staff	2	18	20
Administration & management	4	8	12
Total	19	44	63

regeneration  
**stem cells**  
 heart development  
 differentiation  
 left-right patterning  
 tissues

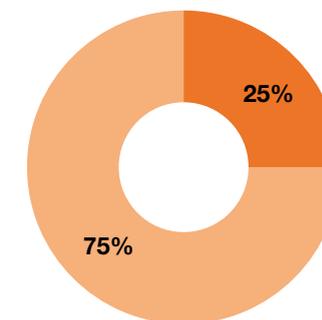
### Main competitive resources currently awarded

- 1 ICREA researcher.
- 1 grant from the Marie Curie Programme (FP7).
- 2 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 1 grant from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

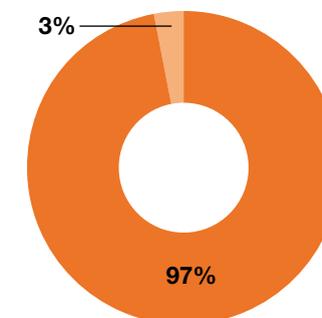
- 2714 m<sup>2</sup> premises in the Barcelona Biomedical Research Park, PRBB.
- Stem cell bank.
- Five technical platforms (aquatic animals, bioimaging and histology, flow cytometry, cell culture and embryo micromanipulation).
- 1 patent pending.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated



<b>Director:</b>	Juan Carlos Izpisua Belmonte
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Ministry of Science and Innovation. Spanish National Research Council (CSIC). University of Barcelona (UB). Autonomous University of Barcelona (UAB). Pompeu Fabra University (UPF). Barcelona City Council. Cellex Foundation
<b>Founded:</b>	2004
<b>Contact:</b>	www.cmrb.eu
<b>CMR[B]<sup>®</sup></b>	Barcelona Biomedical Research Park - PRBB Doctor Aiguader, 88. 08003 – Barcelona Tel. +34 93 316 03 00 · cmrb@cmrb.eu



# Centre for Research in Environmental Epidemiology **CREAL**

## Research into the environmental factors that affect human health

The Centre for Research in Environmental Epidemiology is an institute created at the end of 2005 to carry out advanced epidemiological research into the environmental factors that affect human health.

The CREAL is firmly committed to its responsibility for environmental epidemiology as part of the sciences of public health, and is deeply involved in the

processes of risk assessment and public environmental health practices. The centre's educational and advisory work forms part of this commitment.

The centre is currently working on 6 research programmes: respiratory disease, cancer, childhood illnesses, air pollution, water pollution and radiation. It also carries out transversal projects, such as those in biostatistics or education. ■



### Operating budget 2009: €3,449,258

49% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,664,140	€64,294
Non-competitive resources	€1,700,000	€20,824

### Centre staff

	Men	Women	Total
Research staff	16	24	40
Technical support staff	10	39	49
Administration & management	3	11	14
Total	29	74	103

water and air pollution  
childhood respiratory  
biostatistics radiation  
cancer environmental epidemiology

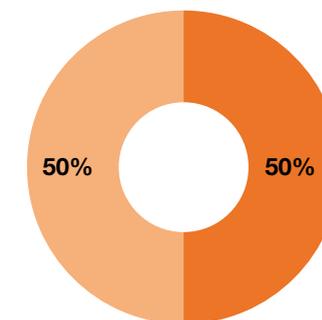
### Main competitive resources currently awarded

- 1 'Marie Curie Actions' grant (FP7), International Research Staff Exchange Scheme (IRSES), GEOCODE.
- 3 Río Ortega post-doctoral contracts.
- 1 Beatriu de Pinós post-doctoral contract.
- Participation in 20 EU projects, 4 coordinated by CREAL researchers.

### Facilities and services

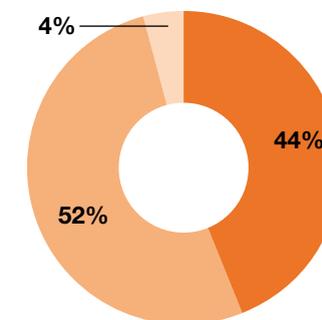
- 878 m<sup>2</sup> premises in the Barcelona Biomedical Research Park (PRBB).
- Teaching activities in the Pompeu Fabra University (UPF), the Autonomous University of Barcelona (UAB), the Barcelona Graduate School of Economics (Barcelona GSE) and the European Educational Programme in Epidemiology (EEPE).
- Advisory and technical consultancy services for public and private entities.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting



<b>Director:</b>	Josep M. Antó Boqué
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Pompeu Fabra University (UPF). Municipal Institute of Healthcare (IMAS)
<b>Founded:</b>	2005
<b>Contact:</b>	www.creal.cat Barcelona Biomedical Research Park - PRBB Doctor Aiguader, 88. 08003 Barcelona Tel. +34 93 214 73 00 · info@creal.cat





# Barcelona Centre for International Health Research **CRESIB**

Responding to new global health challenges in the 21st century

The CRESIB's mission is to generate scientific knowledge that has a direct impact on improving the health of vulnerable populations in poorer countries and tackling the health problems caused by population movements.

The Centre's scientific strategy is based on a matrix structure that enables it to adopt a translational and multidisciplinary approach to research into a range

of health problems. The research is therefore organised under programmes that include studies of the most widespread poverty- and migration-related diseases (malaria, imported pathologies, HIV/AIDS and viral and bacterial infections) and disciplines such as public health, medical anthropology, maternal and reproductive health and host-pathogen interactions). ■

<b>Director:</b>	Pedro L. Alonso Fernández
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Barcelona (UB). August Pi i Sunyer Biomedical Research Institute (IDIBAPS). Hospital Clínic de Barcelona. Cellex Foundation.
<b>Founded:</b>	2006
<b>Contact:</b>	www.cresib.cat Roselló, 132, 4th Floor. 08036 Barcelona Tel. +34 93 227 57 06 · info@cresib.cat



## Operating budget 2008: €2,048,061\*

54% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€24,021	€924,040
Non-competitive resources	€1,100,000	€0

\* Over 7 M€ devoted to international health projects.

## Centre staff

	Men	Women	Total
Research staff	6	8	14
Technical support staff	1	3	4
Administration & management	2	1	3
Total	9	12	21

disease health malaria HIV/AIDS poverty migration chagas

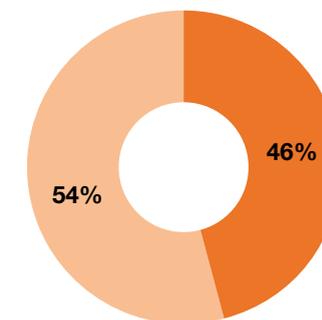
## Main competitive resources currently awarded

- 1 ICREA researcher.
- 2 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).

## Facilities and services

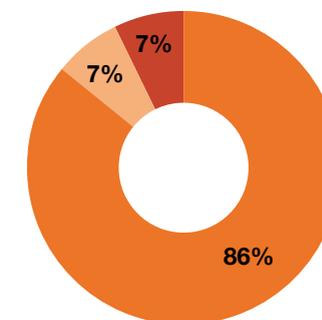
- 105 m<sup>2</sup> laboratory and 686 m<sup>2</sup> office facilities within the Hospital Clínic buildings.
- Biostatistics Unit.

## Source of funds



- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated
- Research grants





## Centre for Genomic Regulation **CRG**

### Behind the human genome

The CRG's main goal is to be an international benchmark centre in biomedical research, in particular in the field of genomic and proteomic regulation.

This research is focused on finding new diagnostic methods to help prevent and treat genetic disorders, and to transfer technology to the biomedical, pharmacology and biotechnology industries. ■

<b>Director:</b>	Miguel Beato del Rosal
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Pompeu Fabra University (UPF). Ministry of Science and Innovation.
<b>Founded:</b>	2000
<b>Contact:</b>	www.crg.es Barcelona Biomedical Research Park - PRBB Doctor Aiguader, 88. 08003 Barcelona Tel. +34 93 316 01 00 · comunicacio@crg.es



### Operating budget 2008: €21,635,568

53% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€7,850,125	€724,153
Non-competitive resources	€12,103,582	€957,708

### Centre staff

	Men	Women	Total
Research staff	115	98	213
Technical support staff	28	55	83
Administration & management	13	36	49
Total	156	189	345

genomics proteomics  
bioinformatics cellular biology  
cancer health gene therapy

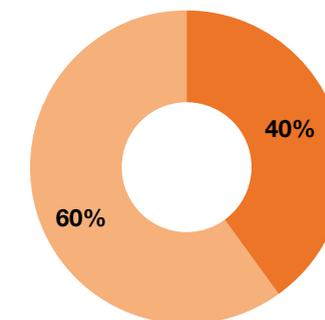
### Main competitive resources currently awarded

- 3 Starting Independent Researcher Grants (European Research Council).
- 1 Advanced Investigators Grant (European Research Council).
- 11 ICREA researchers.
- 8 grants from the Marie Curie Programme (FP7).
- 7 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 11 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

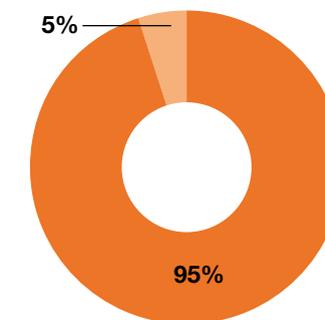
- 7,388 m<sup>2</sup> premises in the Barcelona Biomedical Research Park, PRBB.
- Science and technology services that manage an advanced light microscopy unit, bioinformatics, genomics and proteomics units and a high throughput screening facility.
- 1 spin-off and 4 Spanish patents and 3 international patents (PCT).
- PhD and post-doctoral programme in cooperation with the UPF.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated





## Forest Technology Centre of Catalonia **CTFC**

### Governance, management, exploitation and protection of natural agro-forestry resources

Catalonia contains almost 2 million hectares of natural vegetation, of which over half are forests. The CTFC was set up in 1996 to help modernise the forestry sector and make it more competitive, to contribute to rural development and the sustainable management of the natural environment, through research, training and the transfer of technology and knowledge to society.

The centre focuses on meeting the demands of society and resolving problems related to forestry areas and the rural environment. Its work is based on three programmes: the functioning of agro-forestry ecosystems, the governance and socioeconomics of the rural environment, and the multi-functional management of the environment. ■



**Operating budget 2008: €6,498,237**  
13% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€2,354,912	€131,168
Non-competitive resources	€3,046,499	€965,658

#### Centre staff

	Men	Women	Total
Research staff	36	27	63
Technical support staff	11	19	30
Administration & management	6	34	40
Total	53	80	133



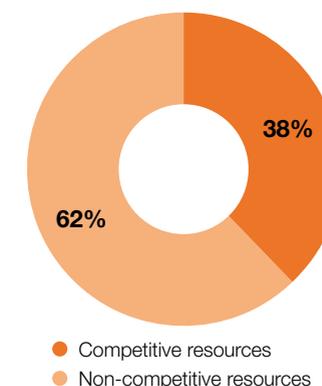
#### Main competitive resources currently awarded

- 3 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 3 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

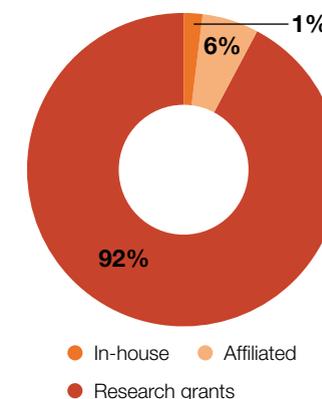
#### Facilities and services

- 3,500 m<sup>2</sup> of own premises and a further 3000 m<sup>2</sup> rented.
- Analysis and testing laboratories, GIS laboratory, experimental plots, meteorological stations.

#### Source of funds

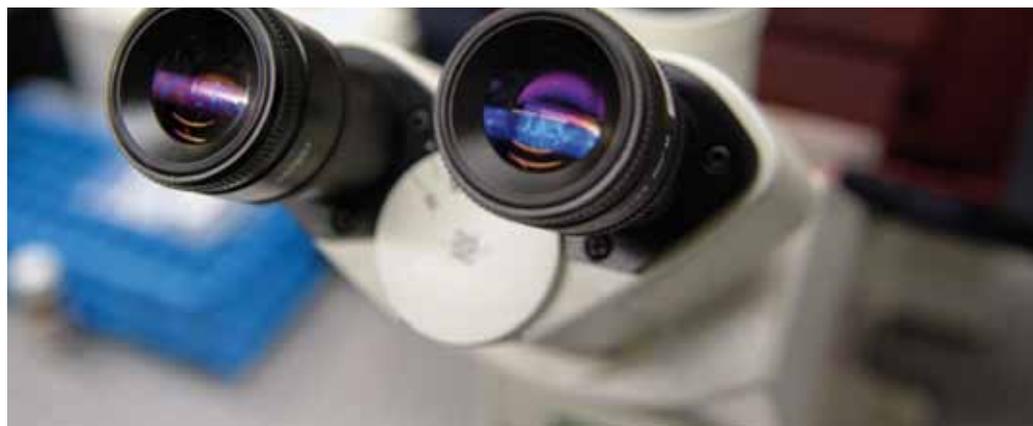


#### Research staff



<b>Director:</b>	Glòria Domínguez Torres
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. University of Lleida (UdL). Lleida Provincial Council. Solsonès Regional Council Catalan Foundation for Research and Innovation (FCRI). Catalan Centre for Integrated Rural Development.
<b>Founded:</b>	1996
<b>Contact:</b>	www.ctfc.cat Crta. de Sant Llorenç de Morunys, km 2. 25280 Solsona (Lleida) Tel. +34 973 481 752





# Catalan Institute of Cardiovascular Sciences **ICCC**

## Research on the cardiovascular system and its disorders

Cardiovascular and vascular-cerebral diseases are the main causes of death and sickness in Spain and other developed countries, with a major impact on their populations and high costs for their national health systems.

The ICCC is implementing a strategic cardiovascular research plan whose goals are to achieve scientific excellence, international presence and cooperation with other research groups both in Spain and

abroad. Its programmes include pure and translational research with the aim of transferring the scientific results obtained to clinical practice. It focuses on the development of new therapeutic techniques, improving diagnosis and the prevention of cardiovascular diseases.

Together with the Spanish High Council for Scientific Research (CSIC), the centre participates in the Joint Center for Cardiovascular Research. ■

<b>Director:</b>	Lina Badimon Maestro
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB). Hospital de la Santa Creu i Sant Pau.
<b>Founded:</b>	2000
<b>Contact:</b>	www.iccc.cat Hospital de la Santa Creu i Sant Pau St. Antoni Maria Claret, 167. 08025 Barcelona Tel. +34 93 556 59 00



**Operating budget 2008: €2,669,423**  
57% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€729,792	€297,050
Non-competitive resources	€1,520,000	€122,581

### Centre staff

	Men	Women	Total
Research staff	22	39	61
Technical support staff	2	14	16
Administration & management	2	7	9
Total	26	60	86

**arteriosclerosis**  
**myocardial infarction**  
**thrombosis** **biomarkers**  
**cardiovascular genetics**  
**cellular proteome**

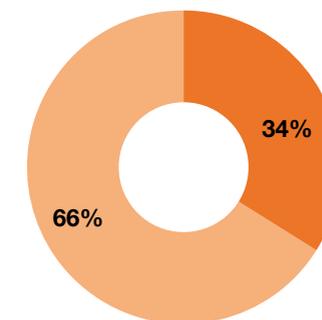
### Main competitive resources currently awarded:

- 1 grant from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 1 grant from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

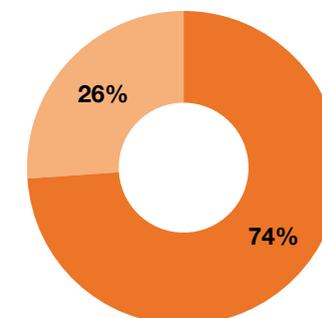
- 3,889 m<sup>2</sup> premises in the Hospital de la Santa Creu i Sant Pau.
- Portfolio of 2 international patents (PCT).
- Confocal microscopy, microdissection (LCM) and flow cytometry services and an animal experimentation unit.

### Source of funds



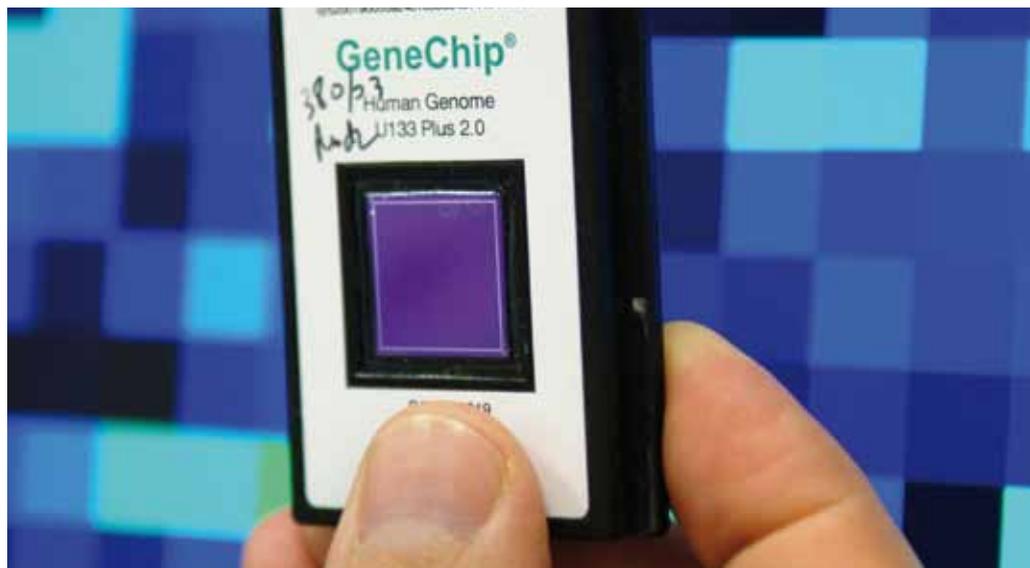
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated





## August Pi i Sunyer Biomedical Research Institute **IDIBAPS**

Minimising the barriers between the laboratory and the doctor's surgery

The rapid transfer of new discoveries in biomedicine to clinical practice has been the basic aim of IDIBAPS since it was founded in 1996. Pure and clinical researchers work together to provide answers to the main challenges of modern biomedicine

by means of research transfer. The Institute's work has made it a benchmark institution in Southern Europe and has consolidated an innovative model in Catalonia, using innovations in the laboratory to deal with common health problems. ■

<b>Director:</b>	Ramon Gomis de Barberà
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. University of Barcelona (UB). Hospital Clínic i Provincial de Barcelona. Spanish High Council for Scientific Research (CSIC), as an associated entity.
<b>Founded:</b>	1996
<b>Contact:</b>	www.idibaps.org Campus Casanova. Villarroel, 170. 08036 Barcelona Tel: +34 93 227 57 75



### Operating budget 2008: €16,492,904

30% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€10,525,224	€0
Non-competitive resources	€5,000,000	€967,680

### Centre staff

	Men	Women	Total
Research staff	na	na	<b>163</b>
Technical support staff	na	na	<b>69</b>
Administration & management	2	12	<b>14</b>
<b>Total</b>	<b>59</b>	<b>187</b>	<b>246</b>

**bioengineering**  
metabolism  
biological aggression  
oncology neuroscience **liver**

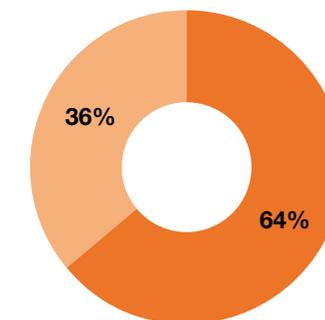
### Main competitive resources currently awarded

- 5 ICREA researchers.
- 13 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 3 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

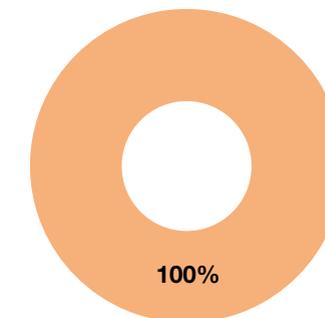
- 4,447.2 m<sup>2</sup> of premises in the Hospital Clínic i Provincial de Barcelona and on the UB campus.
- Portfolio of 9 Spanish patents, 3 international patents (PCT) and 5 pending.
- The Institute has its own research support services, with units for bioinformatics, cytomics, nanobiotechnology, proteomics and others such as the Medicine Department of the University of Barcelona's Scientific and Technical Services.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- Affiliated





# Institute of Predictive and Personalised Cancer Medicine **IMPPC**

Research to prevent disease before it happens

**A** change in approach from curative to predictive and personalised medicine is poised to revolutionise healthcare. This profound change will affect health administrators and financial managers as much as medical staff and patients. But this change will not happen overnight. Experts predict that progress will first be seen in the fields of cancer, neurological and cardiovascular diseases and endocrine and metabolic disorders, in particular diabetes and allergies.

The IMPPC research team has extensive experience of research into the molecular changes that produce cancer in the digestive system, especially cancer of the colon. The Institute plans to begin, therefore, with studies into cancer of the lower digestive tract, collaborating with other centres working in the field studying lung, breast and prostate cancer. ■

<b>Director:</b>	Manuel Perucho Martínez
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB). Spanish National Research Council (CSIC). Badalona City Council. Catalan Institute of Health (ICS). Hospital Universitari Germans Trias i Pujol. Health Sciences Research Institute of the Germans Trias i Pujol Foundation.
<b>Founded:</b>	2006
<b>Contact:</b>	www.imppc.org Crtà de Can Ruti, camí de les escoles, s/n 08916 Badalona (Barcelona) Tel. +34 93 497 86 94 · info@imppc.org



**Operating budget 2008: €1,950,000**  
87% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€250,000	€0
Non-competitive resources	€1,700,000	€0

### Centre staff

	Men	Women	Total
Research staff	4	4	8
Technical support staff	-	4	4
Administration & management	3	5	8
<b>Total</b>	<b>7</b>	<b>13</b>	<b>20</b>

**genetics**  
medicine epigenetics  
preventive **cancer**  
personalised

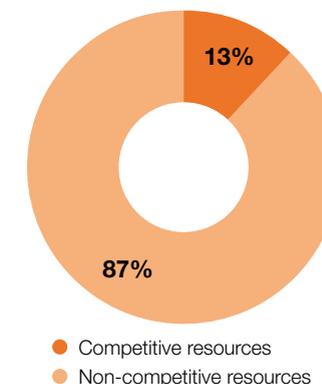
### Main competitive resources currently awarded

- 1 grant from the Ramón y Cajal Programme (Ministry of Science and Innovation).

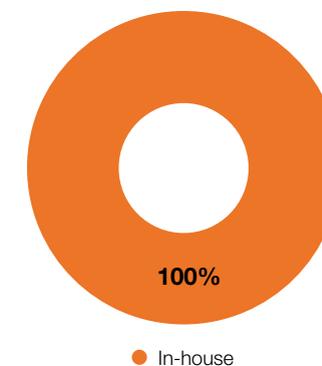
### Facilities and services

- 3,300 m<sup>2</sup> dedicated building on the grounds of the Hospital Universitari Germans Trias i Pujol.
- DNA bank containing samples and information from 50,000 people, and a genomics and bioinformatics unit.

### Source of funds



### Research staff





# Institute for Research in Biomedicine **IRB Barcelona**

Pushing forward the boundaries of biomedical research

The Institute for Research in Biomedicine (IRB Barcelona) is a first-class pure research centre whose mission is to make groundbreaking advances in biomedicine. To achieve this aim, the Institute adopts a unique multidisciplinary approach that blends ideas from the three fields of biology, chemistry and the computational sciences.

The Institute aims to promote cutting-edge research in biomedicine, to foster co-operation with local, na-

tional and international organisations and research institutes, to provide high-level training in the biomedical sciences to staff, students and visitors, and to foster innovation, technology transfer and open dialogue with society through conferences and educational activities. The Institute is currently working on five research programmes: cellular and developmental biology, structural and computational biology, molecular medicine, oncology, and molecular pharmacology and chemistry. ■

<b>Director:</b>	Joan J. Guinovart i Cirera
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Barcelona (UB). Barcelona Science Park (PCB)
<b>Founded:</b>	2005
<b>Contact:</b>	www.irbbarcelona.org Barcelona Science Park (PCB) Baldri Reixac, 10-12. 08028 Barcelona Tel. +34 93 402 02 50 · info@irbbarcelona.org



## Operating budget 2008: €22,251,745

46% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€7,581,072	€2,879,910
Non-competitive resources	€11,790,763	€0

## Centre staff

	Men	Women	Total
Research staff	180	177	357
Technical support staff	14	20	34
Administration & management	11	30	41
Total	205	227	432

genomics metabolic disorders  
cancer proteomics  
genetic disorders metastasis  
pre-clinical drug design

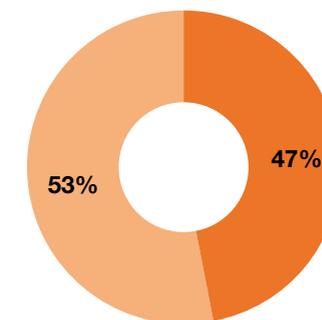
## Main competitive resources currently awarded

- 1 Starting Independent Researcher Grant (European Research Council).
- 11 ICREA researchers.
- 5 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 7 projects under the Seventh Framework Programme and 1 INTERREG project, 3 of which are co-ordinated co-operative projects.
- 5 Groups in CIBER networks (Ministry of Science and Innovation).

## Facilities and services

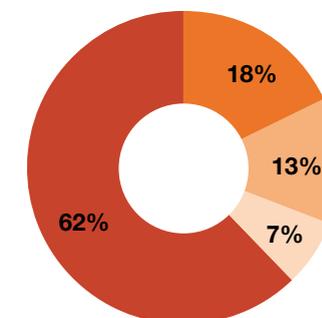
- 4,984 m<sup>2</sup> premises in the UB's Barcelona Science Park (PCB).
- Portfolio of 28 Spanish patents, 22 international patents (PCT) and 3 pending.
- 1 spin-off.
- Protein expression, mass spectrometry, mouse mutant, functional genomics, bioinformatics and digital light microscopy facilities.

## Source of funds



- Competitive resources
- Non-competitive resources

## Research staff



- In-house
- Affiliated
- Visiting
- Research grants





# Vall d'Hebron Institute of Oncology **VHIO**

Translational cancer research in a key field

The VHIO Foundation promotes and carries out first-class research into methods for improving the prevention, early diagnosis and treatment of cancer.

Its strategy focuses on developing innovative programmes of clinical, basic and translational research with a model based on that of the best international research centres.

Clinical research is at the heart of its scientific activities, making it the driving force and inspiration behind the development of basic and translational research programmes. This approach means the research results obtained in the laboratory can be quickly and effectively applied to patient care, encouraging the development of connections between medical needs and research programmes. ■

<b>Director:</b>	Josep Baselga Torres
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Fero Foundation. Cellex Foundation. "la Caixa" Foundation.
<b>Founded:</b>	2006
<b>Contact:</b>	www.vhio.net Pg. Vall d'Hebron, 119. 08035 Barcelona Tel. +34 93 489 30 21 · info@vhio.net



## Operating budget 2008: €1,147,395

35% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€348,158	€355,803
Non-competitive resources	€426,434	€17,000

## Centre staff

	Men	Women	Total
Research staff	5	1	6
Technical support staff	1	6	7
Administration & management	2	6	8
Total	8	13	21

**cancer oncology**  
 experimental treatment  
 clinical trial biomarkers  
 translational research genetics

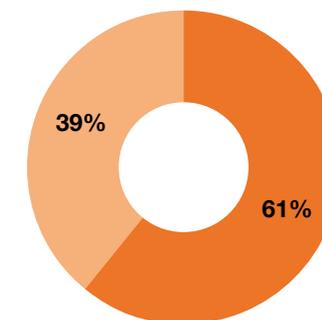
## Main competitive resources currently awarded

- 1 Advanced Investigators Grant (European Research Council).
- 1 Starting Independent Researcher Grant (European Research Council).
- 2 ICREA researchers.

## Facilities and services

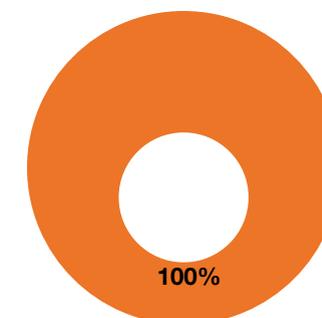
- Occupies a range of facilities within the grounds of the Hospital Universitari Vall d'Hebron.
- New, dedicated building under construction in the same grounds (9,500 m<sup>2</sup>).
- New 1,000 m<sup>2</sup> Molecular Therapy Unit under construction for the performance of phase 1 oncological clinical trials (inauguration May 2010).
- Portfolio of 3 pending patents (2 licensed).

## Source of funds



- Competitive resources
- Non-competitive resources

## Research staff



- In-house





# Institute of Food and Agricultural Research IRTA

Research focused on the food and agriculture sector

Since its foundation in 1985, the Institute of Food and Agricultural Research (IRTA) has been developing a research model focusing on serving the food and agriculture sector and society as a whole.

The Institute makes its human resources, its experience and infrastructures available to government bodies, businesses, co-operatives, etc. in order to contribute to the modernisation, competitiveness

and sustainable development of the sector.

The Institute works with sectors as well as for them, establishing joint strategies and projects which contribute to the modernisation, competitiveness and sustainable development of the agricultural, food, aquiculture and fishing sectors, the supply of healthy, good-quality food to consumers and the general wellbeing of the population. ■

<b>Director:</b>	Josep Monfort Bolívar
<b>Structure:</b>	Public company
<b>Governing body:</b>	Government of Catalonia. Barcelona Provincial Council. Girona Provincial Council. Lleida Provincial Council
<b>Founded:</b>	1985
<b>Contact:</b>	www.irta.cat
<b>IRTA</b>	Passeig de Gràcia, 44, 3rd Floor. 08007 Barcelona Tel. +34 93 467 40 40 · irta@irta.cat



**Operating budget 2008: €43,181,320**  
40% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€10,070,230	€0
Non-competitive resources	€23,437,460	€9,673,630

### Centre staff

	Men	Women	Total
Research staff	129	144	273
Technical support staff	145	129	274
Administration & management	28	88	116
<b>Total</b>	<b>302</b>	<b>361</b>	<b>663</b>

plant  
animal production  
biotechnology food  
agriculture genetics

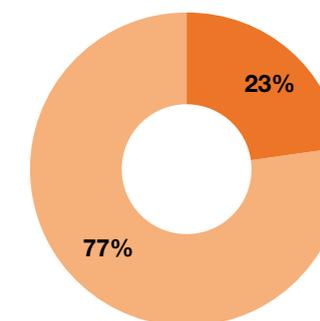
### Main competitive resources currently awarded

- 1 ICREA researcher.
- 1 grant from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 8 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

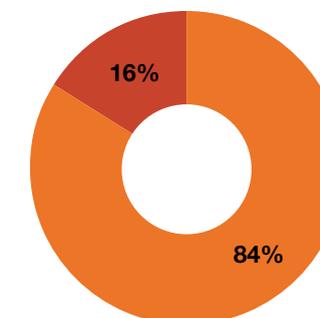
- The IRTA has 17 operations units in 6 centres around Catalonia, in addition to 8 experimental stations and 6 affiliated centres in cooperation with universities and other institutions.
- Portfolio of 7 Spanish patents, 1 international patent (PCT) and 12 pending.
- Three spin-offs created.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Research grants





## Centre for Research in Agricultural Genomics CRAG

### Research for the agricultural and livestock sectors

The CRAG uses tools developed in the field of genomics to study the structure and function of the genes of plant and animal species of interest to the food and agriculture sectors. The aim is to increase knowledge of these matters and to identify applications that meet the needs of the agricultural and livestock sectors, such as the development of molecular markers that can be used to improve species' genetic makeup, working in co-operation with business.

Three institutions work together at the CRAG: the Institute of Food and Agricultural Research (IRTA), the Spanish National Research Council (CSIC) and the Autonomous University of Barcelona (UAB). This co-operation focuses on three main lines of research: molecular genetics, plant and animal genetics, investigating the applications of genomics in agriculture and livestock. ■

<b>Director:</b>	Pere Puigdomènech Rosell
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Institute of Food and Agricultural Research (IRTA). Spanish National Research Council (CSIC). Autonomous University of Barcelona (UAB)
<b>Founded:</b>	2003
<b>Contact:</b>	www.cragenomica.es Jordi Girona, 18-26. 08034 Barcelona Tel. +34 93 400 61 30



### Operating budget 2008: €4,944,276

20% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€3,498,036	€477,240
Non-competitive resources	€969,000	€0

### Centre staff

	Men	Women	Total
Research staff	70	89	159
Technical support staff	13	40	53
Administration & management	3	7	10
Total	86	136	222

molecular genetics  
animal plant  
agrifood  
livestock agriculture

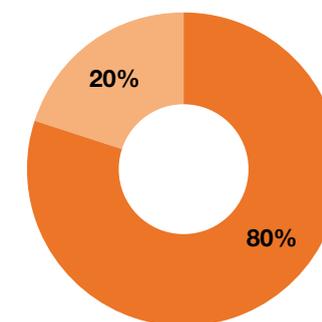
### Main competitive resources currently awarded

Most of the CRAG's research staff is affiliated with the CSIC, the IRTA and the UAB, including 1 Starting Independent Researcher Grant, 4 ICREA researchers and others from domestic and international research programmes.

### Facilities and services

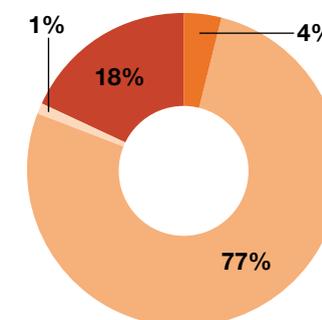
- 7500 m<sup>2</sup> building under construction in the UAB campus will be ready to occupy in the near future.
- Greenhouse service at IRTA's Torre Marimon experimental farm.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting
- Research grants





## Centre for Animal Health Research CReSA

### Research to control disease in animals

The CReSA fosters research, technological development and training in the field of animal health in Catalonia.

Its researchers are dedicated to finding new and effective vaccines, the study of epidemiology, the immune response and pathogenic mechanisms, evaluating risks for human health and developing standard infection models and diagnostic techniques.

To achieve these aims, in addition to developing research programmes in the field of animal health, the centre transfers the scientific advances achieved to the sector, providing technological services in the field of animal health and consultancy services to the food and agriculture sector and to public bodies and organising scientific and technical training programmes. ■

<b>Director:</b>	Mariano Domingo Álvarez
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Autonomous University of Barcelona (UAB). Institute of Food and Agricultural Research (IRTA).
<b>Founded:</b>	1999
<b>Contact:</b>	www.cresa.cat UAB Campus. 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 581 32 84 · cresa@cresa.uab.cat



### Operating budget 2008: €5,688,276

17% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€2,399,920	€0
Non-competitive resources	€1,405,627	€1,882,729

### Centre staff

	Men	Women	Total
Research staff	31	36	67
Technical support staff	7	27	34
Administration & management	5	11	16
Total	43	74	117

parasitology  
epidemiology  
immunology  
bacteria  
viral

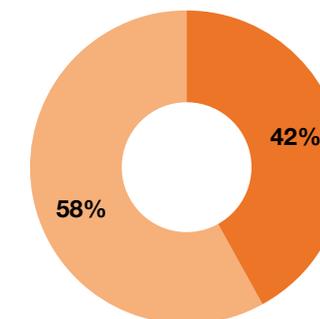
### Main competitive resources currently awarded

- 1 grant from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 2 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

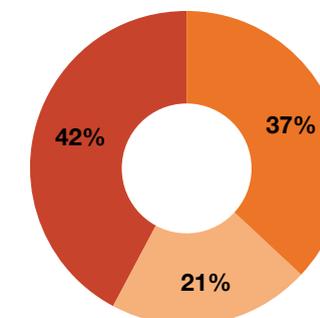
- 6,000 m<sup>2</sup> dedicated building on the UAB campus.
- The centre contains conventional laboratories, high-security laboratories with biosafety level 3, and level-3 biocontainment facilities for animals (BSL3), with capacity for housing farm animals and laboratory animals.

### Source of funds



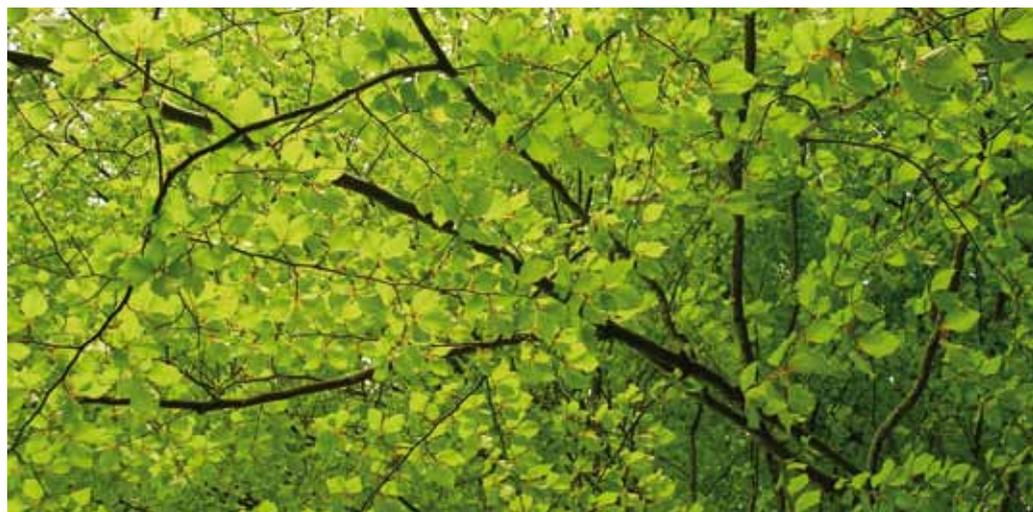
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Research grants





## Centre for Ecological Research and Forestry Applications **CREAF**

Research in terrestrial ecology and environmental management

The CREAF conducts research and designs new conceptual and methodological tools in the field of terrestrial ecology, especially forest ecology, in order to improve environmental planning and management in rural and urban areas. Preventing forest fires, the sustainable use of environmental resources and conserving biodiversity in a time of global change are some of the most important challenges that the centre aims to tackle.

Its activities include research into the functioning and diversity of ecosystems and how to deal with disturbances to those systems, and into the environmental problems that can affect how they work, such as changes in land use or atmospheric and climate change. The centre also develops tools to aid decision making and facilitate the sustainable management of resources. ■

<b>Director:</b>	Javier Retana Alumbros
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. University of Barcelona (UB). Autonomous University of Barcelona (UAB). Institute of Catalan Studies (IEC). Institute of Food and Agricultural Research (IRTA)
<b>Founded:</b>	1987
<b>Contact:</b>	www.creaf.cat UAB Campus, Building C. 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 581 13 12



### Operating budget 2008: €3,826,000

14% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€1,328,000	€117,000
Non-competitive resources	€1,803,000	€578,000

### Centre staff

	Men	Women	Total
Research staff	46	32	78
Technical support staff	24	28	52
Administration & management	3	6	9
<b>Total</b>	<b>73</b>	<b>66</b>	<b>139</b>

ecosystems  
fires biodiversity  
ecology countryside  
land

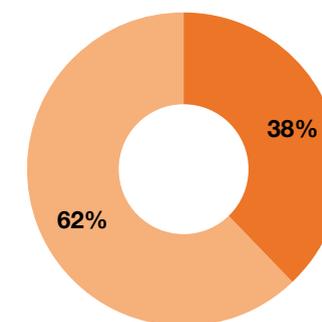
### Main competitive resources currently awarded

- The CREAF is leading the Montes Consolider-Ingenio Project, intended to integrate forestry management into strategies for mitigating the effects of climate change.

### Facilities and services

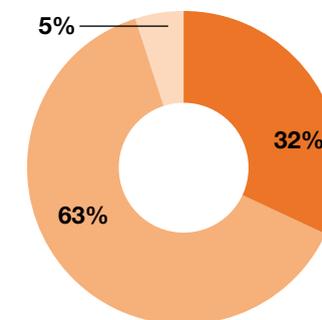
- 2,600 m<sup>2</sup> premises on the UAB campus.
- Coordination of PhD programme in terrestrial ecology as a UAB-affiliated university institute.
- Services for public bodies and companies covering areas such as forestry dynamics, forest fires, and environmental and geographical information systems.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



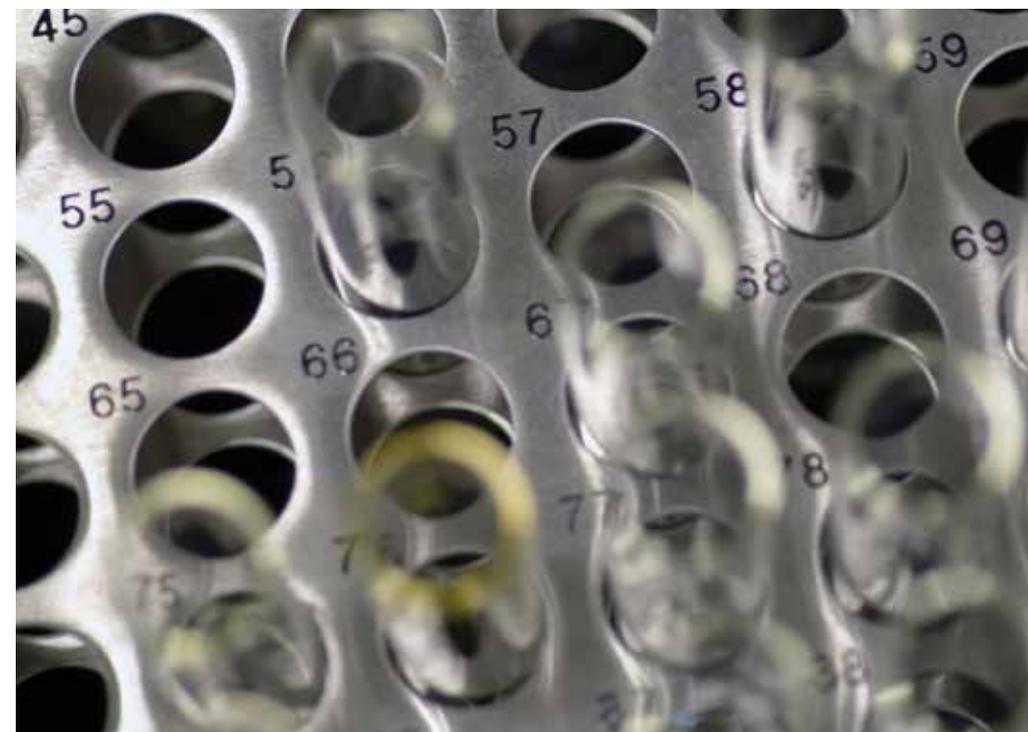
- In-house
- Affiliated
- Visiting





## Centre for Research in Agrotechnology AGROTECNIO

<b>Director:</b>	Joan Girona Gomis
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. University of Lleida (UdL). Institute of Food and Agricultural Research (IRTA).
<b>Founded:</b>	2006
<b>Contact:</b>	University of Lleida ETSEA Campus Av. Alcalde Rovira Roure, 191. 25198 Lleida Tel. +34 973 70 25 00



### Strategic research for the food and agriculture sector

**A**grotecnio is a new centre, expanding Lleida's research and innovation facilities. The centre, created in 2006 as UdL-IRTA Foundation and currently being incorporated into the CERCA system, is dedicated to research, technology development and specialised training in the food and agriculture sector.

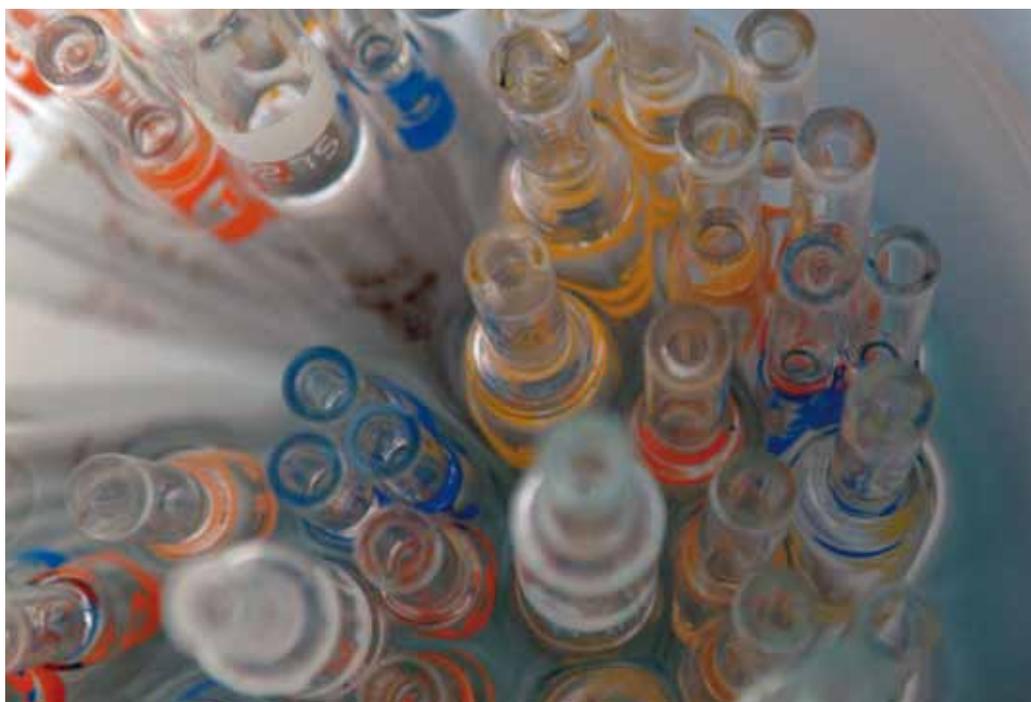
The four main topics of research cover an area that was not previously addressed by the Catalan R&D system and which we consider to be strategic for the future of the food, agriculture and biomedical fields. Agriculture, livestock, global change, and biofactory production (a groundbreaking research

Contribution from the Government  
of Catalonia (2008): €400,000

food and agriculture  
countryside  
land  
technology  
development

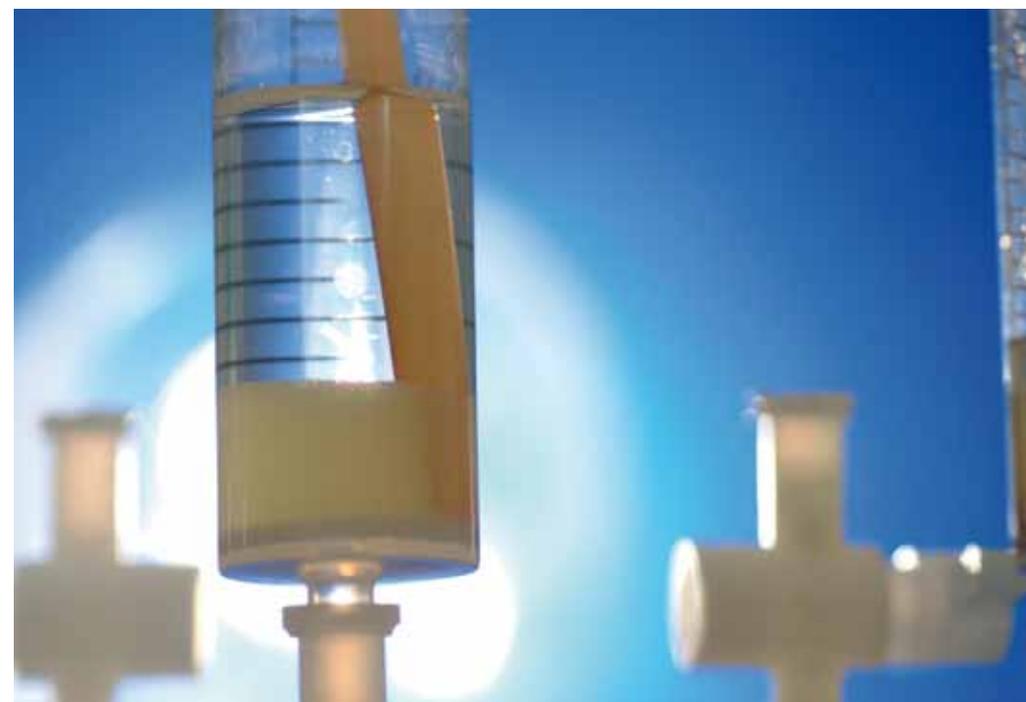
area whose scope includes biomedicine and food production, international development and cooperation and food bioavailability) are the fields of research the centre hopes to explore. ■

## RECENT ADDITIONS TO CERCA



## Girona Biomedical Research Institute IDiBGi

<b>Scientific Director:</b>	Wifredo Ricart Engel
<b>Structure:</b>	Foundation
<b>Governing body:</b>	Government of Catalonia. University of Girona (UdG). Hospital Universitari de Girona Dr. Josep Trueta. Catalan Institute of Health (ICS).
<b>Founded:</b>	2004
<b>Contact:</b>	www.idibgi.org Hospital Universitari de Girona Dr. Josep Trueta Carretera de França, s/n, 9a planta A. 17007-Girona Tel. +34 972 94 02 82



### Committed to biomedical research in the regions of Girona

The IdIBGi was founded in July 2004 through the merger of two existing institutions, the Dr Josep Trueta Private Foundation and the Research Agency of the Girona University Hospital. Its current organisation is based on research groups from the University of Girona and the Girona University Hospital, the Institute for Diagnostic Imaging (IDI), the Catalan Institute of Oncology (ICO) and the Catalan Health Service (CatSalut).

It is hoped that in the near future other hospital and research institutions working in the fields of life and health sciences in Girona will join the Institute.

Contribution from the Government of Catalonia (2008): €600,000

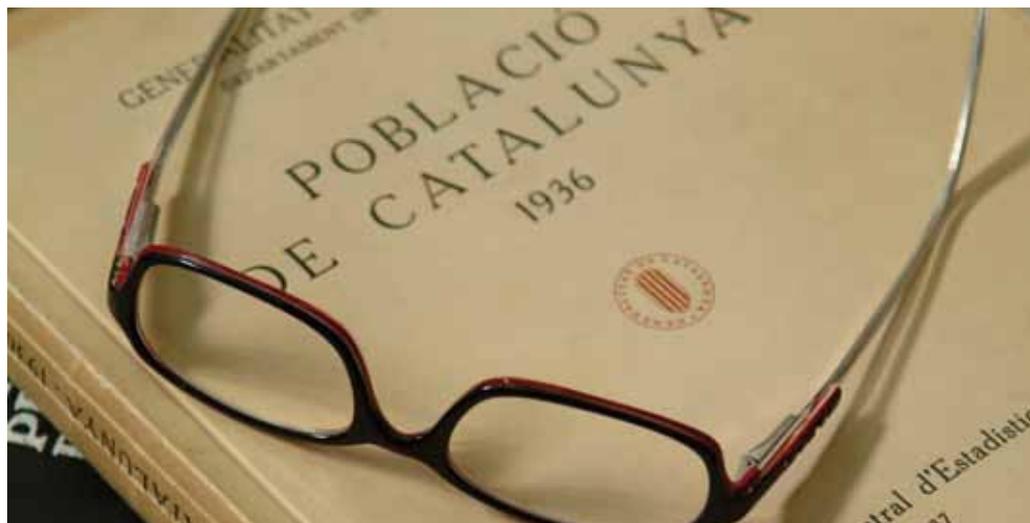
**cancer**  
**epidemiology**  
**public health**  
**disease**  
**metabolic-vascular**

They will work together to support quality research, train new researchers, promote and consolidate new research groups and, in particular, find new treatments that can be made available to society. With the consolidation of the IdIBGi, the regions of Girona will form part of the 'Catalan Bioregion' in their own right. ■



The centres by topic area

# Social and Human Sciences



## Centre for Demographic Studies **CED**

### Population patterns and trends

The activities of the CED are research, education and publishing in the field of studies of the demographics and population of Europe, with particular focus on Catalonia and Spain.

Research work is based on historical and regional studies of issues such as populations, the family, migration, and demographic forecasts and projections.

The Centre has some 30 PhD students currently preparing theses, in addition to students on the official

master's degree course in Regional and Population Studies, which forms part of the Autonomous University of Barcelona's official programme.

The centre makes available to the scientific and academic community a specialist library, a documentation centre and an extensive demographic database going back to 1497. It is also responsible for the Integrated European Census Microdata (IECM) database, which it maintains jointly with the University of Minnesota ([www.iecm-project.org](http://www.iecm-project.org)). ■

<b>Director:</b>	Anna Cabré i Pla
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Autonomous University of Barcelona (UAB). Government of Catalonia.
<b>Founded:</b>	1984
<b>Contact:</b>	<a href="http://www.ced.uab.es">www.ced.uab.es</a>
	UAB Campus, Building E2. 08193 Cerdanyola del Vallès (Barcelona)
	Tel. +34 93 581 30 60 · <a href="mailto:demog@ced.uab.es">demog@ced.uab.es</a>



Centre d'Estudis Demogràfics



### Operating budget 2008: €1,344,775

36% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€734,744	€0
Non-competitive resources	€600,486	€9,545

### Centre staff

	Men	Women	Total
Research staff	26	17	43
Technical support staff	3	6	9
Administration & management	1	5	6
Total	30	28	58

demographics migration  
activity territory  
gender population family  
projections forecasts

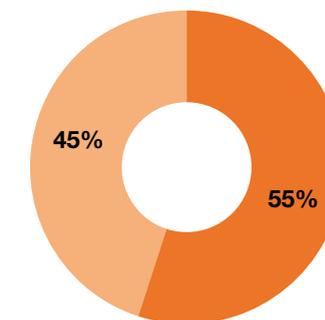
### Main competitive resources currently awarded

- 3 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 2 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).
- 1 Human Fertility Database (HFD) (Max Planck Institute for Demographic Research and the Vienna Institute of Demography (VID)).

### Facilities and services

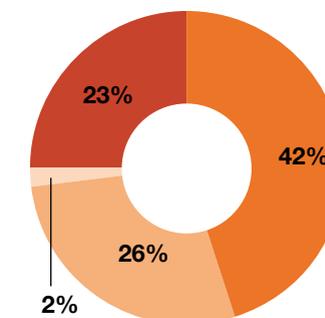
- 1,392 m<sup>2</sup> dedicated building on the UAB campus.
- Library with 9,540 indexed books.
- Specialist documentation centre, historical and contemporary demographic database, census microdata database.

### Source of funds



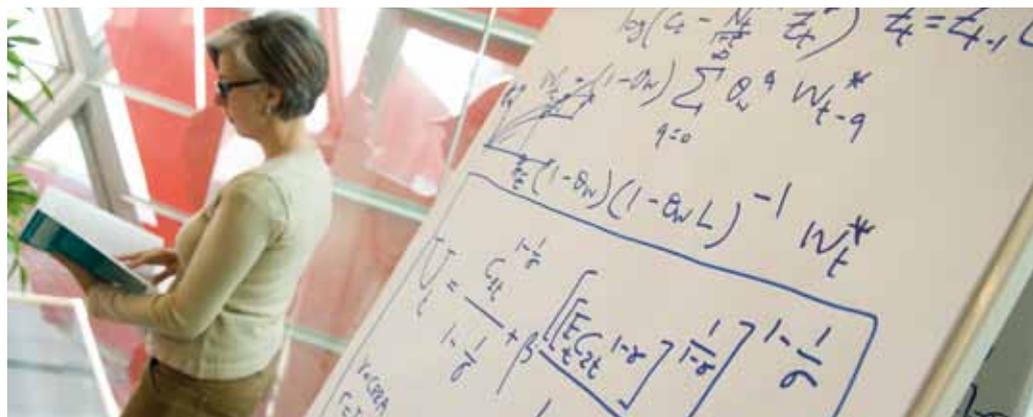
- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting
- Research grants





## Centre for Research in International Economics CREI

Committed to improving understanding of the functioning of the economy

The activity of the CREI focuses on research into international economics and macroeconomics in the broadest sense, with special emphasis on European issues.

The CREI aims to generate knowledge according to the highest academic standards but also to be a focal point for the dissemination of ideas, always in contact with research. The projects it undertakes lead to valuable original contributions to economic science.

The first versions of this research work circulate as working papers via the Centre's website and they are presented in seminars, conferences and international academic journals.

The CREI is committed to contributing to knowledge of the functioning of the economy in contemporary society, leading to improvements in the design of policies and institutions, with the resulting economic growth and improvement in public wellbeing. ■

<b>Director:</b>	Jordi Galí Garreta
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Pompeu Fabra University (UPF).
<b>Founded:</b>	1994
<b>Contact:</b>	www.crei.cat
	Pompeu Fabra University (UPF)
	Ramon Trias Fargas, 25-27. 08005 Barcelona
	Tel. +34 93 542 13 88 · crei@crei.cat



### Operating budget 2008: €1,424,700

67% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€315,560	€0
Non-competitive resources	€969,700	€139,440

### Centre staff

	Men	Women	Total
Research staff	14	2	16
Technical support staff	-	-	-
Administration & management	-	5	5
Total	14	7	21

finance trade  
monetary economics  
macroeconometrics growth  
international economic geography

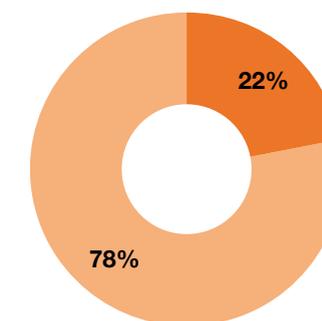
### Main competitive resources currently awarded

- 2 Starting Independent Researcher Grants (European Research Council).
- 2 Advanced Investigators Grants (European Research Council).
- 3 ICREA researchers (UPF associate staff).
- 5 grants from the Ramón y Cajal Programme (Ministry of Science and Innovation).
- 2 grants from the Juan de la Cierva Programme (Ministry of Science and Innovation).

### Facilities and services

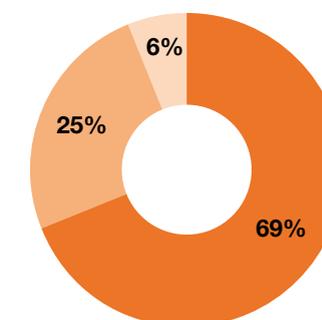
- 1,160 m<sup>2</sup> dedicated building on the UPF campus.
- Organisation of the Barcelona Macroeconomics Summer School.
- 6 high-level international conferences and 85 seminars in 2008.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated
- Visiting





## Catalan Institute of Classical Archaeology ICAC

Tarraco, a site for the study of classical civilisations

The remains of ancient Tarraco are the setting for the ICAC, an institute devoted to research, training and dissemination of the knowledge provided by classical archaeology, specifically the ancient civilisations of the Mediterranean: Greek, Roman and others directly related to it.

The centre's research focuses on the archaeology of ancient cities; the archaeology of landscape,

population and territory; materials and trade in the ancient world; and classical archaeology and artistic productions.

The ICAC also organises three cross-disciplinary methodology programmes, which include environmental and palaeo-environmental archaeology, archaeometry, ICT applied to archaeology and textual sources, epigraphy and numismatics. ■

Director:	Isabel Rodà de Llanza
Structure:	Consortium
Management body:	Government of Catalonia. Rovira i Virgili University (URV). Inter-university Council of Catalonia (CIC).
Founded:	2000
Contact:	www.icac.net PI. Rovellat, s/n. 43003 Tarragona Tel. +34 977 249 133 · info@icac.net



### Operating budget 2008: €2,025,519

65% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€387,130	€88,638
Non-competitive resources	€1,490,418	€59,333

### Centre staff

	Men	Women	Total
Research staff	21	20	41
Technical support staff	3	8	11
Administration & management	1	9	10
Total	25	37	62

culture heritage  
city civilisation territory  
archaeometry trade population  
palaeo-environment

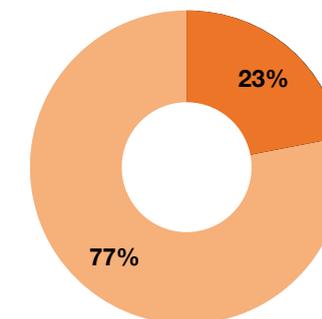
### Main competitive resources currently awarded

- 1 ICREA researcher.
- 1 Beatriu de Pinós post-doctorate researcher (Ministry of Innovation, Universities and Enterprise).

### Facilities and services

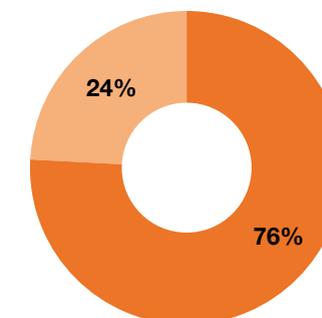
- 1,129 m<sup>2</sup> building ceded by Tarragona City Council, in the historic centre of the city.
- Documentation centre, newspaper library and image bank.
- Archaeometric studies unit and graphic documentation unit

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated





## Catalan Institute for Cultural Heritage Research ICRPC

### Reporting on the development of our cultural history

Catalonia's rich cultural heritage can be exploited in a wide variety of ways, not least as a major element of the country's attractiveness as a tourist destination. The number of people using this resource is constantly increasing. For these reasons, issues related to cultural heritage are being increasingly prioritised and accurate knowledge of its key features is therefore vital.

The purpose of the institute is to promote high-quality research organised in two main priority areas: heritage valorisation processes and the use of cultural heritage. The ICRPC hopes to increase the number of people dedicated to cultural heritage, and at the same time, become a support and reference centre for the many agents working with our cultural heritage. ■

Director:	Gabriel Alcalde Gurt
Structure:	Foundation
Board of Trustees:	Government of Catalonia. University of Girona (UdG)
Founded:	2006
Contact:	www.icrpc.cat
	University of Girona Science and Technology Park
	Jaume Casademont Building. Pic de Peguera, 15, door B. 17003 Girona.
	Tel. +34 972 183 424 · icrpc@icrpc.cat



### Operating budget 2008: €491,767

81% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€68,291	€14,944
Non-competitive resources	€408,532	€0

### Centre staff

	Men	Women	Total
Research staff	6	2	8
Technical support staff	1	-	1
Administration & management	-	2	2
Total	7	4	11

cultural heritage  
use tourism exploitation  
society territory management

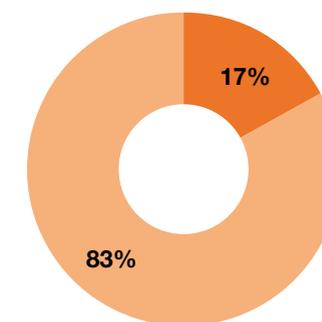
### Main projects and responsibilities

- The valorisation of archaeology as heritage: Current concepts and uses of archaeological heritage (Ministry of Science and Innovation RDI Project).
- Cultural heritage map of Catalonia (Directorate General for Cultural Heritage), to produce an analysis of Catalonia's cultural heritage and the centres that manage it.

### Facilities and services

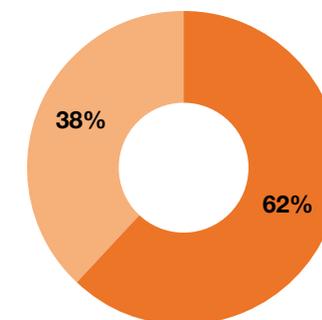
- Located in the University of Girona Science and Technology Park.
- Participates in teaching of masters' degree in Cultural Heritage Management at local level (University of Girona) and an inter-university masters' course in Tourism Management and Planning.

### Source of funds



- Competitive resources
- Non-competitive resources

### Research staff



- In-house
- Affiliated





# Catalan Institute for Human Palaeoecology and Social Evolution IPHES

Studying the evolution of human societies

**H**uman palaeoecology is the study of human ecology over time. This way of looking at the subject enables us to track the development of human societies.

The IPHES was founded in 2005 as a cross-disciplinary advanced research and teaching institute that aimed to socialise knowledge from the

earth and life sciences, merging it with the social sciences.

On the basis of its research, IPHES contributes to postgraduate teaching activities, and organises a wide range of public activities, using different channels and mechanisms to bring the results of its research work back to society so that people can benefit from them. ■

<b>Director:</b>	Eudald Carbonell i Roura
<b>Structure:</b>	Foundation
<b>Board of Trustees:</b>	Government of Catalonia. Rovira i Virgili University (URV). Tarragona City Council
<b>Founded:</b>	2004
<b>Contact:</b>	www.iphes.cat Escorxador, s/n. 43003 Tarragona Tel. +34 977 558 703



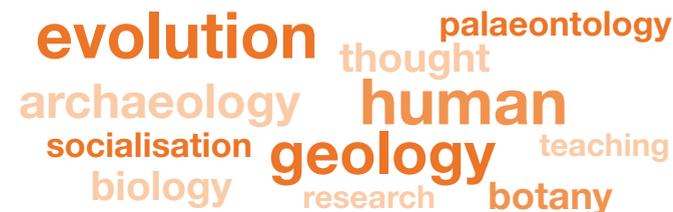
## Operating budget 2009: €1,388,150

52% Contribution from the Government of Catalonia

Source of funds	Public funds	Private funds
Competitive resources	€145,610	€0
Non-competitive resources	€750,000	€492,540

## Centre staff

	Men	Women	Total
Research staff	23	15	38
Technical support staff	8	10	18
Administration & management	5	3	8
Total	36	28	64



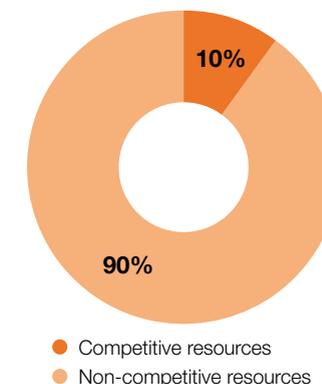
## Main competitive resources currently awarded

- 4 ICREA researchers

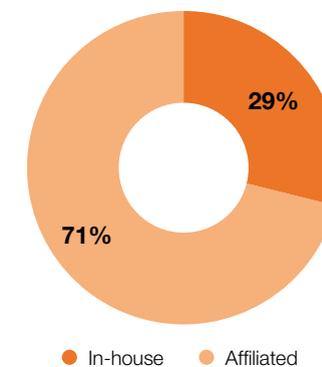
## Facilities and services

- 2,000 m<sup>2</sup> in premises ceded by the Tarragona City Council.
- Analytical services in archaeobotany, micromorphology, palaeoanthropology, zooarchaeology (taphonomy).
- Conservation service for archaeological, palaeontological, historical and artistic heritage.

## Source of funds



## Research staff



## RECENT ADDITIONS TO CERCA



## Markets, Organizations and Votes in Economics **MOVE**

<b>Director:</b>	Salvador Barberà Sández
<b>Structure:</b>	Consortium
<b>Governing body:</b>	Government of Catalonia. Autonomous University of Barcelona (UAB).
<b>Founded:</b>	2008
<b>Contact:</b>	www.movebarcelona.eu UAB Campus, Building B 08193 Cerdanyola del Vallès (Barcelona) Tel. +34 93 586 84 93 · info@movebarcelona.eu



### The consolidation of research into economics in Catalonia

**Operating budget 2008: €180,000**  
100% Contribution from the Government of Catalonia

**M**OVE is a recent initiative, intended to promote research in economics and consolidate a research model based on international competitiveness and excellence in science and management.

The centre organises its work in three specialist areas: mechanism design, studying governance and the design of institutions; quantitative economics, focusing on the development of analytical tools and their application to specific problems and to macroeconomic models; and the economics of science and innovation, which carries out research in areas related to R&D, technological transfer and risk capital, intellectual property rights, innovation in health, pharmacy and health policy, etc.

analysis  
**economics**  
organisations  
markets  
mechanisms **innovation**

MOVE was founded in late December 2008 and is currently has the support of 33 affiliated researchers whilst building up its research team. MOVE hopes to share its expertise with different institutions and publicise its most significant results, those which have the potential to accelerate economic growth, reduce inequality and increase social wellbeing. ■



## Methodology

The data presented is based on values calculated by the Directorate General for Research and through a survey completed by all CERCA centres.

The total staff of the centre (as of 31 December 2008) comprises the entire work force, affiliated personnel, ICREA researchers, pre-doctoral researchers, post-doctoral researchers and visiting researchers (if there for more than three months). If the time dedicated was not 100%, it has been weighted so that the data was equivalent to full-time positions.

Affiliated research staff refers to those who work at the centre but whose main work contract (professional or with the government) is with another entity (ICREA, university, etc.).

As for current competitive grants, the fiches provide an indication of the main awards relating to research staff or, alternatively, a selection of other national and international competitive research projects that exemplify their activities.

The aim of this summary is to provide a quick overview of the research centres comprised in the CERCA system and the activity carried out in them. For more comprehensive information please consult the web site for each centre, the address for which you will find in each fiche.



## If You Want to Know More

### The directors of CERCA centres

The role of the person responsible for managing a research centre is imperative, for it is the foundation on which the centre's success is built. International prestige with which to attract research personnel and scientific and managerial ability are the basic skills that a person in charge of the management of a centre must possess. Aware of the importance of this management figure, the Directorate General for Research publishes an electronic newsletter known as RECERCAT, which provides a space in which to analyse the professional profile of those responsible for managing the research centres of Catalonia. Available at:

<http://www.gencat.cat/diue/serveis/publicacions/ur/periodiques/recercat/perfils/index.html>

(Catalan only).

More director profiles can be found at Global Talent, Digital Daily Science & Innovation. Available at:

<http://www.ca.globaltalentfcri.com/divulgator/perfils.aspx>

### Other publications

*'Catalan Research Centres' [Centres de recerca a Catalunya].*

Temes de Recerca i Innovació [Topics in Research and Innovation] collection, No. 4, Ministry of Innovation, Universities and Enterprise, Barcelona, 2007. Available at:

[http://www.gencat.cat/diue/doc/research\\_centres\\_catalonia.pdf](http://www.gencat.cat/diue/doc/research_centres_catalonia.pdf)

*Catalonia: Improving R+D and Innovation Policies.*

OECD Reviews of Regional Innovation: Catalonia, Spain. Assessment and Recommendations. 2009. Disponible a: [www.oecd.org](http://www.oecd.org)

Caracterització bibliomètrica de la producció científica a Catalunya, 1996-2006.

Lluís Rovira<sup>1</sup>, Raül Isaac Méndez-Vásquez<sup>2,4</sup>, Eduard Suñén-Pinyol<sup>3</sup>, i Jordi Camí<sup>3,4</sup>

<sup>1</sup>Agency for Management of University and Research Grants (AGAUR), <sup>2</sup>Catalan Agency for Health Technology and Research (AATRM), <sup>3</sup>Barcelona Biomedical Research Park (PRBB), and <sup>4</sup>Pompeu Fabra University (UPF).) Barcelona, 2007. Available at:

<http://bibliometria.prbb.org/ncrcat06>

(Catalan only).

For further information on the R&D system in Catalonia: [http://www.gencat.cat/diue/ambits/ur/recerca/index\\_en.html](http://www.gencat.cat/diue/ambits/ur/recerca/index_en.html)

## Table of Initials and Acronyms

<b>7PM</b>	7th Framework Programme for Research and Technological Development	<b>CVC</b>	Computer Vision Centre (Centre de Visió per Computador)
<b>AGBAR</b>	Societat General de les Aigües de Barcelona, S.A.	<b>ERC</b>	European Research Council
<b>AGROTECNIO</b>	Centre for Research in Agrotechnology (Centre de Recerca en Agrotecnologia)	<b>i2CAT</b>	Internet and Digital Innovation in Catalonia (Internet i Innovació Digital a Catalunya)
<b>CED</b>	Centre for Demographic Studies (Centre d'Estudis Demogràfics)	<b>IBEC</b>	Institute for Bioengineering of Catalonia (Institut de Bioenginyeria de Catalunya)
<b>CENIT</b>	National Strategic Consortia for Technical Research	<b>IC3</b>	Catalan Climate Sciences Institute (Institut Català de Ciències del Clima)
<b>CERCA</b>	Catalan Research Centres Institute	<b>ICAC</b>	Catalan Institute of Classical Archaeology (Institut Català d'Arqueologia Clàssica)
<b>CIBER</b>	Centre for In-Network Biomedical Research	<b>ICCC</b>	Catalan Institute of Cardiovascular Sciences (Institut Català de Ciències Cardiovasculars)
<b>CIEMAT</b>	Research Centre for Energy, Environment and Technology	<b>ICFO</b>	Institute of Photonic Sciences (Institut de Ciències Fotòniques)
<b>CIIRC</b>	International Centre for Coastal Resources Research (Centre Internacional d'Investigació dels Recursos Costaners)	<b>ICIQ</b>	Institute of Chemical Research of Catalonia (Institut Català d'Investigació Química)
<b>CIMNE</b>	International Centre for Numerical Methods in Engineering (Centre Internacional en Mètodes Numèrics en Enginyeria)	<b>ICN</b>	Catalan Institute of Nanotechnology (Institut Català de Nanotecnologia)
<b>CMRB</b>	Centre of Regenerative Medicine in Barcelona (Centre de Medicina Regenerativa de Barcelona)	<b>ICP</b>	Catalan Institute of Palaeontology (Institut Català de Paleontologia)
<b>CRAG</b>	Centre for Research in Agricultural Genomics (Centre de Recerca en Agrigenòmica)	<b>ICRA</b>	Catalan Institute for Water Research (Institut Català de Recerca de l'Aigua)
<b>CREAF</b>	Centre for Ecological Research and Forestry Applications (Centre de Recerca Ecològica i Aplicacions Forestals)	<b>ICREA</b>	Catalan Institute for Research and Advanced Studies
<b>CREAL</b>	Center for Research in Environmental Epidemiology (Centre de Recerca en Epidemiologia Ambiental)	<b>ICRPC</b>	Catalan Institute for Cultural Heritage Research (Institut Català de Recerca en Patrimoni Cultural)
<b>CREI</b>	Centre for Research in International Economics (Centre de Recerca en Economia Internacional)	<b>IDAE</b>	Institute for Diversification and Saving of Energy
<b>CReSA</b>	Centre for Animal Health Research (Centre de Recerca en Sanitat Animal)	<b>IDIBAPS</b>	August Pi i Sunyer Biomedical Research Institute (Institut d'Investigacions Biomèdiques August Pi i Sunyer)
<b>CRESIB</b>	Barcelona Centre for International Health Research (Centre de Recerca en Salut Internacional de Barcelona)	<b>IDIBGI</b>	Girona Biomedical Research Institute (Institut d'Investigació Biomèdica de Girona Dr. Josep Trueta)
<b>CRG</b>	Centre for Genomic Regulation (Centre de Regulació Genòmica)	<b>IEC</b>	Institute of Catalan Studies
<b>CRM</b>	Centre for Mathematical Research (Centre de Recerca Matemàtica)	<b>IEEC</b>	Space Studies Institute of Catalonia (Institut d'Estudis Espacials de Catalunya)
<b>CSIC</b>	Spanish National Research Council	<b>IFAE</b>	Institute for High Energy Physics (Institut de Física d'Altes Energies)
<b>CTFC</b>	Forest Technology Centre of Catalonia (Centre Tecnològic Forestal de Catalunya)	<b>IFIAS</b>	International Federation of Institutes for Advanced Study
<b>CTTC</b>	Catalan Telecommunications Technology Centre (Centre Tecnològic de Telecomunicacions de Catalunya)		

<b>IG</b>	Institute of Geomatics (Institut de Geomàtica)
<b>IMPPC</b>	Institute of Predictive and Personalised Cancer Medicine (Institut de Medicina Predictiva i Personalitzada del Càncer)
<b>IPHES</b>	Catalan Institute for Human Palaeoecology and Social Evolution (Institut Català de Paleoecologia Humana i Evolució Social)
<b>IRB Barcelona</b>	Institute for Research in Biomedicine (Institut de Recerca Biomèdica de Barcelona)
<b>IREC</b>	Catalan Institute for Energy Research (Institut de Recerca en Energia de Catalunya)
<b>IRTA</b>	Institute of Food and Agricultural Research (Institut de Recerca i Tecnologia Agroalimentàries)
<b>LIM/UPC</b>	Maritime Engineering Laboratory / Technical University of Catalonia
<b>MOVE</b>	Markets, Organizations and Votes in Economics
<b>PNRI</b>	Catalan Agreement on Research and Innovation
<b>PRBB</b>	Barcelona Biomedical Research Park
<b>UAB</b>	Autonomous University of Barcelona (UAB)
<b>UB</b>	University of Barcelona (UB)
<b>UdG</b>	University of Girona (UdG)
<b>UdL</b>	University of Lleida (UdL)
<b>UPC</b>	Technical University of Catalonia (UPC)
<b>UPF</b>	Pompeu Fabra University (UPF)
<b>URL</b>	Ramon Llull University (URL)
<b>URV</b>	Rovira i Virgili University (URV)
<b>VHIO</b>	Vall d'Hebron Institute of Oncology (Institut d'Oncologia Vall d'Hebron)

civilisation  
**aphics**  
ecosystem  
proteo  
netics  
food  
development  
experimental treatment  
Internet  
genomics  
nanotechnolog  
optical network  
strophysics  
photon  
biostatistics  
structures  
palaeobiology  
chemistry  
ecology  
biomathematics  
immunology  
climate change  
maritime engi  
cultural heritage  
cellular biotechnolo  
water quality  
robotic  
fundamental physics  
finance  
health  
stem cells  
palaeontology  
bioer  
cardiovascular genetics  
photogrammetry  
food and agriculture

