



FACTS AND FIGURES 2008-2011

**Instituto de
Biologia Molecular
e Celular**

Universidade do Porto

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1. INSTITUTE

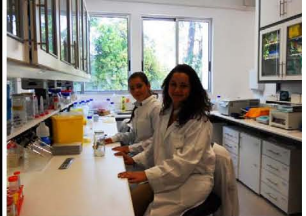
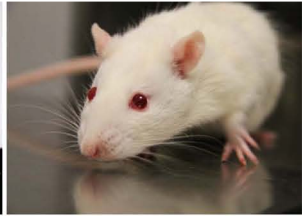
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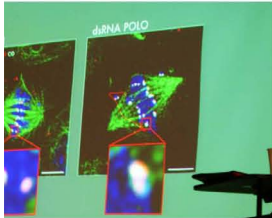
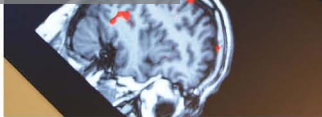
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1. Institute for Molecular and Cell Biology

Instituto de Biologia Molecular e Celular



1.1. Institute for Molecular and Cell Biology

IBMC is a multidisciplinary research institution that was founded in 1997 with the aim of bringing together researchers working within the University of Porto and affiliated hospitals to create a unique multidisciplinary environment that could promote research in Life and Biomedical Sciences. It then became a Research Unit recognized and funded by the National Foundation for Science and Technology (FCT).

At this stage, IBMC joined forces with the Institute of Biomedical Engineering (INEB), and proposed the creation of an Associate Laboratory and in 2000 the

two Research Units became known as the IBMC.INEB Associate Laboratory (LA).

IBMC continues to develop fundamental and applied research in Life Sciences with distinct applications related to health and biomedicine at the highest national and international levels. To do so, it ensures a highly multidisciplinary environment that fosters the implementation of fully integrated scientific programs across the different Thematic Units and Research Groups in order to pursue new and innovative approaches to fundamental Biological questions.

“IBMC has developed strong basic research in the field of Life Sciences, which has allowed a successful interface with applied and clinical research at the highest international level. This has resulted in a very productive multidisciplinary environment in which Research Groups can collaborate to find innovative answers to biologically relevant medical questions” *Claudio Sunkel*

IBMC Association

ASSOCIATED INSTITUTIONS:

Universidade do Porto

FCUP

FMUP

ICBAS

FEUP

FFUP

Centro Hospitalar de São João

Centro Hospitalar do Porto -
Hospital de Santo António

BIAL

CCDRN

Câmara Municipal do Porto

FLAD

INSA

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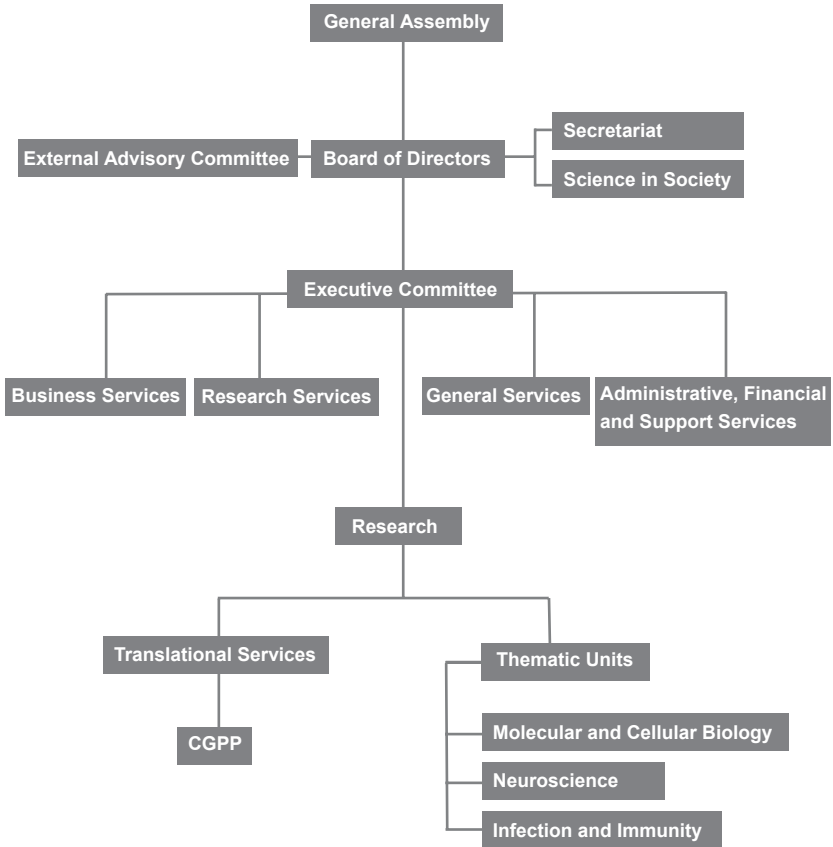
Nuria Verdaguer

Instituto de Biología Molecular, Barcelona

Peter Heutink

Vrije Universiteit, Amsterdam

1.2. Organization

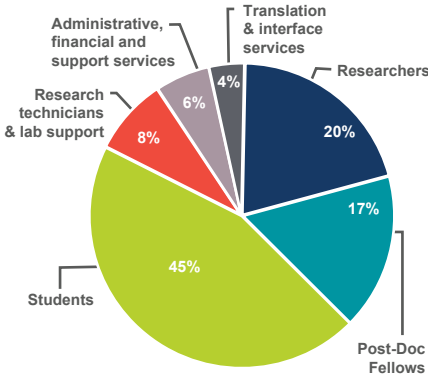


In 2011 the Institute had 498 collaborators, distributed among several areas of expertise and services, managed by a renewed management structure, in operation since 2009.

Our mission is to foster research in Life Sciences and Biomedicine at the highest international level, to promote postgraduate training of young researchers, to encourage technology transfer and public engagement with science.

1.3. Staff distribution and funding sources: an overview

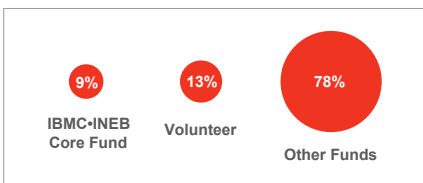
IBMC Staff activity distribution (n=498, in 2011)



IBMC personnel includes the 498 integrated plus 36 external collaborators (i.e. those who spend less than 20% of their working hours at IBMC). Only fully integrated collaborators are included in this analysis. A large number of IBMC collaborators have a PhD (researchers and post-docs represent 37%) while 45% are MSc/PhD students or trainees.

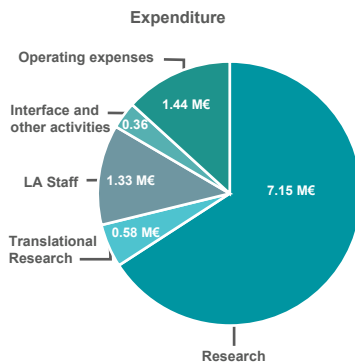
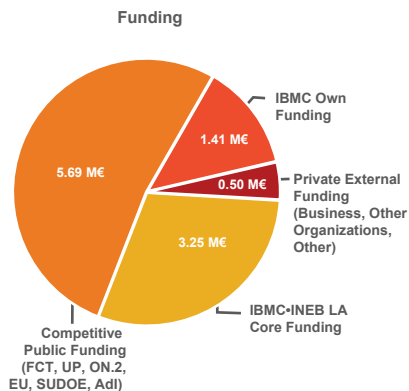
| | <i>number</i> |
|--|---------------|
| Researchers | 460 |
| Researchers | 99 |
| Senior Scientists | 3 |
| Post-Docs | 82 |
| PhD Students | 125 |
| MSc Students | 31 |
| Other Students and Trainees | 65 |
| Technicians | 26 |
| Collaborators | 29 |
| Scientific Services | 16 |
| Research Technicians | 6 |
| Technicians | 1 |
| Staff | 8 |
| Collaborators | 1 |
| Translational Research | 17 |
| Clinical Staff | 13 |
| Collaborators | 4 |
| Science Management and Support | 12 |
| Science Managers | 4 |
| Post-Docs | 1 |
| PhD Students | 1 |
| Technicians | 2 |
| Other Students and Trainees | 2 |
| Collaborators | 2 |
| Administrative and Financial Services | 16 |
| Managers | 1 |
| Technicians | 9 |
| Staff | 6 |
| General Services | 13 |
| Technicians | 5 |
| Staff | 8 |
| Total | 534 |
| Total without external collaborators | 498 |

IBMC Staff funding sources (n=498, in 2011)



2011 IBMC budget

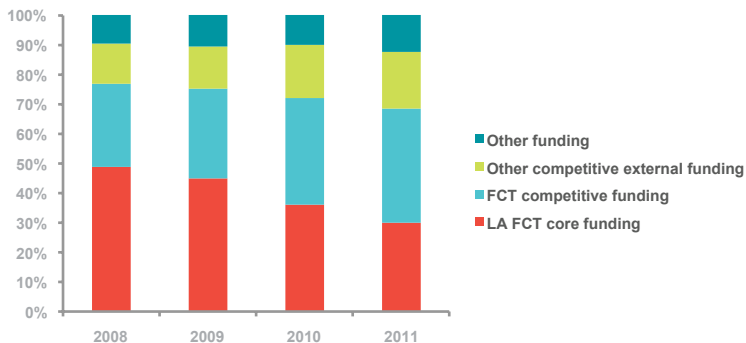
Total: 10,85 M€



In 2011, overall expenditure was 10,85 M€. Associate Laboratory core funding to IBMC is less than 30% of the total annual budget, a percentage that has been steadily decreasing since 2008. IBMC runs an autonomous infrastructure that is not supported by the University or any other private or public institution; therefore it has to raise funds to cover all the costs of the infrastructure.

IBMC has diversified its funding sources, which include both national and international competitive funding as well as services, and industry-related projects.

Expenses evolution by funding sources



2.1. Research Groups

Scientific research is the core activity of IBMC. In 2011, 37 groups carried out fundamental and applied research on three key domains: Infection and Immunity, Molecular and Cellular Biology, and Neuroscience.

Infection and Immunity

- Cell Activation and Gene Expression
- Fish Immunology and Vaccinology
- Immunobiology
- Iron and Innate Immunity
- Microbiology and Immunology of Infection
- Molecular Microbiology
- Parasite Disease

Neuroscience

- Glial Cell Biology
- Laboratory Animal Science
- Lysosome and Peroxisome Biology Unit
- Molecular Neurobiology
- Morphophysiology of the Somatosensory System
- Nerve Regeneration
- Neuropharmacology
- Spinal Neuronal Networks
- Translational Neuro-Urology
- UniGENe

Molecular and Cellular Biology

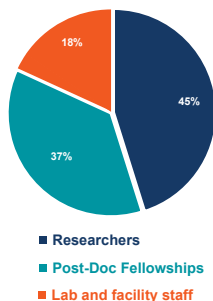
- Basic and Clinical Research on Iron Biology
- Bioactive Natural Products
- Bioengineering and Synthetic Microbiology
- Biomolecular Structure
- Cellular and Applied Microbiology
- Chromosome Instability and Dynamics
- Evolutionary Systems Biology
- Mitochondria
- Molecular Biology of Nitrogen Assimilation
- Molecular Evolution
- Molecular Genetics
- Organelle Biogenesis and Function
- Protein Crystallography
- Redox Cell Signalling
- Structural Biochemistry

Associated Groups

- Ageing and Stress
- Biology of Inflammation and Reproduction
- Genetics and Arthritis Research
- Molecular Biophysics
- Molecular Parasitology

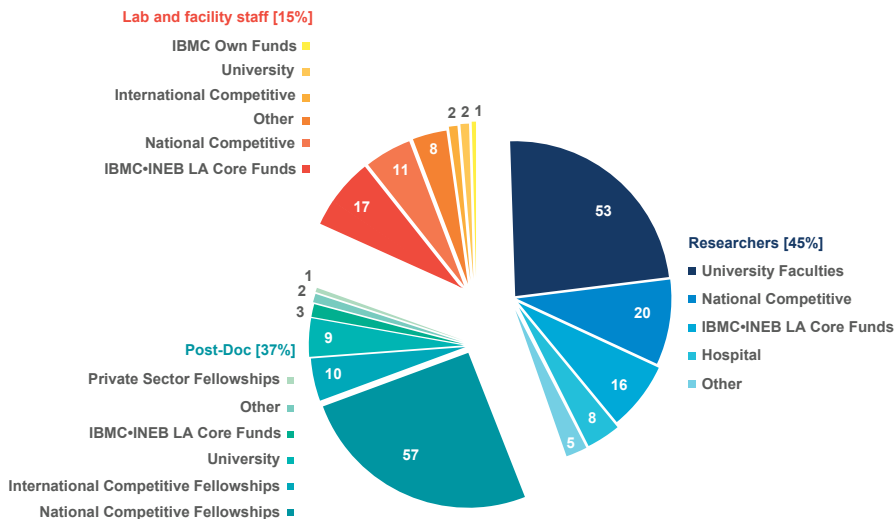
2.2. Research Staff: categorization and funding sources

Research Staff (n=226, in 2011)



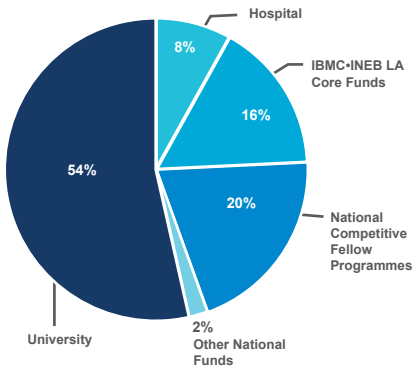
From the 498 collaborators, 460 are directly engaged in research: 226 are researchers, post-docs, lab technicians and scientific service managers, and 224 are students. Both groups are separately analysed in this document. Lab and research technicians comprise about 18% of the research staff. The IBMC research staff is financed by various funding sources. For example, in the researchers group more than 50% are University professors.

Research Staff Funding Sources (n=226, in 2011)

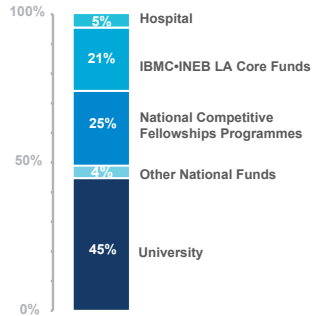


Researchers: funding sources

Researchers funding sources (n=99)

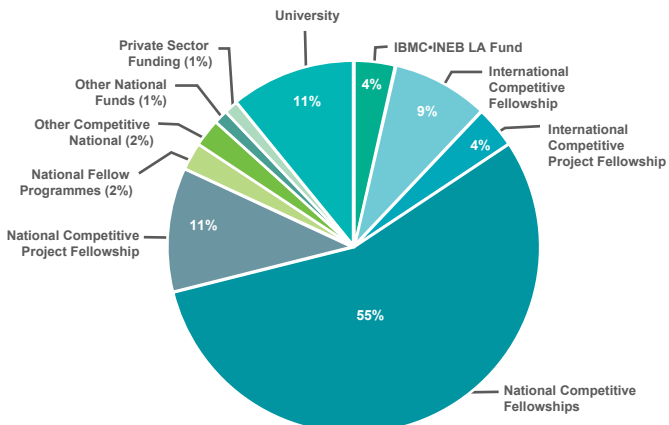


Researchers Full Time Equivalent (N=99)



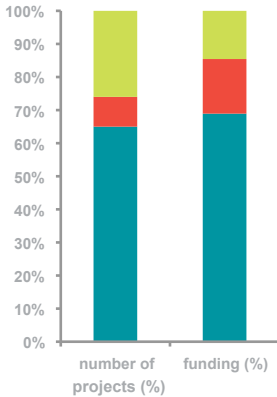
IBMC hosts 99 researchers that are either directly employed by IBMC or by one of our partner institutions. An additional 83 post-doc fellows are supported by several funding sources. In FTE (full time equivalent), IBMC has approximately 75 (FTE) researchers, mostly because the majority of them also have academic or clinical commitments (54% are University Professors and 8% Medical Doctors). Researchers hired by IBMC.INEB core funds correspond to only 25% (FTE) of IBMC scientists.

Post-Docs Funding Sources (n=83)



2.3. Research Projects: funding sources

Funding Sources (2008-2011)



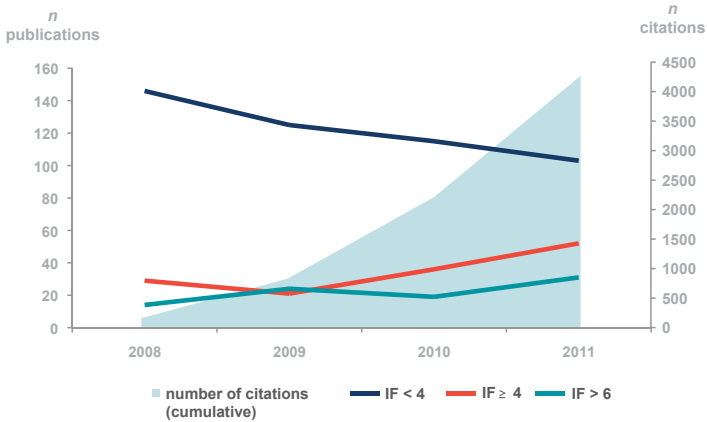
In 2008-2011, FCT has played a significant role in funding competitive research projects (65% of the total of projects). However, IBMC has been also successful in obtaining other national and international competitive funding. In 2011 IBMC held 141 projects, resulting on a ratio of 1,4 projects per researcher: 97 funded by FCT, 12 by EU, and 33 by other sources.

■ Other sources ■ International EU ■ National FCT



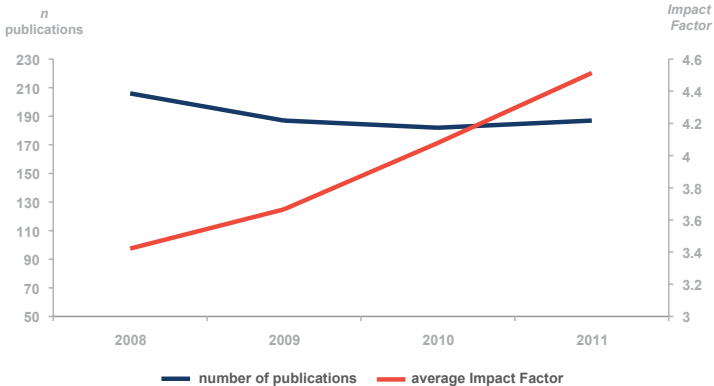
2.4. Research Productivity

Number and Impact of publications 2008-2011



IBMC has been working very hard to improve the impact of its publications. As a result, the average IF of the publications has raised steadily, associated with a slight drop in the number of publications. In 2011, IBMC published 186 papers in international peer reviewed journals (20 of which had an IF of >9), reaching a ratio of 1,9 papers per researcher (n=99, if considered the FTE=75 the ratio is 2,48). IBMC reached 4257 citations in 2011, for papers published in 2008-2011.

Comparison: number of publications vs Impact Factor average

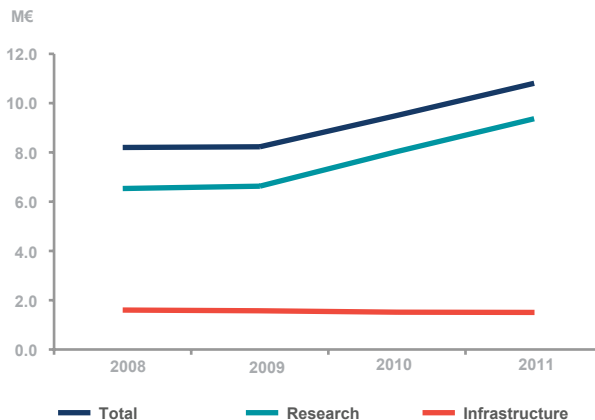


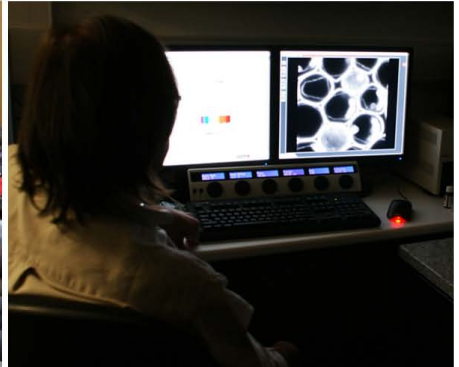
2.5. Research vs running costs

| Scientific Services | Administration, Financial and Support Services | Translation, Interface and Management Services |
|-------------------------------------|--|--|
| Histology and Electron Microscopy | Financial and Administrative | Predictive and Preventive Genetics |
| Animal Facility | Project Management | Technology Transfer |
| Protein Production and Purification | Information Technology | Programs' Office |
| Radioactivity | Library | Science Communication |
| Advanced Light Microscopy | Maintenance | |
| Cell Culture and Genotyping | Secretariat | |
| Advanced Flow Cytometry | Events Management | |
| Occupation Health & Safety | | |

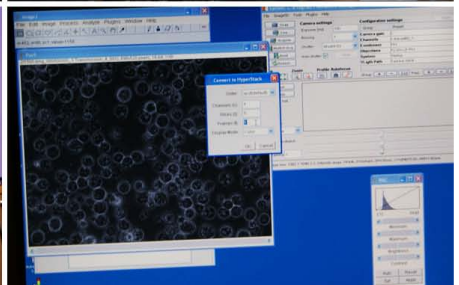
IBMC has a policy of shared core scientific resources that allows a more rational use of resources. We have 8 Scientific Services, 7 Administrative, Financial and Support Services, and 4 Science Translation, Management and Interface Services. IBMC has become increasingly cost-efficient using little over 13% of the total expenses in infrastructure. Most of resources raised are therefore invested directly into research.

Expense: Research vs. Infrastructure





3. Training, Translation and Interface Activities

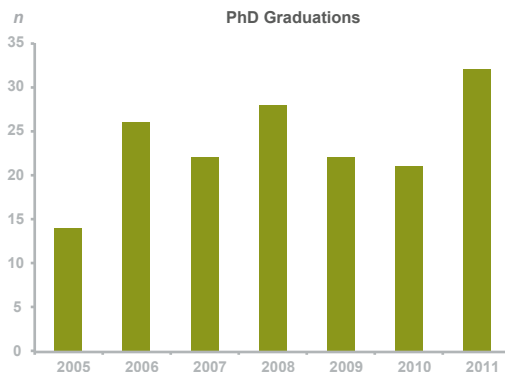
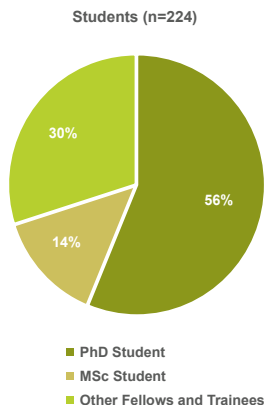


3.1. Training

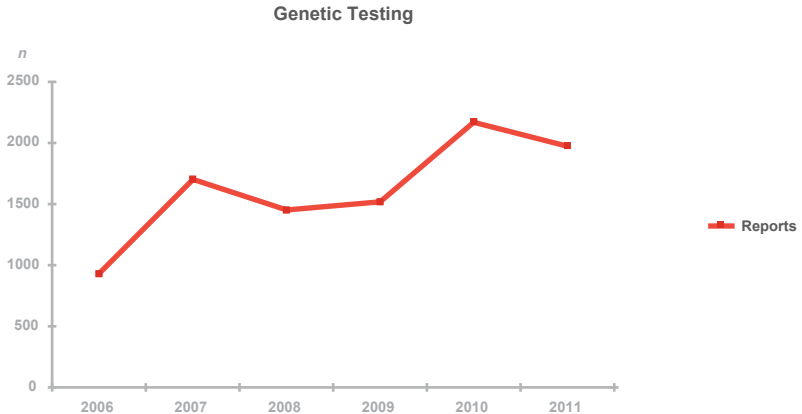
IBMC provides the infrastructure and environment for the training of future researchers in Life and Biomedical Sciences through **PhD programs** and other **post-graduate studies** in cooperation with various faculties of the University of Porto and also from other Universities. IBMC is currently developing a **training center** specialized in topics and techniques of fundamental relevance for current research such as laboratory animal science and advanced microscopy.



In 2011, IBMC hosted 224 students, 56% of which were PhD students. In the same year 32 PhD students completed their degree and IBMC organized 50 Scientific Seminars, 7 Workshops, 14 modules of the GABBA PhD program, 5 international meetings and 3 advanced training courses. The IBMC runs the only internationally accredited training course in laboratory animal science in Portugal. Since 2005, more than 300 researchers from institutions across Portugal have received advanced training in laboratory animal science organized by the IBMC.

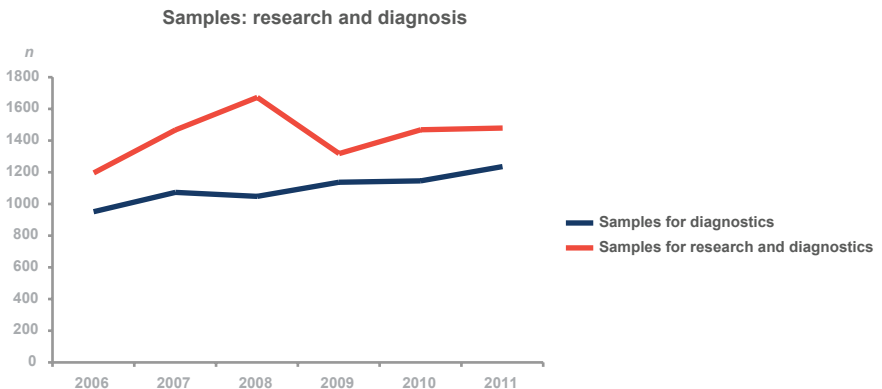


3.2. Translational Research



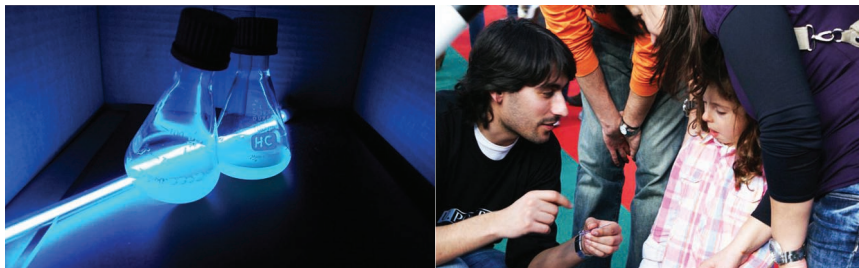
IBMC is also involved in Translational Research, carried out mostly through the Center for Predictive and Preventive Genetics (CGPP). This unit performs genetic diagnostics and counselling on genetic diseases, mainly neurodegenerative diseases and hemochromatosis, which have been studied at the IBMC over many years.

CGPP handles more than 1000 samples for genetic diagnostics and sent more than 2000 reports to clinicians all over the country per year. This service is entirely self-funded and invoiced more than 1,2 M€ in 2011.



3.3. Science in Society

The partnership between IBMC•INEB is committed to the promotion of a dialogue between Science and schools, science and the general public, science and the arts, and science and media. There is a large number of initiatives being developed that allow IBMC•INEB researchers and staff to participate in many different activities.



In 2011 IBMC•INEB developed 4 projects with 90 primary school students and 20 volunteers (researchers, post-docs and graduate students); 900 high-school students visited the institute with the assistance of 40 volunteers; 20 researchers were involved in the “science ambassadors” program; 20 volunteers were involved in the Summer School Training programs; 16 high-school teachers were trained in an accredited course on synthetic biology; our virtual platform for schools reached 4300 visits; the Associate Laboratory has been involved in national consortia of the European Researchers’ Nights; the institute is also a partner in the first Portuguese Science Shop and has participated in 2 large science fairs.

