

# Science





✦ Gulbenkian Programme to Promote Research, 2006. Awarding of distinctions. Calouste Gulbenkian Foundation, 19/03/2007.



## Science Department

	Amounts in euros
Personnel costs	403 352
Operating costs	175 553
Departmental activities	441 818
Subsidies	776 544
<b>Total</b>	<b>1 797 267</b>
Receipts	191 263

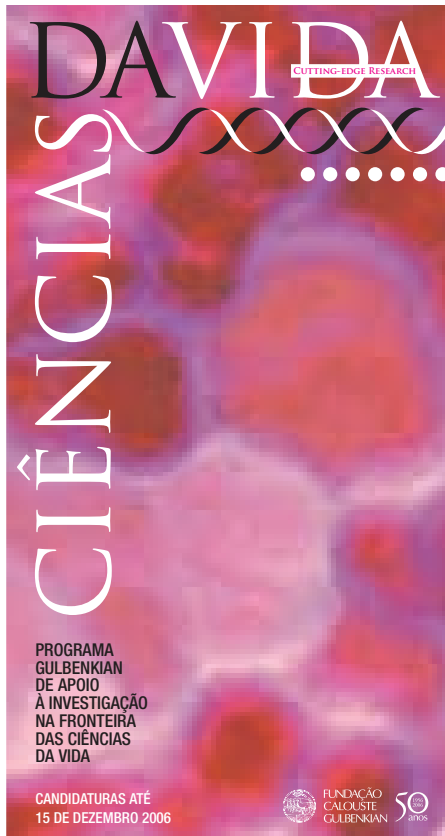
As laid out in its statutory aims and the guidance framework for the Foundation's activities in the field of science, there were three structuring goals of the department's activities in 2006:

- › stimulating creativity and rigour in scientific practice;
- › encouraging links between science and culture;
- › strengthening the interaction between science and society.

### Stimulating creativity and rigour in scientific practice

#### Gulbenkian Young Researchers Incentive Awards

As part of the Gulbenkian Programme to Promote Research, activities were carried out to support and encourage younger researchers, with the launching of a competition in four areas. Every year the programme identifies two high-quality proposals in each scientific field and supports their execution over the following year at research centres in Portugal. 65 applications were submitted for the competition, in the four scientific fields. Following their assessments, the evaluation committee recommended that the work of eight candidates be recognised, each with a total grant of € 12,500, awarded in two parts – € 2,500 to the researcher him/herself, and € 10,000 towards the costs of carrying the research project out, awarded to the institution where the work would take place.



### **The Gulbenkian Programme to Support Research in the Life Sciences**

This programme aims to encourage originality and the development of creative new ideas in research work in the life sciences, and arose from a desire to provoke in centres of excellence the capacity to take greater risks among younger researchers in work on the cutting edge.

The final trimester of the year saw a competition being launched alongside national research institutions which resulted in 152 applications.

### **Programmes for Improving Research Potential**

Support for basic research was undertaken through the awarding of various grants, of which the following are worth highlighting: to the Sciences Faculty Foundation of Lisbon University for the “Portuguese Post-Kyoto” project; to the Higher Institute for Economics at the UTL for the “Globelics Academy 2006”; and to the Wissenschaft im Dialog gGmbH, Germany, for support of ESOF 2006.

### **The Gulbenkian “New Talents in Mathematics” programme**

The Gulbenkian “New Talents in Mathematics” programme each year identifies university mathematics students who demonstrate particularly high academic standards, and encourages the development of their mathematical aptitudes and culture, supporting their work with recognised experts who take on the role of tutors. Following a public competition, the Foundation awarded 20 scholarships, won by students who were in their 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> year in a mathematics degree course in the 2006-7 academic year.

The third Summer School, named the Escola Diagonal, ran from 4 to 8 September at the Faculty of Sciences at the University of Porto and involved approximately 80 students (more than 30 of them from secondary education, and the remainder from higher education). Four courses were run, each with five classes complemented with working sessions. This Escola Diagonal preceded the 6<sup>th</sup> National Meeting for the “New Talents in Mathematics” programme, held in Luso from 8 to 10 September, and whose main objectives were: giving the funded students from all over the country the opportunity to meet one another and exchange experiences on their respective academic settings; carrying out an appraisal of the work developed as part of the programme; holding sessions for scientific discussion involving all



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 7 de Outubro 2006

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participants, both students and tutors. The meeting also included a series of papers presented by some of the students and invited academics, from Portugal and abroad.

✦ Gulbenkian “New Talents in Mathematics” Programme, National Programme Meeting at the Luso Grand Hotel, September 2006.

### Encouraging links between science and culture

#### Dissemination of scientific culture

With the aim of promoting and encouraging the dissemination of science and scientific culture, a number of grants were awarded to various institutions to run a variety of initiatives.

### Cycle of colloquia and seminars

Work began to prepare for a seminar on “Science and Politics”, an initiative that would form part of the Foundation’s Fiftieth Anniversary Celebrations. This seminar would bring together a group of experts and political decision-makers with the aim of contributing to a greater understanding of the decision-making processes in which science plays a critical part, as well as the impact of scientific knowledge on the defining of strategies for the future.

A cycle of conferences “Science and the City” was promoted; it consisted of eight debates, one a month between 15 March and 13 December. The format of each conference in the cycle included the presentation of a paper, two commentaries and a moderator.



“Science and the City” debate series: the market. António Câmara, New University of Lisbon – Ydreams; José Vitor Malheiros, moderator; Filipe Araújo, journalist and documentary-maker; Gustavo Cardoso, sociologist. Calouste Gulbenkian Foundation, 21/06/2006,



Also within the framework of conferences and seminars, on 7 January there was a meeting under the title “Communicating Science through Scientific Instruments”, which brought together a group of foreign and domestic experts to debate this issue. The book *Sociedade em Rede* was launched on 3 February.

### **The “Gulbenkian Professorships” programme**

The “Gulbenkian Professorships” programme seeks to encourage the exchange of experiences and promote scientific mobility within research work. Scholarships called “Gulbenkian Professorships” are awarded to scientists and researchers of international renown who come to spend a period of time (at least a term, at most a year) in Portugal, running seminars, conducting research and encouraging the advanced training of post-graduate academics. In 2006 the support went to Professors G. Jank and Philip Ross to work at the University of Aveiro.

### **Strengthening the interaction between science and society**

#### **The “Science and Society” programme**

As part of this programme grants were awarded to the Research Foundation of the State University of New York, to carry out the second year of their “Questioning 19<sup>th</sup>-century Assumptions about Knowledge” project; and to the ISCTE for the “Lisbon Agenda Group” project.

#### **Scientific dissemination exhibitions**

The scientific exhibition “In the Light of Einstein” was open to the public at the Museu Nacional da Ciência e da Técnica Dr Mário Silva in Coimbra between 16 May and 24 November, and received 4,237 visitors.

Preparatory work was carried out for the exhibition “Ingenuities: Photography and Engineering, 1846-2006”, organised as part of the Foundation’s Fiftieth Anniversary Celebrations, including preparing the exhibition catalogue for publication in both Portuguese and English versions.

Work began to plan another exhibition of a scientific nature to be held in 2009.

### **Publications**

Preparatory work began on a publication containing the conference papers which were presented as part of the “Wake up to Science” 2004 and 2005 cycles.



🔬 Microscope observation of fruit flies.



## The Gulbenkian Institute of Science

The purpose of the Gulbenkian Institute of Science (IGC) is to conduct scientific research and post-graduate training in bio-medicine, contributing to the creation of new leaders in the country's scientific community. The IGC functions as a 'host institution', offering a remarkable intellectual atmosphere, as well as excellent set-ups and services to young Portuguese and foreign researchers, who set up their own research teams here autonomously and develop their projects over fixed periods of time.

	Amounts in euros
Personnel costs	1 545 170
Structural costs	1 572 884
Departmental activities	4 804 611*
Subsidies and grants	1 052 958
<i>Investment</i>	<i>1 826 416</i>
<b>Total</b>	<b>8 975 623*</b>
Receipts	3 754 213

*\* The values affected refer to funds managed by the Calouste Gulbenkian Foundation (FCG), excluding other financing assigned directly to the researchers, students or technicians or generated through other bodies. In 2006 the budget assigned to the IGC by the FCG included extraordinary funds for purchasing new equipment, associated with the Foundation for Science and Technology's Annual Competition.*

The Institute's areas of interest tend towards certain defined areas of biomedicine, namely the genetic and molecular bases of the development and evolution of complex systems. The subjects given priority are the genetics of complex illnesses and of resistance to infection, auto-immunity, stress and inflammation, the biology of animal and plant development and neurosciences. The IGC is characterised too by the robust support it gives to theoretical and computational biology and its internationalisation, through the exchange of people from various foreign institutions as well as post-graduate courses, workshops and symposia. The IGC also includes a library, a vivarium (for the production of specific pathogen-free mice, and a germ-free unit), a service producing transgenic animals, as well as a high-quality technological platform of equipment and human skills: high-speed cell separation; electron microscopy, confocal and multiphotonic microscopy; DNA sequencing and genotyping, Genechip™, the preparation of monoclonal antibodies, a laboratory with level-three biosecurity and a high-performance computation infrastructure for bio-informatic computing.

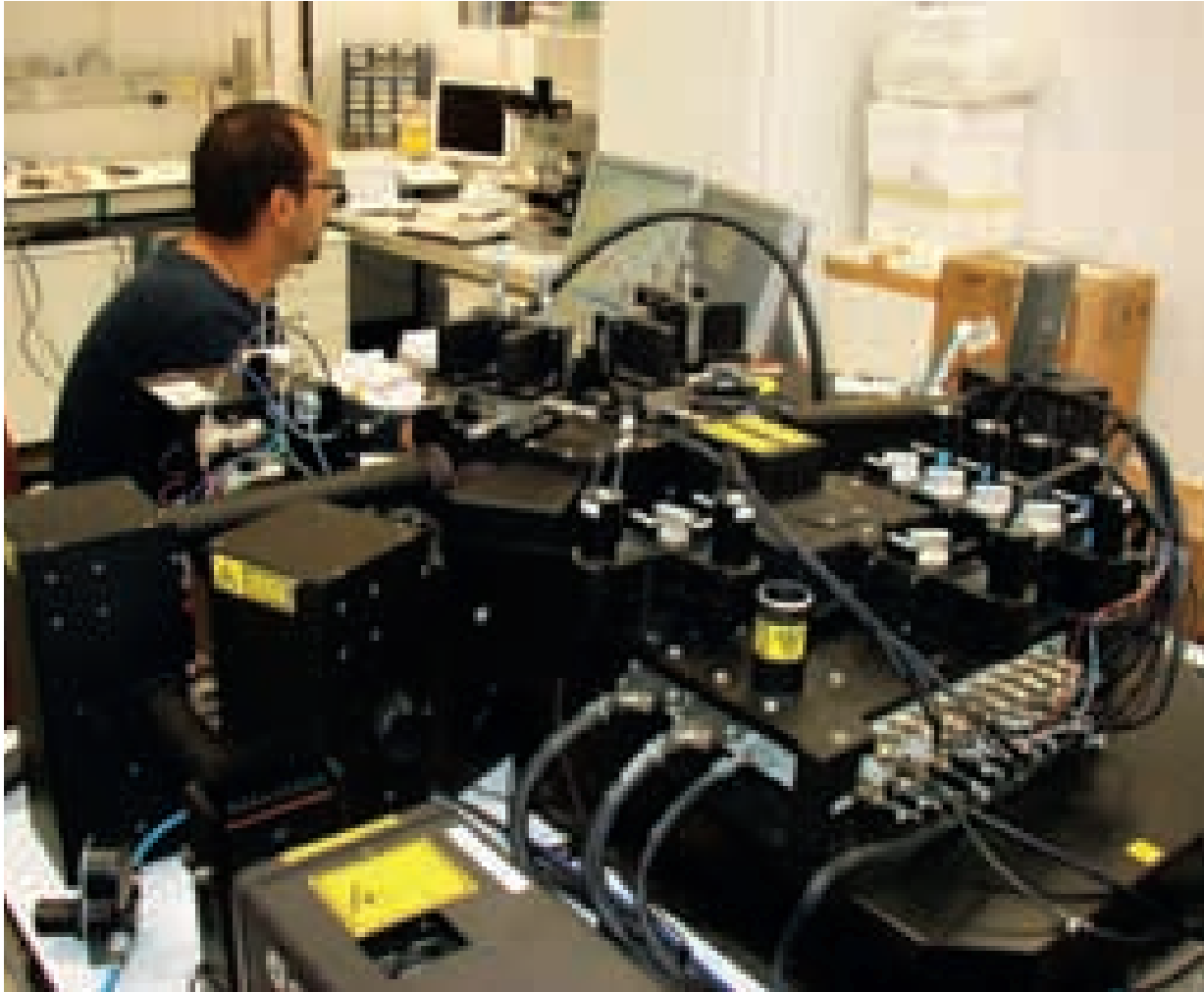
Currently research in the IGC is carried out by 34 independent research groups and 12 research groups based abroad. Each of these groups has external financial support for carrying out their projects in areas that have been progressively consolidated: cell cycle and mitosis, cellular and molecular responses to stress, the biology of animal and plant development, immunological tolerance, auto-immune illnesses and inflammation, virus/host interaction, the development of vaccines against chronic infections, the genetics of resistance to malaria, the genetics of type I diabetes, of lupus and autism, evolution, behavioural neurobiology and theoretical and computational biology. In 2006 80 research articles were published in international journals, 6 review articles and/or chapters in books, and there were 219 presentations at conferences or scientific meetings. Altogether the IGC saw the preparation of 18 doctoral theses, four Masters' theses and twelve undergraduate theses.




Teaching at a postgraduate level has always been one of the IGC's strong suits. This tradition was maintained in 2006 through the Gulbenkian Biomedicine Doctoral Programme, the Gulbenkian Institute of Science Doctoral Programme and the Computational Biology Doctoral Programme. The IGC also organised various other international courses, namely the Advanced Course on Epidemiology of Infectious Diseases, and Biosapiens, the Fourth European School of Bio-informatics, as well as various conferences and workshops, highlights of which include the Fifth International Conference on Artificial Immune Systems (ICARIS 2006), the meeting of students and researchers who had been at the IGC (GAMEets) and the Annual Meeting for the students in the various current doctoral programmes. In addition the IGC organised 117 individual seminars.

Manipulation of transgenic animals in the vivarium.

Other IGC initiatives continued through 2006 included the promotion of dialogue between scientists and society. With this aim in mind the IGC organised a series of conferences and informal sessions between researchers and the general public, hoping to encourage enthusiasm



for and familiarity with the fundamental questions in biomedicine today, as well as finding ways of improving channels of communication between scientists, the communication media of society at large, secondary school biology teachers and the general public.

 High-speed cell separator (sorter).

The IGC was visited by some 708 secondary school pupils from up and down the country – a figure comparable to previous years. The IGC also set up an open day for the general public, which accounted for some 1,500 visitors.