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Programme for Advanced Medical Education

Leonor Parreira

Fundação Calouste Gulbenkian



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1969 “Advanced Studies of Oeiras” (Biology)

Instituto Gulbenkian de Ciência (IGC)

(fully supported by the Foundation)

1992

- New policy on scientific research and graduate education
- Initiation of a profound reform of IGC (new mode of operation)
- New Director of Advanced Studies (later of IGC) (António Coutinho)



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Instituto Gulbenkian de Ciência (IGC)

1993-1999 Gulbenkian PhD Programme in Biology
and Medicine ^(a)



IMPACT

- First example of cooperation between public (National Research Council) and non-profit private Institutions for advanced education in science.
- Other portuguese research institutes (Porto, Coimbra) rapidly launched similar programmes, also in collaboration with FCT.
- The Gulbenkian Foundation supports the new programmes

^(a) open to portuguese students only (12/year)
all fellowships from FCT

www.igc.gulbenkian.pt



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Gulbenkian PhD Programme in Biology and Medicine (PGDBM) (1993-1999)

101/103 obtained the PhD degree in portuguese or foreign Universities

63 returned to Portugal after 1 or 2 post-Docs abroad
(more planning to return)

Currently:

- 34 Group-leaders in research institutions (5 MDs)
- 7 Professors at portuguese Universities
- 4 Institute Director (1), Directors of Biotech companies (3)
- 14 “lateral mobility”: science communication, grant
administration, NGOs abroad
- 4 MDs in public hospitals



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Instituto Gulbenkian de Ciência (IGC)

1993-1999	Gulbenkian PhD Programme in Biology and Medicine ^(a)	 Fundação para a Ciência e a Tecnologia MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR	 BRITISH COUNCIL
2000-2004	Gulbenkian PhD Programme in Biomedicine ^(b)	 Fundação para a Ciência e a Tecnologia MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR	 BRITISH COUNCIL
2005-2009	PhD Programme in Computational Biology ^(c)	 Fundação para a Ciência e a Tecnologia MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR	 PT FUNDAÇÃO
2007-	PhD Programme in Integrative Biomedical Sciences (IGC internal Program) ^(c)	 Fundação para a Ciência e a Tecnologia MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR	
2007-	Champalimaud Neuroscience Doctoral Programme at IGC ^(c)	 Fundação para a Ciência e a Tecnologia MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR	 Champalimaud Foundation

^(a) open to portuguese students only; ^(b) 3 foreign students allowed; ^(c) open to foreign students.
all fellowships from FCT (10-12/year)



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PhD Programmes at IGC

		Students	MDs
1993-1999	Gulbenkian PhD Programme in Biology and Medicine (PGDBM)	103	10
2000-2004	Gulbenkian PhD Programme in Biomedicine	100	4
2005-2009	PhD Programme in Computational Biology	48	0
2007-	PhD Programme in Integrative Biomedical Sciences (internal IGC program)	36	0
2007-	Champalimaud Neuroscience Doctoral Programme at IGC	32	2
Total		319	16

Note: From 1993 to 2009, the IGC had been responsible for the recruitment and, at least in part, for the education, of nearly 500 doctoral students (formal graduate programs + students recruited directly by internal group-leaders)



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MDs in Gulbenkian (and other) PhD programmes

- few applicants (only 10% of selected students in PGDBM)
- majority did not return to clinical work after obtaining the PhD degree

Situation in the country

- exponential growth of highly qualified biomedical scientists
- new biomedical research institutes with international standards
- rapid progress of (basic) biomedical sciences

YET

- no significant progress in innovative patient-oriented research
- legal constraints to the practice of research by young MDs
 - obligatory full-time dedication to clinical duties during residency
 - no protected time for research
 - deficient education of MDs in modern biomedical science



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1996 – 2006

Repeated attempts to launch a doctoral programme specifically dedicated to MDs

- contacts with Ministers of Health and Science and Medical Schools
- no results: political instability (high turnover of Ministers of Health)

2007 new Minister of Health agrees to modify the legislation of medical residency

- interns allowed to interrupt the residency (maximum 3 years) for science education and research
- protected time for research during residency
- duration of residency prolonged for interns enrolled in doctoral programs

2008 final joint legislation of Ministers of Health and Science (protection and funding of interns in doctoral programmes)



2008: Programme for Advanced Medical Education

www.gulbenkian.pt

1st Doctoral Programme for clinicians in Portugal
(targeted at those who wish to pursue research activities as a long-term professional project)

Multi-institucional:

Instituto Gulbenkian de Ciência
Instituto de Medicina Molecular, University of Lisbon
IPATIMUP, University of Porto
New University of Lisbon

10 students per year (3 editions)

- 5 full-time (3 years fellowship) (Interns or Specialists)
- 5 part-time (6 months fellowship) (Interns)



AIM

Fostering and supporting the practice of high-quality medical research by physicians.

Principles

“Provide the students with graduate courses given by faculty (renewed every year) recruited amongst the very best active scientists in the world, so that they can gain critical knowledge and inspiration.”⁽¹⁾

Expose the students to the frontiers of the unknown in a wide diversity of biomedical fields.

Let the students decide on what to do and with whom to do (in the world)

⁽¹⁾ A. Coutinho. IGC Annual Report, 2007

The Programme offers the selected applicants:

- Excellent education in biomedical and clinical sciences under a multidisciplinary approach

- Financial support:

1- Full-time Students:

Specialists: a €30,000/year scholarship for 3 years plus €25,000 to support research activities.

Note: Specialists in Medical Oncology or related specialties will be supported by the **Champalimaud Foundation** (up to 3 trainees/year).

Interns: a €24,000/year scholarship for 3 years plus €25,000 to support research activities.

2- Part-time Students (only Interns) ⁽¹⁾

A €2,000/month scholarship for 6-months plus €25,000 to support research activities

⁽¹⁾ upon successful completion of graduate courses students return to internship (supported by Ministry of Health and FCT)

Structure

Graduate courses

6 months, starting in October each year, at leading Portuguese Biomedical Research Institutes.

Science & Medicine (3 months)

Challenges in Clinical & Translational Research (3 months)

Aim - offering a broad education in modern biomedical sciences to practicing physicians rather than producing professional scientists.

Research

Full-timers - 2,5 years in Portugal or abroad.

Part-timers (Interns) – research+internship (up to 8 years).



Programa de Formação Médica Avançada

Courses (2008-2009)	Institution
OPENING LECTURE	Fundação Gulbenkian
GET TOGETHER	Instituto de Medicina Molecular (IMM) & IGC
GENE EXPRESSION	IMM
LAB VISITS/READING/DISCUSSIONS	IMM or IGC
STRUCTURAL BIOLOGY	IGC
CELL CYCLE & DISEASE	IGC
GENETICS	IGC
COMPUTATIONAL BIOLOGY & MEDICINE	IGC
STATISTICS & EPIDEMIOLOGY	IGC & Porto Medical School
FREE READING/DISCUSSIONS	IGC
CANCER	IPATIMUP
IMMUNE DISORDERS	IMM
HOSTS & PATHOGENS	IMM
AGING	IGC
DEV BIOL (Symposium)	Fundação Gulbenkian
NEURODEGENERATIVE DISORDERS	IMM
REGENERATIVE MEDICINE	IMM
ETHICS & SCIENTIFIC INTEGRITY	IMM
PREPARING FOR RESEARCH	IMM
INTERVIEWS & EVALUATION	Fundação Gulbenkian

International Faculty (2008-2009)

Country	Institutions	Instructors
UK	Univ. Cambridge, NIMR Mill Hill, London, Univ. Manchester, European Bioinformatics Institute, London School Hygiene & Tropical Medicine, Guy's Hospital, London, UK Research Integrity Office, Imperial College, London, Univ. College, London	17
USA	Univ. Harvard, Univ. California San Francisco, Univ. Michigan, Craig Venter Institute, Univ. Philadelphia, NHI Bethesda	16
Germany	Univ. Koln, Univ. Heidelberg, Univ. Philipps Universitat, Marburg, Max Plank Institute, Martinsried.	5
Italy	Univ. La Sapienza, Rome, Univ. Milan	5
Holland	Univ. Erasmus Rotterdam, Univ. Leiden, Univ. Medical Center Groningen	4
Sweden	Univ. Umea, Univ. Upssala	4
Spain	Univ. Pompeu Fabra, Centro Nacional de Biotecnologia, Hospital Donostia Paseo, San Sebastian, University Clinical Hospital, Valencia	4
France	Centre d'Immunologie de Marseille-Luminy, Univ. de Nice-Sophia Antipolis	4
Brasil	Univ. S. Paulo, Univ. Maranhão, Fund. Oswaldo Cruz	3
Belgium	Univ. Hospital, Ghent	1
Croacia	Univ. Zagreb	1
Total (instructors)		64
Total (institutions)		34



Programa de Formação Médica Avançada

National Faculty (2008-2009)	
Instituto Gulbenkian de Ciência	15
Instituto de Medicina Molecular/Univ Lisboa	18
IPATIMUP, Univ. Porto	4
Univ. Porto	4
Univ. Lisboa	3
Hosp. St. Maria	3
Uni. Nova de Lisboa	3
Univ. Minho	1
Univ. Algarve	1
Univ. Coimbra	1
Total (instructors)	53
Total (institutions)	10



Students admitted in 2008

FULL-TIME (2008)

Name	Specialty		Institution of origin
Sofia Santos Braga	Oncology	Specialist	Instituto Português de Oncologia de Lisboa
Ana Sofia Cerdeira	Gynecology	Intern	Hospital Geral de Santo António, Porto
Sandra Garcês Gama	Rheumatology	Intern	Hospital Garcia de Orta, Lisboa
Maria Rita Dionísio Abreu	Oncology	Specialist	Instituto Português de Oncologia de Lisboa
Filipe Martins	Gynecology	Intern	Hospitais da Universidade de Coimbra

PART-TIME (2008)

Name	Specialty	Degree	Institution
Ana Bastos Carvalho	Ophtalmology	Intern	Hospital de Santa Maria, Lisboa
Joana Azevedo	Hematology	Intern	Centro Hospitalar de Coimbra
Teresa Lima Braga	Surgery	Intern	Hospital de Santa Maria, Lisboa
Ricardo Fernandes	Pediatrics	Intern	Hospital de Santa Maria, Lisboa
Nuno Leitão Figueiredo	General Surgery	Intern	Hospital de Santa Maria, Lisboa

FULL-TIME (2008)

Name	Specialty		Research (chosen Institution)
Sofia Santos Braga	Oncology	Specialist	Instituto Gulbenkian de Ciência
Sandra Garcês Gama	Rheumatology	Intern	Instituto Gulbenkian de Ciência
Maria Rita Dionísio Abreu	Oncology	Specialist	Cornell University
Ana Sofia Cerdeira	Gynecology	Intern	Harvard University
Filipe Martins	Gynecology	Intern	Harvard University

PART-TIME (2008)

Name	Specialty	Degree	Institution
Ana Bastos Carvalho	Ophtalmology	Intern	Hospital de Santa Maria, Lisboa CIPM, Lisboa
Joana Azevedo	Hematology	Intern	Centro Hospitalar, Coimbra University College, London
Teresa Lima Braga	Surgery	Intern	Hospital de Santa Maria, Lisboa Instituto Gulbenkian de Ciência
Ricardo Fernandes	Pediatrics	Intern	Hospital de Santa Maria, Lisboa Amsterdam University Medical Center
Nuno Leitão Figueiredo	Surgery	Intern	Hospital de Santa Maria, Lisboa Instituto de Medicina Molecular, Lisboa

Students admitted in 2009

FULL-TIME (2009)

Name	Specialty		Institution of origin
Alexandra Santos	Immuno-allergology	Intern	Hospitais da Universidade, Coimbra
Inês Pires Silva	Oncology	Intern	Instituto Português de Oncologia, Lisboa
Susana Vacas	Anesthesiology	Intern	Hospital de Santarem, Santarem
Sandra Jacinto	Pediatrics	Specialist	Hospital D. Estefania, Lisboa
Alexandra Borges	Radiology	Specialist	Instituto Português de Oncologia, Lisboa

PART-TIME (2009)

Name	Specialty	Degree	Institution of origin
Jaime Almeida	Psychiatry	Intern	Hospital S. Francisco Xavier, Lisboa
Diogo Casal	Plastic Surgery	Intern	Hospital S. José, Lisboa
Claudia Faria	Neurosurgery	Intern	Hospital de Santa Maria, Lisboa
Catarina Santos	General Surgery	Intern	Instituto Português de Oncologia, Lisboa
Nuno Cortez-Dias	Cardiology	Intern	Hospital de Santa Maria, Lisboa



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Ministério da Ciência, Tecnologia e Inovação

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Culture has a Lamarckian mode of transmission, as it leaves no inherited imprint in individuals. Education, perhaps the noblest of all human endeavors, thus represents the only strategy to “improve” upon biological evolution.

António Coutinho
Instituto Gulbenkian de Ciência
Annual Report (2008)