

## **3-7 November 08**

### **Cell Cycle, Cytoskeleton & Disease**

**Programa Gulbenkian de Formação Médica Avançada (com participação da Fundação Champalimaud)**

#### **Purpose of the PhD programme:**

The Programme of Advanced Medical Training has the objective of supporting and involving medical specialists in translational and clinical research. As such, the Programme will provide opportunities in biomedical and clinical science education. In addition, it will allow the acquisition of skills that will permit, in the future, the collaboration between clinical practice and investigation in the participating Health Centres.

#### **Purpose of this course:**

- Overview of the basis of cell cycle and cytoskeleton
- To see good examples of basic research & the use of model organisms and how they relate to human disease
- To discuss fundamental biology papers, to present and referee them
- To be able to think of exciting questions in these fields and to propose research projects to tackle them
- To see the IGC and research done at IGC (excellent reference for Basic research in Portugal)

#### **Audience of this course:**

- **Seminars**

Open to everyone (from IGC and other researchers) when at Ionians Seminar Room

- **Rest of the course-people who will present journal clubs and projects and participate in practical work- Theano Room.**

12 Interns and Specialists

4 students from IMM PhD programme

1 student associated with IGC

- **Other interested people may attend the sessions but not present or participate in practical.**

Total of 15-20 other people (IGC PhD and Master students and postdocs) will be attending.

## - External Faculty

- **Phong Tran**- Cytoskeleton (Tubulin/Actin)- University of Philadelphia (USA)/ Institut Curie (Paris)-email: tranp@mail.med.upenn.edu  
[www.med.upenn.edu/camb/faculty/cbp/tran.html](http://www.med.upenn.edu/camb/faculty/cbp/tran.html)
- **Karim Labib**- DNA replication & cancer -Paterson Institute for Cancer Research, Manchester, UK- email: KLabib@picr.man.ac.uk  
<http://www.paterson.man.ac.uk/groups/cellcycle.jsp>
- **Martin Eilers**- Signalling and cancer- Institut für Molekularbiologie und Tumorforschung, Philipps-Universität Marburg (Germany) email:eilers@imt.uni-marburg.de  
<http://www.imt.uni-marburg.de/eilers/>
- **Tim Mitchison**- Harvard Medical School (USA)- Cytoskeleton, Cell Division and Cancer - email: timothy\_mitchison@hms.harvard.edu  
<http://mitchison.med.harvard.edu/>
- **Erich Nigg**- Max-Planck-Martinsried (Germany)- Cell Cycle and Mitosis & Cytoskeleton - email: nigg@biochem.mpg.de  
[www.biochem.mpg.de/nigg/](http://www.biochem.mpg.de/nigg/)
- **Helder Maiato**- IBMC (Porto, Portugal)-Mitosis and Microtubules  
Maiato@ibmc.up.pt  
<http://www.ibmc.up.pt/cid/>
- **Paula Chaves**- Serviço de Anatomia Patológica, Lisbon Portuguese Institute of Cancer of Francisco Gentil, EPE. Barrett's oesophagus, genomic instability and centrosomes- pchaves@ipolisboa.min-saude.pt

## -Internal (IGC) faculty:

- **Monica Bettencourt Dias**- Centrosomes & Cell Cycle-IGC-  
<http://sites.igc.gulbenkian.pt/ccr/>
- **Florence Janody**-Actin Cytoskeleton & Cancer- IGC-  
<http://www.igc.gulbenkian.pt/research/unit/72>
- **Miguel Godinho**- Telomere and Genomic Stability- IGC-  
<http://www.igc.gulbenkian.pt/research/unit/69>
- **Alvaro Tavares**- Cell cycle & Mitosis –IGC-  
<http://www.igc.gulbenkian.pt/research/unit/28>
- **Lars Jansen**- Centromeres & Epigenetics- IGC-  
<http://www.igc.gulbenkian.pt/research/unit/89>
- **Rui Martinho**- Early Fly Development-  
<http://www.igc.gulbenkian.pt/research/unit/70>

# Programme

Monday	<b>3 Nov</b>	09:30	Monica Dias-Introduction to the Course (Theano)
		10:00	P. Tran (Institut Curie, FR)- Introduction to the Cytoskeleton & Microscopy (2 hours with break) (Theano)
		12:00	F. Janody (IGC)- Research on actin & drosophila & cancer- Tour of Fly Room-(Theano)
		13:00	Lunch with Phong & Florence
		14:30	A. Tavares (IGC)- Introduction to the Cell cycle (1 hour)-(Theano)
		16:00	K. Labib-DNA replication and human disease (Paterson Institute, UK) (1,5 hours) (Theano)
		17:30	JC guidelines (30 min)-(Theano)
Tuesday	<b>4 Nov</b>	09:30	M. Godinho (IGC)-Chromosome Maintenance-45 min-(Theano)
		10:30	K. Labib Seminar (open to everyone)- Ionians-The beginning and the end of the Cell Cycle
		12:00	IGC Internal Seminar-Lounès Chikhi
		13:00	Lunch with K Labib & M Godinho; Miguel Shows Yeasts
		14:45	Free afternoon to prepare journal clubs
Wednesday	<b>5 Nov</b>	09:30	Monica & Martin-Journal Club I (1 group presenting paper; 1 group refereeing)-(Theano)
		10:30	M. Eilers- Signalling and cancer (Marburg, DE)-(Theano)
		12:00	M. Eilers seminar (open)-Transcriptional Repression: The Dark Side of Myc- Ionians
		13:00	Lunch with M Eilers
		14:30	Centrosomes and Cancer-M Dias (IGC) & P Chaves (IPO) (1,5 hours with small break)-(Theano)
		16:15	R Martinho (IGC)- Using flies to find new therapies (45 min with discussion)-(Theano)
Thursday	<b>6 Nov</b>	09:30	H. Maiato-Mitosis (IBMC, Porto) (1 hour) (Theano)
		10:30	Maiato & Dias & Jansen-Challenge and Project Preparation (3 groups) (Theano)
		12:00	Project presentation & discussion- (each group 10+5 min) (Theano)
		13:00	Lunch with H. Maiato & L Jansen
		14:30	T. Mitchison- Research on Cell Cycle, Human Disease and Drugs (Harvard, USA)- (1 hour)(Theano)
		16:00	T. Mitchison Seminar (open) (Ionians)-Pharmacology of the mitotic spindle
		17:30	Open Discussion on Where to go on Cell Cycle and Cancer Research (Ionians-1.30 hrs) with beer
Friday	<b>7 Nov</b>	09:30	M Dias; R Martinho & A Tavares -Journal Club 2- (2 papers presented; 2 groups refereeing) (2 hours) (Theano)
		12:00	seminar Erich Nigg (open)- Ionians-Cell Cycle Control of Genome Integrity: Focus on Mitosis and the Centrosome Cycle
		13:00	Lunch with E Nigg (DE)
		14:30	L Jansen (IGC)- My research on centromeres and show delta vision (Theano) (1 hr)
		15:30	Check Things in Lab (4 Labs- Godinho, Jansen, Martinho, Dias)
		17:30	Open Discussion on Where to go on Cell Cycle and Cancer Research (Ionians-1.30 hrs) with beer
		19:30	Course Dinner

**Papers for Journal clubs:**

**-Wednesday-**

- **Popov N, Wanzel M, Madiredjo M, Zhang D, Beijersbergen R, Bernards R, Moll R, Elledge SJ, Eilers M. The ubiquitin-specific protease USP28 is required for MYC stability. Nat Cell Biol. 2007 Jul;9(7):765-74. Epub 2007 Jun 10.**

**-Friday-**

- **Potapova TA, Daum JR, Pittman BD, Hudson JR, Jones TN, Satinover DL, Stukenberg PT, Gorbsky GJ. The reversibility of mitotic exit in vertebrate cells. Nature. 2006 Apr 13;440(7086):954-8.**
- **Kwon M, Godinho SA, Chandhok NS, Ganem NJ, Azioune A, Thery M, Pellman D. Mechanisms to suppress multipolar divisions in cancer cells with extra centrosomes. Genes Dev. 2008 Aug 15;22(16):2189-203. Epub 2008 Jul 28.**