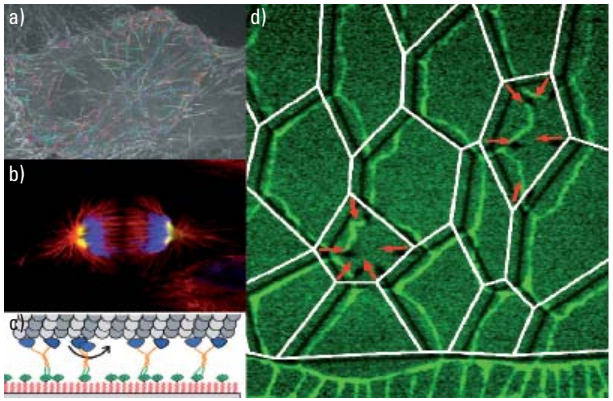
Technical Information

Workshop overview (10–11th November)
It is the aim of the course to provide an overview of advanced light microscopy techniques. The course is directed at researchers that want a more thorough understanding of the instruments used in biomedical imaging. After an initial review of microscope optics and the fundamental concepts of image formation, widefield microscopy, confocal microscopy, Total Internal Reflection Fluorescence (TIRF) Microscopy and techniques for molecular imaging will be covered.

Sessions
4 parallel sessions of 5 people. 5 topics:
a) Microscope optics
b) Image formation
c) Widefield/TIRF
d) Confocal microscopy (takes twice the time of the other sessions)
e) Single Molecule Detection (FCS/FLIM)

Symposium overview (12–13th November)
The cytoskeleton provides an intracellular dynamic framework that determines cell shape and functionality as well as the morphogenesis of tissues and organisms. The advances in microscopy techniques and instrumentation offer the possibility to approach the study of cytoskeleton dynamics at different levels of complexity ranging from pure component mixtures in vitro to whole organisms *in vivo*. This symposium brings a team of top scientists working on these different levels to address the role and regulation of actin filaments and microtubules in cells and organisms.



a) Courtesy of Lucia Sironi (Univ Konstanz, Germany) and Jerôme Solon (EMBL, CRG)
b) Courtesy of Isabelle Vernos (CRG)
c) Courtesy of Thomas Surrey (EMBL)
d) Courtesy of Jerôme Solon (CRG)

General Information

Venue CRG – Centre for Genomic Regulation
Dr. Aiguader, 88
08003 Barcelona
www.crg.es

Date 10th – 13th November 2009

Registration
The whole workshop + symposium:
Registration includes all documentation, access to all lectures, lunches and coffee breaks, as well as participation in the practical sessions. Only 20 places are available, so allocation will be done on a "first come, first served" basis. **Price 650 Euros**

Symposium only:
This registration is open to 100 participants, and includes documentation, access to all lectures, lunches and coffee breaks.
Price 150 Euros

Each participant will receive acknowledgement of his/her application. Payment should be by cheque, made payable to Leica Microsistemas S.A. **before 26th October 2009**.

Participants should register directly on our website:
www.leica-microsystems.com/crg

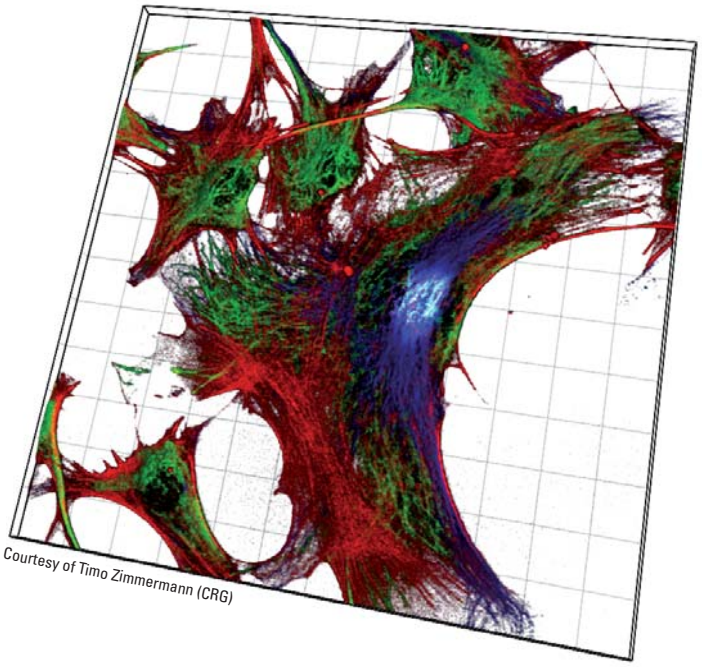
Contact person:
E-mail: marga.fite@leica-microsystems.com
Leica Microsistemas, SA
C/Nicaragua 46
08029 Barcelona
Tel. +34 93 494 95 55, Fax +34 93 494 95 32

Language: All lectures& practical sessions will be in English, translation services will not be provided.

Short talks: Participants are allowed to present contributed papers covering original work in the topics of the symposium at the different short talks programmed. Please submit your abstract (up to one page) to Dr Isabelle Vernos (e-mail: isabelle.vernos@crg.es) before 26th October 2009. Confirmation will be sent back by e-mail for those accepted.

www.leica-microsystems.com

Leica MICROSYSTEMS



Courtesy of Timo Zimmermann (CRG)

Imaging Approaches to Study Cytoskeleton Dynamics

Barcelona, 10th to 13th November 2009

Organised by the Centre de Regulació Genòmica (CRG) and Leica Microsystems

CRG Centre for Genomic Regulation

PRBB Barcelona Biomedical Research Park

Living up to Life

Leica MICROSYSTEMS

Tuesday 10th November

13:00 **Welcome cocktail**

14:15 **Microscope optics in 4 parallel sessions**

15:45 Coffee Break

16:15 **Common session in image formation**

17:45 End of the day

Wednesday 11th November

09:30 **"Concepts of confocal imaging, TIRF, FCS and FLIM"**

11:00 Coffee Break

11:30 **Practical sessions in 4 parallel groups (I):**
5 topics:
a) Microscope optics
b) Image formation
c) Widefield/TIRF
d) Confocal microscopy
(takes twice the time of the other sessions)
e) Single Molecule Detection (FCS/FLIM)

12:30 **Practical sessions in 4 parallel groups (II)**

13:30 Lunch

15:00 **Practical sessions in 4 parallel groups (III)**

16:00 Coffee Break

16:30 **Practical sessions in 4 parallel groups (IV)**

17:30 End of the day

Thursday 12th November

Chair: Timo Zimmermann

9:15 **Welcome & short introduction**

9:30 **„How actin filaments are organised to push: from live cell microscopy to electron tomography"**
Vic Small

10:20 **"Vaccinia virus, a model system to understand signaling dynamics and regulation of actin polymerization"**
Michael Way

11:1 Coffee Break

Chair: Michael Way

11:45 **"Optical nanoscopy: Imaging cellular structures below the diffraction limit "**
Stefan Jakobs

12:35 **Short talk**

12:55 **Short talk**

13:15 Lunch

Chair: Daniel Gerlich

14:30 **"Pulsed forces directed by an actin cable drive tissue movement during morphogenesis"**
Jerôme Solon

15:20 **Short talk**

15:40 **"Signals integrating microtubule patterning and auxin transport in Arabidopsis"**
Marcus Heisler

16:30 Coffee Break

17:00 End of Session

Friday 13th November

Chair: Thomas Surrey

9:30 **"Regulation of microtubule dynamics by End Binding proteins and their partners"**
Anna Akhmanova

10:20 **"Seeing and touching inside the living dividing cell"**
Helder Maiato

11:10 Coffee Break

Chair: Helder Maiato

11:40 **"How the combinatorial action of mitotic kinesins determines microtubule organization and dynamics *in vitro*"**
Thomas Surrey

12:30 **"Bipolar spindle assembly and stability: balancing the forces"**
Isabelle Vernos

13 :20 Lunch

Chair: Isabelle Vernos

14:30 **Short talk**

14:50 **"Maintenance of meiotic spindle bipolarity by Hurp in mouse oocytes"**
Marie-Helene Verlhac

15:40 **"Cytokinetic abscission: cytoskeletal and membrane dynamics at the midbody"**
Daniel Gerlich

16:30 Coffee Break

17:00 End of Session

List of speakers
The program of this event brings a team of top scientists as well as Leica Microsystems specialists; this undoubtedly forms a unique opportunity to become acquainted with the latest advances in this key area of microscopy, which is having such an impact on cell science.
Anna Akhmanova, Department of Cell Biology, Rotterdam. The Netherlands.
Daniel Gerlich, Institute of Biochemistry, Zürich. Switzerland.
Marcus Heisler, EMBL, Heidelberg. Germany.
Stefan Jakobs, Mitochondrial Structure and Dynamics group, Göttingen. Germany.
Helder Maiato, Institute for Molecular and Cell Biology, Porto. Portugal.
Vic Small, Institute of Molecular Biotechnology GmbH, Viena. Austria.
Jerôme Solon, Center for Genomic Regulation, Barcelona. Spain.
Thomas Surrey, EMBL, Heidelberg. Germany.
Marie-Helene Verlhac, CNRS/Université Pierre et Marie Curie, Paris. France.
Isabelle Vernos, CRG, Barcelona. Spain.
Michael Way, Cancer Research UK London Research Institute, London. United Kingdom.

Leica Microsystems Advanced Fluorescence Systems Team:
Juan L. Monteagudo, Francisco Porto, Olga Sánchez & Mark Munro, Leica Microsystems.