

June 1st

Montpellier School of Medicine – Theatrum Anatomicum

2PM : Welcome address

2:15-3:40PM : «Mechanisms and Mechanics of the Cell»

Chair :

2:15-3:00PM **Erwin Frey**, *Ludwig-Maximilians-Universität München, München, Germany.*

« Symmetry Breaking and Pattern Formation in Cellular Systems »

3:00-3:20PM **Jean-Baptiste Manneville**, *UMR 144 CNRS-Institut Curie, Paris.*

« Mapping intracellular mechanics on micropatterned substrates »

3:20-3:50PM : Coffee Break

3:50-5:15PM : « Single cells physiology : theory and experiments »

Chair :

3:50-4:35PM **Marco Cosentino Lagomarsino**, *Computational and Quantitative Biology UMR7238 CNRS / UPMC, Paris.*

« Fluctuations of size and cell-cycle control in single E. coli cells »

4:35-4:55PM **Joachim Rambeau**, *DIMNP UMR 5235, Montpellier.*

« Changing the diet: heterogeneous bacterial cell fates in response to carbon source switching »

4:55-5:15PM **Jean-Charles Walter**, *Laboratoire Charles Coulomb, Montpellier.*

« Stochastic self-assembly of ParB proteins nucleated from the centromere builds bacterial DNA segregation apparatus »

5:15-5:45PM : Refreshments break

5:45-7:25PM : «New single molecule methods and applications »

Chair :

5:45-6:30PM **Terence Strick**, *Institut Jacques Monod, Paris.*

« Correlative approaches in single-molecule experimentation »

6:30-6:50PM **Sébastien Balme**, *Institut Européen des Membranes, Montpellier.*

« Macromolecule sensing by Nanopores »

6:50-7:10PM **Laurence Salome**, *Institut de Pharmacologie et de Biologie Structurale, Toulouse.*

« High-throughput analysis of DNA conformational changes by Tethered Particle Motion on single molecule arrays »

7:15PM : Dinner cocktail at the School of Medicine – Cour d'honneur

June 2nd

Amphitheatre Mediterannée – CRDP Canopé

9:00-10:25 : «Cell mechanics and interactions »

Chair :

9:00-9:45AM **Pierre-François Lenne**, *Institut de Biologie du Développement de Marseille, Marseille.*

« Mechanics of cell-cell contacts during tissue morphogenesis »

9:45-10:05AM **Elsen Tjhung**, *Laboratoire Charles Coulomb, Montpellier.*

« Dynamical first order transition in simple model of cell crawling »

10:05-10:25AM **Guillaume Saint-martin**, *L2C - INM, MONTPELLIER.*

« Tissue alterations in spinal cord injured rodent: diffusion magnetic resonance imaging as translational tool. »

10:25-10:55AM : Coffee Break

10:55-12:20PM : « Nucleoproteic assemblies »

Chair :

10:55-11:40AM **Pietro Cicuta**, *Cambridge*

« Physical views of bacterial cells: chromosome conformation in E.Coli »

11:40-12:00AM **Antoine Le Gall**, *Centre de Biochimie Structurale, Montpellier.*

« The organization and architecture of Bacillus subtilis chromosome revealed by super-resolution microscopy and HiC »

12:00-12:20PM **Halina Anton**, *Laboratoire de Biophotonique et Pharmacologie, CNRS UMR 7213, Strasbourg, Illirch.*

« Investigating the cellular distribution and interactions of HIV-1 Nucleocapsid protein by quantitative fluorescence microscopy »

12:30-3:00PM : Lunch at the CRDP with posters session

3:00-4:25PM : « Membrane organization and dynamics »

Chair :

3:00-3:45PM **Harvey McMahon**, *MRC Laboratory of Molecular Biology, Cambridge, UK.*

« A New Membrane Trafficking Pathway »

3:45-4:05PM **Didier Marguet**, *Centre d'Immunologie de Marseille Luminy, Marseille.*

« Deciphering the cell membrane organization by fluorescence correlation spectroscopy at different length scales »

4:05-4:25PM **Laurent Fernandez**, *Centre de Biochimie Structurale, Montpellier.*

« Membrane dynamics and partitioning of CD9 and CD81 are differentially regulated by the actin network »

4:25-4:45PM : Coffee Break

4:45-5:15PM : "Recreation-Time": Opening to Games

Chair :

Chiara Mocenni, *Dept Inf. Eng. and Science, Siena.*

« Game Interactions and Dynamics on Networked Populations »

5:15PM : IPOLS BUSINESS MEETING

FREE EVENING

June 3rd

Amphitheatre Mediterannée – CRDP Canopé

9:00-9:45 : « Cell dynamics and motility »

Chair :

- 9:00-9:45AM **Olivier Thoumine**, *Interdisciplinary Institute for Neuroscience, Bordeaux.*
« Mechanical coupling between actin flow and N-cadherin adhesion in neuronal motility »
- 9:45-10:05AM **Viviana Clavería**, *Centre de Biochimie Structurale, Montpellier.*
« Clustering of red blood cells under flow conditions »
- 10:05-10:25AM **Ashley Nord**, *Centre de Biochimie Structurale, Montpellier.*
« Manipulation of the bacterial flagellar motor with magnetic tweezers »

10:25-10:55AM : Coffee Break

10:55-12:40 : « Structure, folding, and dynamics »

Chair :

- 10:55-11:40AM **Matthias Rief**, *Physikdepartment der Technischen Universität, München, Germany.*
« Single Molecule Mechanics of Adenylate Kinase »
- 11:40-12:00AM **Remy Sounier**, *Institut de Génomique Fonctionnelle, Montpellier.*
« Propagation of conformational changes during μ -opioid receptor activation »
- 12:00-12:20AM **François Richard**, *CRBM, Montpellier.*
« Repeat or not repeat in protein sequence? 3D structure as a decision criterion. »
- 12:20-12:40AM **Alessandro Barducci**, *EPFL, Lausanne, Switzerland.*
« Hsp70 chaperones as non-equilibrium machines: ultra-affinity by energy consumption »

12:40 : Concluding Remarks, Talks and Poster prizes and departure.