

Second Max Planck Society sponsored German-Argentine Workshop
November 20-22, 2007

Multiparametric Probes and Agents of Cellular Function

Facultad de Ciencias Exactas y Naturales,
University of Buenos Aires, Argentina
Ciudad Universitaria, Pabellón II, Tercer piso, Aula INQUIMAE,
Departamento de Química Inorgánica & FisicoQuímica

Program

Tuesday November 20

8:45 Opening remarks (organizers)

1. From structure to simulation (Chairperson: Claudio Fernandez)

9:00 Christian **Griesinger** (MPI f. Biophysical Chemistry)
NMR spectroscopic views of Parkinson's disease and an ion channel

9:30 Alejandro **Vila** (Universidad Nacional de Rosario)
Catalytic mechanism and evolution of metallo-beta-lactamases

10:00 Dario **Estrin** (Universidad de Buenos Aires)
Computer simulation of biomolecules

10:30 Coffee and tea break

2. Creating and mapping nanostructures I (Chairperson: Lía Pietrasanta)

11:00 Roberto **Salvarezza** (Universidad Nacional de La Plata)
Biological applications of nanostructured systems

11:30 Daniel **Müller** (Technical University Dresden)
Automatic mapping of interactions from cellular membranes to single membrane proteins at submolecular resolution

12:00 Fernando **Goldbaum** (Fundación Instituto Leloir)
Multiple display of protein domains using a polymeric protein scaffold

12:30-14:00 Lunch break

3. Creating and mapping nanostructures II (Chairperson: Ernesto Calvo)

14:00 Arturo **Lopez-Quintela** (Universidad de Santiago de Compostela, Spain)
Exploring the subnanometer range in the synthesis of metal particles with chemical methods.

14:30 Galo **Soler-Illia** (University of Buenos Aires; CNEA)
Design and synthesis of nanopatterned thin films for sensing, optical and biological applications

15:00 Coffee and tea break

4. **Smart systems and delivery** (Chairperson: Sara Bilmes)

- 15:30 Andre **Skirtach** (MPI f. Colloids and Interfaces)
Controlling the aggregation state of nanoparticles on multifunctional polymeric microcapsules for intracellular delivery
- 16:00 Juana Chessa **de Silber** (Universidad Nacional de Rio Cuarto)
On the search of smart organized systems

16:30-18:00 *Visit to laboratories*

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Wednesday, November 21

5. **Signaling and assembly** (Chairperson: Carsten Schultz)

- 9:00 Carlos **Arregui** (Universidad Nacional de San Martín)
Molecular complexities of cell adhesion and motility
- 9:30 Andrea **Gamarnik** (Fundación Instituto Leloir)
Molecular details of Dengue Virus genome amplification
- 10:00 Philippe **Bastiaens** (MPI of Molecular Physiology)
Fluorescence correlation spectroscopy in the analysis of yeast pheromone signaling

10:30 *Coffee and tea break*

6. **From sensors to actuation** (Chairperson: Omar Coso)

- 11:00 Alan **Waggoner** (Carnegie Mellon University)
Fluorescent biosensors for cell pathways
- 11:30 Elizabeth **Jares-Erijman** (Universidad de Buenos Aires)
Quantum dots as nucleation agents for amyloid proteins
- 12:00 Carsten **Schultz** (European Molecular Biology Institute, EMBL)
Simultaneous visualization of intracellular events

12:30-14:00 *Lunch break*

7. **Biosensors** (Chairperson: Pedro Aramendía)

- 14:00 Daniel **Murgida** (Universidad de Buenos Aires)
Redox proteins at nanostructured interfaces from basic biophysics to biosensors
- 14:30 Thomas **Jovin** (MPI. f. Biophysical Chemistry)
Environment sensitive probes applied in studies of α -synuclein aggregation

15:00 *Coffee and tea break*

8. **Photoconversion for reception and superresolution** (Chairperson: Francisco Barrantes)

15:30 Silvia **Braslavsky** (MPI f. Bioanorganic Chemistry)
The flavins as ubiquitous redox and photoreactive moieties, playing various roles as electron relays and signaling effectors

16:00 Alexander **Egner** (MPI f. Biophysical Chemistry)
Fluorescence nanoscopy by optical switching

16:30-18:00 *Poster session*
(Organizers: Leonardo Slep and Lia Pietrasanta)

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Thursday, November 22

9. Membrane associated regulatory systems
(Chairperson: Osvaldo Uchitel)

9:00 Eva-Kathrin **Sinner** (MPI f. Polymer Research)
In vitro synthesis of membrane proteins (G-Protein Coupled Receptors) for biosensing

9:30 Bruno **Maggio** (Universidad Nacional de Córdoba)
Regulation of surface topography by sphingolipids and membrane-associated proteins/enzymes

10:00 Fernando **Marengo** (Universidad de Buenos Aires)
Functional coupling of voltage sensitive calcium channels with exocytosis of immediately releasable pool in mouse chromaffin cells

10. Vibrational and near-field nanoscopies
(Chairperson: Oscar Martínez)

9:00 Rainer **Hillebrand** (MPI f. Biochemistry)
Infrared Nanoscopy

9:30 Andrea **Bragas** (Universidad de Buenos Aires)
Metal nanoparticles as optical and thermal nanoprobos

10:00 Alex **Fainstein** (Instituto Balseiro in San Carlos de Bariloche)
SERS sensitive detection of molecular processes in metallic nanovoid substrates

11:30 *Concluding remarks*