

# SUMMER SCHOOL PROGRAM

## Monday 18

- 09.30 – 10.00      **Registration and Coffee Break**
- 10.00 – 10.30      **Opening** (Prof. Maria Svelto - Head of the Department of Bioscience, Biotechnology and Biopharmaceutics; Prof. Grazia Paola Nicchia - Director of the School)
- 10.30 – 11.30      **Prof. David C. Spray** - *What holds the brain together: Adhesive and communicating junctions in the nervous system and their regulation*
- 11.30 – 12.30      **Prof. Antonio Frigeri** - *Super resolution microscopy for the imaging of membrane protein clustering: from Total Internal Reflection (TIRF) to Stimulated Emission Depletion (STED) and Photoactivated Localization Microscopy (PALM)*
- 12.30 – 13.30      **Prof. Eliana Scemes** - *Purinergic signaling in the nervous system: Properties of Pannexins and P2 receptors*
- 13.30 – 14.30      **Lunch**
- 14.30 – 18.30      **Laboratory Activities**

## Tuesday 19

- 8.30 – 9.00      **Dr. Maria Grazia Mola** - *Analysis of Cell Volume Regulation and Calcium Signaling in Astrocytes: Fluorescence-based biophysical approaches*
- 9.00 – 10.30      **Prof. David C. Spray** - *Glial, neuronal and glia-neuronal gap junctions: What they are, how they work and how dysfunction causes disease*
- 10.30 – 11.00      **Coffee Break**
- 11.00 – 12.30      **Prof. Eliana Scemes** - *Purinergic signaling in the nervous system:*

*Role of Pannexins and P2 receptors in physiology and pathology*

12.30 – 13.30 **Prof. Giuseppe Calamita** - *Biophysical assessment of the water and anaelectrolytes permeability of biological and artificial membranes by stopped-flow light scattering*

13.30 – 14.30 **Lunch**

14.30 – 18.30 **Laboratory Activities**

**Wednesday 20**

08.30 – 9.15 **Dr. Andrea Gerbino** - *Targeting of organic biosensors to organelles: strategies and available sensors*

9.15 – 10.30 **Prof. Aldebaran Hofer** - *Fundamentals of second messenger signaling*

10.30 – 11.00 **Coffee Break**

11.30 – 12.45 **Dr. Konstantinos Lefkimmiatis** - *Phosphodiesterases and Phosphatases in shaping cAMP signalling: positive roles for negative regulators*

12.45 – 13.30 **Prof. Grazia Tamma** - *FRET visualization of second messengers in epithelial cells*

13.30 – 14.30 **Lunch**

14.30 – 18.30 **Laboratory Activities**

**Thursday 21**

8.30 – 9.15 **Prof. Monica Carmosino** - *Electrophysiology of cardiac channelopathies*

9.15 – 10.30 **Prof. Aldebaran Hofer** - *Cyclic AMP signals in subcellular compartments*

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| 10.30 – 11.00 | <b>Coffee Break</b>  |
| 11.00 – 12.00 | <b>Dr. Valentina Benfenati</b> - <i>Glial interface: materials and device to study and modulate astroglial physiology and biophysics</i> |
| 12.00 – 13.00 | <b>Prof. Giovanna Valenti</b> - <i>Fluorescence dequenching to monitor membrane merging and interactions of signaling proteins</i>       |
| 13.00 – 13.30 | <b>Dr. Konstantinos Lefkimmiatis</b> - <i>Die another way, new forms of non-apoptotic programmed cell death</i> <b>Lunch</b>             |
| 13.30 – 14.30 | <b>Lunch</b>   |
| 14.30 – 19.00 | <b>Laboratory Activities</b>   |
| 20.00         | <b>SOCIAL DINNER</b>   |

## Friday 22

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| 08.30 – 9.30  | <b>Presentation of MASMEC SpA</b>  |
| 9.30 – 10.30  | <b>Introduction to automation in molecular diagnostic laboratories</b>         |
| 10.30 – 11.00 | <b>Coffee Break</b>  |
| 11.00 – 13.30 | <b>Automatic extraction of nucleic acids from different biological samples</b> |
| 13.30 – 14.30 | <b>Lunch</b>   |
| 12.45 – 13.30 | <b>Laboratory experience on high-throughput platforms</b>                      |

*The theoretical-applicative activities will involve:*

- **Dr. Pietro Larizza** (Research and Development Manager, MASMEC SpA)
- **Dr. Maria Teresa Mancini** (MASMEC SpA)
- **Dr. Vincenzo Costantino** (MASMEC SpA)
- **Dr. Sabrina Calamita** (MASMEC SpA).