

LABORATORY ACTIVITIES

ACTIVITIES	Monday 18 th	Tuesday 19 th	Wednesday 20 th	Thursday 21 st
1 and 2	A	B	C	D
3 and 4	B	C	D	A
5 and 6	C	D	A	B
7 and 8	D	A	B	C

Activity 1 - Antonio Frigeri

High resolution microscopy for the analysis of protein channel aggregation into the plasma membrane of cells and tissues

Activity 2 - Giuseppe Calamita

Stopped-flow light scattering measurements of membrane osmotic and solute permeability

Activity 3 - Maria Grazia Mola

Total Internal Reflection Microscopy (TIRFM) for water transport measurements across astrocyte plasma membrane

Activity 4 - Maria Grazia Mola

Use of a semi-automatic platform for a medium throughput screening of compounds able to modulate protein channel function through fluorescence based assays

Activity 5 - Giovanna Valenti

Fluorescence assay to monitor membrane fusion kinetics

Activity 6 - Marianna Ranieri

Detecting cAMP with FRET-based sensors in single living cells

Activity 7 - Monica Carmosino

Electrophysiological characterization of KCNH2 potassium voltage-gated channels

Activity 8 - Andrea Gerbino

Fluorescence detection and imaging of cytosolic calcium oscillations in cardiomyocytes

Summer School Director



Grazia Paola Nicchia

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SCIENTIFIC COMMITTEE

Giuseppe Calamita

Monica Carmosino

Antonio Frigeri

Grazia Paola Nicchia

Giuseppe Procino

Maria Svelto

Grazia Tamma

Giovanna Valenti

ORGANIZING COMMITTEE

Patrizia Gena

Andrea Gerbino (Coordinator)

Maria Grazia Mola (Coordinator)

Francesco Pisani

Marianna Ranieri

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Coffee Breaks and Social Dinner



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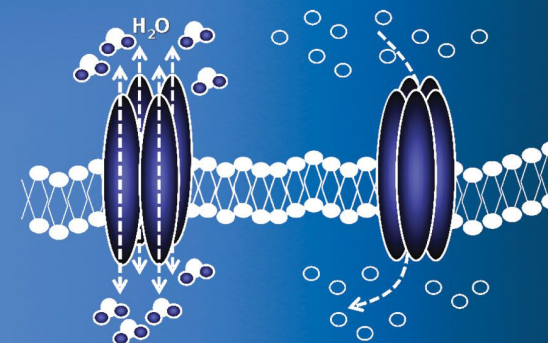
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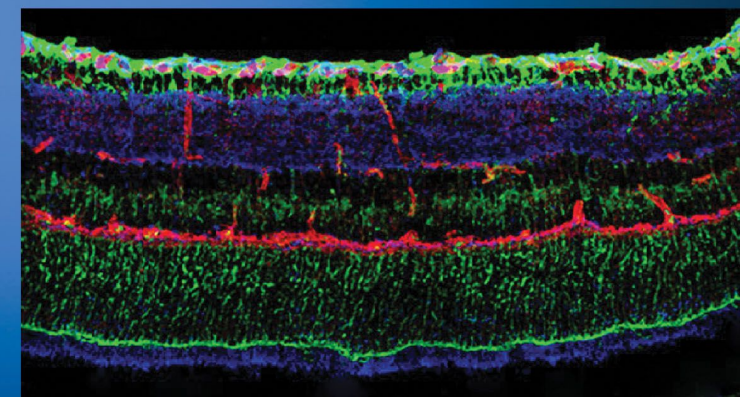
SPYWATCH

First Edition

Summer School

Physiology and Biophysics of Water and Ion Channels

BARI June 18-22, 2018



Dept. Bioscience, Biotechnology and Biopharmaceutics
University of Bari Aldo Moro
Via Orabona, 4 - 70125 Bari, ITALY

SUMMER SCHOOL PROGRAM

MONDAY 18

08.30 am  Registration

09.30 am Opening Remarks

Antonio Felice Uricchio - Rector of the University of Bari

Sebastiano Leo - Assessor for Education and Employment policy "Regione Puglia"

Maria Svelto - Head of the Department of Bioscience, Biotechnology and Biopharmaceutics

Grazia Paola Nicchia – Summer School Director

10.00 am **Grazia Paola Nicchia** - *Water and Ion Channel Proteins: an indissoluble friendship*

10.30 am **David C. Spray** - *What holds the brain together: Adhesive and communicating junctions in the nervous system and their regulation*

11.30 am **Antonio Frigeri** - *Super resolution microscopy for the imaging of membrane protein clustering: from Total Internal Reflection (TIRF) to Stimulated Emission Depletion and Photoactivated Localization Microscopy (PALM)*

12.30 pm **Eliana Scemes** - *Purinergic signaling in the nervous system: Properties of Pannexins and P2 receptors*

01.30 pm 

02.30 pm – 06.30 pm 

TUESDAY 19

08.30 am **Maria Grazia Mola** - *Analysis of cell volume regulation in astrocytes: Fluorescence-based biophysical approaches*

09.00 am **David C. Spray** - *Glial, neuronal and glia-neuronal gap junctions: What they are, how they work and how dysfunction causes disease*

10.30 am 

11.00 am **Eliana Scemes** - *Purinergic signaling in the nervous system: Role of Pannexins and P2 receptors in physiology and pathology*

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

01.30 pm 

02.30 pm – 06.30 pm 

07.00 pm **A walk in the old city** 

WEDNESDAY 20


08.30 am **Grazia Tamma** - *FRET visualization of second messengers in epithelial cells*

09.15 am **Aldebaran Hofer** - *Fundamentals of second messenger signaling*

10.30 am 

11.30 am **Konstantinos Lefkimmatis** - *Phosphodiesterases and Phosphatases in shaping cAMP signalling: positive roles for negative regulators*

12.45 pm **Andrea Gerbino** - *Targeting of organic biosensors to organelles: strategies and available sensors*

01.30 pm 


02.30 pm **Pietro Cirigliano** - *Nikon Solutions for High End Applications*

02.45 pm - 06.45 pm 

THURSDAY 21

08.30 am **Monica Carmosino** - *Electrophysiology of cardiac channelopathies*

09.15 am **Aldebaran Hofer** - *Cyclic AMP signals in subcellular compartments*

10.30 am 

11.00 am **Valentina Benfenati** - *Glial interface: materials and device to study and modulate astroglial physiology and biophysics*

12.00 am **Giovanna Valenti** - *Fluorescence dequenching to monitor membrane merging and interactions of signaling proteins*

01.00 pm **Konstantinos Lefkimmatis** - *Die another way, new forms of non-apoptotic programmed cell death*

01.30 pm 

02.30 pm – 06.30 pm 


07.00 pm **Social Dinner** 

FRIDAY 22

08:00 am Bus transfer to MASMEC

08.30 am Presentation of MASMEC SpA

09.30 am *Introduction to automation in molecular diagnostic laboratories*

10.30 am 

11.00 am *Automatic extraction of nucleic acids from different biological samples*

01.30 pm 

02.30 pm *Laboratory experience on high-throughput platforms*

05.00 pm - 06.00 pm **Final Test** 

The theoretical-applicative activities will involve:

Pietro Larizza (Research and Development Manager)

Maria Teresa Mancini

Vincenzo Costantino

Sabrina Calamita

Claudia Lionetti

all from MASMEC SpA