

FEBS/EMBO lecture course

Erice 14-20 May 2017

Biophysics and Medicine of Channels and Transporters: Electrifying New Insights

Program

Each Lecturer has 70 minutes divided into a 25+10 min didactic lecture on background and methodology and a 25+10 min state-of-the-art lecture.

Data Blitz sessions will involve 2 min presentations by Attendees, based on their posters. These presentations will be followed by general poster sessions.

All lectures will be held in the San Domenico lecture theatre.

May 14: Arrival and registration

Evening:

21.30-23.30 Welcome session - organisers.
Poster display organisation.

May 15: Ion channel gating, permeation and trafficking

Morning:

9.00-10.10 Chair, Anna Moroni
Christopher Miller
"Fluoride exporters and fluoride resistance in microorganisms."
10.10-11.20 Annette Dolphin
"Neuronal calcium channel function and trafficking in health and disease."
11.20-11.30 Zrinka Kovarik
"Presentation on the activities of FEBS"
11.30-11.50 Break and posters
11.50-13.00 Crina Nimigean
"Molecular mechanisms of potassium channel gating."

Afternoon: Chair, Chris Miller

14.30-15.40 Anna Moroni
"Light-gated ion channels as a tool in optogenetics."

15.40-16.50 Francesco Tombola
"Voltage-gated proton channels: molecular mechanisms of gating and permeation."
16.50-17.30 Break and posters
17.30-18.05 Data Blitz
18.05-19.05 Public Engagement Lecture (Chair, Paolo Tammaro)
Gavin Francis
"Truth, beauty & astonishment - communicating wonder in science."

Evening:

21.30-24.00 Mixer and poster session

May 16: From single channel to whole organism and therapies

Morning: Chair, Alexis de Angeli

9.00-10.10 Paolo Tammaro
"Native and exogenous ion channels in the control of vascular tone"
10.10-11.20 Nicole Schmitt
"KV 7.1 surface expression - a regulatory mechanism for insulin secretion"
11.20-11.50 Break and posters
11.50-13.00 David Attwell
"An ion channel regulating microglial surveillance of the brain."

Afternoon: Chair, Nicole Schmitt

14.30-15.40 Alexis de Angeli
"Intracellular ion transport in plant cells."
15.40-16.25 Data Blitz
16.25-16.55 Andrea Brüggemann
"New toys for studying ion channels."
16.55-18.00 Break and posters
18.00-19.00 EMBO Lecture (Chair, Michael Pusch)
Thomas Jentsch

"VRACs: versatile volume-regulated anion channels with many functions beyond cell volume regulation"



Evening:21.30-24.00*Mixer and poster session***May 17: Ion transporters: biophysics and molecular physiology****Morning:** *Chair, Francisco Bezanilla*9.00-10.10 *David Gadsby*

"Mechanisms of function and dysfunction of the Na/K pump, the ubiquitous classic P-type ATPase."

10.10-11.20 *Olga Boudker*

"Linking structure, dynamics and function in a glutamate transporter homologue."

11.20-11.50 *Break and posters*11.50-13.00 *Michael Pusch*

"CLC channels and transporters: From biophysics to human genetic disease."

Afternoon: *Chair, Olga Boudker*14.30-15.40 *Francisco Bezanilla*

"Voltage sensors in membrane proteins."

15.40-16.50 *Scott Blanchard*

"Single-molecule imaging of structure-function relationships in regulated, multicomponent biological systems."

16.50-17.30 *Break and posters*17.30-18.05 *Data Blitz*18.05-19.05 *EMBO Women in Science Lecture (Chair Alessio Accardi)**Carol Robinson*

"A celebration of women in science."

**Evening:**21.30-24.00*Mixer and poster session***May 18: Channels, transporters and membranes: exciting new insights****Morning:** *Chair, Wolfgang Baumeister*9.00-10.10 *Carol Robinson*

"Protein-lipid connections - insights from mass spectrometry"

10.10-11.20*Gerhard Thiel*"Minimal art: 78 amino acids are sufficient for building a functional K⁺ channel."11.20-11.50*Break and posters*11.50-13.00*Alessio Accardi*

"Molecular mechanisms of transmembrane ion and lipid transport."

13.00-13.35*Data Blitz***Afternoon:**

Discussion groups

Evening:21.30-23.30*Mixer and poster session***May 19: Pushing the boundaries****Morning:***Chair, Anna Weinzinger*9.00-10.10*Wolfgang Baumeister*"The Challenge of doing structural biology *in situ*."10.10-11.20*Simon Scheuring*

"High-speed atomic force microscopy: dynamics of single channels and transporters."

11.20-11.50*Break and posters*11.50-13.00*Peter Hegemann*

"Multimodal optogenetics."

Afternoon:*Chair, Crina Nimigean*14.30-15.40*Chris Ahern*

"All organic but non-natural: encoding new functionalities into ion channels."

15.40-16.50*Anna Weinzinger*

"Computational investigations of cation channels."

16.50-17.30*Break and posters*17.30-18.00*Viviana Agus*

"Optogenetics applications for ion channels in drug screening."

Evening:21.30-24.00*Mixer and poster session***May 20: End of FEBS/EMBO Meeting: depart**