

With the patronage of



MITOCHONDRIAL BIOMEDICINE

WINTER SCHOOL

From **28**
JANUARY
2024

to **2**
FEBRUARY
2024

Hotel Grüner Baum
BRESSANONE - BRIXEN BZ

RATIONALE

First European Winter School in Mitochondrial Biomedicine: a unique training opportunity for PhD students, medical residents, and postdoctoral researchers with a keen interest in mitochondrial biology and medicine.

The project aims to encourage the training of doctoral students, residents and post-doctoral researchers interested in the topics of mitochondrial biology and medicine by bringing together international experts in the biology, genetics, pathophysiology of mitochondria and in the clinic of mitochondrial diseases. The participation of the Mitocon, the Italian association of mitochondrial patients will add the patients' perspective to the school.

The school will be held in person from January 28th to February 2nd 2024 at the Grüner Baum Hotel in Bressanone, Italy and will be open to 40 attendees from across Europe. Mitochondria are organelles often referred to as the energy plants of the cell as they are mainly responsible for converting energy derived from food into ATP, the high-energy molecule used by the biochemical systems of cells. The series of reactions that lead to the synthesis of ATP forms the mitochondrial respiratory chain consisting of respiratory complexes I-IV and ATP synthase. A unique feature of mitochondria is that they have their own genetic material (mitochondrial DNA) that contains some essential genes of the respiratory complexes, although most of the genes that code for proteins found in mitochondria are found in nuclear DNA. The malfunction in the processes that lead to the synthesis of ATP due to mutations in the mitochondrial or nuclear DNA can give rise to mitochondrial diseases, rare genetic pathologies, characterized by extreme heterogeneity and clinical, biochemical and genetic complexity. The role of mitochondria, however, is not limited to the synthesis of ATP, but includes a large number of essential metabolic pathways (e.g. the Krebs cycle, beta oxidation etc.), the regulation of cellular calcium levels, the synthesis of nucleotides etc...

The European Winter School in Mitochondrial Biomedicine responds to a need felt at an international level to improve the interaction between basic researchers and clinicians engaged in the study of mitochondrial biology and mitochondrial diseases. The cross-contamination that the course aims to promote will train the next generation of researchers attentive to the problems of mitochondrial diseases and will increase clinicians' awareness of the potential and problems of basic research. Overall, the School will strengthen the role and visibility of UNIPD in the field of mitochondrial biomedicine.

The school will include the holding of seminar lessons and small thematic workshops ensuring close interaction between attendees and faculties. All the topics will be treated both from a clinical point of view and from that of basic biological mechanisms with the contribution of national and international experts.

FACULTY

ORGANIZERS:

- Carlo Viscomi**,
University of Padova, Italy
- Erika Fernandez-Vizarra**,
University of Padova, Italy
- Luca Scorrano**,
University of Padova, Italy
- Maria Andrea Desbats**,
University of Padova, Italy
- Sukru Anil Dogan**,
Bosphorus University, Turkey

CONFIRMED SPEAKERS:

- Anna Wredenberg**,
Karolinska Institute, Sweden
- Aurora Gomez-Duran**,
Centro de Investigaciones Biológicas Margarita Salas (CIB-CSIC), Spain
- Caterina Agosto**,
University of Padova, Italy
- Costanza Lamperti**,
Neurological Institute "C. Besta", Milan, Italy
- Daria Diodato**,
Bambin Gesù Hospital, Italy
- Holger Prokisch**,
Helmholtz Zentrum, Munich, Germany
- Leonardo Salviati**,
University of Padova, Italy
- Marie Eugenia Soriano**,
Univeristy of Padova
- Maria Falkenberg**,
University of Gothenburg, Sweden
- Michal Minczuk**,
University of Cambridge, UK
- Patrick Yu Wai Man**,
University of Cambridge, UK
- Rita Horvath**,
University of Cambridge, UK
- Robert MacFarland**,
University of Newcastle, UK
- Robert Pitceathly**,
UCL, UK
- Serena Massucci**,
Mitocon, Italy

Sunday 28 January 2024

- 18:00 Welcome from organizers
- 18:15 - 19:00 **Keynote lecture: Bobby McFarland** (mitochondrial disease)

Monday 29 January 2024

- 09:30 - 10:00 **Luca Scorrano** (Autosomal Optic dominant Atrophy and Opa1)
- 10:00 - 10:30 **Patrick Yu Wai Man** (Leber's Hereditary Optic Neuropathy)
- Break*
- 10:45 - 11:15 **Aurora Gomez-Duran** (mtDNA variation in health and disease)
- 11:15 - 11:45 **Erika Fernandez-Vizarra** (Tissue-specificity in mitochondrial diseases)
- 11:45 - 12:15 **Maria Eugenia Soriano** (A Complexomic dynamic analysis to functionalize mitochondrial complexes)
- Free time until 5:00 pm
- 17:00 - 19:00 Round tables with students

Tuesday 30 January 2024

- 09:00 - 09:30 **Anna Wredenberg** (The role of methylation inside mitochondria)
- 09:30 - 10:00 **Rita Horvath** (Modelling mitochondrial disease in zebrafish)
- 10:00 - 10:30 **Maria Andrea Desbats** (Yeast and worms models for human mitochondrial associated disorders)
- Break*
- 11:00 - 11:30 **Anil Dogan** (Stress responses in mitochondrial myopathies)
- 11:30 - 12:00 **Leonardo Salvati** (CoQ deficiency: pathways and pathologies)
- Free time until 5:00 pm
- 17:00 - 19:00 Round tables with students

Wednesday 31 January 2024

- 09:00 - 09:30 **Rob Pitceathly** (diseases of mtDNA)
- 09:30 - 10:00 **Carlo Viscomi** (AAV-based gene therapy for mitochondrial diseases)
- 10:00 - 10:30 **Michal Minczuk** (The therapeutic potential of mitochondrial genome engineering)
- Break*
- 11:00 - 11:30 **Maria Falkenberg** (mtDNA replication)
- 11:30 - 12:00 **Holger Prokisch** (OMIC-approaches to mitochondrial diseases)
- Free time until 5:00 pm
- 17:00 - 19:00 Round tables with students

Thursday 1 February 2024

- 9:30 - 10:00 **Costanza Lamperti** (Treating mitochondrial dysfunction in mitochondrial diseases: Clinical Trials)
- 10:00 - 10:30 **Daria Diodato** (Pediatric mitochondrial diseases)
- Break*
- 10:30 - 11:00 **Mitocon** (Mitochondrial diseases; The patients 'perspective)
- 11:00 - 11:30 **Caterina Agosto** (Critical care in mitochondrial children)
- Free time until 5:00 pm
- 17:00 - 18:30 Discussion with students
- 18:30 - 19:15 **Keynote Lecture: Prof. Luca Scorrano** (Title: TBD)
- 19:15 - 19:20 **Carlo Viscomi** (conclusion remarks)

Friday 2 February 2024

Departures

GENERAL INFORMATION

Venue:

Grüner Baum Hotel
Via Stufles, 11,
39042 Brixen – Bressanone (BZ)
Italy

REGISTRATIONS:



Hotel accommodation:

By HOTEL GASSER (depandance of the hotel Güner Baum Hotel)
Check-in: 28/01/2024 - Check-out: 02/02/2024: 5 nights
Hotel price for half board per person and day incl. 10% VAT:

- Shared double bedroom: € 99,00 per day: € 495,00
- Single room: € 114,00 per day: € 570,00

Cancellations Received: after December 17, 2023:
100% of the total cost of the registration and of the hotel accommodation

To register click on:

<https://winterschool2024.myquadra.it/>

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ORGANIZING SECRETARIAT



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