

FOURTH INTERNATIONAL MEETING OF THE
ITALIAN GROUP OF BIOMEMBRANES AND BIOENERGETIC

GIBB2025

CATANIA, 12-14 JUNE 2025

Auditorium Giancarlo De Carlo
Monastero dei Benedettini
University of Catania

SCIENTIFIC PROGRAM

GRUPPO ITALIANO DI BIOMEMBRANE E BIOENERGETICA

Italian group of Biomembranes and Bioenergetic



Created in 1973 by a group of Italian Scientists coming from a variety of disciplines (biology, chemistry, biophysics, pathology, pharmacology and physiology), GIBB was born with the idea of promoting Bioenergetics in the Country and to establish an interface with the growing International Bioenergetics Community.

EXECUTIVE BOARD AND SCIENTIFIC COMMITTEE

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Marcello Pinti, University of Modena

Annamaria Tonazzi, CNR-IBIOM, Bari



WELCOME TO CATANIA

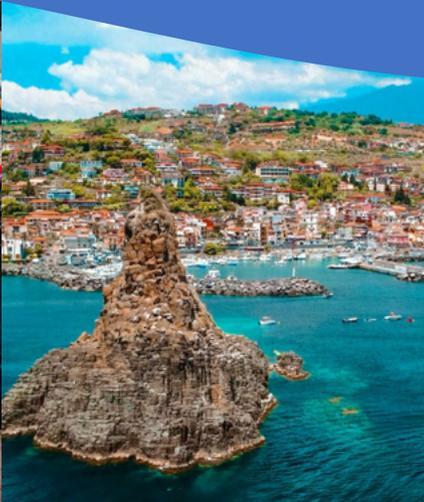
Situated at the foot of Mount Etna, Catania is a vibrant city rich in history and culture. Its stunning Baroque architecture, a **UNESCO World Heritage Site**, is exemplified by the magnificent **Cathedral of Sant'Agata**, the **Basilica della Collegiata**, and the iconic fountains, **Fontana dell'Elefante** and the **Fontana dell'Amenano**, which the locals call "acqua o' linzolu" (water in the form of a leaf).

Stroll through the bustling fish market, **La Pescheria**, to experience the local flavors and lively atmosphere. Don't miss the **Roman Amphitheatre**, partially hidden by the flooring of Piazza Stesicoro, and the **Greek-Roman Theater**, both remarkable archaeological sites that showcase the city's ancient heritage. For breathtaking views, take a cable car to the top of Europe's most active volcano.

A perfect blend of tradition, gastronomy and natural beauty, Catania is a must-visit place in Sicily.



<https://turismo.comune.catania.it/>





HOSTING INSTITUTION

With an average enrolment of **38000 students**, the **University of Catania** has been around for hundreds of years since **1434** and is oldest one in Sicily. The educational system is run and overseen by **17 departments**. The Medical School for starters, and by two other educational units respectively located in the city of Ragusa and in Syracuse. Another special unit is the **Scuola Superiore di Catania**, a higher education center based on excellence that was founded in 1998 for the selection and the recognition of the brightest young minds, offering a variety of studies including analysis, research and experimentation.

The Fourth International GIBB Meeting is hosted by **Department of Biological, Geological and Environmental Science (DSBGA)** and **Department of Biomedical and Biotechnological Sciences (BIOMETEC)**.



Università
di Catania



Uni
ct SCIENZE BIOLOGICHE,
GEOLOGICHE
E AMBIENTALI

The meeting will take place under the patronage of the oldest parliament in the world, the Sicilian Parliament, **Assemblea Regionale Siciliana (ARS)**.



Repubblica Italiana
Assemblea Regionale Siciliana



ORGANIZING COMMITTEE



Angela Messina



Vito De Pinto



Andrea Magri



Francesca Guarino



Simona Reina



Stefano Conti Nibali



Salvatore Cubisino



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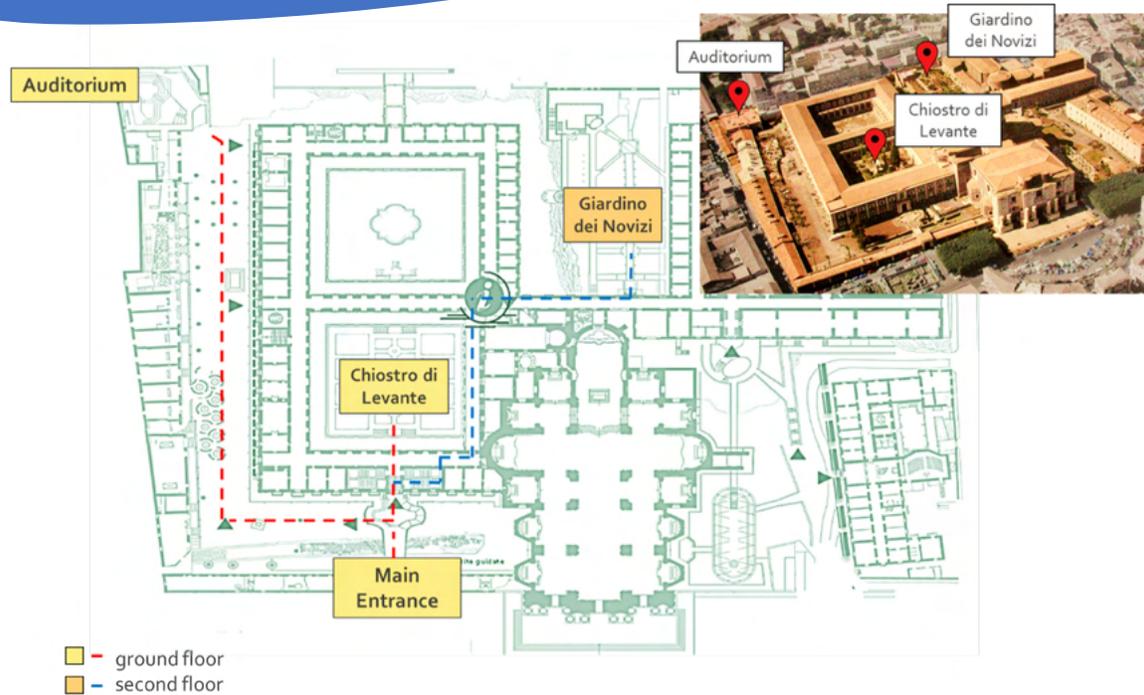


VENUE



MONASTERO
dei BENEDETTINI
CATANIA

Auditorium Giancarlo De Carlo
[Monastero dei Benedettini](#)
University of Catania
Piazza Dante, 32
95124, Catania



Monastero dei Benedettini is easily accessible by bus from any part of the city. For routes and timetable, please visit the [local transportation site](#).

SOCIAL DINNER

Enjoy the social dinner with mediterranean special dishes by Chef Dedè in the enchanting surrounding of the Botanical Garden of Catania, a gem of the Biological, Geological and Environmental Science department. The Botanical Garden is accessible by the secondary entrance of via **Antonino Longo 19**.



Travellers' Choice
2024



SOCIAL ACTIVITIES

Plan for the weekend? Explore the Mount Etna, enjoy the amazing view of Isola Bella and the Ionian Sea from Taormina, relax on the beaches of Giardini Naxos, or get lost among the baroque streets of Syracuse. For tour and excursions visit [Etna Tribe website](#).

ISTITUTIONAL SPONSOR



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PATRONAGE

ARS



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INVITED SPEAKER



Timothy Wai

Institut Pasteur, Mitochondrial Biology Group
CNRS, Université Paris Cité, Paris, France



Doron Rapaport

Interfaculty Institute of Biochemistry,
University of Tübingen, Tübingen, Germany



Erich Gnaiger

Oroboros Instruments
Innsbruck, Austria



Tatiana Rostovsteva

National Institute of Health, NHI
Bethesda, USA

PROGRAMME

Thursday 12 June 2025

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| 12:00 - 13:30 Registration | |
| 13:45 - 14:15 Welcome Address Authorities, GIBB President and the Organizing Committee | |
| 14:15- 15:00 Opening Plenary Lecture Timothy Wai , Institut Pasteur, Paris, France Mitochondrial bioenergetics and signaling in the failing heart Chairs: Angela Messina (University of Catania), Paolo Bernardi (University of Padova) | |
| 15:00 - 16.30 Session I The role of mitochondria in cancer, aging and diseases - Part I Chairs: Timothy Wai (Institut Pasteur, Paris), Marcello Pinti (University of Modena) | |
| 15:00 | P1 Showmeya Mallavarapu , Graduate Student, University of Udine, Italy Mitochondrial dysfunction in Spinal Muscular Atrophy: a multi-omics approach using SMA patient-derived iPSCs |
| 15:10 | P2 Marco Falcone , Graduate student, University of Catania, Italy Dual sEH/LOX-5 inhibition confers neuroprotection in <i>in vitro</i> and <i>in vivo</i> models of Parkinson's disease |
| 15:20 | P3 Roberta Rizzo , PhD Student, University of Catania, Italy Characterization of Glioblastoma phenotypes and associated metabolic pathways as a new therapeutic strategy |
| 15:30 | P4 Aasia Bibi , Post-Doc, University of Bari, Italy Cellular cAMP content and mitochondrial profile define different subtypes of ovarian cancer cells |
| 15:45 | P5 Alessia Nisco , Post-Doc, University of Bari, Italy Dysregulation of flavin homeostasis in Pancreatic Ductal Adenocarcinoma: the role of p53 |
| 16:00 | P6 Pietro Caruso , PhD Student, University of Catania, Italy Distinct respiratory profiles of Glioblastoma Multiforme cell lines revealed by High-Resolution Respirometry |
| 16:10 | P7 Manuela Murano , PhD Student, University of Calabria, Italy Citrate carrier function and its role in tumor metabolic reprogramming in pancreatic cancer cell models |
| 16:20 | P8 Martina Rosa , PhD Student, University of Basilicata, Italy Peptides with potential α-Synuclein disaggregating activity |
| 16:30 - 17:10 Coffee break Chiostro di Levante, Monastero dei Benedettini | |

17:10 - 19.00 Session II

The role of mitochondria in cancer, aging and diseases - Part II

Chairs: Nathalie Mazure (CNRS, Nice), Alessandro Giuffrè (IBPM-CNR, Rome)

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| 17:10 | P9 Giorgia Sinigaglia , PhD Student, University of Modena and Reggio Emilia, Italy Monocyte response to stimulation with mitochondrial DNA in aging: insights into metabolic features and chronic inflammation |
| 17:20 | P10 Giulia Micheloni , PhD Student, University of Modena and Reggio Emilia, Italy Unravelling the pathogenetic mechanism of a new Lonp1 mutation causing CODAS syndrome |
| 17:30 | P11 Cristiana Lipari , Post-Doc, University of Catania, Italy Mitochondrial rescue in Amyotrophic lateral sclerosis: the power of VDAC1 overexpression |
| 17:45 | P12 Marika Lanza , Researcher, University of Messina, Italy Identifying miRNA networks linking cognitive stimulation to synaptic function in Alzheimer's disease |
| 18:00 | P13 Sara D'Amato , PhD Student, University of Catania, Italy Tumor-specific expression of VDAC1 and its pseudogene VDAC1P8 |
| 18:10 | P14 Alessandro Pistone , PhD Student, University of Basilicata, Italy Gender differences in sera biomarkers of Parkinson's disease patients |
| 18:20 | P15 Alessia Magro , PhD Student, University of Padova, Italy Tracking metabolic changes to identify new vulnerabilities in melanoma cells |
| 18:30 | P16 Maria Egle Castorina , PhD Student, University of Padova, Italy Investigating the crosstalk between Schwann cells and macrophages in peripheral nerve sheath tumors |
| 18:40 | P17 Ali Safarzadeh , PhD Student, University of Padova, Italy The mitochondrial protein Fis1 and its interactors Drp1 and Tbc1d15 are essential to sustain Acute Myeloid Leukemia stem cells |

18:50 - 19:30 Board meeting

19:30 - 21:30 Welcome cocktail

Chiostrò di Levante, Monastero dei Benedettini

Friday 13 June 2025

08:30 - 10:15 Session III

Structural and functional characterization of channels and transporters - Part I

Chairs: Francesca Guarino (University of Catania), Cesare Indiveri (University of Calabria)

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| 08:30 | P18 Elena Frigo , Post-Doc, University of Padova, Italy Investigating the role(s) of F-ATP synthase subunits e and g in <i>Drosophila melanogaster</i> |
| 08:45 | P19 Salvatore Cubisino , Post-Doc, University of Catania, Italy Computational and electrophysiological studies of the Envelope protein from SARS-CoV-2 |
| 09:00 | P20 Tiziano Mazza , Post-Doc, University of Calabria, Italy Effect of lipids on the function and kinetics of the ASC-1 serine transporter |
| 09:15 | P21 Ludovica Tommasin , Post-Doc, University of Padova, Italy Adenine Nucleotide Translocator and ATP synthase cooperate in mediating the mitochondrial permeability transition |
| 09:30 | P22 Stefano Conti Nibali , Post-Doc, University of Catania, Italy VDAC1 antagonist molecules trigger profound alterations in channel electrophysiology |
| 09:45 | P23 Amer Ahmed , Post-Doc, University of Bari, Italy UCP2 and UCP3: fraternal twins with distinct metabolic functions |
| 10:00 | P24 Federica Boscolo Nata , PhD Student, University of Padova, Italy Defining the mechanism of channel formation by ATP synthase |
| 10:10 | P25 Aurora Maracani , PhD Student, University of Padova, Italy The mitochondrial aspartate-glutamate carrier is a metabolic sensor orchestrating organelle morphology and cristae maintenance |

10:20 - 11:00 Coffee break

Chiostro di Levante, Monastero dei Benedettini

11:00 - 11:45 Plenary Lecture

Doron Rapaport, Interfaculty Institute of Biochemistry, University of Tübingen, Germany

Biogenesis of mitochondrial outer membrane proteins

Chairs: Valentina Giorgio (University of Bologna), Luca Scorrano (University of Padova)

11:45 - 13:00 Session IV

Structural and functional characterization of channels and transporters - Part II

Chairs: Tatiana K Rostovtseva (NIH, Bethesda), Andrea Magri (University of Catania)

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| 11:45 | P26 Evgeny Pavlov , Professor, New York University, USA Fully synthetic C-subunit of the ATP synthase spontaneously assembles into the β-sheet oligomers and forms voltage-gated porin-like channels in the planar lipid bilayers |
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| 12:00 | P27 Maria Gaetana Giovanna Pittalà , Post-Doc, University of Catania, Italy Structural characterization of intra- and inter-molecular disulfide bonds in VDAC proteins from <i>R. norvegicus</i> (rVDACs) by high resolution mass spectrometry |
| 12:15 | P28 Soha Sadeghi , Post-Doc, University of Padova, Italy Mapping the interactome of SLC25A36 using TurboID-Based Proximity Labeling in human cells reveals mitochondrial and metabolic functional networks |
| 12:30 | P29 Milena Putnik , Post-graduate fellow, University of Padova, Italy Exploring the mechanism accounting for Kv1.3-STAT3 interaction and consequent alterations of cancer-relevant pathways |
| 12:40 - 14:00 Light lunch Chiostro di Levante, Monastero dei Benedettini | |
| 14:00 - 14:45 Plenary Lecture Tatiana K Rostovtseva , Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, Bethesda, USA Control of mitochondrial outer membrane permeability: role of individual VDAC isoforms Chairs: Karin Nowikovsky (University of Wien), Vito De Pinto (University of Catania) | |
| 14:45 - 16:30 Session V Redox biology, mitochondrial metabolism and energy transduction membranes Chairs: Simona Reina (University of Catania), Giancarlo Solaini (University of Bologna) | |
| 14:45 | P30 Anna Barile , Researcher, CNR-IBPM, Rome, Italy <i>Pseudomonas aeruginosa</i> sulfide: quinone oxidoreductase is a key enzyme in H₂S detoxification |
| 15:00 | P31 Silvia Grillini , Post-Doc, University of Bologna, Italy Mitochondrial dysfunction and oxidative stress in CANVAS: insights from patient-derived fibroblasts |
| 15:15 | P32 Marta Carro-Alvarellos , Post-Doc, University of Padova, Italy ATAD3 protein family members orchestrate mitochondrial translation with metabolic reprogramming |
| 15:30 | P33 Noemi Pesce , Post-Doc, CNR-IC, Catania, Italy Unravelling the HK1-VDAC1 interaction: insights into apoptosis and metabolic adaptation |
| 15:45 | P34 Francesca Giordano , Post-Doc, University of Rome La Sapienza, Italy The bd-type Cyanide Insensitive Oxidase (CIO) from the multidrug-resistant pathogen <i>Pseudomonas aeruginosa</i> is inhibited by carbon monoxide |
| 16:00 | P35 Alessandro Cecconi , PhD student, University of Padova, Italy Upregulated cardiomyocyte Monoamine Oxidase A (MAO A) participates in the development of heart failure following conditional Opa1 heart deletion |

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| 16:10 | P36 Giulia Chiara Maria Perrone , PhD Student, University of Bari, Italy FAD/NAD(P)H-dependent dehydrogenases of pathogens and mammals: challenges and opportunities for the selective antimicrobial targeting |
| 16:20 - 17:00 Coffee break Chiostro di Levante, Monastero dei Benedettini | |
| 17:00 - 18:15 Session VI: Mitochondrial biogenesis, mitophagy, dynamic and contact sites Chairs: Alessandra Baracca (University of Bologna), Doron Rapaport (University of Tübingen) | |
| 17:00 | P37 Federica Vinelli , PhD student, University of Padova, Italy RAP1 inhibition restores mitochondria elongation and lysosomal distribution downstream of OPA1 deletion |
| 17:10 | P38 Giuseppe Battiato , PhD Student, University of Catania, Italy Multifaceted roles of VDAC cysteine redox state in biogenesis, redox homeostasis, and oligomer assembly |
| 17:20 | P39 Mirko Tamma , PhD Student, University of Foggia, Italy Circadian control of mitochondrial biogenesis and turnover: insights from Parkin-deficient models |
| 17:30 | P40 Hualin Fan , PhD Student, University of Padova, Italy Von Willebrand factor A domain-containing protein 8 modulates mitochondria-sarco/endoplasmic reticulum contacts in β-adrenergic agonist-induced cardiac hypertrophy |
| 17:40 | P41 Cien Zhen , PhD student, University of Padova, Italy Mitochondrial calcium uptake regulates mitochondrial fission models |
| 17:50 | P42 Kimia Goharian , Post-graduate fellow, University of Padova, Italy The role of the FIS1-interactome in Acute Myeloid Leukemia mitophagy |
| 18:00 | P43 Dan Pan , PhD Student, University of Padova, Italy LACTB modulates the sorting of unfolded mitochondrial protein aggregates |
| 18:15 - 19:15 GIBB meeting | |
| 20:30 - 23:30 Social dinner Botanical Garden of Catania. Entrance from via Antonino Longo, 19 | |

Saturday 14 June 2025

08:30 - 10:15 Session VII

Synthetic molecules, miRNA and natural bioactive compounds regulating the mitochondrial function and bioenergetics

Chairs: Elena Forte (University of Rome), Luigi Palmieri (University of Bari)

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| 08:30 | P44 Daniela De Benedictis , PhD Student, University of Bari, Italy Effect of nutraceuticals on mitochondrial dysfunctions in Chemotherapy-Induced Peripheral Neuropathy (CIPN) |
| 08:40 | P45 Ilenia Paoletti , PhD student, University of Foggia, Italy Exploring the effects of β-hydroxybutyrate on a new in vitro model of human hippocampal neurogenesis |
| 08:50 | P46 Martina Grandi , PhD Student, University of Bologna, Italy Honokiol blocks tumor development and metastasis through mitochondrion-targeted effects |
| 09:00 | P47 Teresa Valentini , Researcher, University of Padova, Italy In Vivo Opanimim treatment: antagonizing microRNAs that upregulate Opa1 and their effect on Cox deficient mice |
| 09:15 | P48 Lukas Rimle , Post-Doc, University of Bern, Switzerland Dissecting structural requirements of Leucinstatin A derivatives for antiprotozoal activity and mammalian toxicity |
| 09:30 | P49 Giorgia Iaconisi , Post-Doc, University of Bari, Italy Melatonin preserves mitochondrial structure and function in ischaemic HT22 cells |
| 09:45 | P50 Iolanda Infantino , PhD Student, University of Catania, Italy Phenolic extract from olive mill wastewater preserves mitochondrial bioenergetics under oxidative stress |
| 09:55 | P51 Federico Magrin , PhD student, University of Padova, Italy Lead optimization of specific OPA1 inhibitors enhancing cytochrome c release and cell death |

10:05 - 10:50 Plenary Lecture

Erich Gnaiger, Oroboros Instruments, Innsbruck, Austria

Bioenergetics and obesity: OXPHOS capacity in human muscle tissue and excess body mass

Chairs: Maria Barile (University of Bari), Nazzareno Capitanio (University of Foggia)

10:50 - 11:00 Coffee break

Chiostro di Levante, Monastero dei Benedettini

11:00 - 12:30 Session VIII

Novel technical approaches in the study of bioenergetics

Chairs: Consiglia Pacelli (University of Foggia), Michele Galluccio (University of Calabria)

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| 11:00 | Sponsor talk Lorena Maria Ferreira , Product Specialist AHSI Agilent Seahorse Analyzers: Discover the power of cellular energy metabolism |
| 11:10 | P52 Stefan Urs Moning , PhD Student, University of Bern, Switzerland Oxidative phosphorylation powered by electricity |
| 11:20 | P53 Aurelia Miscia , PhD Student, University of Padova, Italy STACCATO: a family of Split-FAST Mitochondria-ER Contacts probes that measure contact sites of different widths |
| 11:30 | P54 Claudio Piselli , Post-Doc, University of Tübingen, Germany Universal protocol for the isolation of channel forming membrane proteins using the <i>E. coli</i> expression system |
| 11:45 | P55 Xena Giada Pappalardo , Post-Doc, University of Catania, Italy Harnessing Big Data to Uncover <i>VDAC1P8</i>'s Role in AML Pathophysiology |
| 12:00 | P56 Beatrice Capita , PhD Student, University of Padova, Italy FLYMP: a new FRET based sensor to study contact sites between mitochondria and lysosomes |
| 12:10 | P57 Larissa Henke , PhD student, University of Bern, Switzerland Real-time monitoring of ATP synthesis in synthetic liposomes using iATPSnFR2 |
| 12:20 | P58 Alessandra Gabriele , PhD Student, University of Salento, Italy Optimization of synthesis parameters for cell-targeting Fluorescent Carbon Dots: From Nanostructure to Mitochondrial Bioimaging |
| 12:30 - 13:30 Concluding remarks and awards | |

Useful information for the speaker

1. All presentations must be in PowerPoint or PDF format. Presentations can be sent in advance to andrea.magri@unict.it by 8 June.
2. Due to time constraints, please do not use your own computer.
3. The allotted time for oral presentations is **8 minutes** (+ 2 minutes for Q&A) for graduate students, post-graduate fellows and PhD students, and **12 minutes** (+ 3 minutes for Q&A) for Postdoctoral fellows and researchers.
4. Due to the large number of abstracts received this year, we urge everyone to adhere to the schedule to ensure equal opportunity for all presenters.
5. Prizes will be awarded in two categories, for the best oral presentations by graduate students and postdoctoral researchers. Two of them will be granted by Nanion Technologies for presentations in the field of electrophysiology.