The international summer school on **"Advanced Biotechnology"** is organized yearly by several members of Biotechnet Switzerland in collaboration with the Master In Applied Biotechnology, BIRS, at the University of Palermo.

The School has reached its 15th edition after a stop in 2020 due to the Covid pandemic.

The School restarts this year in Palermo in compliance with the current regulations of the Italian Government relating to the containment of the spread of the SARS COVID-19 virus.

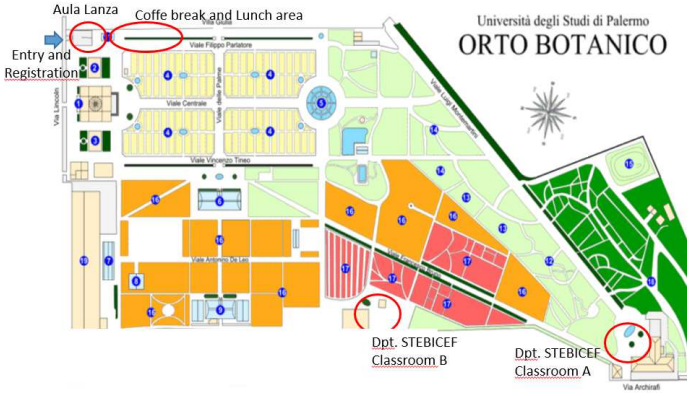
Organizing Committe

Patrizia Cancemi
Giuseppe Gallo
Giulio Ghersi
Salvatore Feo
Anna Maria Puglia
Laura Suter-Dick

Contact & Information
salvatore.feo@unipa.it
anna.maria.puglia@unipa.it

https://www.unipa.it/dipartimenti/stebicef/summer-school/

Venue: UNIPA, Orto Botanico, Via Lincoln 2
Classroom A and B Dpt. STEBICEF

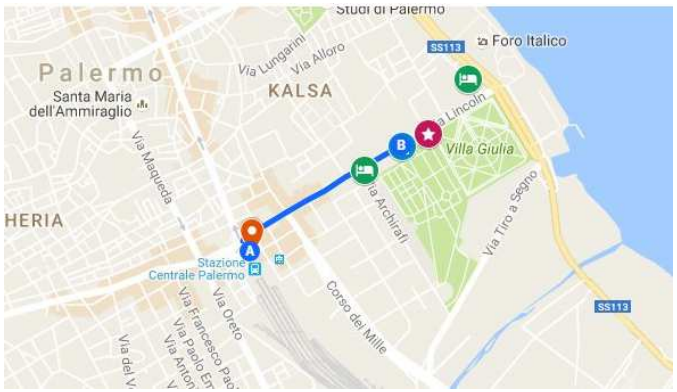


How to reach Orto Botanico

From Falcone Borsellino airport you can reach the main train station of the city (Palermo centrale) by :

- Prestia and Comandè bus (bus stop is outside the airport, 50 meters to the right)

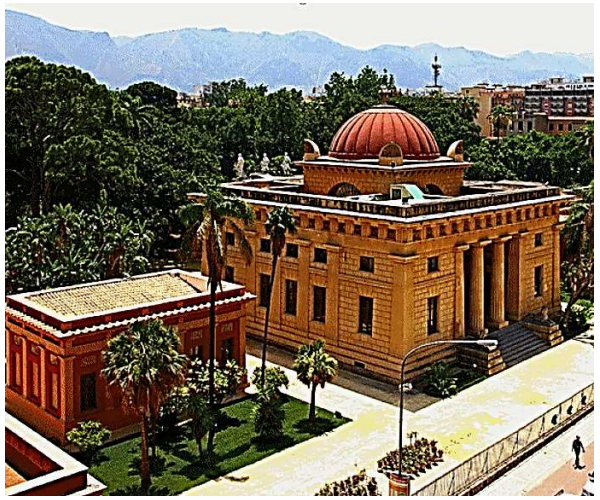
- from Central Railway Station you can reach Hotel Villa Archirafi, Botanical Garden and NH Hotel along Via Lincoln.



XV Summer School on Advanced Biotechnology

September 13-15, 2021
Orto Botanico, Dpt. STEBICEF
Palermo, Italy

Program



Organized by

- FHNW (Switzerland)
- HES-SO (Switzerland)
- MCI (Austria)
- Università degli Studi di Palermo (Italia)
- ZHAW (Switzerland)

Monday 13

08:30 **Registration**
09:15 **Welcome and Opening remarks**

09:30 -10:30 **Medical Biotechnology**
Chair: Laura Suter-Dick

Jack Rohrer
Developing an in vitro model system for the human blood brain barrier

Floriana Burgio
Models for Blood Brain Barrier: How to determine passage of compounds into the brain

10:30 **Coffee break**

11:00 12:30 **Medical Biotechnology**
Chair: Jack Rohrer

Laura Suter-Dick
MicroRNA as biomarkers of toxicity in vitro

Laura Lentini
Targeting Nonsense: Rescue of CFTR Expression and Functionality in Cystic Fibrosis Cell Model Systems by TRIDs

Ruggero La Rosa
Pseudomonas aeruginosa adaptation and evolution in patients with cystic fibrosis

12:30 **Lunch**

14.30 – 17:00 **Industrial and Environmental Biotechnology**
Chair: Simon Crelier

Hans Joachim Nägele
The role of biomass in future energy systems And System services through Anaerobic Digestion

Nathanaël Junod
Development of a biosorption process for the removal of micropollutants

Mira Mutschlechner
Emerging molecular tools to integrate microbial ecology into biotechnology

Chistoph Griesbeck
Screening of secondary metabolites from soil algae extracts

Giorgio Mannina
Advances in water resource recovery from wastewater treatment: roadmapping the transition to circular economy

17:30 **Welcome Party**

Tuesday 14

09:00 – 10:30 **Microbial Biotechnology**
Chair: Fabian Fischer

Wolfgang Merkle
Characterization and optimisation of ex-situ biological methanian process"

Alessandro Presentato
Microbial processing of metal(loid)s"

Elena Piacenza
Application of biogenic nanomaterials: a biotechnological perspective

10:30 **Coffee break**

11:00 – 12:30 **Microbial Biotechnology**
Chair: Chistoph Griesbeck

Fabian Fischer
Microbial fuel cell scale-up

Maria Vittoria Salvo
Hydrogen production by Chlamydomonas reinhardtii coupled with dye-sensitized solar cells

Simon Crelier
Enzymes for the degradation of micropollutants"

12:30 **Lunch**

14:30 -17:00 **Biotechnology applications**
Chair: Alessandro Presentato

Harald Schöbel
Using LED technology for life-science applications"

Simona Campora
Nanoparticles in Biomedicine: a world to discover

Claudia Oliviero
Generation of a MAR-rich Landing Pad Platform for recombinant protein production

Philippe Corvini
Bacteria feeding on antibiotics -Eating the poisonous

Alexandre Kuhn
Next-generation DNA sequencing: applications in biotechnology and medical diagnostics"

Wednesday 15

09:00 – 1030 **Medical Biotechnology**
Chair: Giulio Ghersi

Mariagrazia Pizza
Structure-based antigen design

Thomas Villiger
Development of a Rapid Test to Detect Anti-bodies Directed Against an Extended RBD of SARS-CoV-2 Spike Protein

Federica Bernardini
Editing population genetics for malaria vector control

10:30 **Coffee break**

11:00 – 12:30 **Protein Engeneering**
Chair: Mariagrazia Pizza

Steffen Hinz
Bispecific antibodies: Challenges in Generation and Production

Patrick Shahgaldian
Protein Supramolecular Engineering: From Virus Recognition to Biocatalysis and Nanomedecine

Gottfried Dasen
Bacteriophages as substitutes for pathogenic viruses like COVID-19 in antiviral activity testing procedures

12:30 **Lunch**

14:30 16:30 **Drug Delivery and Nanotecnology**
Chair: Patrick Shahgaldian

Francesca D'Anna
Organic Salts: Playing the Game of the Structure to Tune the Applications

Georg Lipps
Drug Delivery to the Colon

Valeria Vetri
Peptide-membrane interactions monitored by quantitative fluorescence microscopy

Matthias Rüdt
PAT in biopharmaceutical DSP

17:00 **Concluding remarks**

BRS
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biotechnet
switzerland

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