

## Open lectures within the Phenotypic Fingerprinting school as part of the PRP@CERIC project: a training opportunity promoted by Area Science Park, Elettra Sincrotrone Trieste, ICGEB and CNR

**Subject.** Many metabolic pathways are involved in host cell response to infection, such as glycolysis, TCA cycle, pentose phosphate pathway, amino acid synthesis, fatty acid synthesis and oxidation, lipidome and proteome changes. The aim of the Phenotypic Fingerprinting school is to shed light on fingerprints of the cellular metabolic pathways perturbed by infection and drug-response by exploiting complementary approaches and fostering their integration. Hints of techniques for the preparation of biological substrates will be also given. The school is promoted by Area Science Park in collaboration with Elettra Sincrotrone Trieste, the International Center for Genetic Engineering and Biotechnology – ICGEB and the National Research Council – CNR, as part of the activities of the “Pathogen Readiness Platform for CERIC-ERIC Upgrade” – PRP@CERIC project.

The following seven thematic modules will be addressed during the school: 1) Host-pathogen interaction models and high-throughput screening (HTS) imaging; 2) Genomics advancements through -omics NGS approaches: from DNA to single cell transcriptome; 3) Atomic Force Microscopy (AFM) biomechanical imaging; 4) Micro- and nano-machining for biology; 5) Infrared (IR) chemical cytology (cellular imaging); 6) Ultraviolet (UV) - Raman chemical cytology (cellular imaging); 7) Data analysis, integration, and management.

For each of the first six modules, selected internationally recognized invited speakers, with sector-specific skills and expertise, will provide a theoretical overview offering a perspective of the field.

The lessons held by the invited speakers will be open to interested people and will be available in hybrid mode, in person at the Area Science Park Convention Centre and remotely via the Microsoft Teams platform.

### Calendar of “open” lectures held by Invited Speakers

Date & location	Time slot	Speaker & topics
<b>Module 1: Host-pathogen interaction models and HTS imaging</b>		
<b>Wednesday 16 October 2024</b> Conference Hall, Building C1 Area Science Park, Padriciano 99	2:00-6:00 PM	<b>Prof. Peter Horvath</b> , Institute of Biochemistry, Biological Research Centre, Szeged, Hungary <i>“High Throughput Screenings in Drug Discovery”</i>
<b>Module 2: Genomics advancements through -omics NGS approaches: from DNA to single cell transcriptome</b>		
<b>Thursday 17 October 2024</b> Conference Hall, Building C1 Area Science Park, Padriciano 99	9:00 AM-1:00 PM	<b>Prof. Piero Carninci</b> , Genomics Research Centre, Human Technopole, Milan, Italy <i>“My travel from genomic technologies to biology”</i>
<b>Module 3: AFM biomechanical imaging</b>		
<b>Tuesday 22 October 2024</b>	9:00 AM-1:00 PM	<b>Prof. Núria Gavara Casas</b> , Universitat de Barcelona, Spain

# Phenotypic Fingerprinting school

Conference Hall, Building C1 Area Science Park, Padriciano 99		<i>"Mechanobiology of the cytoskeleton"</i>
<b>Module 4: Micro- and nano-machining for biology</b>		
<b>Monday 18 November 2024</b>  Conference Hall, Building C1 Area Science Park, Padriciano 99	2:00-6:00 PM	<b>Prof. Gianluca Greci</b> , Mechanobiology Institute, National University of Singapore  <i>"Micro systems for live cell imaging"</i>
<b>Module 5: IR chemical cytology (cellular imaging)</b>		
<b>Thursday 21 November 2024</b>  Conference Hall, Building C1 Area Science Park, Padriciano 99	2:00-5:00 PM	<b>Prof. Bernhard Lendl</b> , TU Wien, Austria  <i>"Novel analytical methodologies for molecular spectroscopies"</i>
<b>Module 6: UV-Raman chemical cytology (cellular imaging)</b>		
<b>Tuesday 26 November 2024</b>  Auditorium, Building C1 Area Science Park, Padriciano 99	9:00 AM-1:00 PM	<b>Prof. Igor Lednev</b> , University at Albany, State University of New York, US  <i>"Advanced Chemometrics: Biological Applications of NIR and ultraviolet Raman spectroscopy"</i>