



Perseus is funded by the European Union's Horizon Europe research and innovation programme under Grant Agreement no. 101099423. UK participants in Horizon Europe Project Perseus are supported by UKRI grant number 10073017.

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# PERSEUS

PERSEUS International Workshop  
Friday 29 May 2026

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## Opening Session

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09:00 - 09:10

### Welcome and Greetings

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09:10-09:30

### Introduction by the project Coordinator

Session I-Morning.

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09:30 - 09:55

### Selenoproteins and reductive enzyme pathways in control of cell fate and as anticancer drug targets.

Prof. Elias S.J. Arnér, Division of Biochemistry, Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden; Department of Selenoprotein Research, National Institute of Oncology, Budapest, Hungary.

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09:55 - 10:20

### Title to be confirmed.

Prof. Alessandro Bertucci, Laboratory of Bioartificial Systems and Biosensors-Department of Chemistry, Life Sciences and Environmental Sustainability-University of Parma-Italy.

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10:20 - 10:40

### Coffee Break

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10:40 - 11:05

### The evolution of radiation therapy: where we stand now.

Prof. Salem Billan, MD, The Joseph Fishman Oncology Centre, Rambam Health Care Campus, Haifa, Affiliated to the Rappaport Faculty of Medicine, Israel Institute of Technology-Technion, Haifa.

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11:05 - 11:30

### Cutting-edge biofunctionalized nanoparticles: a step toward technological innovation.

Prof. Miriam Colombo, University of Milano-Bicocca, Department of Biotechnology and Bioscience.

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11:30 - 11:55

### Lipid Nanoformulations for Photodynamic-and Radiotherapy for Pancreatic Cancer.

Dr. Måns Broekgaarden, French National Institute for Health and Medical Research (Inserm) and Institute for Advanced Biosciences, Grenoble-Alpes University, France.

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11:55 - 12:20

### Unique features and collateral immune effects of mRNA-LNP COVID-19 vaccines: plausible Mechanisms of Adverse Events and Complications (title to be confirmed).

Prof. János Szebeni, Nanomedicine Research and Education Centre, Department of Clinical Pathophysiology, Semmelweis University, Budapest, Hungary.

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12:30 - 13:30

### Lunch Break

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## Session II – Afternoon

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13:30 - 13:55

### Title to be confirmed

Dr. Dávid Beke, HUN-REN Wigner Research Centre for Physics Institute for Solid State Physics and Optics, Budapest.

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13:55 - 14:20

### Title to be confirmed

Prof. Cao Yihai, Department of Microbiology, Tumour and Cell biology, Karolinska Institutet, Stockholm, Sweden.

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14:20 - 14:45

### Title to be confirmed

Prof. María C. Rodríguez-Argüelles, Dept. Química Inorgánica, Universidade de Vigo, 36210, Vigo, Spain.

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14:45–15:10

### Title to be confirmed

Prof. Avi Schroeder, The Louis Family Laboratory for Targeted Drug Delivery and Personalized Medicine Technologies, Department of Chemical Engineering, Technion–Israel Institute of Technology, Haifa, Israel.

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15:10–15:30

### Coffee Break

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## Session III–Afternoon

### PhD students & young researchers

(names to be confirmed)

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15:30–18:00

### Final session

(Each talk: 10 min + 5 min Q&A)

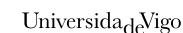
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18:00–18:30

### Final discussion and wrap-up

(30 min)

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The international workshop Cancer Nanomedicine: Forging a Path to the Clinic aims to provide a focused forum for discussing recent advances in nanotechnology-based cancer therapies. The event brings together researchers, clinicians and experts in nanomedicine and drug delivery to exchange knowledge, present emerging results, and examine the scientific and technological gaps that still limit clinical translation. In addition to invited talks, the workshop creates a dedicated space for open discussion and idea-sharing on emerging approaches in the field. Opportunities for young researchers to present their work will further enrich the scientific exchange. By prioritizing direct scientific conversation, the workshop enables participants to explore new findings, discuss challenges, and identify promising directions for advancing nanomedicine toward clinical application.

## About the Perseus project

The PERSEUS project, funded by the European Innovation Council, aims to develop a novel cancer therapy using nanotechnology for deep-seated, drug-resistant and metastatic tumours. The therapy involves multifunctional composite nanosystems made from 2D transition metal dichalcogenide (TMD) flakes, metal nanoparticles and photosensitizers, encapsulated in liposomes. These nanosystems absorb low energy X-ray radiation, which can be activated by CT scanners. Upon activation, they convert the absorbed energy into reactive oxygen species and radiosensitizing agents, providing multimodal therapy with minimal adverse effects. This therapy can reach tumours inaccessible by other radiation types and is effective regardless of cancer type or patient gender. The approach does not deliver specific drugs for a particular type of tumor (like e.g. chemotherapy), rather it excites material-mediated physico-chemical processes through targeting, irradiation and immunotherapy. Therefore, the therapy is

agnostic to the type of cancer and to gender incidence because it does not affect the body biochemistry. Further, low energy X-ray irradiation can also induce immunogenic cell death with the exposure or release of neo-antigens to trigger an anti-cancer immune response (abscopal effect), to treat metastatic disease.

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## Perseus at a glance

Project title:

2D Material-Based Multiple Oncotherapy Against Metastatic Disease Using a Radically New Computed Tomography Approach

Acronym:

PERSEUS

Funding:

European Innovation Council (EIC), SMEs Executive Agency, UK Research and Innovation

Coordinator:

Dr. Giancarlo Salvati (National Council of Research–Italy)

Project duration:

1 March 2023 -28 February 2027

Consortium:

National Research Council, CNR–Italy (Coordinator)

Karolinska Institutet–Sweden

Israel Institute of Technology, Technion–Israel

Universidad de Vigo–Spain

Wigner Fizikai Kutatóközpont–Hungary

BeDimensional S.P.A–Italy

QED Film & Stage Productions LTD (Associated Partner)–UK

