

## Aim and objectives

The conference aims to update participants on innovative microscopic equipment which, by correlating the various features of optical and electron microscopy, can maximize the potential applications of morphological and ultrastructural methods. The conference will address the limits of sample preparation, the optimization of image processing, and the critical analysis of experimental results with different materials.

## SPEAKERS AND CHAIRPERSONS

**Roberto Balboni** National Research Council - IMM, Bologna, Italy  
**Edoardo Bemporad** University "Rome III", Rome, Italy  
**Luca Boarino** National Institute of Metrological Research, Turin, Italy  
**Annarica Calcabrini** Istituto Superiore di Sanità, Rome, Italy  
**Katia Cortese** University of Genoa, Italy  
**Marco Crescenzi** Istituto Superiore di Sanità, Rome, Italy  
**Alberto Diaspro** Italian Institute of Technology, Genoa, Italy  
**Elisabetta Falcieri** University of Urbino, Italy  
**Mauva Francolini** University of Milan, Italy  
**Mauvo Gemmi** Italian Institute of Technology, Pisa, Italy  
**Bruno M. Humbel** University of Lausanne, Switzerland  
**Lars-Oliver Kautschor** Zeiss, Oberkochen, Germany  
**Emine Korkmaz** Fei-Thermo Fisher, Eindhoven, The Netherlands  
**Vratislav Kostal** Tescan, Brno, Czech Republic  
**Frederic Leroux** Leica Microsystems, Germany  
**Alberto Luini** National Research Council, Naples, Italy  
**Manuela Malatesta** University of Verona, Italy  
**Matteo Mariani** Media System Lab, Monza, Italy  
**Alexandre A. Mironov** Institute of Molecular Oncology, Milan, Italy  
**Agnese Molinari** Istituto Superiore di Sanità, Rome, Italy  
**Amelia Montone** Research Center ENEA, Rome, Italy  
**Luca Ortolani** National Research Council - IMM, Bologna, Italy  
**Roman Polshchuk** Telethon Institute of Genetics and Medicine, Naples, Italy  
**Francesca Sbrana** Schaefer SEE, Genoa, Italy  
**Annarita Stringaro** Istituto Superiore di Sanità, Rome, Italy  
**Daniela Uccelletti** University "La Sapienza", Rome, Italy  
**Marco Vittori Antisari** NanoItaly Association, Rome, Italy  
**Andy Yarwood** Jeol, London, United Kingdom

## SCIENTIFIC COORDINATOR

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This congress is organized with the unconditioned contributions of:



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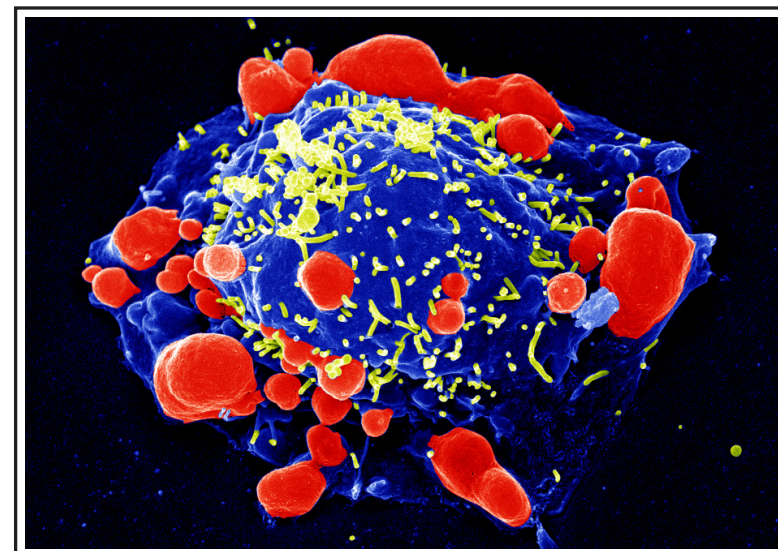
## GENERAL INFORMATION

**Venue:**  
Istituto Superiore di Sanità, Aula Bovet, Viale Regina Elena  
299 - 00161 Rome, Italy

**Target audience:**  
biologists, medical doctors, physicists, engineers, researchers  
and technicians.

Maximun number of participants: 90

ECM credits: NO



# CORRELATIVE MICROSCOPY IN LIFE AND MATERIALS SCIENCES

November 6<sup>th</sup> - 7<sup>th</sup>, 2017

Aula Bovet  
Istituto Superiore di Sanità, Rome

organized by

Istituto Superiore di Sanità - ISS  
and Italian Society for Microscopical Sciences - SISM

# Programme

## Monday, November 6<sup>th</sup>

08.30 Registration

09.00 Opening Ceremony

*Prof. Walter Ricciardi*, ISS President

*Dr. Patrizia Popoli*, ISS, Director of National Center for Drug Research and Evaluation

*Prof. Elisabetta Falcieri*, SISM President

*Dr. Stefania Meschini*, ISS Scientific Coordinator of the event

### I SESSION

09.30 **Correlative microscopy: principles and application potential**

Chairs: *Marco Vittori, Elisabetta Falcieri*

09.30 **Keynote Lecture**

Correlative light and electron microscopy in biology

*Bruno M. Humbel*

10.00 Applications for 3D characterization in the life sciences. Illumination correlative research using light, X-ray, and electron microscopy

*Lars-Oliver Kautschor*

10.20 Correlative imaging workflows across scales: a powerful approach for cell and tissue studies

*Emine Korkmaz*

10.40 Coffee break

11.10 Investigating cancer cell behaviour using correlative imaging by holographic microscopy and FIB-SEM tomography

*Vratislav Kostal*

11.30 An analytical journey from 4D live cell imaging to scanning electron microscopy. Fast, reliable and trust worthy

*Matteo Mariani*

11.50 New solutions for correlative microscopy

*Andy Yarwood*

12.10 Preparation workflows for correlation microscopy

*Frederic Leroux*

12.30 3D holotomographic microscopy opens new era for label-free live cell imaging

*Francesca Sbrana*

12.50 Discussion

13.00 Lunch

### II SESSION

14.15 **Correlative microscopy applications in materials sciences**

Chairs: *Amelia Montone, Roberto Balboni*

14.15 **Keynote Lecture**

Correlative microscopy as a powerful tool for coupling structural compositional and functional properties

*Edoardo Bemporad*

14.45 A case study of correlative approach to 3D microscopy: the silicon nanowires

*Luca Boarino*

15.05 Curvature driven nanoparticles decoration of graphene membranes

*Luca Ortolani*

15.25 Evaluation of antimycotic activity of zinc oxide nanoparticles by correlative microscopy

*Daniela Uccelletti*

15.45 Selected Talks

16.05 Discussion

## Tuesday, November 7<sup>th</sup>

### I SESSION

09.00 **Correlative microscopy applications in life sciences**

Chairs: *Agnese Molinari, Marco Crescenzi*

09.00 **Keynote Lecture**

Correlative microscopy in biomedicine: from the slow beginning decades ago to the rapidly expanding leading edge of today

*Alberto Luini*

09.30 Correlative electron microscopy in modern bio-medical research

*Roman Polishchuk*

10.00 Compatibility of correlative light and electron microscopy with three-dimensional and quantitative analysis in biology

*Alexandre A. Mironov*

10.30 Correlative X-ray micro tomography and TEM microscopy on biological samples for the study of complex pathologies

*Mauro Gemmi*

10.50 Discussion

11.10 Coffee break

### II SESSION

11.30 **Correlative microscopy applications in life sciences**

Chairs: *Annarica Calcabrini, Annarita Stringaro*

11.30 **Keynote Lecture**

The extraordinary microscope: multimodal and correlative approaches in nanomedicine

*Alberto Diaspro*

12.00 3D HDO-CLEM: cellular compartment analysis by correlative light-electron microscopy on cryosections

*Katia Cortese*

12.20 New tools and protocols for correlative microscopy application to biomedical research

*Maura Francolini*

12.40 Visualizing fluorochrome-labelled nanoparticles and fluorescent free molecules at transmission electron microscopy by diaminobenzidine photo-oxidation

*Manuela Malatesta*

13.00 Discussion and Closing Remarks

13.30 Lunch