

AGORA workshop series

MULTIMODAL

IMAGING

in life sciences
and cancer
research

Thursday, February 2, 2023

AGORA Cancer Research Center

Auditorium Paternot, Rue du Bugnon 25A, 1011 Lausanne, Switzerland

Keynote speaker:

Ralph Weissleder Harvard/MGH, USA

Confirmed speakers:

Jan Böttcher

Technical University of Munich, Germany

Adrien Depeursinge

HES-SO Valais / CHUV, Switzerland

Matteo Iannaccone

San Raffaele Research Institute, Italy

Johanna Joyce

University of Lausanne, Switzerland

Laura Mezzanotte

Erasmus MC, Netherlands

González Santiago

Institute for Research in Biomedicine, Switzerland

Colinda Scheele

VIB-KU Leuven Center for Cancer Biology, Belgium

Kuangyu Shi

University of Bern, Switzerland

Margret Schottelius

CHUV, Switzerland

Breakthroughs in imaging technologies have been a driving force for new discoveries in biology. Indeed, the ability to visualize events occurring in the living organism is essential for understanding biomedical processes. Today, in vivo imaging provides crucial observations of cell dynamics, and allows for assessment and manipulation of cells at the molecular level. It is also possible to combine different imaging modalities to analyze life at different resolutions and scales.

To advance knowledge and networking in this area, this one-day workshop will explore intravital microscopy, light-triggered functional interventions, macroscopic imaging techniques (e.g. PET-CT, MRI), and new tools for visualization, targeting, labeling and manipulation of cells in vivo. We will also discuss the combination of imaging modalities, and image analysis and the use of AI in this area. We will mostly focus on the application of these techniques to cancer research.

- Meeting organizers: Alexandre Benechet, Susan Gasser, Mikael Pittet

Registration:



<https://bit.ly/3rP4HQA>

Fee: CHF 80.00



ISREC



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Auditorium Paternot, Rue du Bugnon
25A, 1011 Lausanne, Switzerland

- 08:30AM Coffee and croissants *with the speakers*

Welcome

- 09:00AM Susan Gasser, ISREC Foundation Director
- 09:10AM Alexandre Bénéchet, University of Lausanne, Switzerland

Keynote (moderator: Mikaël Pittet)

- 09:20AM **Ralph Weissleder**, Harvard/MGH, USA.
Imaging live: more, faster and possibly in patients

Session 1 - MICROSCOPIC IMAGING (moderator: Alexandre Bénéchet)

- 10:20AM **Jan Böttcher**, Technical University of Munich, Germany.
Spatial and functional coordination of anti-cancer immunity by conventional type 1 DCs
- 10:50AM Coffee and croissants *with the speakers*
- 11:20AM **Matteo Iannaccone**, San Raffaele Research Institute, Italy.
In vivo imaging of antiviral immune responses in the liver
- 11:50AM **Colinda Scheele**, VIB-KU Leuven Center for Cancer Biology, Belgium.
Multi-dimensional imaging of breast development and disease

Lunch

- 12:20AM Lunch *with the speakers*

Session 2 - MACROSCOPIC IMAGING & MULTIMODAL INTEGRATION (moderator: Ruud Van Heeswijk)

- 01:20PM **Johanna Joyce**, University of Lausanne, Switzerland.
Multimodal imaging of the brain tumor microenvironment
- 01:50PM **Laura Mezzanotte**, Erasmus MC, Netherlands.
Multiscale and multimodal imaging of cancer using novel bioluminescent tools
- 02:20PM **Margret Schottelius**, CHUV, Switzerland.
The power of nuclear imaging in immuno-oncology
- 02:50PM Coffee break *with the speakers*

Session 3 - INNOVATIVE TOOLS, IMAGE ANALYSIS, AI (moderator: Susan Gasser)

- 03:20PM **Adrien Depeursinge**, HES-SO Valais / CHUV, Switzerland.
Multimodal image analysis using AI for precision oncology: an overview
- 03:50AM **Kuangyu Shi**, University of Bern, Switzerland.
Quantitative analysis of molecular imaging for the interpretation of underlying physiology
- 04:20PM **González Santiago**, Institute for Research in Biomedicine, Switzerland.
IMMUNEMAP, an intravital microscopy platform for spatio-temporal studies in immunology

Concluding remarks

- 04:50PM Mikael Pittet, University of Geneva, Switzerland
- 05:00PM Departure