

# X-ray based imaging on different scales for biomedical application

Monday, August 23rd 2021, 10 am - 6 pm

10:00 am **Welcome** by Frauke Alves, Tim Salditt and Christian Dullin

## Session 1: Novel technological developments in X-ray based imaging

Chair: C. Dullin

10:10 am Tim Salditt, Institute of X-ray Physics, University of Göttingen, Germany

**"3d virtual histology of the human brain: the opportunities of multi-scale X-ray phase contrast tomography"**

10:40 am Hans Hertz, Biomedical and X-ray physics, KTH, Royal Institute of Technology, Stockholm, Sweden

**"Towards high-resolution molecular and morphological X-ray imaging"**

11:10 am Julia Herzen, TUM München, Germany

**"High resolution and sensitivity X-ray phase contrast imaging for biomedical applications"**

11:40 am Coffee break

## Session 2: Short selected talks of students

Chairs: H. Hertz, J. Herzen

12:00 pm Jakob Reichmann, Institute of X-ray Physics, University of Göttingen, Germany

**"High resolution tomography of lung tissue: from Covid19 small animal models to human lung"**

12:10 pm Jannis Schaeper, Institute of X-ray Physics, University of Göttingen, Germany

**"Multi-scale phase-contrast X-ray tomography of small-animal cochleae"**

12:20 pm Jonas Albers, Dpt. of Diagnostic and Interventional Radiology, University Medical Center Göttingen

**"X-ray based correlative imaging in lung research"**

12:30 pm Amara Khan, Translational Molecular Imaging, Max Planck Institute of Experimental Medicine

**"X-ray based lung function in a mouse model of pulmonary fibrosis"**

12:40 pm Kian Shaker, Biomedical and X-ray physics, KTH, Royal Institute of Technology, Stockholm, Sweden

**"Preclinical in vivo X-ray fluorescence imaging"**

12:50 pm Lunch Break

## Session 3: Nano/small scale imaging and biomedical application

Chairs: G. van de Velde, T. Salditt

01:50 pm Alexandra Pacureanu, X-ray Nanoprobe Group, Neuroimaging Unit, ESRF, Grenoble, France

**"X-ray nano-tomography for life sciences"**

02:20 pm Liz Duke, European Molecular Biology Laboratory Hamburg

**"Phase contrast X-ray tomography at EMBL"**

02:50 pm Sam Bayat, ESRF, Grenoble, France

**"Synchrotron radiation imaging of lung structure and function"**

03:20 pm Coffee Break

## Discussion and presentation

03:50 pm Discussion rounds in small groups: Future application in X-ray imaging

04:20 pm Presentation of ideas

## Session 4: Towards clinical application

Chairs: T.R. Schneider, F. Alves

04:50 pm Alessandro Olivo, London, UK

**"Edge-illumination X-ray phase contrast CT for intra-operative imaging and digital histology"**

05:20 pm Christian Dullin, UMG Göttingen, Germany

**"Towards phase contrast lung CT imaging in patients"**

05:50 pm Summary