University of Basel
Department of Biomedical Engineering

Seminar Series:
Latest Breakthroughs in Biomedical Engineering Research

Location: DBE Science Lounge, Hegenheimermattweg 167C, 4123 Allschwil
Date & Time: Thursday 12.11.2026 | 16:30 – 17:30
Host: Prof. Dr. Bert Müller

Waves for Life Science

Prof. Dr. Marina Eckermann

Biomedical Photonics, Institute of Applied Physics, University of Bern

Abstract

The group of Biomedical Photonics at the University of Bern pushes the development of non-invasive imaging techniques based on electromagnetic and acoustic waves to extract anatomical features from biological tissues for pre-clinical and clinical purposes. Because of their penetration depth, X-rays are of special interest in medicine. Conventional and advanced full-field X-ray imaging methods are combined with scattering and fluorescence to characterize biological tissues. A prominent example is three-dimensional virtual histology. The final goal is to decipher diseases by the identification of pathological mechanisms.

Biosketch

Marina Eckermann is tenure-track assistant professor and leader of the Biomedical Photonics group. Under the supervision of Tim Salditt she obtained her BSc degree in physics from the Georg-August-University Göttingen, Germany 2014 with a thesis entitled “Scanning small-angle X-ray diffractive imaging of cardiomyocytes”. Her Master thesis in physics with specialization in medical physics, combined with a research stay in Edmonton, was granted by the Ludwig-Maximilians-University Munich, Germany and entitled “Development of advanced image processing methods for X-ray phase contrast neuro-CT experiments” and supervised by Paola Coan. Also, her doctoral thesis was supervised by Tim Salditt at the Georg-August-University Göttingen, Germany. Her 2022 awarded doctoral thesis is entitled “Advancing the characterization of neuronal cyto-architecture by three-dimensional X-ray phase-contrast tomography”. Between 2022 and 2025, Marina Eckermann was working at the ID16A Nanoimaging-Beamline of the European Synchrotron Radiation Facility (ESRF) in Grenoble, France, led by Peter Cletens.