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 26.11.2026 | 16:30 – 17:30
Host: Prof.Dr. Philippe Cattin

From concept to care in facial trauma

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Abstract

The surgical treatment of complex facial trauma requires a high level of precision to restore the form and function of the face to the pre-trauma state. This demand for high accuracy, combined with restricted surgical access and surrounding critical anatomy has driven innovation and implementation of medical technologies supporting preparation, execution, and evaluation of facial trauma surgery. Advanced diagnostics, virtual surgical planning, patient-specific implants, intraoperative imaging, and surgical navigation can be applied individually or integrated into a comprehensive computer-assisted surgery workflow. Over the past decade, research at Amsterdam UMC has focused on developing, validating, and implementing these technologies. This lecture will focus on the pathway from technological innovation to clinical implementation, with particular attention to advances in surgical navigation and patient-specific implant design. Current challenges and future directions for further improving the accuracy, efficiency, and applicability of computer-assisted surgery in facial trauma will also be explored.

Biosketch

Ruud Schreurs studied Technical Medicine at Twente University (the Netherlands), from which he graduated in 2013. After this, he has worked as a Technical Physician at Radboudumc and Amsterdam UMC, combining research and computer-assisted patient care. In 2021, he defended his PhD with honours (cum laude) on Transformation in orbital reconstruction. After this, he continued as head of the 3D Lab in Amsterdam UMC, a group focusing on research, innovation and incorporation on computer-assisted technology in patient care. In 2026, he got appointed as professor of computer-assisted diagnosis and planning at the Academic Centre for Dentistry Amsterdam (ACTA).