



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 07.05.2026 | 16:30 – 17:30

Host: Dr. Claudia Lenz

# **Microstructure of the human brain investigated by quantitative MRI in vivo and validation through multi-modal imaging ex vivo**

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## **Abstract**

Our ability to characterize the microstructure of brain tissue in both healthy and diseased individuals is enhanced by the availability of quantitative MRI techniques with high spatial resolution. For validation, we use ex vivo brain tissue under conditions optimized for MRI at ultra-high magnetic field strengths of 9.4–14.1 T, in combination with  $\mu$ CT and histology. Such approaches can improve image interpretation and lead to new MRI techniques for clinical use.

## **Biosketch**

Gisela E Hagberg was trained in Engineering Physics (MSc) at EPFL, Lausanne, Switzerland and at Lund University, Sweden; in Biophysics (PhD) at the Biozentrum of the University of Basel, Switzerland; and in Medical Physics at the Sapienza University, Rome, Italy. Currently, she pursues research on quantitative MRI at high magnetic field strengths to study microstructure of the human brain, in health and disease, in vivo and ex vivo.