

NeuroConnect Workshop at KIT Sparks New Momentum for Interdisciplinary Brain Research

Neurological and psychiatric disorders represent a rapidly growing societal burden, with limited treatment options and no curative therapies available for most conditions. What more, current research is limited and the common disease modeling rarely incorporates systems that adequately recapitulate actual brain (patho-) physiology. So how can we better model the human brain to understand, and ultimately treat, neurological disease? To discuss interdisciplinary perspectives on this important question, scientists from different disciplines from KIT and Freiburg University got together to organize a workshop (Figure 1). On **March 26, 2026, the NeuroConnect Organoid Neurophysiology Workshop was held at**



Figure 1: Program committee (left to right): Prof. Randel (KIT), Dr. Rickert (KIT), Prof. Vlachos (U Freiburg), Prof. Mayer (KIT), Prof. Aghassi-Hagmann (KIT), Dr. Binder (U Freiburg)



Figure 2: Welcome by Prof. Hein

Workshop was held at

KIT, bringing together over 80 participants from neuroscience, bioengineering, medicine, and ethics across Germany. The importance of the topic and the unique opportunities available now when joining forces between disciplines was highlighted in the introductory words by Prof. Robitzki (Head of Division I, KIT) and Prof. Hein (Dean of the Medical Faculty Freiburg, Figure 2).

Internationally recognized experts shared insights into topics ranging activity-dependent plasticity in engineered neural tissues (Figure 3) to advanced electrophysiological recording technologies embedded within organoid structures. Alongside these fundamental insights, the workshop highlighted how closely advances in neuroscience are now tied to technological innovation and translational thinking. At the same time, ethical questions surrounding increasingly complex brain-like models were also addressed. Clinical contributions added an important perspective, pointing to the potential of these approaches to enable more targeted therapies in the long term. The day concluded with a lively poster session, where early-career researchers in particular brought new energy into the discussions and further emphasized the collaborative spirit that shaped the workshop (Figure 4).



Figure 3: Presentation by Dr. Patapia Zafeiriou, University of Göttingen



Figure 4: Impressions of the lively discussions at the poster session