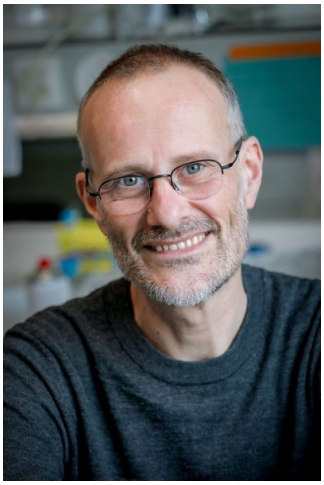
DEC 9th 2025 | 12:00PM CET VIRTUAL

iPSZÜRICH

A Lecture Series Focused on Induced Pluripotent Stem Cells

KU LEUVEN



Prof. Dr. Patrik Verstreken
KU Leuven, Belgium

Patient-specific human brain networks on high density multielectrode arrays to map neurodegenerative disease with AI-powered analysis pipelines

The clinical heterogeneity of Parkinson's disease (PD) reflects distinct molecular causes that converge on neuronal network defects leading to motor symptoms. I will discuss how we reconstructed patient specific striatal microcircuits on high-density multielectrode arrays (HD-MEAs) from human induced pluripotent stem cells (hiPSCs), and how we used electrophysiological recordings from these circuits to accurately (>85%) classify specific disease genotypes using on AI-powered data analysis. Our findings show that combining hiPSC-based circuit models with advanced computational approaches connect molecular etiologies with motor circuit dysfunction, enabling us to stratify PD beyond clinical symptomatology.