

# LABORATORY OF CELL BIOLOGY & HISTOLOGY

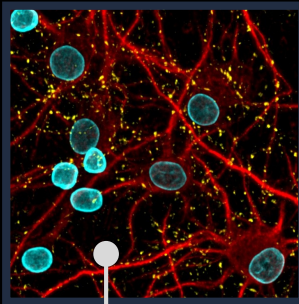
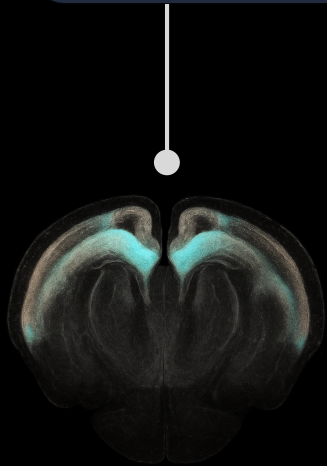
## UNVEILING THE CELLULAR BASIS OF BRAIN DISEASE

USING DATA-DRIVEN MICROSCOPY ACROSS SCALES



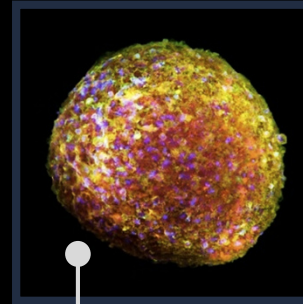
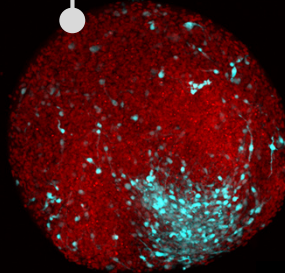
### Neurodegeneration

- Amyloid-driven neurodegeneration
- Cellular senescence in aging and disease



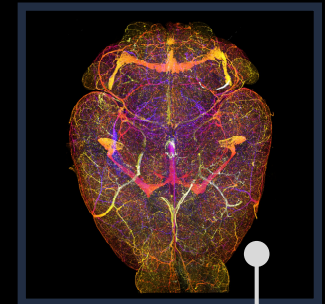
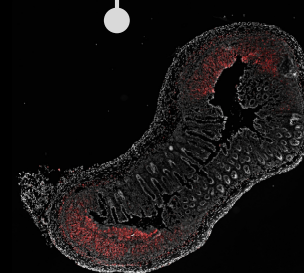
### Brain cancer

- Cancer cell infiltration in cerebral organoids
- Nuclear envelope stress in glioblastoma



### Peripheral pathways

- Gut-brain axis in Alzheimer's disease
- Lung-brain axis & long COVID



### In vitro screening

- Synaptic connectivity in cultured neuronal networks
- AI-driven identification of cell types and states
- Cytokine quantification at scale



### Organoid models

- Immune-competent iPSC-derived organoids
- Organoid Painting
- Quantifying neuronal calcium fluxes

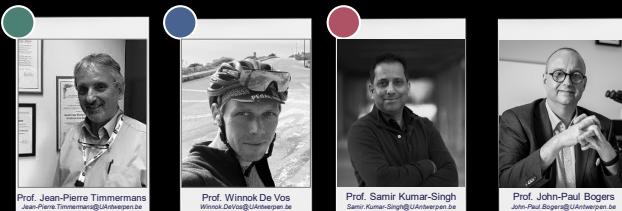


### Whole brain imaging

- Whole brain mapping in health and disease
- Regional quantification of tauopathy & amyloidosis



### PRINCIPAL INVESTIGATORS



### MAIN AFFILIATIONS

**ACAM:** Antwerp Centre for Advanced Microscopy  
**μNEURO:** Excellence Centre for Integrative Neuroimaging  
**IMARK:** Valorisation of image-based biomarkers

### CONTACT

