OUR CORE TOPICS ARE....

**GUT PHYSIOLOGY AND DYSFUNCTION**
- Neuro-immune interactions in the gastrointestinal system
- AAV-mediated targeting of the enteric nervous system
- Effects of amyloid proteins on the enteric nervous system
- The ageing epithelial gut barrier
- The microbiome-gut-brain axis


**NEURODEGENERATION**
- Modulators of neuronal network connectivity
- Whole brain staging of neurodegeneration
- Development and characterization of models for tauopathies
- Toxic protein clearance pathways


**EXPERIMENTAL LUNG RESEARCH: PHYSIOLOGY AND INJURY**
- Pulmonary neuroepithelial bodies (NEBs): quest for physiological stimuli
- NEB microenvironment as an airway epithelial stem cell niche
- Acute lung injury modulators


**IMMUNOLOGICAL DRUG TARGETING AND BIOMARKER DISCOVERY OF DIFFERENT PNEUMONIAS**
- Ventilator-associated pneumonia (VAP)
- Stroke-related pneumonia
- Cystic fibrosis-related pneumonia
- Pneumonia associated with ageing
- Pneumonia associated with microbiome alterations


**ACCELERATED AGEING**
- Molecular characterisation of Progeria
- Mimicking laminopathies using genome editing
- Uncovering the mechanisms of neurodegenerative laminopathies
- Nuclear compartmentalisation in ageing and (HPV-induced) cancer


**NEXT GENERATION MICROSCOPY**
- Deep coverage microscopy
- Intelligent microscopy
- In toto microscopy
- Optomodulation

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