# PÔLE SANTÉ
# PhD DAY 2026

Interfaculty Day for Doctoral and Master's students within the ULB Health Ecosystem

**WEDNESDAY 6 MAY 2026**

**BUILDING W**
**CAMPUS ERASME**

*ULB event organized by the Pôle Santé Research Office*

Promega — Gold
MERCK — Gold
BD — Gold
BIOPARK CHARLEROI — Silver

The ULB Pôle Santé brings together four entities: the School of Public Health, the Faculty of Medicine, the Faculty of Pharmacy, and the Faculty of Motor Sciences, all united by a shared commitment to health. Together, these faculties contribute actively to the advancement of both research and teaching.

At a time when interdisciplinarity has become essential to scientific progress, the Pôle Santé contributes to strengthening connections across disciplines and building bridges with the university ecosystem engaged in health-related research.

The organisation of unifying scientific events is a key mission of the Pôle Santé. Among them, the Pôle Santé PhD Day stands out as a flagship event. It is designed not only as a platform for doctoral researchers to present their work, but also as a space for exchange, visibility, and collaboration. In addition, it offers Master's students an opportunity to discover ongoing research, interact with PhD students, and explore potential laboratories and future research paths. The Pôle Santé also organises the FRIA/FRESH Days in September. This event allows PhD students to prepare the defence of their research proposals in front of a local jury in a challenging, yet respectful atmosphere.

As part of this commitment, the Pôle Santé PhD Day 2026 will provide an excellent opportunity for PhD students to share research, receive constructive feedback, and engage in discussions with other researchers in a friendly and interdisciplinary environment. We hope that this new edition, featuring 20 oral communications and 49 poster presentations, will be a source of inspiration and motivation for all participants.

Prizes will also be awarded for the best oral communication and the best poster presentation.

We look forward to welcoming you to the campus Erasme on May 6 for a day of discovery, exchange, and inspiration.

Prof. Nicolas Mavroudakis
Pôle Santé Academic Coordinator

# PROGRAMME

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| **8:15 – 8:45** | **REGISTRATION & BREAKFAST** |
| | *De Genst Auditorium \| Chair: Prof. N. MAVROUDAKIS, Pôle Santé* |
| **8:45 - 9:00** | **INTRODUCTION**<br>Prof. Nicolas MAVROUDAKIS - Pôle Santé Academic Coordinator<br>Prof. Marius GILBERT - Vice Rector of Research & Valorisation |
| **9:00 - 9:30** | **KEYNOTE**<br>From the bench to the bed: an exciting journey through medical device development<br>Prof. Alain DELCHAMBRE - Ecole Polytechnique de Bruxelles |
| **9:30 - 10:30** | **SESSION 1 - PhD ESSENTIALS** |
| **9:30 - 9:40** | **The doctoral pathway**<br>Dr. Joffrey BANETON - Research and Innovation Support Dept |
| **9:40 - 9:50** | **Internationalization funding for PhD students**<br>Dr. Delphine LAUWERS - Communication & External Relations Dept |
| **9:50 - 10:20** | **The PhD & PostDoc Society: Why become a member ?**<br>Dr. Yves BETTIGNIES CARI - Ecole Polytechnique de Bruxelles |
| **10:20 - 10:50** | **COFFEE BREAK & POSTER SESSION** |
| **10:50 - 12:00** | **SESSION 2 - ORAL COMMUNICATIONS** |
| | *Session 2A*<br>*Wollast Auditorium \| Chair: Prof. D. VERMIJLEN, Faculty of Pharmacy* |
| **10:50 - 11:00** | **OC1 - The CD27 costimulatory pathway regulates hepatic cytotoxic T cells exhaustion and tissue residency in an Eomes-dependent manner**<br>Solange DEJOLIER - Faculty of Sciences (Promoter: F. Andris) |
| **11:00 - 11:10** | **OC2 - Maternal IL-17A Response in GBS Colonization: A Marker of Neonatal Risk**<br>Narjis AMAR - Faculty of Medicine (Promoter: M. Chamekh) |
| **11:10 - 11:20** | **OC3 - Using 3D multicellular tumor spheroids to better understand human Tumor-associated macrophages polarization**<br>Florian VAN HORENBEKE - Faculty of Sciences (Promoter: S. Goriely) |
| **11:20 - 11:30** | **OC4 - Evaluation of sperm capacitation as a parameter of male infertility diagnosis and impact of the cryopreservation process**<br>David PENING - Faculty of Medicine (Promoters: P. Lybaert & I. Demeestere) |

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| **11:30 - 11:40** | **OC5 - Progressive Renal Alterations Precede the Onset of HFpEF in a Rat Model of Metabolic Syndrome**<br>Umair SHEIKH MOHAMMAD - Faculty of Medicine (Promoter: D. Laurence) |
| **11:40 - 11:50** | **OC6 - Perinatal exposure to probiotics shapes neonatal cDC1 function through maternal IgG transfer**<br>Jeanne PAUWELS - Faculty of Medicine (Promoter: V. Flamand) |
| | *Session 2B*<br>*Popelin Auditorium \| Chair: Prof. C. STÉVIGNY, Faculty of Pharmacy* |
| **10:50 - 11:00** | **OC7 - Tunable BRAFV600E activation in human organoids uncovers early events in thyroid cancer initiation**<br>Ivan TIENTCHEU - IRIBHM, Faculty of Medicine (Promoter: S. Costagliola) |
| **11:00 - 11:10** | **OC8 - Label-Free Coreset Selection with Foundation Models for Efficient Annotation in Computational Pathology**<br>Tuo YIN - Faculty of Medicine (Promoter: J. Dhont) |
| **11:10 - 11:20** | **OC9 - Spatial Transcriptomics Reveals Clinically Relevant Microenvironmental Subtypes in HR+ HER2- Breast Cancer of No Special Type**<br>Bengisu KARAKOSE - Institut Jules Bordet, Faculty of Medicine (Promoters: F. Rothé & C. Sotiriou) |
| **11:20 - 11:30** | **OC10 - Life after Informal Caregiving? Mental health trajectories when spousal caregiving ends**<br>Carine RAKOFSKY - School of Public Health (Promoters: B. Vanhoutte & C. Mahieu) |
| **11:30 - 11:40** | **OC11 - Clinical implication of m6A-5mC crosstalk in AML**<br>Louis VAN DER LINDEN - Faculty of Medicine (Promoters: F. Fuks & R. Deplus) |
| **11:40 - 11:50** | **OC12 - Potential of microRNA therapy to preserve growing mice follicles during the chemotherapy exposure**<br>Camille PAVONCELLI - Faculty of Medicine (Promoter: I. Demeestere) |
| **12:00 - 13:00** | **LUNCH & POSTER SESSION**<br>Group photo in Hall W (all speakers) |
| | *De Genst Auditorium \| Chair: Prof. N. MAVROUDAKIS, Pôle Santé* |
| **13:00 - 13:40** | **KEYNOTE**<br>Stem cells and cancer<br>Prof. Cédric BLANPAIN - Faculty of Medicine |

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| **13:50 - 14:45** | **SESSION 3 - ORAL COMMUNICATIONS** |
| | *Session 3A*<br>*Wollast Auditorium \| Chair: Prof. M. KLASS, Faculty of Motor Sciences* |
| **13:50 - 14:00** | **OC13 - Protective properties of Enn surface proteins against Group A Streptococcus**<br>Cyprien WIDOMSKI - European Plotkin Institute for Vaccinology, Faculty of Medicine (Promoter: A. Botteaux) |
| **14:00 - 14:10** | **OC14 - CellCousin2: An Optimized System for Partial Ablation and Tracing of Regenerative Lineages**<br>Gabriel GARNIK HOVHANNISYAN - Faculty of Medicine (Promoters: E. Gurzov & S. P. Singh) |
| **14:10 - 14:20** | **OC15 - Exploring the host Immune system - Gut Microbiota interActions in healthy individuals (ENIGMA)**<br>Louison TORIS - Faculty of Medicine (Promoters: D. Franchimont & C. Liefferinckx) |
| **14:20 - 14:30** | **OC16 - A common genetic variation in hematopoietic stem cells regulates the development of human γδ T cells**<br>Isoline VERDEBOUT - Faculty of Pharmacy (Promoter: D. Vermijlen) |
| | *Session 3B*<br>*Popelin Auditorium \| Chair: Prof. A. Cardozo, Faculty of Medicine* |
| **13:50 - 14:00** | **OC17 - TRMT10A deficiency and tRNA fragmentation disrupt human pancreatic β-cell identity and insulin maturation**<br>Khadija BENABDALLAH - Faculty of Medicine (Promoter: M. Igoillo-Esteve) |
| **14:00 - 14:10** | **OC18 - Maternal anti-Escherichia coli IgG and plasma levels of IL-6 are associated with neonatal infectious disease**<br>Azeddine CHAKROUN - Faculty of Medicine (Promoter: M. Chamekh) |
| **14:10 - 14:20** | **OC19 - Vascular Remodeling Enhances High-Flow Muscle Oxygen Delivery Following Aerobic Exercise Training**<br>Emilie MAUFROY - Faculty of Human Movement Science (Promoter: G. Deboeck) |
| **14:20 - 14:30** | **OC20 - Study of Bacteriophage A25 Adsorption to Group A Streptococcus Cell Wall Carbohydrates**<br>Jenny STEINMETZ - European Plotkin Institute for Vaccinology, Faculty of Medicine (Promoter: A. Botteaux) |
| **14:45 - 15:15** | **COFFEE BREAK** |

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| **15:15 - 16:45** | **SESSION 4 - WORKSHOPS** |
| | *Popelin Auditorium | Chair: Dr. Franck DEVAUX (H.U.B)* |
| | **Workshop 4A: Beyond rules: understanding ethics in your research project**<br>Dr. Franck DEVAUX (H.U.B), Dr. Hélène FRANÇOIS (H.U.B), Dr. Virginie PIRARD (Research & Innovation Dept), Dr. Alexandre STOUFFS (PCRU Pfizer).<br>*Workshop in French with presentation slides in English* |
| | *De Genst Auditorium | Chair: Prof. Dimitri RENMANS, School of Public Health* |
| | **Workshop 4B: Making your research proposal fundable**<br>Dr. Baptiste DETHIER (FNRS), Rocco GIORDANO (Faculty of Medicine), Prof. Mariana IGOILLO ESTEVE (Faculty of Medicine), Maxime MELCHIOR (Faculty of Medicine), Prof. Romano REGAZZI (University of Lausanne), Prof. Dimitri RENMANS (School of Public Health), Chantal Ruffer (Faculty of Medicine).<br>*Workshop in English* |
| **16:45 - 17:00** | **AWARD CEREMONY & CLOSING REMARKS** |
| | *De Genst Auditorium* |
| | Prof. Nicolas MAVROUDAKIS - Pôle Santé Academic Coordinator |

# POSTER SESSION

## Scientific abstracts

**PO1** **Prevalence and clinical significance of IgE sensitization to pollen in a population of patients in Benin**
Dossou Aurice TOSSA DOGNON - Faculty of Medicine (Promoter: F. Corazza)

**PO2** **Metabolomic workflow for oxidative post-translational protein modification identification: a case study for oxidized LDLs**
Elise DE SNYDERS - Faculty of Pharmacy (Promoter: P. Van Antwerpen)

**PO3** **The cost and health-related quality of life of stroke management and care of acutely hospitalized cases in Mozambique**
Igor DOBE - School of Public Health (Promoter: M. Castry)

**PO4** **Patient Costs and Time Spent on Hypertension Care Among People Living with HIV in Mozambique**
Igor DOBE - School of Public Health (Promoter: M. Castry)

**PO5** **Investigating FLASH radiotherapy and beam structure influence in zebrafish embryos**
Nina BLOND - Faculty of Medicine (Promoters: S. Penninckx & V. Wittamer)

**PO6** **Unfold the effect of oncogenic heterogeneity on the response of esophageal cancer and its tumor immune microenvironment to CDK4/6 inhibition**
Diego JAPÓN RUIZ - Faculty of Medicine (Promoters: B. Beck & X. Bisteau)

**PO7** **An unbiased quantitative of histology in human asymptomatic tissues reveals morphological changes and histological QTL**
Zhao ZHANG - Faculty of Medicine (Promoter: V. Detours)

**PO8** **EndoPlasma – Evaluating the efficacy of Cold Atmospheric Plasma (CAP) technology for endoscope disinfection**
Amélie BOURGEOIS - Faculty of Medicine (Promoters: A. Lemmers & A. Delchambre)

**PO9** **Analysis of Liver Macrophage Compartment Variation During MASLD-HCC Progression**
Sara MAGGIORE - Faculty of Medicine & UGent Faculty of Sciences (Promoters: E. Gurzov & C. Scott)

**PO10** **A Step Towards Thyroid Regeneration: A Novel Organoid Model**
Bria JACKSON - Faculty of Medicine (Promoters: M. Romitti & S. Costagliola)

**PO11** **Vitamin D deficiency aggravates pulmonary vascular remodeling and dysfunction in experimental pulmonary hypertension**
Corentin VAN NUFFELEN - Faculty of Medicine (Promoter: D. Laurence)

**PO12** **Targeting Galectin-1 in Melanoma Using siRNA-Loaded Lipid Nanoparticles to Overcome Tumor Resistance**
Emmanuel RODRIGUES - Faculty of Pharmacy & UCLouvain Faculty of Pharmacy (Promoters: V. Mathieu & A. des Rieux)

**PO13** **MAFB as a key transcriptional regulator of tumor-associated macrophages in breast cancer**
Emmanuelle DONCKIER DE DONCEEL - Faculty of Sciences (Promoter: S. Goriely)

**PO14** **Deciphering the Supporting Role of RHPN2 in Melanoma: From Zebrafish Models to Molecular Interactomes**
Mana ALAVI - Faculty of Medicine (Promoter: I. Pirson)

**PO15** **Synthesis and Biological Evaluation of Lipophilic Ru(II), Ir(III) and Rh(III) Complexes on Microorganisms**
Sarah REIBEL - Faculty of Pharmacy (Promoter: F. Dufrasne)

**PO16** **Measuring whole-genome doubling and aneuploidies across cancer types**
Taher DALIL - Faculty of Medecine (Promoter: M. Tarabichi)

**PO17** **Three-dimensional reconstruction of normal and cancer thyroid histology**
Diego SERRA - Faculty of Medecine (Promoters: M. Tarabichi & V. Detours)

**PO18** **Human IgG1 subclass specifically empowers functions against influenza A virus in neonates**
Audrey FRAIKIN - Faculty of Medicine (Promoter: V. Flamand)

**PO19** **Indirect activation of CD8 T Cells by cDC1 exosomes may reveal developmental constraints in neonatal immunity**
Léa LA PALOMBARA - Faculty of Medicine (Promoter: V. Flamand)

**PO20** **Perceptions and Experiences of Sexuality Among Men with Motor, Visual, and Hearing Disabilities in Maputo City, Mozambique**
Lénia SITOE - Faculty of Medicine (Promoter: N. Baeyens)

**PO21** **Studying developmental resilience at the cellular level: a focus on oxidative stress**
Gayathri VILANGAPPURATH - Faculty of Medicine (Promoter: A. de Jaime Soguero)

**PO22** **Mental health of group therapists: influence of institutional support on the creation of a safe space and containing function within group settings for patients suffering from psychological trauma**
Anne VERHEYLEWEGHEN - Faculty of Psychology, Educational Sciences, and Speech and Language Therapy (Promoter: M. Sylin)

**PO23** **Unravelling developmental resilience towards protein folding stress at the cellular leveland its impact on mammalian embryogenesis**
Begüm BÖKE - Faculty of Medicine (Promoter: A. De Jaime-Soguero)

**PO24** **Integrating methylation and copy number aberrations across a pan-cancer database**
Antonia VLAICU - Faculty of Medicine (Promoter: M.Tarabichi)

**PO25** **Ionizing Radiation Exposure During Balloon Pulmonary Angioplasty in Chronic Thromboembolic Pulmonary Hypertension: Efficiency and Optimization Strategies**
Roseline Larock - H.U.B, ULB Faculty of Medicine (Promoters: R. Dendievel & M. El Mourad)

**PO26** **Validation of analytical methods and toxicological risks assessment of endocrine disruptors compounds and heavy metals in commercial packaged water produced in Ouagadougou, Burkina Faso, West Africa**
Jean Luc Téénganimbé KABORE - Faculty of Pharmacy (Promoters: B. Balé & C. Delporte)

**PO27** **Functional study of microRNA-3688-5p in the modulation of the inflammatory response in monocytes**
Hind SEBBAH - Faculty of Medicine (Promoter: M. Chamekh)

**PO28** **Preclinical validation of FLASH radiotherapy to accelerate its clinical translation**
Coralie DESTREBECQ - Faculty of Medicine (Promoter: S. Penninckx)

**PO29** **Human breast milk is enriched for γδ T cells and affects their phenotype**
Moosa REZWANI - Faculty of Pharmacy (Promoters: D. Vermijlen & M. Papadopoulou)

**PO30** **Characterisation of immunoglobulin G glycosylation as a potential mortality risk biomarker in patients with sepsis admitted to intensive care unit**
Victoria PAREDES-OREJUDO - Faculty of Pharmacy (Promoter: C. Delporte)

**PO31** **Contemporary issues in respite services for informal caregivers**
Alice ROBERT - Faculty of Psychology, Educational Sciences, and Speech and Language Therapy (Promoter: P. Gérain)

**PO32** **Evaluation of the Pharmaceutical Functionality of Local Excipients for the Production of Granule Formulations**
Mory GUILAO - Faculty of Pharmacy (Promoter: N. Wauthoz)

**PO33** **Current State of Anesthesia Practice in Kasaï Oriental: Clinical Stakes and Optimization Strategies**
Annie TSHIBANGU - Université Officielle de Mbujimayi (UOM), in collaboration with Faculty of Medicine (Promoter: T. Tuna)

**PO34** **Maternal IgGs: Active players in shaping neonatal cDC1-dependent adaptive immunity?**
Essozinam WOENANDE - Faculty de Medicine (Promoter: V. Flamand)

**PO35** **Engaging Displaced Populations in Health Interventions in Fragile Settings: Developing a Realist Programme Theory**
Houssynatou SY - School of Public Health (Promoter: B. Marchal & D. Renmans)

**PO36** **Governance mechanisms and access to healthcare for migrant domestic workers in Lebanon: a scoping review**
Maroun MIKHAEL - School of Public Health (Promoter: S. Tricas-Sauras)

**PO37** **Can primary care actors use participatory methods to support the collective empowerment of individuals with type 2 diabetes? Participatory research in French speaking Belgium**
Deborah LAUWERS - Faculty of Medicine (Promoter: J. Nortier)

**PO38** **Spatially resolved tumor subclones in HER2-positive breast cancer**
Lucie CERVENKOVA - Faculty of Medicine (Promoter: C. Sotiriou)

**PO39** **Exploring the Role of Chemerin in Lung Fibrosis**
Ani GARABET - Faculty of Medicine (Promoters: B. Bondue & A.Cardozo)

**PO40** **Investigating the role of microglia during brain regeneration in zebrafish**
Alexandre PELLIZZARI - Faculty of Medicine (Promoter: V. Wittamer)

**PO41** **Regulation of serotonin release in colon mediated by olfactory receptors: investigating the molecular mechanisms involved in homeostatic and pathological conditions**
Nathalie TUBEZ - Faculty of Medicine (Promoter: M. Garcia)

**PO42** **Preventing radiotherapy-induced osteoradionecrosis using extracellular vesicles from bone marrow mesenchymal stromal cells**
Marie-Eugénie DE MEESTER - Faculty of Medicine (Promoter: S. Penninckx & B. Stamatopoulos)

**PO43** **Impact of development on the cortical processing of postural sway**
Antonella IANNOTTA - Faculty of Human Movement Sciences (Promoters: M. Bourguignon & N. Deconinck)

**PO44** **Immersive Virtual Nature to Promote Mental Health in Youth: A Scoping Review**
Mostafa EL MADANI - Faculty of Human Movement Sciences (Promoters: M. Klass & J. Foucart)

**PO45** **Age as a social construct: A protocol for a mixed-methods study on ageism in healthcare**
Eva VANGILBERGEN - School of Public Health (Promoter: B. Vanhoutte & L. De Donder)

**PO46** **Mechanisms Underlying Peripheral Macrophage Engraftment in the Healthy Embryonic Brain**
Isabela KIESEWETTER ZANDAVALLI - Faculty of Medicine (Promoter: V. Wittamer)

**PO47** **Transfusion biosafety and malaria screening practices in conflict-affected settings: Evidence from health facilities in eastern Democratic Republic of Congo**
Lambert Morisho MULAKWA - Université des Sciences et Techniques de Masuku (USTM), Franceville, Gabon & Education Programme at ULB School of Public Health

**PO48** **Physiotherapists' and Patients' Perceptions of Integrating Telerehabilitation and artificial intelligence into Clinical Practice for Patients with Anterior Knee Pain**
Miguel FARRAJ - Faculty of Human Movement Sciences (Promoter: J. Van Cant)

**PO49** **Insulin signaling and glucose metabolism in fetal lung organoids: mechanistic insights into lung development**
Alessandra BOGGIAN - Faculty of Medicine (Promoter: M. Romitti)

## Technology Platforms & Others

**PO50** **Light Microscopy Facility (LIMIF)**
Martens MICHIEL - Faculty of Medecine

**PO51** **Micro-Milli Platform**
Adam CHAFAÏ - Ecole Polytechnique de Bruxelles

**PO52** **MedTechLab Platform**
Ramzi BEN HASSEN - Ecole Polytechnique de Bruxelles

**PO53** **Tissue Imaging Platform for the Bordet Cancer Research Laboratories**
Anaïs BOISSON - Jules Bordet Institute, Faculty of Medicine

**PO54** **Pôle Technologies**
Raphaël LEPLAE - ULB Informatics Department

**PO55** **Pôle Santé**
Thomas GILLET

**PO56** **React**
**Réseau Académique pour les Transformations Ecologiques et Sociales**
Adélaïde RAGOT

# KEYNOTES

## SCIENTIFIC JOURNEY

# Prof. CÉDRIC BLANPAIN

**Cédric Blanpain** is MD/PhD and board certified in internal medicine from the Université Libre de Bruxelles, Belgium. Cédric Blanpain is full professor, WEL Research Institute Investigator and director of the laboratory of stem cells and cancer at the Université Libre de Bruxelles. His research group pioneered lineage-tracing approaches to study the fate and plasticity of SCs during development, homeostasis and cancer. His group uncovered the existence of stem cells and progenitors acting during homeostasis and repair of the epidermis and uncovered a novel paradigm of lineage segregation in the mammary gland and prostate. His lab was pioneered in using mouse genetics to identify the cells of origin of epithelial cancers. They identified the cancer cell of origin and the mechanisms regulating the early steps of tumor initiation in skin basal cell carcinoma, skin squamous cell carcinoma and mammary tumors. His lab developed novel approaches to unravel tumor heterogeneity and to understand the mechanisms regulating the tumor states responsible for tumor growth, metastasis and resistance to anti-cancer therapy. Cedric Blanpain received several prestigious and highly competitive awards including EMBO Young investigator award, ERC starting, ERC consolidator and ERC advanced grants, the outstanding young investigator award of the ISSCR 2012, the Liliane Bettencourt award for life sciences 2012, the Joseph Maisin Award for basic biomedical Science 2015, the Francqui prize 2020, the European Association for Cancer Research's Mike Price gold medal 2022, the momentum award of the ISSCR 2023 and the Fondation ARC Léopold Griffuel Award for basic research 2024. He has been elected member of the EMBO, the Belgian Royal Academy of Medicine, the Academia Europaea, the French Academy of Science, and the American Academy of Arts & Sciences.

# Prof. ALAIN DELCHAMBRE

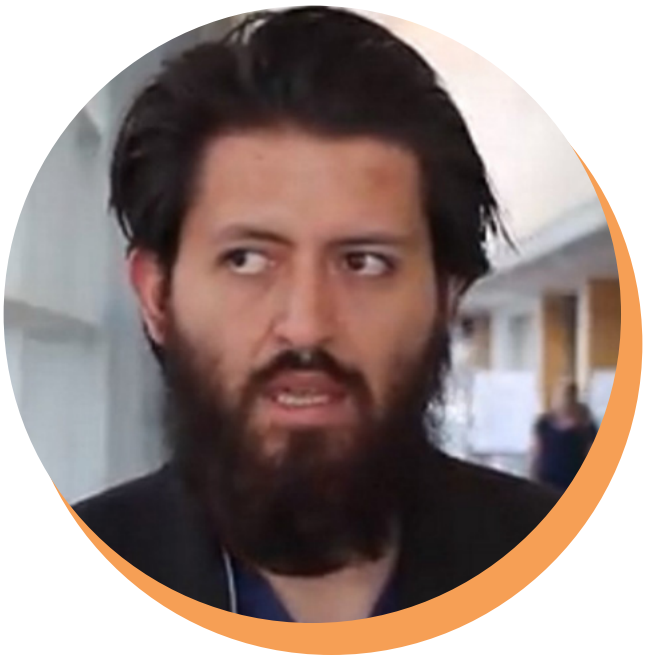
Alain Delchambre has obtained his Master and Phd degrees in Electromechanical engineering from the Université libre de Bruxelles respectively in 1983 and 1990. From 1983 to 1986, he worked in a small-to-medium-sized enterprise (SME) in the Tournai region that specialized in the research, design, and manufacture of stainless steel equipment for the textile, food processing, and nuclear industries. He was responsible for the automation of this equipment and the implementation of robotics in manufacturing processes. Drawn to research, from 1987 to 1994 he led the “Design, Methods, and Assembly Equipment” team (8 researchers) in the Automation and Industrial Computing section of the CRIF (Research Center for the Metal Manufacturing Industry). He managed various European and regional research projects.As he also wished to teach and share his knowledge, he joined the ULB in 1994 as an assistant professor under an international chair.He first developed a research team in the field of computer-aided design within the Applied Mechanics Department. In 1999, he took over as head of the Analytical Mechanics Department. Since 2001, he is Full Professor at the Faculty of Engineering. In 2006, the Applied Mechanics Department merged with the “Bio, Electro, and Mechanical Systems” (BEAMS) Department, along with the electrical engineering and microelectronics departments. This department currently employs approximately 120 people, including about 60 researchers on external contracts. The research topics addressed by his team have evolved from industrial assembly to microtechnology and the design of medical devices used in microsurgery. In this context, numerous collaborations have been initiated, primarily with the University of Franche-Comté, Pierre and Marie Curie University, the Swiss Federal Institute of Technology in Lausanne (EPFL), UMONS, and Erasme Hospital. He has always been committed to promoting the results of applied research in the wider world. He was the founder of eight spin-offs, five of which are in the field of medical technology. He was Dean of the Faculty of Engineering (2006-2010) and Chairman of the Board of the University (2011-2014). Since 2018, he is the Head of the Bio, Electro and Mechanical Systems department (BEAMS).

# PhD ESSENTIALS

## SESSION 1

**Joffrey Baneton** holds a PhD in Sciences from ULB (2019), where his research focused on the synthesis of catalytic layers and ion-exchange membranes for fuel cells using atmospheric plasma methods. Since 2021, he coordinates a unit in ULB's Research Department, supporting the doctoral journey and managing internal and FNRS research funding. Through structuring doctoral programs and overseeing research grants, his team aims to provide robust support to researchers at all career stages. Participation in the Pôle Santé Interfaculty PhD Day 2026 fosters closer engagement with the academic community.

**Delphine Lauwers** is an International Officer at ULB's International Relations Office, where she manages partnerships with China, the Middle East and Oceania, and oversees international mobility funding schemes supporting the internationalization of research. She holds a PhD in Contemporary History from the European University Institute in Florence. Before joining ULB, she worked for over a decade at the intersection of research (focusing on international and transitional justice through the study of war crimes trials and post-colonial reparations), cultural heritage, and digital transformation. Building on this experience, and having benefited from such mobility herself as a researcher, she embraces her role with a strong conviction that the internationalization of higher education and research is more crucial than ever in today's volatile geopolitical context.



**Yves Bettignies** is an engineer and postdoctoral researcher at the École Polytechnique de Bruxelles, Université libre de Bruxelles (ULB). He obtained his PhD in 2026 from the Sustainable Urban Future Institute at ULB. His research focuses on modelling energy consumption in cities, with particular emphasis on the quantitative, multiscale analysis of its drivers across international urban contexts. He is a co-founder of the international research group Metabolism of Cities, a collaborative network spanning France, Switzerland, the United States, Belgium, and South Africa. The group develops data-driven research on urban systems and their sustainability, with a strong emphasis on large-scale datasets and comparative approaches.

Alongside his academic work, he founded the PhD & Postdoc Society (P&PS) at ULB in 2020. The Society has since grown into the university's largest community of early-career researchers, bringing together more than 1,500 PhD candidates and postdoctoral researchers from all faculties. It is coordinated by a team of 20 members across eight divisions, including Data Science, Scientific Writing, Communication and Outreach, and Knowledge Transfer. The P&PS aims to reduce isolation among early-career researchers, particularly international scholars, and to foster the exchange of knowledge and skills related to scientific practice. To support these goals, the Society organises conferences, workshops, and networking events focused on both research and professional development.

# ORAL COMMUNICATIONS

## SESSIONS 2 & 3

**Narjis Amar** is a PhD student in Bio-immunology, jointly enrolled at the Université libre de Bruxelles (ULB), Belgium, and Hassan II University of Casablanca, Morocco. Her research focuses on maternal-fetal immunity and the inflammatory responses associated with Group B Streptococcus (GBS) infection during pregnancy — a major cause of neonatal morbidity worldwide. She holds an international Master's in Health Sciences, jointly awarded by Hassan II University of Casablanca (Morocco) and Aix-Marseille University (France). Her doctoral work is conducted jointly between ULB's Laboratory of Pediatric Research in Brussels and the Research Center of Biotechnology and Health at Hassan II University of Casablanca, as part of a broader Belgium–Morocco cooperation project (PRD) supported by the Académie de Recherche et d'Enseignement Supérieur (ARES). The project is dedicated to tackling infectious diseases affecting the mother–infant pair.

**Khadija Benabdallah** is a PhD student in Dr. Mariana Igoillo-Esteve's lab (ULB Center for Diabetes Research). She was born in Morocco in 1999 but grew up in Belgium. She initially graduated in Nutrition before pursuing a Masters in Biomedical Sciences at the ULB (Brussels). She presented her masters thesis on TRMT10A deficiency and its effect on m6A methylation in human pancreatic beta-cells and won the Prize of the Dean. She obtained then the FRIA grant (FNRS) to start a PhD focusing on exploring the link between tRNA fragmentation and beta-cell function and survival.

**Azeddine Chakroun** holds an international Master's degree in Health Sciences from Aix-Marseille University. He is currently a PhD student at the Université libre de Bruxelles. As part of a Research for Development (PRD) project, his PhD research focuses on the role of Gram-negative bacteria in maternal and neonatal infections. He is particularly interested in inflammatory profiles and maternal antibody responses, and their association with the mother-to-child transmission of Gram-negative bacteria.

**Solange Dejolier** has obtained her master degree in biochemistry and molecular and cellular biology from ULB in 2022. In 2021-2022, she did her master thesis in the team of Fabienne Andris (Immunobiology lab, Gosselies campus), working on CD8 T cell exhaustion in a mouse model of hepatocellular carcinoma. She was rewarded with the Raymond Jeener price (first of class) in September 2022. After graduating, she started her PhD in September 2022 and pursued her work on CD8 T cell exhaustion in the Andris Team, with a new focus on the CD27 costimulatory molecule and liver homeostasis.

**Gabriel Garnik Hovhannisyan** is a third-year PhD student at the STML Laboratory and the Singh Lab, supervised by Dr. Esteban Gurzov and Dr. Sumeet Pal Singh. He obtained his Master's degree in Biomedical Sciences from the University of Brussels in 2023 and began his PhD the same year. His research focuses on liver regeneration, hepatocellular carcinoma, and liver diseases. He uses zebrafish and mouse models to study gene function and disease mechanisms. His work also involves transcriptomic analyses, including single-cell and bulk RNA sequencing.

**Bengisu Karaköse** is a third-year PhD student at the Breast Cancer Translational Research Laboratory (BCTL), Institut Jules Bordet, Université libre de Bruxelles (ULB), where she works on breast cancer bioinformatics under the supervision of Prof. Françoise Rothé and Prof. Christos Sotiriou. She obtained her MD degree with distinction from Acıbadem University School of Medicine in Istanbul, Turkey, in 2023. Her research focuses on understanding tumor heterogeneity and the tumor microenvironment using advanced computational approaches, with a particular interest in spatial transcriptomics. During her training, she gained international research experience through internships in bioinformatics and genomics at institutions including Maastricht University and the Max Delbrück Center for Molecular Medicine in Berlin. She has presented her work at international conferences such as ESMO, EACR, and RECOMB. Her current research aims to identify clinically relevant spatial subtypes of breast cancer and improve prognostic stratification to support precision oncology.

**Emilie Maufroy** is a PhD candidate in the Research Unit in Rehabilitation Sciences at the Faculty of human Movement Sciences (ULB). With a background in physiotherapy, she began her doctoral studies in 2021. Her thesis investigates how different types of aerobic exercise, high-intensity interval training (HIIT) versus moderate continuous training (MICT), affect the structure of small blood vessels in skeletal muscle and their ability to deliver oxygen. Using muscle biopsies and advanced imaging techniques, she produced three-dimensional maps of the microcirculation, allowing detailed visualization of vascular architecture. Combined with physiological assessments and computer simulations of blood flow, this approach reveals how mechanical forces generated by exercise trigger vascular adaptations. Her findings suggest that high-intensity training improves aerobic capacity not by creating new blood vessels, but by reinforcing existing ones to better regulate blood flow during effort. This work sheds light on how our muscles adapt to exercise at the microscopic level, with potential implications for rehabilitation programs and cardiovascular health.

**Jeanne Pauwels** is a PhD candidate in biomedical sciences at the Institute for Medical Immunology at Université Libre de Bruxelles. She obtained her master's degree in biomedical sciences in 2020 and then joined GSK as a research and development scientist. In 2021, she started her doctoral research focusing on how maternal signals, including antibodies and microbiota-derived factors, shape neonatal immune development. Her work combines in vivo models and immunological approaches to study early-life immune programming. She is particularly interested in the role of maternal IgG in regulating dendritic cell function and antiviral immunity in newborns. Her research aims to contribute to the development of innovative strategies to enhance early-life protection against infectious diseases. She is expected to defend her PhD in 2026.

**Camille Pavoncelli** is a PhD student currently in Isabelle Demeestere's lab, the Research Laboratory on Human Reproduction at the Université Libre de Bruxelles (ULB), Belgium.She received her Master's degree in 2023 at ULB and is currently in the third year of her doctorate. Her research interests on chemotherapy-induced growing follicle damage as well as the safety and efficiency of a microRNA-based potential pharmacoprotection.

**David Pening** graduated as a Medical Doctor in 2013 and in Obstetrics and Gynaecology in 2018 from Université Libre de Bruxelles. In the field of Assisted Reproductive Technology, he did training in Fertility at Brussels IVF. His clinical and research interests are in Andrology, as he graduated in Andrology from Université de Lille in 2021 and does his PhD on sperm capacitation at ULB. He obtained an Executive Master in Management of Healthcare Institutions from Solvay Brussels School of Economics and Management in 2025. He is currently Praticien Hospitalier Universitaire at H.U.B Erasme Hospital.

**Umair Sheikh Mohammad** began his PhD in 2023 in the Experimental Intensive Care Research Laboratory at the Faculty of Medicine. His PhD project is supervised by Professor Laurence Dewachter and Professor Céline Dewachter. He holds a degree in Biomedical Sciences from the Université libre de Bruxelles (ULB), obtained in 2023. His research is driven by a strong interest in human physiology and translational science, which led him to focus on heart failure with preserved ejection fraction (HFpEF). His current work aims to better understand the use of SGLT2 inhibitors and GLP-1 receptor agonists in patients with HFpEF.

**Jenny Steinmetz** has obtained her master's degree in biomedical science at the ULB. She is currently working on a PhD studying the interactions of Group A Streptococcus and its lytic bacteriophage in the Bacteriology Group at the European Plotkin Institute for Vaccinology, under the supervision of Prof. Anne Botteaux and Prof. Pierre Smeesters.

**Ivan Tientcheu** is a PhD candidate at the Thyroid and Lung Organoid Laboratory (IRIBHM – Jacques E. Dumont Institute). He holds a Bachelor's and Master's degrees in Clinical Biochemistry, Hematology, and Clinical Immunology from Université des Montagnes (Cameroon), and a second Master's in Biomedical Sciences from ULB, where he developed his research profile. His doctoral work focuses on thyroid cancer organoids, a model system he first explored during his master's training. Under the supervision of Prof. Sabine Costagliola and prof. Mirian Romitti, he is developing organoid-based models to investigate the early cellular and molecular events driving thyroid carcinogenesis.

**Louison Toris** is an R&D Engineer and PhD fellow at the Laboratory of Experimental Gastroenterology (LGE), ULB Erasme Hospital, where she leads the ENIGMA project on gut microbiota, immune system and diet interactions in healthy individuals. She holds a Master's degree in Biotechnology Engineering from Sup'Biotech (2022) and a dual Bachelor's degree in Biology and Chemistry from UPEC (2020). Her research integrates longitudinal microbiome profiling, ex-vivo immune stimulation and detailed dietary assessment to map diet-microbiota-immune feedback loops. Prior to her doctorate, Louison gained industry experience as a Process Specialist at Novartis, where she optimised lean-manufacturing processes for monoclonal-antibody production, as a Quality Assistant Engineer for VINCI's membrane filtration water-treatment plant, and as a Project-Management Assistant for an international healthcare webinar series. Outside the lab, she is an avid runner and tennis player. She has run to support the BRIDGE Foundation and also enjoys personal challenges, recently completing the Paris marathon.

**Louis Van der Linden** is a PhD student in the Laboratory of Cancer Epigenetics in the Faculty of Medicine. He obtained his bachelor's and master's degrees in biomedical sciences at the Université libre de Bruxelles (ULB). His master's thesis focused on the link between epitranscriptomics and metabolism in cancer. Motivated to pursue cancer research, he was awarded a FRIA fellowship in 2021. His PhD project, also in the field of epigenetics, investigates the relationship between m6A mRNA modification and DNA methylation in the development of acute myeloid leukemia. His goal is to develop a novel therapeutic approach for this aggressive form of leukemia by targeting both epigenetic machineries.

**Florian Van Horenbeke** started believing in science as he witnessed his 6-year-old little brother running through a wall and falling from 6 meters high. Inspired by this surprisingly benign proof that universal laws apply to everything, he fostered a deep curiosity for the world around him. He quenched his understanding thirst by doing a bachelor's and master's degree in biomedical sciences at UCLouvain. He produced a master thesis in Long non-coding RNAs involved in T cells exhaustion in the lab of Pierre van der Bruggen. After a long and existential search for what adventure to pursue next, he found his dream PhD position in Stanislas Goriely's lab (ULB). He is now working on Tumor-Associated Macrophages using 3D multicellular tumor spheroids models.

**Tuo Yin** obtained her bachelor's degree from Dalian University of Technology, China, in 2018, and her master's degree from the Tokyo Institute of Technology, Japan, in 2021, in the field of computer science. She is currently a third-year PhD student at the Radiophysics and MRI Physics Laboratory at Université libre de Bruxelles (ULB), located in Institut Jules Bordet, under the supervision of Prof. Jennifer Dhont. Her research focuses on the development of artificial intelligence algorithms to enhance the accuracy and efficiency of cancer diagnosis, treatment, and prognosis. Specifically, she has been working on the automation of stain quantification in immunohistochemistry whole-slide images, the selection of representative coresets from large unlabeled datasets to improve the efficiency of pathologists' annotations, and the prediction of lymph node metastasis from primary tumors in colon cancer using pathology variables and whole-slide images.

**Cyprien Widomski** is a PhD student at the European Plotkin Institute for Vaccinology, within the BacMol team. His research focuses on immunology and bacteriology. His thesis project aims to develop new vaccine antigens against Group A Streptococcus, using technics such as ELISA, antibody-dependent cellular phagocytosis and whole blood killing assay.

# WORKSHOPS

## SESSION 4

# Workshop

## *Beyond rules: understanding ethics in your research project*

**Franck Devaux,** PhD, is ethicist at the Hôpital Universitaire de Bruxelles. He holds three master's degrees in Master's degree in Ethics (with two specialization in Bioethics and in Legal Ethics), a Master's degree in Philosophy, and a Master's degree in Sciences of Religions and Secular Studies. He holds a PhD in Philosophy and Clinical Ethics from the Université libre de Bruxelles (ULB). His doctoral work focused on the integration of ethical out of the field of paediatric palliative care in perinatology regarding rare diseases. He is currently Vice-President of the Hospital-Faculty Ethics Committee at the Hôpital Universitaire de Bruxelles (H.U.B.), where he contributes to the ethical review of clinical research and supports healthcare professionals in addressing complex clinical and institutional dilemmas. He also serves as Coordinator of the Rare Diseases Function within H.U.B., working on the diffusion of knowledge's about rare diseases, patients and representatives testimony, the organization of care pathways and the ethical challenges associated with rare conditions on local, national and international level. He is a Lecturer at the Faculty of Medicine of ULB, where he teaches ethics and contributes to the training of healthcare professionals. He also teaches clinical ethics in several institutions in Belgium and France. He is also an active member of the Belgian Advisory Committee on Bioethics, participating in national deliberations on contemporary ethical issues in healthcare.

**Virginie Pirard** is a jurist and philosopher, who specialized in bioethics and research ethics. She holds a PhD in philosophy focused on the field of bioethics. She currently serves as President of the Belgian Advisory Committee on Bioethics, the national advisory Committee on bioethics. Within the Committee, she co-chairs the working groups on “Euthanasia” and “Heart Transplantation,” and has been rapporteur for several of its major advisory opinions. After several years leading the Ethics Unit at the Institut Pasteur (Paris), she is now affiliated with the Research Department of the Université Libre de Bruxelles. In this capacity, she recently published a report on the ethical evaluation of scientific research within the universities of the Fédération Wallonie-Bruxelles. In collaboration with Professor Marie-Geneviève Pinsart, she co-directed until the end of 2025 the international consortium R(H)OPE (bringing together eight partners across four continents), dedicated to preparing future WHO guidelines integrating ethics committees into responses to climate change. An internationally recognized expert, she was a member during the pandemic of the WHO Working Group on the Allocation of Experimental Treatments in Emergencies (WHO-WG MEURI) and served on the Steering Committee of the World Summit of National Ethics Committees (San Marino, 2024). She also teaches ethics and professional conduct to healthcare professionals at the Haute École Libre de Bruxelles

**Alexandre Stouffs** is a Clinical Research Physician/Principal Investigator at the Pfizer Clinical Research Unit (PCRU) in Brussels, where he contributes to the design, conduct and medical oversight of early phase clinical pharmacology studies.Before moving into the pharmaceutical industry, he trained at UCLouvain and worked as a Clinical Anesthesiologist at Cliniques universitaires Saint-Luc. In parallel, he served as a Clinical Research Fellow at the Institute of Neurosciences (IoNS - UCLouvain). He was actively involved in major European academia–industry collaborations, including the Innovative Medicines Initiative (IMI2 PAINCARE) and the Horizon 2020 (QSPainRelief) project. His research focused on the development of electrophysiological biomarkers of pain, working at the interface of clinical research, translational neuroscience, and drug development.

# Workshop

## *Making your research proposal fundable*

**Dimitri Renmans** is an Assistant Professor in Health Policy and Systems at the École de Santé Publique of the Université libre de Bruxelles (ULB). He holds Master's degrees in International Politics (KU Leuven) and Public Health (ULB), as well as a PhD in Development Studies from the University of Antwerp. At ULB, he serves as President of the Jury of the Master in Public Health, coordinates the specialisation in Health Policy, Systems and Promotion, acts as Secretary of the Faculty Doctoral Commission, and is the faculty's AI reference person. His teaching focuses on health politics and systems, project development and planning, and evaluation. He has recognised expertise in realist evaluation and regularly delivers workshops and webinars internationally. He is the Founder and Coordinator of the All Realists Group and is currently involved in establishing a Diamond Open Access journal dedicated to realist research. His research applies systems thinking, implementation research, and artificial intelligence to health systems, with a particular focus on African contexts, including projects in the Democratic Republic of the Congo, Burkina Faso, and Uganda.

**Baptiste Dethier** is a Scientific advisor at the Fund for Scientific Research – FNRS. Holding a PhD in Political and Social Sciences from the University of Liège, he joined the Observatory of Research and Scientific Careers (incorporated into the FNRS) at its creation in 2018. At the Observatory, he conducted qualitative studies on doctoral dropout, the postdoctoral experience, participated in another study on the added value of the doctorate for employers, and is currently working on the recruitment processes at doctoral and postdoctoral levels, and the attractivity of the research sector in the Wallonia-Brussels Federation.

**Mariana Igoillo-Esteve** is an Associate Professor at the ULB Center for Diabetes Research (Université Libre de Bruxelles, Belgium). She obtained her Biochemistry degree from the Faculty of Pharmacy and Biochemistry at the University of Buenos Aires (1999), followed by a PhD in Molecular Biology and Biotechnology (Summa cum Laude) from the Instituto de Investigaciones Biotecnológicas (IIB–INTECH/CONICET), National University of General San Martín, Argentina (2005). She then moved to Belgium, where, after completing her postdoctoral training at the de Duve Institute (UCLouvain), she joined the ULB Center for Diabetes Research in 2007 for a second postdoctoral fellowship. She subsequently progressed to Senior Scientist and, in 2016, obtained a tenured appointment as Associate Professor. Dr. Igoillo Esteve's research focuses on the role of non coding RNAs, including tRNA derived fragments, miRNAs, and long non coding RNAs, in driving β cell stress, identity loss, and apoptosis in both common and rare forms of diabetes. Her laboratory combines molecular biology, functional genomics, stem cell-derived β cell models, and human genetics to uncover RNA mediated mechanisms of β cell vulnerability. Her work has provided important insights into TRMT10A deficiency, ER stress-driven diabetes, mitochondrial apoptosis pathways, and epitranscriptomic regulation of β cell function. She has authored more than 50 scientific publications, received several prizes, and collaborates widely with international research groups. She is committed to mentoring the next generation of scientists, supervising postdoctoral fellows, PhD candidates, and master's students, and she teaches multiple courses in translational medicine at ULB. In addition to securing numerous competitive research grants as Principal Investigator, Dr. Igoillo Esteve serves as a reviewer for international journals and funding agencies and has been an active member of several evaluation panels, including the F.R.S FNRS/FRIA PhD fellowship committee.

**Romano Regazzi** earned a PhD in Biochemistry from the University of Basel and completed postdoctoral training at the University of Geneva. Following a Career Development Award from the Juvenile Diabetes Foundation, he joined the University of Lausanne as a Professor, where he subsequently became Director of the Department of Biomedical Sciences and Vice-Director of the Medical School. Prof. Regazzi's research focuses on understanding the molecular mechanisms underlying pancreatic beta-cell function and the development of diabetes. He is currently Emeritus Professor at the University of Lausanne and a Scientific Collaborator at the ULB Center for Diabetes Research. Prof. Regazzi also serves as a member of various expert panels for the evaluation of scientific projects.

**Rocco Giordano** began his scientific training in his hometown, earning a Bachelor's degree in Biotechnology from the University of Basilicata. He then pursued a Master's degree in Functional Genomics at the University of Trieste, where he completed his thesis in the Chromatin and Epigenetics Cancer Lab of Professor Manfioletti, investigating the role of CDK inhibitors in triple-negative breast cancer. He further expanded his experience in cancer research during an Erasmus traineeship at Oslo University Hospital, in the Metastasis Biology and Experimental Therapeutics group led by Professor Mælandsmo. More recently, he worked in early drug discovery at UCB as part of the in vitro screening department. He is currently a PhD candidate in the Cancer Epigenetics group of Professor Fuks at ULB. In 2024, together with support of Prof. Fuks and Dr. Deplus, he was awarded of a FRIA fellowship, which supports his research focused on exploring novel molecular mechanisms in the field of Epitranscriptomics.

**Maxime Melchior** studied at the ULB, Faculty of Medicine from 2012 to 2018. Upon completing his residency in rheumatology, he began a PhD in immunology at the ULB Center for Research in Immunology under the supervision of Stanislas Goriely. After one year of funding from the Fonds Erasme, he received a FRIA grant in 2025. His research focuses on the role of genetic predispositions in immune responses of lymphoid populations involved in spondyloarthropathies.

**Chantal Rufer** began her scientific journey with a Bachelor of Science in Biology, during which she completed a research internship at the Institute of Physiology (University of Zurich, Switzerland) focused on the in vitro functional characterization of the EPO minimal promoter upon WT1 binding. This work introduced her to transcriptional regulation under hypoxic conditions and ignited a broader interest in how gene regulatory mechanisms govern cellular responses to physiological stress. During her Master of Science in Biomedicine, she conducted her graduate research at the Center of Experimental Rheumatology (University of Zurich, Switzerland), where she investigated the role of the Fosl-2 transcription factor in the inflammatory response of macrophages. She then transitioned to industry, joining InSphero AG (Zurich, Switzerland) as a Research Associate, where she made her formal entry into diabetes research, developing and working with models of both type 1 and type 2 diabetes. This role bridged mechanistic and translational science and solidified her commitment to understanding beta cell biology across distinct disease contexts. She is now a PhD Candidate at the ULB Center for Diabetes Research. Under the supervision of Miriam Cnop she is determining the mechanisms behind the heterogeneity of type 2 diabetes in human pancreatic islets. Integrating her background in transcriptional regulation, inflammation, and diabetes modeling, her doctoral research aims to resolve how islet heterogeneity drives disease progression and to identify targetable pathways for precision therapy. This research is supported by FNRS as she received the FRIA fellowship in 2024.

# ORAL COMMUNICATIONS

SCIENTIFIC ABSTRACTS

# OC1

## The CD27 costimulatory pathway regulates hepatic cytotoxic T cells exhaustion and tissue residency in an Eomes-dependent manner

**Solange Dejolier**

Supervised by Fabienne Andris
Immunobiology Service, Institute of Molecular Biology and Medicine (IMBM),
ULB Faculty of Sciences

Immune checkpoint blockade (ICB) therapies have strikingly advanced the oncological treatments over the past decades, by using antagonist and agonist antibodies that modulate T lymphocytes function. However, it is observed that many cancer patients treated with ICB do not respond or develop immune-related adverse events. A better understanding of the mechanisms underlying ICB responses is required to increase response rates and avoid treatments disruption. Preclinical studies have shown promising results with synergistic blockade of PD-1 and activation of CD27. Our project aims at carefully studying the role of these pathways and at understanding the impact of ICB treatments. Our lab has shown that PD- 1 blockade drives an Eomes-dependent expansion of hepatic resident memory CD8 T cells (TRM) that acquire exhaustion features (Tex). We noticed that CD27KO mice present more steady-state TRM, which do not develop into Tex cells upon PD-1 blockade. We then observed that CD27 pathway stimulation reduces TRM development while inducing a Tex population, in an Eomes-dependent manner. scRNA-seq showed that individual PD-1 or CD27 induce distinct transcriptomic profiles among liver CD8 T cells, suggesting that their effects are mediated by different mechanisms. Overall, our results suggest roles for PD-1 and CD27 pathways in liver T cells homeostasis.

# OC2

## Maternal IL-17A Response in GBS Colonization: A Marker of Neonatal Risk

**Narjis Amar**

Supervised by Mustapha Chamekh
Laboratory of Pediatric Research, Inflammation Unit, Center for Immunology,
ULB Faculty of Medicine

Group B Streptococcus (GBS) is a major cause of maternal and neonatal infections. yet maternal immune responses to its colonization and transmission remain poorly understood in low- and middle-income countries. This study aimed to characterize cytokine profiles in pregnant women colonized with GBS and to explore their correlation with the occurrence of invasive GBS infection in their newborns.

GBS-colonized-women were followed from the third trimester of gestation through delivery, quantifying cytokines in maternal and cord blood using Luminex and ELISA. Functional immune responses were further assessed by measuring cytokine release in culture supernatants after ex-vivo stimulation of pathogen-recognition receptors. Data from GBS positive mothers were correlated with clinical markers and neonatal outcomes to identify key inflammatory patterns.

The study identified a distinct immune signature in GBS-colonized-mothers whose infants developed invasive disease, characterized by a significant diminution in IL-1β, IL-4, and IL-17A production, both in baseline circulation and following TLR ligand simulation. Maternal IL-17A notably emerged as the primary predictive marker for the neonatal invasive GBS disease transmission and development.

Maternal IL-17A is a promising biomarker for identifying GBS-colonized-pregnancies at risk for invasive neonatal disease. Its role as an antibacterial mediator makes it a primary target for predicting vertical transmission.

# OC3

## Using 3D multicellular tumor spheroids to better understand human Tumor-associated macrophages polarization

**Florian Van Horenbeke**

Supervised by Stanislas Goriely
Institut de Biologie et de Médecine Moléculaire (IBMM),
ULB Faculty of Sciences

Immunotherapy represents a paradigm shift in the treatment of cancer. However, current approaches are still inefficient for many of these patients. A better understanding of how tumors shape their microenvironment, and alter immune cell functions, will pave the way to novel lines of treatment. Tumor-associated macrophages (TAMs) are viewed as central contributors to the resistance to conventional and immune-based therapies. Single-cell transcriptomic approaches obtained in mouse models and human cancers have unraveled a previously unrecognized complexity in macrophage states, far beyond the “M1-M2” dichotomy. Here, we propose to define the cellular and molecular signals that dictate the transcriptional states of human TAMs.

For this purpose, we are developing a 3D multicellular tumor spheroid model to recapitulate human TAMs phenotypic and molecular features. Our current model is based on the breast MDA-MB-231 cell line and shows the recapitulation of multiple TAM features observed in vivo. Using this model, we successfully confirmed the role of the MAFB transcription factor in macrophage-induced tumor growth and in defining human TAM cell states.

Based on our data, we are now focusing on expanding our model scope to high-throughput. This will allow us to screen a set of transcription factors and define their contribution to monocytes/macrophages reprogramming and function with the aim of discovering therapeutic strategies targeting these cells.

# OC4

## Evaluation of sperm capacitation as a parameter of male infertility diagnosis and impact of the cryopreservation process

**David Pening**

Supervised by Pascale Lybaert & Isabelle Demeestere
Research Laboratory on Human Reproduction, ULB Faculty of Medicine

Conventional semen analysis is currently the tool used worldwide to assess sperm quality in the diagnosis of couple infertility. Yet, it does not reflect the fertilizing potential of spermatozoa. Number of actors are not evaluated such as sperm ion transporters and channels involved in sperm capacitation, a process characterized by an increase in the intracellular pH (pHi), and a change of the membrane potential (membrane hyperpolarization). Sperm capacitation results in a spermatozoa becoming hyperactive and prepared to undergo the acrosome reaction, only capacitated sperm can fertilize the oocyte. In the field of Medically Assisted Reproduction, sperm freezing is widely used for banking and fertility preservation programs, yet the impact of freezing on capacitation status remains unknown. We have assessed capacitation parameters on both fresh human sperm and frozen samples using spectrofluorimetry and flow cytometry. Fresh samples in a capacitating media Sperm Medium® are more hyperpolarized ($p<0.01$) and more alkalinized ($p=0.01$) than frozen straws. Levels of spontaneous acrosome-reacted (AR) sperm and progesterone induced AR are higher in all frozen samples ($p<0.05$). Correlation of capacitation parameters with fertilization success by IVF and ICSI have been investigated in frozen straws with no statistical significance, yet 14 pregnancies were reported.

# OC5

## Progressive Renal Alterations Precede the Onset of HFpEF in a Rat Model of Metabolic Syndrome

**Umair Sheikh Mohammad**

Supervised by Dewachter Laurence
Experimental Intensive Care Laboratory, ULB Faculty of Medicine

Heart failure with preserved ejection fraction (HFpEF) represents over 50% of heart failure cases and is increasing due to population ageing and cardiometabolic comorbidities. Renal dysfunction is highly prevalent in HFpEF and contributes significantly to mortality. This study aimed to characterize the progression of renal alterations in a rat model of HFpEF associated with metabolic syndrome.

Obesity-prone (OP) and obesity-resistant (OR) rats were fed a high-fat diet or standard chow for 4 and 12 months (n=10/group). Cardiac function was assessed by echocardiography and catheterization, while renal aalterations were evaluated using histological and molecular analyses.

OP rats developed metabolic syndrome at 4 months and HFpEF at 12 months, characterized by diastolic dysfunction, concentric hypertrophy, fibrosis, and elevated soluble ST2 levels with preserved ejection fraction. Renal dysfunction was evidenced by increased plasma creatinine and cystatin C. Histological analyses revealed early tubular inflammation and glomerular changes at 4 months, worsening at 12 months. These alterations were associated with increased expression of Kim-1, ICAM, VCAM, CD68, and TNF-α, along with apoptosis and fibrosis. Circulating pro-inflammatory cytokines (IL-1β, IL-6, IL-13) were elevated.

These findings demonstrate that renal injury precede the diagnosis of HFpEF, supporting early cardiorenal interactions and emphasizing the need for early therapeutic strategies targeting both organs.

# OC6

## Perinatal exposure to probiotics shapes neonatal cDC1 function through maternal IgG transfer

**Jeanne Pauwels**

Supervised by Véronique Flamand
Institute for Medical Immunology, ULB Faculty of Medicine

Early life is characterized by a window of immune modulation during which the developing immune system is permissive to maternal- and microbial-derived signals, yet the molecular mediators linking these environmental cues to immune development remain poorly defined. Here, through maternal administration of probiotics during gestation and lactation, we explore how maternal microbial signals influence neonatal immunity. We show that FcRn-dependent transfer of maternal IgG isotypes to the offspring is modulated in a strain-specific manner, with Lacticaseibacillus rhamnosus promoting IgG1 and Bifidobacterium animalis subsp. Lactis (B.lac) favoring IgG2 isotypes. The increase in IgG transfer induced by both probiotics is linked to an enhanced expression of FcγRIII and FcγRIV and an enhanced TNF production by myeloid cells, thereby supporting the expansion and differentiation of neonatal cDC1. Transcriptomic analyses further reveal that FcRn-dependent IgG transfer regulates functional programming of neonatal cDC1, including antigen presentation. In the context of maternal vaccination with ovalbumin, maternal IgGs drive efficient Fc-dependent antigen cross-presentation by neonatal cDC1, a process further enhanced by enrichment of OVA-specific IgG2 in offspring from B.lac- supplemented mothers. Upon maternal immunization with influenza hemagglutinin, each probiotic selectively enhances the transfer of its associated antigen-specific IgG isotype, with both ultimately improving protection of the pups against Influenza infection. Collectively, we highlighted that probiotic exposure links maternal microbial signals to neonatal immune programming by shaping IgG transfer and dendritic cell function, with implications for early- life immune protection.

# OC7

## Tunable BRAFV600E activation in human organoids uncovers early events in thyroid cancer initiation

**Tientcheu Ngaffi Verla Ivan**

Supervised by Sabine Costagliola
IRIBHM JE Dumont,
ULB Faculty of Medicine

Thyroid cancer is a rising global health concern, with papillary thyroid carcinoma (PTC) constituting the most common type. Although most patients respond well to current treatments, about 20% develop resistance to standard therapies, resulting in poor prognosis. Crucially, PTC is often diagnosed too late, with early malignant transformation processes remaining enigmatic. Yet, progress is hampered by the lack of robust human in vitro models that authentically mimic the human thyroid microenvironment. To tackle this, we engineered a human thyroid organoid derived from embryonic stem cells, enabling precise tracking of thyrocytes and controlled induction of oncogenic BRAFV600E expression using the tamoxifen. We conducted a pilot single-cell RNA sequencing analysis two weeks post- BRAFV600E induction to capture transcriptional dynamics. Within three days of BRAFV600E activation, we observed robust MAPK pathway stimulation evidenced by ERK phosphorylation, accompanied by hallmark dedifferentiation events including loss of thyroglobulin, diminished NKX2.1-driven GFP fluorescence, and reduced E-cadherin expression. Remarkably, two distinct cell populations emerged: invasive cells escaping the organoid and non-invasive cells remaining organized. Single-cell transcriptomics confirmed Sustained suppression of thyroid differentiation genes. This model successfully recapitulates key features of PTC and provides a powerful platform for studying early thyroid cancer development and identifying novel therapeutic targets.

# OC8

## Label-Free Coreset Selection with Foundation Models for Efficient Annotation in Computational Pathology

**Tuo Yin**

Supervised by Jennifer Dhont
Radiophysics and MRI Physics Laboratory, ULB Faculty of Medicine

Computational pathology has advanced considerably with deep learning (DL). However, DL model development relies on expert-annotated data for fully supervised training or fine-tuning foundation models (FMs). Obtaining these annotations is costly and limited by expert availability. Ideally, one could identify a minimal yet representative coreset of images that, when annotated, yields maximum downstream model performance.

We present the first task-agnostic coreset selection method for computational pathology. Data points are embedded into a high-dimensional feature space using Prov-GigaPath representations. We propose an iterative coverage-based maximization algorithm that evaluates candidates using the area under the coverage–radius curve, permanently adding the sample maximizing global coverage until optimal coverage is reached. We validate our method on colorectal tissue classification and breast tumor–stroma segmentation tasks.

Models trained on the coresets achieved performance comparable to full-dataset training while requiring less than 2% of annotations. Our method improved F1 scores by 0.10, 0.10, and 0.15 in tumor tile classification compared with state-of-the-art label-free coreset selection, active learning, and entropy-based methods, and is applicable to segmentation. Results demonstrate robustness to imbalanced data, hyperparameters, and foundation models.

We propose a systematic strategy for coreset selection from large and heterogeneous datasets, improving annotation efficiency while maintaining model performance.

# OC9

## Spatial Transcriptomics Reveals Clinically Relevant Microenvironmental Subtypes in HR+ HER2- Breast Cancer of No Special Type

**Bengisu Karakose**

Supervised by Françoise Rothé & Christos Sotiriou
Breast Cancer Translational Research Department, Institut Jules Bordet,
ULB Faculty of Medicine

Hormone receptor–positive, HER2-negative (HR+/HER2−) breast cancers account for most breast tumors but remain biologically and clinically heterogeneous, with a substantial proportion of patients relapsing despite favorable clinicopathologic and genomic features. To better characterize this heterogeneity, we applied spatial transcriptomics (10x Visium) to 86 fresh-frozen HR+/HER2− no special type tumors. Histology-guided annotation and spatial deconvolution using a single-cell RNA-seq reference were integrated with unsupervised spatial clustering, WGCNA-derived gene modules, and multikernel learning to define spatially informed tumor subtypes. We identified four biologically coherent and clinically distinct subtypes independent of classical clinicopathologic variables: Endocrine-Responsive, associated with strong ER signaling, low proliferation, sparse stroma, and excellent prognosis (10-year RFS 95.7%); Proliferative-Inflammatory, marked by high proliferation, immune infiltration, interferon signaling, and the poorest outcome (57.6% RFS); Luminal-HER2like, showing partial HER2-pathway activation and poor prognosis (68.7% RFS), and Stromal- Fibrotic, characterized by low proliferation, myofibroblast-rich stroma, ECM remodeling, and immune exclusion. Strikingly, Stromal-Fibrotic subtype showed unexpectedly high relapse rates (64.3% RFS) despite low-risk conventional genomic scores, revealing a clinically underestimated high-risk subgroup. These subtypes were robustly reproduced in the METABRIC cohort with concordant cellular and pathway features. Our findings show that spatial organization of tumor and microenvironment refines prognostic stratification beyond existing genomic classifiers and reveals clinically underestimated high-risk states in HR+/HER2− breast cancer.

# OC10

## Life after Informal Caregiving? Mental health trajectories when spousal caregiving ends

**Carine Rakofsky**

Supervised by Bram Vanhoutte & Céline Mahieu
ULB School of Public Health

The links between mental health and caregiving are well documented. However, the trajectory of caregivers' mental health around the transition out of caregiving is less studied. Several reasons may lead to caregiving cessation including death of the care recipient, changes in their dependency level, or the caregiver's health problems, each potentially shaping depressive symptoms differently.

To examine this, we reshape longitudinal SHARE data of informal spousal caregivers and estimate event-centered multilevel growth models. The transition is identified when an individual reports being a caregiver at wave T−1 but not at T0. Time is centered on this transition and modeled using three splines: pre-transition, transition (T−1 to T0), and post-transition. Depressive symptoms are measured using the EURO-D scale. Changes in the ADL scores of the care recipient and caregiver between T−1 and T0 capture dependency changes at transition.

Our results show a significant decrease in depressive symptoms during the transition, indicating an inflection between T−1 and T0. The cause of caregiving cessation moderates this trajectory: symptoms increase following the care recipient's death when the ADL scores rise for either party.

These results highlight the heterogeneous depressive trajectories around the transition and identify configurations associated with higher psychological risk.

# OC11

## Clinical implication of m6A-5mC crosstalk in AML

**Louis Van der Linden**

Supervised by François Fuks & Rachel Deplus
Laboratory of Cancer Epigenetics, ULB Faculty of Medicine

Our research focuses on exploring the interaction between DNA methylation and the m6A mRNA modification in the context of acute myeloid leukemia (AML). We aim to prove the clinical relevance of the joint targeting of both machineries: the DNMTs (DNA methylation writers) and METTL3-14 (m6A writers). We obtained very promising results showing a synergetic effect on proliferation rate between DNMT inhibitor, Decitabine, and METTL3 inhibitor in vitro. Using flow cytometry, we also showed that the combined treatment induces massive apoptosis and differentiation. We aim to identify the mode of action of this combined therapy. To do so, we analysed DNA methylation and m6A level upon treatment, thanks to Infinium assay and mass spectrometry. To study the gene expression deregulations, we performed transcriptomic analyses (RNA-sequencing) and proteomic analyses (mass spectrometry) in several AML cell lines. Several key pathways of cancer development and well- known cancer oncoprotein are affected by the combined therapy. We are currently developing several in vivo models allowing the study of our combination in more complex AML models. In fine, our project has the potential to lead to groundbreaking discoveries and pave the way for developing new tools to treat AML by targeting both epigenetic machineries.

# OC12

## Potential of microRNA therapy to preserve growing mice follicles during the chemotherapy exposure

**Pavoncelli Camille**

Supervised by Demeestere Isabelle
Research Laboratory on Human Reproduction, ULB Faculty of Medicine

Cancer treatments, such as alkylating agents, can compromise future fertility by damaging both resting and growing follicles. The destruction of the growing follicular pool further reduces the ovarian reserve through a burn-out effect. Preserving this pool may help limit gonadotoxicity. Our aim is to investigate an innovative pharmacological approach based on microRNA therapy mitigate damage to growing follicles. We previously identified let-7a as a promising candidate as its expression profile is downregulated in response to chemotherapy in postnatal-day-3 mouse ovaries containing a quiescent follicular pool.

Preantral follicles were mechanically isolated from prepubertal mouse ovaries and individually cultured for up to 11 days. From day 4, follicles were exposed to 4-HC (10 or 20 µM, single or repeated doses), lipofectamine-mediated let-7a mimic, or combination of both. Short- and long- term effects were assessed via follicular survival, morphology, let-7a expression.

Exposure to 4-HC induced dose-dependent damage, significantly reducing follicular survival and healthy morphology compared to control. It decreased let-7a expression at later stages while short-term exposure showed a trend toward let-7a downregulation and a significant upregulation of its target gene, Stat3. Let-7a transfection was efficient and non-toxic. However, no protective effect was observed under cotreatment conditions. Further analysis including hormonal assay are ongoing.

# OC13

## Protective properties of Enn surface proteins against Group A *Streptococcus*

**Cyprien Widomski**

Supervised by Anne Botteaux
Molecular Bacteriology Laboratory, European Plotkin Institute for Vaccinology,
ULB Faculty de Medicine

**Background:** Group A Streptococcus (GAS) causes 500 000 deaths with no available vaccine. Several GAS vaccines are currently developed based on the M protein. Recent epidemiological data showed that the global coverage would not be optimal. M-like proteins, Enn and Mrp, are present on 85% of GAS strains suggesting their biological relevance. Both M-like proteins are composed of a hyper variable region (HVR) in N-terminus which is immunogenic in M proteins.

**Methods:** 10 most relevant Enn were chosen and then, rabbits were immunized with 10 EnnHVR peptides. Antibody specificity to other EnnHVR peptides was tested using ELISA. Functionality of anti-EnnHVR antibodies was tested using antibodies-dependent cellular phagocytosis (ADCP) test. Moreover, anti-Enn sera were tested using whole blood killing assay with a wide range of GAS strains.

**Results:** We observed high specific antibody titers against injected EnnHVR. ADCP assay revealed the efficacity of specific antibodies to significantly mediate phagocytosis. As well, our data showed an increased killing of GAS strains in the presence of immunized sera in a phagocytosis- dependent manner. We also observe cross-protection using anti-Enn sera.

**Conclusion:** Enn proteins possess immunogenic and protective properties and should be further considered as complementary antigens in vaccine formulation for global coverage.

# OC14

## CellCousin2: An Optimized System for Partial Ablation and Tracing of Regenerative Lineages

**Gabriel Garnik Hovhannisyan**

Supervised by Esteban Gurzov & Sumeet Pal Singh
Signal Transduction & Metabolism Laboratory, ULB Faculty of Medicine

A central question in regenerative biology is how distinct cellular lineages contribute to tissue repair and interact to form functional tissue. Regeneration may involve stem cells, proliferation of differentiated cells, or transdifferentiation between lineages. Lineage tracing is essential to determine the origin of regenerated tissue, but its accuracy is often limited by recombination leakiness and injury-induced toxicity.

We previously developed the CellCousin system to study cellular plasticity in zebrafish using inducible recombination and nitroreductase-mediated ablation. Here, we introduce CellCousin2, an improved platform that enables precise lineage labeling combined with selective, low toxicity ablation for studying liver regeneration.

CellCousin2 includes two key advances. First, we developed a DHFR-CreER system with dual control: DHFR-mediated degradation in the absence of trimethoprim and tamoxifen-dependent activation, minimizing background recombination while maintaining high efficiency. Second, we replaced the original nitroreductase with NTR2.0, allowing effective ablation at tenfold lower metronidazole concentrations, reducing off-target toxicity.

By coupling tight temporal control of recombination with improved ablation, CellCousin2 enables cleaner mechanistic studies. It supports accurate lineage tracing, minimizes artifacts, and allows long-term tracking of spared and regenerating cells, providing a robust tool to dissect regenerative processes in zebrafish

# OC15

## ExploriNg the host Immune system - Gut Microbiota interActions in healthy individuals (ENIGMA)

**Louison Toris**

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The gut microbiota, immune system, and nutrition form a fundamental triad for host homeostasis. Yet, their temporal coupling in strictly healthy adults remains poorly defined; current literature is largely restricted to cross-sectional, single-omic designs that fail to control for transient environmental and lifestyle confounders. ENIGMA investigates whether healthy individuals display stable, personalised microbial and immune signatures, how these co-vary over time, and how diet and seasonality modulate this tripartite ecosystem.

We built a prospective longitudinal cohort of 130 deeply phenotyped healthy adults, integrating faecal 16S rRNA microbiome profiling, longitudinal immunophenotyping (flow cytometry and ex-vivo whole blood stimulation) and standardised dietary assessment across four visits over one year, with multi-omic temporal trends modelled using the MEFISTO framework.

Interim analyses indicate robust, fingerprint-like stability of gut microbial communities, with inter-individual variability exceeding temporal intra-individual fluctuations. Furthermore, sub-clinical variations in systemic markers and specific dietary habits (e.g., CRP, processed meat intake) correlate with distinct shifts in overall microbial community structure and taxonomic composition. Longitudinal immune profiling identifies stable “immunotypes” but reveals time-varying cytokine response patterns, with preliminary evidence for seasonal modulation.

ENIGMA provides a unique, comprehensive longitudinal resource for interpreting microbiota-immune-diet interactions in health and disease.

# OC16

## A common genetic variation in hematopoietic stem cells regulates the development of human γδ T cells

**Isoline Verdebout**

Supervised by David Vermijlen
Institute of Medical Immunology; ULB Center for Research in Immunology; Department of Pharmacotherapy and Pharmaceutics, ULB Faculty of Pharmacy

γδ T cells are unconventional T lymphocytes that recognize antigens through their T cell receptor (TCR). Like αβ T cells, they generate TCR diversity through V(D)J recombination, where a Variable, a Diversity (for the δ chain) and a Joining genes are combined in the TRG and TRD loci. Dictated by the type of Vδ gene included in their TCR, human γδ T cells are broadly divided into innate-like Vδ2 and more adaptive-like non-Vδ2 (mainly expressing the Vδ1 chain) T cell populations. Since a common single-nucleotide-polymorphism (SNP), known to be involved in thymopoiesis, is located within the TRD locus, we hypothesized that this SNP could be involved in the Vδ1 vs Vδ2 usage.

GG infants possessed more Vδ2 and less Vδ1 T cells in their thymus. Using human immune system mice and in vitro T cell development cultures, we showed that this Vδ usage bias is driven at the level of hematopoietic stem cells. This thymic Vδ2 vs Vδ1 T cell bias was conserved during their wave-like appearance in fetal blood, resulting in different Vδ2 and Vδ1 T cell frequencies in newborns. Thus, we identified a common genetic variation that determines the prevalence Vδ2 vs Vδ1 T cells in humans.

# OC17

## TRMT10A deficiency and tRNA fragmentation disrupt human pancreatic β-cell identity and insulin maturation

**Khadija Benabdallah**

Supervised by Mariana Igoillo-Esteve
Center for Diabetes Research,
ULB Faculty of Medicine

TRMT10A is a tRNA methyltransferase whose loss-of-function mutations cause a rare monogenic syndrome characterized by early-onset diabetes and neurodevelopmental deficits, yet the mechanisms driving β-cell failure in TRMT10A-deficient individuals remain incompletely understood.

Using human TRMT10A-deficient induced pluripotent stem cell–derived islet-like aggregates and TRMT10A-silenced β-cells, we show that the absence of TRMT10A profoundly disrupts β-cell development, insulin maturation, and glucose-stimulated secretion. These functional defects arise alongside oxidative stress, mitochondrial dysfunction, and a marked impairment in proinsulin processing caused by reduced PCSK1 expression. At the RNA level, TRMT10A loss triggers selective fragmentation of tRNAGln-CTG, generating tRNA-derived fragments (tDRs) that accumulate in β-cells. We identify tDR-1:29-Gln as a previously unrecognized regulatory RNA that binds hnRNPM and disrupts hnRNPM–PTBP1 complexes, thereby destabilizing PCSK1 mRNA and attenuating its glucose-induced translation. Beyond these targeted mechanistic effects, RNA-seq and proteomic profiling revealed widespread dysregulation of pathways linked to β-cell identity, neuronal development, synaptic function, and cellular stress responses, mirroring the metabolic and neurodevelopmental manifestations observed in TRMT10A-deficient patients.

Our findings position TRMT10A dependent tRNA fragmentation as a pathogenic axis with direct clinical relevance, connecting altered ncRNA processing to β cell dysfunction and early onset diabetes.

# OC18

## Maternal anti-*Escherichia coli* IgG and plasma levels of IL-6 are associated with neonatal infectious disease

**Azeddine Chakroun**

Supervised by Mostafa Chamekh
Laboratory of Pediatric Research, Inflammation Unit, ULB Faculty of Medicine

**Objective:** Maternal infection or colonization with pathogenic bacteria is a significant risk factor for neonatal infections. Among Gram-negative bacteria, *Escherichia coli* is the primary cause of early-onset diseases. This study sought to determine if maternal anti-*E. coli* IgG levels and cytokine profiles could be linked to neonatal invasive diseases.

**Methodology:** This prospective study investigated pregnant women infected with *E. coli* and their newborns. Maternal peripheral blood and umbilical cord blood were collected from each mother-neonate pair. Inflammatory mediators were measured using Luminex multiplex assays and ELISA. Anti-LPS *E. coli* IgG were quantified using ELISA.

**Results:** Mothers with infected neonates had significantly lower levels of anti-LPS *E. coli* IgG and higher levels of IL-6 compared to those with non-infected neonates. Infected neonates exhibited higher levels of IL-6 and tended to have lower levels of anti-LPS *E. coli* IgG compared to non-infected neonates. Receiver operating characteristic revealed a strong association between maternal levels of IgG anti-LPS *E. coli* and IL-6 with vertical transmission of E. coli.

**Conclusion:** Pregnant mothers with elevated levels of IL-6 and reduced levels of anti-LPS *E. coli* IgG are at a higher risk of transmitting bacteria to their newborns, highlighting their value in the monitoring of mother-newborn dyads.

# OC19

## Vascular Remodeling Enhances High-Flow Muscle Oxygen Delivery Following Aerobic Exercise Training

**Emilie Maufroy**

Supervised by Gael Deboeck
Research Unit in Rehabilitation Sciences, ULB Faculty of Human Movement Science

**Background:** This research demonstrates how two distinct training modalities, high-intensity interval training (HIIT) and moderate-intensity continuous training (MICT), influence oxygen transport dynamics and microvascular remodeling.

**Methods:** Twenty-five healthy sedentary men and women (median age 21 years) were randomly assigned to HIIT or MICT for 8 weeks. $VO_2$max improvement was assessed in 25 participants, while non-invasive maximal cardiac output (Qmax) was measured only in 15. Biopsies from vastus lateralis were obtained, cleared and immunolabeled for VE-cadherin and alpha-smooth muscle actin, in 10 participants, to observe microvasculature architecture. A predictive computational hemodynamic model was constructed to estimate muscle flow dynamics.

**Results:** $VO_2$max and Qmax increased significantly in both training groups, with a greater improvement for aerobic capacity in HIIT that was accompanied by a significant increase in capillaries pericyte coverage. No formation of new capillaries nor anastomoses was detected in either group. Modelisation estimated higher shear stress during HIIT than MICT and pericyte recruitment was modelized to adapt to shear stress level limiting excessive capillary dilation.

**Conclusion:** Better aerobic capacity improvement following HIIT is thought to be the results of microvascular structural adaptations rather than angiogenesis, limiting dilation at high exercise intensity and improving oxygen diffusion.

# OC20

## Study of Bacteriophage A25 Adsorption to Group A Streptococcus Cell Wall Carbohydrates

**Jenny Steinmetz**

Supervised by Anne Botteaux
Molecular Bacteriology Laboratory, European Plotkin Institute for Vaccinology,
ULB Faculty of Medicine

Bacteriophages (phages) are viruses that infect bacteria and influence microbial ecosystems. Understanding phage–bacteria interactions is important for studying bacterial population dynamics and developing phage therapy. Phages infecting Gram-positive bacteria often share structural similarities in their receptor-binding proteins, suggesting potential for engineered phages.

This study examines bacteriophage A25, which infects Group A Streptococcus (GAS), a strictly human pathogen causing mild to severe infections for which treatment relies on antibiotics, as no vaccine exists to date.

Studies dating back to the 1970s showed that A25 binds reversibly to peptidoglycan (PG) but requires a second receptor for irreversible attachment.

The predicted antireceptor (Distal Tip protein) encodes a carbohydrate binding motif (CBM), similar to a Lactococcus casei phage motif CBM2, which binds the bacterial cell-wall polysaccharides. We prepared peptidoglycan (PG) sacculi and treated them to remove proteins and GlcN(Ac)-bound carbohydrates. We found that adsorption was completely abrogated in absence of carbohydrates. This lead us to investigate the role of the Lancefield group A carbohydrate (GAC), the main carbohydrate of GAS cell wall. It is composed of a polyrhamnose backbone with N-acetyl-β-D-glucosamine (GlcNAc) side-chains of which about 30% contain a glycerol phosphate (GroP) modification. Knock-out mutants lacking either modification showed the importance of the GlcNAc side chain for adsorption.

Overall, results suggest A25 attaches irreversibly via the GAC GlcNAc side chains.

# POSTER PRESENTATIONS

SCIENTIFIC ABSTRACTS

# PO1

## Prevalence and clinical significance of IgE sensitization to pollen in a population of patients in Benin

**Dossou Aurice Tossa Dognon**

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ULB Faculty of Medicine

Allergic diseases are on the rise in West Africa, but aerobiological and immunological data remain limited. In Abomey-Calavi, an initial phase of the study revealed high atmospheric concentrations of certain types of pollen. This second phase aims to determine the IgE sensitization profile to the main pollens identified in the local air.

A total of 76 patients with seasonal rhinoconjunctivitis and 53 controls were tested for 16 allergen extracts using the ImmunoCAP® method. Sensitizations were analyzed at thresholds of >0.35 kU/L and >0.10 kU/L. Pollen data (2021–2023), obtained using a Hirst-type volumetric sensor, allowed us to establish a link between exposure and sensitization.

The results show a slightly higher prevalence of positive test results among patients than among controls. At a cutoff value of >0.35 kU/L, the most commonly implicated allergens are Melaleuca (13.2 %), Oil Palm (10.5 %), Date (9.2 %), and Poaceae (6.6 %). Likelihood ratios suggest diagnostic relevance for Eucalyptus (LR = 2.79) and Queen Palm (LR = 1.74). At a threshold of >0.10 kU/L, prevalence increases as expected, confirming a consistency between exposure and sensitization.

This study provides the first comprehensive database on allergies for Abomey-Calavi and highlights the importance of regular pollen monitoring.

# PO2

## Metabolomic workflow for oxidative post-translational protein modification identification: a case study for oxidized LDLs

**Elise Snyders**

Supervised by Pierre Van Antwerpen
PBDD, ULB Faculty of Pharmacy

Oxidative modification of low-density lipoproteins (LDLs) is a central mechanism in early atherosclerotic plaque formation. Among the different pathways involved, myeloperoxidase (MPO) plays a key role by producing hypochlorous acid (HOCl) from hydrogen peroxide ($H_2O_2$) and chloride ions. While HOCl is a strong oxidant that broadly modifies LDL lipids and apoB-100, M POmediated oxidation induces more selective protein modifications not reproduced by direct HOCl treatment. This study aimed to generate and compare LDLs oxidized under different conditions to characterize their molecular signatures. After oxidation, LDL ApoB-100 was trypsinized and peptides were analyzed by RP-LC-HRMS. Data were converted into ".xml" format and processed using a W4M workflow adapted for peptide analysis. Multivariate analyses revealed a substantial overlap between conditions, indicating limited global metabolomic differences. However, oxidation-dependent patterns emerged: mild conditions ($H_2O_2$, MPO) showed high variability and poor clustering, whereas stronger conditions (HOCl, MPO–$H_2O_2$–$Cl^-$) exhibited clearer separation, suggesting more consistent and specific modifications. Overall, LDL oxidation appears to converge toward common end products, although the nature and intensity of oxidation influence the reproducibility and specificity of the resulting molecular signatures.

# PO3

## The cost and health-related quality of life of stroke management and care of acutely hospitalized cases in Mozambique

**Igor Dobe**

Supervised by Mathieu Castry
ULB School of Public Health

**Background:** Stroke is a leading cause of death and disability, imposing a heavy burden on survivors and families. To address limited African data, this study assessed the cost of stroke management and post-discharge health-related quality of life in Mozambique.

**Methods:** A prospective cost-of-illness study was conducted at a first-referral urban public hospital in Maputo (June–December 2019). Direct costs were estimated from medical records, while indirect costs were derived from interviews with patients or caregivers during hospitalization and 28 days post-discharge, capturing additional expenses and productivity loss by employment status. Quality of life was assessed at 28 days using the EQ-5D-3L. Costs were analyzed from a societal perspective and reported in USD.

**Results:** Fifty of 80 stroke patients were recruited (56% female; median age 61 years); 44% had hemorrhagic stroke. Median hospital stay was 7 days, and 20% died within 28 days post-discharge. Total direct hospital costs were $36,315.28, with a median of $721.45 per patient. Non-medical costs increased after discharge, and productivity losses were highest among informally employed patients. Quality of life was poor (mean EQ- 5D index 0.514; VAS 49.39), with anxiety/depression and pain/discomfort most reported.

**Conclusion:** Stroke imposes a high economic and health burden in Mozambique, with significant costs, mortality, and reduced quality of life. Health system reforms are needed to reduce this burden.

# PO4

## Patient Costs and Time Spent on Hypertension Care Among People Living with HIV in Mozambique

**Igor Dobe**

Supervised by Mathieu Castry
ULB School of Public Health

**Background:** With expanded antiretroviral therapy, people living with HIV (PLHIV) in Mozambique are living longer but face growing non-communicable disease burdens, particularly hypertension. Evidence on time and financial costs of hypertension care is limited. This study evaluates direct and indirect costs of hypertension care among PLHIV and quantifies time spent using a Time-and-Motion approach in public facilities.

**Methods:** A cross-sectional study was conducted in four public health facilities in Maputo Province. Adult PLHIV (≥18 years) on hypertension treatment for at least three months were enrolled. Direct costs included health-care and non–health-care expenses, while indirect costs captured time lost seeking care, valued using self-reported income. Data were collected through structured exit interviews and time-and-motion observations, double-entered, verified, and analyzed descriptively. Costs were reported in Meticais and converted to USD.

**Results:** Thirty-six participants were enrolled (61.1% female; median age 55.5 years). Patients incurred substantial direct and indirect costs, including transport and income loss due to time spent accessing care. Financial burdens were higher among socioeconomically vulnerable individuals, highlighting inequities in access to integrated HIV–hypertension services.

**Conclusions:** Hypertension care among PLHIV in Mozambique imposes significant time and financial burdens, driven by waiting times, travel, and income loss. Integrating hypertension management into HIV services could reduce costs, improve efficiency, and enhance equity.

# PO5

## Investigating FLASH radiotherapy and beam structure influence in zebrafish embryos

**Nina Blond**

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The efficacy of radiotherapy is limited by the toxicity induced in healthy tissues. Ultra-high dose rate (UHDR) irradiation, associated with the FLASH effect, offers a promising strategy to mitigate this limitation by reducing normal-tissue damage while maintaining anti-tumor efficiency. Evidence indicates that specific beam parameters influence the magnitude of this protective effect. This thesis investigates the FLASH effect and the impact of irradiation parameters using the zebrafish embryo as a biological model.
UHDR irradiation induces less toxicity compared with conventional (CONV) dose rates in this model. Faster dose delivery enhanced tissue sparing, with the most severe toxicities showing the greatest sensitivity to dose-rate changes. To explore the underlying mechanisms, an in silico model was developed to simulate the kinetics of radiation-induced chemical reactions. The model predicts a reduction in peroxide production—a key mediator of radiation toxicity—under UHDR conditions, providing a plausible explanation for the FLASH effect. By correlating predicted peroxide levels with observed biological damage, a predictive model was established, identifying the beam parameters most influential in the FLASH sparing response. Further in vivo investigations remain necessary to confirm the relationship between reduced peroxidation and the FLASH effect.

This work supports FLASH effect optimization through beam-parameter and mechanistic insights.

# PO6

## Unfold the effect of oncogenic heterogeneity on the response of esophageal cancer and its tumor immune microenvironment to CDK4/6 inhibition

**Diego Japón Ruiz**

Supervised by Benjamin Beck & Xavier Bisteau
IRIBHM J.E. Dumont, ULB Faculty of Medicine

Esophageal squamous cell carcinoma (eSCC) remains a highly lethal malignancy with poor survival rates and limited response to current immunotherapies. While cell cycle deregulation via the CDK4/6 pathway is a hallmark of eSCC, early clinical trials of CDK4/6 inhibitors (CDK4/6i) have shown only modest efficacy. Recent preclinical data indicate that Palbociclib not only suppresses proliferation particularly in p53-deficient lines but also induces inflammatory signaling and promotes immune cell migration.

This project investigates the impact of CDK4/6i on the tumor immune microenvironment (TIME) in eSCC through a multi-faceted approach. Using multiplex cytokine assays and transwell migration systems, the study will characterize secretome changes and immune cell recruitment. Advanced models, including a 3D vascularized OrganiX chip and an in vivo 4- NQO-induced mouse model, will be employed to evaluate immune infiltration and spatial transcriptomic shifts. By defining the mechanisms through which CDK4/6 inhibition modulates TIME, this research aims to provide a mechanistic foundation for novel combination strategies with immune checkpoint inhibitors to improve clinical outcomes for eSCC patients.

# PO7

## An unbiased quantitative of histology in human asymptomatic tissues reveals morphological changes and histological QTL

**Zhao Zhang**

Supervised by Vincent Detours
Computational Biology Labs, IRIBHM J.E.Dumont, ULB Faculty of Medicine

We developed an artificial intelligence (AI)–based framework for quantitative histology, enabling the application of tools originally developed for RNA-seq analysis to histological images. We applied it to 23,887 H&E slides from 40 tissues collected from 946 asymptomatic subjects to survey morphological diversity and identify associated genetic variants.

The framework proceeds as follows: H&E images are tiled, each tile is processed by an AI network into a numerical vector. Tiles vectors are clustered into categories and morphologies in a slide are quantified by counting the number of its tiles assigned to each category. This generates interpretable slide-level numerical representations of histological content, analogous to a gene expression matrix for RNA-seq, which we call a histology count matrix, and enables histological quantitative trait locus (hQTL) analysis using standard eQTL discovery tools.

Application to GTEx data revealed 287 morphologies associations with 1,105 unique SNPs at genome-wide significance. The strongest signal linked several thyroid morphological categories to a region on chromosome 9 overlapping FOXE1, a major thyroid transcription factor, and PTCSC2, a lincRNA antisense of FOXE1 with well-documented association with papillary thyroid cancer risk.

In conclusion, this framework enables quantitative analysis of histological morphology and reveals extent of morphological variation and hQTLs.

# PO8

## EndoPlasma – Evaluating the efficacy of Cold Atmospheric Plasma (CAP) technology for endoscope disinfection

**Amélie Bourgeois**

Supervised by Arnaud Lemmers & Alain Delchambre
European Plotkin Institute for Vaccinology, ULB Faculty of Medicine

Complete disinfection of medical instruments is a critical patient safety concern. In gastroenterology, endoscopes are particularly challenging to decontaminate due to their long, narrow inner channels and the ability of bacteria to form biofilms, which confer significant resistance to conventional high-level disinfection protocols.

Cold Atmospheric Plasma (CAP) has demonstrated promising bactericidal and virucidal properties in various settings. This study aimed to evaluate the efficacy of CAP against both planktonic bacteria and biofilms in a simulated endoscope model.

A laboratory model mimicking contaminated endoscope channels was developed and inoculated with several bacterial strains. CAP was applied at varying exposure durations, and outcomes were assessed through bacterial regrowth analysis and crystal violet staining to quantify biofilm presence.

CAP achieved complete eradication of bacteria across all tested strains. Biofilm presence was reduced in the majority of samples; however, complete elimination was not achieved, suggesting that biofilm matrix structure may attenuate CAP efficacy.

These results are encouraging and support further investigation into optimizing CAP parameters for biofilm disruption, with the long-term goal of integrating CAP-based technology into clinical endoscope reprocessing workflows.

# PO9

## Analysis of Liver Macrophage Compartment Variation During MASLD-HCC Progression

**Sara Maggiore**

Supervised by Esteban Gurzov & Charlotte Scott
Signal Transduction and Metabolism Laboratory, ULB Faculty of Medicine and Laboratory of Myeloid Cell Biology in Tissue Damage and Inflammation, UGent Faculty of Science

Metabolic dysfunction associated steatotic liver disease (MASLD) represents a spectrum of disease states ranging from simple steatosis to fibrosis, cirrhosis and hepatocellular carcinoma (HCC). The progression of MASLD to HCC is accompanied by significant changes in the hepatic macrophage compartment, including the reduction and activation of resident Kupffer Cells (KCs) and an increase in recruited lipid associated macrophages (LAMs), but whether these changes influence progression to HCC remains to be determined. To recapitulate MASLD-HCC, a choline-deficient high-fat diet (CDA-HFD) feeding model was utilized and samples processed for single nucleus RNA-sequencing (snRNA-seq) analysis. The data showed that Kupffer Cells (KCs) were gradually lost and activated. Despite this, the developing tumours were actively populated with KC-like cells. This was also validated at protein level with immunofluorescence staining. LAMs, largely absent in control conditions, populated the MASLD liver and showed variability in the gene signature. CT scans on transgenic mice lacking Trem2 (a LAM marker) on macrophages allowed to follow tumour formation in real time. The lack of Trem2 in macrophages promoted an earlier tumour appearance in the MASLD-HCC model. Further analysis are currently being carried out to investigate and predict spatially relevant cell-cell crosstalk events leading to MASLD- HCC development, specifically focusing on macrophage-hepatocyte interactions.

# PO10

## A Step Towards Thyroid Regeneration: A Novel Organoid Model

**Bria Jackson**

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ULB Faculty of Medici

The thyroid is an essential endocrine gland that produces thyroid hormones (TH), essential for normal embryotic development and energy metabolism in adults. Defects in thyroid gland development leads to congenital hypothyroidism (CH), affecting 1,500-4,000 births worldwide, the origins of which are poorly understood. Though TH replacement is a well-established therapy, one third of patients are not adequately treated. This is largely due to difficulties modulating TH doses to the body's changes in requirements, especially during growth, puberty, development and stress. Organoids are self-organizing 3D cell culture systems that mimic the developmental steps, structure and function of target tissue, making them a powerful tool to study organogenesis in a human context. Current thyroid organoid models utilize genetic constructs that bypass the physiological processes of thyroid follicular cell (TFC) specification which may be at the root of CH. Recently our lab has generated a novel approach to generate functional thyroid organoids. Thyroid progenitors are specified from induced pluripotent stem cells (iPSCs) through a directed differentiation strategy. Then, sequential addition of key factors promotes the maturation of TFCs and TH synthesis which has been verified in both wild type and patient derived iPSC lines showing the potential of this system for clinical exploitation.

# PO11

## Vitamin D deficiency aggravates pulmonary vascular remodeling and dysfunction in experimental pulmonary hypertension

**Corentin Van Nuffelen**

Supervised by Dewachter Laurence
Laboratoire de Recherche Expérimentale en Soins Intensifs, ULB Faculty of Medicine

Pulmonary arterial hypertension (PAH) is a rare life-threatening disease characterized by structural and functional alterations of pulmonary arterioles. These changes increase pulmonary vascular resistance, leading to right ventricular (RV) failure and death. Vitamin D deficiency has been associated with poor prognosis in PAH. This study investigated the impact of vitamin D deficiency on the pathogenesis of experimental pulmonary hypertension (PH).

Male Wistar rats were fed either a vitamin D-deficient diet (VDD, n=24) or a standard diet (n=23) for four weeks. After one week, monocrotaline (MCT; 40 mg/kg) was administered intraperitoneally in 14 rats on VDD and 12 rats on standard diet to induce PH. Right heart catheterization was performed to assess pulmonary hemodynamics, followed by morphological, histological, molecular and ex vivo pulmonary artery vasoreactivity analyses.

Vitamin D deficiency was confirmed by low circulating 25(OH)D levels (<10 ng/mL). In MCT rats, vitamin D deficiency significantly worsened PH, with higher mean pulmonary arterial and RV systolic pressures, and increased RV hypertrophy. These changes were associated with enhanced vascular remodeling. Pulmonary vascular function was impaired, with reduced endothelium- and smooth muscle-dependent relaxation.

Vitamin D deficiency exacerbates MCT-induced PH by worsening hemodynamics, promoting vascular remodeling, and impairing both endothelial and smooth muscle function.

# PO12

## Targeting Galectin-1 in Melanoma Using siRNA-Loaded Lipid Nanoparticles to Overcome Tumor Resistance

**Emmanuel Rodrigues**

Supervised by Véronique Mathieu & Anne des Rieux
Department of Pharmacotherapy and Pharmaceutics, ULB Faculty of Pharmacy and LDRI, UCLouvain Faculty of Pharmacy

Advanced melanoma is a highly aggressive cancer marked by adaptive resistance, recurrence, and poor survival. Galectin-1 (Gal1) plays a key role in tumor progression, metastasis, angiogenesis, immune escape, and resistance to current therapies, yet remains insufficiently targeted.

This project aims to silence Gal1 expression using lipid nanoparticles (LNPs) encapsulating siRNA. By inhibiting Gal1 post-transcriptionally, we seek to enhance the efficacy of first-line treatments (anti-BRAF/MEK therapies and immunotherapies) and resensitize resistant tumors. LNP formulations are based on clinically validated ionizable lipid systems, similar to those used in Onpattro® and mRNA vaccines.

We used murine (B16F10), human (SK-MEL-28), and patient-derived melanoma cell lines, including resistant variants confirmed by MTT assays. qRT-PCR analysis validated Gal1 expression across models. Among four formulations, DSPC combined with MC3 or C12 yielded optimal results, with particle sizes of 50–100 nm, zeta potentials of −12 to −8 mV, and encapsulation efficiencies of 80–95%. Preliminary MTT assays indicate good safety profiles.

Ongoing studies focus on validating Gal1 silencing at RNA and protein levels, followed by combination therapies in vitro and in vivo, aiming to overcome resistance and improve patient outcomes.

# PO13

## MAFB as a key transcriptional regulator of tumor-associated macrophages in breast cancer

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In most cancers, macrophages are the most abundant tumor-infiltrating immune cells and are associated with poor prognosis. They present high diversity and plasticity, responding to local cues that drive pro-tumoral functions, including immunosuppression and tumor support.

The project aims to resolve tumor-associated macrophage (TAMs) populations within the tumor microenvironment, focusing on tumor-supporting macrophages, particularly TREM2$^+$ TAMs, to better understand their transcriptional regulation. Using next-generation humanized mice implanted with a human breast cancer cell line, we identified TREM2$^+$ and GLUT1$^+$ TAM populations associated with angiogenesis, stress responses, and hypoxia-related gene expression.

Single-cell ATAC-seq analysis identified MAFB as a candidate transcription factor regulating these TAMs. CUT&RUN data show that MAFB regulates distinct gene sets when expressed in healthy bone marrow–derived macrophages compared to TAMs. Consistently, multiplex IHC analysis of human samples revealed that MAFB is specifically expressed in macrophages from breast tumors compared to those from healthy breast tissue.

In bicellular spheroids, MAFB knockout in macrophages reduced tumor cell invasive capacity. Furthermore, CRISPR-mediated gene editing of hematopoietic stem cells prior to humanization, targeting MAFB, induced a redistribution of tumor-infiltrating macrophage subsets and a shift toward antigen-presenting and stress-responsive states. Together, these results identify MAFB as a key regulator of TAM plasticity.

# PO14

## Deciphering the Supporting Role of RHPN2 in Melanoma: From Zebrafish Models to Molecular Interactomes

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Melanoma, through its high-metastatic potential and drug resistance, is the first leading cause of skin tumor death. RHO GTPases play key roles in cancer progression and invasion. Rhophilin-2 (RHPN2) was identified as RHOB effector. It is amplified in multiple human cancers and proposed to support tumor survival-invasion; in silico studies suggest its essentiality for melanoma cell survival, although this remains to be experimentally validated. Previously, we showed through stable knockdown that RHPN2 promotes melanoma cell proliferation and migration; we now aim to investigate its role in in vivo melanoma development, signaling, and protein interactions in human melanoma cells.

In zebrafish, loss of Rhpn2 delayed NRASQ61L-driven melanoma onset, and melanocyte-specific overexpression in a Tg(mitfa:BRAFV600E);p53-/- model enhanced nodular tumor formation, confirming its pro-tumorigenic role. We aim to elucidate the mechanisms of action of RHPN2 in different melanoma cell subtypes. We first showed its enriched expression in mesenchymal-like states, consistent with an invasive phenotype. We will now further investigate RHPN2 impact on signalling through RHPN2 knockdown and overexpression experiments.

To dissect RHPN2 protein partners, we employed TurboID-based proximity labelling and identified proximal interactors in A375 melanoma cells by mass-spectrometry. The detection of known partners, including keratins KRT8 and RHO GTPases, validated the assay, while novel interactors linked to cell adhesion, trafficking, and vesicle transport suggest a role for RHPN2 in cellular plasticity and invasive, aggressive behaviour.

We expect our work could pave the way to consider RHPN2 as a new potential target to control cell plasticity in melanoma

# PO15

## Synthesis and Biological Evaluation of Lipophilic Ru(II), Ir(III) and Rh(III) Complexes on Microorganisms

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Synthesis of novel molecules is important to discover new drug candidates against a wide range of diseases. Metal complexes have been characterized as potential anticancer agents since the 1960s. In-house former research[1] in the MCBM laboratory of ULB highlighted the effect of several metal complexes on cancer cells and micro-organisms. Especially, Ruthenium (Ru)[2], Rhodium (Rh)[3], and Iridium (Ir)[4] have attracted our interest since they are considered as promising bioactive molecules. Moreover, diamine endowed with particular physico-chemical properties (e.g. good water solubility or, on the contrary, high lipophilicity) used as ligands can be used to improve the biological properties of the complexes. The molecules described in this project are metal complexes (Ru, Rh and Ir) coupled with lipophilic diamine ligands that could increase the diffusion of the metals across the cell membranes. Compounds have been characterized by Nuclear Magnetic Resonance (NMR) and Mass Spectroscopy (MS), and a screening on diverse pathogens such as *S.aureus*, *E.coli*, *C.albicans* and on SiHa cells has been carried out.

[1]Inorg. Chem. Front., 2022, 9, 2594
[2]Int. J. Mol. Sci. 2023, 24, 9512
[3]Eur. J. Med Chem. 2021, 216, 113308
[4]Eur. J. Med Chem. 2024, 276, 116648

# PO16

## Measuring whole-genome doubling and aneuploidies across cancer types

**Taher Dalil**

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This study investigates the spatial and temporal dynamics of whole-genome doubling (WGD) and intra-tumor heterogeneity to understand WGD acquisition during cancer progression. A multi-faceted wet-lab and in-silico approach was employed to benchmark and predict ploidy changes. Methodologies utilized include Fluorescent Activated Cell Sorter (FACS) and bulk DNA sequencing to screen an expanding pan-cancer cohort, acoustic cell tagmentation (ACT) for scalable single-cell whole-genome DNA sequencing (scWGS), and widefield microscopy. Furthermore, a dedicated analysis pipeline integrating state-of-the-art tools and AI is currently developed to derive ploidy signatures directly from histopathological slides.

Key results highlight the successful implementation of the ACT protocol, achieving a 72% success rate in nuclei sequencing for copy number and ploidy inference. Additionally, we benchmarked nuclei extraction protocols and advanced a semi-supervised model to estimate ploidy without a flow cytometer.

In conclusion, computing copy-number-based phylogenies from scWGS sheds light on WGD evolution. Establishing this scalable image-based pipeline reduces reliance on bulk sequencing, potentially facilitating the integration of ploidy assessment into routine diagnostic workflows across diverse cancer types.

# PO17

## Three-dimensional reconstruction of normal and cancer thyroid histology

**Serra Diego**

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Thyroid cancer initiation and progression must be studied within their native histological context, yet conventional 2D histopathology cannot capture the 3D architecture of the gland (follicle connectivity, tumour-stroma interfaces). CODA[1] has enabled 3D reconstruction in pancreas, lung and skin, but the thyroid remains unexplored. We ask: (i) can a CODA-like pipeline be adapted to reconstruct human thyroid tissue, and (ii) can thyroid-specific structures be segmented reliably from the resulting volumes?

Formalin-fixed paraffin-embedded thyroid blocks were serially sectioned (8 µm), H&E-stained, and digitized at 0.23 µm/pixel. Serial sections were aligned with VALIS[6] using rigid and elastic registration methods. Segmentation algorithms were trained and used to segment follicular epithelium, colloid, blood vessels, connective tissue and nuclei.

We reconstructed a ~100 $mm^3$ normal thyroid volume from 113 aligned sections (~8 × 5 × 1.8 mm), the first high-resolution 3D model of human thyroid from FFPE material.

This pipeline will next be applied to papillary thyroid carcinoma and integrated with spatial transcriptomics, snRNA-seq and DNA-seq to link 3D morphology with molecular profiles.

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[1]Kiemen AL, Braxton AM, Grahn MP, Han KS, Babu JM, Reichel R, Jiang AC, Kim B, Hsu J, Amoa F, Reddy S, Hong SM, Cornish TC, Thompson ED, Huang P, Wood LD, Hruban RH, Wirtz D, Wu PH. CODA: quantitative 3D reconstruction of large tissues at cellular resolution. Nat Methods. 2022 Nov;19(11):1490-1499. doi: 10.1038/s41592-022-01650-9. Epub 2022 Oct 24. PMID: 36280719; PMCID: PMC10500590.

[2]Gatenbee, C.D., Baker, AM., Prabhakaran, S. et al. Virtual alignment of pathology image series for multi-gigapixel whole slide images. Nat Commun 14, 4502 (2023). https://doi.org/10.1038/s41467-023-40218-9

# PO18

## Human IgG1 subclass specifically empowers functions against influenza A virus in neonates

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Virus-targeting monoclonal antibodies are a promising therapy for respiratory infections, yet few are approved for neonates whose immune immaturity increases susceptibility to infection. In this study, we sought to elucidate and compare the role of IgG Fc-dependent effector functions in protection against influenza A virus (IAV) infection during early life using FcgR- humanized mice and the broadly neutralizing Fc-engineered human monoclonal antibody CR9114. Our results show that all CR9114 subclasses confer protection against influenza in neonatal FcγR-humanized mice, while Fc subclass differentially influences viral burden and inflammatory responses independently of survival outcomes. Strikingly, alveolar macrophage (AMs) loss induced by the IAV infection was prevented only in pups receiving CR9114 IgG1. Consistently, AM depletion abolishes the protective effect of CR9114 IgG1, underscoring their essential role in mediating IgG1-driven protection. Single-cell transcriptomic analysis further revealed that IgG1 selectively programs AMs toward a distinct transcriptional state characterized by preserved antiviral sensing, restrained inflammatory signaling, and a lipid- associated metabolic programming. Collectively, these findings highlight the critical contribution of FcγR-engaging IgG subclasses in shaping neonatal antiviral immunity and support the rational design of Fc-optimized monoclonal antibodies to enhance protection against IAV in early life.

# PO19

## Indirect activation of CD8 T Cells by cDC1 exosomes may reveal developmental constraints in neonatal immunity

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Neonates are susceptible to infections and exhibit poor vaccine responses due to immune immaturity. XCR1$^{+}$ conventional type 1 dendritic cells (cDC1s), which dominate early life, shape immunity by producing low IL-12p70 and high IL-10 levels, thereby limiting protective Th1 and CD8 T-cell responses. Beyond intrinsic cDC1 properties, extracellular vesicles (EVs) may mediate immune communication, with cDC1-derived EVs modulating adaptive immunity. EVs are heterogeneous and defined by size, content and origin.

Our lab identified cDC1-derived exosomes (DEX), isolated by PEG precipitation, that differ with age. Adult splenic DEX express higher levels of MHCII and costimulatory molecules (CD80, CD40) than neonatal DEX, potentially contributing to reduced early-life CD4/CD8 T- cell responses. Using adult bone marrow-derived DCs (BMDCs), we reliably isolate and quantify DEX and efficiently load them with ovalbumin (OVA) for functional studies. We found that OVA-loaded DEX do not directly activate OVA-specific OT-I CD8 T cells, supporting a role in antigen transfer to DCs. Preliminary data suggest indirect activation induces OT-I responses.

Future studies will investigate the functional impact of neonatal versus adult DEX on adaptive immunity in vivo. DEX will undergo phenotypic characterization and their capacity to drive antigen-specific T-cell responses will be evaluated in vivo using CFSE-based proliferation assays.

# PO20

## Perceptions and Experiences of Sexuality Among Men with Motor, Visual, and Hearing Disabilities in Maputo City, Mozambique

**Lénia Sitoe**

Supervised by Nicolas Baeyens
ULB Faculty of Medicine

**Introduction:** Individuals with disabilities encounter various obstacles that impact their sexuality, including inadequate knowledge and limited access to sexual health information, overprotective families, and discriminatory attitudes within communities. This study aims to examine the perceptions and experiences related to sexuality among men with motor, visual, and hearing impairments.

**Methods:** An ethnographic study conducted in Maputo City, involving 67 men over the age of 18 with motor, visual, or hearing disabilities; employing participant-oriented and purposive sampling to facilitate semi-structured interviews and observations. Data analyzed trough content and narrative analysis.

**Results:** For each category of disability, we identified specific sexual experiences and challenges, suggesting that targeted interventions for each disability group would be more advantageous.

**Conclusion:** Poverty and a lack of opportunities for economic development, as well as the family and social environment in which these men are part of, lead to feelings of low self-esteem and self-realization that influence their experiences of sexuality. Future studies are needed on implementing policies to improve their sexual life in Mozambique.

# PO21

## Studying developmental resilience at the cellular level: a focus on oxidative stress

**Gayathri Vilangappurath**

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Early embryonic development is highly sensitive to cellular stress, yet the mechanisms linking oxidative stress to genome instability and developmental failure remain poorly understood. This study aims to determine how early embryonic and extraembryonic lineages in human and mouse models respond to intrinsic and extrinsic stress signals, and how these responses influence chromosomal stability and embryo viability. Using human induced pluripotent stem cells, we established 2D differentiation models representing key developmental states, including pluripotent, primitive streak, and lineage-committed populations. Oxidative stress conditions were defined through dose-response viability assays using hydrogen peroxide and menadione, revealing differential sensitivity to distinct ROS sources, with menadione inducing a stronger reduction in cell survival. Transcriptional analyses showed stressor-specific responses, with robust activation following menadione treatment, whereas $H_2O_2$ elicited limited changes under the tested conditions. In parallel, we are validating the HyPer7 ratiometric biosensor for live-cell monitoring of intracellular ROS dynamics. Importantly, preliminary data indicate increased chromosome missegregation in pluripotent cells upon ROS exposure, which is reduced after early differentiation, suggesting lineage-specific vulnerability. This work will uncover developmental bottlenecks arising from redox imbalance and genome instability, establish a platform to test antioxidant-based interventions, and identify stages at which embryonic competence may be compromised.

# PO22

## Mental health of group therapists: influence of institutional support on the creation of a safe space and containing function within group settings for patients suffering from psychological trauma

**Anne Verheyleweghen**

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In this study, we examine, through the lens of the notions of containing function and safe space, how institutional support can influence caregivers' mental health and well-being, as well as the effective functioning of therapeutic groups for individuals who have experienced psychological trauma.

The notion of a safe space here refers to an environment that enables expression, emotional regulation, and prevention of retraumatization. The notion of containing function refers to the caregiver's ability to hold and process the raw affects brought by patients in the group, thereby allowing their psychological transformation. We particularly focus on how the institution supports this process through supervision, peer consultation, and training programs. We also analyze how, by extension, a failure of the safe space and containing function can impact patient well-being. The aim of this research, through qualitative interviews with caregivers and institutional leaders, is to understand the mechanisms within institutions that support caregivers leading therapeutic groups. These interviews seek to identify existing support systems as well as those perceived to be lacking.

# PO23

## Unravelling developmental resilience towards protein folding stress at the cellular leveland its impact on mammalian embryogenesis

**Begüm Böke**

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Even though embryonic development is generally robust, its earliest stages are vulnerable. In humans, two out of three conceptions end in early spontaneous miscarriage. Genomic imbalance (aneuploidy), in all or some (mosaicism) of the embryonic cells, can cause implantation or growth failure. Hence, it is critical to identify intrinsic and extrinsic stress factors driving chromosomal mosaicism and how affected embryonic and extraembryonic lineages adapt, survive, or fail. The recent work of our lab showed that early human lineages differ in response to replicative stress, a major cause of mosaicism. Yet, the impact of other stresses remains unclear. In this project, I will assess how disruptions in protein folding homeostasis through endoplasmic reticulum (ER) stress trigger aneuploidy and risk embryo fitness. Building on our lab expertise in human lineage specification and genome integrity, I will quantify the developmental resilience towards protein folding stress in 2D human embryonic and extraembryonic models and in 3D human blastoids/gastruloids, combining transcriptomics, proteomics, and stress biosensors. In addition, I will investigate how loss of proteostasis perturbs genome stability in these models by mapping replicative stress through quantification of mitotic length, lagging chromosomes, and anaphase/ultrafine bridges.

# PO24

## Integrating methylation and copy number aberrations across a pan-cancer database

**Antonia Vlaicu**

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IRIBHM Jacques E. Dumont, ULB Faculty of Medicine

Copy Number Aberrations (CNAs), such as gains/amplifications, losses/deep deletions, and whole genome doubling, are one of the most important types of oncogenic variations. They play a crucial role in cancer progression and underly the chromosomal instability (CIN), providing an important substrate for transcriptomic plasticity through gene dosage effects.

A novel in-house bioinformatic tool, ASCAT.ma, has been developed to infer integer copy number, purity and ploidy from Illumina methylation array data, allowing to thus integrate and explore methylation patterns and CNAs across cancer types.

Using ASCAT.ma, we infer the copy number profiles of ~40.000 cancer samples across different cancer types, leveraging published methylation data, including TCGA and samples in the GEO database.

Thanks to this new pan-cancer methylation and copy-number database, we can train autoencoders, capturing important common biological features at both methylation and copy-number level, followed by a classifier on the latent representation to improve and generalize predictions of cancer subtypes.

Furthermore, we derive an immune score using the methylation information, for which we can explore correlations with arm-level CNAs. Lastly, we extract CNA signatures and analyze their links to methylation pathways across cancer types.

# PO25

## Ionizing Radiation Exposure During Balloon Pulmonary Angioplasty in Chronic Thromboembolic Pulmonary Hypertension: Efficiency and Optimization Strategies

**Roseline Larock**

Supervised by Renaud Dendievel & Mike El Mourad
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**Introduction:** Chronic thromboembolic pulmonary hypertension (CTEPH) results from incomplete resolution of pulmonary emboli, leading to persistent arterial obstruction. Balloon pulmonary angioplasty(BPA) is a percutaneous treatment used as an alternative or adjunct to medical and surgical therapies. However, radiation exposure during these procedures remains a concern due to the multiple sessions required.

**Methods:** This single-center retrospective study at HUB-Erasme evaluated radiation exposure during BPA procedures in 23 patients (2019–2025). Dosimetric parameters (DAP, AirKerma, maximum skin dose, fluoroscopy time) and hemodynamics (pre/post BPA) were analyzed ($p<0.05$).

**Results:** The 23 patients underwent 2 to 8 BPA sessions (median:4), treating a total of 241 arteries. Post-BPA hemodynamic analysis showed improvement (mPAP:41.2±6 to 33±7.9mmHg; PAWP:11.2±2.6 to 13.4±3.8mmHg; PVR: 6.2[IQR:3] to 3.5[IQR:1.2]WU). Median radiation exposure (Air Kerma:255.98mGy [IQR:256.32]; DAP:3040.66µGy·m² [IQR:4262.99]) remained stable per patient but decreased over time across the cohort. BMI and treated segments had no significant effect, while longer fluoroscopy per session was correlated with fewer total sessions.

**Conclusion:** At HUB-Erasme, radiation doses remained well below recommended alert thresholds, although fluoroscopy time was longer than recommended. These findings provide perspectives for optimizing BPA procedures, reducing radiation exposure, and contributing to the development of recommendations aimed at improving safety for both patients and operators.

# PO26

## Validation of analytical methods and toxicological risks assessment of endocrine disruptors compounds and heavy metals in commercial packaged water produced in Ouagadougou, Burkina Faso, West Africa

**Jean Luc Téénganimbé Kabore**

Supervised by Bayala Balé & Cédric Delporte
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Consumption of drinking water packaged in plastic bags has become increasingly in urban and rural regions of Burkina Faso, raising public health concerns. This study aimed to analyze three commonly consumed brands (EC11, EC9, and EC14) to quantify potential contamination by heavy metals and endocrine disruptors and to evaluate associated the toxicological effects. Samples were collected from production units in Ouagadougou. Heavy metals were analyzed using atomic absorption spectrophotometry, and endocrine disruptors were determined using chromatography techniques (GC-MS and LC-MS/MS) coupled with the QuEChERS extraction method. Results revealed that levels of lead, cadmium, and arsenic were below WHO guideline limits, suggesting minimal heavy metal contamination. Preliminary findings of analytical validation for phthalates (PAE) demonstrated linear calibration curves, limits of detection ranged from 7.0 to 49.8 µg/L, while limits of quantification ranged from 21.3 to 150.8 µg/L with acceptable intra-day coefficients of variability. For BP, the calibration curve fit a quadratic model. Toxicological findings revealed significant increases ($p<0.05$) in the relative liver weight and decreases ($p<0.05$) in kidney, ovaries, testes, and epididymis weights in exposed groups, indicating potential reproductive toxicity. The proliferation of water brands, combined with inadequate storage conditions may contribute contamination by plastic packaging, posing health risks.

# PO27

## Functional study of microRNA-3688-5p in the modulation of the inflammatory response in monocytes

**Hind Sebbah**

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**Background:** MicroRNAs, small non-protein-coding RNAs, silence gene expression by binding to and inhibiting the translation of complementary messenger RNA. Dysregulation of miRNA expression has been observed in various inflammatory conditions, such as sepsis. However, the transcriptional states of specific cell types regarding miRNAs remain largely unexplored.

**Objective:** This study aims to identify novel microRNAs that regulate monocyte activation and assess their significance in sepsis pathophysiology.

**Methods:** Human monocytes were stimulated with LPS and whole transcriptomic (mRNA and miRNA) profiling was performed by Next Generation Sequencing. In silico analysis was applied to identify potential target genes. The validation of the target genes was assessed using luciferase reporter assay. The functional study of miRNA candidates was performed by loss- and gain-of-function experiments using specific miRNA inhibitors and synthetic miRNA mimics.

**Key results:** Our results revealed a total of 4 highly significant differential microRNA expressions, of which miR-3688-5p was downregulated. Preliminary data suggest that miR-3688-5p negatively regulates TRAF6, E3 Ubiquitine Ligase critically involved in NF-κB signaling.

**Conclusion:** miR-3688 plays a key role in regulating monocyte activation. Its relevance in pediatric sepsis is currently under investigation

# PO28

## Preclinical validation of FLASH radiotherapy to accelerate its clinical translation

**Coralie Destrebecq**

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Radiotherapy is a cornerstone of cancer treatment, using ionizing radiation to eradicate tumors. However, its efficacy is limited by normal tissue toxicity, restricting dose escalation. Ultra-high dose rate (UHDR) irradiation has emerged as a promising strategy due to the FLASH effect, which reduces normal tissue damage while preserving antitumor efficacy compared with conventional radiotherapy (CONV). However, most evidence relies on non-clinical accelerators, limiting clinical translation. This study evaluated whether the FLASH effect can be achieved using a clinical device.

C57BL/6J mice bearing subcutaneous B16-F10 melanoma tumors received a single 30 Gy dose delivered either at CONV (0.2 Gy/s) or UHDR (210 Gy/s) using a Mobetron clinical electron accelerator. Tumor response was monitored by growth kinetics and 18F-FDG PET-CT imaging. Normal tissue toxicity was assessed over 10 weeks using skin scoring (depigmentation, alopecia and ulceration) and leg contracture measurements.

Tumor control was comparable between groups, with similar growth delay and metabolic activity. In contrast, UHDR significantly reduced the severity of skin toxicity over time compared with CONV, with a significant delay in toxicity onset and a trend toward faster recovery. Fewer mice also developed severe leg contracture under UHDR.

In conclusion, the FLASH effect was reproduced with a clinical accelerator.

# PO29

## Human breast milk is enriched for γδ T cells and affects their phenotype

**Moosa Rezwani**

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ULB Faculty of Pharmacy

Breast feeding offers significant immunological benefits to both mother and child. Breast milk contains a range of immunoactive components, including a relatively high proportion of γδ T cells. γδ T cells are unconventional T cells that express a γ and a δ chain in their TCR and are not dependent on MHC for antigen recognition. The contribution of γδ T cells to lactation immunity is not known. Here, we extensively studied the γδ T cell populations in a cohort consisting of paired blood and milk samples at different lactation time points, including early milk (colostrum) and mature milk (a few weeks postpartum). We phenotyped γδ T cells using flow cytometry and performed single-cell sequencing (RNA-seq, TCR-seq, and CITE-seq). Compared to their blood counterparts, milk γδ T cells showed elevated levels of tissue-residency markers, showed differences at the TCR level (e.g. higher Vδ1 usage), and exhibited a transitional differentiation status that was associated with multiple T cell activation pathways. Thus, γδ T cells in breast milk are distinct from their peripheral blood counterparts, likely contributing to local immunosurveillance during lactation.

# PO30

## Characterisation of immunoglobulin G glycosylation as a potential mortality risk biomarker in patients with sepsis admitted to intensive care unit

**Victoria Paredes-Orejudo**

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Septic shock is caused by a bacterial or viral general infection characterized by an excessive inflammatory response. This state is associated with an exacerbated production of pro-inflammatory mediators (i.e. interleukin-6). The World Health Organization reports that in 2017, 11 million of death worldwide were caused by sepsis. The mortality of this affection goes from 22% to 42%. This disease affects mainly infection sensible populations such as older patients as well as younger infants. Immunoglobulins G (IgG), by their action on the FcγR, play an important role in the inflammation by enabling higher pro-inflammatory mediator production. On the IgG constant chain, there is a highly conservated N-glycosylation site. The glycans associated with this position modifies the binding properties to FcγR and, therefore, inflammatory cellular answer. It has been demonstrated in other diseases that the glycans are associated with severity. IgG subclasses show different effector functions and distributions which is why we decided to work with IgG glycopeptides rather than just glycans.

We aim to compare the glycans, along with their associated IgG subclasses, between a septic group and a healthy group. The IgG glycopeptides are analysed using liquid chromatography coupled to high-resolution mass spectrometry. This enables IgG subtypes and N-glycosylation characterisation.

# PO31

## Contemporary issues in respite services for informal caregivers

**Alice Robert**

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Informal caregivers play a crucial role in healthcare systems by supporting individuals with chronic illnesses or disabilities. However, caregiving entails a significant physical and emotional burden, placing caregivers at high risk of burnout. In response, a range of community-based and institutional respite services have been developed in recent years. These services provide temporary relief aimed at preserving caregivers' well-being and ensuring continuity of care. Although widely recognized as essential for alleviating caregiver burden, they remain underutilized.

This study constitutes a preliminary exploration of the scientific literature to better understand contemporary issues related to respite services. It pursues two main objectives: (a) to identify the determinants of the use or non-use of respite services, and (b) to examine their effectiveness. Initial analyses reveal a substantial but fragmented body of literature, often organized by diagnosis or the age group of the care recipient, with limited integrative perspectives.

In this context, an umbrella review appears particularly relevant for synthesizing existing knowledge and proposing a renewed conceptual framework for respite. This approach moves beyond effectiveness to examine underlying purposes, mechanisms, and the diversity of its forms. This poster will present this exploratory approach, initial findings, and perspectives for a more integrative understanding of respite.

# PO32

## Evaluation of the Pharmaceutical Functionality of Local Excipients for the Production of Granule Formulations

**Guilao Mory**

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**Introduction:** Local excipients offer a sustainable and low-cost alternative. This study evaluate the potential of local excipients: starches (cassava, corn, rice bran); fibers; acacia gum and cellulose compared to conventional pharmaceutical excipients (lactose, PVP) used in the formulation of granules (1,2).

**Materials and Methods:** Granules containing 10 % paracetamol (Alrich Sigma, USA) were produced by wet granulation, replacing the usual lactose (diluent), (pharmatose 100 mesh, Germany) or PVP (binder) (Thermo Fisher, USA) with various local excipients (AMC, AMS, ASR, FSR, GA, cellulose). These formulations were then compared to conventional standards (containing 5 % binder and 85 % diluent) based on characterization such as moisture content, particle size, friability, and disintegration time (3).

**Results:** The average granulation yield was 75% (granules A) and 78% (granules B). The median particle size ranged from 800 to 900 µm. Granules with local excipients (B) retain more water (≥ 4%) than those with lactose (A) (≤ 2%). The PVP (B) produces less friable granules (0.60 ± 0.03%) ($P < 0.0001$) and more solid granules than local excipients (A) (0.66 ± 0.04%). Granules B dissolve faster (4 mn) than granules A (7 mn).

**Conclusion:** Local excipients are effective adjuvants for drug production, given their binding and diluting properties (which meet standards) and their lower production cost compared to conventional excipients.

# PO33

## Current State of Anesthesia Practice in Kasaï Oriental: Clinical Stakes and Optimization Strategies

**Annie Tshibangu**

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Anesthetic safety remains a critical challenge in resource-limited countries, where surgical mortality rates remain high. In the Kasaï Oriental region of the Democratic Republic of the Congo (DRC), there is a significant lack of systematic data regarding actual clinical practices. This multicenter descriptive study aims to bridge this gap by evaluating local practices against WHO-WFSA international standards. Data collection employed a standardized grid to assess key variables, including human resources, equipment availability, essential medications, and post-intervention monitoring.

The study provides an analysis of the density of trained practitioners and the adequacy of technical platforms for managing vital functions. Preliminary results identify major systemic challenges and provide a concrete basis for clinical advocacy. To optimize patient safety, the study suggests a dual approach: improving minimum equipment standards and launching a local theoretical training program supported by a simulation laboratory. These findings serve as a roadmap for enhancing anesthesia care and reducing perioperative risks in the region.

# PO34

## Maternal IgGs: Active players in shaping neonatal cDC1-dependent adaptive immunity?

**Essozinam Woenande**

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In early life, the immune system must balance tolerance to maternal and environmental antigens with the need for rapid protection against pathogens. This delicate equilibrium contributes to the higher susceptibility to infections and poor vaccine responses observed in newborns. In line with this, we previously identified unique cytokines profiles of neonatal type 1 conventional dendritic cells (cDC1) that contribute to this tolerogenic environment. Interestingly, recent findings show that neonatal cDC1 express higher levels of Fcγ receptors (FcγRs) compared to adults, suggesting enhanced responsiveness to immunoglobulins. As IgG exclusively come from the mother in early life, we investigated whether maternal IgG modulates neonatal adaptive immunity through the formation of immune complexes (ICs) that target cDC1.

Using *in vitro* and *in vivo* approaches, we studied IC-dependent cDC1 functions. Surprisingly, when primed with ICs, neonatal cDC1 outperform adult cDC1 in both phagocytosis and (cross-) presentation to T cells. This enhanced functionality is FcγR-dependent, as shown using *Fcer1g*$^{-/-}$ cDC1 and FcγR blockade. Moreover, inflammation modulates this function, since the addition of TLR3 agonist shifts neonatal CD4$^{+}$ T-cell responses from Tregs to Th1. In conclusion, neonatal cDC1 are fully functional when primed with appropriate antigen forms. This observation could redesign early-life vaccination strategies.

# PO35

## Engaging Displaced Populations in Health Interventions in Fragile Settings: Developing a Realist Programme Theory

**Houssynatou Sy**

Supervised by Bruno Marchal & Dimitri Renmans
Institute of Tropical Medicine Antwerp & ULB School of Public Health

Around 1.8 billion people live in fragile settings facing extreme health burdens. While stakeholder engagement is advocated for health interventions, limited evidence exists on conditions enabling meaningful engagement of affected populations—particularly internally displaced persons (IDPs). This PhD uses realist evaluation to examine how, why, under what conditions, and with what effects vulnerable populations are involved in health interventions. The research employs iterative theory-building integrating: a Personal Hypothesis from 20 years professional experience; thematic analysis of IDP data from Mali (35 interviews, 3 focus groups, 1 workshop); and rapid framework synthesis. These are contributing iteratively into an Initial Programme Theory tested through case studies examining One Health interventions using participatory approaches with IDPs in Mali (prospective) and DRC (retrospective). Preliminary findings reveal five interconnected context-mechanism-outcome configurations: When IDPs lack structural power, external legitimating authority amplifies community agency generating meaningful influence. When survival pressures dominate, economic enablement triggers participation capacity—reframing support as prerequisite not incentive. When knowledge hierarchies exist, integrating technical, traditional, and experiential systems generates appropriate solutions. When intervention actors have abandonment histories, demonstrated continuity builds trust enabling sustained engagement. When time demands are excessive, ensuring value justifies burden contributes to ethical engagement. Refined programme theory will inform practice.

# PO36

## Governance mechanisms and access to healthcare for migrant domestic workers in Lebanon: a scoping review

**Maroun Mikhael**

Supervised by Sandra Tricas-Sauras
Social Approaches to Health (CR5), ULB School of Public Health

Migrant domestic workers (MDWs) in Lebanon face significant barriers to accessing healthcare, shaped by governance arrangements regulating labor migration, residency, and social protection under the Kafala system. While existing research and grey literature document health vulnerabilities among MDWs, evidence remains fragmented and has not been systematically analyzed through a governance-informed perspective. This study asks: *How do governance mechanisms shape access to healthcare among MDWs in Lebanon?*

This scoping review is conducted following PRISMA-ScR guidelines, drawing on peer-reviewed and grey literature identified through searches in international databases and targeted organizational sources. The analysis is guided by a framework combining governance approaches and the Social Determinants of Health, examining both direct pathways (e.g., legal dependency, employer control, administrative barriers) and indirect pathways mediated by living and working conditions and health system organization.

Initial screening suggests that healthcare access may be shaped by interconnected structural mechanisms, including legal exclusion from labor protections, employer gatekeeping, and fragmented reliance on non-state service provision. These observations highlight the potential importance of governance-informed approaches to address structural health inequities affecting MDWs. The review contributes to a broader mixed-methods PhD project and aims to inform policy and practice towards more equitable health systems in Lebanon.

# PO37

## Can primary care actors use participatory methods to support the collective empowerment of individuals with type 2 diabetes? Participatory research in French speaking Belgium

**Deborah Lauwers**

Supervised by Joelle Nortier
Primary Care Research Unit (URSP), ULB Faculty of Medicine

Type 2 diabetes (T2D) is a global epidemic, primarily linked to changes in lifestyle. The Social Determinants of Health (SDH) play a crucial role in the evolution of the disease and are responsible for significant health inequalities related to T2D. We focus our attention on educational methods available to primary care providers that are likely to support the collective empowerment of people with type 2 diabetes. To this end, we will conduct a participatory research project in several phases. First, we will carry out a systematic scoping review of three concepts (community health, popular health education, and critical health literacy) and analyse their applicability to the field of primary care. We will then conduct action research within a community health centre to evaluate, using a mixed-methods approach, the impact of such initiatives on the individual and collective empowerment of T2D people. All these steps will be developed in collaboration with a steering committee composed of professionals and T2D people. The objectives of the thesis are: 1 to develop tools for community-based interventions that address the SDH of T2D, 2 to addresses current priorities related to reducing social health inequalities, strengthening primary health care, and tackling the issue of chronic diseases.

# PO38

## Spatially resolved tumor subclones in HER2-positive breast cancer

**Lucie Cervenkova**

Supervised by Christos Sotiriou
Breast Cancer Translational Research Laboratory, ULB Faculty of Medicine

HER2-positive breast cancer (HER2+ BC) exhibits significant intra-tumoral and microenvironmental heterogeneity that contributes to treatment resistance. Using spatial transcriptomics on frozen treatment-naive HER2+ BC surgical samples (n = 25), we developed a pipeline to define spatial tumor subclones with diverse copy number profiles.

We identified total of 71 spatial tumor subclones in our cohort. We show notable multi-clonality of HER2+ BC (median = 3; 5 samples were monoclonal). Over-representation analysis indicated that multi-clonal samples harbor subclones with diverse gene expression profiles spanning immune, stromal, and luminal features. Subclones with similar phenotypes shared recent ancestry, while distinct phenotypes arose on separate evolutionary branches. Additionally, we observe statistically significant differences in ERBB2 expression between subclones within the same sample in most of our cohort. Intrinsic ERBB2 level discrepancy is challenging in the context of targeted anti-HER2 treatments, as the presence of HER2-low tumor subclones may hinder treatment efficacy. Enrichment tests on drug perturbations gene sets reveal that subclones within the same sample showed variable treatment responses to chemotherapy and anti-HER2 treatments. Lastly, we identified DCIS-specific subclones surrounded by TILs-rich tumor microenvironment, that never progress to invasive disease. In contrast, DCIS/IDC transitioning subclones showed a shift toward a stroma-rich immunosuppressive microenvironment.

# PO39

## Exploring the Role of Chemerin in Lung Fibrosis

**Ani Garabet**

Supervised by Benjamin Bondue & Alessandra Cardozo
Inflammation and Cell Death Signaling group, Signal Transduction and Metabolism Laboratory, ULB Faculty of Medicine

**Introduction:** Idiopathic pulmonary fibrosis (IPF) is a fatal disease for which new and effective anti- fibrotic treatments are urgently needed. Chemerin is a chemoattractant agent expressed by several cell types including fibroblasts and myofibroblasts in fibrotic lesions. Its main receptor, CMKLR1, is expressed by immune cells and fibroblasts.

**Aim:** Our study aims to evaluate the role of the chemerin system in lung fibrosis and IPF.

**Methods:** Chemerin levels were quantified in plasma samples and bronchoalveolar lavage (BAL) from IPF patients and controls. Wild-type (WT) and chemerin knock-out (ChemKO) mice were subjected to the bleomycin model. Fibrosis was assessed by AshcroW modified scale, measurement of lung hydroxyproline and fibroblast activation protein (FAP) in BAL.

**Results:** Chemerin levels were significantly higher in plasma and BAL IPF samples compared to controls, with consistent results observed in an independent cohort. Bleomycin-treated ChemKO mice showed significantly reduced fibrosis compared to WT mice, as assessed by AshcroW modified scale and hydroxyproline. Significant lower fibrogenesis was observed in ChemKO mice, as evaluated by BAL FAP levels.

**Conclusions:** Our findings support a profibrotic role for chemerin in lung fibrosis and highlight its potential as a biomarker and therapeutic target in IPF.

# PO40

## Investigating the role of microglia during brain regeneration in zebrafish

**Alexandre Pellizzari**

Supervised by Valérie Wittamer
Wittamer Laboratory, IRIBHM Jacques E. Dumont, ULB Faculty of Medicine

Microglia are the resident macrophages of the central nervous system (CNS) and are the main immune cells populating the CNS. They participate in various functions in brain development, homeostasis and inflammation. While in mammals, neuroinflammation following injury has been shown to have more a deleterious effect, in zebrafish, neuroinflammation was identified as an essential component to complete brain regeneration, characterized by the control of the acute inflammation and its subsequent resolution. Moreover, a prolonged/chronic inflammation has been linked to neurodegenerative diseases, like Alzheimer's disease or Parkinson's disease. Understanding how zebrafish can control and resolved their neuroinflammation, might open new doors to therapeutic interventions in humans. So, my project aims to investigate the role of microglia in the regenerative capacities of the brain following an injury. Our results show that upon brain injury, microglia quickly become activated and drive the immune response by showing high transcriptomic changes, with microglia rapidly coming back to their steady-state by 3days post-lesion (dpl). Furthermore, microglia undergo a metabolic switch towards oxidative phosphorylation (OXPHOS), which is in sharp contrast with mammals, where microglia tend to rely on glycolysis after injury.

# PO41

## Regulation of serotonin release in colon mediated by olfactory receptors: investigating the molecular mechanisms involved in homeostatic and pathological conditions

**Nathalie Tubez**

Supervised by Marie-Isabelle Garcia
IRIBHM, ULB Faculty of Medicine

The gastrointestinal epithelium contributes to endocrine physiology by constituting a chemosensory system for external toxic agents, diet-derived nutrients and microbiota-derived metabolites. This sensory function is mainly exerted by enteroendocrine cells producing specific hormones along the whole digestive tract. The most abundant subtype of these cells, the enterochromaffin cell (EC), is the main provider of serotonin (5-HT) in the body. This hormone has systemic metabolic roles and performs local regulatory digestive functions. Short chain fatty acids (SCFA) generated by microbial fermentation are part of the chemical signals that stimulate 5-HT production and its release by EC cells. Four GPCRs recognize SCFA as ligands: Ffar2/Gpr43, Ffar3/Gpr41 and the two olfactory receptors Olfr78 and Olfr558. Intriguingly, our studies have revealed that these SCFA receptors are co-expressed in EC cells in the colon and that Olfr78 regulates EC differentiation as well as the expression of Olfr558 in these cells. To further understand the mechanisms by which SCFA receptors coordinately regulate 5-HT release in colon, we will investigate the phenotype of Olfr558-deficient mice in homeostasis. Moreover, since deregulated EC function is reported in inflammatory bowel diseases, we will address the role of Olfr78 and Olfr558 in EC cells in an experimental model of DSS-induced colitis.

# PO42

## Preventing radiotherapy-induced osteoradionecrosis using extracellular vesicles from bone marrow mesenchymal stromal cells

**Marie-Eugénie Meester**

Supervised by Penninckx Sébastien & co-supervised by Stamatopoulos Basile
Radiophysics Laboratory and Translational Hematology and Oncology Research Laboratory, Jules Bordet Institut, ULB Faculty of Medicine

Radiotherapy (RT) is widely used to treat head and neck cancers (HNC) but can lead to osteoradionecrosis (ORN), a severe complication linked to impaired tissue regeneration. Bone marrow mesenchymal stromal cells (BM-MSCs) have regenerative and anti-inflammatory properties, but their clinical use is limited, prompting interest in extracellular vesicles (EVs) as a cell-free alternative. In this study, BM-MSC-derived EVs were isolated by ultracentrifugation and characterized according to MISEV2023 guidelines. BM-MSCs were exposed to increasing doses of X-rays with or without EV pretreatment, and oxidative stress, cell cycle, senescence, DNA damage, and osteogenic differentiation were assessed. Irradiation induced significant cellular stress, including increased lipid peroxidation (n=6, $p<0.001$), cell cycle arrest in S phase (n=6, $p<0.001$), and senescence (n=6, $p=0.005$). EV pretreatment reduced oxidative stress (n=7, −35%, $p=0.004$), partially limited senescence (n=6, −14%, $p=0.088$), and restored cell cycle progression (n=6, $p=0.039$), demonstrating a cytoprotective effect. It also improved osteogenic differentiation and mineralization after irradiation. Additional analyses are ongoing to assess DNA damage. Importantly, EVs did not increase proliferation (n=3) or clonogenic survival (n=3) of CAL27 cancer cells. Overall, BM-MSC- EVs mitigate radiation-induced damage, preserve regenerative capacity, and represent a promising strategy to prevent ORN in HNC patients.

# PO43

## Impact of development on the cortical processing of postural sway

**Antonella Iannotta**

Supervised by Mathieu Bourguignon & co-supervised by Nicolas Deconinck
Laboratoire d'Anatomie Fonctionnelle - ULB Faculty of Human Movement Sciences

Postural stability and balance control are developmental processes; consequently, children exhibit lower stability than adults. However, little is known about the cortical involvement in this process during development. This study precisely investigates cortical involvement in this process using corticokinematic coherence (CKC) between EEG activity and center-of-pressure (CoP) fluctuations.

We recorded CoP and EEG data from 25 children (mean age 8.24) and 29 adults (mean age 25.75) during four randomized standing conditions (eyes open/closed, hard surface/foam). Instability was quantified via CoP standard deviation (SD(rCoP)) and mean velocity (mean(|vCoP|)). CKC was computed between EEG electrodes and three CoP features (|rCoP|, vCoP, and |vCoP|).

Two-way ANOVAs showed that instability parameters were significantly higher in children and increased with condition complexity ($p < 0.001$). Crucially, CKC analysis revealed significant effects for age ($p < 0.01$) and condition ($p < 0.001$), with a significant interaction ($p = < 0.02$). CKC was lower in children and increased with task difficulty, though this increase was more pronounced in adults.

In conclusion, while children exhibit greater sway, their sensorimotor cortical areas represent these fluctuations less faithfully. CKC appears to be an objective marker of immature cortical implication in balance maintenance in children.

# PO44

## Immersive Virtual Nature to Promote Mental Health in Youth: A Scoping Review

**Mostafa El Madani**

Supervised by Malgorzata Klass & Jennifer Foucart
Research Unit in Cardio-Respiratory Physiology, Exercise and Nutrition, Health and Human Motor Psychology Research Unit, ULB Faculty of Human Movement Sciences

This scoping review aimed to map how immersive virtual nature (IVN) has been used to promote mental health and nature connectedness in youth, and to examine how characteristics of virtual environments influence outcomes.

Following PRISMA-ScR guidelines, six databases were searched. Interventional studies were included if participants had a mean age <24 years, involved IVN interventions, and assessed outcomes related to mental health and/or nature connectedness.

Fifty-six studies were included. Most studies involved university students, while a minority of studies targeted adolescents. Furthermore, 10 studies targeted symptomatic populations. Only 10 studies implemented multi- session interventions, while the majority used a single-session design. Outcomes primarily focused on mood, stress and anxiety, with most studies reporting short-term improvements. Overall, the evidence suggests that IVN experiences have short-term benefits for mental health in young populations. Studies comparing different IVN characteristics highlight the importance of environmental features such as soundscapes, visual properties, and interactivity in modulating outcomes.

Therefore, IVN appears to be a promising, accessible tool to support youth mental health and nature connectedness. However, the evidence base is dominated by short-term laboratory studies, with limited data on adolescents, clinical populations, and long-term effects. Future research should focus on standardized protocols, diverse populations, and longitudinal outcomes.

# PO45

## Age as a social construct: A protocol for a mixed-methods study on ageism in healthcare

**Eva Vangilbergen**

Supervised by Bram Vanhoutte & Liesbeth De Donder
Research Centre 2: Epidemiology, Biostatistics and Clinical Research,
ULB School of Public Health

This project investigates the neglected role of age as a central axis of inequality, offering insights into how age contributes to shaping healthcare. Ageism is a key element, addressing global concerns about the alarming pervasiveness of age-based stereotypes, prejudices and discrimination in our greying society. This project adds empirical robustness and a unique dimension to the study of ageism, focusing on (1) experienced ageism in the Belgian population, (2) age in primary care diagnosis, and (3) the role of age in oncology treatment. Examining both younger and older age, it demonstrates how social constructions of age shape diagnosis and treatment across the lifespan. Three interconnected work packages are proposed. WP1 maps ageism in Belgium using nationally representative data from the Social Study, analyzing how age intersects with gender, ethnicity and socio-economic status to shape vulnerability to discrimination through a MAIHDA approach. WP2 explores age norms among healthcare professionals using a mixed methods design, combining latent profile analysis and interviews with general practitioners. WP3 investigates differences between biological and chronological age in oncology using a clinical vignette study. Findings provide new understandings of unequal healthcare practices, highlighting age as an underexplored social construct that implicitly can drive discrimination at all ages.

# PO46

## Mechanisms Underlying Peripheral Macrophage Engraftment in the Healthy Embryonic Brain

**Isabela Kiesewetter Zandavalli**

Supervised by Valerie Wittamer
Wittamer Laboratory, IRIBHM Jacques E. Dumont, ULB Faculty of Medicine

Recently, microglia have gained significant attention as a major therapeutic target for a wide range of brain diseases such as Alzheimer's and Parkinson's diseases. Because of that, and because of the limitations of studying these cells in humans, the search for models that can recapitulate cellular and molecular mechanisms seen in human microglia cells is of extreme importance. The zebrafish model, due to its conserved mechanisms, transparency, and facilitated genetic manipulation, allows us to study microglia cells in vivo. Not only that, but it allows us to explore the ontogeny of these cells, and the signals and pathways associated with them. In zebrafish, embryonic microglia arise from primitive macrophages (pMF) during embryogenesis, while adult microglia originate from hematopoietic stem cells (HSCs) during the juvenile stage. This differs from the situation in mice, where pMF-derived microglia persist throughout life. Because HSCs are being used in clinical settings as a source for microglia replacement therapies, leveraging the zebrafish model, where HSCs are capable of generating functional microglia, offers a unique opportunity to study both the recruitment and establishment of HSC-derived microglia in the brain parenchyma, and the replacement of dysfunctional pMF-derived microglia by HSC-derived counterparts in disease contexts. This can now be achieved in a temporally controlled manner through transient inhibition of pu.1 during embryogenesis, a transcription factor essential for pMF development. This approach results in 1) the absence of embryonic microglia and 2) the emergence of a new population of HSC-derived microglia at the larval stage. Here, I will present our data uncovering the molecular mechanisms driving these processes.

# PO47

## Transfusion biosafety and malaria screening practices in conflict-affected settings: Evidence from health facilities in eastern Democratic Republic of Congo

**Lambert Morisho Mulakwa**

Regional Doctoral School of Central Africa in Tropical Infectious Diseases, Université des Sciences et Techniques de Masuku (USTM), Franceville, Gabon & Education Programme at ULB School of Public Health

**Background:** Blood transfusion is lifesaving, but safety remains challenging in conflict-affected, malaria-endemic settings. This study assessed transfusion biosafety and malaria screening practices in eastern Democratic Republic of Congo.

**Methods:** A cross-sectional study was conducted in health facilities across South Kivu and Maniema. Data were collected from healthcare workers using questionnaires, observations, and facility records. Biosafety practices, blood sources, and malaria screening were evaluated.

**Results:** A total of 173 healthcare workers were involved in 73 health facilities. Family replacement donation was the main source of blood, particularly in rural areas. Although malaria tests were available in 60-70% of facilities, they were rarely incorporated into routine pre-transfusion protocols. Peripheral and rural facilities exhibited lower biosafety standards, whereas the presence of a blood bank was associated with better practices.

**Conclusion:** Major gaps persist in transfusion biosafety and malaria screening. Strengthening blood banks, staff training, and routine malaria screening is urgently needed

# PO48

## Physiotherapists' and Patients' Perceptions of Integrating Telerehabilitation and artificial intelligence into Clinical Practice for Patients with Anterior Knee Pain

**Miguel Farraj**

Supervised by Joachim Van Cant
Research Unit in Rehabilitation Sciences, ULB Faculty of Human Movement Science

**Objective:** This study aims to explore the perspectives of physiotherapists (PTs) and patients on the integration of telerehabilitation and artificial intelligence (AI) technologies in the management of anterior knee pain (AKP).

**Methods:** A qualitative study was conducted through semi-structured interviews with 15 physiotherapists and 16 AKP patients with varying rehabilitation experiences. The PROGRESS-Plus framework was used to guide participant inclusion and ensure representation across key social determinants of health to minimize potential inequalities. Interviews were analyzed using thematic analysis with the support of MAXQDA

**Results:** Both PTs and patients valued AI and telerehabilitation as complementary to clinical practice, emphasizing the need to preserve human interaction. PTs wanted control over treatment decisions, while patients valued their PT's involvement. Trust in AI was limited; PTs were hesitant to rely on chatbots for clinical decisions but recognized AI's potential in collecting and summarizing patient data. Patients preferred personalized video instructions with audio feedback and trusted educational resources. Both groups saw these technologies as beneficial for long-term follow-up, enabling continuous monitoring and treatment adjustments. However, they opposed AI-generated voice or image representations due to privacy concerns and stressed the importance of data protection. PTs also preferred a user-friendly system with easy access to exercises rather than rigid classifications based on pathology, patient profiles, or progress, as they found treatment approaches too varied for strict categorization.

**Conclusion:** AI and telerehabilitation offer promising opportunities in AKP management but must balance **technological advancements with human interaction**. Future AI-driven tools should support, rather than replace, clinical decision-making while ensuring effective patient engagement. Addressing these concerns is essential to optimizing rehabilitation outcomes and fostering acceptance among HCPs and patients

# PO49

## Insulin signaling and glucose metabolism in fetal lung organoids: mechanistic insights into lung development

**Alessandra Boggian**

Supervised by Mírian Romitti
Thyroid and Lung Organoid Research Laboratory, IRIBHM J.E. Dumont, U
LB Faculty of Medicine

Respiratory diseases are a major cause of global mortality, emphasising the need for effective models to study lung development. Lung organoids (LOs), derived from human embryonic stem cells, offer 3D systems that recapitulate key aspects of lung morphogenesis. This project investigates how insulin directs NKX2.1+ progenitors towards lung fate rather than thyroid organoids. LOs are generated via transient NKX2.1 overexpression and treated with insulin for 2, 5, and 8 weeks, corresponding to key stages of lung development. Transcriptional and histological analyses assess maturation. Single-cell RNA sequencing at days 23 and 45, and ATAC-sequencing at day 23, evaluate changes in cell composition and chromatin accessibility. These analyses show that insulin enhances lung-specific cell populations and gene expression. Glucose metabolism emerges as a key mechanism amplifying insulin's effects. Blocking glucose metabolism using 2-Deoxy-D-glucose and inhibiting GLUT-1, a glucose transporter expressed in lung cells, both impaired lung cell generation, confirming its role in insulin-driven differentiation. Inhibition of the insulin receptor and downstream pathways produces similar effects. These findings suggest that insulin promotes LO development primarily through glucose metabolism, influencing cell composition and maturation. This validated model offers a robust platform to study human lung development, paediatric lung diseases, and regenerative strategies.

# POSTER PRESENTATIONS

# TECHNOLOGY PLATFORMS & OTHERS

## PO50

**Light Microscopy Facility (LIMIF)**

**Martens Michiel**
Faculty of Medecine

## PO51

**Micro-Milli Platform**

**Adam Chafaï**
Ecole Polytechnique de Bruxelles

## PO52

**MedTechLab Platform**

**Ramzi Ben Hassen**
Ecole Polytechnique de Bruxelles

## PO53

**Tissue Imaging Platform for the Bordet Cancer Research Laboratories**

**Anaïs Boisson**
Jules Bordet Institute, Faculty of Medicine

## PO54

**Pôle Technologies**

**Raphaël Leplae**
ULB Informatics Department

## PO55

**Pôle Santé**

**Thomas Gillet**

## PO56

**React - Réseau Académique pour les Transformations Ecologiques et Sociales**

**Adélaïde Ragot**

# PRATICAL INFORMATION

## Where ?

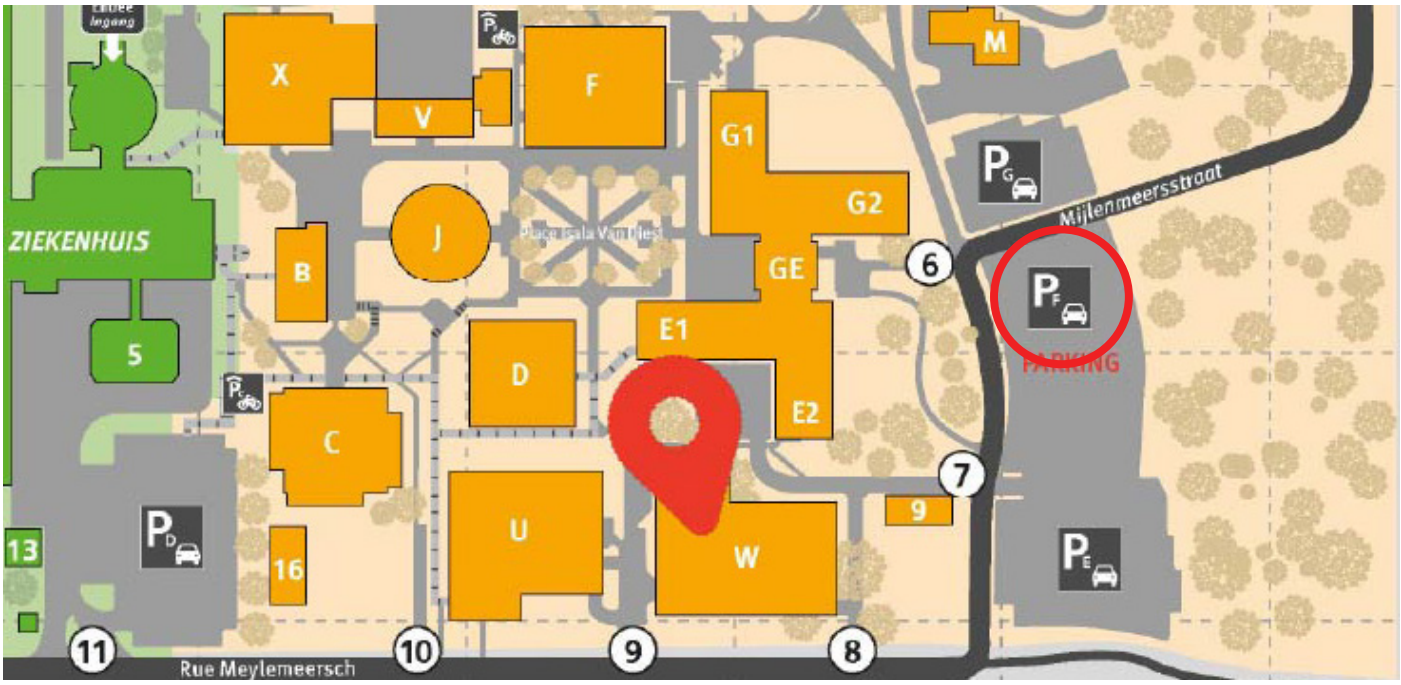
Campus Erasme
Route de Lennik, 808 - 1070 Brussels
Campus plan

## Building W

Auditorium Madeleine De Genst
Auditorium Louise Popelin
Auditorium Elisabeth Wollast

## Map

The closest parking to Building W is **circled in red**

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# SAVE THE DATE

## Join us for our next Pôle Santé PhD Day

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