

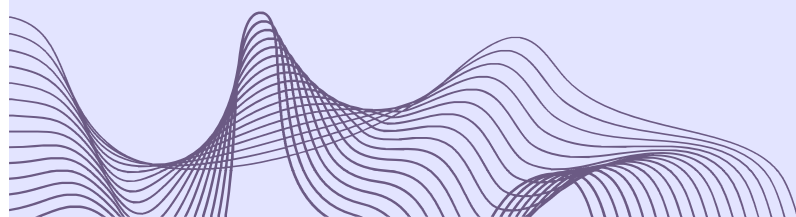


# MOSA CONFERENCE

**Program book**

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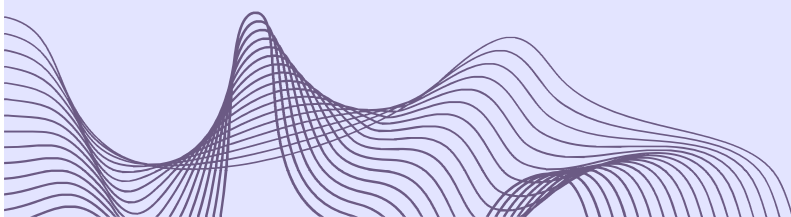
# 1. Welcome to MOSA Conference 2024

We are delighted to welcome you to the 28th edition of the MOSA Conference, a remarkable event where (bio)medical innovation, student-driven excellence, and global opportunities converge. Hosted by Maastricht University (UM) in partnership with Hasselt University (UH) and MUMC+, this international conference stands as a beacon of innovation, knowledge sharing, and boundless potential.

MOSA is where student researchers meet discerning judges, healthcare leaders, and industry visionaries. We serve as a bridge between academia and industry, facilitating the exchange of cutting-edge ideas and research. Each year, we delve into a (bio)medical theme through captivating lectures and workshops, fostering fresh perspectives and connections.

The 2024 edition promises a global perspective as we continue to attract renowned speakers. We invite you to join us and become part of this thriving community. This year's theme, "Big Data & Artificial Intelligence (AI) in (Bio)medicine," highlights the integration of vast datasets and advanced AI analytics, enabling personalized medicine, improving clinical outcomes, and fostering innovation in biomedicine.

Welcome to MOSA Conference 2024 - Igniting the Future of (Bio)medical Research.



## 2. Short program

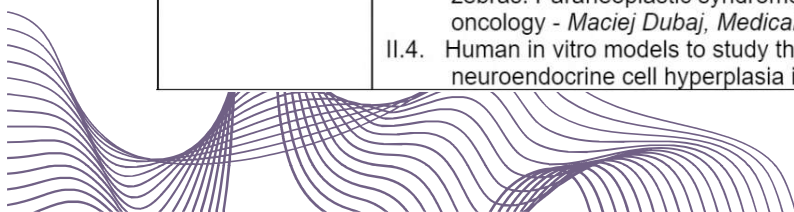
Tuesday, 25 June 2024	
Time	Program
08:00 – 09:00	Registration open
09:00 – 09:10	<b>Opening by Prof. Jan Theys</b>
09:10 – 09:20	<b>Intro from Prof. Annemie Schols (FHML Dean)</b>
09:20 – 09:30	<b>Intro from Prof. Dr. Veerle Somers (UH Biomed Dean)</b>
09:30 – 10:30	<b>Guest lecture by Dr. Pieter Kubben</b>
10:30	Coffee break
10:00 – 13:00	<b>CV check</b>
10:00 – 13:00	<b>Job market</b>
10:45 – 12:15	<b>Oral presentations I - Embracing The Wide Range of Biomedical Research: Talks About Cardiovascular Disease, Enteric Nervous System, and Tissue Engineering</b> <b>Oral presentations II - Advances in Pediatric Care, Anti-Immuno-Aging, Acne Treatment, and HBV</b>
10:45 – 12:15	<b>Poster walks</b>
12:00 – 13:00	Lunch
13:00 – 14:30	<b>Interactive workshop part 1 (MANDATORY for UM and UH students)</b>
14:30 – 15:00	Coffee break
15:00 – 16:00	<b>Guest lecture by Prof. Dr. Liesbet Peeters</b>
15:00 – 16:00	<b>Guest lecture by Prof. Dr. Rianne Fijten</b>
16:15 – 17:45	<b>Workshops in parallel</b>
18:00	<b>End of the first day</b>

Wednesday, 26 June 2024	
Time	Program
08:30 – 09:00	Registration open
09:00 – 10:00	<b>Interactive workshop part 2 (MANDATORY for UM and UH students)</b>
10:00 – 14:30	<b>CV check</b>
10:00 – 16:00	<b>Job Market</b>
10:00	Coffee break
10:15 – 12:30	<b>Oral presentations III - NeuroInsights: Advancements And Challenges In Neurological Health And Treatment.</b> <b>Oral presentations IV - Advancements in Genotoxicity, Cancer Research, and Machine-Assisted Innovations</b>
10:15 – 12:30	<b>Poster walks</b>
12:00 – 13:00	Lunch
13:10 – 14:10	<b>Guest lecture by Dr. Mehrdad Seirafi</b>
14:20 – 15:50	<b>Workshops in parallel</b>
15:50 – 16:00	Coffee break
16:00 – 17:00	<b>Guest lecture by Dr. William van Doorn and Dr. Paul van Dam</b>
17:10 – 18:10	<b>Panel discussion: “Ethical Implications of Big Data and AI in Biomedicine”</b>
18:20 – 19:20	<b>Awards and closing</b>
19:20 - 21:00	<b>Reception</b>



# 3. Complete program

Tuesday, 25 June 2024		
Time	Program	Location
08:00 – 09:00	Registration open	Onderwijsplein / UNS40 main entrance
09:00 – 09:10	<b>Opening by Prof. Jan Theys</b>	MSM conference Hall
09:10 – 09:20	<b>Intro from Prof. Annemie Schols (FHML Dean)</b>	MSM conference Hall
09:20 – 09:30	<b>Intro from Prof. Dr. Veerle Somers (UH Dean)</b>	MSM conference Hall
09:30 – 10:30	<b>Guest lecture by Dr. Pieter Kubben</b> Opening lecture on Big data and AI <i>Moderator: Jan Theys</i>	MSM conference Hall
10:30 - 10:45	Coffee break	Onderwijsplein / Drielandenpunt
10:00 – 13:00	<b>CV check</b>	Tongeren Hall
10:00 – 13:00	<b>Job market</b>	Onderwijsplein
10:45 – 12:15	<p><b>Oral presentations I - Embracing The Wide Range of Biomedical Research: Talks About Cardiovascular Disease, Enteric Nervous System, and Tissue Engineering</b> <i>Moderators: Elke Smeets (UHasselt) &amp; Niels Vanden Bosshe (Maastricht University)</i></p> <p>I.1. Endothelial Cell Volume in Arteriovenous Malformations: Everolimus and Growth Factor Effects- <i>Mohammadhossein Izadloo, Universidade Católica Portuguesa</i></p> <p>I.2. Serratus Anterior Plane Block: High vs. Low Dose for Post-Minimally Invasive Heart Valve Surgery Pain- <i>Laurien Veulemans, Hasselt University</i></p> <p>I.3. Fabrication of strong and tough hydrogel networks processable for tissue engineering - <i>Anneleen Jacobs, Hasselt University</i></p> <p>I.4. Sound-based assembly of a spatially organised neurovascular network - <i>Greta Cocchi, Maastricht University</i></p> <p>I.5. The impact of microbiota on gut function and behaviour in a mouse model for psychiatric disorders - <i>Kobe Neven, Hasselt University</i></p> <p>I.6. miR-146a-5p Regulation of Enteric Glial Cell Status in Gastrointestinal Health and Disease - <i>Jorunn Vranken, Hasselt University</i></p> <p><b>Oral presentations II - Advances in Pediatric Care, Anti-Immuno-Aging, Acne Treatment, and HBV</b> <i>Moderators: Iveta Dzivite (Maastricht University) &amp; Tia Ackermans (Maastricht University)</i></p> <p>II.1. Hyperleukocytosis in paediatric patients with acute lymphoblastic leukaemia - a single center experience- <i>Aleksandra Dembowska, Medical University of Lubin</i></p> <p>II.2. Animal milk oligosaccharides inhibit the biofilm of <i>Cutibacterium acnes</i> - a preliminary study - <i>Wiktoria Stańska, Medical University of Warsaw</i></p> <p>II.3. When you hear hoofbeats, think of horses, but also of zebras. Paraneoplastic syndromes in paediatric oncology - <i>Maciej Dubaj, Medical University of Lubin</i></p> <p>II.4. Human in vitro models to study the role of pulmonary neuroendocrine cell hyperplasia in the</p>	<p>Heerlen Hall</p> <p>Tongeren Hall</p>



	<p>pathophysiology of congenital diaphragmatic hernia - <i>Isabel Bougie, Erasmus University Medical center</i></p> <p>II.5. Exercise: a powerful tool to counteract immune ageing via IL-15-induced autophagy - <i>Mariken Lemmens, Hasselt University</i></p> <p>II.6. Hepatitis B virus core protein as an antiviral target for functional cure of chronic hepatitis B - <i>Emerance Ishimwe, Hasselt University</i></p>	
10:45 – 12:15	<b>Poster walks:</b> Group 1-6	
12:00 – 13:00	Lunch	Onderwijsplein / Drielandenpunt
13:00 – 13:10	<b>Interactive workshop - explanation (only for UM and UH students, MANDATORY)</b>	dsm-firmenich hall (Maastricht Hall)
13:10 - 14:30	<b>Interactive workshop - part 1 (only for UM and UH students, MANDATORY)</b>	Multiple halls
14:30 – 15:00	Coffee break	Onderwijsplein / Drielandenpunt
15:00 – 16:00	<b>Guest lecture by Prof. Dr. Liesbet Peeters</b> Real-world data <i>Moderator: Jan Theys</i>	dsm-firmenich hall (Maastricht Hall)
15:00 – 16:00	<b>Guest lecture by Prof. Dr. Rianne Fijten</b> Shared-decision making in cancer <i>Moderator: Niels Vanden Bossche</i>	Tongeren Hall
16:15 – 17:45	<b>Workshops in parallel</b>	Multiple halls
18:00	<b>End of the first day</b>	

<b>Wednesday, 26 June 2024</b>		
Time	Program	Location
08:30 – 09:00	Registration open	Onderwijsplein / UNS40 main entrance
09:00 – 10:00	<b>Interactive workshop part 2 (only for UM and UH students, MANDATORY)</b>	dsm-firmenich hall (Maastricht Hall)
10:00 – 14:30	<b>CV check</b>	<i>Tongeren Hall</i>
10:00 – 16:00	<b>Job Market</b>	<i>Onderwijsplein</i>
10:00 - 10:15	Coffee break	Onderwijsplein / Drielandenpunt
10:15 – 12:30	<p><b>Oral presentations III - NeuroInsights: Advancements And Challenges In Neurological Health And Treatment.</b> <i>Moderators: Charlotte Peetersem (UHasselt) &amp; Laurien Veulemans (UHasselt)</i></p> <p>III.1. The Real-World Effectiveness and Safety of Cyclophosphamide in Patients with Progressive Multiple Sclerosis - <i>Ian Meyssen, Hasselt University</i></p> <p>III.2. The good, the fat, the ugly: fatty acid elongation in control of lesion repair in multiple sclerosis - <i>Elke Smeets, Hasselt University</i></p> <p>III.3. The isotype-dependent impact of ApoE on miR-146A-mediated autoimmunity in multiple sclerosis - <i>Dylan Kidjemet, Hasselt University</i></p> <p>III.4. Temperature-Dependent Axonal Growth Inhibition via TRPV4 Activation - <i>Femke Cornelissen, Hasselt University</i></p>	<i>Heerlen Hall</i>



	<p>III.5. The Haunted Treatment Against Stroke: Harnessing the Power of Stem Cell Nanoghosts - <i>Sarah Willems, Hasselt University</i></p> <p>III.6. Turning back time: Can Targeting Cellular Senescence Enhance Recovery After Spinal Cord Injury? - <i>Yanne van Reusel, Hasselt University</i></p> <p><b>Oral presentations IV - Advancements in Genotoxicity, Cancer Research, and Machine-Assisted Innovations</b>  <i>Moderators: Hanne Coenen (UHasselt) &amp; Josephine-Elisabeth Pippi (Maastricht University)</i></p> <p>IV.1. bioGWAS: a Simple and Flexible Tool for GWAS Datasets Generation - <i>Anton Changalidi, Maastricht University</i></p> <p>IV.2. Machine Learning Approaches Using Complete Blood Count for Diagnosis Chronic Lymphocytic Leukemia - <i>Oğuzkan Ilmaz, Giresun University</i></p> <p>IV.3. MET activity prevents actin cap alignment: implications for cell migration and nuclear morphology - <i>Jasmijn Timmermans, Maastricht University</i></p> <p>IV.4. A survey of protective effect of melatonin against trifluoperazine-induced genotoxicity in peripheral blood lymphocytes via micronucleus assay- <i>Sahar Bezhad, Zabol University</i></p> <p>IV.5. Lost in Translation: Unravelling cancer's dependence on aberrant mRNA translation - <i>Ozgu Gumustekin, Maastricht University</i></p> <p>IV.6. Detection of Low Diastolic Ocular Perfusion Pressure Using Transfer Learning from Fundus Photographs - <i>Betin Bilkan Karaman, Eskışehir Osmangazi University Medical School</i></p> <p>IV.7. Cathepsins Beyond the Lysosome: Extracellular Cathepsin B as a Therapeutic Target for MASH-HCC - <i>Jorn Steeghs, Maastricht University</i></p>	Tongeren Hall
10:15 – 12:30	<b>Poster walks:</b> Group 7-11	
12:00 – 13:00	Lunch	Onderwijsplein / Drielandenpunt
13:10 – 14:10	<b>Guest lecture by Mehrdad Seirafi</b> Application of AI in neurological research <i>Moderator: Jan Theys</i>	dsm-firmenich hall (Maastricht Hall)
14:20 – 15:50	<b>Workshops in parallel</b>	Multiple Halls
15:50 – 16:00	Coffee break	Onderwijsplein / Drielandenpunt
16:00 – 17:00	<b>Guest lecture by Dr. William van Doorn and Dr. Paul van Dam</b> Machine learning for risk stratification in the emergency department <i>Moderator: Jan Theys</i>	dsm-firmenich hall (Maastricht Hall)
17:10 – 18:10	<b>Panel discussion: “Ethical Implications of Big Data and AI in Biomedicine”</b> <i>Moderator: Jan Theys</i>	dsm-firmenich hall (Maastricht Hall)
18:20 – 19:20	<b>Awards and closing</b>	dsm-firmenich hall (Maastricht Hall)
19:20 - 21:00	<b>Reception</b>	Faculty bar



# Workshops

Tuesday, 25 June 2024	
Workshop	Location
Science communication	Heerlen Hall
AlphaFold	Luik Hall
dsm-firmenich	Diepenbeek Hall
Drug discovery & AI	Keulen hall
Blender	dsm-firmenich hall (Maastricht Hall)
Clinical Data Harmonisation and Machine Modelling	Tongeren Hall

Wednesday, 26 June 2024	
Workshop	Location
Science communication	Heerlen Hall
dsm-firmenich	Diepenbeek Hall
Drug discovery & AI	Keulen hall
Blender	dsm-firmenich hall (Maastricht Hall)
Microscopy	Tongeren Hall

## Interactive workshop (UM & UH)

Location: Maastricht Hall						
Group	Name					
1	Elisa Simone	Jens Gielen	Asier Martin Carzorla	Marina Porras Macua	Edmée Snijders	Aina Tudela Gonzalez
2	Mariken Lemmens	Lien Van Otterdijk	Sophia Wanner	Andrea Pääro	Karmen Aslankurt	Manon van der Pas
3	Dylan Kidjemet	Femke Cornelissen	Cas CTMA Swinkels	Alexandra Bosch	Iveta Dzivite	Julie Mounir Labib
4	Janne Vandyck	Dario Geebelen	Matteo Cesario	Jolijn Driessen	Ulas Babaygit	Elini Papadopoulou
5	Yanne Van Reusel	Anton Brosens	Cobi Bergsma	Nick Welten	Valentine Deremiens	Camilla Ferrari
6	Anessa Pijalovic	Ruben Knevels	Veerle Horsting	Christos Konstantaros	Jorn Steeghs	Caitlin Peeters
7	Renée Rita Moonen	Anouar Dlatat	Niels Vanden Bossche	Luisa Wensky	Sarah Veenstra	Olivia Smyth
8	Merel Hufkens	Lisa Steegen	Sem Peijnenborgh	Jasmijn Timmermans	Zuzanna Lech	Anne Oude Egberink
9	Homayoon Yazdanshenas	Freddy Leenders	Panagiotis (Panos) Barlampas	Anouk Aaldering	Mart Smidt	
10	Yana Heyvaert	Yara Lambrechts	Mehmet Koyuncuoğlu	Lisi Wagener	Daan Arts	
11	Hanne Coenen	Thomas Raps	Bram Brandt	Lara Stassen	Madalena Santos Neves Rêgo Cabrita	

Location: Tongeren Hall						
Group	Name					
12	Amber Theunissen	Anouk Bollen	Ana Neves Da Fonseca	Borja Zaragoza Gauchia	Greta Cocchi	
13	Birgit Vrancken	Jelena Geens	Paula Perez Climent	Linda Kehr	Nina Lier	
14	Willem Awouters	Miele Martens	Sanne Dekker	Anastasia Karatza	Josephine-Elisabeth Pippi	
15	Michèle Hendriks	Charlotte Peetersem	Ines Santos	Silke van Reeuwijk	Jenny Surholt	
16	Robin Schellingen	Elien Mees	Louise Beuk	Demi Gerritsen	Martijn Simons	
17	Joke Aerts	Sofia Vorobiova	Rachel Chin Kwie Joe	Luc Hooglugt	Isabel Bougie	
18	Sarah Willems	Anneleen Jacobs	Ivan Saify	Delphine lemaire	Alessandra Papitto	



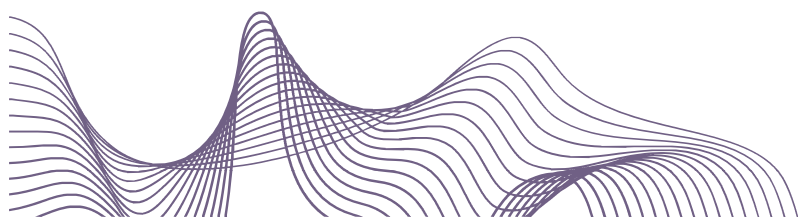


Location: Heerlen Hall						
Group	Name					
19	Elif Korkmaz	Algoe Hemafelincia	Quinten Lok	Levi Iperenburg	Lynn Theunissen	
20	Semih Bayram	Elke Smeets	Denzel Hageman	Tia Ackermans	Romy Khan	
21	Quinn Crouchs	Jule Richartz	Fleur Wiertz	Lotta Regtop	Diego Fadrique Valle	

Location: Keulen Hall						
Group	Name					
22	Zoë Donders	Kobe Neven	Laura Wubben	Elisa Santarsiero	River Hummel	
23	Jonas Schimmel	Rombout Moors	Liset Jacobs	Dario Strikwerda	Nienke Meskes	
24	Laurien Veulemans	Niki Sciarrino	Ioanna Tzavara	Jente Schmeetz	Loïs Reijnders	
25	Jorunn Vranken	Kirsten Poelmans	Pierre Cantagallo	Lisa Kalisvaart	Marie Poncelet	

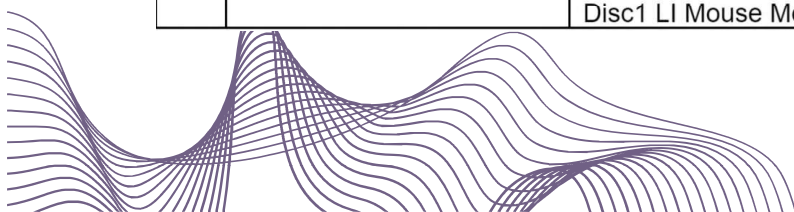
Location: Diepenbeek Hall						
Group	Name					
26	Malou Reverendo	Jill Grondelaers	Fabiola Marques Trujillo	Anna Ouwerkerk	Maaïke Bruurs	
27	Amber Delbroek	Melisa Erdal	Emmee Stevelmans	Niek Stassen	Tim Diebels	
28	Marie Miseur	Heike Blockx	Bruno Mendes Dinho Pinto Da Silva	Pablo Infante Villanueva	Delana Deijck	
29	Dario Cosemans	Anouk Delaet	Leela Chatterji	Sewan Abbas	Pierre Klemmer	

Location: Luik Hall						
Group	Name					
30	Hanne Eerdeken	Liam Coenen	Marta Sossai	Steffanie Hartjes	Faith-Nova Folkerts	
31	Emma Geerits	Imke Guery	Erik Meyer	Maryam Bouzidi	Eva Hensenne	
32	Emma Gesquire	Eline Simons	Lucia Malikova	Marie Vandormael	Vignesh Shaju	Ozgu Gumustekin
33	Ian Meysen	Yousra Boutayniout	Emerance Ishimwe	Lourdes Matas Sancho	Jasper JJJA Ploos van Amstel	Senne Zon



# 4. Poster walks

Tuesday, 25 June 2024		
Poster walk 1, Area around Maastricht Hall		
1A	Jill Grondelaers	Fluoxetine's Anti-inflammatory Potential Hinges on Lipid Metabolism Integrity
1B	Michèlle Hendriks	Tackling Cancer Cachexia in Colorectal Cancer Patients by Unraveling Skeletal Muscle Characteristics
1C	Ana Neves da Fonseca	Exploring the roles of ARID4B and BMPR2 in the progression of KMT2A-rearranged Acute Lymphoblastic Leukemia
1D	Emmee Stevelmans	The glaucoma gambit: rescuing retinal ganglion cells from dysfunction
1E	Charlotte Peetersem	The triad between lipids, apolipoprotein E, and microglial activation in Alzheimer's disease explored
Poster walk 2, Onderwijsplein		
2A	Jonas Schimmel	The influence of extracellular matrix cues on aging retinal pigment epithelium biomechanics
2B	Inês Santos	Implementing up-front ctDNA liquid biopsy using ddPCR for the molecular genotyping of advanced NSCLC
2C	Amber Theunissen	Unraveling the role of reactive oxygen species during epithelial to mesenchymal transition
2D	Merel Hufkens	Uncovering the Differential Roles of Microglia and Macrophages in MS: Foamy or Functional?
2E	Eline Simons	The membrane-associated periodic scaffold regulates endocytosis along the proximal axon
Poster walk 3, Onderwijsplein		
3A	Anton Brosens	Exploring the role of DNA repair protein APEX1 on the development and longevity of the ENS.
3B	Renée Rita Moonen	EVEN SUPERHEROES NEED THEIR VITAMINS. Investigating Riboflavin's Influence on Planarian Regeneration
3C	Zoë Donders	Downstream PDE4D Signaling: Illuminating the Path to Myelin Regeneration in Multiple Sclerosis
3D	Josephine-Elisabeth Pippi	Investigating the therapeutic potential of antibody Candidate 14 in amyloid- $\beta$ induced neurotoxicity
3E	Eva Hensenne	The glutamate/GABA balance as a novel therapeutic target in 22q11.2 deletion syndrome: a clinical trial
Poster walk 4, Drielandenpunt		
4A	Lisa Steegen	Echocardiography evaluation to allow early detection of doxorubicin-induced cardiotoxicity in rats
4B	Niki Sciarrino	Acyl-CoA-binding protein (ACBP) deletion in brown adipose tissue impairs high-fat diet-induced cardiac remodeling
4C	Dario Geebelen	The impact of polystyrene micro- and nanoplastic on neuroregeneration in <i>Schmidtea mediterranea</i>
4D	Cobi Bergsma	Structure-activity relationship between per- and polyfluoralkyl substances (PFAS) and their effects on the NF- $\kappa$ B pathway in innate immune toxicity: a matter of headgroups?
4E	Anouar Djalat	DNA damage and repair in the spinal cord after traumatic injury
Poster walk 5, Drielandenpunt		
5A	Hanne Coenen	The MIF/CD74 Axis as a Driver of Pro-inflammatory B Cell Responses Following Spinal Cord Injury
5B	Elisa Simone	Interrogating the essentiality of RBBP7 chromatin modifiers in IDH1-mutant glioma.
5C	Quinn Crougns	The fight against head and neck cancer on a nano-scale: ROS-responsive carriers for targeted therapy
5D	Amber Delbroek	Investigating Microglial Saltatory Migration and Efferocytosis in Disc1 LI Mouse Models



5E	Lien Van Otterdijk	S-palmitoylation hinders brain repair by triggering foam cell formation
<b>Poster walk 6, Drielandenpunt</b>		
6A	Bayram Semih	Human dental pulp stem cells as a patient-in-a-dish model for Charcot Marie-Tooth disease type 1A
6B	Jenny Surholt	A Two-Edged Sword: Impact of Anticoagulation Treatment on Atherosclerosis
6C	Luisa Wensky	Assessing genome instability markers in relation to obesity across different tissues and age groups in the ZSF1 hypertensive rat model
6D	Kirsten Poelmans	Promoting Phospholipid Synthesis via the TGF- $\beta$ axis as a Potential Strategy to Rescue Remyelination in Demyelinating Disorders
6E	Jule Richartz	PDE4D enzymes as possible therapeutic target to alleviate dementia symptoms in Alzheimer's disease

### Wednesday, 26 June 2024

#### Poster walk 7, Area around Maastricht Hall

7A	Willem Awouters	Light-induced degradation of N719 in dye-sensitized solar cell-based photovoltaic photographs
7B	Alessandra Papitto	Investigating Immune Responses in Severe Asthma and the Influence of Mepolizumab on Immune Cell's Profiles and Phenotypes
7C	Birgit Vrancken	Assessing nutritional interventions' impact on cognitive function in older at-risk adults
7D	Yara Lambrechts	Exploring lipid metabolism dynamics during human Schwann cell differentiation for CMT1A therapy
7E	Marie Poncelet	Exploring Transcranial Alternating Current Stimulation Modulation of Neural Oscillations

#### Poster walk 8, Onderwijsplein

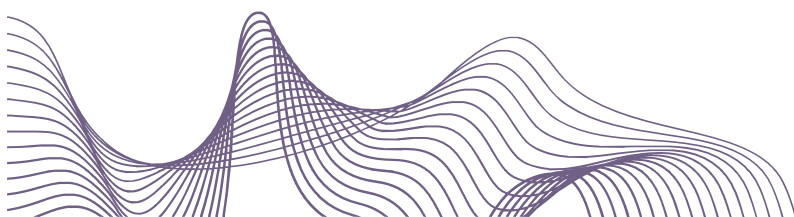
8A	Jens Gielen	Duration and Quality of Analgesia after Ambulatory Forefoot Surgery under Ankle Block
8B	Vana Stojić	Necrotizing fasciitis secondary to retroperitoneal abscess
8C	Hema Felincia Algoe	The effect of a potato- versus a pasta or rice-based food pattern on cardiometabolic health
8D	Anessa Pijalovic	Generation of Cortical Neurons from Mouse ES Cells to Study Val66Met Polymorphism in the BDNF Gene
8E	Lucia Malikova	Uncovering the uptake and cytotoxicity of micro- and nanoplastics in human intestinal cells

#### Poster walk 9, Drielandenpunt

9A	Yana Heyvaert	Conductive MXene-based bioink for integrating biomimetic electronics into new 3D skin model
9B	Homayoon Yazdanshenas	Potential Mechanisms of PM2.5 Particulate Transfer via Extracellular Vesicles
9C	Rombout Moors	Identification of cellular processes elicited by the defects in ribosome synthesis that cause Diamond-Blackfan anemia
9D	Emma Geerits	Decoding tumor heterogeneity: cyclic staining to visualize the tumor microenvironment.
9E	Selma Mtoor	Roles of apical ectodermal ridge and zone of polarizing activity in chicken embryo limb development

#### Poster walk 10, Drielandenpunt

10A	Elien Mees	Phenotypic and functional characterization of IgD-CD27- double negative B cells in multiple sclerosis pathology
10B	Thomas Raps	Evaluating suicide gene therapy with human dental pulp stem cells for oral squamous cell carcinoma



10C	Delphine Lemaire	Deciphering D-Amino Acid Dynamics in Cancer Cachexia: From Plasma Profiling to Muscle Cell Responses
10D	Joke Aerts	The role of inflammasome activation for T cell migration in Multiple Sclerosis
10E	Iveta Dzivite	In vitro differentiation profile of human periosteum-derived cell aggregates
Poster walk 11, Drielandenpunt		
11A	Emma Gesquiere	The neuroregenerative potential of IGF-II as a therapeutic strategy in ischemic stroke
11B	Robin Schellingen	Unraveling the Brain's Cleanup Crew: TRPV4 in Mitochondrial Movement during Microglial Phagocytosis.
11C	Freddy Leenders	Forever Young – The Epigenetic Clock of Oligodendrocyte Precursor Cells
11D	Hanne Eerdeken	NANO-ARD: Utilizing NANOvesicles for accelerating angiogenesis in Acute Radiation Dermatitis
11E	Miele Martens	Synergistic sensing: combining thermal and impedance sensors into the microwell format.



## 12. Abstracts

### Oral Presentation Session 2

*Advances in Pediatric Care, Anti-Immuno-Aging,  
Acne Treatment, and HBV*

1. Aleksandra Dembowska, Medical University of Lubin
2. Wiktoria Stańska, Medical University of Warsaw
3. Maciej Dubaj, Medical University of Lubin
4. Isabel Bougie, Erasmus University Medical center
5. Mariken Lemmens, Hasselt University
6. Emerance Ishimwe, Hasselt University

## **Animal milk oligosaccharides inhibit the biofilm of *Cutibacterium acnes* - a preliminary study."**

Wiktorja Stańska<sup>1</sup>, Sylwia Jarzynka<sup>2\*</sup>, Kacper Pająk<sup>1</sup>, Olga Witkowska-Piłaszewicz<sup>3</sup>,  
Bartosz Pawliński<sup>3</sup>, Dominika Domańska<sup>3</sup>, Gabriela Olędzka<sup>2</sup>

*1 - Student Science Club Agar, Department of Medical Biology, Medical University of Warsaw, Poland*

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**Background.** Acne is a global problem, and although associated with adolescence, 12-41% of adults suffer from that life quality-decreasing condition. Although its pathogenesis is not fully understood, recent studies emphasised the key role of a biofilm of *Cutibacterium acnes*, increasing the virulence of the bacteria and resulting in treatment failure. Therefore, novel antibiofilm substances are being sought. Animal Milk Oligosaccharides (AMOs) may show potential antimicrobial and antibiofilm activity against Gram-positive bacteria. To the best of our knowledge, our study is the first to determine if mare's milk oligosaccharides affect the inhibition of *Cutibacterium acnes*.

**Methods.** Reference laboratory strain *Cutibacterium acnes* ATCC 11827 (American Type Culture Collection) was used in the experiment. AMOs probes came from the collection of the Department of Medical Biology, Medical University of Warsaw. The inhibition of the biofilm formation of the *C. acnes* was determined after 3-day BHI (Brain heart infusion) cultures diluted to 0.5 McFarland and adjusted to 10<sup>6</sup> CFU/mL (colony-forming units/mL). The isolates grew in 96-well plates in BHI broth in anaerobic conditions. The ability of AMOs to inhibit the *C. acnes* strain was provided by a quantitative method using 10-fold serially diluted AMOs and calculating CFU/mL. The 1:2 diluted AMOs in BHI broth, concentrations of the AMOs (50, 25, 12.5, 6.25, 3.125, 1.5625, 0.78, 0.354, 0.1529 mg/mL), lactose and BHI broth controls were examined. Each experiment was independently performed in triplicate. We estimated the oligosaccharides' Minimum Biofilm Inhibitory Concentration (MBIC) against *C. acnes* growth.

**Results.** In this preliminary study, the characterised mare's milk oligosaccharides showed good potential for antimicrobial activity with MBIC ranging from 0.78 mg/mL to 50 mg/mL. On average, they could inhibit *C. acnes* biofilm formation from 11% to even 100% in high concentrations. No inhibition effect was observed at lower concentrations of the AMOs. The lactose did not affect the experiment.

**Conclusion.** Our primary study first demonstrated that mare's milk oligosaccharides might have the potential to be effective against *Cutibacterium acnes*. The protective properties of the biofilm matrix increase antibiotic resistance, leading to treatment failure and recurring infections. Therefore, finding new antimicrobial agents of natural origin is a promising, cost-effective solution that will facilitate proper future therapeutic strategies and limit antibiotic use.