NRS Advanced Technologies Symposium

27 March 2026

David de Wied Building, University of Utrecht, Universiteitsweg 99, 3584 CG Utrecht

Topics of Interest 2026: The airway microbiome, Sex differences in lung disease, Computational frameworks for integrating Multi-Omics and Imaging in severe asthma, Microplastics and the exposome

From 10:15	***Arrivals and Registration with tea and coffee***	
10:45-10:50	Opening introduction	Prof. Rudi Hendriks
10:50-11:25	Integrative AI and Clustering Approaches for Precision Medicine in Asthma	Dr. Nazanin Kermani
11:25-12:00	Airway microbiome in chronic lung diseases	Professor Tomas Eagan
12:00-12:35	Assessing the effect of biological sex in preclinical models of interstitial lung disease	Professor Killian Hurley
12:35-13:10	The Exposome and Lung Health. Lessons from the Dutch Context	Dr. George Downward, UMC Utrecht
13:10-14:00	Meet the speaker Lunch	
14:00-15:00	**Workshop (parallel sessions)**	
	Session 1: Sex differences in lung research	Dr. Anne van der Does (Moderator) and Prof. Killian Hurley
	Session 2: Exposome and microbiome	Prof. Rudi Hendriks (Moderator), Prof. Tomas Eagan and Dr. George Downward
	Session 3: Multi-omics and imaging in asthma	Dr. Martijn Nawijn (Moderator) and Dr. Nazanin Kermani
15:00-15:30	Coffee break	
	Junior session: View into the Future	
15:30-15:50	Sex bias in Airway Inflammation: Immunomodulation by Innate Defence Regulator Peptides	Courtney Marshall (online)
15:50-16:10	To be updated	Olaf Perdijk
16:10-16:30	Unsupervised integrative multiomics analysis of nasal brushes identifies systemic alterations of asthma-related pathways	Tatiana Karp
16:30-16:50	Written in your genes? Using Polygenic Scores for Risk Assessment in Respiratory Medicine	Lianne Trap
16:50-17:10	Micro- and Nanoplastics as Triggers of Lung Inflammation	Lieke de Jong
17:10-17:20	Closing highlights/take home messages	
17:20-	Drinks	

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Speaker Information

Dr. Nazanin Kermani

Imperial College London

Dr Nazanin Zounemat-Kermani is a Genomics Data Scientist and Postdoctoral Research Associate at the Data Science Institute, Imperial College London. Her research focuses on developing computational and AI-driven methods to integrate multi-omics, imaging, and environmental data to understand complex disease mechanisms and advance precision medicine. She has contributed to several major international research consortia, including U-BIOPRED, SARP, and PIONEER, working on large-scale biomedical datasets to identify disease subtypes and improve patient stratification. Her work combines machine learning, bioinformatics, and systems biology to uncover clinically relevant insights, particularly in respiratory diseases such as severe asthma. Dr Zounemat-Kermani is also actively involved in teaching and mentoring students in biomedical data science and artificial intelligence in medicine.

Professor Tomas Eagan

University of Bergen

Tomas Mikal Eagan, b 1969, graduated from medical school at the University of Bergen, Norway, in 1995, and took his PhD in the epidemiology of asthma in 2004. He has a double specialty in internal medicine and pulmonology, obtained in 2011. He works as a senior consultant and section leader for research at the Department of Thoracic Medicine, Haukeland University Hospital, Bergen, and as a full professor at the Department of clinical Science, University of Bergen, where he heads the Bergen Respiratory Research Group.

Professor Killian Hurley

Royal College of Surgeons, Ireland

Professor Hurley is a respiratory physician in Dublin and Associate Professor in the Royal College of Surgeons in Ireland. He performed his PhD in RCSI Dublin and his postdoctoral work in the Centre for Regenerative Medicine in Boston University. His research seeks to better understand the causes of pulmonary fibrosis and find new treatments using patient-derived induced pluripotent stem cells (iPSC) to model lung disease. He has published on this topic in journals such as Cell Stem Cell, Nature Biotechnology and Stem Cell Reports. In 2022, he was awarded a European Research Council Starting Grant to develop an iPSC-based platform to find new gene therapies for patients with short telomere related pulmonary fibrosis.

Dr. George Downward

UMC Utrecht

Originally a medical doctor from New Zealand, George now works as an Associate Professor at the UMCU where he co-ordinates the Exposome and Planetary Health team. His research, and teaching, examines the various ways in which our environment is changing and importantly, how those changes go on to impact human health. Working in a variety of settings around the world, George has a special interest in examining health effects among vulnerable populations, many of whom contribute relatively little to our wider environmental challenges. Here in the Netherlands, he is proud to be a senior member of the Precision Medicine for More Oxygen (P4O2) consortium, where he coordinates exposome activities in the examination of risk factors for chronic lung diseases.

Lieke de Jong

Erasmus MC

Lieke de Jong is a fourth-year PhD candidate in the Department of Pulmonary Medicine at Erasmus MC in Rotterdam. Her research focuses on understanding the immune mechanisms underlying sarcoidosis and identifying potential triggers of this disease. In her work, she investigates the role of micro- and nanoplastics as possible drivers of pulmonary inflammation. By combining in vivo and in vitro studies, she examines how different types of micro- and nanoplastics influence immune responses in the lung.

Dr. Olaf Perdijk

University Utrecht

Tatiana Karp

UMC Groningen

Tatiana Karp is a postdoctoral researcher at the University Medical Center Groningen (UMCG) within the Groningen Research Institute of Asthma and COPD (GRIAC). With a background in molecular medicine, she specializes in the intersection of respiratory diseases and computational biology. During her PhD, Tatiana focused on uncovering asthma heterogeneity, primarily utilizing omics data derived from low-invasive nasal brush samples. Currently, she is expanding this expertise into her postdoctoral work, where she applies advanced

multi-omics integration approaches to investigate the complexities of other respiratory conditions, including COPD. Her research aims to apply novel integration methods to decode the heterogeneity and underlying mechanisms of chronic airway diseases.

Lianne Trap

Erasmus MC

Lianne Trap is a PhD candidate in the Department of Pulmonary Medicine at Erasmus MC. Her research focuses on the genetic predisposition to respiratory diseases, including asthma, lung cancer, and severe COVID-19. Lianne completed an undergraduate exchange semester at Cornell University (USA), where she discovered her passion for genetics, and subsequently earned her Master's degree in Molecular Medicine at Erasmus MC, graduating Cum Laude. She specializes in developing and evaluating genetic risk scores and interpreting genome-wide association study (GWAS) data through the lens of epigenomics and disease biology. Her work has been recognized with an Early Career Education Award at the World Conference on Lung Cancer and a nomination for the Young Investigator Award at the Dutch Lung Congress.

Courtney Marshall

University of Manitoba

Courtney Marshall is a PhD Candidate at the University of Manitoba, Immunology Program, under the guidance of Dr. Neeloffer Mookherjee. She completed a BSc in Biology at the University of Manitoba (2021), and subsequently pursued graduate studies focused on sex bias in asthma and immunomodulatory mechanisms of Innate Defence Regulator (IDR) Peptides. Courtney's current research goals are to define sex-related differences in asthma and immunomodulation of airway inflammation by IDR peptides.

Courtney has consistently received various National- and Provincial- level studentships from the Canadian Institute of Health Research, Asthma Canada, Canadian Allergy, Asthma, and Immunology Foundation, Research Manitoba, in recognition of her research and academic excellence.

Courtney was awarded a nomination to attend the Lindau Nobel Laureate Meeting by the Gairdner Foundation of Canada (2025) for her research excellence and ability to communicate scientific findings at the International Congress on Academic Medicine. She was also awarded the Women's Health Research Foundation of Canada Graduate Scholarship for her contributions to sex-based research and academic achievements. Courtney was elected to Co-Chair the Gordon Research Seminar Antimicrobial Peptides (2027), an international peer-recognition of her leadership in the field.

Courtney is a passionate advocate for Women in Science and Mentorship. She facilitates two mentorship programs, for WISDOM (Women in Science: Development, Outreach and Mentorship) at the University of Manitoba, and an international program within iAMPNet (International Antimicrobial Peptide Network). Courtney's contributions to science, mentorship, and leadership reflect her commitment to promoting equity in research and science.