Amsterdam UMC

Amsterdam institute for Immunology & Infectious diseases (AI&I)

Ai&i

ANNUAL REPORT 2024

Facts & Figures

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PREFACE

The mission of the Amsterdam Institute for Immunology and Infectious diseases is to foster groundbreaking research, stimulate innovation, and translate discoveries into tangible benefits for human health. We do so by empowering and leveraging the specific strengths of our two scientific programs, Immunology and Infectious Diseases, while also actively fostering synergy between these programs and connecting with our strategic partners and other institutes.

Our **vision** is of a world where science transcends boundaries, where infectious diseases no longer pose insurmountable challenges, and where in-depth immunological insights in inflammatory processes, autoimmune diseases and cancer lead to new horizons via novel clinical interventions.

"Empowering researchers in Immunology and Infectious Diseases to drive groundbreaking health innovations"

2024: A Year of Transformation
In 2024, AI&I underwent a significant restructuring of its organizational framework. The institute is now composed of two complementary programs: Immunology and Infectious Diseases. This clear structure strengthens research focus and leverages the expertise of both programs by bringing together basic and clinical researchers from different disciplines. This fosters the development of a cohesive and inclusive research community.

Both programs are organized according to a matrix structure, with each program divided into four themes and seven research topics. This strategic setup aims to enhance research focus, stimulate interdisciplinary collaboration, and increase visibility both internally and externally.

Seven different committees have been established and are responsible for initiating and overseeing both institute-wide and program-specific activities and outcomes. The committees promote cohesion between the programs and their respective research themes.

Additionally, AI&I has identified three focus areas that highlight the intersections between Immunology and Infectious Diseases to encourage collaboration and synergy between the programs. These Focus Areas are 'Post-Acute Infection Syndromes', 'Immune Modulation', and 'Vaccination'.

The past year has established a solid foundation and generated enthusiasm within the organization. Together, we are stronger and better equipped to face future challenges.

AI&I Directors
Prof. dr. Joppe Hovius &
Prof. dr. Reina Mebius

RESEARCH BOARD

Directors

Joppe Hovius

Reina Mebius

Management Support

Yvonne Duiker

Judith Lubbers-Glim

Tine Sibbing

Esmée Vesseur

Business Development

Dilek Yusuf

Theme representatives

Infectious Diseases

Marit van Gils

Constance Schultsz

Nina van Sorge

Joost Wiersinga

Immunology

Derk Amsen

Jan van de Bossche

Marjolein van Egmond

Conny van der Laken

THEME LEADERS

INFECTIOUS DISEASES

Host-microbe Interactions		
Jeroen den Dunnen	Vanessa Harris	Nina van Sorge
Public & Global Health		
Sabine Hermans	**Constance Schultsz**	Henry de Vries
Diagnostics & Therapeutics		
Lieuwe Bos	Janke Schinkel	Joost Wiersinga
Vaccines & other Preventive Strategies		
Marit van Gils	Bram Goorhuis	Janneke Heijne

IMMUNOLOGY

Immune Homeostatis		
Jochem Bernink	Jan van den Bossche	Joep Grootjans
Immune Activation		
Derk Amsen	Marten Hoeksema	Arjen Kwakernaak
Immunomonitoring		
Juan Garcia-Vallejo	Conny van der Laken	Theo Rispens
Immunomodulation		
Marjolein van Egmond	Joep Killestein	Marleen van de Sande

TOPIC LEADERS

INFECTIOUS DISEASES

Sepsis & Complex Bacterial Infections		
Bas Haak	Tom van der Poll	Kim Sigaloff
Respiratory Infections		
Josje Altenburg	Colin Russell	Matthijs Welkers
Neurological Infections		
Matthijs Brouwer	Martijn van der Kuip	
Vector-Borne & Tropical Infections		
Martin Grobusch	Paula Ristow	Henk Schallig
HIV, Viral Hepatitis & STI's		
Godelieve de Bree	Rogier Sanders	Marc van der Valk
Antimicrobial Resistance		
Alex Speer	Sacha Kuil	Jan Prins
Post-Acute Infection Syndromes		
Janita Bosch (Diedericks)	Steven Chamuleau	Michele van Vugt

IMMUNOLOGY

Cancer Immunology		
Idris Bahce	Tanja de Gruijl	Joke den Haan
Autoimmunity and Inflammatory diseases		
Lisa van Baarsen	GertJan Wolbink	Marc Hilhorst
Gastrointestinal Immunology		
Gerd Bouma	Anje te Velde	Joep Derikx
Cardiovascular Immunology		
Jaap van Buul	Jeffrey Kroon	Frances de Man
Neuro-immunology		
Filip Eftimov	Gijs Kooij	Wouter de Jonge
Allergies		
Hetty Bontkes	Tim van der Houwen	Sietze Reitsma
Immunodeficiencies		
Godelieve de Bree	Taco Kuijpers	

Strategic Partners

GGD: Elske Hoornenborg, Maria Prins
Sanquin: Mariet Feltkamp, Hans Zaaijer
AIGHD: Anna Vassall, Frank Cobelens
SHM: Marc van der Valk, Andres Boyd
READE: Gertjan Wolbink

COMMITTEES

ANNUAL MEETING / SEMINARS

Chair:
- Derk Amsen

Members:
- Tanja de Gruijl
- Brenda Raud
- Henk Schallig
- Alsya Affandi
- Adithya Sridhar
- Merve Kocyigit

PR & PUBLIC OUTREACH

Chair:
- Esmée Vesseur

Members:
- Yvonne Duiker
- Judith Lubbers-Glim
- Hessel Peters-Sengers
- Tine Sibbing

GRANTS & STIPENDS

Chair:
- Joke den Haan

Members:
- Lieuwe Bos
- Marten Hoeksema
- Elena Rampanelli
- Lia van der Hoek
- Kees van ’t Veer
- Sofia Ibanez Molero

CORE FACILITIES

Chair:
- Jasper Koning

Members:
- Lisa van Baarsen
- Alex de Vos
- Adithya Sridhar
- Marit van Gils
- Febe van Maldegem
- Nienke Haverkate

EDUCATIONAL PROGRAMS & TALENT DEVELOPMENT

Chair:
- Nicole van der Wel

Members:
- Juan Garcia Vallejo
- Bianca Blom
- Yvonne Pannekoek
- Eddy Wierenga
- Rieneke van de Ven
- Marleen van der Sande
- Niekie Spoorenberg
- Oliver Chen
- Pien van Paassen

COLLABORATION & SYNERGY

Chair:
- Jan van den Bossche

Members:
- Vanessa Harris
- Janneke Heijne
- Sabine Hermans
- Jeroen den Dunnen
- Yvette van Kooyk
- Myrthe van Delft

VALORIZATION

Chair:
- Conny van der Laken

Members:
- Rosalie Luiten
- Dilek Yusuf
- Gijs Kooij
- Oliver Chen
- Kathelijn Verdeyen

A SELECTION OF HIGHLIGHTS

Significance of Fibroblastic Reticular Cells in Dendritic Cell Function Revealed by an Innovative Human Lymph Node Model

Andrew Morrison and colleagues utilized the lymph node expertise from the **Reina Mebius** lab and the organotypic modeling skills of the **Sue Gibbs** Skinlab. Together, they successfully developed and characterized the beginning of an innovative organotypic 3D human lymph node (LN) model, specifically incorporating fibroblast reticular cells (FRCs). This model enabled a comprehensive exploration of the impact of FRCs on Dendritic Cells (DCs). The findings from this work are available in the Journal for Tissue Engineering and Regenerative Medicine.

Post-COVID Fatigue Linked to Physical Causes

Researchers from Amsterdam UMC and Vrije Universiteit Amsterdam have identified a physical basis for the enduring fatigue experienced by post-COVID patients. Professor of Infectious Diseases at Amsterdam UMC, **Michèle van Vugt**, notes, "*We observe muscle changes in these patients. At the cellular level, we noted decreased functioning of mitochondria, the cell's energy factories, resulting in less energy production. The fatigue is biologically rooted. Muscles require energy for movement. This discovery allows us to explore effective treatments for post-COVID individuals.*" The study's findings were published in Nature Communications.

4 out of 5 Tuberculosis Patients Lack a Persistent Cough, Despite it Being Seen as a Characteristic Symptom

Over 80% of individuals affected with tuberculosis (TB), the world's deadliest infection, do not exhibit a persistent cough, contrary to common perception. TB primarily spreads through coughing and inhalation. A study conducted by Amsterdam UMC and the Amsterdam Institute for Global Health and Development (AIGHD) analyzed data from over 600,000 individuals in Africa and Asia. Results revealed that 82.8% of TB patients did not manifest a persistent cough, with 62.5% showing no coughing at all. This research was recently published in The Lancet Infectious Diseases.

Advanced Optical Technique for Non-invasive Detection of Pulmonary Fibrosis

De Vrije Universiteit Amsterdam and Amsterdam UMC have pioneered a cutting-edge bronchoscopic imaging technique that could eliminate the need for invasive biopsies. Pulmonologists **Dr. Peter Bonta** and **Prof. Dr. Jouke Annema** were involved in this study. Their study demonstrates that the bronchoscopic technique EB-PS-OCT, using a minimally invasive catheter, can detect and measure pulmonary fibrosis without the need for a biopsy. The method provides three-dimensional images with much higher resolution than CT, thereby improving diagnosis and disease monitoring in ILD, reducing invasive procedures, and saving costs.

Enhanced Understanding of Genetic and Immunological Aspects of Lyme Disease

Which genes and genetic variations play a role in Lyme disease, influencing sensitivity, severity, and duration? Researchers from Amsterdam UMC, in collaboration with Radboudumc, RIVM, and CiiM, have published findings in BMC Infectious Diseases and Nature Communications, identifying 31 new genetic loci that influence the disease and a new gene variant that increases susceptibility.

Decline in HIV Diagnoses in the Netherlands Halts

This is evident from the publication of the 2024 HIV Monitoring Report by the Stichting HIV Monitoring (SHM), released ahead of World AIDS Day on December 1. **Prof. dr. Marc van der Valk** "*We've seen a strong decline in the number of new HIV diagnoses in the Netherlands over a long period. The stagnation in this decline is striking*."

Radio Show Spraakmakers Visits Post-COVID Center of Expertise

The newly opened Post-COVID Center of Expertise is offering care for patients struggling with lingering symptoms after COVID-19. During a recent visit, NPO Radio 1's Spraakmakers radio show interviewed **Prof. dr. Michèle van Vugt**, Coordinator of the post-COVID center at Amsterdam UMC.



AWARDS & PRICES

A Selection of Awards and Prices Obtained

NVOI and NVGTP publication awards

Dr. Derk Jan Jager and his team secured both the NVOI (first place) and the NVGPT (third place) publication awards for their recent article in Clinical Oral Implants Research. Their research focused on the success of dental implants in individuals with Sjögren's syndrome.

Amsterdam University Fund Startstipendium

Dr. Fons van den Berg, has been awarded the Amsterdam University Fund (AUF) Startstipendium, amounting to €25,000, in recognition of his research project titled "Effects of Tributyrin Supplementation in Patients with Acute Pancreatitis. His research aims to explore the potential of tributyrin, a dietary supplement, as a treatment to ward off infections in patients with acute pancreatitis.

Lupus Innovation Award

The Lupus Research Alliance awarded **Dr. Lisa van Baarsen** the prestigious Lupus Innovation Award (LIA). This award provides funding for scientists worldwide to develop new treatments and tools for better diagnosing and monitoring lupus, benefiting millions affected by this complex diseases. Dr. van Baarsen alongside Dr. Wendy Dankers will explore how maternal-fetal tolerance is disrupted in SLE. Findings from this study could improve the way we predict, treat, and prevent pregnancy complications in women with lupus.

Dr. van Baarsen: ‘I am extremely honored to receive this LRA grant to push forward our translational research study on unravelling the immunological mechanism driving pregnancy complications in lupus patients. Together with my colleagues Dr. Wendy Dankers, Dr Irene Bultink and Dr. Marjon de Boer’.

Hugo van Poelgeest Prize

Giulia Moreni was honored as a "Scientist of the Future." Moreni won both the jury and audience awards of the Hugo van Poelgeest Prize, totaling €5,000, for her research using human stem cells. Her work provides greater insights into the progression of viral infections, paving the way for personalized treatments.

SCIENTIFIC MEETINGS

AI&I ANNUAL SYMPOSIUM

- 4 July 2024 - Theme 'AI in AI&I'

AI&I SEMINAR SERIE

- 9 January 2024 - **Michael Dustin** – *Building an immunological synapse with bispecific engagers*
- 18 January 2024 - **Hans Langedijk** - *Structural Vaccinology; Role of Prefusion Stabilized Glycoproteins in Vaccine Design*
- 6 February 2024 - **Megan Baldridge** – *Viral interference in the intestine*
- 5 March 2024 - **Ricardo Fernande**s – *Targeting TCR and co-receptor signaling in T cell -mediated immunity*
- 14 March 2024 - **Amy Chung** - *Antigen exposure history influences antibody immunity to SARS-CoV-2 infection and Vaccination*
- 2 April 2024 **Grègoire Altan-Bonnet** - *Sharpening the specificity of cancer immunotherapy, using robotic dynamic profiling & machine learning*
- 27 June 2024 - **Meren Murat Eren** - *Diverse plasmid systems of the human gut microbiome and their ecology*
- 3 September 2024 - **Bernard Malissen** - *Unveiling the molecular basis of T cell malfunctions and disorders using quantitative interactomics*
- 8 October 2024 - **Chris Kenyon** - *Asymptomatic STIs – it's time to move from a BIG GAME HUNTING to a STEWARDSHIP paradigm*
- 10 October 2024 - **Michael Baym** - *Plasmid evolution and antibiotic resistance*

AI&I JOINT SYMPOSIUM WITH APH

- 19 June 2024 - Amsterdam Tuberculosis Center Symposium
- 24 October 2024 - Migrant Health: screening and prevention

AI&I INSIDE

- 30 January 2024 - Research Group of Reina Mebius
- 27 February 2024 - Research Group of Bruno Sovran
- 19 March 2024 - Research Group of Sarah Derks
- 23 April 2024 - Research Group of Gijs Kooij
- 21 May 2024 - Research Group of Tom vd Poll and Joost Wiersinga
- 22 October 2024 - Research Group of Janneke Heijne
- 19 November 2024 - Research Group of Rieneke van de Ven

AI&I MINI SYMPOSIA

- 31 October 2024 - Salvatore Simmini - *Advanced intestinal culture systems for modelling viral infections, inflammation, and drug toxicity in vitro*
- 11 December 2024 - *Controlled Human Infection Models*
- 19 December 2024 - *At the Barriers: Innate Lymphoid Cells and the Microbiome in Graft versus Host Pathophysiology*

AI&I EDUCATION

- 29 January – 9 February 2024 - *Post-graduate course Advanced Immunology* - Course & workshop Target audience: PhD students working on projects that require substantial knowledge of principles in immunology.

RESEARCH NUMBERS

Research staff

Scientific core staff	318
Other scientific staff	222
PhD candidates	532
Technicians	122
Total research staff	**1.194**

Table 1a: Research staff in institute. Scientific core staff includes full professors, associate professors, assistant professors and endowed professors. Other scientific staff includes senior researchers, postdocs and junior researchers. PhD candidates includes internal and external PhD and MD/PhD candidates.

Principal investigators

	Immunology	Infectious Diseases	Both Programs
PIs appointed in 2024	10	3	1
Total PIs per research program	114	55	36

Table 1b. Principal investigators (PIs) per research program. PIs are defined as researchers with an own research line within Amsterdam UMC and are appointed by the Executive Board of Directors.

Research output

Source: Pure

Output	Immunology	Infectious Diseases	TOTAL
Referees article	1293	847	2.140
PhD thesis	27	25	52

Funding & grants

External funding	
2nd Cost Flow	6.818.601
3rd Cost Flow	4.988.545
4th Cost Flow	2.031.370
Total	**13.838.156**

APPOINTED PROFESSORS

Gertjan Wolbink has been appointed as Professor of Rheumatology, specializing in precision medicine for rheumatic diseases, effective April 1, 2024. This professorship is within the Department of Rheumatology and Clinical Immunology, Division 1 of Amsterdam UMC.

Frederique Paulus has been appointed as Professor of Intensive Care, starting 4 April, 2024. Her professorship will play a crucial role in advancing scientific knowledge to optimize the future of ICU care, with special attention to the role of ICU nurses and improving their autonomy in the care process.

Theo Rispens has been appointed Professor of Molecular Immunology and Biotherapeutics at Vrije Universiteit Amsterdam, effective December 1, 2024. This position enables Prof. Rispens to advance his research on the immune system, a key player in both health and disease.

GRANTS - Internal

Collaboration Grant

The AI&I Collaboration Grant has the goal to stimulate new collaborations between research groups of at least 2 locations (AMC, VUmc, GGD, Sanquin, Reade).

Myrthe van Delft and Sander Tas:
This grant of € 20.000,- is intended to initiate a new collaboration between the Departments of Molecular Cell Biology and Immunology and Rheumatology & Clinical Immunology and Experimental Immunology to exploring the Role of IgA and TNF Reverse Signaling in the Pathogenesis of Spondylarthritis.

Aida Llucià-Valldeperas and Annette Neele:
This € 20.000 grant is intended to initiate a new collaboration between the Departments of Pulmonary Medicine and Medical Biochemistry to investigate how BMPR2 mutations in PAH lead to pro-inflammatory macrophages that contribute to disease progression and right heart failure.

Wendy Dankers and Gijs Afink:
This €20.000 grant is intended to initiate a new collaboration between the Departments of Experimental Immunology, Rheumatology and Reproductive Biology Laboratory to study how immune dysregulation in women with systemic lupus erythematosus (SLE) contributes to pregnancy complications by disrupting maternal-fetal tolerance and trophoblast function.

Fons van den Berg, Bas Haak and Mohammed Ghiboub
This € 20.000 grant is intended to initiate a new collaboration between the Department of Medical Microbiology and Infection Prevention, the Tytgat Institute for Liver and Intestinal Research and the Center of Experimental and Molecular Medicine for the project titled “Gut Tryptophan Metabolites For Severe Acute Inflammatory Diseases”.

Work visit grant

This grant is to stimulate young talent within AI&I to visit a research facility important within the field of Immunology and Infectious Diseases to actively build their CV and network while also obtaining new knowledge (techniques, samples, data, competences etc.) valuable to AI&I.

- **Meliawati Poniman** - Research technician; Imperial College in London, United Kingdom
- **Nicholas Pucci** - PhD student; School of Life Science and Technology in Tokyo, Japan
- **Annemiek Dijkhuis** - Technician; University hospital in Caen, France
- **Daan Filippini** - PhD student; University School of Medicine in Washington, United States
- **Anne Timmerman** - PhD student; Institute of Virology and Immunology in Bern, Switzerland

Travel grant

This grant is to stimulate young talent within AI&I to attend an international scientific conference important within the field of Immunology & Infectious Diseases to actively build their CV and network while also creating international exposure of AI&I. In 2024, the travel grant was awarded to **28** PhD students.

GRANTS - External

A selection of grants obtained

ZonMW Open Competition

- **Dr. Joke den Haan** and **Prof. dr. Theo Geijtenbeek** have been awarded a ZonMW Open Competition grant of €750,000 euros for their research project titled "Collaboration between Sugar Lovers: Siglec and C-type Lectin Interactions Controlling Immunity to Pathogens."
- **Prof. dr. Marjolein van Egmond** and **Dr. Lisa van Baarsen** have secured a ZonMW Open Competition grant of €749.027 euros for their research project titled "Lymph node neutrophils in inflammatory arthritis: the missing link between innate and adaptive autoimmunity?"

ZonMW Grant

- **Dr. Kornel Golebski** and **Prof. Anke-Hilse Maitland-van der Zee** have been awarded a €640,000 grant to investigate new diagnostic tools and biomarkers for long COVID. Collaborating with Dr. Janesh Pillay from UMCG, they aim to address the critical issue of identifying phenotypes of severe and persistent long-COVID, affecting up to 10% of patients even a year after SARS-CoV-2 infection.
- **Dr. Rosa van Mansfeld** has received a €500,000 ZonMw grant to support practical solutions for tackling antimicrobial resistance (AMR), a major global health threat. The grant will aid her research group in developing strategies to improve infection prevention (IP) practices.

ZonMW Create2Solve grant

- **Prof. Dr. Sander Tas** received this grant for his project entitled: “Human 3D synovial tissue organoids as a versatile tool to facilitate anti-rheumatic drug development for rheumatoid arthritis (3D4RA).” Part of the ZonMw Create2Solve program, the researchers receive a maximum of 100,000 euros for this innovative, animal-free approach.

Startup Grant ZonMw

- **Prof. Dr. Joppe Hovius** (Amsterdam UMC) and **Meta Roestenberg** (Leiden University Medical Center; LUMC) have, together with Radboudumc, Utrecht UMC, and the Centre for Human Drug Research (CHDR), secured a €9.5 million startup grant from ZonMw to launch a Dutch facility for early clinical research on drugs and vaccines targeting infectious diseases. This grant has let to the establishment of the non-profit organization INFECT-NL, of which **Tom van der Poll** is a board member.

European Union Grant

- An African-European research consortium, led by **Dr. Petra Mens** and **Dr. Henk Schallig** from the Laboratory for Experimental Parasitology of the department of Medical Microbiology and Infection Prevention, has secured a €1.5 million grant from the European Union. The funding will support a study on the neuro-cognitive and motor development of young children whose mothers received anti-malaria treatment during pregnancy.

Global Health EDCTP3 EU Partnership Grant

- **Dr. Henk Schallig** and his team have secured a €5 million from the EDCTP3 EU Partnership to launch the *Safety of Antimalarials in the FIrst tRimEster (SAFIRE)* project in Kisumu, Kenya. SAFIRE marks the first-ever Phase 3 clinical trial to evaluate the efficacy and safety of antimalarials in women during the first trimester of pregnancy.

KWF (Dutch Cancer Society)

3 Researchers from the Amsterdam Institute for Immunology and Infectious Diseases (AI&I) have been awarded over €4.6 million by the Dutch Cancer Society (KWF) to fund four studies targeting lung cancer, skin cancer, throat cancer, and a novel form of immunotherapy.

- **Dr. Alsya Affandi** - Boosting Immunotherapy with a New Lung Cancer Vaccine
- **Prof. dr. Yvette van Kooyk** - Predicting Immunotherapy Effectiveness in Melanoma
- **Dr. Roeland Lameris** - Developing a New Immunotherapy with Oncolytic Viruses

- **Prof. dr. Amsen** has secured a €906,164.76 grant from the Dutch Cancer Society to address CD8 T cell exhaustion in tumors. These immune cells are critical in cancer defense and are key players in immunotherapy. Prof. Amsen's research may eventually lead to more potent adoptive T cell therapies against solid tumors, potentially improving patient survival rates.
- **Prof.dr. Steenbergen** has obtained a €767,391.95 grant from the Dutch Cancer Society to study the progression from HPV-induced precancerous stages to cancer using preclinical models.

TKI-PPP grants

The TKI-PPP grant Amsterdam UMC stimulates its researchers to perform research projects together with companies in Public-Private Partnerships (PPP).

- **Prof. dr. Marjolein van Egmond** received a TKI subsidy of almost €900.000 from Health Holland to investigate a new immunotherapeutic approach to treat cancer. Most immunotherapeutic approaches focus on engaging T cells for tumor cell killing. The van Egmond lab, however, identified neutrophils as additional cytotoxic effector cells, through targeting of the IgA Fc receptor (FcaRI; CD89) via bispecific antibodies.
- **Dr. Maria Themeli** received a TKI-PPP grant (400K) to develop - in collaboration with QvQ and dr. Bart Westerman - a CAR T cell therapy strategy to treat Glioblastoma (GBM). GBM is the most common primary malignant brain tumor in adults, with a very poor prognosis (only 20% 2-year survival) and a high unmet clinical need.

ReumaNederland Grant

- **Dr. Jan Piet van Hamburg**, **Eva Philippon**, **Lisanne van Rooijen**, and **Prof. dr. Sander Tas** have secured a research grant of €425,000 from ReumaNederland. With this funding, they aim to develop organoids that closely mimic the inflamed tissue in the joints of patients with rheumatoid arthritis (the most common inflammatory joint disease). The ultimate goal is to test the effects of various treatments in the laboratory and thereby better predict individual patients' therapeutic responses. This brings personalized treatment for rheumatoid arthritis one step closer, while also potentially reducing the need for animal testing in the future.

Dutch Research Council (NWO) – VIDI grant

- **Jochem Bernink** - *From Intestinal Inflammation to Healing with Tuft Cells*
  Inflammatory Bowel Disease (IBD) is a major global health issue with limited treatment options. A central challenge is the inadequate healing of intestinal wall damage. Researchers recently identified tuft cells, a type of intestinal cell vital for restoring the intestinal wall post-injury. Tuft cells leverage immune system signals to activate healing. Jochem Bernink's research will explore how the immune system and tuft cells collaborate to repair the intestinal wall and how this process may be disrupted in IBD. The ultimate goal is to develop new therapies for chronic gastrointestinal inflammation.
- **Janneke Heijne** - *Gonorrhea Superbug: Preventing Resistance and Spread*
  Why are antibiotics losing their effectiveness? Janneke Heijne is investigating this question through gonorrhea, a sexually transmitted infection increasingly resistant to most antibiotics. Her research uses mathematical models on the development of antibiotic resistance, backed by lab experiment

data and information from sexual health and treatment centers. These models aim to pinpoint the most effective ways to minimize superbug development and prevent its spread.

- **Jeffrey Kroon** - *Endothelial Cells: Key Gatekeepers of the Immune System in Cardiovascular Disease* This project examines the critical role of inflammation in cardiovascular disease. Jeffrey Kroon's research focuses on how the immune system regulates itself through changes in blood vessel cell function. Endothelial cells, the "gatekeepers," can either promote or suppress inflammation, providing an opportunity to enhance our immune system's response. The goal is to identify more effective treatments for cardiovascular disease.

Dutch Research Council (NWO) – VENI grant

- **Dr. Marry Smit** has been awarded a Veni grant for her project: Picture Perfect Ventilation – Lung Imaging for Personalized Treatment of Acute Respiratory Distress Syndrome (ARDS).
  Research background: Nearly 1 in 3 patients with acute lung injury does not survive the intensive care unit. Personalized ventilation based on lung imaging has the potential to significantly improve survival rates, but current methods are too complex for widespread use. Dr. Smit is developing an advanced tool to analyze lung images and is researching how personalized ventilation can improve patient outcomes, aiming to enhance both the technique and its application in intensive care automatically and more accurately.

American Foundation for AIDS Research (amfAR)

- **Dr. Elena Herrera-Carrillo**, awarded $479,249, will utilize lipid nanoparticles (LNPs)—similar to those in COVID-19 mRNA vaccines—to deliver gene-editing enzymes that inactivate the CCR5 gene, rendering cells immune to HIV and removing the virus from already infected cells.
- Awarded $383,742, **Dr. Alexander Pasternak** will work with T cells from people with HIV on ART to dissect the transcriptionally active HIV reservoir on the single-cell level and accordingly, to identify novel combinations of compounds that can fully reverse HIV latency and render the reservoir cells vulnerable to the immune-mediated killing. In such a way, this project will both expand our knowledge of HIV persistence and contribute to the development of an effective intervention aiming at an HIV cure.

AMR Care Network North Holland-Flevoland

- **Dr. Sacha Kuil**, Dr. **Mireille Dekker** and **Iris van der Horst** (The Infection Prevention Implementation Research Group) received a €237,000 grant from the AMR Care Network North Holland-Flevoland to enhance infection prevention in nursing homes.

National Institute of Health | Bill & Melinda Gates Foundation

- **Dr. Yoann Aldon** has been awarded two prestigious grants: a $3.3 million National Institute of Health (NIH) R01 grant and a $3.63 million grant from the Bill & Melinda Gates Foundation (BMGF) (jointly with **Prof. dr. Rogier Sanders**). These grants will fund groundbreaking research in HIV vaccine development using artificial intelligence (AI)-based protein design approaches.

MS Research Bonus Grant

- **Dr. Hamann** has been awarded the MS Research bonus grant of €300,000 from the MS Research Foundation. The grant supports the research project titled 'Path and Performance of Pathogenic T-Cells in the Human MS Brain'.

Stichting Long-COVID Consortium Grant and ZonMw Long-COVID Diagnostic and Treatment Grant

- **Dr. Hung-Jen (Oliver) Chen** has obtained €250,000 from the Stichting Long-COVID Consortium Grant to support his research on to the progression of research in immunoglobulin Fab and Fc region characterization, specifically aimed at unraveling the complexities associated with Long-COVID identification and pathogenesis.
  Additionally, he has been honored with the ZonMw Long-COVID Diagnostic and Treatment Grant, which provides substantial funding of €470,534 for the DEDICATE project. The primary objective of this project is to develop a robust diagnostic assay incorporating a panel of validated autoantibodies and serum biomarkers.

Open Philantrophy Grant

- **Dr. Kwinten Sliepen**, **Prof. dr. Rogier Sanders**, and **Dr. Janke Schinkel** have secured a substantial $3,464,862 grant over three years from Open Philanthropy to work on a hepatitis C virus (HCV) vaccine. The grant will specifically fund the design and preclinical testing of promising vaccine candidates.

PhD GRADUATIONS

- 23 Jan 2024; **Wendy Walrabenstein** - *Plants for Joints | A plant-based diet, physical activity, and stress management for rheumatic diseases* – UVA
- 02 Feb 2024; **Lisa van Pul** - *Host-control of HIV: balance between immunity and immunopathology* – UVA
- 28 Feb 2024; **Laura Boekel** - *COVID-19 in patients with immune-mediated inflammatory diseases*- VU
- 08 Mar 2024; **Stefanie Busold** - *Metabolic Interventions in Chronic Lymphocytic Leukemia| Towards Tumor Elimination and Immune Rejuvenation* – UVA
- 14 Mar 2024; **Sivaporn Gatechompol** - *Predicting tuberculosis among People Living with HIV on antiretroviral treatment in high TB burden settings* – UVA
- 15 Mar 2024; **Ivy Choi** - *Biomarker Research in Rheumatoid Arthritis|a special focus on S100 proteins* – UVA
- 15 Mar 2024; **Marloes Grobben** - *Polyfunctional antibodies in viral disease | Detecting, controlling and preventing infections with antiviral antibodies* – UVA
- 22 Mar 2024; **Frank van Someren Gréve** - *Influenza and Common Cold Viruses in Critically ill Adults* – UVA
- 22 Mar 2024; - **Noémi Nagy -** *An untold tale of tolerance | Conditioning dendritic cells to restore immune balance using tolerogenic nanocarriers* – UVA
- 08 Apr 2024; **Floirs van den Brand** - *Therapeutic and prognostic aspects of autoimmune hepatitis* – VU
- 11 Apr 2024; **Thomas Caniels** - *Guided by glycoproteins: insights from antibody responses enable viral vaccine design* – UVA
- 17 Apr 2024; **Mohamed Elamin Ahmed Ismail** - *Cystic Echinococcosis in Humans and Domestic Animals in Central Sudan | Epidemology and Molecular Characterization Studies*- UVA
- 24 Apr 2024; **Ye Liu** - *Antiviral CRISPR-Cas strategies|Intended and unintended effects* - UVA
- 25 Apr 2024; **Maarten Nijen Twilhaar** - *A nano-sized message* – VU
- 16 May 2024; **Marthe Minderman -** *Oncogenic signaling and mechanisms of immune evasion in aggressive B-cell lymphomas* - UVA
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