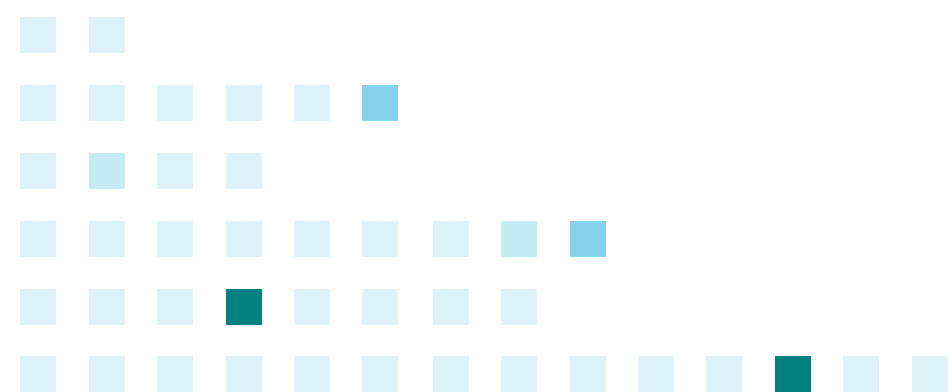


# Erasmus MC Core Facilities



Where Innovation and  
Research Come Together



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# Introduction

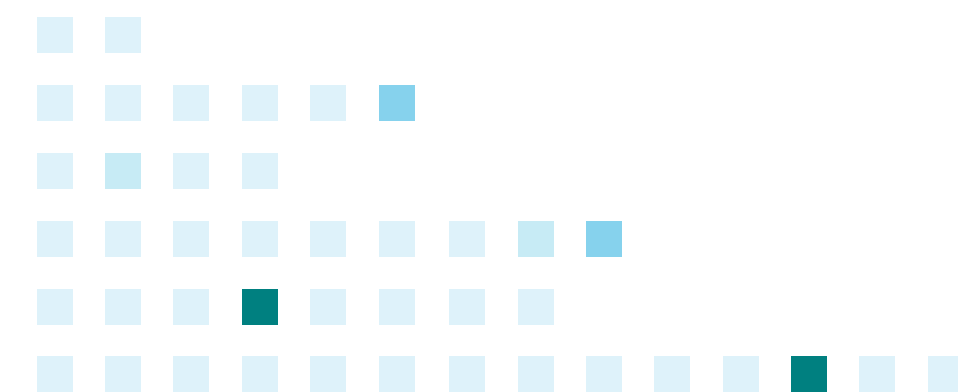


The Core Facilities at Erasmus MC empower researchers with cutting-edge technology, expert support, and world-class infrastructure. They are a driving force behind innovation—not just within Erasmus MC, but also for external scientists, companies, and global consortia. Every project gains unique value from their expertise and state-of-the-art resources.

In this document, the teams from our core facilities introduce themselves and provide a brief explanation of the services they offer. Please feel free to contact us for more information.



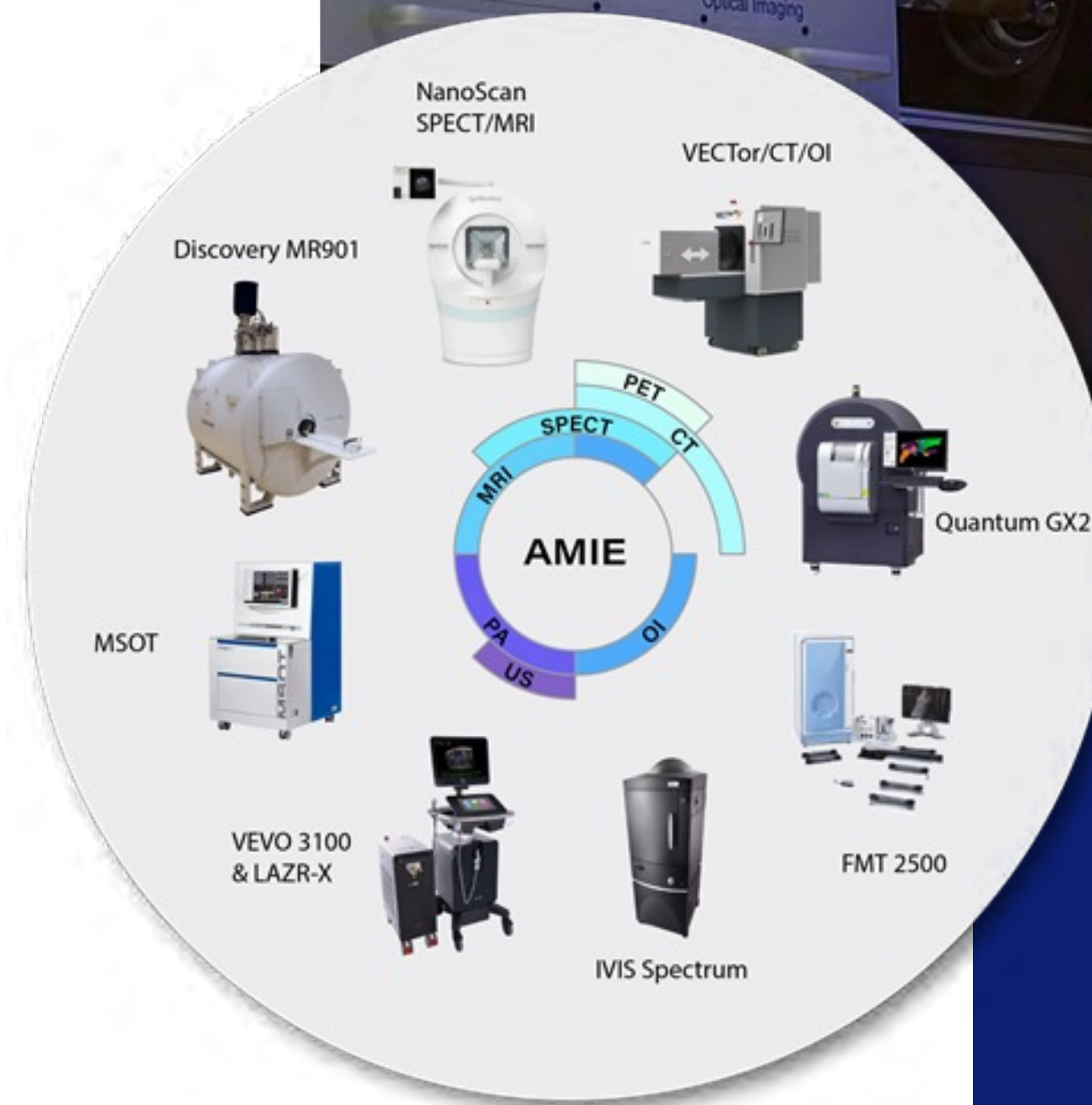
# Applied Molecular Imaging Erasmus MC (AMIE)



# Introduction

Applied Molecular Imaging Erasmus MC (AMIE) offers access to state-of-the-art imaging technologies for preclinical and translational research. More than an accessible infrastructure, AMIE is a leading center for training and expertise, supported by a dedicated team. Our unique setup enables the combination of multiple imaging modalities, such as MRI, PET, CT, ultrasound, and optical imaging, within a single study or even one laboratory animal.

AMIE supports diverse research fields, including oncology, microbiology, immunology, developmental biology, and pharmacology. By physically clustering complementary techniques and expertise, AMIE creates powerful synergies that foster more comprehensive and innovative research. At AMIE you will find the expertise and technologies to maximize your research potential.



## Team & Contact



**Dr. Monique Bernsen**

Head Operations and Daily Management



**Dr. Jeroen Essers**

Head Innovation



**Dr. Sandra van Tiel**

Application Specialist



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Application Specialist



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[www.erasmusmc.nl/en/research/core-facilities/amie](http://www.erasmusmc.nl/en/research/core-facilities/amie)



# What our clients say



With the help of AMIE, we were able—for the first time—to capture high-resolution 3D in vivo images of the brain in our age-accelerated mouse model to assess vascular changes. From project design and device setup to hands-on support during measurements, the AMIE team was incredibly responsive and solution-oriented. Their expertise and fast troubleshooting made a big difference and allowed us to push the boundaries of what was technically possible in our research.



**Soroush Mohammadi Jouab**  
PhD student



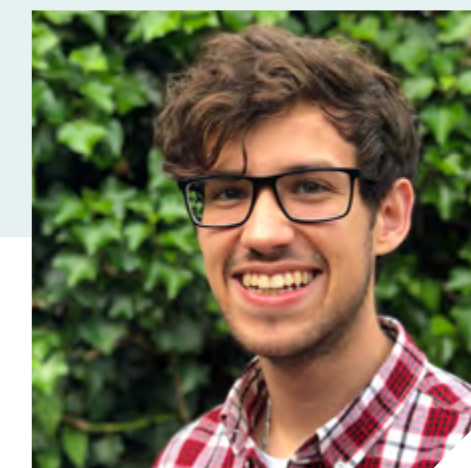
Our research group has an overall positive experience with the AMIE. They are easy to reach out to and always friendly and willing to help. Based on your research question, they provide advice on the ideal set up for your experiment, as well as the optimal camera settings for the study. With their extensive knowledge and expertise, they do not only support the aforementioned, but also support with analysis of the acquired images, or provide software to do so.



**Dr. Simone Dalm**  
Group leader radiotracer interactions group



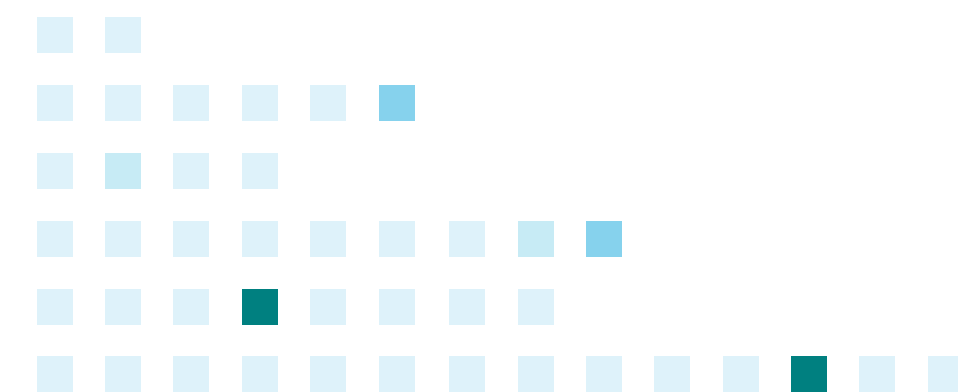
With the assistance of AMIE applications specialists, we have established a pipeline for 7T ex vivo brain MR imaging, enabling advanced neuroscientific discoveries and enhancing the translational value of our research. The optimisation and development were achieved through close collaboration with the AMIE application specialists, who consistently offer support and innovative ideas. Which have also led the successful implementation of ultrasound imaging to determine embryonic timing in mice.



**Thomas Jacobs**  
Research technician



# Erasmus Laboratory Animal Research Center (EDC)



# Introduction



The Erasmus Laboratory Animal Science Center (EDC) is the leading hub for animal-based research within Erasmus MC. The EDC is a versatile facility, providing a professional and secure environment where scientists, educators, and students receive comprehensive support for fundamental, translational, and preclinical research.

With our skilled professionals, specialized infrastructure and extensive experience across a wide range of animal species, we offer tailored solutions to address diverse scientific questions.

We manage the acquisition, housing, and care of laboratory animals and provide in-depth support throughout experimental procedures: from biotechnical procedures and veterinary care to training researchers and medical professionals.

Our commitment to responsible animal use, safety for both humans and animals, and strict adherence to legal and ethical standards is at the core of everything we do.

The EDC is continuously evolving. We actively contribute to innovation by implementing new methodologies that enhance scientific output per animal, thereby advancing the 3R principles (Replacement, Reduction, Refinement). Through our education programs and training initiatives, we also help shaping the next generation of professionals in biomedical research.

Supporting a wide array of research groups, the EDC collaborates closely with national and international partners. In doing so, it plays a vital role in pioneering research and driving medical progress with meaningful societal impact.



## Team & Contact



**Rini de Crom, PhD**  
Director Biomedical Sciences



**Edo Schraa, PhD**  
Project Manager



**Patricia Hereman, Drs**  
Manager




**Josianne Theuns, Drs**  
Head of BSL Facility



**Frans Meijers, DVM**  
Chair Animal Welfare Body/Designated Veterinarian



**Marjolein van Loon, DVM**  
Designated Veterinarian

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# What our clients say



“ Our experience with the Erasmus Laboratory Animal Science Center (EDC) has been exceptionally positive. From the SkillsLab perspective, we greatly value the professional and pleasant collaboration, always marked by open dialogue and tailored solutions. The EDC demonstrates a balanced and transparent approach to animal ethics and offers support with both flexibility and expertise whenever possible. This gives us confidence and peace of mind in carrying out our work. The EDC’s genuine engagement and open attitude make it a reliable and highly valued partner.



**Dr. Hilco P. Theeuwes**  
Program Leader SkillsLab & InnovationLab Healthcare

“ We regularly work with the EDC and AMIE with great appreciation and pleasure. The EDC warrants alert animal welfare supervision, which is pivotal for reliable animal experimenting. Always seeking the personal dialogue with priority of dealing with problems fast, you get the comfort of feeling that the EDC is part of your own lab. The AMIE’S imaging methods and help allow us to strongly refine and reduce the use of animals, whilst providing state-of-the-art read-outs that can be aligned with clinical imaging data. This provides excellent translation potential. This is of special importance in this era of demand for 3R solutions, for better model-to-clinic translation and for valorization of our research output. An endorsement of these two Core Facilities by our central financial resources, in order to keep up with the latest technical developments, is imperative for maintaining excellent research, responsible animal use and health care development.



**Dr. Anton J.M. Roks**  
Associate professor of Internal Medicine

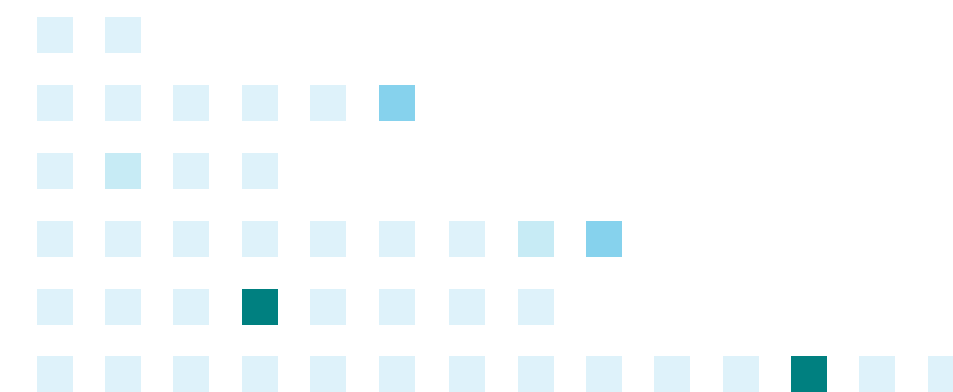
“ For all our animal work, we rely on the Erasmus Laboratory Animal Science Center (EDC). Our experiments run at both the Ce building and the BSL facility. We have good experiences working with the EDC, as their employees are easy to reach out to, and they are happy to think along with experimental designs and logistics. They are flexible in planning (virological experiments are not easy to predict) and they offer expertise in animal handling and procedures as well. Overall, they have extensive knowledge and expertise, and are a pleasure to work with.



**Dr. Rory D. de Vries**  
Associate professor and group leader department of Viroscience



# Experimental Medical Instrumentation (EMI)



# Your Partner in Medical Innovation

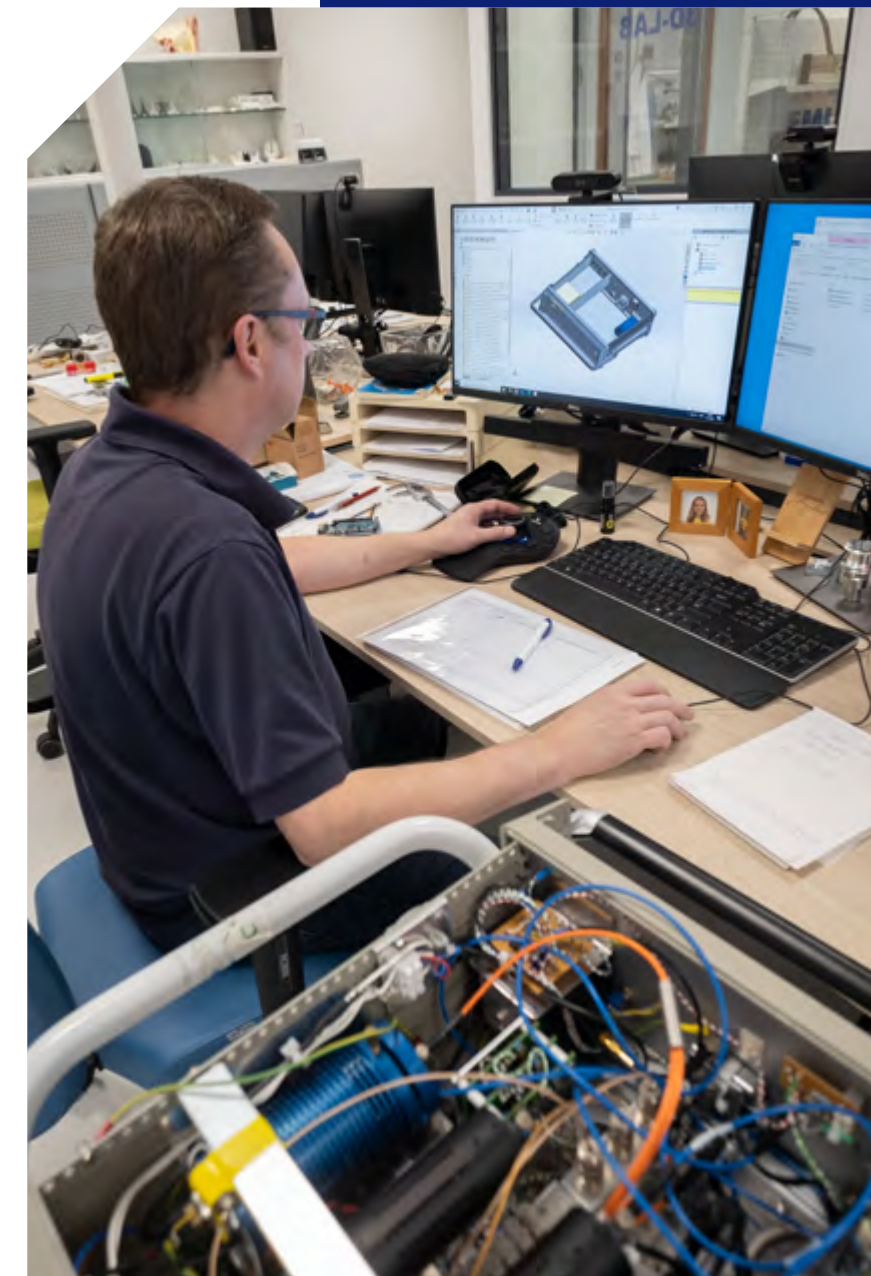


At EMI, we develop unique medical instruments and (experimental) setups that push the boundaries of healthcare. We specialize in creating innovative scientific and health-tech solutions that are not readily available on the market.

Together with medical researchers, healthcare professionals, and medtech startups, we turn ideas into reality. Our service includes custom-made instruments and equipment, advanced research and measurement setups,

specialized 3D models and medical devices. We work on and support fundamental, translational and clinical research, patient care and education. We combine in-depth knowledge of design & engineering, prototyping, 3D printing, precision mechanics, electronics, and (fiber)optics.

With our fully equipped workshops, including 3D CAD tools, CNC machines, and specialized equipment, we transform your concept into a tangible result.



## Team & Contact



**Geert Springeling, BSc**

Head Core Facility EMI and designer/instrument maker



**Michiel Manten**

Designer/instrument maker



**Robin van Vlerken**

Designer/instrument maker



**Stein Beekenkamp**

Designer/instrument maker



**Sylvia Leenheer, BSc**

Business advisor

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# What our clients say



The collaboration with EMI has been instrumental in the groundbreaking strides we made in the development of catheters for photoacoustic and OCT imaging. The expertise of the staff and the extensive, innovative machinery allowed us to transform an initial idea to a final product: a novel intravascular catheter, that is not just functional but also reliable and manufacturable.



**Prof. dr. Gijs van Soest, PhD**

Researchgroup Invasive Imaging, Thoraxcenter



The Maxillofacial Surgery and ENT departments collaborate closely with EMI. 3D-printed patient-specific anatomical models and surgical guides help us prepare for complex procedures and improve surgical precision. With access to cutting-edge printing technologies, EMI enables innovation in both clinical practice and education.

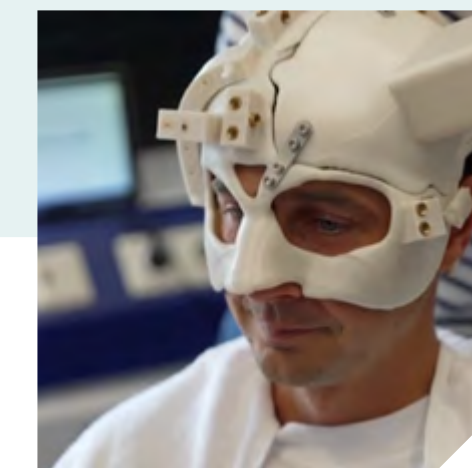


**Bart Cornelissen, PhD**

Technical Physician, Department of Oral and Maxillofacial Surgery and 3D-Lab

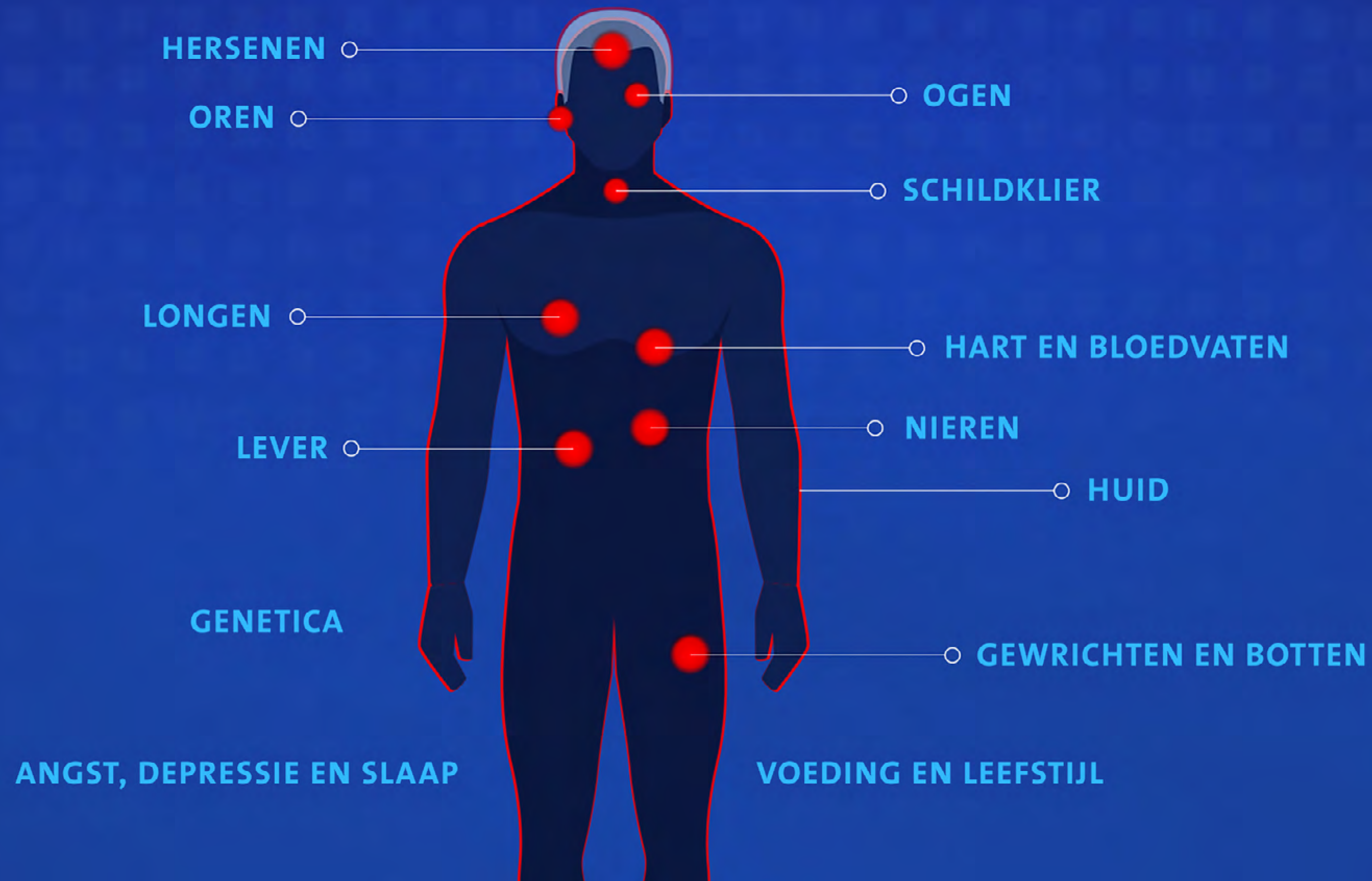


EMI has been an essential partner in advancing our clinical ultrasound research at the BrainEcho Lab. Their expertise and innovative tools enable us to continuously design, build, test, and implement custom devices in human studies. From 3D-printed helmets that secure ultrasound probes to a subject's head, to intra-operative surgical arms that stabilize probes over the exposed human brain, their contributions have made these developments possible. The team brings together deep technical expertise, practical problem-solving, and a strong focus on clinical application.

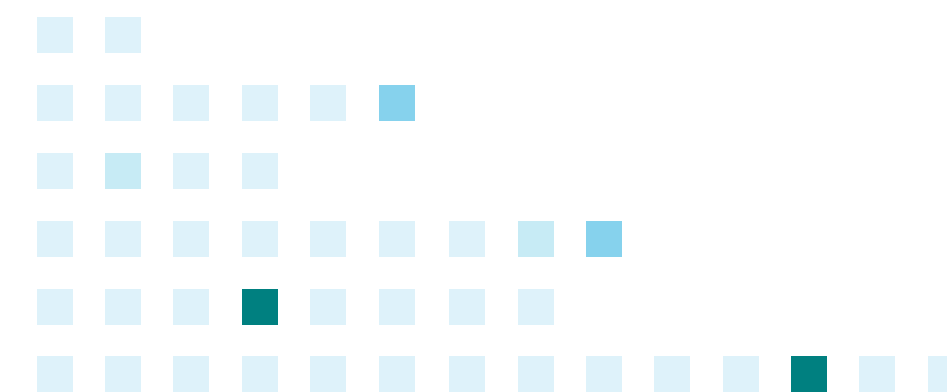


**Dr. Sadaf Soloukey, PhD**

Neurosurgical resident and post-doc and the BrainEcho Lab, Neuroscience



# The Rotterdam Study (ERGO)



# Introduction

The Rotterdam Study (ERGO in Dutch) is a population-based cohort study, initiated in 1990 in Ommoord, Rotterdam in the Netherlands. Its aim is to quantify the prevalence and incidence of common diseases among middle-aged and older adults, unravel their etiology, and identify targets to predict or prevent multifactorial diseases.

The study currently includes 17,931 participants (baseline response of 65%), aged 40 years and over. Participants are examined in-person every three to five years at a dedicated research facility. They are closely and continuously monitored during follow-up through automated linkages with health care providers, both regionally and nationally.

Research is structured along two axes: disease-focused lines aligned with medical specializations, and cross-cutting lines that enable inter- and multidisciplinary collaboration across clinical domains.

The study focuses on cardiovascular, dermatological, endocrine, hepatic, locomotor, neurological, ophthalmic, otolaryngological, psychiatric, and respiratory diseases. The findings of the Rotterdam Study have been presented in over 1750 research articles and reports.

We welcome you to explore whether there are opportunities for cooperation. Only through collaboration we can maximize the scientific and societal value of the vast amount of epidemiologic data collected within almost 18,000 participants in over 35 years.

Because our participants come from a community-based background, their data is ideally suited for use as a control group in the study of various diseases.

Over the years, we have developed advanced expertise in population-based study design, methodology, and logistics, including ethical approval. We specialize in collecting, processing, managing, and sharing data from diverse sources: questionnaires, physical exams, wearables, omics, and clinical records. Our data management team is available to support your research setup.



## Team & Contact



**Prof. dr. Arfan Ikram**  
Chair Department of Epidemiology



**Prof. dr. Maryam Kavousi**  
Cardiometabolic Epidemiology



**dr. Luba Pardo**  
Dermatological Epidemiology



**dr. Willem Pieter Brouwer**  
Hepatological Epidemiology



**dr. Layal Chaker**  
Internal Medicine Epidemiology



**dr. Mohsen Ghanbari**  
Molecular and Systems Epidemiology



**dr. Frank Wolters**  
Neuroepidemiology



**dr. ir. Trudy Voortman**  
Nutrition and Lifestyle Epidemiology



**Prof. dr. Caroline Klaver**  
Ophthalmology-epidemiology



**dr. ir. André Goedegebure**  
Otolaryngological Epidemiology



**dr. Lies Lahousse**  
Pharmacoeconomics



**Prof. dr. Meike Vernooij**  
Population Imaging



**Prof. dr. Miranda Schram**  
Psychiatric and social epidemiology



**Prof. dr. Guy Brusselle**  
Pulmonary Epidemiology



**dr. Silvan Licher**  
Medical Coordinator of the Rotterdam Study



**Drs. Frank van Rooij**  
Data management & IT



**Jolanda van Gelder-Docter**  
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# What our clients say



Since the mid-1990s, I have enjoyed working with many researchers in the Department of Epidemiology in the field of blood coagulation and cardiovascular disease. Doing research together with the Rotterdam study investigators has resulted in dozens of publications on the relationship between blood levels of coagulation factors, genetic variants and the development of arterial thrombosis.



**Prof. dr. Moniek de Maat**



My work in the last 20 years that made major impact on the field of human appearance genetics was only possible with the resource the Rotterdam Study provided.



**Prof. dr. Manfred Kaiser**



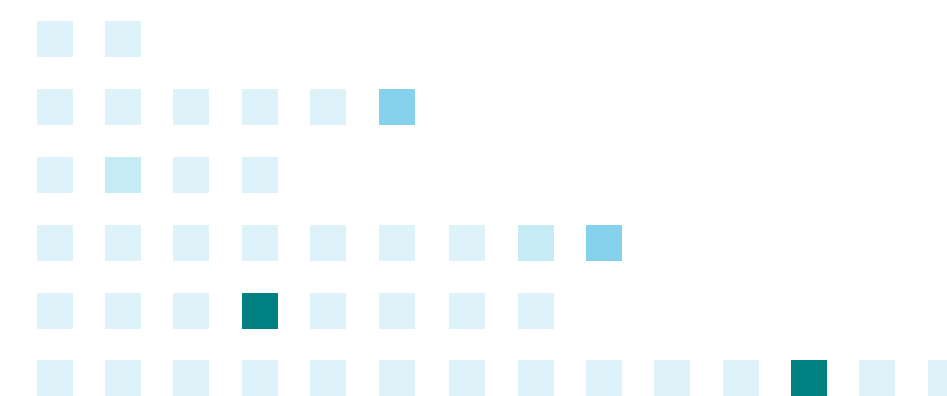
I moved to the Netherlands in 1999, already familiar with the Rotterdam Study through its numerous scientific publications. After joining Erasmus MC (Dijkzigt), I set my sights on earning a PhD and performed my research on cardiovascular aging. The wealth of outstanding scientific publications on research conducted within the Rotterdam Study enabled me to establish myself as an international expert in this field. Today, I continue to collaborate with much pleasure with several principal investigators of the Rotterdam Study.



**Prof. dr. Francesco Mattace Raso**



# The Generation R Study



# Introduction



Generation R is a large, population-based cohort study embedded in Rotterdam's diverse, multi-ethnic urban population. It investigates how early environmental and genetic factors influence health, growth, and development from fetal life into adulthood. The study consists of three cohorts. The first, started in 2001, follows around 10,000 children from fetal life into young adulthood. In 2017 the second cohort, Generation R *Next*, launched, studying children and their parents from preconception onward to examine early developmental influences. The third cohort, Generation R *Next - Optimaal Opgroeien*, initiated in 2023, focuses on a randomized intervention to assess the effects of lifestyle and stress-management strategies on maternal, paternal, and child health.

Participants are invited to our dedicated research center at Erasmus MC – Sophia Children's Hospital, where we use advanced and innovative methods to assess growth, development, health, and behavior. By collecting extensive data across early life stages, Generation R provides a unique foundation for understanding long-term health trajectories. The knowledge gained from these cohorts supports the development of evidence-based strategies to improve health outcomes and healthcare for future generations in urban, multi-ethnic populations.



## Team & Contact



**Prof. dr. Vincent Jaddoe**

Head of Core Facility



**Dr. Janine Felix**

Deputy Head of Core Facility



**Kjeld Aij**

Theme Director Health Sciences



**Sander Woerdeman**

Finance Manager



**Annemiek Mian**

Project Coordinator



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# Perspectives from the Generation R Management Team



“

Rotterdam is doing something unique in the world. We are already performing 3D ultrasounds of the embryo at 11–13 weeks of pregnancy and growth scans at 30 weeks in 10,000 women. These repeated measurements allow us to closely follow fetal development.

”



**Vincent Jaddoe**  
Pediatrician

“

Why does one child grow up to be healthy whereas another child doesn't? *Generation R Next* provides essential pieces of that puzzle.

”

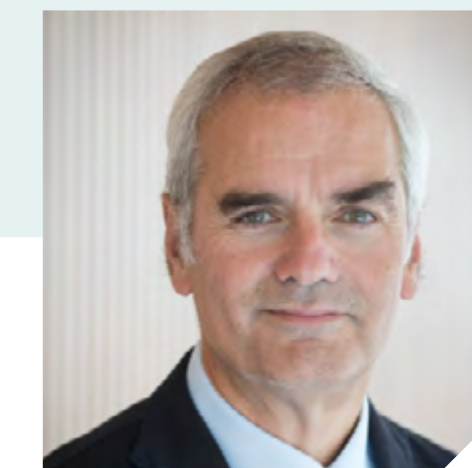


**Janine Felix**  
Senior Researcher

“

If there's one thing *Generation R* has made clear, it's how crucial the very first weeks of pregnancy are. That's when the foundation is laid for a child's health at birth.

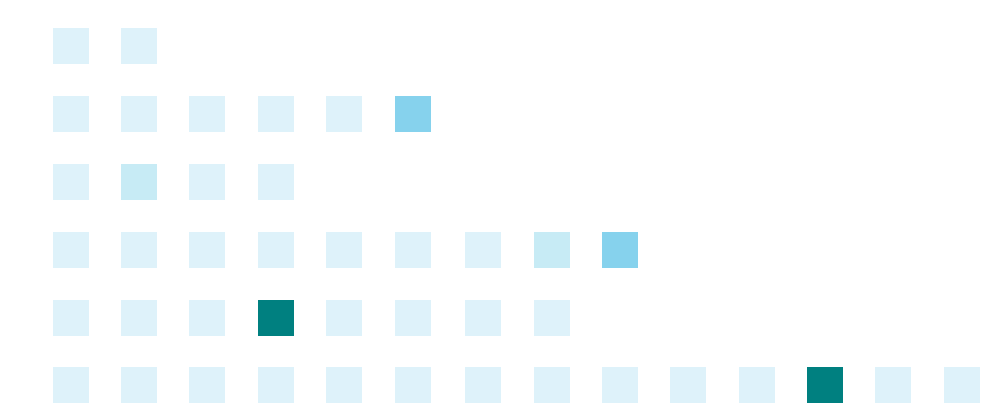
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**Eric Steegers**  
Obstetrician



# Genomics Core Facility Erasmus MC



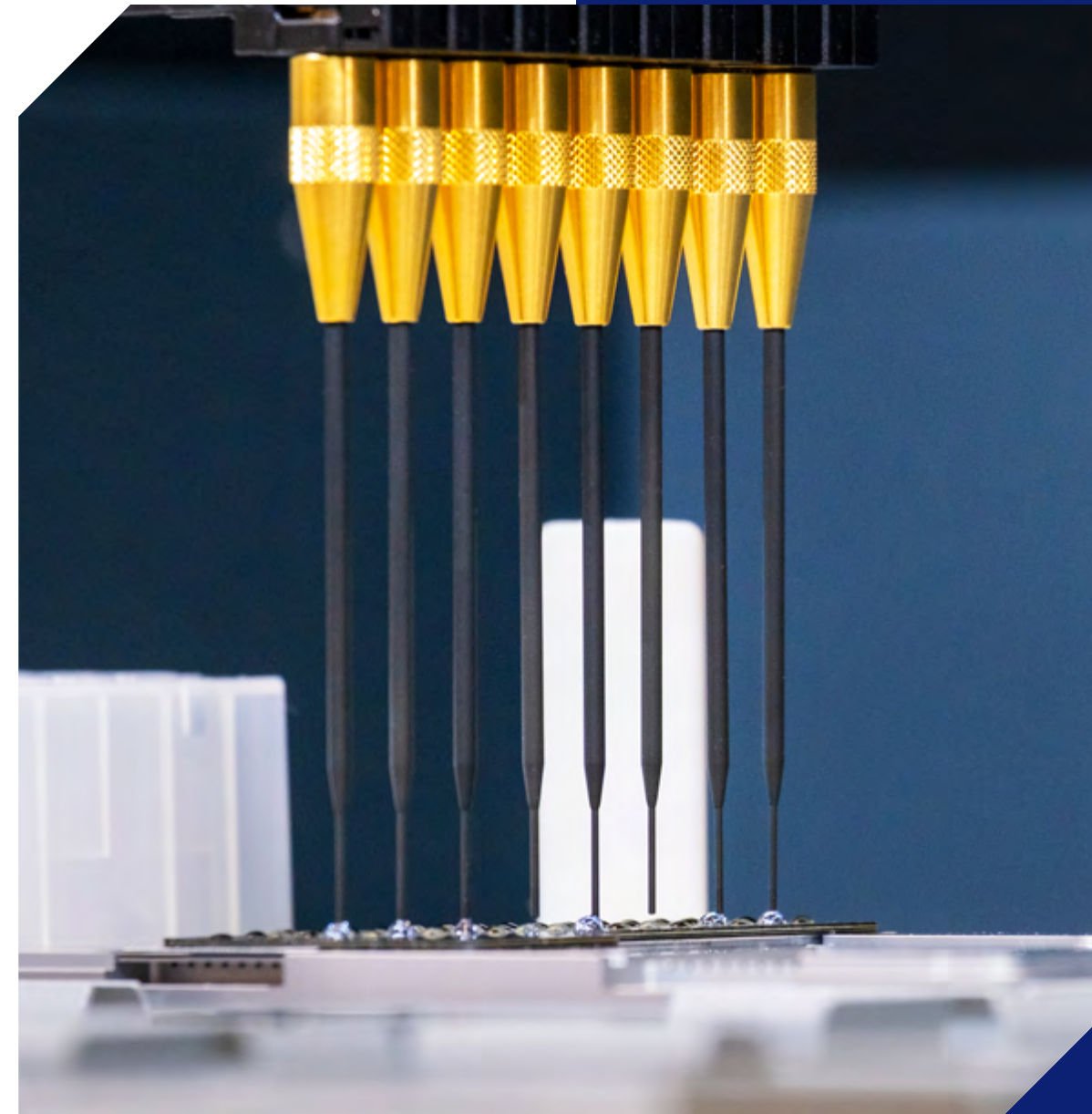
# Promoting scientific progress Improving healthcare



The Genomics Core Facility at Erasmus MC provides advanced genomic services with tailored expertise, delivering the support researchers and clinicians need to drive scientific progress and improve healthcare.

Our services span a broad range of genomics workflows, including automated DNA isolation, second- and third-generation sequencing with single-cell applications, genotyping arrays, and proteomic analyses for biomarker discovery or targeted studies. Specialised bioinformatics support, from streamlined pipelines to consultancy, ensures you gain maximum value from your data.

Founded through collaboration between the Human Genomics Facility and the Erasmus Center for Biomics, and with strong roots in large collaborative networks, we deliver high-throughput services with innovation and reliability. Our solutions broaden the scope of your research.



## Team & Contact



**Prof. Joyce Van Meurs**

Head Genomics Core Facility



**Gaby Van Dijk, PhD**

Contract and Project Manager



**Mila Jhamai**

Wet Lab Manager



**Harmen van de Werken, PhD**

Head Bioinformatics

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# What our clients say



“

We are again about to complete a block of collaboration, and I would like to take this opportunity to express our gratitude for the exceptionally professional work which has been done again in your labs; we are indebted! Thanks for the smooth partnering, the high standards.

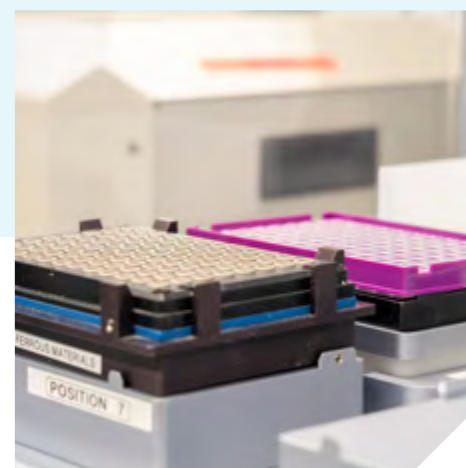
”



“

We especially kindly thank you for your openness and assistance at all these stages. Of course, we also thank you for the good genetic and epigenetic data collected in your genomic core facility. The data are currently being analyzed by us and providing extremely interesting results. All the effort has paid off greatly! We hope for a future collaboration with you.

”



“

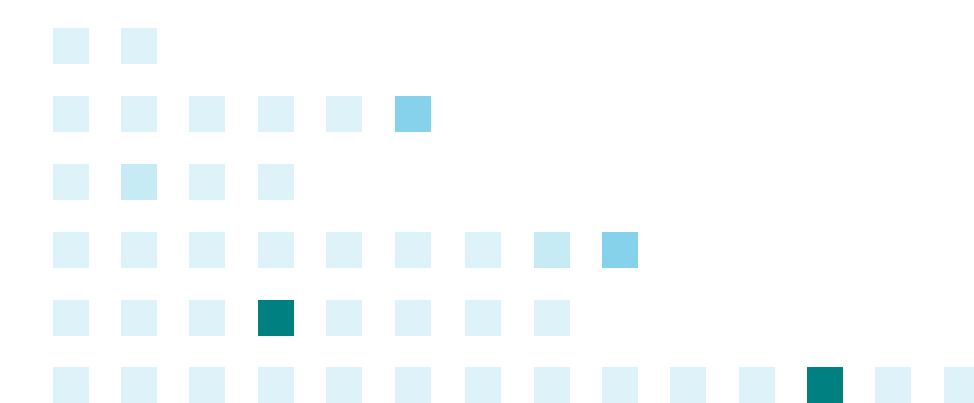
I'm pleased to say that the idat data was of high quality. Thank you for your excellent service, which I will recommend to others, seeking methylation analysis.

”





# Induced Pluripotent Stem Cells (iPS)



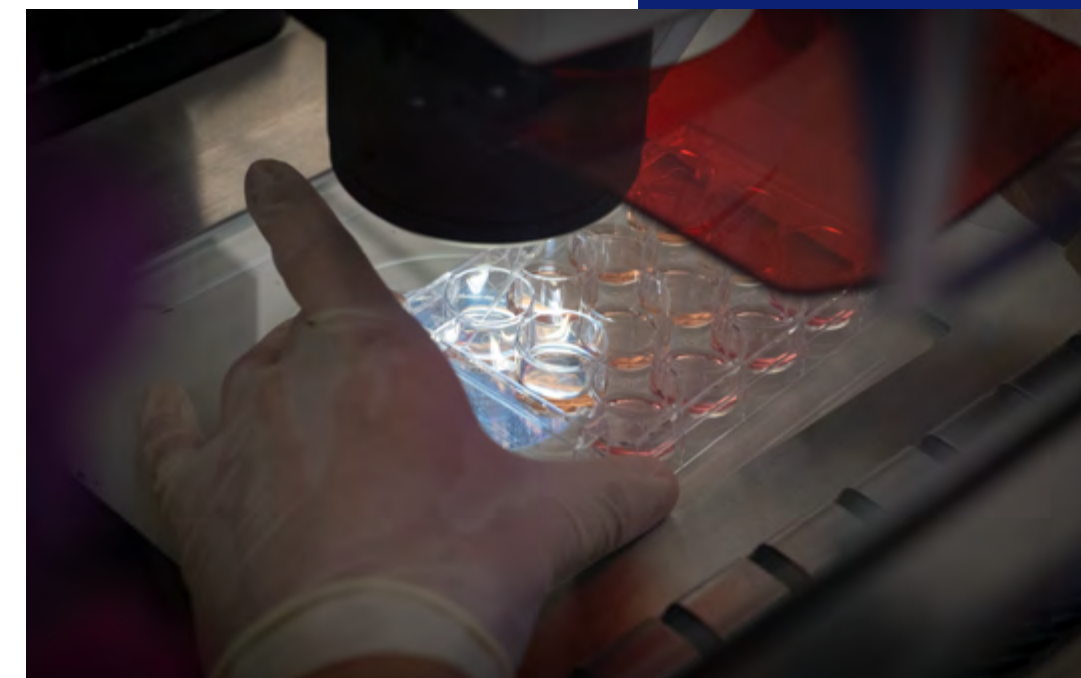
# Introduction

The Erasmus MC iPS Core Facility, founded in 2011, is a central hub for cutting-edge stem cell research, specializing in the generation, characterization, and differentiation of human induced pluripotent stem cells (iPSCs). We generate research-grade iPSCs from various primary sources—including skin biopsies, blood, bone marrow, urine, and hair—using different reprogramming methods such as episomal plasmids, Sendai virus, RNA, and Lentivirus.

All lines undergo stringent quality control, including identity checks, pluripotency analysis, functional assays, and genotyping. We also offer on-demand differentiation into specific cell types, including neurons and beta cells as well as customized cell characterization services.

Training is a key part of our mission: we offer hands-on courses in iPSC maintenance and short-term, tailor-made training programs upon request. The facility is part of international initiatives such as CorEuStem and the Stem Cell COREdinates consortium, working to standardize and advance global stem cell research.

As a facility embedded within Erasmus MC, we offer subsidized services to Erasmus MC researchers and collaborate broadly with academic, clinical, and industry partners to accelerate progress in regenerative medicine, disease modeling, and drug discovery.



## Team & Contact



**Dr. Mehrnaz Ghazvini**

Head iPS Core Facility



**Tracy Li**

Senior Research assistant



**Lieke Dons**

Senior Research assistant



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Research assistant

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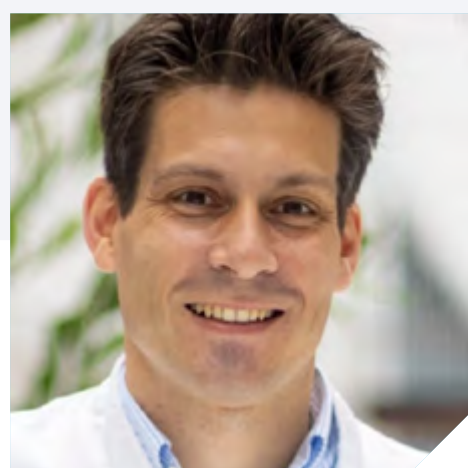


# What our clients say



“  
**My experience with the iPSC Core Facility has been very positive over the last couple of years. The staff are highly knowledgeable, responsive, and supportive, providing clear guidance at every step of the process. The facility’s equipment and protocols are state-of-the-art, ensuring high-quality results. Overall, their service has significantly facilitated our research using iPSC based models in better understanding thyroid hormone signaling in the brain, and I would highly recommend the iPSC Core Facility to colleagues working with stem cells.**

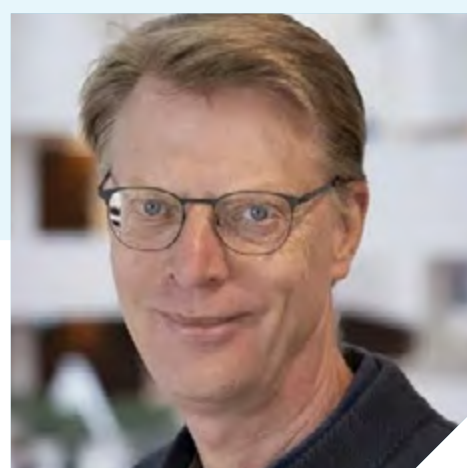
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**Prof. Dr. Edward Visser**  
Internal Medicine

“  
**provided by the iPSC facility. From start to finish, the team demonstrated exceptional technical expertise, professionalism, and responsiveness. Their proficiency in induced pluripotent stem cell generation and rigorous quality control consistently met the highest standards in the field (according to ISSCR). The team was always approachable, attentive to my questions, and flexible in accommodating customized requests, making collaboration smooth and highly productive. I also appreciate how the facility continues to evolve alongside advances in this fast-paced field such as including GSA-arrays and cell-line repositories. The user facilities and culturing services are very conveniently set-up to meet researchers’ needs e.g. IPS-specific equipment such as nucleofection devices.**

”



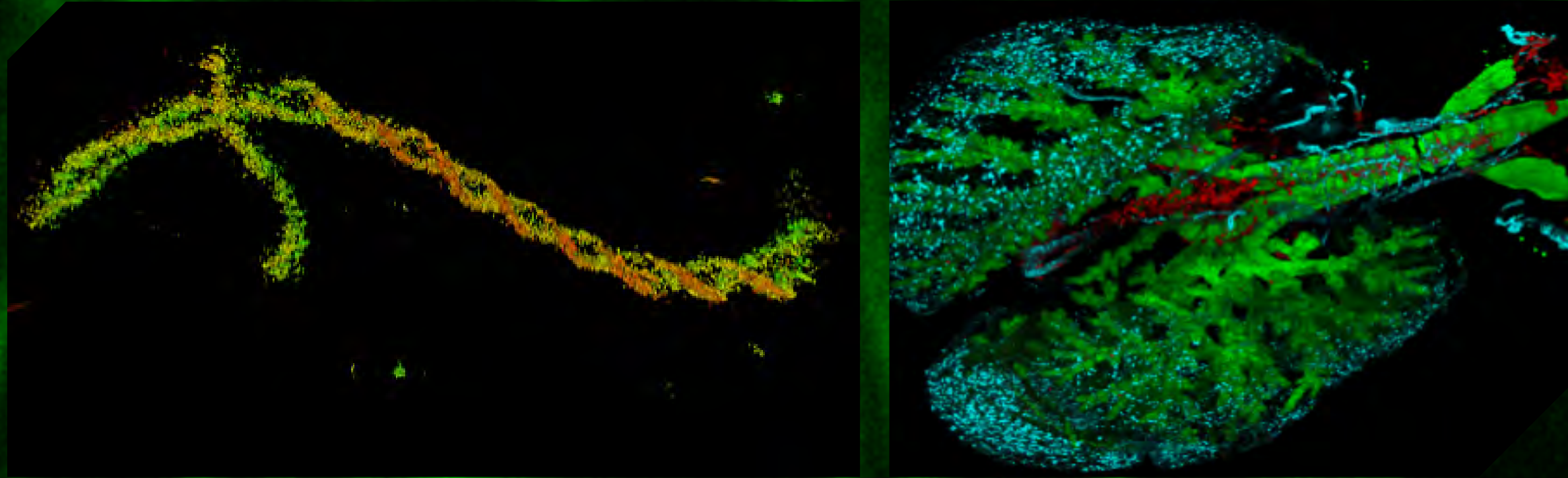
**Prof. Dr. Ype Elgersma**  
Head of research and education of clinical genetics department

“  
**Our group has been collaborating with the iPSC core facility for a decade. The collaboration has been very fruitful and laid at the basis for several scientific publications and promotions. Apart from providing iPSC from multiple patients and healthy controls, the core facility has always been a very useful partner for training new staff working with the cells, for advise on iPSC culture and differentiation, and for problem solving. In addition, their scientifically input in our projects has been very valuable.**

”

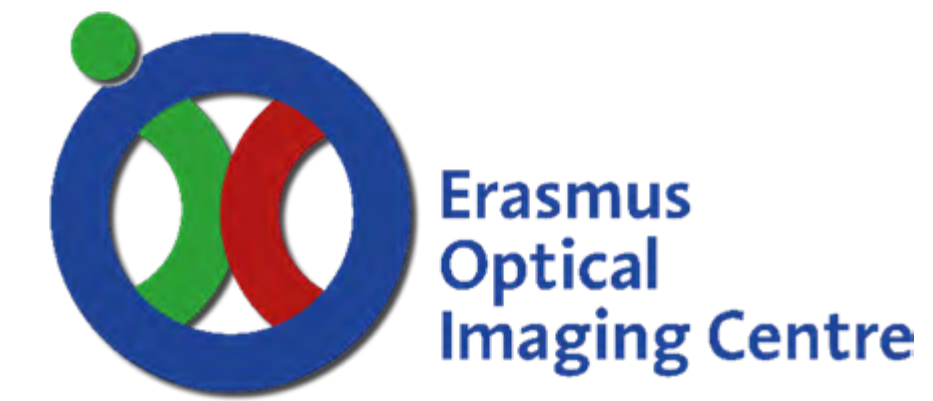


**Dr. Martin Hoogduijn**  
Associate professor, Internal Medicine

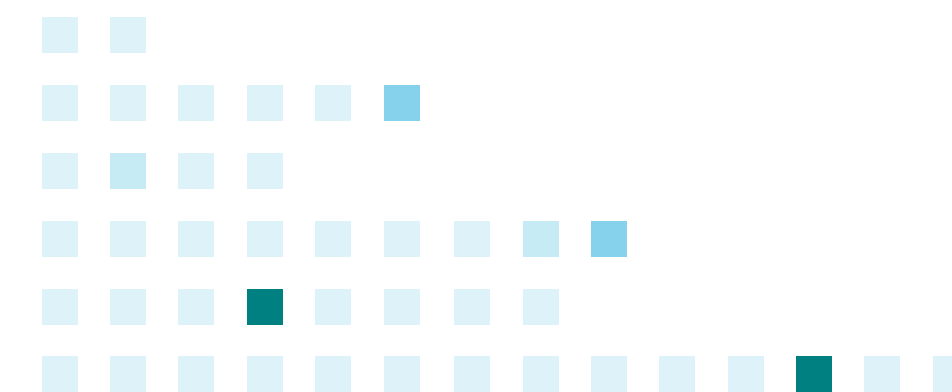


*“...the help and input  
of the OIC were never far  
away and always useful”*

Lieke Stockman



## Erasmus Optical Imaging Centre (OIC)



# Introduction

The Erasmus Optical Imaging Centre (OIC) is a core facility focusing on the development and application of advanced fluorescence microscopy technology for biomedical research.

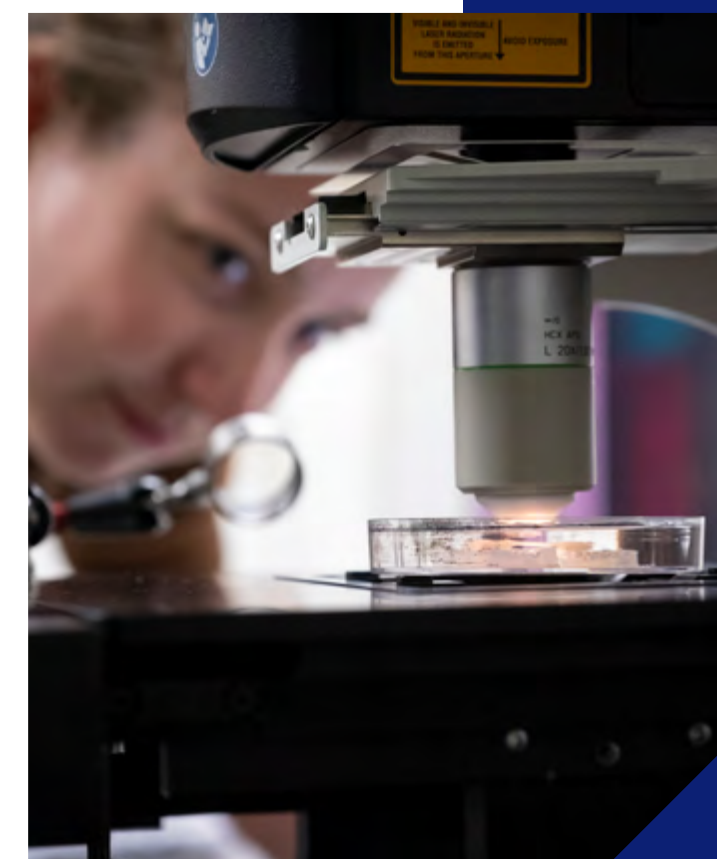
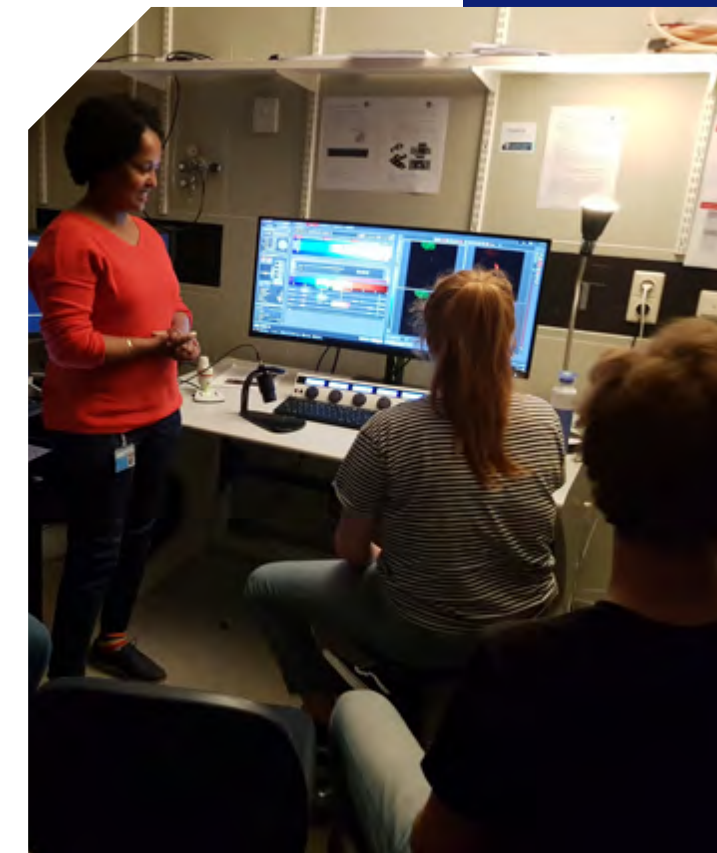
The OIC is accessible to both researchers from within as well as outside the Erasmus MC.

The OIC offers access to a broad spectrum of techniques ranging from conventional fluorescence microscopy to highly advanced techniques, including:

- Live-cell microscopy and functional imaging
- Confocal fluorescence microscopy
- Super-resolution microscopy
- High-content imaging and smart microscopy
- Digital image processing

The OIC mission comprises five main goals:

- Innovation – Development of novel imaging applications and access to state-of-the-art microscope technology.
- Knowledge – Advice on selection of the imaging technique best suited for answering your specific research questions.
- Training – We teach you in detail how to operate the equipment and how to choose optimal imaging settings as well as how to optimally interpret image data.
- Collaboration – If desired, the OIC-staff collaborates intensively with researchers and co-publishes the results in peer-reviewed journals.
- Education - OIC organizes courses at BSc, MSc and PhD level, many of which are open to participants from inside and outside Erasmus MC.



## Team & Contact



**Adriaan Houtsmuller**

CoFa Head



**Johan Slotman**

Science



**Tsion Abraham**

Time-lapse imaging and expansion microscopy



**Bart Geverts**

Informatics and smart microscopy



**Marla Lavrijsen**

Confocal imaging and microfluidics



**Gert-Jan Kremers**

Technology



**Jeffrey van Haren**

Innovation



**Martijn de Gruiter**

Functional imaging and super-resolution



**Alex Nigg**

Confocal imaging and image analysis



**Ilse Bakker**

Correlative light and electron microscopy

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<https://erasmusoic.nl/>



# What OIC-users say



Thanks to the OIC, our team can study neural circuits at a resolution we never thought possible. With the dedicated confocal microscopes, we explore the fine details of neuronal networks, such as the connections linking motor cortex to cerebellum. By combining the OIC microscopes with expansion technology, we could even surpass the resolution limits of conventional light microscopy and uncover connections between the axons of individual neurons. These questions could only be addressed using electron microscopy previously. These new insights could potentially transform our understanding of how neurons are connected.



**Zhenyu Gao**

Principal investigator Dept of Neuroscience  
Erasmus MC



**My work as PhD student at Erasmus MC included a lot of microscopy, and the help and input of the OIC were never far away and always useful!**

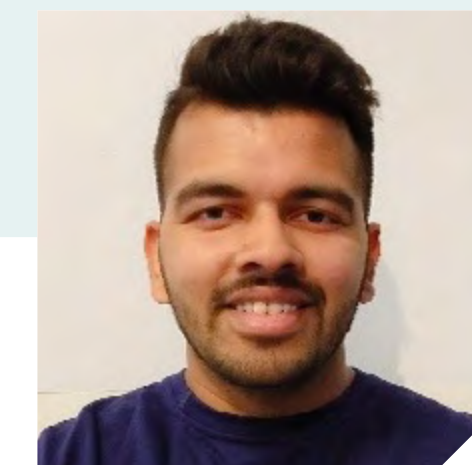


**Lieke Stockman**

University of Copenhagen



My project examines DNA damage repair dynamics in meiotic prophase cells, for which I regularly use STED super-resolution imaging. The OIC has been invaluable, providing both hands-on support with STED and practical advice to improve resolution further. I also benefited from the CoFa's expertise and advanced facilities, including the opportunity to visualize and measure complex 3D structures in virtual reality.



**Aditya Mhaskar, PhD student**

TU Delft - Erasmus MC convergence flagship CIFIC