



# **2022 ANNUAL REPORT**

Department of Biomedical Sciences  
of Cells and Systems (BSCS)

**UMCG**



university of  
groningen





# 2022 ANNUAL REPORT

**Department of Biomedical  
Sciences of Cells and  
Systems (BSCS)**

**UMCG**

## CONTENT

<u>Content</u>	2
<u>1. Foreword - 2022</u>	3
<u>2. Research at BSCS</u>	4
<u>3. Research groups at BSCS</u>	5
3.1 <u>Section Anatomy and Medical Physiology</u>	5
3.2 <u>Section Cognitive Neuroscience</u>	6
3.3 <u>Section Molecular Cell Biology</u>	7
3.4 <u>Section Molecular Neurobiology</u>	9
<u>4. Awarded Research Proposals</u>	10
<u>5. Facts and Figures</u>	12
<u>6. Facilities</u>	14
6.1 <u>Dissection Room facility</u>	14
6.2 <u>Medical Physiology Lab facility</u>	15
6.3 <u>Cognitive Neuroscience Center (CNC) facility</u>	16
6.4 <u>Drosophila melanogaster facility</u>	17
6.5 <u>UMCG Microscopy &amp; Imaging Center (UMIC) facility</u>	18
6.6 <u>Cesium-137 γ-ray facility</u>	19
<u>7. Education</u>	20
<u>8. Scientific dissemination and Business development</u>	22
8.1 <u>PKAN</u>	22
8.2 <u>Enatom</u>	22
8.3 <u>Anatomy Gym</u>	22
8.4 <u>Stem cell therapy</u>	22
<u>9. Outreach and Dissemination</u>	23
<u>10. Appendix 1: PhD graduations</u>	25
<u>11. Appendix 2: Publications</u>	28
<u>12. Colophon</u>	33
<u>13. Contact</u>	33

# 1. Foreword - 2022

Hereby we present to you our third Annual Report of the Department of Biomedical Sciences of Cells and Systems (BSCS). As with our previous reports, this edition aims to provide you with a quantitative overview of all our activities and achievements in the year 2022, including our scientific research, educational programs, business development, and outreach initiatives.

The risks of such overviews are that they may be (mis) used as numerical indicators to score quality and progress or (even worse) as failures, especially when evaluating individual contributions. So, while we do consider and value the quantitative data in this report as our "medals", we also like to emphasize that they are the result of the collaborative efforts of many (not always mentioned by name) and that many other non-quantitative events have enlightened 2022. Whilst the Covid-19 pandemic seems over, it still had an impact, especially on Ph.D. students that had to finish their projects with limited or no time compensation. In addition, several other crises in the world also impacted their future perspectives, meaning that we must -even more than before- stand together to inspire and mentor them to help them to build up their future careers.

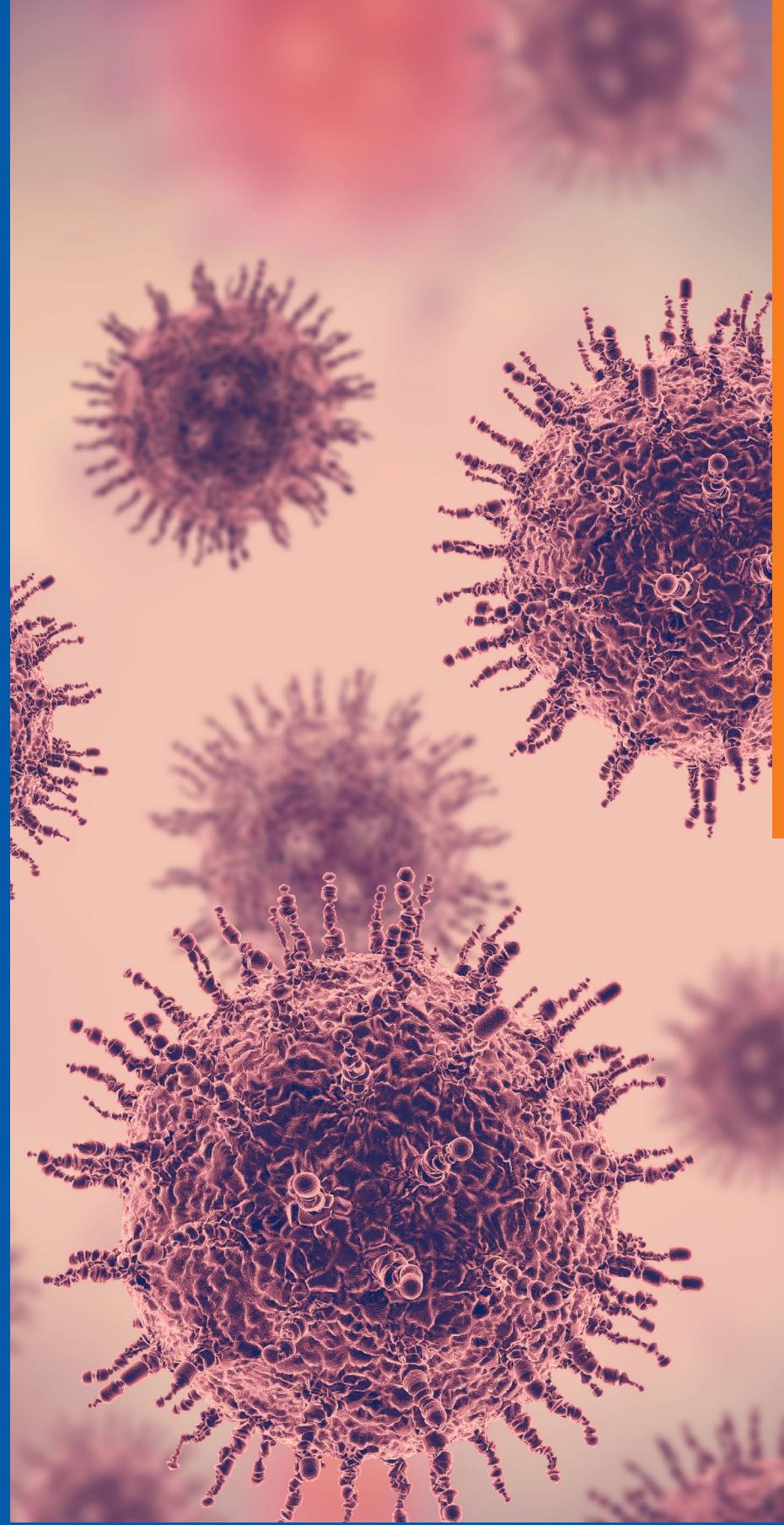
On behalf of all our department members, I would also like to express my appreciation to our collaborators and funding agencies, but also the patient organizations (for continuous inspiration); without their support, all of this would not have been possible.

Finally, I am proud of and indebted to our research and technical staff, and to the many students for their unwavering commitment, creativity, and cooperation in the year 2022.



Harrie Kampinga  
Head of the department, BSCS

February 2023



## 2. Research at BSCS

Our mission is to contribute significant advancements to the understanding of the fundamentals of functional and dysfunctional human biology at the molecular, cellular and systems level that ultimately will be applicable to combat diseases and increase human health span.

In BSCS, research and education are intertwined.

- With our research, we aim to discover and transfer knowledge to medical applications.
- With our education, we teach cutting-edge biology to the doctors and scientist of the future.

This way, we strive to advance the cycle of bench-to-bed-to-bench for human well-being. The societal relevance of this mission is considered to be comprised of the following 3 main items:

### 1. Understanding basic mechanism of the function of cells & systems drive advances in Medicare

Nearly all current medical treatments are based on discoveries, often done long before the related application, on detailed insights in how molecules, cells and systems function and how they are derailed in disease.

- Our early analysis on how precision radiotherapy can be targeted to avoid radiation side effects has been the basis for proton therapy.

- Our screens in *Drosophila melanogaster* have led to the discovery of therapeutic compounds now explored for the treatment of PKAN.

### 2. We connect state-of-the-art Research with Innovative Education

Academic education requires role models and modern teaching.

- BSCS takes pride in intense training and careful supervision of its PhD students.
- We support problem-based, curiosity-driven learning programs (such as in flipped classrooms), provide basic and advanced courses in science technologies and strategies, and practical courses.
- We develop novel digital education tools (e-learning).

### 3. Collaborations drive discoveries

The progress of science is based on specialized expertise for discoveries, but requires intense collaborations amongst experts for driving such discoveries all the way to utilization.

- BSCS strives for a great team spirit not only to nurture internal collaboration but also strongly supports collaborations with external partners in and outside the UMCG.

### 3. Research groups at BSCS

Research in the Department of Biomedical Sciences of Cells and Systems is divided into the following four sections:

#### 3.1 The section Anatomy and Medical Physiology

The section Anatomy and Medical Physiology perform basic research on human motivational processes using different motivational contexts and research techniques. Human motivational process in biomedical education and training also underly the development of several digital applications by our group that support undergraduate and postgraduate anatomy and physiology teaching. These applications can also be implemented in applied research on teaching efficacy. The two facilities of the Section – Dissection Room and Medical Physiology Lab –offer possibilities to collaborate in external research programs.



#### Groups:

- The research group of **Janniko Georgiadis** mainly focuses on human motivational processes in i) biomedical education and training, integrating educational science with gaming-psychology, and ii) sexual behavior, focusing on predictive coding theory.



## 3.2 Section Cognitive Neuroscience

The Section Cognitive Neuroscience does research into symptoms and treatment of different psychiatric disorders and of age-related cognitive impairment.

### Groups:



- **André Aleman** focuses on three lines of investigation:  
i) Psychiatric symptoms and vulnerability, with a focus on cognitive-emotional interactions, ii) Cognitive aging, with a focus on mild cognitive impairment and iii) Treatment and prevention, with a focus on non-invasive neurostimulation.



- **Branislava Ćurčić-Blake** focuses on brain connectivity analysis and improving cognitive functioning in patients with multiple sclerosis and elderly people with mild cognitive impairment (MCI), as well as auditory verbal hallucinations.



- **Sander Martens** focuses on individual differences in temporal attention within and across sensory modalities.



- **Iris Sommer** aims to improve future perspectives for patients with schizophrenia and other complex brain disorders. Special emphasis is put on biomarkers and personalized medicine. Her group has a broad interest in methods such as imaging, post-mortem analysis, epidemiology and treatment studies.



- **Marie-José van Tol** focuses on the interaction between mood and cognition in major depressive disorders, and especially factors that promote a prolonged course of these disorders and prevent relapse.



## 3.3 Section Molecular Cell Biology

The research mission of this section is to study basic processes in molecular cell biology to generate novel, fundamental insights related to cellular and organismal fitness. Through high-quality research, we aim at identifying and, where possible, at exploiting cellular targets to promote healthy aging and/or treat human disease.

### Groups:



- **Lara Barazzuol** (Seconded from the department of Radiation Oncology) focuses on assessing the effect of DNA damage (as caused by radiation and chemotherapy) on the brain and aims to achieve an improved biological and molecular understanding of cancer treatment-induced neurocognitive dysfunction.



- **Rob Coppe** (Seconded from the department of Radiation Oncology) focuses on the role, mechanism and regenerative potential of normal tissue stem cells in the response of tissues to different radiation qualities, such as photons and protons.



- **Mark Hipp** studies the cellular quality control machinery to identify the mechanisms that healthy cells use to prevent toxic protein aggregation, and to help cells to use these mechanisms to prevent diseases associated with protein aggregation.



- **Ben Giepmans** aims to better visualize how molecules, organelles and cells act in concert to organize life, and how this may be affected in diseases. Focus is on developing and improving large-scale multimodal microscopy approaches that allow better identification of targets with new probes. Special interest is in uncovering the trigger that leads to Type 1 diabetes.



- **Harrie Kampinga** studies how cells maintain a healthy proteome, which is not only crucial for protein function and hence functionality of cells, but also essential to prevent accumulation of protein damage (protein aggregates) that can lead to a cascade of toxic events that threaten cellular health span. To ensure a proper protein homeostasis, an intricate protein quality control (PQC) network exists in cells in which Heat Shock Proteins (HSP), the central research topic in his group, play a central role.





- **Muriel Mari** focuses on i) Investigation of the membrane rearrangements underlying the biogenesis of the autophagosomes, the vesicular carriers that are the hallmark of autophagy, and ii) Improvement and development of new electron microscopy approaches to increase the number of biological questions that can be addressed with these techniques. (Muriel resigned from our department on 01-06-2022)



- **Ody Sibon** aims to understand molecular mechanisms behind neurodegenerative diseases presenting with movement disorders. Obtained fundamental insights are used to design treatment strategies which are currently tested in clinical settings.



- **Fulvio Reggiori** aims at unveiling the regulation and molecular mechanism of autophagy using yeast as the model system. As the long-term objective is to understand the exact contribution of autophagy in specific physiological and pathological contexts, the group is also investigating the interaction between autophagy-related proteins and pathogens, in particular viruses, and the role of autophagy in preventing neurodegeneration. (Fulvio resigned from our department on 01-06-2022)



- **Catherine Rabouille** focuses on i) how cellular stress remodels the secretory pathway into a phase separated stress assembly in cell culture and ii) how cells initiate unconventional secretion through the Golgi protein GRASP in organoids.



- **Sven van IJzendoorn** aims to understand the molecular mechanisms that control the intracellular dynamics of proteins, lipids and membranes in the context of the functional organization of cells, and to understand how these mechanisms contribute to health or, when disrupted, to human disease. In this context our focus is also on rare congenital disorders caused by disrupted intracellular protein dynamics and cellular organization, which includes elucidating their pathogenesis, development of patient-specific iPSC-based cell models and lead identification for novel therapeutic strategies.

## 3.4 Section Molecular Neurobiology

The mission of the Section Molecular Neurobiology is to study the central nervous system (CNS) during healthy ageing and neurodegenerative diseases using state of the art techniques.

### Groups:



- **Wia Baron**'s research interests lie in the area of myelin biogenesis and myelin repair with emphasis on the disease multiple sclerosis (MS). Currently, her research aims at revealing and overcoming environmental restrictions in MS lesions that underlie remyelination failure.



- **Bart Eggen** focuses on neuron-glia signaling and on the epigenetic regulation of different glial cell phenotypes and associated functionalities. This research is focused on brain development, ageing and perturbed functions of cells of the central nervous system cell in neurodegenerative conditions.



- **Inge Holtman** focuses on the effect of natural genetic variation on susceptibility to brain diseases using state-of-the-art computational and machine learning approaches.



- **Susanne Kooistra** focuses on how the epigenome regulates glial cell identity and function under neuroinflammatory conditions like multiple sclerosis, using single cell-omics approaches.



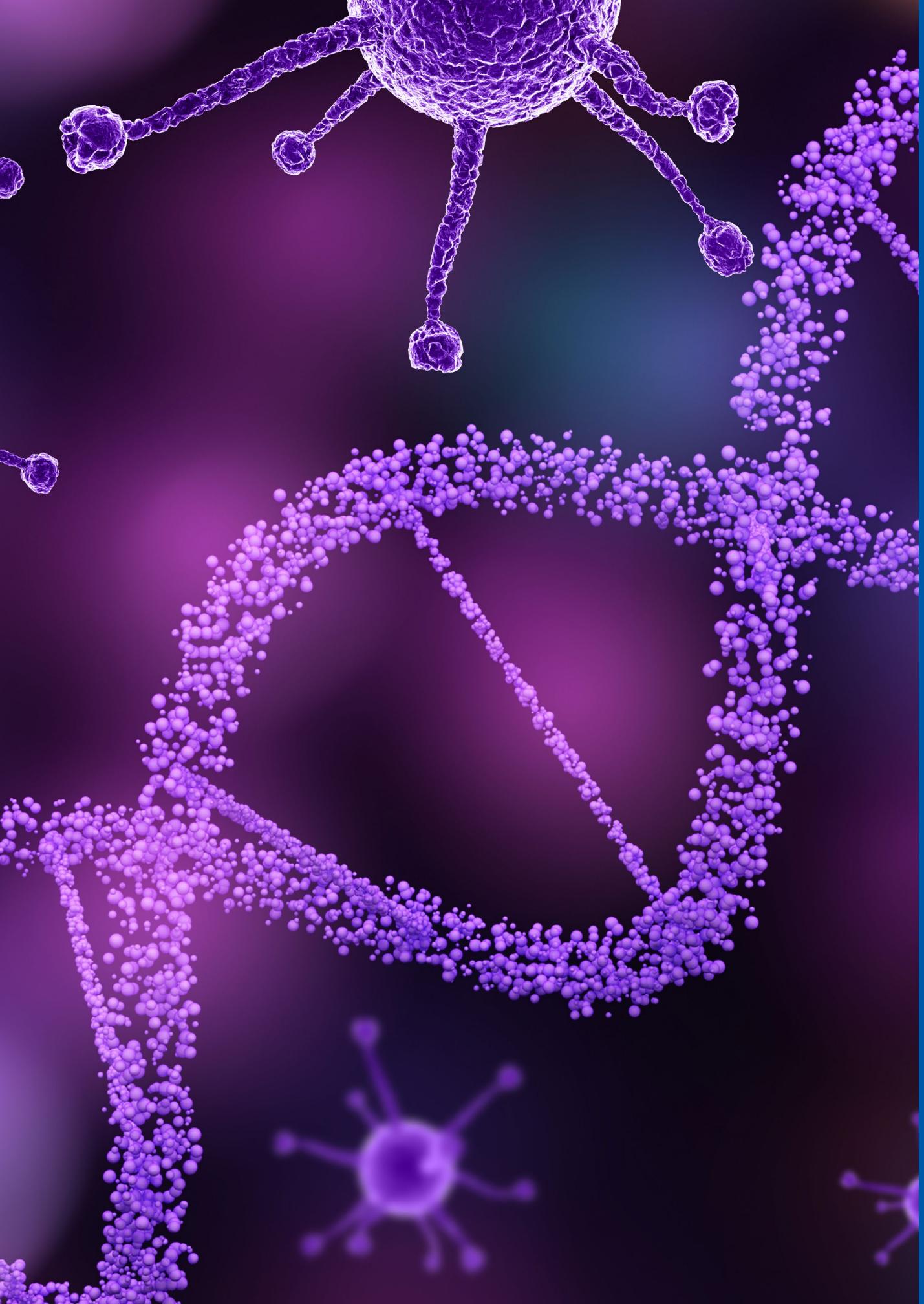
- **Inge Zijdewind** investigates mechanisms – at the level of muscles, spinal cord, and cortex – responsible for increased levels of fatigue and fatigability in different groups of subjects (including multiple sclerosis). Additionally, associated effects of fatigue and fatigability on physical and cognitive performance, and quality of life are studied.

# Awarded Research Proposals

## Projects awarded to the PIs in 2022:

#	Group Leader	Funding Body	Project Title	Funding Awarded
1	Sibon/Gorter	ZZF	Fruitvlieg behandeling Noordzeeziekte	€ 95.900
2	Sibon	NWO	Elucidating mechanisms by which the negatively charged metabolite 4-phosphopantetheine crosses lipid bilayers.	€ 349.926
3	IJzendoorn	La Roche	Proof of Concept to assess the potential of liver and intestinal organoids for addressing pediatric drug exposure and safety	€ 300.000
4	Eggen	ZonMw	Microglial early Neuroinflammatory Dysfunction in Frontotemporal Dementia and Amyotrophic Lateral Sclerosis due to C9orf72 repeat Expansions	€ 136.000
5	Eggen	PPP/UMCG	Drug target finding for neuroinflammation in neurodegenerative diseases and ageing, with a focus on Alzheimer's disease	€ 185.000
6	Zijdewind	MS Research	A stimulating challenge: can low intensity stimulation of sensory nerves improve walking capacity in persons with MS?	€ 62.001
7	Holtman	NARSAD	(Single Nucleus) Transcriptome signatures underlying cross-disorder symptoms in post-mortem brain tissues of donors with Major Depression Disorder, Bipolar Disorder and Schizophrenia	€ 62.520
8	Begemann	NARSAD	To Continue or not to Continue? Investigating the Effect of Antipsychotic Maintenance Therapy on Brain Volume in First Episode Psychosis using a Randomized Design	€ 62.520
9	Baron	MS Research	Unravelling differences in blood-brain barrier function between different clinical forms of MS	€ 70.000
10	Sommer	Suffugium	Elke stem telt	€ 24.953
11	Sommer	Huibregtsen prize	Unequal medical treatment of women and men	€ 25.000
12	Van Tol	ZonMw	Take it personally: A cognitive neuroscience approach to getting a grip on depression	€ 799.534
13	Kampinga	NWO	CureQ - Predict, Delay & Cure polyglutamine(Q) caused neurodegeneration	€ 375.849
14	Giepmans	NWO	3DNI - 3D Nanoscale Imaging	€ 264.707
15	Sibon	ZonMw	CAMELOT: Coenzyme A & Membrane Lipids; an Opportunity for Treatment.	€ 768.088
16	Kooistra	Alzheimer Nederland	The epigenetic landscape of cellular subtypes in AD	€ 150.000
17	Holtman	Alzheimer Nederland	Aged brain organoids to study the role of microglia in pathogenesis of AD	€ 150.000
18	Eggen	ZZF	NeuroMyelitis Optica Spectrum Disorder (NMOSD)	€ 175.000
19	Baron	MS Research	MoveS (?? Title?)	€ 250.000
20	Boddeke	ZonMw	How LRRK2 affect neuron-microglia communication in Parkinson's disease	€ 771.595
21	Aleman	ZonMw	Timely, Accurate and Personalized Diagnosis of Dementia	€ 323.293
22	Sommer	ZonMw	Bodyl Brand Gender Research Award - Portraits in Psychiatry: the Spotlight on Sex and Gender Bias	€ 8.000





## Projects awarded to the PhDs/ Postdocs:

#	PhD/ Postdoc	Group Leader	Funding Body	Project Title	Funding Awarded
1	Wijering	Eggen	MS Research	Spatial gene expression analysis of de- and remyelinating/remyelinated lesions in a cuprizone	€ 30.000
2	Wijering	Eggen	De Cock	Functional analysis of MS-associated astrocyte genes in iPSC-derived astrocytes from relapsing-remitting multiple	€ 5.148
3	Koster	Eggen	De Cock	Delineating cellular heterogeneity and interactions in lesion development and progression of multiple sclerosis	€ 5.500
4	Meideros	Eggen	De Cock	Single-cell epigenomics of microglia to reveal regulators underpinning early transcriptional changes in multiple sclerosis	€ 5.500
5	Tiago	Eggen	MS Research	Restoring microglia functions to improve myelin repair	€ 14.000
6	De Jong	Baron	MS Research	Consequences of the extracellular matrix architecture in white matter multiple sclerosis lesions	€ 7.864
7	Gorter	Baron	De Cock	Unraveling an unexpected role for MMP7 in remyelination	€ 5.500
8	Wedman	Sibon/ Schepers	De Cock	Elucidating the remarkable property of vitamin derivatives to enter the brain and rescue neurodegeneration	€ 5.500
9	Xu	IJzendoorn	De Cock	Role of MYO5B and related genes in the pathogenesis of rare diseases	€ 4.500
10	Hosseini	IJzendoorn	De Cock	The role of the gut microbiome in Parkinson's disease	€ 4.468
11	Brouwer	Eggen	MS Research	Coördinator Brouwer MS Centrum	€ 13.000
12	Medeiros	Eggen	De Cock	Developing a human organoid in vitro MS-model	€ 4.500
13	Palacios	Baron	De Cock	Linking Helicobacter pylori outer membrane vesicle mediated activation of astrocytes to demyelination in multiple sclerosis	€ 4.500
14	De Jager	Sommer	De Cock	Developing a better and more tailor-made therapy for refractory depression	€ 4.500

## 5. Facts and Figures

### 5.1 Funding received/ Projects awarded

Projects and Funding	2020	2021	2022
Budget awarded projects	€ 4.068.420	€ 4.710.069	€ 5.524.366
Number of projects awarded	23	39	36*

\*See the previous section for a list of awarded projects.

### 5.2 PhD Graduations

Number of PhDs Graduated per section	2020	2021	2022
Section Cognitive Neuroscience	3	4	6
Section Molecular Cellbiology	6	4	9
Section Molecular Neurobiology	3	5	4
<b>Total</b>	<b>12</b>	<b>13</b>	<b>19*</b>

\*See the Appendix-1 for a list of all PhD theses defended per section at the end of the report.

### 5.3 Scientific Publications

Number of publications per section	2020	2021	2022
Section Anatomy and Medical Physiology	03	00	08
Section Cognitive Neuroscience	63	97	49
Section Molecular Cellbiology	43	52	53
Section Molecular Neurobiology	25	25	19
<b>Total</b>	<b>134</b>	<b>174</b>	<b>129*</b>

\*See the Appendix-2 for a list of all publications published per section at the end of the report.

### 5.4 People

Gender	2021	2021	2022
Men	62 (41%)	83 (50%)	91 (50%)
Women	91 (59%)	84 (50%)	90 (50%)
<b>Total</b>	<b>153</b>	<b>167</b>	<b>181</b>
PhDs students	2020	2021	2022
PhD regular	38	48	49
PhD bursaries	4	12	14
<b>Total</b>	<b>42</b>	<b>60</b>	<b>63</b>
Employees	2020	2021	2022
Total FTE	113,15	122,85	125,62
Total number of employees	153	167	181
No. of employees moved out	7	6	4
No. of employees joined	23	13	9
Internationals	2020	2021	2022
No. of Dutch employees	89 (58%)	135 (81%)	148(82%)
No. of International employees	64 (42%)	32 (19%)	33(18%)
No. of nationalities	22	16	20
Brazil	3	Russia	1
Canada	1	Saoedi Arabia	1
China	1	Slowakya	1
Germany	11	Spain	2
Philipins	1	Sytia	1
Italy	2	South Africa	1
Yoegoslavia	1	Switserland	1
Mexico	1	Iraq	1
Dutch	148	Iran	1
Austria	1	Japan	1



#### Management team BSCS

Harrie Kampinga	Head of the Department
Janniko Georgiadis	Head of the Section Anatomy and Medical Physiology
André Aleman	Head of the Section Cognitive Neuroscience
Sven van IJzendoorn	Head of the Section Molecular Cellbiology
Bart Eggen	Head of the Section Molecular Neurobiology
Henk Heidekamp	Managing Director
Arnoud Rozema	Financial Controller and Staff Advisor (Resigned on 15-02-2023)
Guus Achterweust	Financial Controller and Staff Advisor
Ria Ubels	Quality Assurance Manager and Staff Advisor
Mallikarjuna Gurram	Research Coordinator
Wytse Hogewerf	Staff Assistant
Harry Moes	Housing, HRM, Finance and Quality Assurance (Resigned on 01-07-2022)
Greetje Hollander	Secretary Anatomy & Medical Physiology (Retired in 2022)
Fokje Boomsma-van der Weg	Secretary Anatomy & Medical Physiology
Hedwig van Oosten	Secretary Cognitive Neuroscience Center
Greetje Noppert	Secretary Molecular Cellbiology
Trix van der Sluis-Rozema	Secretary Molecular Neurobiology

# 6. Facilities

## 6.1 Dissection Room facility

The Dissection Room facility is a modern facility where real human anatomy can be studied extensively and in considerable detail. The facility strongly supports life-long learning, offering both basic undergraduate courses and specialist post-graduate trainings across a great variety of teaching and training programs, locally, regionally, nationally and internationally. This irreplaceable form of learning is afforded by [human body donors](#), who generously give their body to the University of Groningen to stimulate, support and improve biomedical education and research. The facility has a close collaboration with the [Wenckebach Skills Center](#) for the optimization of resident training and surgical approaches, for simulating skills needed in the operation room, and for research on clinically relevant anatomy.

Specific services:

- 3 different embalming methods to optimally cater to a range of education or research requests.
- partnership with Wenckebach Skills Center enables very wide range of education, training, and research activities with donated bodies.
- great expertise in organizing international specialist surgical courses.



### People involved in the facility and their roles:

Janniko R. Georgiadis – Head of the facility  
Steve Oosterhoff – Manager of the facility  
Peter Veldman – Prosector  
Ronald Meijer - Prosector

### Contact:

Department of Biomedical Sciences of Cells and Systems  
University Medical Center Groningen

Antonius Deusinglaan, 1  
Section Anatomy and Medical Physiology  
Internal Zipcode FB42  
9700 AD Groningen  
The Netherlands  
<https://bscs.umcg.nl/en/facilities/dissection-room>

## 6.2 Medical Physiology Lab facility

The Medical Physiology Lab is used to teach the basic concepts of physiology to 700-1000 students per year of medicine, human movement sciences, dentistry, pharmacy, biomedical sciences and the University College Groningen. Via experiential learning, these students master the concepts in respiratory physiology, cardiovascular physiology, exercise physiology and neurophysiology: the students experience the tests themselves and they perform those tests on fellow students, and learn to interpret the results. For medical students, this is also their first experience in physical examination and additional measurements, such as electrocardiography, blood pressure measurements, and lung function tests.

In 2020, we received a financial investment from the UMCG to update, upgrade, and increase the numbers of our equipment, to be able to match the practice in the clinic, to deal with larger numbers of students per practical, and to be able to offer high-end courses in physiology for medical residents and specialists. The first investments were used to update (and upgrade) one of the set-ups of exercise physiology, to renew the set-up for continuous blood pressure measurements, and to replace the stethoscopes for the cardiovascular function tests.



### People involved in the facility and their roles.

Janniko R. Georgiadis – Head of the facility  
Ruby Otter-Drost – Manager of the facility  
Annelies van der Molen – Coordinator of the facility

### Contact:

Department of Biomedical Sciences of Cells and Systems  
University Medical Center Groningen  
Antonius Deusinglaan, 1  
Section Anatomy and Medical Physiology  
Internal Zipcode FB42  
9700 AD Groningen  
The Netherlands

<https://bscs.umcg.nl/en/facilities/medphyslab>

## 6.3 Cognitive Neuroscience Center (CNC) facility

We provide high-quality measurements and analyses of brain structure and activity using a diversity of cutting-edge technologies. Founded in 2002, the CNC is a research facility where people from the UMCG, the RUG, and external users collaborate, combining a variety of disciplines including medicine, psychology, linguistics, biology, and artificial intelligence. The main aim of our center is to understand the neural basis of cognitive and emotional functioning during development and ageing using different modalities including fMRI, EEG, NIRS, and neurostimulation.

We focus on different research topics:

- Diverse psychiatric disorders including depression and schizophrenia
- Cognitive Aging
- Attentional and emotional control
- Visual perception
- Food perception
- Language acquisition
- Neurofeedback
- Motor control
- Drug development

We are uniquely placed for a wide variety of (brain) studies. We collaborate with the Department of Nuclear Medicine and Radiology to support integration of PET and MR studies. Besides data acquisition, the CNC supports researchers with analyses and statistics and can provide a workplace environment with its own servers for (guest) researchers. Furthermore, the CNC offers commercial partners a complete brain research 'package' encompassing acquisition, analysis and reporting.



### People involved in the facility and their roles:

Prof. André Aleman – Head of the facility

### Contact:

Cognitive Neuroscience Center  
Internal Zipcode FA32,  
Antonius Deusinglaan 2,  
9713 AW Groningen

For information, you can contact  
Hedwig van Oosten at [h.w.p.m.van.oosten@umcg.nl](mailto:h.w.p.m.van.oosten@umcg.nl),  
Telephone +31 50 361 64 44.  
<https://bscs.umcg.nl/en/facilities/cognitive-neuroscience-center/>  
<https://umcgresearch.org/w/cognitive-neuroscience-center>

## 6.4 Drosophila melanogaster facility

Drosophila melanogaster (fruit fly) is one of the most well studied animals to answer biological research questions in various fields, including ecology, evolution, behaviour, genetics, biomedical research, development and more.

The Drosophila facility at the UMCG is using a wealth of advanced genetic tools to design fly models to understand biological processes underlying age-related diseases. These models are used to investigate novel treatments for human diseases.

In collaboration with interested parties (researchers, educational organisations) we can design, and assist in generating and providing the requested Drosophila models.

We provide the following services:

- Assist in the design of a suitable Drosophila model for research questions
- Infrastructure for interested parties to generate the Drosophila model
- Deliver fruit flies for small scale (genetic) teaching courses

### People involved in the facility and their roles:

Prof. Ody Sibon -- Head of the facility

Ellie Eggens-Meijer --Technician: logistics Drosophila service unit

Bart Kanon -- Technician: Drosophila handling

Erika Geubel -- Technician: Drosophila handling

### Contact:

Drosophila melanogaster – facility

Department of Biomedical Sciences of Cells and Systems

University Medical Center Groningen

Antonius Deusinglaan, 1

Section Molecular Cellbiology Internal Zipcode FB32

9700 AD Groningen

The Netherlands

<https://umcgresearch.org/w/drosophila-melanogaster>



## 6.5 UMCG Microscopy & Imaging Center (UMIC) facility

Microscopy is a longstanding great enabling technology to help to understand how molecules regulate, or affect, live. UMIC offers training and access to advanced microscopes and image processing aimed at cellular imaging.

UMIC staff is highly enthusiastic because it is again a fantastic time to be a microscopist! Recent developments that already routinely can be used at UMIC include:

- (I) intravital microscopy to study molecules and cells in living organism using
  - (a) single-photon confocal laser scanning microscopy (CLSM)
  - (b) two-photon CLSM
  - (c) light sheet microscopy
- (II) Robotics allow live-cell imaging plates at high throughput

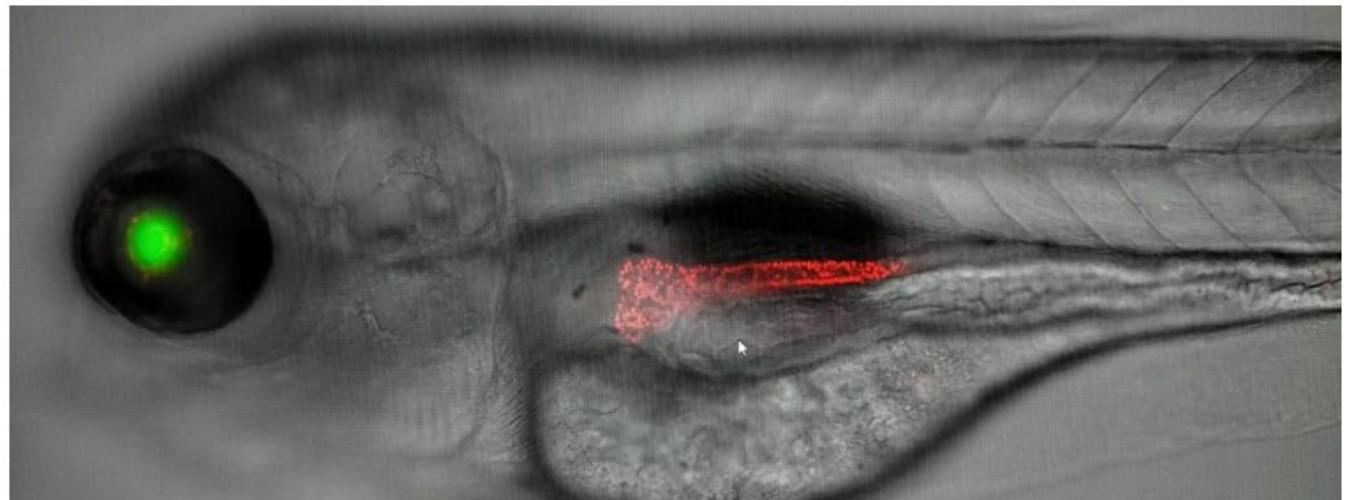
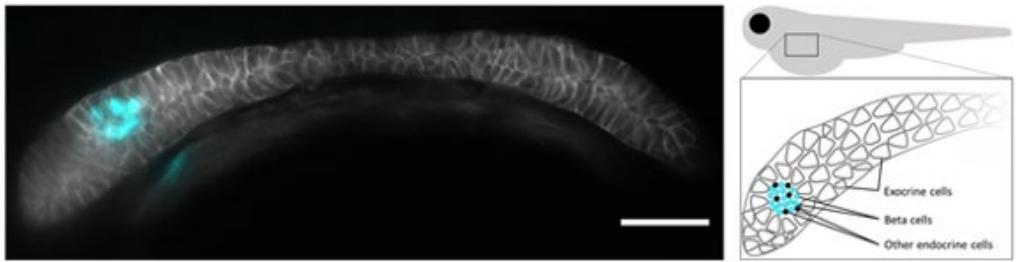
Special niches at UMIC, including custom-built microscopes and expert assistance that attract international researchers include

- (i) correlated light and electron microscopy (CLEM);
- (ii) 'nanotomy' to analyze molecules and organelles in tissues in a Google earth-like manner with nanometer range resolution
- (iii) Identification using 'Color' electron microscopy

In 2021 several new techniques are available by a major upgrade of the instruments. UMIC is very dynamic and has many more approaches for cellular imaging, with several new investments planned. Do you want to apply seemingly impossible microscopic approaches in your research, feel free to contact us ([www.umic.info](http://www.umic.info)).

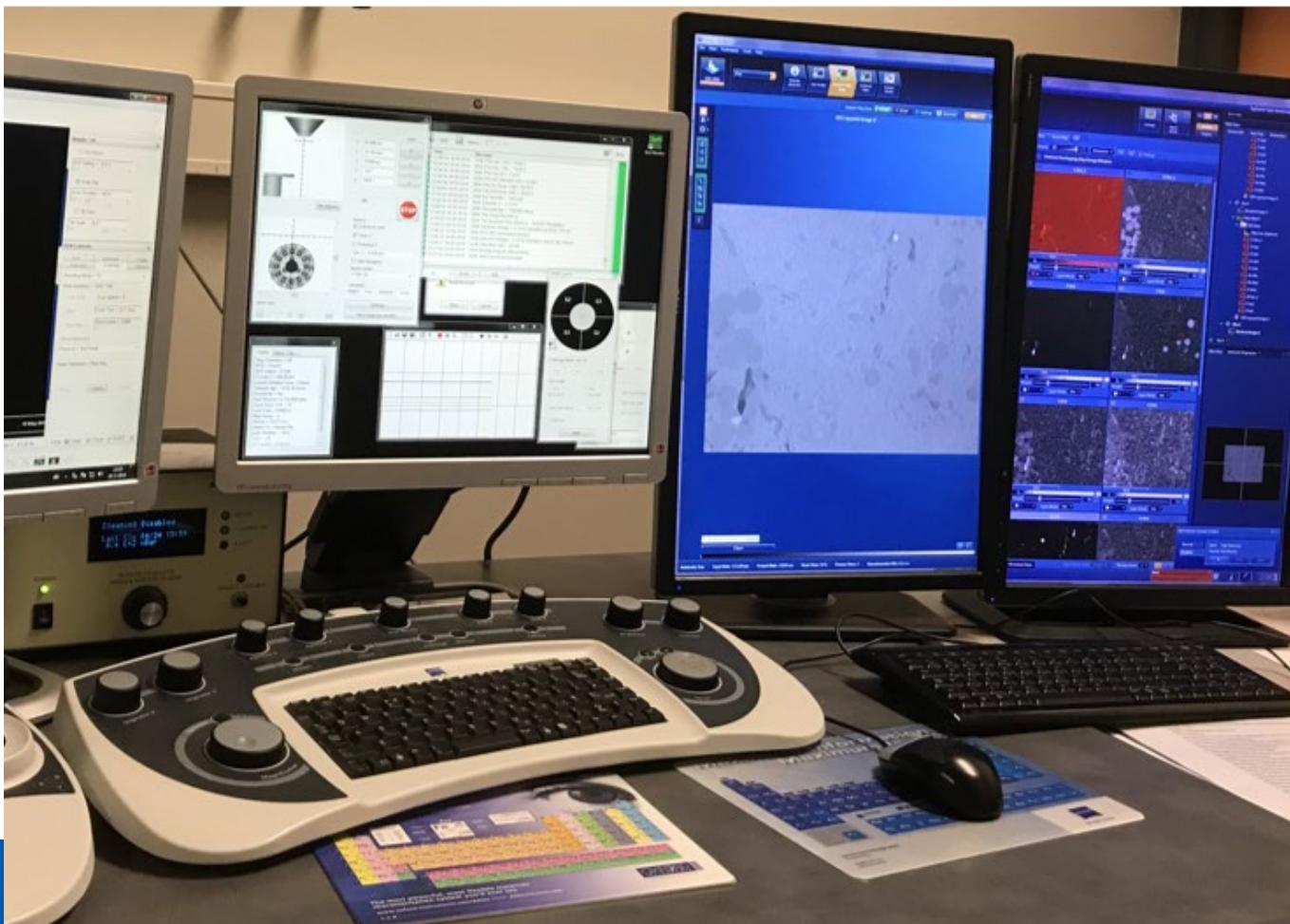
ANOUK  
WOLTERS   NOURA  
FARAJ   PETER  
DUINKERKEN

A FISH  
CALLED  
**TARZAN**



**Fig. 6.5a:** Multimodal microscopy: Different signals are obtained from the electron microscope that allows 'nanotomy' and 'ColorEM'. Samples are sent from other regions in the Netherlands/ world to use these niche techniques in biomedical research.

**Fig 6.5b:** Tarzan (top) and Jane (bottom), zebrafish larvae to study the pancreas in context of Type 1 diabetes. UMIC optogenetics and imaging of living larvae, including using multi-photon, single plane illumination microscopy and FAST-EM.



### People involved in the facility and their roles:

Ben Giepmans – Director  
Klaas Sjollema – Managing Director Light Microscopy  
Jeroen Kuipers – Managing Director Electron Microscopy

**UMIC participates in the NVvM, NL-BioImaging, NEMI, is a DTL-hotel and nPOD core facility**

### Contact:

UMCG Microscopy & Imaging Center (UMIC)  
Antonius Deusinglaan 1 (FB32)  
9700 AD Groningen  
The Netherlands  
EM-dbase: [nanotomy.org](http://nanotomy.org)  
UMIC core: [umic.info](http://umic.info)  
<https://umcgresearch.org/w/umic>

## 6.6 Cesium-137 γ-ray facility

The Cesium-137 γ-ray machine is to be used by authorized researchers to irradiate cells, Drosophila larvae, mice and rats and other samples.



### People involved in the facility and their roles:

RPO (Radiation Protection Officer): Rob Coppers

RPE (Radiation Protection Expert): Rick Havinga

Contact person radiation worker (level 5): Uilke Brouwer

### Contact:

<https://bscs.umcg.nl/en/facilities/cesium-137%CE%B3-ray-facility/>

Email: [u.brouwer@umcg.nl](mailto:u.brouwer@umcg.nl)

Department of Biomedical Sciences of Cells and Systems

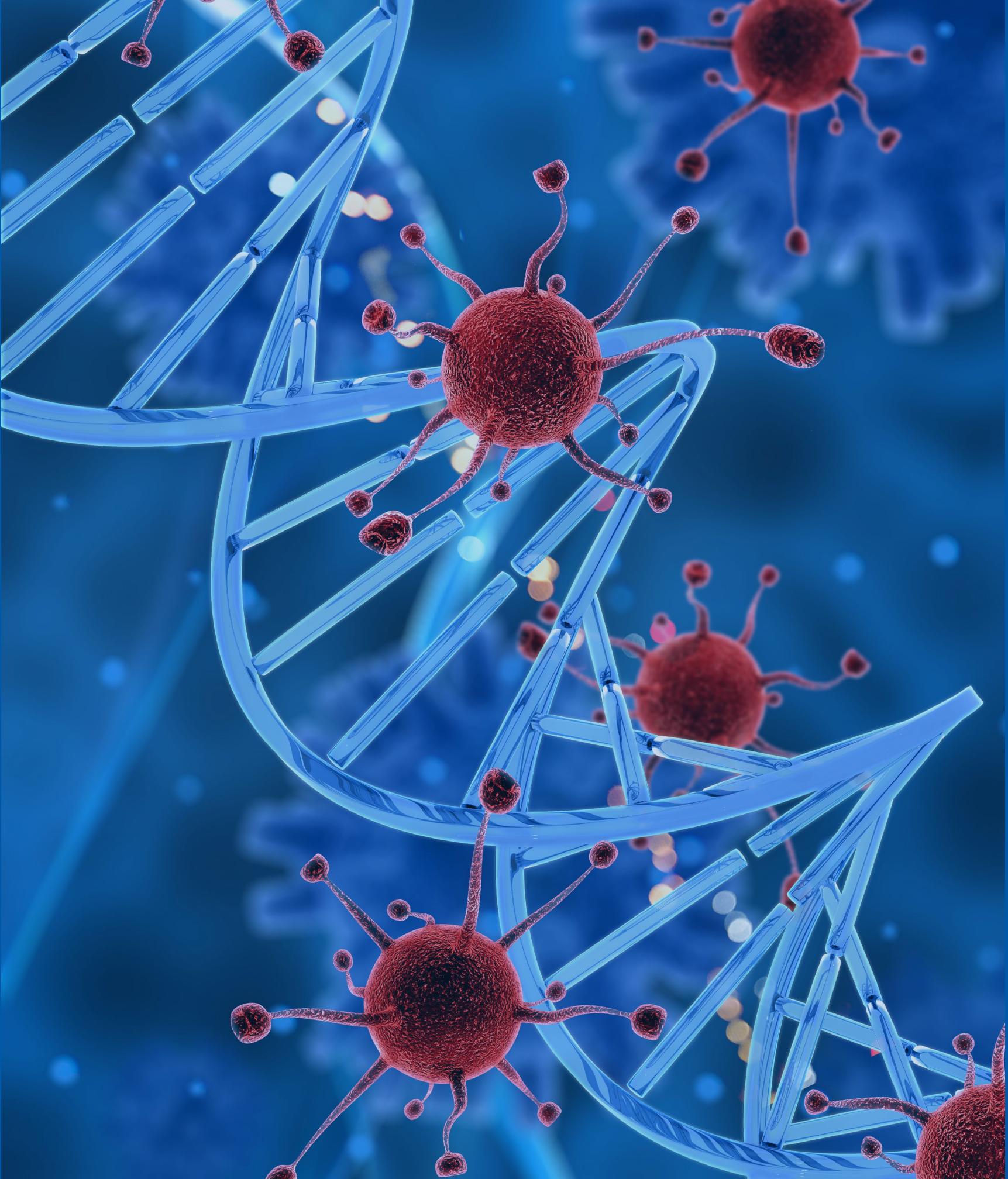
University Medical Center Groningen

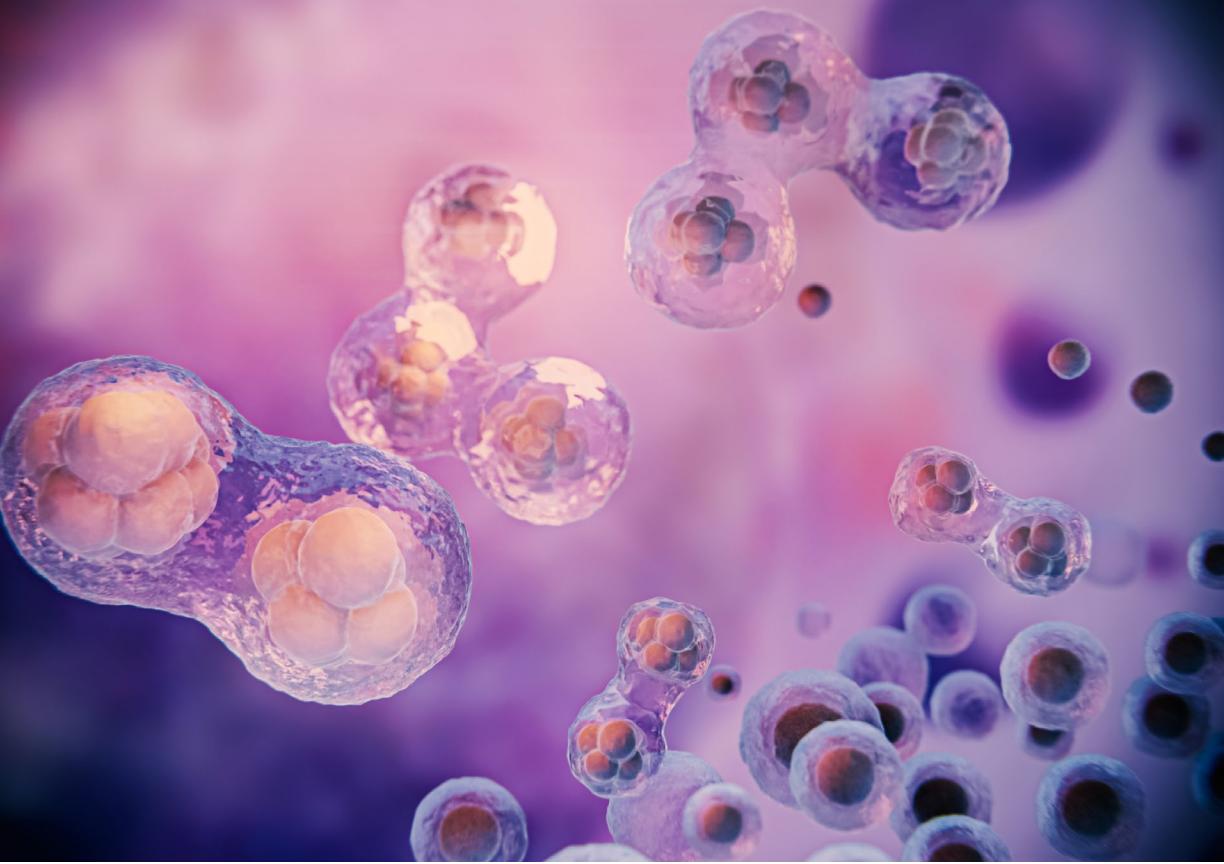
Antonius Deusinglaan, 1

Section Molecular Cellbiology Internal Zipcode FB32

9700 AD Groningen

The Netherlands





## 7. Education

Teaching and training is also a core activity within the BSCS department. The research staff from BSCS is involved in a wide range of educational activities spanning across multiple faculties and institutions. Below we provide a list of courses that are being coordinated by the research staff from the BSCS. This list does not include the activities where the BSCS members were not the coordinators.

Faculty/ Institute	Course	Coordinator
Medicine	G2020 Course Semester 1.1 (appointed as per 1/2/2022)	Anne-Marijke Kosta
	G2020 Course Semester 1.2	Hiske van Duinen
	G2020 Course Semester 2.1	Hiske van Duinen
	G2020 Premaster	Rob Bakels
	G2020 chair TBP (toetsbeoordelingspanel)	Rob Bakels
	European Medical School Oldenburg-Groningen	Janniko Georgiadis
	Psychiatry and Neuroscience (2nd year)	Branislava Ćurčić-Blake
	MMIT neuroscience track & MMIT neuroscience week	Susanne Kooistra & Bart Eggen
	MMIT - Mechanisms of Disease and Innovative Therapies	Sven Ijzendoorn
	MMIT - Scientific Integrity	Sven Ijzendoorn
Dentistry	MMIT - Program Committee	Sven Ijzendoorn
	Ethics in Research and Scientific Integrity	Sven Ijzendoorn
Science and Engineering (FSE)	Bachelor, year 1	Anne-Marijke Kosta
	Coordinator Medische lijn	Inge Zijdewind
Science and Engineering (FSE)	Master BCN: Human neuroanatomy	Janniko Georgiadis
	Bachelor Life Sciences & Technology / Biology: Medical Physiology	Hiske van Duinen
	Master BCN: Membrane Biology and Disease	Wia Baron
	Medical Cell Biology	Muriel Mari
	Functional Neuroscience	Susanne Kooistra
	Glia and Stem Cell Biology	Bart Eggen



Faculty/ Institute	Course	Coordinator
Human Movement Science	Bachelor BW: Neuroanatomie 1	Janniko Georgiadis
	Bachelor BW: Algemene fysiologie	Ruby Otter-Drost
	Bachelor BW: Neurofysiologie	Ruby Otter-Drost
	Bachelor BW: Inspanningsfysiologie	Hiske van Duinen
University College Groningen	Anatomy & Histology	Cyril Luman
	Human Physiology	Pepijn Schoonen
	Clinical Psychology: mental health and illness	André Aleman
Hanze	Anatomie van de mens (Master Physician Assistant)	Carola Haven
Post-graduate teaching and training	Common Trunk surgery residency training program	Janniko Georgiadis
BSCS/UMIC, UMCG	Cellular Imaging Light	Ben Giepmans
BCN, UMCG	Cognitive Neuro-psychiatry, Research Masters	Marie-José van Tol
	Functional Neuroscience (N-track, BCN Master)	Susanne Kooistra
	BCN Mathematics for neuroscientists	Branislava Ćurčić-Blake



# 8. Scientific dissemination and Business development

At BSCS, we encourage and support researchers to share our know-how, drive discoveries towards applications and (in doing so) collaborate with industries. We welcome collaborations to generate access to our scientific ideas and state-of-the-art facilities. Below we list out results from our recent efforts to connect science with business.

## 8.1 PKAN

The Sibon group discovered and developed a potential treatment for the neurodegenerative disease Pantothenate Kinase-Associated Neurodegeneration (PKAN) (Srinivasan et al., Nat. Chem Biol 2015; Jeong et al., EMBO MOL. MED 2019).

Currently, financed by the Stichting Zeldzame Ziekte Fonds, Stichting Kans voor PKAN kinderen, de Stichting Lepelaar, ZonMW and the Hersenstichting, an investigator driven clinical trial started (September 2021) for PKAN patients in close collaboration with the Expertise Centre for Movement Disorders, at the UMCG. The product under investigation was designed, developed and produced (clinical usage grade) by prof. Sibon and her collaborators. The product is proven to be effective in Drosophila and mouse models for PKAN and the aim of the clinical study is to test our developed product in the clinic.

## 8.2 Enatom

Enatom is a joint initiative by the Section Anatomy & Medical Physiology and the 360 degree visualization company VIEMR to visualize in exquisite detail human anatomical specimens for use in distance learning applications and solutions. Thanks to considerable investments over the past few years, Enatom has made substantial progress in anatomic content and image quality.

## 8.3 Anatomy Gym

Anatomy Gym is a game-like App for smartphone and tablet to learn anatomical facts. It was launched in 2020. Anatomy Gym has seen considerable interest from users as well as from teaching parties that want to include specific modules. Anatomy Gym is scalable to a very large and diverse audience, and progress has been made to stimulate its further development and sustainability.

## 8.4 Stem cell therapy

Radiotherapy of head and neck cancer is often accompanied with dysfunction of the salivary glands leading to xerostomia (dry mouth syndrome). Basic science by the Coppes' lab linked this to identification of a salivary gland cell stem compartment that is depleted by radiation. This has now developed into a stem cell therapy in which stem cells from the patient are collected before and give back after radiation for the treatment of this side effect. After pre-clinical testing and development of a [protocol for safe clinical use](#), a first-in-man Phase I/II trial will start this summer at the UMCG.



# 9. Outreach and Dissemination

Besides research and education, all scientific staff members from BSCS, including PhD students, postdocs, and group leaders, have been actively involved in the scientific outreach and dissemination activities. Below we list out the notable activities by BSCS during the year 2021.

## Outreach activities by the PIs, PhDs, Postdocs, and Technicians:

9. Wouter Huiting (group Kampinga) received NWO Rubicon award. (source: <https://www.nwo.nl/onderzoeksprogrammas/rubicon/toekenningen/toekenningen-rubicon-2022>).
10. Els Kuiper (group Kampinga) received NWO Rubicon award. (source: <https://www.nwo.nl/onderzoeksprogrammas/rubicon/toekenningen/toekenningen-rubicon-2022>).
11. Els Kuiper (group Kampinga) received EMBO fellowship. (source: <https://www.embo.org/funding/fellowships-grants-and-career-support/postdoctoral-fellowships>).
12. Mingqian Xu (group Ijzendoorn) received De Cock-Hadders Foundation research grant (€4.500) for the project titled 'Role of MYO5B and related genes in the pathogenesis of rare diseases' (source: <https://decockhadders.nl/financiele-steun/>).
13. Maiara Kolbe Musskopf (group Kampinga) received De Cock-Hadders Foundation research grant (€4.500) for the project titled 'Identifying DNAJB6 interactors at the nuclear pore complex' (source: <https://decockhadders.nl/financiele-steun/>).
14. Wondwossen Yeshaw (group Sibon) received Max Gruber prize. (source: <https://www.rug.nl/research/gbb/maxgruber/information/max-gruber-prize>).
15. Yu Yi (group Sibon/ Schepers) selected speaker NWO-Life congress. (source: <https://nwolife.nl/>).
16. Jenke Gorter (group Sibon) received ZZF grant (€90.000) for the project "Met de fruitvlieg op zoek naar behandeling van de noordzeeziekte". (source: <https://www.zzf.nl/met-de-fruitvlieg-op-zoek-naar-behandeling-van-de-noordzeeziekte/>).
17. Roald Lambrechts (group Sibon) received Mandema Stipendium for project on Noordzeeziekte aandoening. (source: <https://www.movementdisordersgroningen.com/nieuws/mandema-stipendium-voor-roald-lambrechts>).
18. Rubén Gómez Sánchez (group Reggiori/ Kampinga) selected speaker for the conference the Dutch Society for Cell Biology. Amsterdam (The Netherlands), March 2022.
19. Esteban Palacios (group Baron) received De Cock Hadders (budget €4500) for the project titled "Linking Helicobacter pylori outer membrane vesicle mediated activation of astrocytes to demyelination in multiple sclerosis".
20. Nikki Dreijer (group Zijdewind) presented the research work for the MS-vereniging - Najaarsbijeenkomst.
21. Leda Maffei (group Eggen) presented the research work for the MS-vereniging - Najaarsbijeenkomst.
22. Tiago Medeiros Furquim (group Eggen) received the Young Talent Award, MS Stichting - €17.000 research grant for a placement abroad at the group of Marie-Eve Tremblay (University of Victoria, Canada) for restoring microglia functions to improve myelin repair.
23. Tiago Medeiros Furquim (group Eggen) received the ECTRIMS conference travel grant €400 for attending the ECTRIMS 2022.
24. Tiago Medeiros Furquim (group Eggen) received De Cock-Hadders Stichting grant - €4500 research grant for developing a human brain organoid MS model.
25. Rianne Gorter (group Baron) received the Gemmy & Mibeth Tichelaar Award of €60.000 for fundamental postdoctoral research into multiple sclerosis (source: <https://msresearch.nl/nieuws/rianne-gorter-ontvangt-de-gemmy-mibeth-tichelaar-prijs/>).
26. Wendy Oost (group Baron) was the selected contestant and winner of the people's choice award (€250) of the 3 Minute Thesis (3MT) Competition - "An 80,000 word thesis would take 9 hours to present. Your time limit: 3 minutes..."
27. Astrid Alsema (group Eggen) received the best presentation prize from the MS research day 2022.
28. Marlijn Besten (group Andre Aleman/Marie-Jose van Tol) appeared on RTV Noord or 'Piekeren tot je er depressief van wordt'. (source: <https://www.rtvoord.nl/nieuws/903831/piekeren-tot-je-er-depressief-van-wordt-welke-behandeling-werkt-voor-wie>).
29. Andre Aleman/Marie-Jose van Tol published an article in MEER Magazine Dagblad van het Noorden (14 May 2022) title 'Malen, malen, malen: Wanneer wordt piekere een probleem?'.
30. Andre Aleman/Marie-Jose van Tol gave Guest lessons scholierenacademie University of Groningen on 'Je gedachten de baas'.
31. Andre Aleman/Marie-Jose van Tol gave Presentation National Mindfulness Symposium for scientists, as well as mindfulness trainers and other interested parties (7 Oct 2022) on 'Mechanisms of change of app-based interventions to reduce perseverative cognition in depression: study design'.
32. Bodyl Brand (group Iris Sommer):
  - a. Opname filmpje voor nominatie Iris Sommer Hubregtsenprijs (23 September 2022)
  - b. Deelname aan en presentatie bij Masterclass van David Page, georganiseerd door Amsterdam UMC. (11 oktober 2022)
  - c. Presentatie/lezing onderzoeksresultaten bij GGZ Friesland, nascholingsprogramma psychiaters. (28 november 2022)
  - d. Presentatie/lezing bij RISE, Early Intervention in Psychosis Team, Ierland (digitaal). (2 december 2022)
  - e. Interview met Jeroen den Blijker, voor in dagblad Trouw: 'Vrouwen zijn in psychoseorg slechter af dan mannen'. <https://www.trouw.nl/binnenland/vrouwen-zijn-in-psychoseorg-slechter-af-dan-mannen~ba456c09>. (1 maart 2022)
- f. Interview voor NPO radio 1: voor in live uitzending later uitgezonden op die dag. (8 maart 2022)
- g. Opname interview met ervaringsdeskundige: voor het filmpje vertoond tijdens plenary session van Iris Sommer op SIRS conferentie in Florence, Italië op 4-9 april 2022. (18 maart 2022)
- h. Interview met Noël Houben, voor op website De Eestelijns: Een vrouw is geen kleine man. <https://www.de-eestelijns.nl/2022/03/een-vrouw-is-geen-kleine-man/> (22 Maart 2022)
- i. Artikel op Psychosenet over onderzoek: 'Psychotische klachten bij vrouwen: van vruchtbaarheid naar kwetsbaarheid?' <https://www.psychosenet.nl/psychotische-klachten-bij-vrouwen/> (3 november 2022)
- j. Gedicht op Psychosenet over behandeling voor vrouwen met psychose: 'Voor mijn lieve broer Sint Nicolaas, die leeft in een mannenwereld' <https://www.psychosenet.nl/voor-mijn-lieve-broer-sint-nicolaas-die-leeft-in-een-mannenwereld/> (5 december 2022)
- k. Te gast bij radio RTV Noord: Radio show 'Babette op Noord', [https://www.rtvoord.nl/radio/aflevering/babette-op-noord/970016\\_2](https://www.rtvoord.nl/radio/aflevering/babette-op-noord/970016_2) (9 december 2022)
33. Iris Sommer:
  - a. Organiser: Multidisciplinary workshop at the Lorentz centre in Leiden: (Cross)linguistic speech patterns as bio-social markers for psychiatric disorders (31 October – 4 November 2022).
  - b. Iris Sommer interview at Tijd voor Max (NPO2), 28 November 2022.
  - c. Plenaire lezing SIRS, Florence, Italy, April 2022.
  - d. Interview in AD: Groningse psychiater: zorg vrouwen met psychoses kan veel beter, 26 February 2022.
  - e. Interview in Trouw: Vrouwen zijn in psychoseorg slechter af dan mannen, Maart 2022.
  - f. Interview in Nationale Zorggids – GGZ: Richtlijnen psychoseorg te veel gericht op mannen, Maart 2022.
  - g. Medische publieksacademie Sorry Simone de Beauvoir. De ongemakkelijke waarheid is: een vrouw is wél anders dan een man. Maar dat maakt van haar nog geen kleine vent, Maart 2022.
  - h. Medische Publieksacademie UMCG - Het vrouwenbrein, Maart 2022.
  - i. Videocollege Iris Sommer: hebben vrouwen een ander brein dan mannen?, 14 April 2022.
  - j. Interview in Medisch Specialist, September 2022.
  - k. Book published by Iris Sommer: Voed je brein, Paperback, 9789090362526, 24 November 2022, 192 pages, Dutch.

34. Sophie van Zonneveld (group Iris Sommer)
- Webinar Vlaamse vereniging voor psychiatrie, 29 November 2022.
  - Workshop Netwerkconferentie vroege psychose @ Altrecht Zeist, 1 December 2022.
35. Alban Voppel (group Iris Sommer): Spreken op BCN brain day, 1 December 2022.
36. Franciska de Beer (group Iris Sommer):
- Guest lecture Psychotic disorders and antipsychotic medication, Deutsche Hochschule für Gesundheit & Sport, Hamburg, Germany, June 2022.
  - Lecture 'Psychiatrists and outcomes in first episode psychosis patients' at the Annual symposium of Behavioural & Cognitive Neurocience research school, University Medical Center Groningen, June 2022.
  - Video and podcast 'Are you crazy when you hallucinate?' for the University of the Netherlands at universiteitvannederland.nl, November 2022.
  - Organizer of Wetenschap op Woensdag (Science on Wednesdays) which combines art works by art academy studens with neuroscientific facts to bring science to a broad audience via social media, Nov2022 - now.
  - Noorderzon flash lecture 'How do your brains make you hallucinate?',-by Young Academy Groningen on a festival in Groningen, Augustus 2022.
  - Panel member 'Tapering antipsychotics and the role of loved ones' by MIND Ypsilon, an organization for relatives of psychosis patients, September 2022.
  - Organizational member of Marvelous Mind, a science outreach working group which organizes films and events on neuroscience, 2022.
37. Moni Germann (group Iris Sommer): Interview voor Gehirn & Geist, July 2022.
38. Theresa Marshall (group Iris Sommer): Invited talk at the Groninger tinnitus dag, November 2022.
39. Mayha Hosseini Bondarabadi (group Iris Sommer): Informal talk for Winclove, 2022.
40. Emile d'Angremont (group Iris Sommer):
- Presentation at Parkinson Café Zwolle: Dopamine en acetylcholine bij de ziekte van Parkinson, 13 October 2022.
  - Article in Ned Tijdschr Geneesk: Hulp van robot kan reviewproces versnellen, October 2022.
  - Article in Ned Tijdschr Geneesk: Meer onderling vertrouwen, minder besmettingen?, June 2022.
34. Sophie van Zonneveld (group Iris Sommer)
- Article in Ned Tijdschr Geneesk: Psilocybine-behandeling bij depressive, January 2022.
41. Marieke Begemann (group Iris Sommer):
- Invited lecture – Alcmaeon, student organization Psychology of Utrecht University, May 2022.
  - Informative gathering for HAMLETT participants, June 2022.
  - Marvelous Minds – Forum: Film & lecture on Psychosis, September 2022.
  - Expert panel invitation by Ypsilon (family member organization), online meeting on antipsychotic medication, September 2022.
42. Shiral Gangadin (group Iris Sommer):
- Blogs voor Faces of Science:
    - Groter risico op nieuwe psychose na de overgang voor vrouwen met schizofrenie - Faces of Science - NEMO Kennislink (samen met Bodil Brand) (<https://www.nemokennislink.nl/facesofscience/blogs/groter-risico-op-nieuwe-psychose-na-de-overgang-voor-vrouwen-met-schizofrenie/>)
    - Wat doe je als onderzoeker nou écht? - Faces of Science - NEMO Kennislink (<https://www.nemokennislink.nl/facesofscience/blogs/wat-doe-je ALS-onderzoeker-nou-echt/>)
    - Waarom een studie psychobiologie zo interessant is - Faces of Science - NEMO Kennislink (<https://www.nemokennislink.nl/facesofscience/blogs/waarom-een-studie-psychobiologie-zo-interessant-is/>)
    - It's a men's world: schizofrenie als mannenziekte - Faces of Science - NEMO Kennislink (<https://www.nemokennislink.nl/facesofscience/blogs/it-s-a-men-s-world-schizofrenie-als-mannenziekte/>)
  - Een week het twitteraccount van NL wetenschap overgenomen (voor Universiteiten van Nederland) ([https://twitter.com/search?f=live&q=\(from%3ANL\\_wetenschap\)%20until%3A2022-10-15%20since%3A2022-10-09%20-filter%3Areplies&src=typed\\_query](https://twitter.com/search?f=live&q=(from%3ANL_wetenschap)%20until%3A2022-10-15%20since%3A2022-10-09%20-filter%3Areplies&src=typed_query))
  - Radio 1 interview (<https://www.nprradio1.nl/uitzendingen/de-nacht-van/8b6e0789-31b5-4714-9d35-b7fage2d7ea4/2022-10-13-de-nacht-van-ntr>)
  - Interviews voor het Nationale Psychose congres
    - <https://kenniscentrumphrenos.nl/waarom-mag-je-het-nationale-psychose-congres-2022-niet-missen/>

## Cellular senescence in the ageing brain

To eliminate or not to eliminate?



Nynke Talma

# The Kaleidoscope of Microglia

***Microglia transcriptional  
phenotypes from  
development to disease***

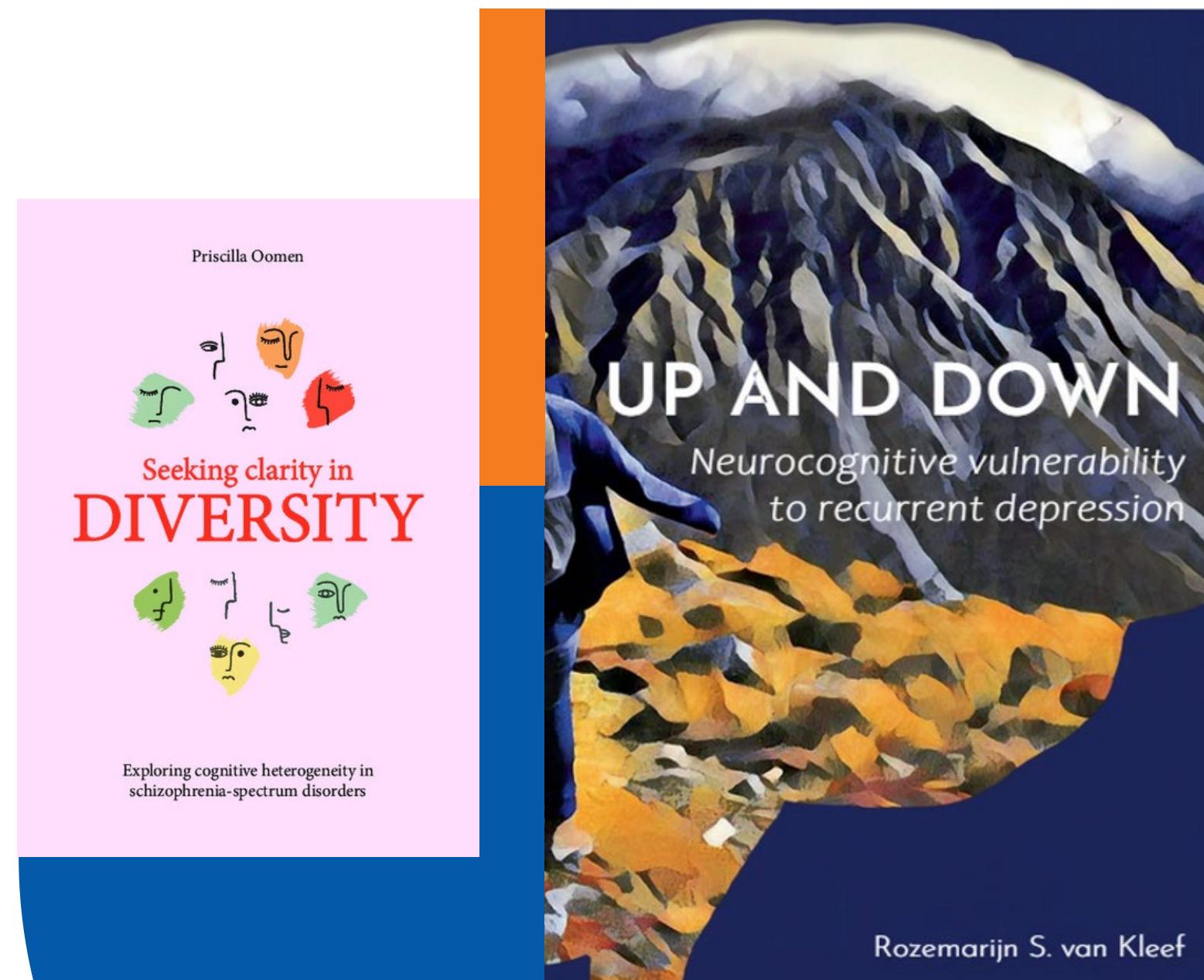
## 10. Appendix 1: PhD graduations

More details about the PhD graduations can be found on the [university research portal](#).

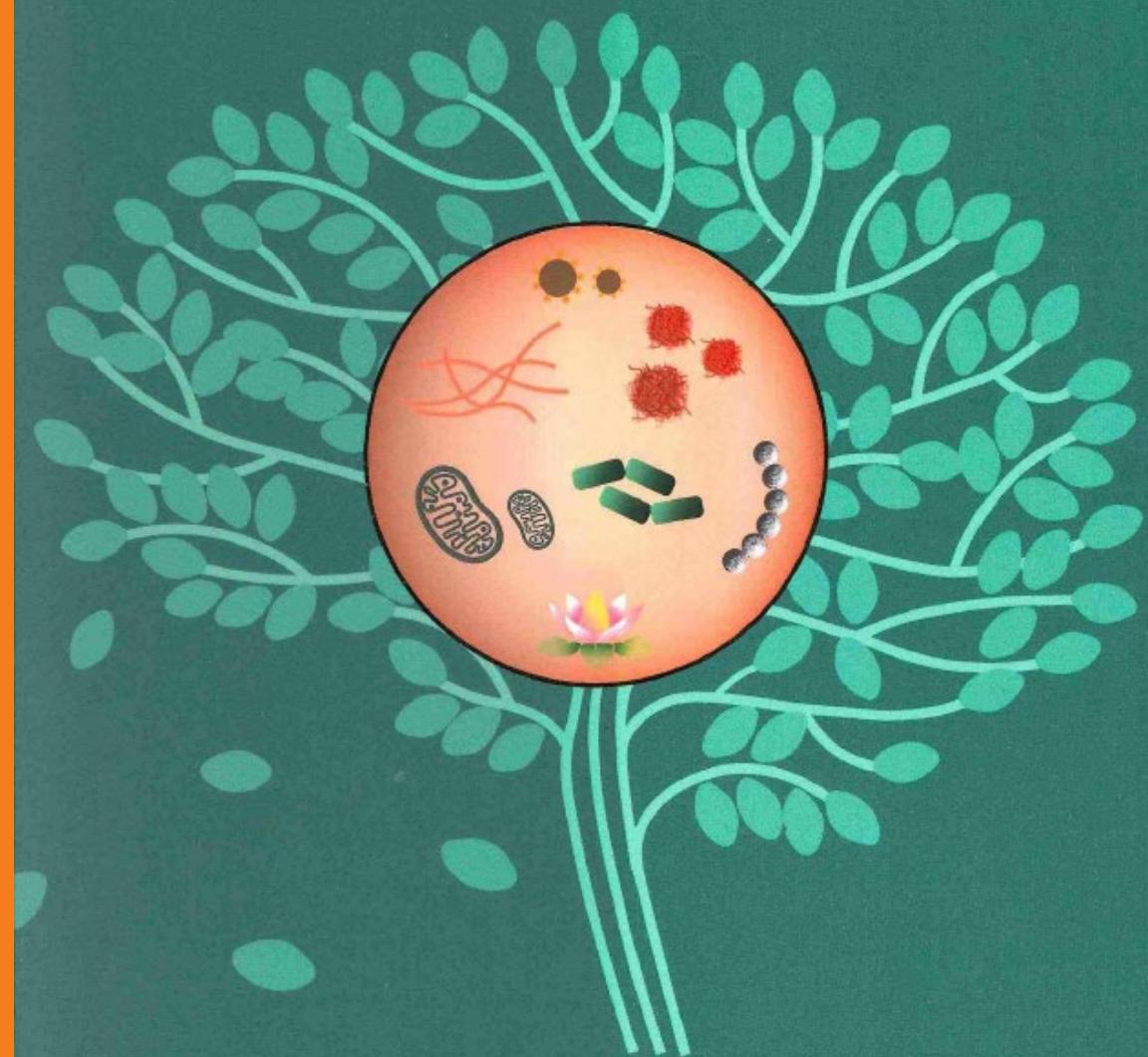
Section Cognitive Neuroscience	
1	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:
2	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:
3	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:
4	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:
5	PhD Student: Promotor(s): Thesis title: URL:
6	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:

Section Molecular Cellbiology	
7	PhD Student: Promotor(s): Thesis title: URL:  Du Liang Coppes, R.P.; Hao, Z. Exploring novel personalized treatment options focusing on cancer stem cells <a href="https://research.rug.nl/en/publications/exploring-novel-personalized-treatment-options-focusing-on-cancer">https://research.rug.nl/en/publications/exploring-novel-personalized-treatment-options-focusing-on-cancer</a>
8	PhD Student: Promotor(s): Thesis title: URL:  Andries Groen Plukker, J.; Coppes, R.P.; Links, T. Patient Tailored Treatment of Thyroid Cancer: Radiotherapy, Organoid Models and Follow-up <a href="https://research.rug.nl/en/publications/patient-tailored-treatment-of-thyroid-cancer-radiotherapy-organoi">https://research.rug.nl/en/publications/patient-tailored-treatment-of-thyroid-cancer-radiotherapy-organoi</a>
9	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:  Yi Wu Coppes, R.P; Vissink, A; Barazzuol, L; Pringle, S.A. Salivary gland organoids to study radiation-induced microenvironmental changes: a versatile translational tool <a href="https://research.rug.nl/en/publications/salivary-gland-organoids-to-study-radiation-induced-microenvironm">https://research.rug.nl/en/publications/salivary-gland-organoids-to-study-radiation-induced-microenvironm</a>
10	PhD Student: Promotor(s): Thesis title: URL:  Susan Hayflick Sibon, O.C.M.; Reijngoud, DJ Therapeutics development for pantothenate kinase-associated neurodegeneration (PKAN) <a href="https://research.rug.nl/en/publications/therapeutics-development-for-pantothenate-kinase-associated-neuro">https://research.rug.nl/en/publications/therapeutics-development-for-pantothenate-kinase-associated-neuro</a>
11	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:  Els Kuiper Kampinga, H.H. Bergink, S. DNAJB6 and its substrates: connecting the dots <a href="https://research.rug.nl/en/publications/dnajb6-and-its-substrates-connecting-the-dots">https://research.rug.nl/en/publications/dnajb6-and-its-substrates-connecting-the-dots</a>
12	PhD Student: Promotor(s): Thesis title: URL:  Eduardo Preusser Mattos Kampinga, H.H.;Jardim, L.B. Molecular and clinical determinants of pathogenic protein aggregation <a href="https://research.rug.nl/en/publications/molecular-and-clinical-determinants-of-pathogenic-protein-aggrega">https://research.rug.nl/en/publications/molecular-and-clinical-determinants-of-pathogenic-protein-aggrega</a>
13	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:  Marines Du Teil Espina van Dijl, J.M. ; Reggiori, F.M. Westra, H. Tricking the gatekeepers: subversion of host immune responses by Porphyromonas gingivalis <a href="https://research.rug.nl/en/publications/tricking-the-gatekeepers-subversion-of-host-immune-responses-by-p">https://research.rug.nl/en/publications/tricking-the-gatekeepers-subversion-of-host-immune-responses-by-p</a>

Section Molecular Cellbiology	
14	PhD Student: Promotor(s): Co-promoter(s): Thesis title: URL:  Nicole Pirozzi Giepmans, B.N.G. Hoogenboom, J.P. Electron Microscopy --Now in Color: Method and Application Development of Energy Dispersive X-ray Imaging for Biology <a href="https://research.rug.nl/en/publications/electron-microscopy-now-in-color-method-and-application-developme">https://research.rug.nl/en/publications/electron-microscopy-now-in-color-method-and-application-developme</a>
15	PhD Student: Promotor(s): Thesis title: URL:  Vivian Ogundipe Coppes, R.P.; Plukker, J.; Links, T. Investigating the Potential of Thyroid Gland Organoids to Restore Surgery-induced Hypothyroidism <a href="https://research.rug.nl/en/publications/investigating-the-potential-of-thyroid-gland-organoids-to-restore">https://research.rug.nl/en/publications/investigating-the-potential-of-thyroid-gland-organoids-to-restore</a>



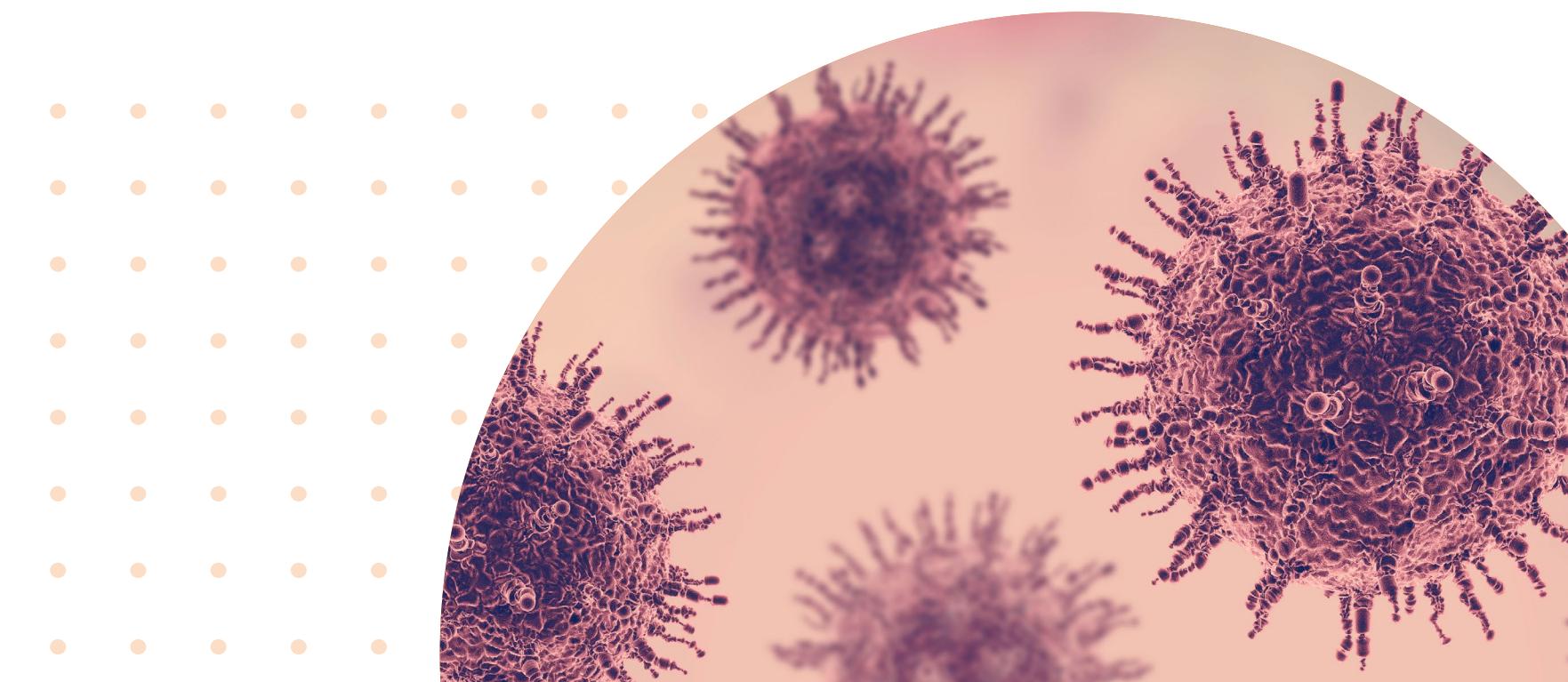
## Implications for multiple sclerosis



Chairi Misrielal

### Section Molecular Neurobiology

- |    |                                                                          |                                                                                                                                                                                                                                                                                                                                                                  |
|----|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | PhD Student:<br>Promotor(s):<br>Co-promoter(s):<br>Thesis title:<br>URL: | Laura Kracht<br>Bart Eggen<br>Susanne Kooistra<br>The Kaleidoscope of Microglia<br><a href="https://research.rug.nl/en/publications/the-kaleidoscope-of-microglia-phenotypes-microglia-transcriptional">https://research.rug.nl/en/publications/the-kaleidoscope-of-microglia-phenotypes-microglia-transcriptional</a>                                           |
| 17 | PhD Student:<br>Promotor(s):<br>Co-promoter(s):<br>Thesis title:<br>URL: | Emma Gerrits<br>Erik Boddeke/Bart Eggen<br>Susanne Kooistra<br>Deciphering cellular heterogeneity of the Brain<br><a href="https://research.rug.nl/en/publications/deciphering-cellular-heterogeneity-of-the-brain-implications-for-">https://research.rug.nl/en/publications/deciphering-cellular-heterogeneity-of-the-brain-implications-for-</a>              |
| 18 | PhD Student:<br>Promotor(s):<br>Thesis title:<br>URL:                    | Nynke Talma<br>Bart Eggen/Marco DeMaria<br>Cellular senescence in the ageing brain<br><a href="https://research.rug.nl/en/publications/cellular-senescence-in-the-ageing-brain-to-eliminate-or-not-to-el">https://research.rug.nl/en/publications/cellular-senescence-in-the-ageing-brain-to-eliminate-or-not-to-el</a>                                          |
| 19 | PhD Student:<br>Promotor(s):<br>Co-promoter(s):<br>Thesis title:<br>URL: | Chairi Misrielal<br>Bart Eggen/Fulvio Reggiori<br>Mario Mauthe<br>Evaluating autophagy in the CNS - Implications for MS<br><a href="https://research.rug.nl/en/publications/evaluating-autophagy-in-the-cns-implications-for-multiple-sclerosis">https://research.rug.nl/en/publications/evaluating-autophagy-in-the-cns-implications-for-multiple-sclerosis</a> |



# 11. Appendix 2: Publications

More details about these publications can be found on the [university research portal](#).

## Section Anatomy and Medical Physiology:

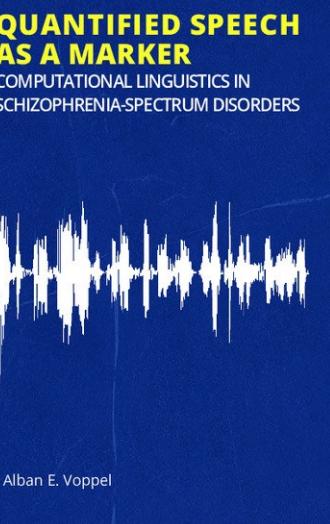
1. A psychophysical and neuroimaging analysis of genital hedonic sensation in men. Ruesink, G.B., McGlone, F.P., Olausson, H., Renken, R.J., Georgiadis, J.R. *Scientific Reports*, 2022, 12(1), 10181.
2. Breath chemical markers of sexual arousal in humans. Wang, N., Pugliese, G., Carrito, M., Schubert, J.K., Williams, J. *Scientific Reports*, 2022, 12(1), 6267.
3. Identifying Player Types to Tailor Game-Based Learning Design to Learners: Cross-sectional Survey using Q Methodology. Van Gaalen, A.E.J., Schonrock-Adema, J., Renken, R.J., Jaarsma, A.D.C., Georgiadis, J.R. *JMIR Serious Games*, 2022, 10(2), e30464.
4. Role of the Cadaver Lab in Lymphatic Microsurgery Education: Validation of a New Training Model. Jiga, L.P., Campisi, C.C., Jandali, Z., Cherubino, M., Georgiadis, J. *Journal of Investigative Surgery*, 2022, 35(4), pp. 758–767.
5. Perceived training of junior speed skaters versus the coach's intention: Does a mismatch relate to perceived stress and recovery? Otter, R. T., Bakker, A. C., van der Zwaard, S., Toering, T., Goudsmit, J. F., Stoter, I. K., & de Jong, J. *International journal of environmental research and public health*, 2022, 19(18), 11221.
6. Introducing a Method to Quantify the Specificity of Training for Races in Speed Skating. Roete, A. J., Stoter, I. K., Lamberts, R. P., Elferink-Gemser, M. T., & Otter, R. T. *Journal of Strength and Conditioning Research*, 2022, 36(7), 1998–2004.
7. Co-Operative Design of a Coach Dashboard for Training Monitoring and Feedback. Goudsmit, J., Otter, R. T., Stoter, I., van Holland, B., van der Zwaard, S., de Jong, J., & Vos, S. *Sensors*, 2022, 22(23), 9073.
8. Why physicians should pay attention to oral health too. Kosta AM, De Smit M, De Vries N, Visser A. *Ned Tijdschr Geneeskd*. 2022 Feb 24;166:D6206.

## Section Cognitive Neuroscience:

1. Balducci, T., Rasgado-Toledo, J., Valencia, A., van Tol, M.-J., Aleman, A., & Garza-Villarreal, E. A. (2022). A behavioral and brain imaging dataset with focus on emotion regulation of women with fibromyalgia. *Scientific data*, 9(1), [581]. <https://doi.org/10.1038/s41597-022-01677-9>

2. Aleman A, Sommer I. *Psychol Med*. 2022 The silent danger of social distancing Mar;52(4):789-790. doi: 10.1017/S0033291720002597. Epub 2020 Jul 6. PMID: 32624043
3. Wang Z, Goerlich KS, Luo YJ, Xu P, Aleman A. *Soc Cogn Affect Neurosci*. 2022 Social-specific impairment of negative emotion perception in alexithymia. Apr;17(4):387-397. doi: 10.1093/scan/nsab099. PMID: 34406408
4. Hansen JY, Shafiei G, Vogel JW, Smart K, Bearden CE, Hoogman M, Franke B, van Rooij D, Buitelaar J, McDonald CR, Sisodiya SM, Schmaal L, Veltman DJ, van den Heuvel OA, Stein DJ, van Erp TGM, Ching CRK, Andreassen OA, Hajek T, Opel N, Modinos G, Aleman A, van der Werf Y, Jahanshad N, Thomopoulos SI, Thompson PM, Carson RE, Dagher A, Misic B. *Nat Commun*. 2022 Local molecular and global connectomic contributions to cross-disorder cortical abnormalities. Aug;13(1):4682. doi: 10.1038/s41467-022-32420-y. PMID: 35948562
5. Wang Z, Goerlich KS, Xu P, Luo YJ, Aleman A. *Soc Cogn Affect Neurosci*. 2022 Perceptive and affective impairments in emotive eye-region processing in alexithymia. Oct;31(10):912-922. doi: 10.1093/scan/nsac013. PMID: 35277722
6. von Conta J, Kasten FH, Schellhorn K, Ćurčić-Blake B, Aleman A, Herrmann CS. *Cortex*. 2022 Sep;154:299-310. doi: 10.1016/j.cortex.2022.05.017. Epub 2022 Jun 16. PMID: 35839572
7. Weber S, Aleman A, Hugdahl K. *Sci Rep*. 2022 Involvement of the default mode network under varying levels of cognitive effort. Apr;15(12):6303. doi: 10.1038/s41598-022-10289-7. PMID: 35428802
8. Zeng N, Aleman A, Liao C, Fang H, Xu P, Luo Y. *Cereb Cortex*. 2022 Role of the amygdala in disrupted integration and effective connectivity of cortico-subcortical networks in apathy. Jul 15;bhac267. doi: 10.1093/cercor/bhac267. Online ahead of print. PMID: 35834901
9. Ćurčić-Blake B, Kos C, Aleman A. *Schizophrenia (Heidelb)*. 2022 Causal connectivity from right DLPFC to IPL in schizophrenia patients: a pilot study. Mar;7(8):16. doi: 10.1038/s41537-022-00216-0. PMID: 35256618
10. van der Stouwe ECD, de Vries B, Steenhuis LA, Waarheid CO, Jans R, de Jong S, Aleman A, Pijnenborg GHM, Van Busschbach JT. BEATVIC, a body-oriented resilience therapy for individuals with psychosis: Short term results of a multi-center RCT. *PLoS One*. 2022 Dec 21;17(12):e0279185. doi: 10.1371/journal.pone.0279185.
11. Ramos-Mastache D, Mondragón-Maya A, Liemburg EJ, Enriquez-Geppert S, Goerlich KS, Rosel-Vales M, Pérez-Ferrara D, Jansari AS, Aleman A. Understanding the relationship between apathy, cognition and functional outcome in schizophrenia: The significance of an ecological assessment. *PLoS One*. 2022 Nov 3;17(11):e0277047. doi: 10.1371/journal.pone.0277047.
12. Borkent J, Ioannou M, Laman JD, Haarman BCM, Sommer IEC. *Psychol Med*. 2022 Role of the gut microbiome in three major psychiatric disorders. May;52(7):1222-1242. doi: 10.1017/S0033291722000897. Epub 2022 May 4. PMID: 35506416
13. van Zonneveld SM, Haarman BCM, van den Oever EJ, Nuninga JO, Sommer IEC. *Curr Opin Psychiatry*. 2022 Unhealthy diet in schizophrenia spectrum disorders. May;135(3):177-185. doi: 10.1097/YCO.0000000000000791. Epub 2022 Mar 17. PMID: 35585755
14. Puvogel S, Palma V, Sommer IEC. *Curr Opin Psychiatry*. 2022 Brain vasculature disturbance in schizophrenia. May;135(3):146-156. doi: 10.1097/YCO.0000000000000789. Epub 2022 Mar 9. PMID: 35266904
15. Aleman A, Sommer I. *Psychol Med*. 2022 The silent danger of social distancing. Mar;52(4):789-790. doi: 10.1017/S0033291720002597. Epub 2020 Jul 6. PMID: 32624043
16. Oomen PP, de Boer JN, Brederoo SG, Voppel AE, Brand BA, Wijnen FNK, Sommer IEC. *J Psychopathol Clin Sci*. 2022 Characterizing speech heterogeneity in schizophrenia-spectrum disorders. Feb;131(2):172-181. doi: 10.1037/abn0000736. PMID: 35230859
17. Brand BA, de Boer JN, Dazzan P, Sommer IE. *Lancet Psychiatry*. 2022 Towards better care for women with schizophrenia-spectrum disorders. Apr;9(4):330-336. doi: 10.1016/S2215-0366(21)00383-7. Epub 2022 Feb 23. PMID: 35216655
18. Grandjean EL, van Zonneveld SM, Sommer IEC, Haarman BCM. *J Affect Disord*. 2022 Anti-inflammatory dietary patterns to treat bipolar disorder? Aug;153:254-255. doi: 10.1016/j.jad.2022.05.073. Epub 2022 May 19. PMID: 35598750
19. Kikkert MJ, Veling W, de Haan L, Begemann MJH, de Koning M; HAMLETT and OPHELIA Consortium, Sommer IE. *Early Interv Psychiatry*. 2022 Medication strategies in first episode psychosis patients: A survey among psychiatrists. Feb;16(2):139-146. doi: 10.1111/eip.13138. Epub 2021 Mar 22. PMID: 33754470
20. Sommer IEC, Horowitz M, Allott K, Speyer H, Begemann MJH. *Lancet Psychiatry*. 2022 Antipsychotic maintenance treatment versus dose reduction: how the story continues. Aug;9(8):602-603. doi: 10.1016/S2215-0366(22)00230-9. Epub 2022 Jun 23. PMID: 35753324
21. Sommer IEC, DeLisi LE. *Curr Opin Psychiatry*. 2022 Editorial: Precision psychiatry and the clinical care for people with schizophrenia: sex, race and ethnicity in relation to social determinants of mental health. May;135(3):137-139. doi: 10.1097/YCO.0000000000000781. PMID: 35579868
22. Luykx JJ, Loef D, Lin B, van Diermen L, Nuninga JO, van Exel E, Oudega ML, Rhebergen D, Schouws SNTM, van Eijndhoven P, Verwijk E, Schrijvers D, Birkenhager TK, Ryan KM, Arts B, van Bronswijk SC, Kenis G, Schurges G, Baune BT, Arns M, van Dellen EE, Somers M, Sommer IEC, Boks MP, Gülsüz S, McLoughlin DM, Dols A, Rutten BPF. *Biol Psychiatry*. 2022 Interrogating Associations Between Polygenic Liabilities and Electroconvulsive Therapy Effectiveness. Mar;159(6):531-539. doi: 10.1016/j.biopsych.2021.10.013. Epub 2021 Oct 24. PMID: 34955169
23. Eltokhi A, Sommer IE. *Front Neurosci*. 2022 A Reciprocal Link Between Gut Microbiota, Inflammation and Depression: A Place for Probiotics? Apr;25:16:852506. doi: 10.3389/fnins.2022.852506. eCollection 2022. PMID: 35546876
24. Grootens KP, Sommer IE. *Lancet Psychiatry*. 2022 Redesigning phase 3 and 4 trials to adopt shared decision making Feb;9(2):101-103. doi: 10.1016/S2215-0366(21)00385-0. Epub 2021 Oct 18. PMID: 34672990
25. Sommer IE, Brand BA, Gangadin S, Tanskanen A, Tiihonen J, Taipale H. *Schizophr Bull*. 2022 Women with Schizophrenia-Spectrum Disorders After Menopause: A Vulnerable Group for Relapse. Oct;5:sbac139. doi: 10.1093/schbul/sbac139. Online ahead of print. PMID: 36198044
26. Linszen MMJ, de Boer JN, Schutte MJL, Begemann MJH, de Vries J, Koops S, Blom RE, Bohlken MM, Heringa SM, Blom JD, Sommer IEC. *Schizophrenia (Heidelb)*. 2022 Occurrence and phenomenology of hallucinations in the general population: A large online survey. Apr;23(8):41. doi: 10.1038/s41537-022-00229-9. PMID: 35853871





27. Hjelmervik H, Craven AR, Johnsen E, Kompus K, Bless JJ, Sinkeviciute I, Kroken RA, Løberg EM, Ersland L, Grüner R, Sommer IE, Hugdahl K. *Brain Behav.* 2022 Negative valence of hallucinatory voices as predictor of cortical glutamatergic metabolite levels in schizophrenia patients. *Jan;12(1):e2446.* doi: 10.1002/brb3.2446. Epub 2021 Dec 7. PMID: 34874613
28. Jansma J, van Essen R, Haarman BCM, Chatzioannou AC, Borkent J, Ioannou M, van Hemert S, Sommer IEC, El Aidy S. *J Psychiatr Res.* 2022 Metabolic phenotyping reveals a potential link between elevated faecal amino acids, diet and symptom severity in individuals with severe mental illness. *Jul;151:507-515.* doi: 10.1016/j.jpsychires.2022.05.011. Epub 2022 May 12. PMID: 35636025
29. de Rijke TJ, Doting MHE, van Hemert S, De Deyn PP, van Munster BC, Harmsen HJM, Sommer IEC. *Front Psychiatry.* 2022 A Systematic Review on the Effects of Different Types of Probiotics in Animal Alzheimer's Disease Studies. *Apr 27;13:879491.* doi: 10.3389/fpsyti.2022.879491. eCollection 2022. PMID: 35573324
30. Hugdahl K, Craven AR, Johnsen E, Ersland L, Stoyanov D, Kandilarova S, Brunvoll Sandøy L, Kroken RA, Løberg EM, Sommer IE. *Schizophr Bull.* 2022 Neural Activation in the Ventromedial Prefrontal Cortex Precedes Conscious Experience of Being in or Out of a Transient Hallucinatory State. *May 21:sbac028.* doi: 10.1093/schbul/sbac028. Online ahead of print. PMID: 35596662
31. Puvogel S, Alsema A, Kracht L, Webster MJ, Weickert CS, Sommer IEC, Eggen BJL. *Mol Psychiatry.* 2022 Single-nucleus RNA sequencing of midbrain blood-brain barrier cells in schizophrenia reveals subtle transcriptional changes with overall preservation of cellular proportions and phenotypes. *Oct 3.* doi: 10.1038/s41380-022-01796-0. Online ahead of print. PMID: 36192459
32. Adam O, Blay M, Brunoni AR, Chang HA, Gomes JS, Javitt DC, Jung DU, Kantrowitz JT, Koops S, Lindenmayer JP, Palm U, Smith RC, Sommer IE, Valiengo LDCL, Weickert TW, Brunelin J, Mondino M. *Schizophr Bull.* 2022 Efficacy of Transcranial Direct Current Stimulation to Improve Insight in Patients With Schizophrenia: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Jul 12:sbac078.* doi: 10.1093/schbul/sbac078. Online ahead of print. PMID: 35820035
33. Yehya A, Khaled SM, Sommer IEC, Woodruff P, Daher-Nashif S. *Front Psychiatry.* 2022 Psychotic-like experiences among university female students in Qatar: A qualitative-phenomenological study. *Sep 23;13:988913.* doi: 10.3389/fpsyti.2022.988913. eCollection 2022. PMID: 36213899
34. van Kleef RS, Marsman JC, van Valen E, Bockting CLH, Aleman A, van Tol MJ. *Neuroimage Clin.* 2022 Neural basis of positive and negative emotion regulation in remitted depression. *34:102988.* doi: 10.1016/j.nicl.2022.102988. Epub 2022 Mar 11. PMID: 35298997
35. Toenders YJ, Schmaal L, Nawijn L, Han LKM, Binnewies J, van der Wee NJA, van Tol MJ, Veltman DJ, Milaneschi Y, Lamers F, Penninx BWJH. *J Affect Disord.* 2022 The association between clinical and biological characteristics of depression and structural brain alterations. *Sep 1;312:268-274.* doi: 10.1016/j.jad.2022.06.056. Epub 2022 Jun 26. PMID: 35760189
36. Balducci T, Rasgado-Toledo J, Valencia A, van Tol MJ, Aleman A, Garza-Villarreal EA. *Sci Data.* 2022 A behavioral and brain imaging dataset with focus on emotion regulation of women with fibromyalgia. *Sep 22;9(1):581.* doi: 10.1038/s41597-022-01677-9. PMID: 36138036
37. Nawijn L, Dinga R, Aghajani M, van Tol MJ, van der Wee NJA, Wunder A, Veltman DJ, Penninx BWJH. *Depress Anxiety.* 2022 Neural correlates of anxious distress in depression: A neuroimaging study of reactivity to emotional faces and resting-state functional connectivity. *Jul;39(7):573-585.* doi: 10.1002/da.23264. Epub 2022 May 10. PMID: 35536093
38. Nijmeijer SE, van Tol MJ, Aleman A, Keijzer M (2022). Musical and multilingual experience are related to healthy aging: better some than none but even better together. *J Gerontol B Psychol Sci Soc Sci.* doi: 10.1093/geronb/gbac185. Online ahead of print.
39. Deng W, van der Kleij RMJJ, Shen H, Wei J, Brakema EA, Guldemond N, Song X, Li X, van Tol MJ, Aleman A, Chavannes NH (2022). eHealth-based psychosocial interventions for adults with insomnia: a systematic review and meta-analysis of randomized controlled trials. *JMIR accepted for publication.*
40. Wang J, Luo Y, Aleman A, Martens S. *Psychol Res.* 2022 Training the attentional blink: subclinical depression decreases learning potential. *Sep;86(6):1980-1995.* doi: 10.1007/s00426-021-01603-5. Epub 2021 Oct 21. PMID: 34674013

41. Hoekstra C, Martens S, Taatgen NA. *PLoS One.* 2022 Testing the skill-based approach: Consolidation strategy impacts attentional blink performance. *Jan 21;17(1):e0262350.* doi: 10.1371/journal.pone.0262350. eCollection 2022. PMID: 35061799
42. Karabay A, Wilhelm SA, de Jong J, Wang J, Martens S, Akyürek EG. *J Exp Psychol Gen.* 2022 Two faces of perceptual awareness during the attentional blink: Gradual and discrete. *Jul;151(7):1520-1541.* doi: 10.1037/xge0001156. Epub 2021 Nov 22. PMID: 34807708
43. Lejko N, Tumati S, Opmeer EM, Marsman JC, Reesink FE, De Deyn PP, Aleman A, Ćurčić-Blake B. *Exp Gerontol.* 2022 Planning in amnestic mild cognitive impairment: an fMRI study. *Mar;159:111673.* doi: 10.1016/j.exger.2021.111673. Epub 2021 Dec 24. PMID: 34958871
44. «Carvalho, J., Invernizzi, A., Martins, J., Renken, R. J. & Cornelissen, F. W. 20-Dec-2022 Local neuroplasticity in adult glaucomatous visual cortex. In: *Scientific Reports.* 12, 1, 17 p., 21981.»
45. Schräder, N. H. B., Duipmans, J. C., Renken, R. J., Sörös, P., Vermeulen, K. M., Bolling, M. C. & Wolff, A. P. 12-Dec-2022 The C4EB studyTransvamix (10% THC / 5% CBD) to treat chronic pain in epidermolysis bullosa: A protocol for an explorative randomized, placebo controlled, and double blind intervention crossover study In: *PLoS ONE.* 17, 12 December, 11 p., e0277512.
46. Invernizzi, A., Haak, K. V., Carvalho, J. C., Renken, R. J. & Cornelissen, F. W. 1-Dec-2022 Bayesian connective field modeling using a Markov Chain Monte Carlo approach 1-Dec-2022 In: *Neuroimage.* 264, 15 p., 119688.
47. van der Weijden, C. WJ., van der Hoorn, A., Potze, J. H., Renken, R. J., Borra, R. JH., Dierckx, R. AJO., Gutmann, I. W., Oualam, H., Karimi, D., Gholipour, A., Warfield, S. K., de Vries, E. FJ. & Meilof, J. F. Nov-2022 Diffusion-derived parameters in lesions, peri-lesion, and normal-appearing white matter in multiple sclerosis using tensor, kurtosis, and fixel-based analysis In: *Journal of Cerebral Blood Flow and Metabolism.* 42, 11, p. 2095-2106 12 p.
48. «Verhallen, A. M., Alonso-Martinez, S., Renken, R. J., Marsman, J-B. C. & Ter Horst, G. J., Oct-2022 Depressive symptom trajectory following romantic relationship breakup and effects of rumination, neuroticism and cognitive control In: *Stress and Health.* 38, 4, 13 p.»
49. Veen, R. V., Meles, S. K., Renken, R. J., Reesink, F. E., Oertel, W. H., Janzen, A., de Vries, G-J., Leenders, K. L. & Biehl, M. Oct-2022 FDG-PET combined with learning vector quantization allows classification of neurodegenerative diseases and reveals the trajectory of idiopathic REM sleep behavior disorder In: *Computer Methods and Programs in Biomedicine.* 225, 12 p., 107042.

## Section Molecular Cell Biology:

- CD146 increases stemness and aggressiveness in glioblastoma and activates YAP signaling. Yuanke Liang, Daniëlle Voshart, Judith T. M. L. Paridaen, Nynke Oosterhof, Dong Liang, Arun Thiruvalluvan, Inge S. Zuhorn, Wilfred F. A. den Dunnen, Guojun Zhang, Haoyu Lin, Lara Barazzuoli, Frank A. E. Kruyt. *Cell Mol Life Sci.* . 79:398 <https://doi.org/10.1007/s00018-022-04420-0>
- Roadmap for Precision preclinical x-ray radiation studies. Verhaegen F, Butterworth KT, Chalmers AJ, Coppes RP, de Ruysscher D, Dobiasch S, Fenwick JD, Granton PV, Heijmans SHJ, Hill MA, Koumenis C, Lauber K, Marples B, Parodi K, Persoon LCGG, Staut N, Subiel A, Vaes RDW, van Hoof SJ, Verginadis IL, Wilkens JJ, Williams KJ, Wilson GD, Dubois LJ.. *Phys Med Biol.* Dec 30. doi: 10.1088/1361-6560/acaf45
- The role of ESTRO guidelines in achieving consistency and quality in clinical radiation oncology practice. Offersen BV, Aznar MC, Bacchus C, Coppes RP, Deutsch E, Georg D, Haustermans K, Hoskin P, Krause M, Lartigau EF, Lee AWM, Löck S, Thwaites DI, van der Kogel AJ, van der Heide U, Valentini V, Overgaard J, Baumann M.. *Radiother Oncol.* Dec 23;179:109446.
- Patient-derived parathyroid organoids as a tracer and drug-screening application model: *Stem Cell Reports.* Milou E. Noltes , Luc H.J. Sondorp, Laura Kracht, Adrienne H. Brouwers, Robert P. Coppes, Schelto Kruijff. *Stem Cell Reps.* October 27, 2022
- FLASH Radiotherapy & Particle Therapy conference, FRPT2021. Vozenin MC, Schüller A, Dutreix M, Kirkby K, Baumann M, Coppes RP, Thwaites D.. *Radiother. Oncol.* Oct;175:167-168. doi: 10.1016/j.radonc.2022.09.013.
- Role of quiescent cells in the homeostatic maintenance of the adult submandibular salivary gland. Serrano Martinez P, Maimets M, Bron R, van Os R, de Haan G, Pringle S, Coppes RP.. *iScience* . Sep 2;25(10):105047. doi: 10.1016/j.isci.2022.105047.
- Radiation-induced cardiac side-effects: The lung as target for interacting damage and intervention. Julia Wiedemann, Robert P. Coppes and Peter van Luijk. *Front Oncol.* 22 July <https://doi.org/10.3389/fonc.2022.931023>
- Thyroid Gland Organoids: Current Models and Insights for Application in Tissue Engineering.. Ogundipe VML, Plukker JTM, Links TP, Coppes RP.. *Tissue Eng Part A* . Jun;28(11-12):500-510. doi: 10.1089/ten.TEA.2021.0221. Epub 2022 May 20. PMID: 35262402.

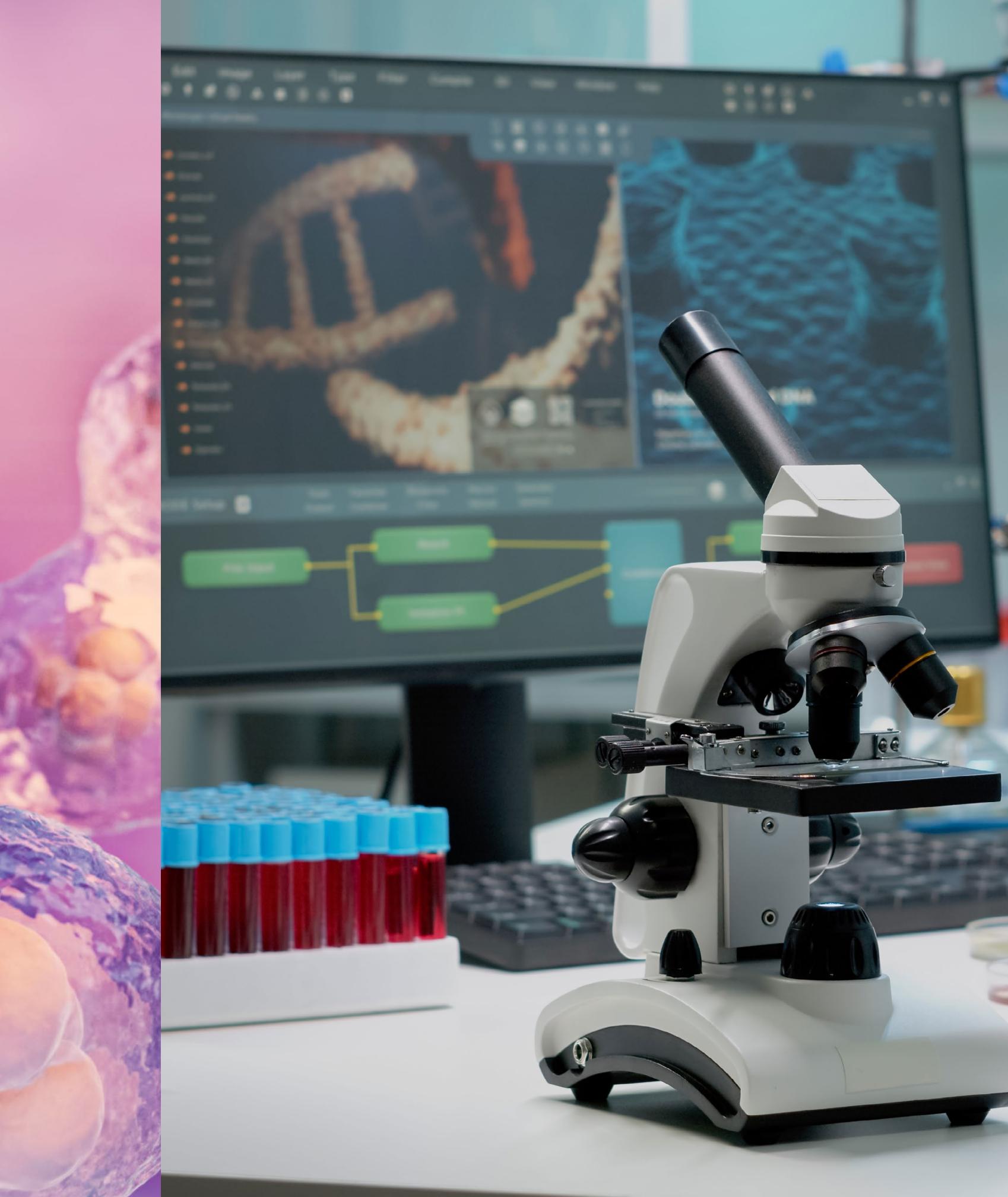
9. Intraoperative MET-receptor targeted fluorescent imaging and spectroscopy for lymph node detection in papillary thyroid cancer: novel diagnostic tools for more selective central lymph node compartment dissection. Pascal K. C. Jonker, Madelon J. H. Metman, Luc H. J. Sondorp, Mark S. Sywak, Anthony J. Gill, Liesbeth Jansen, Thera P. Links, Paul J. van Diest, Tessa M. van Ginhoven, Clemens W. G. M. Löwik, Anh H. Nguyen, Robert P. Coppes, Dominic J. Robinson, Gooitzen M. van Dam, Bettien M. van Hemel, Rudolf S. N. Fehrmann & Schelto Kruyff. *Eur J Nucl Med and Mol Imag*. April 7, <https://doi.org/10.1007/s00259-022-05763-3>
10. Tyrosine Phosphatase PTPRO Deficiency in ERBB2-Positive Breast Cancer Contributes to Poor Prognosis and Lapatinib Resistance. Hongmei Dong, Liang Du, Song Wang Cai, Wan Lin, Chaoying Chen, Matthew Still, Zhimeng Yao, Robert P. Coppes, Yunlong Pan, Dianzheng Zhang, Shegan Gao and Hao Zhang. *Front Pharmacol*. 01 April 2022 | <https://doi.org/10.3389/fphar.2022.838171>
11. Role of mTOR through Autophagy in Esophageal Cancer Stemness. Liang Du, Da Wang, Peter W. Nagle, Andries A. H. Groen, Hao Zhang, Christina T. Muijs, John Th. M. Plukker and Robert P. Coppes. *Cancers*. 14(7), 1806
12. Autophagy induction during stem cell activation plays a key role in salivary gland self-renewal.. Orhon I, Rocchi C, Villarejo-Zori B, Serrano Martinez P, Baanstra M, Brouwer U, Boya P, Coppes R, Reggiori F.. *Autophagy*. Feb;18(2):293-308.
13. Parotid Gland Stem Cell Sparing Radiation Therapy for Patients With Head and Neck Cancer: A Double-Blind Randomized Controlled Trial. Steenbakkers RJHM, van Rijn-Dekker MI, Stokman MA, Kerkels RGJ, van der Schaaf A, van den Hoek JGM, Bijl HP, Kramer MCA, Coppes RP, Langendijk JA, van Luijk P.. *Int J Radiat Oncol Biol Phys*. Feb 1;112(2):306-316
14. Generation and Application of Inducible Chimeric RNA ASTN2-PAPPAs Knockin Mouse Model. Yichen Luo, Liang Du, Zhimeng Yao, Fan Liu, Kai Li, Feifei Li, Jianlin Zhu, Robert P. Coppes, Dianzheng Zhang, Yunlong Pan, Shegan Gao and Hao Zhang. *Cells*. 11, Issue 2, 10.3390/cells11020277
15. Personalised radiation therapy taking both the tumour and patient into consideration. Overgaard J, Aznar MC, Bacchus C, Coppes RP, Deutsch E, Georg D, Haustermans K, Hoskin P, Krause M, Lartigau EF, Lee AWM, Löck S, Offersen BV, Thwaites DL, van der Kogel AJ, van der Heide UA, Valentini V, Baumann M.. *Radiother Oncol*. Jan;166:A1-A5. doi: 10.1016/j.radonc.2022.01.010. Epub 2022 Jan 17. PMID: 35051440.
16. Microscopic modulation and analysis of islets of Langerhans in living zebrafish larvae. Noura Faraj, B. H. Peter Duinkerken, Elizabeth C. Carroll, Ben N. G. Giepmans. *FEBS Lett*. 29 May <https://doi.org/10.1002/1873-3468.14411>
17. Integrated Array Tomography for 3D Correlative Light and Electron Microscopy. Ryan Lane, Anouk H. G. Wolters, Ben N. G. Giepmans and Jacob P. Hoogenboom. *Front Mol Biosci*. 19 January 2022 | <https://doi.org/10.3389/fmlob.2021.822232>
18. Plasticity-Related Gene 5 Is Expressed in a Late Phase of Neurodifferentiation After Neuronal Cell-Fate Determination. Isabel Gross, Nicola Brandt, Danara Vonk, Franziska Köper, Lars Wöhlbrand, Ralf Rabus, Martin Witt6, Axel Heep, Torsten Plösch, Mark S. Hipp, and Anja U. Bräuer. *Front Cell Neurosci*. 15 April <https://doi.org/10.3389/fncel.2022.797588>
19. Gel-like inclusions of C-terminal fragments of TDP-43 sequester stalled proteasomes in neurons. Henrick Riemenschneider, Qiang Guo, Jakob Bader, Frédéric Frottin, Daniel Farny, Gernot Kleinberger, Christian Haass, Matthias Mann, F. Ulrich Hartl, Wolfgang Baumeister, Mark S. Hipp, Felix Meissner, Rubén Fernández-Busnadio, Dieter Edbauer. *EMBO rep*. e53890
20. A systematic expression analysis of Plasticity-Related Genes in mouse brain development brings PRG4 into play.. Gross I, Tschigor T, Salman AL, Yang F, Luo J, Vonk D, Hipp MS, Neidhardt J, Bräuer AU. *Dev Dyn*. *Dev Dyn*. Apr;251(4):714-728. doi: 10.1002/dvdy.428.
21. Organoids as a model to study intestinal and liver dysfunction in severe malnutrition.. Horcas-Nieto JM, Versloot CJ, Langelaar-Makkinje M, Gerding A, Blokzijl T, Koster MH, Baanstra M, Martini IA, Coppes RP, Bourdon C, van IJzendoorn SCD, Kim P, Bandsma RHJ, Bakker BM.. *Biochim Biophys Acta Mol Basis Dis*. Dec 26;1869(3):166635
22. Myosin Vb as a tumor suppressor gene in intestinal cancer. Arango D, Cartón-García F, Brotons B, Anguita E, Dopeso H, Tarragona J, Nieto R, García-Vidal E, Macaya I, Zagoya Z, Dalmau M, Sánchez-Martín M, van IJzendoorn SCD, Landolfi S, Hernández J, Schwartz S, Matias-Guiu X, Ramon y Cajal S, and Martínez-Barriocanal A.. *Oncogene*. in press
23. Fetal Bowel Abnormalities Suspected by Ultrasonography in Microvillus Inclusion Disease: Prevalence and Clinical Significance. Yue Sun, Changsen Leng, and Sven C. D. van IJzendoorn. *J Clin Med*. 11(15), 4331; <https://doi.org/10.3390/jcm11154331>
24. A functional relationship between UNC45A and MYO5B connects two rare diseases with shared enteropathy. Qinghong Li, Zhe Zhou, Yue Sun, Chang Sun, Karin Klappe, Sven C.D. van IJzendoorn. *CMGH*. April 11, DOI:<https://doi.org/10.1016/j.cmg.2022.04.006>
25. Induction of Bile Canalliculi-Forming Hepatocytes from Human Pluripotent Stem Cells. Lavinja Matakovic, Arend W Overeem, Karin Klappe, Sven C D van IJzendoorn. *Meth. Mol. Biol.* 2544:71-82. doi: 10.1007/978-1-0716-2557-6\_4.
26. The molecular chaperone DNAJB6 provides surveillance of FG-Nups and is required for interphase nuclear pore complex biogenesis.. Kuiper EFE, Gallardo P, Bergsma T, Mari M, Kolbe Musskopf M, Kuipers J, Giepmans BNG, Steen A, Kampinga HH , Veenhoff LM , Bergink S. *Nature Cell Biol*. 10.1038/s41556-022-01010-x.
27. Digest it all: The lysosomal turnover of cytoplasmic aggregates. Mauthe M, Kampinga HH, Hipp MS, Reggiori F. *Trends Biochem Sci*. Oct 21:S0968-0004(22)00271-7
28. Targeting DNA topoisomerases or checkpoint kinases results in an overload of chaperone systems, triggering aggregation of a metastable subproteome. Wouter Huiting , Suzanne L Dekker , Joris C J van der Lienden , Rafaella Mergener , Maiara K Musskopf , Gabriel V Furtado , Emma Gerrits , David Coit , Mehrnoosh Oghbaie , Luciano H Di Stefano , Hein Schepers , Maria A W H van Waarde-Verhagen , Suzanne Couzijn , Lara Barazzuol, John LaCava , Harm H Kampinga , Steven Bergink. *Elife*. Feb 24;11:e70726. doi: 10.7554/eLife.70726
29. Formation of toxic oligomers of polyQ-expanded Huntingtin by prion-mediated cross-seeding.. Groppe M, Klaips CL, Hartl FU.. *Mol. Cell*. Oct 13:S1097-2765(22)00952-2. doi: 10.1016/j.molcel.2022.09.031
30. Phospholipid imbalance impairs autophagosome completion. Polyansky A, Shatz O, Fraiberg M, Shimoni E, Dadosh T, Mari M, Reggiori F, Qin C, Han X, Elazar Z. *EMBO J*. Dec 1;41(23):e110771
31. The lipid flippase Drs2 regulates anterograde transport of Atgg during autophagy.. Kriegenburg F, Huiting W, van Buuren-Broek F, Zwilling E, Hardenberg R, Mari M, Kraft C, Reggiori F. *Autophagy*. 1, 345-367
32. Cvm1 is a component of multiple vacuolar contact sites required for sphingolipid homeostasis. Daniel D Bisinski, Astrid M Alsema, Marion H C Wijering, Anneke Miedema, Mario Mauthe, Fulvio Reggiori, Bart J L Eggen. *Brain Behav Immun Health*. Sep 8;25:100510. doi: 10.1016/j.bbih.2022.100510
33. mTORC1 controls Golgi architecture and vesicle secretion by phosphorylation of SCYL1. Kaeser-Pebernard S, Vionnet C, Mari M, Sankar DS, Hu Z, Roubaty C, Martinez-Martinez E, Zhao H, Spuch-Calvar M, Petri-Fink A, Rainer G, Steinberg F, Reggiori F, Dengjel J.. *Nat. Commun.* Aug 10;13(1):4685. doi: 10.1038/s41467-022-32487-7
34. The yeast LYST homolog Bph1 is a Rab5 effector and prevents Atg8 lipidation at endosomes. Duarte, P. V., Hardenberg, R., Mari, M., Walter, S., Reggiori, F., Fröhlich, F., Montoro, A. G. & Ungermann, C.. *J Cell Sc*. Mar 28:jcs.259421.
35. ER-phagy requires the assembly of actin at sites of contact between the cortical ER and endocytic pits. Liu D, Mari M, Li X, Reggiori F, Ferro-Novick S, Novick P.. *Proc Natio Ac Sc*. Feb 8;119(6):e2117554119
36. Digest it all: The lysosomal turnover of cytoplasmic aggregates. Mauthe M, Kampinga HH, Hipp MS, Reggiori F. *Trends Biochem Sci*. Oct 21:S0968-0004(22)00271-7
37. Transcriptomic changes in autophagy-related genes are inversely correlated with inflammation and are associated with multiple sclerosis lesion pathology. Misriyal C, Alsema AM, Wijering MHC, Miedema A, Mauthe M, Reggiori F, Eggen BJL.. *Brain Behav Immun Health*. Sep 8;25:100510. doi: 10.1016/j.bbih.2022.100510
38. -D74ATG9 interactions via its transmembrane domains are required for phagophore expansion during autophagy.. Chumpen Ramirez S, Gomez-Sanchez R, Verlhac P, Hardenberg R, Margheritis E, Cosentino K, Reggiori F, Ungermann U. *Autophagy*. Nov 10;1-20. doi: 10.1080/15548627.2022.2136340.
39. Transcriptomic changes in autophagy-related genes are inversely correlated with inflammation and are associated with multiple sclerosis lesion pathology. Chairi Misriyal, Astrid M Alsema, Marion H C Wijering, Anneke Miedema, Mario Mauthe, Fulvio Reggiori, Bart J L Eggen. *Brain Behav Immun Health*. Sep 8;25:100510. doi: 10.1016/j.bbih.2022.100510
40. An optimized protocol for immuno-electron microscopy of endogenous LC3.. De Mazière A, van der Beek J, van Dijk S, de Heus C, Reggiori F, Koike M, Klumperman J.. *Autophagy*. Apr 7:1-19.
41. Getting on the right track: Interactions between viruses and the cytoskeletal motor proteins.. Rio-Bergé C, Cong Y, Reggiori F.. *Traffic*. Feb 10. doi: 10.1111/tra.12835.
42. ER-phagy: mechanisms, regulation and diseases connected to the lysosomal clearance of the endoplasmic reticulum. Fulvio Reggiori, Maurizio Molinari. *Physiol Revs*. Feb 21. doi: 10.1152/physrev.00038.2021.
43. Molecular regulation of autophagosome formation. Yan Hu and Fulvio Reggiori. *Biochem Soc Trans*. Jan 25;BST20210819. doi: 10.1042/BST20210819



44. Transcriptomic changes in autophagy-related genes are inversely correlated with inflammation and are associated with multiple sclerosis lesion pathology. Misriela C, Alsema AM, Wijering MHC, Miedema A, Mauthe M, Reggiori F, Eggen BJL. *Brain Behav Immun Health*. PMID: 36120103
45. The mechanism of Macroautophagy: The movie.. Reggiori F, Boya P, da Costa D, Elazar Z, Eskelinen E-L, Farrés J, Guettler S, Kraft C, Jungbluth H, Martinez A, Morel E, Pless O, Proikas-Cezanne T, Simonsen A. *Autophagy Rep.* . 1, 414-417.
46. Wait, can you remind me just why we need another journal focused on autophagy? . Klionsky DJ, Reggiori F. *Autophagy Rep.* . 1, 1-4
47. Post-transcriptional regulation of ATG1 is a critical node that modulates autophagy during distinct nutrient stresses. Vikramjit Lahiri, Shree Padma Metur, Zehan Hu, Xinxin Song, Muriel Mari M, Wayne D Hawkins, Janakraj Bhattacharai, Elizabeth Delorme-Axford, Fulvio Reggiori, Daolin Tang, Joern Dengjel, Daniel J Klionsky DJ. *Autophagy*, 18, 1694-1714
48. The surface of lipid droplets constitutes a barrier for endoplasmic reticulum-resident integral membrane proteins. Rasha Khaddaj, Muriel Mari, Stéphanie Cottier, Fulvio Reggiori, Roger Schneiter, 135, jcs256206.
49. Autophagy induction during stem cell activation plays a key role in salivary gland self-renewal, Idil Orhon, Cecilia Rocchi, Beatriz Villarejo-Zori, Paola Serrano Martinez, Mirjam Baanstra, Uilke Brouwer, Patricia Boya, Rob Coppes, Fulvio Reggiori , 18, 293-308.
50. «Phosphoregulation of the autophagy machinery by kinases and phosphatases, Mariya Licheva, Babu Raman, Claudine Kraft, Fulvio Reggiori, *Autophagy*, 18, 104-123.»
51. The ménage à trois of autophagy, lipid droplets and liver disease, Yasmina Filali-Moucedf, Catherine Hunter, Federica Roccio, Stavroula Zagkou, Nicolas Dupont, Charlotte Primard, Tassula Proikas-Cezanne, Fulvio Reggiori, *Autophagy*, 18, 50-72
52. PKAN pathogenesis and treatment. Susan J. Hayflick, Suh Young Jeong, Ody C.M. Sibon. *Mol Gen Metabolism* . <https://doi.org/10.1016/j.jmgme.2022.09.011>
53. Coenzyme A precursors flow from mother to zygote and from microbiome to host.. Yi Yu , Marianne van der Zwaag , Jouke Jan Wedman , Hjalmar Permentier , Niels Plomp , Xiu Jia , Bart Kanon , Ellie Eggens-Meijer , Girbe Buist , Hermie Harmsen , Jan Kok , Joana Falcao Salles , Bregje Wertheim , Susan J Hayflick , Erick Strauss , Nicola A Grzeschik , Hein Schepers , Ody C M Sibon . *Mol. Cell* . Jul 21;82(14):2650-2665.e12. doi: 10.1016/j.molcel.2022.05.006

## Section Molecular Neurobiology:

- Microglia states and nomenclature: A field at its crossroads. Paolicelli RC, Sierra A, Stevens B, Tremblay ME, Aguzzi A, Ajami B, Amit I, Audinat E, Bechmann I, Bennett M, Bennett F, Bassis A, Biber K, Bilbo S, Blurton-Jones M, Boddeke E, Brites D, Brône B, Brown GC, Butovsky O, Carson MJ, Castellano B, Colonna M, Cowley SA, Cunningham C, Davalos D, De Jager PL, de Strooper B, Denes A, Eggen BJL, Eyo U, Galea E, Garel S, Ginhoux F, Glass CK, Gokce O, Gomez-Nicola D, González B, Gordon S, Graeber MB, Greenhalgh AD, Gressens P, Greter M, Gutmann DH, Haass C, Heneka MT, Heppner FL, Hong S, Hume DA, Jung S, Kettenmann H, Kipnis J, Koyama R, Lemke G, Lynch M, Majewska A, Malcangio M, Malm T, Mancuso R, Masuda T, Matteoli M, McColl BW, Miron VE, Molofsky AV, Monje M, Mracsko E, Nadjar A, Neher JJ, Neniskyte U, Neumann H, Noda M, Peng B, Peri F, Perry VH, Popovich PG, Pridans C, Priller J, Prinz M, Ragazzo D, Ransohoff RM, Salter MW, Schaefer A, Schafer DP, Schwartz M, Simons M, Smith CJ, Streit WJ, Tay TL, Tsai LH, Verkhratsky A, von Bernhardi R, Wake H, Wittamer V, Wolf SA, Wu LJ, Wyss-Coray T. *Neuron*. 2022 Nov 2;110(21):3458-3483. doi: 10.1016/j.neuron.2022.10.020.
- Transcriptomic and epigenomic landscapes of Alzheimer's disease evidence mitochondrial-related pathways. Marmolejo-Garza A, Medeiros-Furquim T, Rao R, Eggen BJL, Boddeke E, Dolga AM. *Biochim Biophys Acta Mol Cell Res*. 2022 Oct;1869(10):119326. doi: 10.1016/j.bbamcr.2022.119326. Epub 2022 Jul 14.
- Epigenetic regulation of innate immune memory in microglia.Zhang X, Kracht L, Lerario AM, Dubbelaar ML, Brouwer N, Wesseling EM, Boddeke EWGM, Eggen BJL, Kooistra SM.J *Neuroinflammation*. 2022 May 14;19(1):111. doi: 10.1186/s12974-022-02463-5.
- An emerging role for microglia in stress-effects on memory. Sanguino-Gómez J, Buurstede JC, Abiega O, Fitzsimons CP, Lucassen PJ, Eggen BJL, Lesuis SL, Meijer OC, Krugers HJ.Eur J *Neurosci*. 2022 May;55(9-10):2491-2518. doi: 10.1111/ejn.15188. Epub 2021 May 4.
- Neurovascular dysfunction in GRN-associated frontotemporal dementia identified by single-nucleus RNA sequencing of human cerebral cortex.Gerrits E, Giannini LAA, Brouwer N, Melhem S, Seilhean D, Le Ber I; Brainbank Neuro-CEB Neuropathology Network; Kamermans A, Kooij G, de Vries HE, Boddeke EWGM, Seelaar H, van Swieten JC, Eggen BJL.Nat *Neurosci*. 2022 Aug;25(8):1034-1048. doi: 10.1038/s41593-022-01124-3. Epub 2022 Jul 25.





6. Brain macrophages acquire distinct transcriptomes in multiple sclerosis lesions and normal appearing white matter.Miedema A, Gerrits E, Brouwer N, Jiang Q, Kracht L, Meijer M, Nutma E, Peferoen-Baert R, Pijnacker ATE, Wesseling EM, Wijering MHC, Gabius HJ, Amor S, Eggen BJL, Kooistra SM.*Acta Neuropathol Commun.* 2022 Jan 28;10(1):8. doi: 10.1186/s40478-021-01306-3.
7. Early-life stress lastingly impacts microglial transcriptome and function under basal and immune-challenged conditions.Reemst K, Kracht L, Kotah JM, Rahimian R, van Irsen AAS, Congrains Sotomayor G, Verboon LN, Brouwer N, Simard S, Turecki G, Mechawar N, Kooistra SM, Eggen BJL, Korosi A.*Transl Psychiatry.* 2022 Dec 8;12(1):507. doi: 10.1038/s41398-022-02265-6.
8. Distinct gene expression in demyelinated white and grey matter areas of patients with multiple sclerosis.van Wageningen TA, Gerrits E, Brouwer N, Brevé JJP, Geurts JJG, Eggen BJL, Boddeke HWGM, van Dam AM.*Brain Commun.* 2022 Jan 17;4(2):fcaco05. doi: 10.1093/braincomms/fcaco05. eCollection 2022.
9. Single-nucleus RNA sequencing of midbrain blood-brain barrier cells in schizophrenia reveals subtle transcriptional changes with overall preservation of cellular proportions and phenotypes.Puvogel S, Alsema A, Kracht L, Webster MJ, Weickert CS, Sommer IEC, Eggen BJL.*Mol Psychiatry.* 2022 Nov;27(11):4731-4740. doi: 10.1038/s41380-022-01796-0. Epub 2022 Oct 3.
10. Transcriptomic changes in autophagy-related genes are inversely correlated with inflammation and are associated with multiple sclerosis lesion pathology.Misriyal C, Alsema AM, Wijering MHC, Miedema A, Mauthe M, Reggiori F, Eggen BJL.*Brain Behav Immun Health.* 2022 Sep 8;25:100510. doi: 10.1016/j.bbih.2022.100510. eCollection 2022 Nov.
11. Fatigue in primary Sjögren's syndrome is associated with an objective decline in physical performance, pain and depression.Prak RF, Arends S, Verstappen GM, van Zuiden G, Kroese FGM, Bootsma H, Zijdewind I.*Clin Exp Rheumatol.* 2022 Dec;40(12):2318-2328. doi: 10.55563/clinexprheumatol/70s6cs. Epub 2022 Oct 12.
12. Recent insights into astrocytes as therapeutic targets for demyelinating diseases.Gorter RP, Baron W.*Curr Opin Pharmacol.* 2022 Aug;65:102261. doi: 10.1016/j.coph.2022.102261. Epub 2022 Jul 6.
13. Targeting Fibronectin to Overcome Remyelination Failure in Multiple Sclerosis: The Need for Brain- and Lesion-Targeted Drug Delivery.van Schaik PEM, Zuhorn IS, Baron W.*Int J Mol Sci.* 2022 Jul 29;23(15):8418. doi: 10.3390/ijms23158418.
14. Investigating demyelination, efficient remyelination and remyelination failure in organotypic cerebellar slice cultures: Workflow and practical tips.Gorter RP, Dijksman NS, Baron W, Colognato H.*Methods Cell Biol.* 2022;168:103-123. doi: 10.1016/bs.mcb.2021.12.011. Epub 2022 Mar 1.
15. Selective PDE4 subtype inhibition provides new opportunities to intervene in neuroinflammatory versus myelin damaging hallmarks of multiple sclerosis.Schepers M, Paes D, Tiane A, Rombaut B, Piccart E, van Veggel L, Gervois P, Wolfs E, Lambrechts I, Brullo C, Bruno O, Fedele E, Ricciarelli R, Ffrench-Constant C, Bechler ME, van Schaik P, Baron W, Lefevere E, Wasner K, Grünewald A, Verfaillie C, Baeten P, Broux B, Wieringa P, Hellings N, Prickaerts J, Vanmierlo T.*Brain Behav Immun.* 2022 Dec 28;109:1-22. doi: 10.1016/j.bbi.2022.12.020. Online ahead of print.
16. White matter microglia heterogeneity in the CNS.Amor S, McNamara NB, Gerrits E, Marzin MC, Kooistra SM, Miron VE, Nutma E.*Acta Neuropathol.* 2022 Feb;143(2):125-141. doi: 10.1007/s00401-021-02389-x. Epub 2021 Dec 8.
17. Correction: A Screen Identifies the Oncogenic Micro-RNA miR-378a-5p as a Negative Regulator of Oncogene-Induced Senescence.Kooistra SM, Nørgaard LCR, Lees MJ, Steinhauer C, Johansen JV, Helin K.*PLoS One.* 2022 Jul 21;17(7):e0272206. doi: 10.1371/journal.pone.0272206. eCollection 2022.
18. Characterizing microglial gene expression in a model of secondary progressive multiple sclerosis.Vainchtein ID, Alsema AM, Dubbelaar ML, Grit C, Vinet J, van Weering HRJ, Al-Izki S, Biagini G, Brouwer N, Amor S, Baker D, Eggen BJL, Boddeke EWGM, Kooistra SM.*Glia.* 2023 Mar;71(3):588-601. doi: 10.1002/glia.24297. Epub 2022 Nov 15.
19. Dissecting the limited genetic overlap of Parkinson's and Alzheimer's disease.Stlop Andersen M, Tan M, Holtzman IR, Hardy J; International Parkinson's Disease Genomics Consortium; Pihlstrøm L.*Ann Clin Transl Neurol.* 2022 Aug;9(8):1289-1295. doi: 10.1002/acn3.51606. Epub 2022 Jun 9.



## 12. Colophon

### Coordination:

Henk Heidekamp  
Harrie Kampinga  
Mallikarjuna Gurram

### Secretarial support:

Fokje Boomsma-van der Weg  
Greetje Hollander  
Hedwig van Oosten  
Greetje Noppert  
Trix van der Sluis-Rozema

### Design and Illustrations:

PubBliss | [www.publiss.nl](http://www.publiss.nl)  
© 2023, UMCG – Department of Biomedical Sciences of Cells and Systems (BSCS)

## 13. Contact

### Visiting Address:

Department of Biomedical Sciences of Cells and Systems  
University Medical Center Groningen  
The Section Anatomy and Medical Physiology,  
Building 3215, 7th and 8th floor  
The Section Molecular Cell Biology, Building  
3215, 5th, 6th, 7th and 10th floor  
The Section Molecular Neurobiology, Building  
3215, 8th and 10th floor  
Antonius Deusinglaan, 1  
9713 AV Groningen, The Netherlands  
The Section Cognitive Neuroscience Center,  
Building 3111, 1st floor  
Antonius Deusinglaan, 2  
9713 AW Groningen, The Netherlands



### Postal Address:

Department of Biomedical Sciences of Cells and Systems  
University Medical Center Groningen  
The Section Anatomy and Medical Physiology,  
Internal Zipcode FB42  
The Section Molecular Cell Biology, Internal  
Zipcode FB32  
The Section Molecular Neurobiology, Internal  
Zipcode FB43  
Antonius Deusinglaan, 1  
9700 AD Groningen, The Netherlands  
The Section Cognitive Neuroscience Center,  
Internal Zipcode FA32  
Antonius Deusinglaan, 2  
9700 AD Groningen, The Netherlands

### Secretariat:

[secretariaat-bscs@umcg.nl](mailto:secretariaat-bscs@umcg.nl)

The Section Anatomy and Medical Physiology	+31503616382
The Section Cognitive Neuroscience Center	+31503616444
The Section Molecular Cell Biology	+31503616111
The Section Molecular Neurobiology	+31503616432

### Website:

- <https://bscs.umcg.nl/>
- <https://umcgresearch.org/nl/w/biomedical-sciences-of-cells-and-systems>
- LinkedIn: <https://www.linkedin.com/school/bscs-dept-of-biomedical-sciences-of-cells-and-systems-umcg>