



# Annual Report 2021



/ university of  
 groningen



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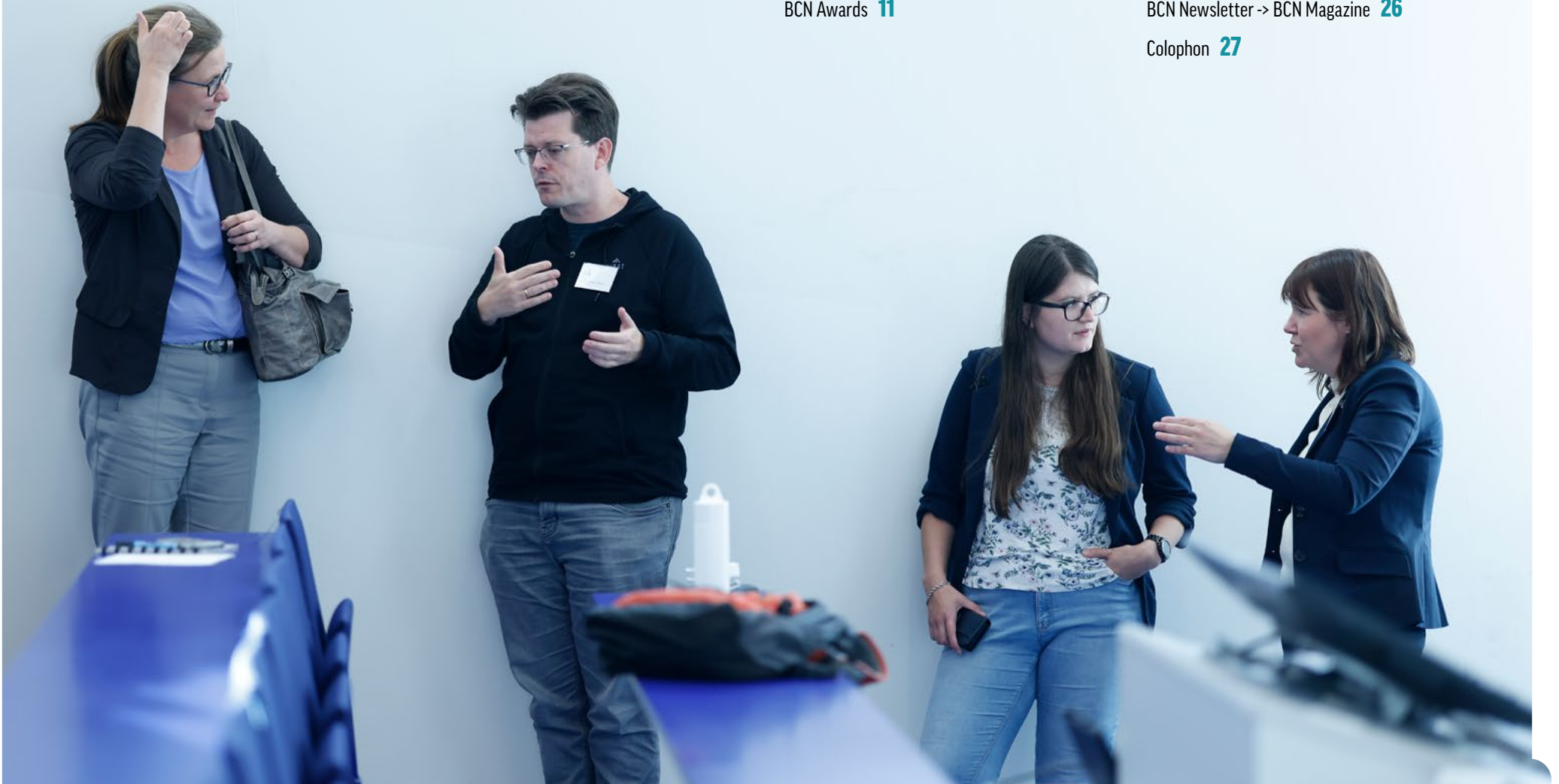
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# INTRO



Dear all,

We are happy to present to you this 35th (!) BCN annual report. Happy, because despite the Covid drawbacks we have all encountered, it has been a very productive year for our Groningen neuroscience community. In this report you will find an overview of these highlights, including the Top Degree Programme predicate for our BCN Research Master programme, no less than 64 successfully defended dissertations, prestigious grants and prizes, and our rebranded BCN magazine.

Of course we are also very glad that meetings and discussions can again take place in person, that research supervision isn't necessarily online, and that patients as well as other participants (both human and animal) can again be studied in our many interdisciplinary research projects. Covid has shown how important it is to rapidly translate scientific findings to society, including all the uncertainties that go with it. It has also revealed a great variety of reactions from society, vividly illustrating the complexities involved in this translation. In our '[Nothing But The Truth](#)' symposium last year, we were able to touch upon some important aspects of this discussion. With an enthusiastic group of researchers and PhD students from our different faculties we are now preparing the full-sized, June 2023 follow-up version, with presentations and interactive workshops by researchers and science communicators from a wide range of scientific backgrounds. This year, we will again be able to offer modest but potentially important BCN interdisciplinary seed grants, after a successful first version in 2021. Our BCN members have gained much media exposure in the

past year, and we look forward to continuing to reach out to the general public with a new series of Marvelous Mind Movies. This year, we will also have an external committee evaluating everything we do as BCN, as part of the reaccreditation procedure. We are looking forward to their input, on top of all the feedback we regularly get from the buzzing BCN community!

Sadly, when looking at today's world in a broader context, happiness is of course not the first word that springs to mind. Every day we see how a terrible war is ravaging a European country, that however manages to stand up to the aggression. It's very important that our University has clearly voiced its support for Ukraine, and is offering practical help for students and colleagues from the scientific community. Let us see where we as BCN-ers can be of help, by sharing what we have built up together over the years.

● BY ROBERT SCHOEVERS

● PHOTO BY YENTE VAN DEN BERG



# BCN'S PARTICIPATING FACULTIES

Who's in BCN? There are five faculties from the University of Groningen and one faculty from the University of Twente that participate in the Research School of Behavioural and Cognitive Neurosciences (BCN). From these faculties a selection of researchers affiliated with the following research institutes are active within BCN.

1. The Research Institute Brain and Cognition from the Faculty of Medical Sciences (FMW) / University Medical Center Groningen (UMCG).
2. The Groningen Institute for Evolutionary Life Sciences (GELIFES): Neurobiology and Behavioural Biology and the Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligence from the Faculty of Science and Engineering (FSE).
3. The Heymans Institute (HI) from the Faculty of Behavioural and Social Sciences (GMW).
4. The Groningen Research Institute of Philosophy (GRIPh) from the Faculty of Philosophy (FW).
5. The Center for Language and Cognition Groningen (CLCG) from the Faculty of Arts (LET).
6. The Technical Medical Centre (TechMed Centre) from the University of Twente.

> **MORE INFORMATION CAN BE FOUND HERE**  
<https://www.rug.nl/bcn>

● **PHOTO BY SANDER MARTENS**



# BCN'S SCIENCE & EDUCATION

One of the core goals of BCN is to stimulate multidisciplinary research within the field of neuroscience. Within BCN we do everything we can to bring our researchers into contact with each other in order to foster creative collaborations across faculties and disciplines. The results are shown in the projects, papers, grants, and new studies that are produced each year, which are highlighted in this annual report.

As for our education, we are more than happy with the fact that BCN's master programme is regarded as the very best neuroscience programme in the Netherlands. The BCN Research Master's programme has been awarded with the 'Top Degree Programme' predicate several times already. Also in 2021 the students appreciated the research master very much. 'Top Degree' programmes are no longer appointed by the Keuzegids.

We believe the ongoing success of BCN is dependent on three unique aspects of this programme. First, we try to bring small-scale education, by admitting a maximum number of 15 students in each of the three tracks: Human and Animal Behavioural Neurosciences (B-track), Cognitive Neurosciences (C-track) and Clinical and Molecular Neurosciences (N-track). A second important factor is the interdisciplinarity of the programme. Students come from a broad range of disciplines, not only Biology, Life Sciences, and Psychology but also Movement Sciences, Computer Science, and Artificial Intelligence. Their lecturers come from no less than five faculties (Science and Engineering, Medical Sciences, Behavioural and Social Sciences, Philosophy and Arts). We train students to think outside 'their' field and come up with interdisciplinary research questions. Moreover, we have started giving an 'interdisciplinarity prize' since 2019, for the student who has best shown to have stepped over the borders of disciplines. The third aspect is a focus on research. BCN-students perform two large research projects during their master, and other courses in BCN are also strongly research-oriented. After graduation, around 75% of the students continue with a PhD project.

This unique combination of features helps BCN-lecturers to optimally prepare our students for their future (research) careers. Alumni mention that the small groups and the experience the students get during the two master projects really helped them get a head start with their PhD-projects. Since recent years, we have been monitoring our alumni more closely, and have created a community of (former) BCN-students that, also later in their careers, can help each other by starting collaborations or sharing job opportunities.



For this, we started a BCN LinkedIn Group, which already provides a nice impression of current careers of our former students. In addition, the BCN Student Council will continue to organize the BCN Alumni Event every year.

We hope you, as a BCN Researcher, will continue to supervise our students, thus maintaining the high quality of our programme.

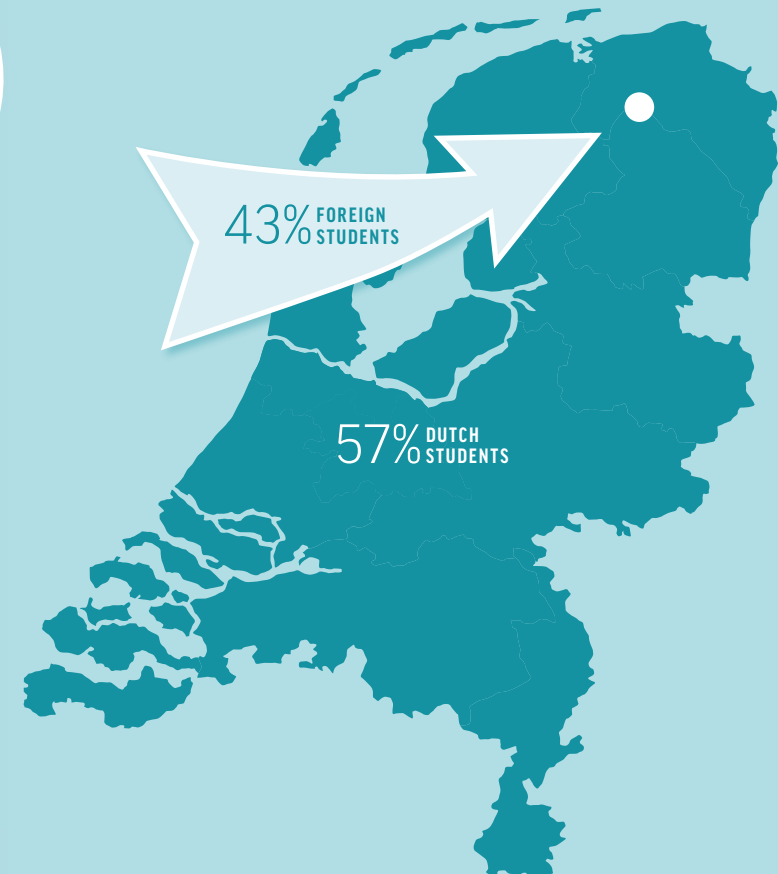
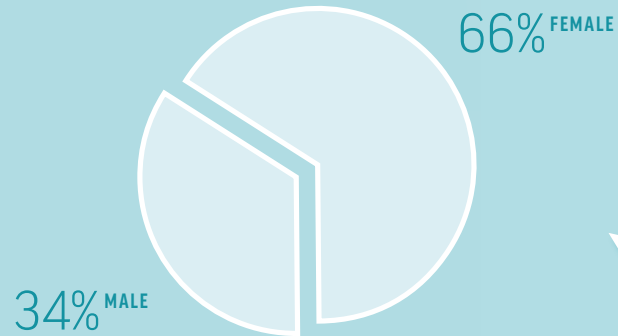
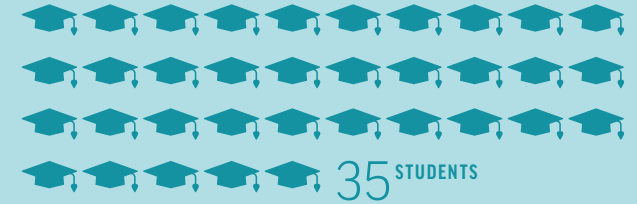
On behalf of the BCN Staff,

● **JELMER PANDER (JELMER.PANDER@RUG.NL)**  
PROGRAMME COORDINATOR BCN



# INFLUX OF MASTER STUDENTS

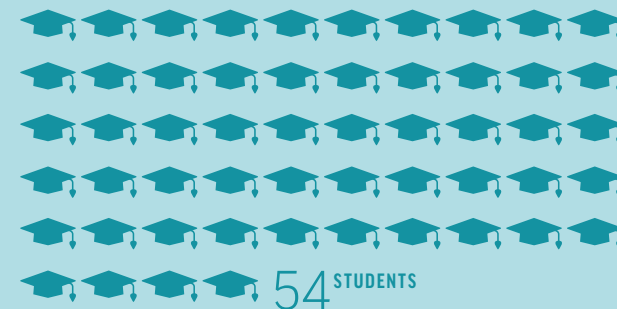
In 2021, 35 students enrolled in the BCN Research Master's degree programme, of which 23 (66%) were women. The proportion of students with a Dutch BSc (57%) is higher compared to the proportion of students with a non-Dutch BSc (43%).



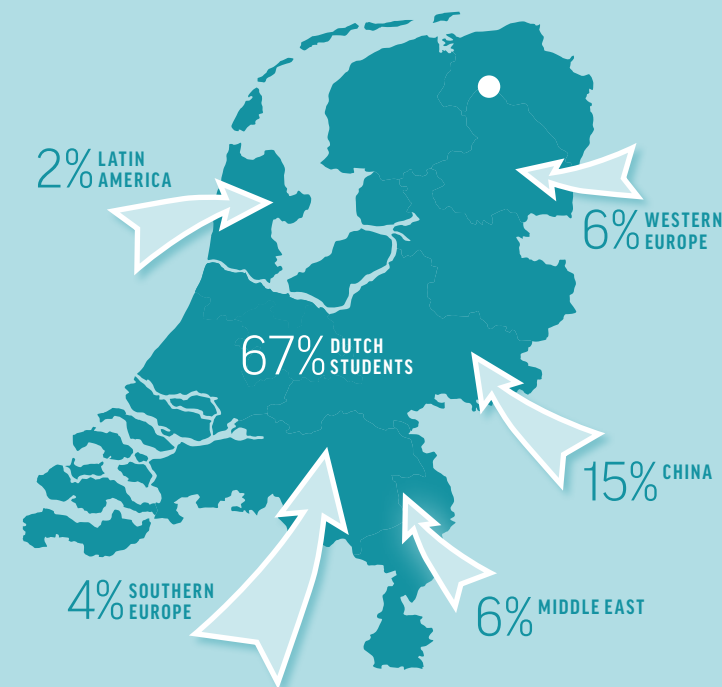
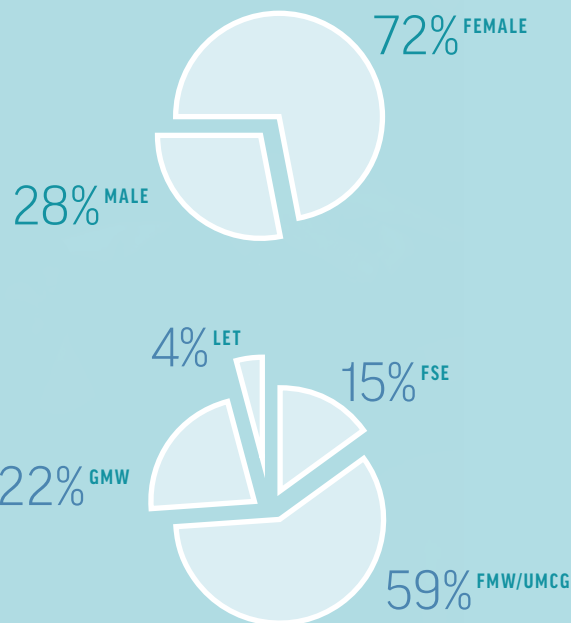
# INFLUX OF PHD STUDENTS



In 2021, 54 PhD students enrolled in the BCN PhD training programme, of which 72% were women. This is an increase from last year, which saw 44 new PhD students. Fifteen percent of the PhD students are from the Faculty of Science and Engineering (FSE), 59% from the Faculty of Medical Science/University Medical Center Groningen (FMW/UMCG), 22% from the Faculty of Behavioural and Social Sciences (GMW) and 4% from the Faculty of Arts (LET).



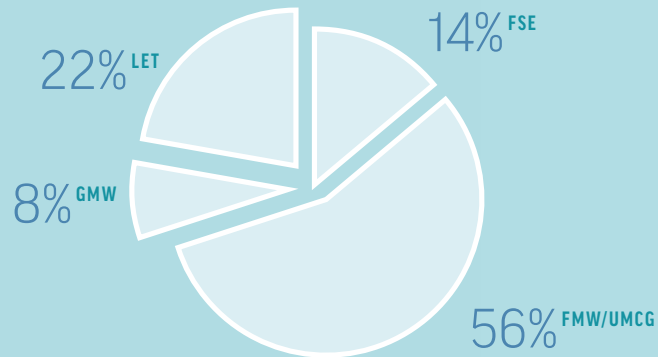
The majority of PhD students come from the Netherlands (67%), followed by China (15%), Western Europe (6%), the Middle East (6%), Southern Europe (4%), and Latin America (2%).



# THESES DEFENSES



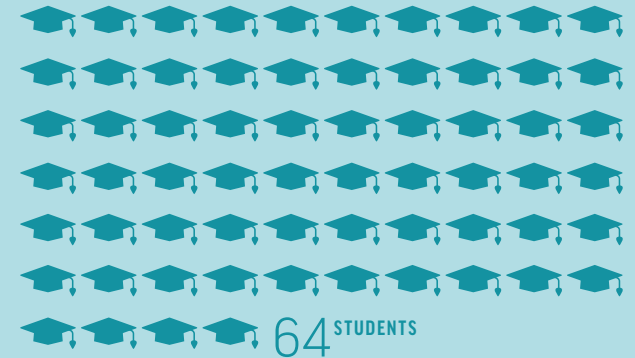
In 2021, 64 PhD BCN students defended their dissertations, quite an increase compared to the 49 defences in 2020. Fourteen percent of the PhD students were from the Faculty of Science and Engineering (FSE), 56% from the Faculty of Medical Science/University Medical Center Groningen (FMW/UMCG), 8% from the Faculty of Behavioural and Social Sciences (GMW), and 22% from the Faculty of Arts (LET).



A more detailed overview is available here:

<https://www.rug.nl/research/behavioural-cognitive-neurosciences/organisation/bcn-dissertations-2021>

● PHOTOS BY SANDER MARTENS





# CHEEKY PROPOSITIONS

*"If the road is easy, you're likely going the wrong way. - Terry Goodkind.*

[Jakolien den Hollander \(Issue 121\)](#)

*"Fruitful and enjoyable collaborations are born at conferences, but we need to rethink the necessity to travel around the globe for them."*

[Sanne Brederoo \(Issue 122\)](#)

*"Revising while generating text is like drinking decaf in the morning: a noble idea, wrong time. It's okay if your first drafts sound like they were hastily translated from Icelandic."*

[Paul J. Silvia - Aida Salcic \(Issue 123\)](#)

*"Feeling a sense of unease rather than pride in admitting to have worked after hours would make for a healthier academic work environment."*

[Sanne Brederoo \(Issue 122\)](#)

*"Non scholae, set vitae discimus."  
[We do not learn for school, but for life]*

[Elouise Koops \(Issue 123\)](#)

*"A straight line may be the shortest distance between two points, but it is by no means the most interesting (3rd Doctor)."*

[Minke de Boer \(Issue 124\)](#)

*"The older the cyclist, the younger the bicycle".*

[Frank Westerhuis\) \(Issue 124\)](#)

*"Everything will be okay in the end. If it's not okay, it's not the end." - John Lennon.*

[Stéphanie Klein Tuente \(Issue 121\)](#)

# PRIZE CABINET

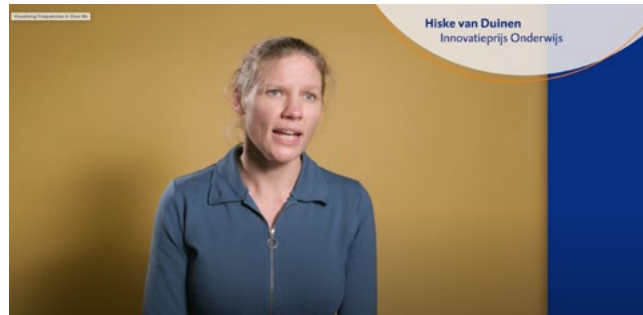
Several BCN members received prizes. An impression:

## Joana Carvalho named “Portuguese woman scientist of the year”

Joana Carvalho, winner of the BCN 2020 dissertation prize, was awarded the UNESCO-L’Oreal prize for “Portuguese woman scientist of the year”. The good news did not stop there for Joana. She also got a personal EU Marie Curie Fellowship for her research proposal “Plastimap” to study plasticity of the visual system.

## UMCG Innovation prize Education for Hiske van Duinen

Hiske van Duinen developed an app with which all data from practicals can be stored and analyzed online. This makes it much easier to compare the data from practicals. <https://youtu.be/YIMOBt1IQPo>



● PHOTO BY UMCG

## Jeanette Gelauff awarded with the Dr. Jan Meerwaldt Prize 2020

Jeanette Gelauff has won the Dr. Jan Meerwaldt prize with her thesis entitled “Functional Movement Disorders: mechanism, prognosis, and treatment”. This biannual prize is awarded for the best thesis written by a neurologist (in training) younger than 40 years old. On October 28, 2020, Dr. Gelauff defended her thesis cum laude.

## Athena Award

Sahar El Aidy of the Groningen Biomolecular Sciences and Biotechnology Institute (GBB) has been awarded the NWO Athena Award. With this award, which is one of five new Science Awards introduced by NWO, El Aidy receives EUR 50,000 towards her research costs. The Athena Award is a prize for outstanding female researchers.

## Young Talent Prize

On June 10, Hanna van Loo, psychiatrist and assistant professor at the University Center for Psychiatry, received the Dutch Neuroscience Meeting Young Talent Prize 2020 worth €500. The award is for her research into the causes of depression.

## Faces of Science

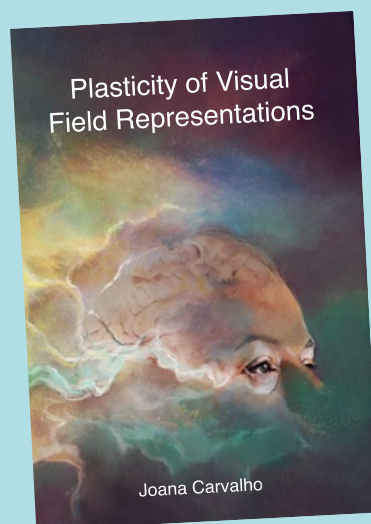
UMCG researcher Shiral Gangadin (Cognitive Neuroscience Center) has been appointed KNAW Face of Science. KNAW Faces of Science is a group of PhD students who will create videos and blogs about their daily scientific work. It is primarily aimed at high school students to provide them with a realistic impression of what life as a scientist can be like.

## BCN AWARDS

The following prizes were awarded during the 2020 BCN Winter Meeting:

### BCN dissertation award 2020/2021

Joane Carvalho (Faculty of Medical Sciences, Department of Ophthalmology/Cognitive Neuroscience Center)



● PHOTO BY L'OREAL FOUNDATION PORTUGAL



## BCN PhD poster awards

Astrid Alsema (Faculty of Medical Sciences, Molecular Neurobiology)

Joëlle Jagersma (Faculty of Medical Sciences, Department of Neurobiology)

Saskia Nijman (Faculty of Medical Sciences, University Center for Psychiatry)

**Spatial gene expression analysis in a mouse model for toxic demyelination**

Authors: Astrid Alsema, Anouk Modema, Marion H.C. Wijering, Michel Meijer, Klaas Spelma, Wia Baron, Erik Boddeke, Susanne M Koorders, Bart J. Eggen

**INTRODUCTION**  
Multiple Sclerosis (MS) is an autoimmune demyelinating disease of the central nervous system characterized by demyelinated lesions. During progression of the disease, the ability to remyelinate demyelinated lesions fails. The cuprizone mouse model is a model of successful remyelination, enabling the study of remyelination promoting factors that might be absent in human MS lesions.

**METHODS**  
The spatial context was missing in previous cuprizone mouse studies studying gene expression information. The heterogeneity of MS lesions suggests the potential for repair and pathobiology is varying in a region-restricted manner. We asked if we can characterize gene expression around pathology hallmarks using a novel sequencing technique called Spatial Transcriptomics (ST).

**RESULTS (I)**  
I: Demyelination in cuprizone mouse model can be captured with ST

**RESULTS (II)**  
II: Annotation of spatial spots to specific brain regions

**RESULTS (III)**  
III: Expression of pan-reactive astrocyte genes are altered in the corpus callosum in cuprizone mice.

**CONCLUSIONS**  
ST can detect how cuprizone treatment induces demyelination in the corpus callosum and myelin nerve fiber tract. After 2 weeks of recovery from treatment, myelin levels partially recovered. Annotating spots by gene expression scores provides more precise annotations than manual annotation, but also includes unidentified spots. Expression of pan-reactive astrocyte genes, such as GFAP and VIM, was increased in specific brain areas, including the corpus callosum and myelin nerve fiber tract after 3- and 5 weeks of cuprizone treatment. In the future, studies will continue with an improved spatial transcriptomic kit with increased resolution.

Astrid Alsema

**Neurobiological underpinnings of noise induced hearing loss on altered social and cognitive behavior: evaluation of cortical thickness and neurogenesis**

Joëlle Jagersma<sup>1,2</sup>, Sonja Pyykkö<sup>3</sup> & Jochen Oliver<sup>1</sup>

**Background**  
Extensive research has shown that children with hearing loss show intellectual and social interaction disabilities. However, the underlying neurobiological mechanisms are largely unknown.

**Objective**  
Identifying neurobiological alterations associated with changes in cognitive function and social behavior following hearing loss.

**Conclusion**  
Noise exposure did not result in:  
• Mild hearing loss  
• Impaired memory formation  
Noise exposure did not result in:  
• Affected social behavior  
• Altered cortical thickness

**Future Direction**  
• Additional analyses of social interaction will be used to determine if other aspects of social play and interaction are affected.  
• Neurogenesis analyses will identify neurobiological factors contributing to altered cognitive function.

**Methods & Results**  
Shown is the timeline of the procedures. Wistar rats were used to assess the effect of noise-induced hearing loss on social and cognitive behavior, and corresponding cortical subregions. Both the noise and control group consisted of 16 animals, each containing 8 males and 8 females.

**ABR Week 3**  
**Noise exposure Week 4**  
**Social Play Week 5**  
**ABR Week 6**  
**Novel Object Recognition Week 8**  
**Social Interaction Week 10**  
**Cortical thickness analysis Post mortem**

Joëlle Jagersma

**DISCoVR: A pilot study of social cognition training in virtual reality**

S. Nijman (s.nijman@umcg.nl), W. Veling, K. Greeves-Lord, M. Vos, E. Zandee, M. aan het Rot, C. Gerretts & M. Pijnenborg

**Objective**  
• Deficits in social cognition are common in people with psychosis [1] and contribute to social dysfunction [2].  
• Social cognition training (SCT) improves social cognition [3], but using virtual reality (VR) for SCT may improve efficacy and generalization [4].  
• We developed a VR SCT, DISCoVR, and tested its feasibility, acceptability and preliminary effects.

**Intervention**  
Module 1: Emotion recognition (5 sessions)  
Module 2: Social perspective taking (4 sessions)  
Module 3: Social interaction training (7 sessions)

**Method**  
• 22 participants with psychotic disorder and deficits in social cognition.  
• 16 male, 6 female, recruited from three mental health centers.  
• All participants completed a 16-session VR SCT, DISCoVR.  
• Two assessments (T1 baseline, T2 post-treatment).  
• Evaluation survey administered at T1 and T2.  
• Social cognition assessed at T1 and T2.

**Feasibility & Acceptance**  
Study Completion: 100%  
Treatment needs met? 100%  
Strengths: Easy to use, Fun, Engaging, Useful for daily life, Learned a lot.  
Weaknesses: Difficult to see, Realism of avatars, Useful for daily life, Learned a lot, Enjoyed DISCoVR.

**Survey ratings**  
Difficulty level: 1-10  
Combination VR-Therapy: 1-10  
Realism of avatars: 1-10  
Realism of actions: 1-10  
Useful for daily life: 1-10  
Learned a lot: 1-10  
Enjoyed DISCoVR: 1-10

**Effect on social cognition**  
DISCoVR is feasible and well-accepted, and was found to improve emotion perception.

Saskia Nijman

## BCN Master student poster award

Noa Schwensfeier (BCN C-track)

Noa N. Schwensfeier<sup>1</sup>, Jelmer P. Borst<sup>2</sup>, Elkan G. Akyurek<sup>3</sup>

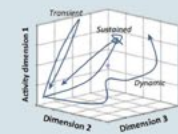
<sup>1</sup>BCN Research Master (C-Track), Faculty of Science and Engineering, University of Groningen, <sup>2</sup>Bernoulli Institute for Mathematics, Computer Science, and Artificial Intelligence, Faculty of Science and Engineering, University of Groningen, <sup>3</sup>Department of Experimental Psychology, Faculty of Behavioural and Social Sciences, University of Groningen



### BACKGROUND

**ACTIVITY-SILENT WORKING MEMORY (WM)**  
WM maintenance does not depend on persistent neural firing<sup>1</sup>, but can be achieved by activity-silent mechanisms<sup>2</sup> such as short-term synaptic plasticity (STSP)<sup>4</sup>. Both activity-based and activity-silent mechanisms interact within WM:

- Sustained neural firing may track the focus of attention while activity-silent states store unattended information passively<sup>2</sup>.
- Pals et al.<sup>4</sup> showed functional WM performance in a neuron model of activity-silent WM based on STSP, but the model could not explain dynamic coding patterns in human data.



**DYNAMIC CODING**  
Activity-silent WM may comprise of dynamic coding, where the trajectory of representations through state space is dynamic, while the encoded semantic content is retained.

### OBJECTIVE

- Extending Pals et al.'s<sup>4</sup> model (Fig. 1) combine activity-silent and activity-based neural WM mechanisms to investigate whether this combination can explain the dynamic coding patterns found in human data.

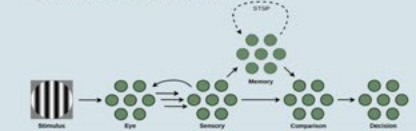


Figure 1. Current model architecture from follow-up studies of Pals et al.'s<sup>4</sup>.

### METHODS & APPROACH

Pals et al.'s<sup>4</sup> study (Fig. 2) will be replicated twice, once with a **model of activity-based WM** and once with an **integrated model** capable of using activity-based and activity-silent mechanisms interchangeably.



Figure 2. Experiment 2 from Wolff and colleagues<sup>3</sup>, adapted from Pals et al.'s<sup>4</sup>.

#### CROSS TIME DECODING ANALYSIS (CTDA)

Dynamic coding can be investigated using CTDA: a decoder is trained on timepoint  $t_1$  and applied to  $t_1 - t_2$ . Poor cross-time generalization (reliable decoding of data from neighbouring but not from distant timepoints) indicates dynamic coding.

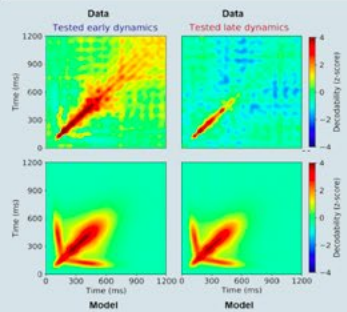


Figure 3. CTDA results from model simulation of Experiment 2.

Models will be built in Nengo, a neural simulator<sup>5</sup>. The main focus is improvement of model fit with regard to Pals et al.'s<sup>4</sup> cross-time decoding analysis (Fig. 3) results via integration of neural WM mechanisms.

#### CTDA RESULTS HUMAN VS MODEL

**Human data** suggests different types of encoding for attended and unattended information

- static encoding of attended items (Fig. 3, 'tested-early'); pattern becomes more stable; better cross-time generalizability over time
- dynamic encoding of unattended items in activity-silent states (Fig. 3, 'tested-late'): high decodability scores on diagonal

**Model data** indicates dynamic storage for all items; no difference in encoding for attended vs. unattended items (Fig 3. lower panels).

#### MODELLING APPROACH

Testing whether improved fit between model and human data arises from a model that stores

- Currently attended information in activity-based (sustained neural firing) patterns
- Currently unattended information in activity-silent patterns (STSP, following Pals et al.)

### RELEVANCE

Contributing to basic WM research and advancing our understanding of the different types of **neural mechanisms of WM**, as well as their dynamic and flexible interplay.



Enhancing understanding of the potential role of **attentional processes in WM**. Attentional is central to cognition, but difficult to define formally. Capturing attentional processes in a cognitive model may promote understanding of the concept.

### GET IN TOUCH

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#### REFERENCES

1. Sreenivasan, Curtis, & D'Esposito, 2014, *Trends in Cognitive Sciences*
2. Stokes, 2015, *Trends in Cognitive Sciences*
3. Wolf, Joachim, Akyurek, & Stokes, 2017, *Nature Neuroscience*
4. Pals, Stewart, Akyurek, & Borst, 2020, *PLoS Computational Biology*
5. Bekolay et al., 2014, *Frontiers in Neuroinformatics*

# GRANTS & FUNDING

BCN members received several grants. An impression:

## Science communication



Marvelous Mind and Mindwise both received € 10 K from a KNAW science communication fund. Since 2019 a group of researchers including Iris

Sommer, Marie-José van Tol, Sander Martens, Robert Schoevers, and Janniko Georgiadis have been hosting Marvelous Mind Movies, in collaboration with FORUM Groningen. These movies feature aspects of the human mind or a specific brain disorder. The topic is introduced by a scientist specialized in the matter at hand and the evening finishes with a discussion of the movie. In addition to the film program, Marvelous Mind has developed a series of podcasts together with radio producer Jelte Posthumus, which is called the De Bovenverdieping (the upper floor).



The blogging platform 'Mindwise' received the same financial contribution for its structural effort in science communication. Since 2014 staff and students have been writing blogs on the online platform Mindwise

about psychological research and education from Groningen, as well as expressing their opinions on current issues based on their expertise.

## Grant for research into 'atlas of brain damage' after radiotherapy

The UMCG is participating in an international study into the effect of radiotherapy on the development of the brains of young children. The study is funded by Stand Up to Cancer (SU2C) and Cancer Research UK (CRUK) with \$ 1 million. The aim of the study is to develop an "atlas of the brain" to locate areas of the brain most susceptible to damage from radiotherapy. This international project will bring together researchers from the University of Manchester in England, St. Jude Children's Research Hospital in the US and the UMCG in the Netherlands and will last for two years. The UMCG team, led by Lara Barazzuol, will investigate how radiotherapy with X-rays or protons damages the developing brain.

## Mandemastipendium for Roald Lambrechts

In his doctoral research into the rare North Sea disease, Roald Lambrechts discovered that it is not the neurons but the glia cells that are responsible for the progressive illness. Glia cells support the nerve cells. <https://youtu.be/oxhkHSEiBPE>

## Grant for UMCG research into VR exercises for more self-compassion

The UMCG has received a grant of € 65 K from the PPO educational institute. Psychologist and postdoc researcher Elise van der Stouwe, in collaboration with Wim Veling and Marieke Pijnenborg, will use the awarded money to start a study into the effects of a new application of Virtual Reality, aimed at stimulating self-compassion.

## ERC grant

Sarthak Misra of the of the University of Twente and University Medical Center Groningen has been awarded an ERC Proof of Concept grant. The project will develop a novel system for magnetically-actuated robotic surgery.



● PHOTO BY UNIVERSITY TWENTE



## Martien Kas coordinates consortium that obtained € 7.9 M

Prof. Martien Kas (GELIFES) is the coordinator of a consortium that has received a grant of no less than € 7.9 million from the Innovative Medicines Initiative (IMI), the world's biggest public-industry drug development partnership. The grant is for the PRISM2 project, a new project that builds on the success of the PRISM project (Psychiatric Ratings using Intermediate Stratified Markers) on mental health. PRISM focuses on Alzheimer's disease, schizophrenia and major depressive disorder. A total of fourteen research institutes and companies are working together in this project. As coordinator, Kas will receive EUR 1.6 million for his part in the project. Kas was also coordinator of the successful PRISM project.



● PHOTO: RUG WEBSITE

## VIDI for Sebastiaan Mathôt

Sebastiaan Mathôt, researcher at experimental psychology, received an NWO VIDI grant for his research proposal 'Turning the senses: How cognition shapes sensation at the gate'. The project is about the complex collaboration between the brain and the senses. Mathôt was one of the five RUG researchers who received the prestigious VIDI grant (€ 800 K).



● PHOTO BY SANDER MARTENS

## Quarter of a million for MS research in the Northern Netherlands

The MS Center North Netherlands, located in the UMCG, which includes researchers Jan Meilof and Bart Eggen (on the right of the photo), will receive a quarter of a million Euros for research. Three other MS research centers in the Netherlands will also receive this amount



● PHOTO: INTRANET UMCG

## Robbert Havekes receives grant from American Airforce

Robbert Havekes of the Groningen Institute for Evolutionary Life Sciences (GELIFES), together with Dr. Steve Ramirez of Boston University received a grant from the American Airforce worth a total of \$ 750,000. The grant comes from the Department of Defense – Airforce Office of Scientific Research –and is for the project ‘Restoring access to memories “lost” as a result of sleep deprivation’. Havekes will receive \$ 300,000 for his part in the research project.

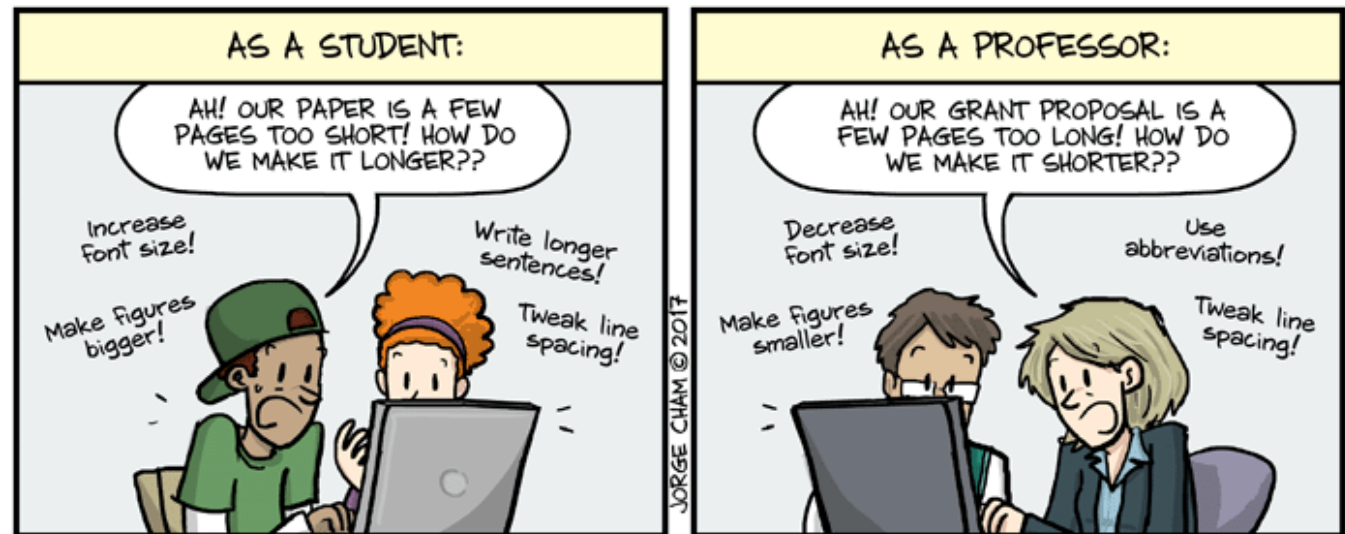
## ZonMw Grant

Deniz Başkent and her colleagues from the dB SPL Lab of Audiology group at UMCG have received a grant from ZonMw, in collaboration with NSDSK and Pento, for a new project: Audiolistic. The consortium partners will make use of new technology, such as data logging in hearing devices and small recorders, in order to make assessments based on home, school, daycare environments. The results will be used to help parents and caregivers increase access to spoken language for moderately hard-of-hearing children.

## New consortium project CoSySpeech funded by ERANET NEURON

Deniz Başkent and Etienne Gaudrain from dB SPL Lab, Audiology group, received a new grant from ERA-NET NEURON as part of an international consortium. The project will investigate a relatively less understood form of hearing loss, namely, cochlear synaptopathy, also commonly known as hidden hearing loss.

## PAGE LIMITS



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# BCN'S MEDIA EXPOSURE

BCN's researchers have also been very active in speaking to the public through newspapers and online media, through books for general and specialist readers, and through TV and radio presentations. Despite, or perhaps thanks to the corona-crisis, it was a good year. Here are a couple of highlights.



**Marijke Gordijn** frequently spoke about sleeping habits in Corona times on television, radio and Studium Generale Utrecht:

- [https://www.uitzendinggemist.net/programmas/140278-De\\_Slapelozen.html](https://www.uitzendinggemist.net/programmas/140278-De_Slapelozen.html)
- RTV Noord about DST and study on near-infrared light: [https://www.rtvnoord.nl/nieuws/864757/wintertijd-op-komst-niet-goed-om-biologische-kloktelkens-te-verzetten?fbclid=IwAR2faaBKd\\_2n72rnXu0l4RpJHCvY4oldfvwY4ZjFX6AjUk3cqovIiMSr00](https://www.rtvnoord.nl/nieuws/864757/wintertijd-op-komst-niet-goed-om-biologische-kloktelkens-te-verzetten?fbclid=IwAR2faaBKd_2n72rnXu0l4RpJHCvY4oldfvwY4ZjFX6AjUk3cqovIiMSr00)
- RTL nieuws on sleep in Corona times and study on near infrared light: <https://www.rtlnieuws.nl/editien/artikel/5207462/langer-slapen-corona-thuiswerken-slaap-ritme-nabij-infrarood>
- <https://www.nporadio1.nl/podcasts/de-slapelozen>
- Dr. Kelder and Co: <https://www.nporadio1.nl/>

[uitzendingen/dr-kelder-en-co/33c2aa13-4089-439b-995c-85419ad375ed/2021-10-30-dr-kelder-en-co-pak-de-grootste-vervuiler-aan-de-mens-de-zomer-en-wintertijd-een-slecht-plan-en-podcast-n.a.v.-dit-gesprek: https://podtail.nl/podcast/dr-kelder-en-co/teveel-mensen-te-weinig-slaap/](https://www.uitzendinggemist.net/programmas/140278-De_Slapelozen.html)

- De Duiders: <https://www.tivolivredenburg.nl/agenda/de-duiders-28-10-2021/>.

**Roelof Hut** and **Hedderik van Rijn** talked about our complex relation with time and were interviewed in the UKrant:

- <https://www.ukrant.nl/magazine/altijd-te-laaf/>

**Hedderik van Rijn** also explained in several newspapers why time seems to fly in Corona times:

- <https://www.volkskrant.nl/cultuur-media/hoe-kon-dit-jaar-een-aaneenrijging-van-grijze-dagen-zo-snel-voorbij-zijn~b9d9bc09/>
- <https://www.welingelichtekringen.nl/samenleving/2619120/het-coronajaar-lijkt-voorbij-gevolgen-hier-komt-dat-door.html>
- [https://www.noordhollandsdagblad.nl/cnt/DMF20210326\\_22438310](https://www.noordhollandsdagblad.nl/cnt/DMF20210326_22438310)
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- [https://www.ijmuidercourant.nl/cnt/DMF20210326\\_22438310](https://www.ijmuidercourant.nl/cnt/DMF20210326_22438310)



**Judith Rosmalen** was interviewed by RTV Noord and KennisInZicht about her research on long covid:

- [onderzoek dat zich richt op mensen met langdurige en soms onbegrepen klachten na een coronabesmetting](https://www.kennisinzicht.umcg.nl/Paginas/Onderzoek-om-de-zorg-voor-patienten-met-long-COVID-te-verbeteren.aspx)
- <https://kennisinzicht.umcg.nl/Paginas/Onderzoek-om-de-zorg-voor-patienten-met-long-COVID-te-verbeteren.aspx>

**Robert Schoevers** was in the news several times where he made a case for psychedelic drugs in the form of a nose spray that can help against depression:

- <https://www.rtlnieuws.nl/nieuws/nederland/artikel/5213571/advies-zorginstituut-neusspray-ernstige-depressie>
- <https://www.demedischspecialist.nl/nieuws/collega%E2%80%99s-de-media-11>
- <https://www.nach-welt.com/gesundheitsinstitut-nasen-spray-das-bei-schweren-depressionen-hilft-in-das-basispaket-aufnehmen/>
- <https://www.volkskrant.nl/nieuws-achtergrond/advies-ketamine-variant-tegen-depressie-moet-in-het-basispakket-b967049b/>
- <https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-021-01939-0>



- <https://fd.nl/futures/1396475/een-psychedelische-drug-tegen-depressie>
- <https://www.parool.nl/ps/hier-kun-je-trippen-onder-begeleiding-voor-4000-euro-ik-werd-helemaal-afgepeld~b9899aae/>
- <https://www.vice.com/nl/article/akvw4k/guided-tripping-drugs-omzet>

**Marie-José van Tol** was the host and presenter of a Studium Generale lecture on the history of conspiracy theories and was interviewed on being flexible during a lockdown.

- <https://platform.forum.nl/nl/tussen-wappies-en-wetenschap-25-mei>
- <https://dvh.nl/groningen/Die-kerstlockdown-2.0-komen-we-ook-wel-door.-Mensen-zeggen-morrend-het-zal-moeten-we-doen-het-wel-weer-27358644.html>



**Merel Keijzer** explained in the national RTL Talkshow Jinek how learning a second language can be beneficial to your mental health:

- <https://www.evajinek.nl/onderwerpen/artikel/5259974/marcel-levi-merel-keijzer-taal-twee-talen-spreken-goed-voor-de>



**Marieke van Vugt** explained on national radio how she came to research her own hobbies:

- <https://www.nporadio1.nl/fragmenten/dr-kelder-en-co/12813a32-9d1e-4dd5-b62c-db3a2de8cde1/2021-07-09-onderzoek-je-eigen-hobby>



**Martijn Wieling** created a mobile research lab to visit schools while building a virtual GatherTown version of his department:

- [‘Vriend van de koning’ lanceert app waarmee Groninger schooljeugd ‘van old noar jong’ de eigen streektaal machtig wordt](#) (newspaper), *Dagblad van het Noorden*, October 29, 2021.
- [Kinderen in Groningen leren wat ‘kopstubber’ en ‘bozzem’ zijn](#) (TV), *NOS Jeugdjournaal*, October 28, 2021.

- [Sprak-app voor dialecten in de maak: ‘We gaan door totdat scheuvelen wordt herkend’](#) (TV), *RTV Noord*, October 22, 2021.
- [Commissaris van de Koning René Paas neemt Groningstalige app voor schoolkinderen in Zandeweer in gebruik](#) (online), *Noorderkrant*, October 20, 2021
- [RUG docht yn ridend lab Ûndersyk nei Fryske dialekten](#) (radio), *Omrop Fryslân*, February 22, 2021.
- [RUG wil taalkundig onderzoek boost geven met rijdend laboratorium](#) (online), *RTV Drenthe*, February 17, 2021.
- [Rijdend ‘Spraklab’ gaat dialecten en articulatie onderzoeken](#) (online), *RTV Noord*, February 17, 2021.
- [Rijksuniversiteit Groningen neemt rijdend laboratorium in gebruik voor taalkundig onderzoek](#) (online), *Dagblad van het Noorden*, February 17, 2021.
- <https://ukrant.nl/magazine/gather-verovert-de-rug/>

## BCN on YouTube

Check out these BCN Researchers on YouTube:

<https://www.rug.nl/research/behavioural-cognitive-neurosciences/organisation/bcn-researchers-on-youtube>



## Marvelous Mind

Marvelous Mind started officially in 2019 and is a neuroscience outreach programme on the initiative

of the Research School of Behavioural and Cognitive Neurosciences (BCN), the research institute Brain & Cognition (UMCG) and the University of Groningen. We modelled the concept in analogy to the initiative Brein in Beeld from Amsterdam ([www.breininbeeld.nl](http://www.breininbeeld.nl)), and we aimed to establish coverage of this concept in Groningen.

Our goal is to share knowledge, start conversations and spark interest concerning the brain, brain disorders, mental health issues, and ongoing interdisciplinary research projects at the University of Groningen. We address questions about brain function; in isolation, in relation to our bodies, and in relation to society and the rest of the world. Considering mental health issues, we focus on awareness, understanding, accepting, and informing about the treatment approaches; now and in the future.

We organize “Mind Movies”, a thematic concept where a movie is introduced in +/- 15 minutes by a vibrant expert in the field, followed up by a short discussion after the movie. Furthermore, we work together with other parties of the University Hospital to organize other thematic gatherings. Our target audience is the general public, patients and their family, and students from all faculties. We try to provide an informative and accessible experience for all interested parties, especially people who would not normally attend a

scientific seminar. We are also always thinking of new ways to make our events more inclusive. Marvelous Mind is organized by both professionals and students from BCN and Brain and Cognition of the UMCG.

Currently, we host our Mind Movies on a bimonthly basis on Monday evenings. In addition to the Mind Movies, we contribute to other events, such as Zpannend Zernike, Noorderzon, and the Brain Olympiade. We have also worked together with other outreach parties, such as Science Linx. At this point, we have hosted several successful editions at Forum Groningen. Due to the Covid-19 pandemic, organizing the “Mind Movies” was challenging to say the least, and often simply not possible due to the restrictive measures.

The Marvelous Mind Movie “The Grown Ups” on Down Syndrome introduced by Alain Dekker on March 21st 2022.

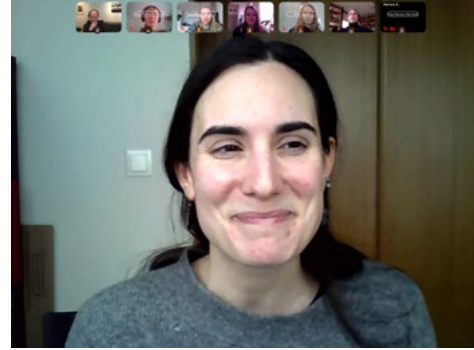
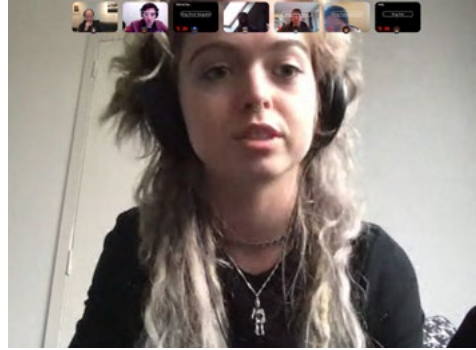
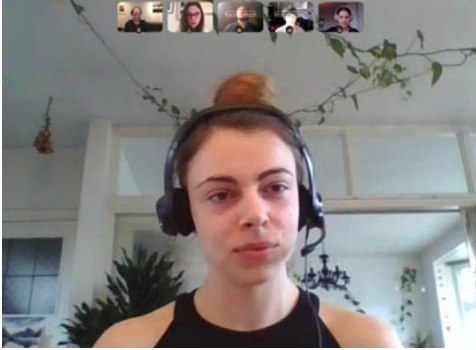


Nevertheless, thanks to the relentless efforts and motivation of our team and invited speakers, last year we were still able to host several inspiring, and thought-provoking movies. In 2021, we hosted the following movies: the Oliver Sacks documentary with speaker Prof. Iris Sommer; the movie My Little Sister which had the theme “anorexia”, which was introduced by Dr. Klaske Glashouwer; and for the final edition of 2021, we hosted the classic movie Inception, which was introduced by Dr. Jeanine Kamphuis.

Looking into the future, we are continually striving to grow as an outreach programme and to integrate other outreach activities in order to have a bigger impact in Groningen and in the other Northern Provinces. We are always open to new ideas and collaborations, so feel free to reach out to us via email: [e.t.kuiper-drenth@umcg.nl](mailto:e.t.kuiper-drenth@umcg.nl). Especially students (Bachelor, Master, PhD level) are most welcome to strengthen us with new outreach ideas and initiatives. Ultimately, we are extremely glad that we can host our Mind Movies again and we look forward to another year of providing captivating and enlightening experiences.

- BY LENNY MARAPIN
- PHOTO BY SANDER MARTENS

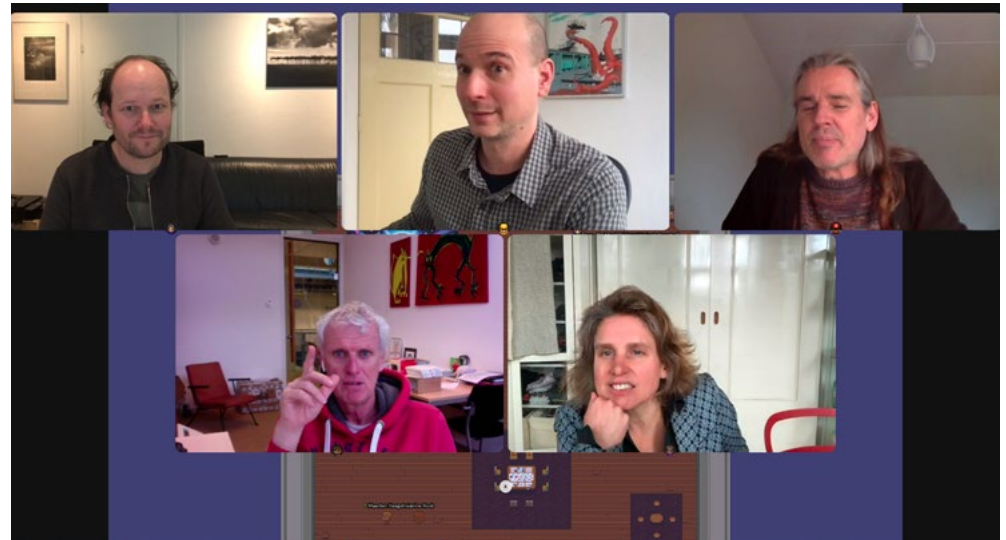
# OTHER ACTIVITIES & EVENTS



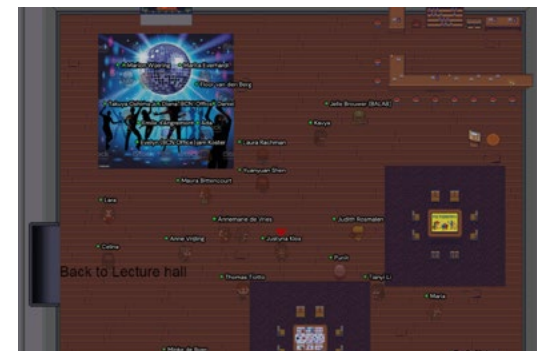
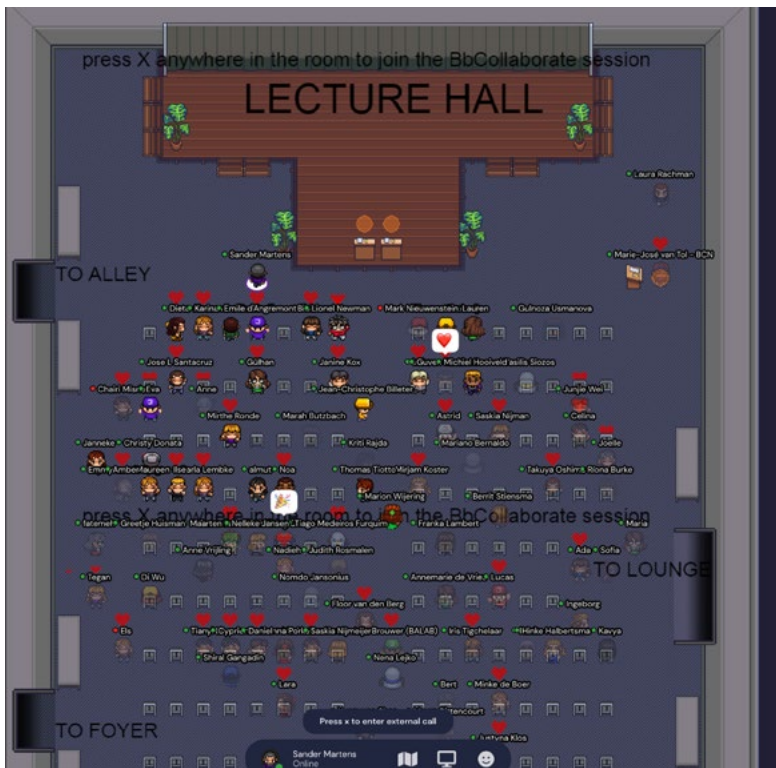
## BCN 2021 Winter meeting

Due to the Covid crisis, we had no choice but to organize the BCN Winter Meeting within the online environment of Gather Town, which worked surprisingly well, especially for the poster sessions. In the 'Alliteration Allee' session, faculty members presented their projects in 'Pitch your project', showed their work, offered vacancies, and had vivid discussions with the participants. In the 'Meet the makers' session, the Competence Model was explained by the GSMS and participants could meet people of the BCN Newsletter, the PhD Council, the BCN Office. During the 'Face your future' session, 'Share your story' was open for all story tellers within BCN, and even a fortune teller predicted the future (Nothing but the Truth!).

● PHOTOS BY SANDER MARTENS







## Nothing but the Truth

On the 1st of November 2021, just before another lock-down, BCN managed to host a symposium focused on truth and trust in science. In four plenary sessions and twelve workshops, a wide range of topics were discussed such as open science, journals' role in guarding scientific validity, science and statistical communication, as well as tips and tricks for best data visualisation and academic pitches. Speakers included John Ioannidis, Eric-Jan Wagenmakers, Heather Douglas, Hanneke Hulst, Casper Albers, Ionica Smeets and many others.

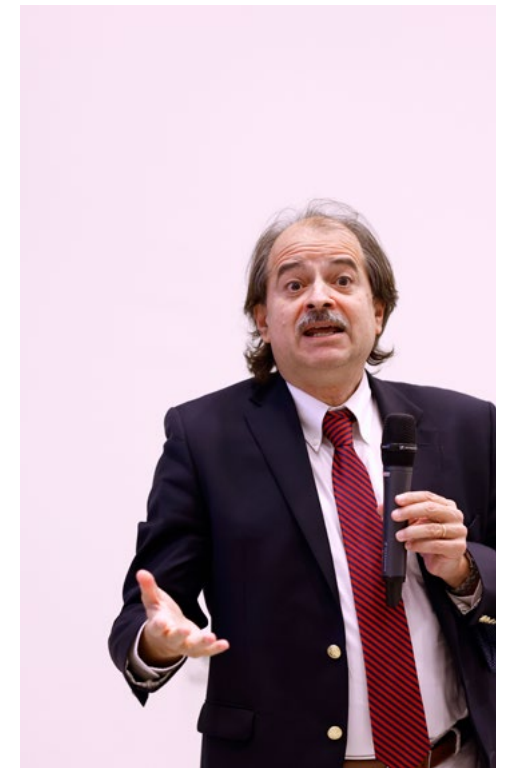
● PHOTOS BY SANDER MARTENS



<https://twitter.com/>











## BCN Retreat

Also in the second year of the Corona pandemic, BCN organized together with the BCN PhD council two one-day online editions of the BCN retreat. These retreats allowed PhD students to partake in disseminating their research to peers, as well as to those who are not in their field. The Elevator Pitch formed the social part of the online retreat.

## An online world

BCN instructors continued the online versions of their courses. Some of them hybrid, like the Orientation and Human Neuroanatomy courses, and some in a classroom when allowed by the Corona rules, like the Competence Management courses. Many thanks to the instructors of the courses. In 2020 the introduced online formats of the Basic Statistics course and the Advanced Statistics course were very highly valued. A part of it is still available online, to give its participants the possibility to review it whenever needed.

## BCN Lunch Lectures

BCN continued organizing Lunch Lectures on almost every Thursday from 12:00-13:00 hr. For the first Thursday of every month, the BCN lecture was given by an outstanding researcher. These researchers came from all over the world and included Felipe Villela Gomes, Don van Ravenzwaaij, Pieter Roelfsma, Andrea Maier, Tim Czopka, Mark Landery, Andrew Fink and Carl Schoonover,

George Patrinos and Greg Poarch, who were willing to give us a glimpse of their work.

The second Thursday of the month is reserved for BCN Alumni. Marijn Post, Jonathan Mall, Erin van Buel, Clair Kos, Hans van der Horn, Marja Broersma, Toivo Glatz and Lisette van der Meer. All gave very nice presentations full of tips and eye-openers for PhD and Research Master students.

The third Thursday of the month focuses on more general themes. BCN invited the METc twice. Thomas Vos, manager of the UG twitter account explained why you should use Twitters as a scientist.

The final Thursday was always reserved for online networking. However, the BCN PhD council started to organize activities within the 1.5 meter possibilities, as soon as it was allowed, so these online sessions were replaced by physical meetings.

## BCN PhD Council

The year 2021 was again a year like no other. Although we have gotten more used to the pandemic-related life, it kept affecting us all in many different ways.

The Covid-19 pandemic certainly did not make PhD life easier, as it created many worries concerning delay in research inclusion and the uncertainty of when scientific measurements could start again. Unfortunately, many PhD researchers are still struggling with the consequences. However, we are very happy to say – the

situation at the university and the UMCG is finally getting to the new post-covid normal!

Unfortunately, as soon as the pandemic-related rules had been lifted at the University, the terrible war in Ukraine started. This affected us all and still has a tremendous effect on the entire BCN community. The BCN PhD council stands with Ukraine! To all our Ukrainian and Russian colleagues and their families we would like to convey our support. Please do not hesitate to reach out to us in case of needed emotional, material or any kind of support we are able to provide.

On a more positive note, the BCN PhD council helped organize and host online BCN events such as the BCN retreat, the BCN winter meeting and the weekly BCN lunch lectures! These lectures were hosted on Zoom or in Gather Town every Thursday at 12:00 and were an amazing opportunity to connect within and outside of BCN. Through these lectures, students had the chance to connect with multiple experts in their field such as Andrea Maier, Marc Landry, Tim Czopka and Marie-José van Tol, as well as with many different BCN alumni working both in and outside of academia. Apart from a large variety of different speakers and network opportunities, these lectures also offered a great moment to take a break from work and meet and greet some colleagues. We are looking forward to organizing more and more BCN lunch lectures. If you have any suggestions or a potential speaker in mind, do not hesitate to contact us!

Finally, the council organized many opportunities for students to stay socially active. Students in the BCN PhD

community had the chance to get to know each other better during a scientific speed dating event organized at the park, during the BCN trampoline day in a jumping arena, during an ice-skating event at Kardinge, as well as during Yoga, bouldering and bowling and of course during social events organized at the DOT, where free snacks and drinks were very appreciated. For more social events to come, stay tuned!

In 2021, the BCN PhD council had to say goodbye to five of its beloved members; Mayra Bittencourt Villalpando, Hermine Berberyan, Sterre van der Veen, Theresa Marschall and the former chair of the council Emile d'Angremont. The enormous amount of effort and positive energy they had put into the council will be missed. Fortunately, we were able to welcome two new members in their place; Martinica Garofalo and Ronja Eike (a warm welcome to you!). Nada Majerníková has now replaced Emile d'Angremont in his former position as chair of the PhD council.

If you too would like to join our council, do not hesitate to contact us. We are always open to accepting new members! Let's carry our inspired efforts into 2022!

On behalf of the BCN PhD Student Council,  
Nada Majerníková.

BCN PhD council members: Alejandro Marmolejo Garza, Tiago Medeiros Furquim Mendonça, Magda Ioannou, Lenny Marapin, Nada Majerníková. Martinica Garofalo and Ronja Eike.



# BCN NEWSLETTER -> BCN MAGAZINE

And last but not least we had three newsletters and the very first BCN Magazine!



BCN Newsletter 121 (March 2021)



BCN Newsletter 122 (June 2021)



BCN Newsletter 123 (September 2021)



BCN Magazine 124 (December 2021)



# COLOPHON

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Spread the knowledge, not the virus

1,5M