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## Professional profile

My research aims to understand how individual brain differences, whether basal or induced by stressors, can modify behavior. Throughout my Master's and PhD studies, I investigated the impact of genetic and environmental stressors on neurodevelopment, brain inflammation, and subsequent behavioral changes using animal models. In the future, I aspire to further explore the connection between brain variations and psychiatric disorders.



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## Education

### UMC Groningen, Netherlands

Dept. Nuclear Medicine  
and Molecular Imaging  
09/2020-today

### 3-year PhD

- Conceptualized, implemented and coordinated research projects focused on investigating the link between risk factors for schizophrenia and their impact on neurodevelopment, brain inflammation, synaptic density, and behaviour in rats.
  - Designed, collected and analysed the data, and wrote manuscripts for publication in peer-reviewed Journal.
  - Supervised students with their Masters and Bachelors thesis.
  - Collaborated closely with colleagues and researchers.
  - Conducted PET imaging, immunohistochemistry, and behavioural studies in rodents.
- Promotors: Prof. Dr. Erik de Vries, Prof. Dr. Iris Sommer, Dr. Janine Doorduyn.

### University of Groningen, Netherlands

09/2018-07/2020

### Research Master Neurosciences (cum laude, 8.8/10)

Behavioural and Cognitive Neurosciences, Molecular and Clinical Neurosciences track.  
ERASMUS Bordeaux Neuroscience Master third semester, Research project Melbourne, Australia.

### University of Lille, France

09/2015-07/2018

### Bachelor Degree (cum laude, top 5%)

Cellular Biology and Physiology, Bilingual path, Bachelor's thesis in Munich, Germany.

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## Appointment

### Radboud UMC, Netherlands

Dept. translational  
Neuroscience  
10/2023-today

### 3-year Postdoctoral Researcher

- Addiction research

Principal Investigators: Prof. Judith Homberg, Prof. Jan Booij, Prof. Arnt Schellekens

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## Professional Training

### University of Wellington, New Zealand

12/2022-04/2023

### 4-month PhD Research project

- Demonstrated that rats with a polygenic susceptibility (apomorphine susceptible rats) have neurodevelopmental changes (ultrasonic vocalizations and heart rate variability) and respond differently to a maternal immune activation.
- Developed the collaboration with Prof. Ellenbroek, designed the project, collected and analyzed the data and wrote the manuscript for publication.

Supervisor: Prof. Dr. Bart Ellenbroek.

### University of Melbourne, Australia

01/2020-07/2020

### 6-month Master Research project

- Investigated the intergenerational effects of paternal stress on male and female mice offspring behaviour and whether an exercise intervention could prevent such deficits.
- Designed the project, collected and analyzed the data, and wrote a master's thesis.

Supervisor: Dr. Terence Pang.

University of Bordeaux,  
France  
09/2019-12/2019

#### 4-month Master Research project

- Investigated the effect of social stress on behaviour and brain inflammation in mice using various behavioral tests and PCR to measure brain cytokines.
- Designed, collected and analysis the data, and wrote a master's thesis.

Supervisor: Dr. Lucile Capuron.

UMC Groningen,  
Netherlands  
01/2019-07/2019

#### 6-month Master Research project

- Investigated the effect of ketamine on neuroinflammation and anhedonia in the repeated social defeat rat model, using PET imaging.
- Contributed to the design, data collection, analysis and writing of the manuscript for publication.

Supervisor: Dr. Janine Doorduyn, Prof. Dr. Erik de Vries.

LMU institute, Munich,  
Germany  
04/2018-07/2018

#### 3-month Bachelor Research project

- Analyzed data of confocal imaging to quantify dendritic spines morphology (stubby, mushroom, thin) in the layer V pyramidal neurons in the motor cortex of ALS-transgenic mice.

Supervisor: Dr. Sabine Liebscher.

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## Academic Activities and Public Outreach

### Organizer and chair

- 2022**
- Organized and chaired a symposium entitled 'identifying risk factors for neuropsychiatric disorders and their underlying pathophysiology' at the Dutch Neuroscience Meeting, Tiel.
  - Organized and taught a 2h workshop "How to write a successful PhD grant proposal."

### Conferences, Presentations and Invited Talks

- 2023**
- Invited speaker at Donder's Discussion round table of "How to deal with the peer-review process?"
  - Oral presentation at the International Society for Development Psychobiology Annual Meeting.
  - 'The combined effect of prenatal infection and social adversity', invited research talk, Behavioural neurogenetic group, Wellington University, New Zealand.
  - 'The dual-hit hypothesis of schizophrenia', invited online research talk, Developmental Neuropsychobiology lab, North-eastern University, Boston, USA.
- 2022**
- Speaker at the Dutch Neuroscience Meeting, Tiel, The Netherlands.
  - Poster Presentation at the FENS Forum of Neuroscience, Paris, France.
- 2021**
- Oral and Poster presentation at the ECNP Congress, Lisbon, Portugal.
  - Poster presentation at the BCN Symposium, Groningen, The Netherlands.
- 2020**
- Video presentation at the BCN Symposium, Groningen, The Netherlands (**best technicality award**).
- 2019**
- Poster presentation at the Dutch Neuroscience Meeting, Lunteren, The Netherlands.
  - Poster presentation at the BCN Symposium, Twente, The Netherlands.

### Teaching and Supervision

- 2020-**
- Tutored MSc students and successfully assisted them with their PhD application (n = 20).
- 2023**
- Developed an online writing course on Udemy to teach the basics of academic writing (n>125).
  - Manager of a blog ([vaillantsdoctorants](#)) and a YouTube channel ([Cyprien Guerrin](#)) devoted to helping the new generation by sharing neuroscience tools, advice on self-management and writing, and interviews of professors and PhDs (3800 YT subscribers, 150 000 YT views in total, 3000 visitors monthly, 1000 people mailing list, Facebook groups>50 000 members).
  - 'Depression, its mechanisms and treatments,' colloquium, 20 min, University of Groningen.
- 2022**
- Daily supervisor of MSc and BSc students in their research internships and thesis writing (n = 3).

# Research Funding Awards, and Honours

FENS Forum, 2022	<ul style="list-style-type: none"><li>• <b>FENS video contest for neuroscience</b>      <b>Waived registration at FENS Forum 2022</b></li></ul> Awarded for winning the international FENS video contest 2022.
UMC Groningen, 2021	<ul style="list-style-type: none"><li>• <b>De Cock-Hadders Grant</b>      <b>5130,-</b></li></ul> Awarded to fund one of my PhD projects 'Genetic and environmental risk factors of schizophrenia' conducted in Wellington
UMC Groningen, 2020-2023	<ul style="list-style-type: none"><li>• <b>Personal 3-year PhD grant</b>      <b>3-year PhD salary funding</b></li></ul> Awarded to fund my PhD project on The dual hit hypothesis of schizophrenia.
University of Groningen 2019	<ul style="list-style-type: none"><li>• <b>GUF grant of excellence</b>      <b>500,-</b></li></ul> Awarded during my Master's to conduct a project on Transgenerational inheritance of trauma in the University of Melbourne, Australia
France-Netherlands 2018	<ul style="list-style-type: none"><li>• <b>EOLE merit-based scholarship</b>      <b>500,-</b></li></ul> Awarded to join the BCN neuroscience Master, Groningen, The Netherlands.

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## Scientific competences and techniques

<b>Animal research</b>	<ul style="list-style-type: none"><li>• <b>Experience in manipulating rats and doing basic or complex techniques:</b> Intraperitoneal, subcutaneous, and intravenous injections, tail vein cannulation, heart perfusion and brain dissection to collect specific brain regions.</li><li>• <b>Ample experience with rodent behavioural tests</b> for memory and stress-related behaviour: Novel-object recognition, Y-maze, Social behaviour, Tail suspension, Forced swim, Sucrose preference, Locomotor anticipatory reward, Splash test, Open field, Elevated-Plus maze.</li><li>• Performed measurement of ultrasonic vocalizations and heart rate variability.</li><li>• <b>Extensive experience with various rodent models:</b> Maternal immune activation, repeated social defeat during adolescence and adulthood, LPS injection, Corticosterone administration paternal model of intergenerational stress, Genetic model of schizophrenia (apomorphine susceptible rats), ALS-transgenic mouse model.</li><li>• <b>Art. 9 License</b> for working with animals in the Netherlands.</li></ul>
<b>PET research</b>	<ul style="list-style-type: none"><li>• <b>Extensive experience with Positron Emission Tomography Imaging in rats.</b> Experience on data collection and analysis through specialized software (PMOD Technologies LLC).</li></ul>
<b>Biological analysis</b>	<ul style="list-style-type: none"><li>• Extensive experience in performing biological analysis (immunohistochemistry, ELISA, Quantitative real-time PCR).</li></ul>
<b>Statistics</b>	<ul style="list-style-type: none"><li>• Experience using IBM SPSS, and GraphPad Prism for data analysis and statistics. Knowledge on study design, power calculation, statistical tests (t-test, ANOVA, linear models such as GEE, correlation).</li></ul>
<b>Project management</b>	<ul style="list-style-type: none"><li>• <b>Writing ethical documents (CCD, IvD),</b> designing and planning projects, manuscript preparation and publication.</li></ul>

## Published Peer-reviewed Publications

1. **Guerrin, C. G. J.**, Doorduyn, J., Prasad, K., Vazquez-Matias, D. A., Barazzuol, L., & de Vries, E. F. J. (2023). Social adversity during juvenile age but not adulthood increases susceptibility to an immune challenge later in life. *Neurobiology of stress*, 23, 100526. <https://doi.org/10.1016/j.ynstr.2023.100526>
2. **Guerrin, C. G. J.**, Shoji, A., Doorduyn, J., & de Vries, E. F. J. (2022). Immune Activation in Pregnant Rats Affects Brain Glucose Consumption, Anxiety-like Behaviour and Recognition Memory in their Male Offspring. *Molecular imaging and biology*, 24(5), 740–749. <https://doi.org/10.1007/s11307-022-01723-3>
3. Moraga-Amaro, R., **Guerrin, C. G. J.\***, Reali Nazario, L., Lima Giacobbo, B., J O Dierckx, R. A., Stehberg, J., de Vries, E. F. J., & Doorduyn, J. (2022). A single dose of ketamine cannot prevent protracted stress-induced anhedonia and neuroinflammation in rats. *Stress (Amsterdam, Netherlands)*, 25(1), 145–155. <https://doi.org/10.1080/10253890.2022.2045269> \*co-first author.
4. **Guerrin, C. G. J.**, Doorduyn, J., Sommer, I. E., & de Vries, E. F. J. (2021). The dual hit hypothesis of schizophrenia: Evidence from animal models. *Neuroscience and biobehavioral reviews*, 131, 1150–1168. <https://doi.org/10.1016/j.neubiorev.2021.10.025>
5. **Guerrin, C. G. J.**, de Vries, E. F. J., Prasad, K., Vazquez-Matias, D. A., Manusiwa, L. E., Barazzuol, L., & Doorduyn, J. (2023). Maternal infection during pregnancy aggravates the behavioral response to an immune challenge during adolescence in female rats. *Behavioural brain research*, 452, 114566. <https://doi.org/10.1016/j.bbr.2023.114566>
6. **Guerrin, C. G. J.**, Prasad, K., Vazquez-Matias, D. A., Barazzuol, L., Doorduyn, J., de Vries, E. F. J. The combination of prenatal infection and adolescent social adversity affects microglia reactivity, synaptic density, and behaviour in male rats. (Submitted in a peer-reviewed Journal).
7. Cyprien G.J. Guerrin, Kavya Prasad, Daniel A. Vazquez-Matias, Jing Zheng, Maria Franquesa-Mullerat, Lara Barazzuol, Janine Doorduyn, Erik F.J. de Vries, Prenatal infection and adolescent social adversity affect microglia, synaptic density, and behavior in male rats, *Neurobiology of Stress*, Volume 27, 2023, 100580, ISSN 2352-2895, <https://doi.org/10.1016/j.ynstr.2023.100580>

## Publications of Conference Abstracts

1. **Guerrin, C. G. J.**, Doorduyn, J., de Vries, E. F. J. (2021). P.0455 Maternal immune activation reduced recognition memory and increased anxiety-like behaviour and brain metabolism in the rat offspring. *European Neuropsychopharmacology*. 53. S333. <https://doi.org/10.1016/j.euroneuro.2021.10.428>

## Publications submitted or in preparation

1. **Guerrin, C. G. J.**, de Vries, E. F. J., Doorduyn, J., Ellenbroek, B. A. Apomorphine genetic susceptibility and maternal immune activation are associated with early ultrasonic vocalizations deficits, reduced heart rate variability, and altered anticipatory behavior in rats (in preparation).

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## References

1. Prof. Erik de Vries  
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2. Dr. Janine Doorduyn  
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