PhD student on Behavioral and Electrophysiological Phenotyping of Autistic Traits.

42.14.18.TBW **36 hours per week** **Neurowetenschappen**

Job description

We offer a "ZonMw" PhD position embedded in the Vidi project entitled: "Cerebello-cerebral networks underlying shared autistic traits".

A key goal in research on autism spectrum disorder (ASD) is to understand how activity across brain networks is disrupted in ASD and what neural correlates underlie the core deficits. While in recent years first steps towards this goal have been taken, the research is hampered by variability in behavioral phenotypes in mouse ASD-models. In this project, the PhD candidate will use novel approaches to quantify the diversity of behavioral phenotypes in mouse ASD-models in a home-cage environment. This will enable the extraction of behavioral features and will consequently, permit us to correlate innate behavior with performance in tasks commonly used to characterize ASD traits.

This approach will allow us to answer several questions. Do we need an array of conventional behavioral assays to detect ASD traits or can we reliably identify ASD in a home-cage environment during natural, unperturbed behavior? To what extent are the phenotypes similar across ASD-models with chemo-genetic manipulations in different parts of the brain? Next we will subject the mouse ASD-models to a cerebellar-dependent learning paradigm, commonly affected in ASD, while simultaneously recording cerebellar activity. These experiments will show to what extent shared behavioral deficits in the learning task can be decoded from the congruent neural code in ASD-model mice.

The responsibilities of the PhD candidate will include: co-designing and performing experiments; data analysis and modeling; documenting and reporting results in lab- and departmental meetings; presenting results at (inter-)national conferences; preparing research manuscripts.

Work environment

Erasmus MC stands for a healthy population and excellence in healthcare. By conducting

groundbreaking work, we aim to push boundaries through leading the way in research, education and healthcare. We have access to the latest equipment and techniques in a state-of-the-art environment.

The Neural Networks Underlying Behavioral Flexibility Group is part of the Department of Neuroscience, which houses innovative technologies and top-level facilities to support its research programs. Research at our department is dedicated to plasticity and dynamics of sensori-motor and cognitive systems in health and disease. We investigate those at the physiological, anatomical and molecular level in 17 different research groups. Our group aims to understand how brain activity translates into behaviors that adapt to ever-changing environments and how in some disorders, characterized by repetitive and stereotyped behaviors (such as autism spectrum disorder) this adaptation to changes in conditions does not occur at all. The Department of Neuroscience is embedded in the dynamic, internationally competitive research community of over 40 biomedical research labs within the Erasmus MC. The main language of the research community is English. During the PhD training, our students follow specialized lab courses organized by the Graduate School at Erasmus MC.

Qualifications and skills

We are seeking for a talented, highly motivated candidate that holds an MSc degree in Neuroscience, Biomedical Sciences, Computer Science, Biohysics or a related field and has a strong interest in computational neuroscience. High level of written and spoken English and strong programming skills for the data analysis (e.g. MATLAB/Python/C++) are required. The ideal candidate will have experience with neurophysiological techniques and the analysis of neuronal activity. Experience with computational modeling and electrophysiology would be considered a plus. The ideal candidate is an effective communicator, combining independent thinking with a collaborative attitude. The candidate will be selected on the basis of excellence, a strong computational background, willingness and enthusiasm to engage in multidisciplinary research; possession of relevant academic background and training; strong academic references and/or prior publications.

Being able to present a certificate of good conduct, a valid proof of identity, diploma's and/ or relevant registration such as BIG/ RGS are conditions for the appointment.

Terms of employment

You will receive a temporary position for 4 years. The gross monthly salary is € 2.279 ,- in the 1st year and increases to € 2.919,- in the 4th year (scale OIO). The terms of employment are according to the Collective Bargaining Agreement for Dutch University Medical Centers (CAO UMC).

Information and application

For more information about this position, please contact Dr. Aleksandra Badura, Assistant Professor,

e-mail: a.badura@erasmusmc.nl. For queries regarding your application, please contact Jerry Chandansingh, recruiter, phone number: +31 (0)10 704 49 83.

Please respond by using the apply button.

No agencies please.

Vragen over werken bij Erasmus MC?

Neem contact op met ons team Recruitment.

werkenbij@erasmusmc.nl

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