

PhD Project Description

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| School/Department: | Department of Neuroscience Erasmus MC |
| Supervisor information: | <ul style="list-style-type: none"> • Prof. Dr. J. Gerard G. Borst, Professor of Neurophysiology (promotor) • Email: g.borst@erasmusmc.nl • Website: www.neuro.nl • Personal Grants: <ul style="list-style-type: none"> - ZONMW-TOP 2018 (665 k€) - EU-MSCA-ITN-2016 (total 2.5 M€) - Dutch Scientific Organization (ALW-Open) Grant, 2013, 2015 (300 k€ each) - Neuro-Basic Pharma Phenomics (FES0908) (2010; total 13 M€) • Most important publications: <ul style="list-style-type: none"> - Nature 383, 431-434 (1996) - Neuron 23, 821-832 (1999); - Science 289, 953-7 (2000); - Science 327: 1614-1618 (2010); - Nature Neurosci. 13: 1050-1052 (2010); - Ann Rev Physiol. 74:199-224 (2012); - Neuron 78: 936-948 (2013); - PNAS 114: 4249-4254 (2017); - J. Neurosci. 38: 2057-2068 (2018). - eLife 8, doi: 10.7554/eLife.49091 (2019). |
| Project Title: | Neuronal mechanisms underlying tinnitus |
| Abstract: | <p>Tinnitus is a very common disorder in which a patient hears sound in the absence of an external source. Severe tinnitus can have a devastating impact on the quality of life, but despite the large burden of disease there is currently no curative treatment, and the mainstay of therapy currently focusses on helping patients cope with their tinnitus. A substantial roadblock in developing an effective treatment for tinnitus is the lack of understanding of the neuropathological mechanisms underlying it.</p> <p>In this project you will investigate the cellular mechanisms underlying tinnitus. To test this, you will investigate in mice whether cortical feedback inhibition is altered in the inferior colliculus of animals with tinnitus. The presence of tinnitus will be assessed by a novel operant conditioning task, while neuronal IC activity and cortical feedback will be measured and manipulated using in vivo optical (two-photon imaging, optogenetics) and electrophysiological (multi-electrode; patch clamp) techniques. These experiments will provide novel insight into tinnitus mechanisms at both a cellular level and at the level of individual auditory regions, which will constitute an important synergistic step towards the development of a curative treatment.</p> |
| Requirements of candidate: | <ul style="list-style-type: none"> • We are looking for a highly motivated student with interests in hearing research and preferentially experience with in vivo recordings to join our international team. • Master degree or MD with research experience. • Scholarship that will, at least, cover subsistence allowance and international air plane ticket (we could help with the scientific part of your scholarship proposal). • English language requirement: <ul style="list-style-type: none"> ○ English speaking countries & Netherlands: no requirement ○ Other countries: IELTS 7.0 (min 6.0 for all subs), TOEFL 100 (min 20 for all subs) |

Application requirements & Deadlines:

<https://www.eur.nl/en/about-eur/erasmus-university-china-centre/csc-scholarship>

Erasmus MC, ranked world

* No.32 for Clinical Medicine US News 2020:

<https://www.usnews.com/education/best-global-universities/clinical-medicine?page=3>

* No. 30 Nature Index for Biomedical Sciences 2019:

<https://www.natureindex.com/supplements/nature-index-2019-biomedical-sciences/tables/healthcare>