LAILA A. BLÖMER

Neurophysiologist - Computational Biophysics

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EDUCATION

Ph.D. in Biophysics

Laboratoire Interdisciplinaire de Physique, Université Grenoble Alpes [and] CNRS

📅 Sept 2019 – Dec 2022   📍 Grenoble, France

- Dissertation title: On the voltage gated ion channels involved in action potential generation and back-propagation in layer 5 pyramidal neuron. Advisor: Dr. Marco Canepari (defended 12/12/2022)

M.Sc. Brain & Mind Sciences

University College London

📅 Sept 2017 – Aug 2018   📍 London, United Kingdom

- Thesis title: Characterisation of Primary Cortical Cultures of Huntington's Disease Mouse Models (Gillian Bates Lab, Institute of Neurology). Advisor: Prof. Dr. Gillian Bates
- GPA: 71/100

B.Sc. Bèta Gamma (Major Neurobiology)

Universiteit van Amsterdam

📅 Sept 2013 – Aug 2017   📍 Amsterdam, The Netherlands

- Thesis title: Drd1+ Neurons Fascilitate Surround Suppression in the Superficial Superior Colliculus of Mice (Netherlands Institute for Neuroscience). Advisor: Dr. Alexander Heimel
- B.Sc. with Honours degree (first degree non-UK)
- GPA: 7.9/10

RESEARCH EXPERIENCE

Post-Doctoral position

Laboratoire Interdisciplinaire de Physique, Centre National de la Recherche Scientifique (CNRS)

📅 Feb 2023 – Feb 2024   📍 Grenoble, France

- Investigating the effect of mutations in Nav1.2 channels on the action potential generation and waveform in axon initial segments in layer 5 pyramidal cells using electrophysiology and pharmacology.

Ph.D. in Biophysics

Laboratoire Interdisciplinaire de Physique, Centre National de la Recherche Scientifique (CNRS)

📅 Sept 2019 – Dec 2022   📍 Grenoble, France

- Investigating the behaviour of voltage-gated ion channels during action potential back-propagation in layer 5 pyramidal cells using electrophysiology (patch-clamp), photo-activable toxins, fluorescent microscopy and computational modelling.

Analysis development

Heimel Lab, Netherlands Institute for Neuroscience

📅 Feb 2019 – July 2019   📍 Amsterdam, The Netherlands

- Development of motion correction computation in MATLAB for the analysis of deep-brain 2-photon microscopy data.

PROFESSIONAL EXPERIENCE

Independent Consultant

Feed Your Brain (feedyourbrain.eu)

📅 Sept 2019 – Present   📍 Europe

- Multiple consultancy projects for start-ups on the interface of health and neuroscience.

Research Assistant

Social Brain Lab, Netherlands Institute for Neuroscience

📅 July 2016 – Sept 2016   📍 Amsterdam, The Netherlands

- Data collection started during the research internship.

Co-founder & Owner

BrouwBrood Amsterdam

📅 Dec 2014 – Jun 2017   📍 Amsterdam, The Netherlands

- Startup, launched by 4 bachelor students, producing bread from brewers spent grains.
- Management of sales, production and public speaking.

INTERNSHIPS

M.Sc. thesis

Bates Lab, Institute of Neurology

📅 Jan 2018 – Aug 2018   📍 London, United Kingdom

- Established and maintained primary cortical cultures of various mouse model for Huntington's Disease.
- Performed molecular characterisation to study incomplete splicing, alternative polyadenylation and Huntingtin aggregation.

B.Sc. thesis

Heimel Lab, Netherlands Institute for Neuroscience

📅 Feb 2017 – Aug 2017   📍 Amsterdam, The Netherlands

- Deep-brain in-vivo 2-photon calcium imaging in the superior colliculus of behaving mice.
- Biostatistics in MATLAB to track the position of a mouse on video.

Research Internship

Social Brain Lab, Netherlands Institute for Neuroscience

📅 Feb 2016 – July 2016   📍 Amsterdam, The Netherlands

- Studying empathy for pain and pro-social behaviour in humans.
- Collected EEG data while participants had to rate others' pain through watching short videos, while receiving HD-tDCS.

SKILLS & QUALIFICATIONS

Qualifications

- L'Experimentation Animale pour les personnes concevant les Procédures Expérimentales aux animaux des especes rongeurs. A & B (Sept 2020)
- UK Home Office Legislation & Ethics (L/E) and Personal Licensee (PIL) Training rodents A & B (Jan 2018)

Cellular & Molecular Skills

Primary Cell Culture, Patch Clamp ●●●●○
RT, qRT-PCR, cDNA synthesis, Western Blot ●●●○○

Imaging Skills

RNAscope, IHC, wide-field microscopy ●●●○○
2-photon & Confocal microscopy ●●●○○

Programming Skills

Biostatistics: MATLAB, R, Python ●●●○○
Machine Learning: Python, R ●●○○○
Other: JavaScript, PHP, C++ ●●○○○

Animal Techniques

Transgenic mouse handling & breeding ●●●●○
Mouse brain and embryo dissection ●●●●○

Human Techniques

HD-tDCS, EEG ●●●○○
TMS ●●○○○

Languages

English (C2), Dutch (native), French (B2), German (B1)

TEACHING EXPERIENCE

- Course 'Experimental methods in cell biology and biochemistry' for 1st year Biochemistry students Université Grenoble-alpes. Four semesters from 2020 to 2023
- Patch clamp practicals at the Paris Spring School (May 2022) for PhD students and Post-docs, at Université Descartes, Paris.

AWARDS & GRANTS

- Awarded **2500** euro from the Stichting Bekker-la Bastide-Fonds for attending the M.Sc programme.
- Awarded **4000** euro from the Stichting Fundatie van de Vrijvrouwe van Renswoude te 's-Gravenhage for young talented women in science for attending the M.Sc programme.

ACHIEVEMENTS

- Semi-finalist in the Accenture Innovation Awards in the category Fair Food, with the startup BrouwBrood Amsterdam (Sept 2016).
- Finalist for the Amsterdam Science and Innovation Award 2015 competition, with the startup BrouwBrood Amsterdam (May 2015).

REFERENCES

References available upon request

CONFERENCES & MEETINGS

FENS Forum 2022

📅 Poster 📍 Paris, France

European Calcium Channel Conference 2022

📅 Poster + short oral teaser 📍 Alpbach, Austria

European Neuroscience Conference for Doctoral Students 2021

📍 Online

Laboratory of Excellence in Ion Channel Science and Therapeutics (ICST) meeting 2021

📅 Poster 📍 Nantes, France

COURSES & SCHOOLS

NERKA8 Ion Channels and Neuronal Excitability

Faculty of Biology - University of Belgrade

📅 Sept 2021 📍 Kotor, Montenegro

Paris Spring School on Optical Imaging and Electrophysiological Recording in Neuroscience

Université Descartes

📅 May 2021 – June 2021 📍 Online

All-optical interrogation of neuronal networks in vivo

La Société Française d'Optique

📅 May 2021 📍 Online

MMBioS Cell Modeling Virtual Workshop

National Center for Multiscale Modeling of Biological Systems

📅 June 2020 📍 Online

Minor Computer Science

Universiteit van Amsterdam

📅 Sept 2016 – Jan 2017 📍 Amsterdam, the Netherlands

PUBLICATIONS

📄 **Journal Articles**

(1) **Blömer, L. A.**; Giacalone, E.; Abbas, F.; Filipis, L.; Tegolo, D.; Migliore, M.; Canepari, M. *Frontiers in Cellular Neuroscience* **2024**, *under revision*.

(2) Filipis, L.; **Blömer, L. A.**; Montnach, J.; Loussouarn, G.; de Waard, M.; Canepari, M. *The Journal of Physiology* **2023**, *601*, 1957–1979.

(3) Montnach, J.; **Blömer, L. A.**; Lopez, L.; Nicolas, S.; Filipis, L.; Caumes, C.; Béroud, R.; Landon, C.; Meudal, H.; Canepari, M.; Waard, M. D. *Nature Communications* **2022**, *13*, 417.

(4) **Blömer, L. A.**; Canepari, M.; Filipis, L. *Current Protocols in Neuroscience* **2021**, *1*.

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