LAILA A. BLÖMER

Neurophysiologist - Computational Biophysics

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EDUCATION

Ph.D. in Biophysics

Laboratoire Interdisciplinaire de Physique, Université Grenoble Alpes

Sept 2019 – Present Grenoble, France

- Dissertation title: The Role of Voltage Gated Ion Channels in 5th Layer Pyramidal Neuron Action Potential Backpropagation, a Computational Model. Advisor: Dr. Marco Canepari

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

Ph.D. in Biophysics

Laboratoire Interdisciplinaire de Physique, Centre National de la Recherche Scientifique

Sept 2019 – Present Grenoble, France

- Investigating the behaviour of voltage-gated ion channels during action potential back-propagation layer-5 pyramidal cells using electrophysiology (patch-clamp), photo-activable toxins and fluorescent microscopy.
- The native behaviour, thus the diverse sodium, calcium and potassium currents, of each channel will be extracted through reproduction of the data with NEURON 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

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

Cellular & Molecular Skills

Primary Cell Culture, Electrophysiology ●●●●○
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 (B1), German (B1)

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).

TEACHING EXPERIENCE

Experimental methods in cell biology and biochemistry

Département de la Licence Sciences et Technologies, Université Grenoble-alpes

Jan 2020 – May 2020 — Grenoble, France

Jan 2021 – May 2021 — Grenoble, France

COURSES

MMBioS Cell Modeling Virtual Workshop

National Center for Multiscale Modeling of Biological Systems

June 2020 — Pittsburgh, USA

- The design and simulation of cell models focused on diffusion-reaction systems. Due to the COVID-19 crisis the workshop was virtual.

Minor Computer Science

Universiteit van Amsterdam

Sept 2016 – Jan 2017 — Amsterdam, the Netherlands

- Six months programming course focusing on data visualisation and heuristics in JavaScript, C++, PHP and Python.

PUBLICATIONS

Journal Articles

(1) 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 Methods (under submission)*.

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

(3) **Blömer, L. A.**; Filipis, L.; Canepari, M. *Journal of Fluorescence* **2021**.

(4) Tafreshiha, A.; van den Burg, S. A.; Smits, K.; **Blömer, L. A.**; Heimel, A. *Journal of Experimental Biology* **2021**.

(5) Gallo, S.; Paracampo, R.; Müller-Pinzler, L.; Severo, M. C.; **Blömer, L. A.**; Fernandes-Henriques, C.; Henschel, A.; Lammes, B. K.; Maskaljunas, T.; Suttrup, J.; Avenanti, A.; Keysers, C.; Gazzola, V. *eLife* **2018**, *7*.

(6) Papadopoulo, A. S.; Sathasivam, K.; **Blömer, L. A.**; Fienko, S. K.; Smith, E. J.; Landles, C.; Bates, G. P. *Journal of Neurology, Neurosurgery & Psychiatry* **2018**, *89*.

REFERENCES

References available upon request