**Loïc Daumail**

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***Education***

Engineer, Master’s Degree: Completed (August 2018)

INSA- National Institute of Applied Sciences- de Lyon, France

Majors: Biochemistry and Biotechnology Engineering

Neuroscience Master’s degree: Completed (August 2019)

Lyon 1 University, Lyon, France

Psychological sciences PhD program: currently (Degree expected completion date: May 2024)

Vanderbilt University, Nashville, TN, United States

Concentration: Neuroscience

***Relevant Coursework***

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| * Organic Chemistry (+Lab) * Analytic Chemistry (+Lab) * Physics Devices for molecular analysis * Biochemistry (+Lab) * Enzymology (+Lab) * Molecular Biology * Cell Biology * Microbiology (+Lab) * Synthetic Biology (+Lab) * Disease Vector Biology * Genetics * Epigenetics * Genomics | * Physiology (+Lab) * Pharmacology (+Lab) * Anatomy (+Lab) * Developmental Biology (+Lab) * Neuroscience (+Lab) * Neuro-immunology * Human Cognition * Computational Neuroscience * Human models of memory (+Lab) * Visual system * Computational neuroscience of the visual system | * Introduction to Psychology * Imaging : dMRI, fMRI * Programming : R, Matlab, Python, bash * Bioinformatics : FreeSurfer, FSL, Galaxy * Biostatistics (+Lab) * Experiment design * Industrial Processes * Business for Engineers * Sociology * Personal Project in Humanity * Ethics |

***Research Experience***

4-7/17 Research internship on microalgae Dunaliella salina, at the University of Antwerp, Belgium. Study of the ß-carotene content in a strain of D. salina, assessment of a sustainable ß-carotene supplementation in animal food with D. salina:

* Cultivation of SAG 42.88 strain under different stress conditions to assess its ß-carotene productivity,
* Assessment of the technical requirements for the bioproduction of ß-carotene with a D.salina ß-carotene producing strain for a D.salina supplemented flamingo food for the flamingos of the zoos in Flanders.

8-12/2017 Research in Serrano Neurolab, at New Mexico State University, on gEar project comparison of expressions of genes implicated in auditory system in the brain, involving bioinformatics, focusing on TRPC and calcium activated potassium channels.

4-9/2018 Research intern at Athinoula A. Martinos Center for Biomedical Imaging, MGH/HST, in Gaëlle Desbordes lab, using DWI and Tracula/FreeSurfer to assess the effect of mindfulness and compassion meditation on the white matter tracts of the Brain.

1-7/2019 Research intern at the Research Center for Neuroscience of Lyon –CRNL–, France, in Dycog research team, under the supervision of Antoine Lutz, to assess the correlates of meditative practices on functional organization principles in traits and states, using resting state and meditative state fMRI data for diffusion embedding processing technique application.

8/2019-Currently

Graduate Research Assistant in the Maier Lab and the Tong Lab. Primary advisor: Alexander Maier, secondary advisor: Frank Tong. Study of neurophysiological data in the lateral geniculate nucleus of the thalamus of the macaque monkey and fixational eye movements. Study of neurophysiological correlates of rapid visual adaptation and of the influence of fixational eye movements on adaptation. Study of saliency learning. Study of spike-triggered multiunit to detect interneurons within the LGN.

***International Exchanges and Internships***

2014-15 UNESP, Guaratinguetá, Brazil, Mechanical Engineering Department.

2017 Study abroad experience (ISEP) during the fall semester at New Mexico State University, Las Cruces, USA, Biology Department, Psychology Department, Industrial Engineering department.

***Languages***

English: fluent — 3 years in the USA.

Portuguese : fluent — 1 year in Brazil.

Spanish: very good command

Chinese: Basic communication skills

French: Native speaker.

***Professional Membership***

Vision Science Society

Society for Neuroscience

Organization of Bioscience Department at INSA de Lyon

INSA Alumni Organization

***Technical Skills***

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| --- | --- |
| * DNA extraction and PCR * Electrophoresis * Northern Blot/ Southern Blot * Bacterial culture and vector transformation * Plasmid cloning * Real Time Polymerase Chain Reaction (RT-PCR) * Quantitative PCR * Cell culture * Serum protein separation and analysis * Enzyme purification – Ion Exchange Chromatography/ Enzyme study * Starch Liquefaction * Western Blot/ SDS Page * Protein Dosage –Lowry, Micro-Lowry * Immunohistochemistry and molecular labeling | * ELISA assay * Yolk lipid and protein extraction and analysis (Gas chromatography) * Sterile environment algal culture * Micro-algae ß-carotene extraction * High Performance Liquid Chromatography (HPLC) * Mass spectrometry analysis * Experiment plan method (Lean Six Sigma tool) * FreeSurfer, FSL * Matlab, bash shell, R, Python * Tractography * Linear-Mixed Models, Linear Models, ANOVA analyses * Project management on GitHub * Spike sorting on BOSS * Neurophysiological data processing * Visual tasks: Monkey Logic 2 |

***Accepted conference abstracts***

Ronan Perry, **L. Daumail**, J. Zorn, D. S. Margulies, J. T. Vogelstein, and A. Lutz. Identifying Differences Between Expert and Novice Meditator Brain Scans via Multiview Embedding. 2020.

Blake A. Mitchell, K. Dougherty, J. A. Westerberg, B. M. Carlson, **L. Daumail**, A. Maier and M. A. Cox. V1 laminar spiking responses to binocular stimuli predicted by monocular activity and principles of gain-control. 2020.

***Conference abstracts***

**Loïc Daumail**, M. A. Cox, J. A. Westerberg, B. A. Mitchell, B. M. Carlson, C. Johnson, P. R. Martin, F. Tong, A. Maier, K. Dougherty. Sparse adaptation among LGN neurons in the awake behaving primate. J.O.V., 2020.

Blake A. Mitchell, K. Dougherty, J. A. Westerberg, B. M. Carlson, **L. Daumail**, A. Maier and M. A. Cox. V1 laminar spiking responses to binocular stimuli of varying contrast. J.O.V., 2020.

**Loïc Daumail**, M. A. Cox, J. A. Westerberg, B. A. Mitchell, B. M. Carlson, C. Johnson, P. R. Martin, F. Tong, A. Maier, K. Dougherty. Rapid visual adaptation of LGN neurons in the awake macaque monkey, Society for Neuroscience, 2021.

***Conference presentations***

« Sparse adaptation among LGN neurons in the awake behaving primate », Vision Science Society, 2020.

« Rapid visual adaptation of LGN neurons », Southeastern Vision Research conference, 2020.

« Rapid visual adaptation of LGN neurons in the awake macaque monkey », Society for Neuroscience, 2021.

***Manuscripts (under review)***

**Loïc Daumail**, M. A. Cox, J. A. Westerberg, B. A. Mitchell, B. M. Carlson, C. Johnson, P. R. Martin, F. Tong, A. Maier, K. Dougherty. Rapid visual adaptation of LGN neurons.

***Other interests***

Sports: Mountain biking, swimming (pre-COVID), Yoga(regularly), scuba diving (1st level)

Music and culture: Guitar, drums, Literature , cinematography, museums.

***References***

*Dr. Alexander Maier, Associate Professor of Psychology, Associate Professor of Ophthalmology and Visual Sciences, Psychology Department, Vanderbilt University, 008 Wilson Hall, 111 21st Avenue South, Nashville, TN 37240 (alex.maier@vanderbilt.edu); (+1)615-322-7466*

*Dr. Frank Tong, Centennial Professor of Psychology, Professor of Ophthalmology and Visual Sciences Psychology Department, Vanderbilt University, 301 Wilson Hall, 111 21st Avenue South, Nashville, TN 37240 (frank.tong@vanderbilt.edu); (+1)615-322-1780*

*Dr. Gaëlle Desbordes, Grants Manager at the Mind and Life Institute, 210 Ridge McIntire Rd Suite 325, Charlottesville, VA 22903 (*[*gdesbord@nmr.mgh.harvard.edu*](mailto:gdesbord@nmr.mgh.harvard.edu)*)*; (+1)434-338-7380

*Dr. Elba Serrano, Regents Professor, NMSU (*[*serrano@nmsu.edu*](mailto:serrano@nmsu.edu)*); (1)575-646-5217*

*Dr. ir. Siegfried Vlaeminck, Assistant Professor, UAntwerpen, Be, (*[*siegfried.vlaeminck@uantwerpen.be*](mailto:siegfried.vlaeminck@uantwerpen.be)*), 032653689*

*Dr. Antoine Lutz, Director of research,CRNL, INSERM U1028, DYCOG team, (*[antoine.lutz@inserm.fr](mailto:antoine.lutz@inserm.fr)), *Bron, France.*