**Kathleen Jacquerie** kathleen.jacquerie@gmail.com

BAEF postdoctoral researcher in Marder Lab kjacquerie.github.io

Brandeis University, Boston



**Education**

2018 · 2023 PhD in Computational Neuroscience | University of Liege, Belgium

*·* FRS-FNRS research fellow

*·* Thesis: Modeling brain-state dependent memory consolidation

*·* Supervisor: Prof. Guillaume Drion

2016 · 2018 Master in Electrical Engineering | University of Liege, Belgium

*·* Summa cum Laude (score: 88%)

*·* Master Thesis: Sensitivity and robustness analysis of thalamic neuron models at the

· cellular and network levels.

· Supervisor: Prof. Guillaume Drion (score: 90%)

2018 · Ap-Au Erasmus Exchange | Technical University Munich, Germany

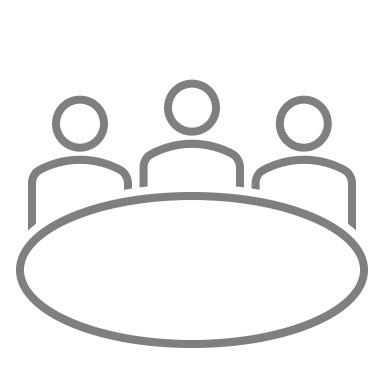
*·* Studies in the neuro-engineering department (score: 89%)

2018 · Ja-Ma Internship in the Control Group | University of Cambridge, United Kingdom

*·* Project: Reduced models of thalamic neurons (score: 90%)

*·* Supervisors: Prof. Timothy O’Leary and Prof. Rodolph Sepulchre

2013 · 2016 Bachelor in Engineering |University of Liege, Belgium



**Work experience**

2023 · Now BAEF Postdoctoral Fellow | Brandeis University, Boston, MA, United States

*·* Fellowship by the Belgian American Educational Foundation (BAEF)

*·* Project: Impact of climate change on the nervous system.

· Supervisor: Prof. Eve Marder

2019 · 2023 FRS-FNRS Research Fellow | University of Liege, Belgium

*·* PhD fellow funded by a national grant in the lab of Prof. Guillaume Drion

2022 · Aug Teaching assistant | Marine Biological Laboratory, MA, United States

*·* In a one-month summer school “Methods in Computational Neuroscience”

*·* Une image contenant flèche

Description générée automatiquement Supervising PhD projects and improving my teaching skills

2018 · 2023 Teaching assistant | University of Liege, Belgium

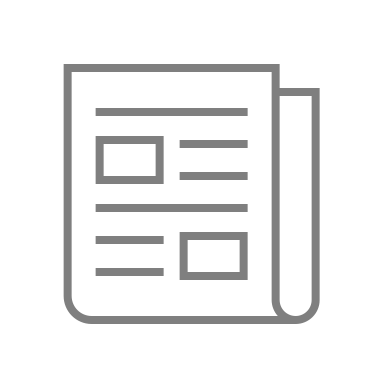
*·* In Signals and Systems: exercises sessions in class, Q&A and exam redaction (2018 · Now)

*·* In Linear Control Systems: exercises sessions in class and project coaching (2018 · 2019)

2016 · 2018 Undergraduate teaching assistant | University of Liege, Belgium

*·* In Linear Control Systems, Signals and Systems, Electrical Circuits, Analog Electronics and

· Digital Electronics

**Publications**

· Jacquerie K, Minne C, Ponnet J, Benghalem N, Sacre P, Drion G (2022). Switches to rhythmic brain activity lead to a plasticity-induced reset in synaptic weights.

*Biorxiv preprint* doi:10.1101/2022.07.15.500198

· Jacquerie K, Drion G (2021). Robust switches in thalamic network activity require a timescale separation between sodium and T-type calcium channel activations.

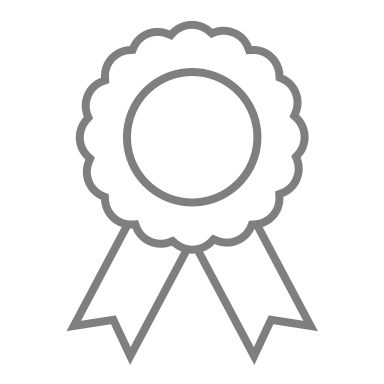
*PLoS Computational Biology*. doi:10.1371/journal.pcbi.1008997

· Jehasse K, Jacquerie K, de Froidmont A, Lemoine C, Grisar T, Stouffs K, Lakaye B, Seutin V (2021). Functional analysis of the F337C mutation in the CLCN1 gene associated with dominant myotonia congenita reveals an alteration of the macroscopic conductance and voltage dependence.

*Molecular Genetics and Genomic Medicine*, 1588. doi:10.1002/mgg3.1588

· Jacquerie K, Drion G (2021). Introduction aux signaux et systèmes : Fascicule d’exercices.

*Pre-print ULiege server*.

**Fellowship & Awards**

2023 · 2024 Belgian American Educational Foundation (BAEF) Postdoctoral Fellowship

2023 · 2024 Wallonie-Bruxelles International (WBI) World Excellence Scholarship

2023 · 2024 Fulbright Postdoctoral Fellowship (declined for BAEF and WBI)

2023 · May Presenter award at the European Neuroscience Conference by Doctoral Students

*·* (ENCODS) in Faro, Portugal

2022 · Nov Trainee Professional Development Award (TPDA) at the Society for Neuroscience (SfN)

*·* in San Diego, USA

2022 · Sep Presenter Travel Award for the Bernstein Conference 2022 in Berlin, Germany

2022 · Mar Presenter Travel Award for the annual meeting of COSYNE 2022 in Lisbon, Portugal

2019 · Jul Scholarship award from Marine Biological Laboratory (MBL) in Woods Hole, USA to

*·* participate as a student at the summer school ‘Methods in Computational Neuroscience’

2019 · 2023 FNRS Research fellowship

2018 · Oct Best Master Thesis in Electrical Engineering by the University of Liege in Liege, Belgium

2013 · Oct Pisart Entrance Scholarship from the University of Liege in Faculty of Engineering

2013 · Jul Mathematical High School Award by the Athénée Royale Air Pur in Liege, Belgium

**Conferences**

2023 · Washington Jacquerie K, Kellens E, Magis J, Sacré P, Drion G. Unraveling the role of collective

· bursting neurons, quiet waking, and structural plasticity in memory consolidation

· using a computational approach.

· Poster, Society for Neuroscience (SfN)

2023 · Leipzig Jacquerie K, Tyulmankov D, Sacré P, Drion G. Memory consolidation through

· combined burst-induced homeostatic reset and structural plasticity.

· Poster, Organization for Computational Neuroscience (OCNS)

2023 · Faro Jacquerie K, Cabral J. Modeling the brain: From single neurons to the whole brain.

· Workshop, European Neuroscience Conference by Doctoral Students (ENCODS)

2023 · Faro Kathleen Jacquerie, Danil Tyulmankov, Pierre Sacré, Guillaume. Switching from

· tonic firing to bursting: implications on learning and memory.

· Poster and Oral presentation, European Neuroscience Conference by Doctoral

· Students (ENCODS)

2022 · San Diego Jacquerie K, Minne C, Ponnet J, Drion G. Is the homeostatic reset an artefact or

*·* feature of synaptic plasticity rules for sleep-dependent memory consolidation?

*·* Poster, Society for Neuroscience (SfN)

2022 · Berlin Jacquerie K, Minne C, Ponnet J, Drion G. The endogenous nature of bursting leads

· to homeostatic reset in synaptic weights: a key player to regularize network

· connectivity during sleep*·*

· Poster, Bernstein Conference

2022 · Paris Jacquerie K, Minne C, Ponnet J, Benghalem N, Drion G. Modeling neuromodulatory

*·* mediated modifications of calcium-based plasticity rules that prevent homeostatic

*·* reset during switches in firing activity.

*·* Poster, Federation of European Neuroscience Societies (FENS)

2022 · Paris Jacquerie K, Minne C, Drion G. Neuromodulation alters synaptic plasticity rules to

*·* avoid homeostatic reset of synaptic weights during switches in neuronal rhythmic

*·* activities.

*·* Poster, European Neuroscience Conference by Doctoral Students (ENCODS)

2022 · Brussels Jacquerie K, Minne C, Drion G. Neuromodulation of excitability and synaptic

*·* plasticity: an underestimated challenge for computational models.

*·* Oral presentation, Belgian Society for Neuroscience (BSN)

2022 · Lisbon Jacquerie K, Minne C, Drion G. Neuromodulation of synaptic plasticity rules avoids

*·* homeostatic reset of synaptic weights during switches in brain states.

*·* Poster, COSYNE 2022

2021 · Virtual Minne C, Jacquerie K, Drion G. Are synaptic plasticity rules compatible with memory

*·* consolidation during sleep?

*·* Poster, Society for Neuroscience (SfN)

##### 2021 · Virtual Jacquerie K, Minne M, Drion G.Effect of switches in brain states on calcium-based

##### *·* plasticity rules: a computational study for sleep-dependent memory consolidation.

##### *·* Poster, Society for Neuroscience (SfN)

2020 · Virtual Jacquerie K, Drion G. Switches in brain states in memory consolidation: a

*·* computational approach.

*·* Poster, Federation of European Neuroscience Societies (FENS)

2019 · Chicago Jacquerie K, Drion G. Which cellular mechanism yields compatibility between brain

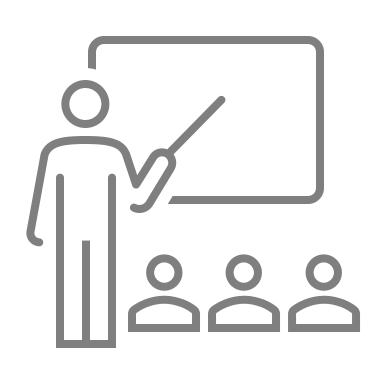
*·* states, synaptic plasticity, and neuromodulation?

*·* Poster, Society for Neuroscience (SfN)

2019 · Lisbon Jacquerie K, Drion G. A cellular mechanism makes switches in brain states

*·* compatible with synaptic plasticity.

*·* Poster, COSYNE 2019



**Training**

2023 · Mar My thesis in 180 seconds

· French-speaking contest to present and popularize PhD student research.

· Une image contenant flèche

Description générée automatiquement Several formations to develop my oratory skills and presence on stage followed by a

· contest.

2021 · 2022 Advances in Neurosciences

*·* Faculty of Biomedical Sciences, University of Liege, BE

*·* Une image contenant flèche

Description générée automatiquement Two hours per week during one semester dedicated to cellular and molecular

· neurobiologyof diverse pathologies in the nervous system.

2019 · Aug Methods in Computational Neuroscience

*·* Marine Biological Laboratory, USA

*·* Une image contenant flèche

Description générée automatiquement One-month summer school dedicated to computational and mathematical techniques

*·* that used to address how the brain works.

2019 · Jan Neuronal Excitability: Modeling, Control and Interconnection Principles

*·* Supelec in Paris at the International Graduate School on Control

*·* Une image contenant flèche

Description générée automatiquement 5-days course about computational neuroscience tools to study excitability.

** Joint Projects**

**PhD thesis collaborations**

2022 · Now Columbia University, New York, USA, with Danil Tuylmankov (in Prof. Larry Abbott’s lab)

*·* ‘Memory consolidation through combined burst-induced homeostatic reset

*·* and structural plasticity’

*·* Une image contenant flèche

Description générée automatiquement Develop memory tasks to test the plasticity rules found during my PhD project.

2022 · 2023 Backyard Brains (BYB),

*·* BYB is a company designing boxes to do affordable and hands-on experiments in

· neuroscience (recording neuronal impulses or playing with computational neuron model)

*·* Une image contenant flèche

Description générée automatiquement Provide computational models able to switch in firing activity.

2021 · 2023 GIGA Neurosciences, University of Liege, BE, with Prof. Seutin

*·* ‘Functional analysis of Nav1.4 channel mutation responsible of a paramyotonia congenita’

*·* Une image contenant flèche

Description générée automatiquement Learn patch-clamp technique and experimental software.

2021 · Now Institute for Functional Genomics (IGF), Montpellier, FR with Prof. Lory

*·* ‘Functional modeling of the gain-of-function properties of CACNA1G mutations causing

*·* neurodevelopmental diseases’

*·* Une image contenant flèche

Description générée automatiquement Implement electrophysiological properties and pharmacological action in a conductance-

*·* based model.

2020 · 2021 GIGA Neurosciences, University of Liege, BE with Prof. Seutin and Dr. Jehasse K

*·* ‘Functional modeling of CLCN1 channel mutations responsible of myotonia’

*·* Une image contenant flèche

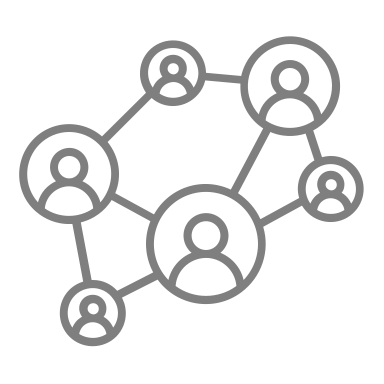
Description générée automatiquement Compare the dynamics of wild type and the mutant and computed the open probability.

**Master thesis supervision**

2022 · 2023 Justine Magis · Emmy Kellens

2021 · 2022 Nora Benghalem · Pauline Garcia, Juliette Ponnet, Nora Sautois

2020 · 2021 Caroline Minne · Chloé Marchal · Chloé Preud’homme.

**Extra-curricular**

2019 · Now Funder of Pot’Ingé | Liege, Belgium

*·* Association raising awareness on ecological issues and managing a collective garden.

*·* Une image contenant flèche

Description générée automatiquement Organize workshops or conferences, and promote seasonal and local products on the

· campus.

2022 · 2023 Member of organizing committee for the European Neuroscience Conference for Doctoral Students (ENCODS) 2023

· 10 PhD candidates and Postdocs organizing a 2-day conference for FENS.

*·* Une image contenant flèche

Description générée automatiquement Teamwork with worldwide PhD students and Post-Doc, backstage behind a conference:

*·* Choiceof speakers, workshops, venues, budget management, sponsor research, ...

2022 · 2023 Member of the Junior Board of Belgian Society for Neuroscience (BSN)

· Group of PhD candidates that represent each university in Belgium nationally.

*·* Une image contenant flèche

Description générée automatiquement Connect young researchers in Neuroscience across Belgium and organize the annual

*·* meeting for neuroscientists in Belgium

2020 · 2021 Representative at the Doctoral Office of the University of Liege

· Represent the Science & Technology sector for all PhD candidates

· Une image contenant flèche

Description générée automatiquement Contribute to the elaboration of the doctorate rules and regulations.

2019 · 2021 Manager of PhD network at University of Liege (ReD)

*·* Association representing PhD candidates at the University of Liege

*·* Une image contenant flèche

Description générée automatiquement Project manager in 2020-2021: develop working groups to implement different

· initiatives in ecology, solidarity, gender equality among others.

*·* Une image contenant flèche

Description générée automatiquement Community manager in 2019-2020: manage social networks and organize events

2016 · 2017 Member of AEES (Association royale des Élèves des Écoles Spéciales)

· Association representing students in engineering at University of Liege

*·* Une image contenant flèche

Description générée automatiquement Member of the external relations team organizing the job-day.

2016 · Aug Seeds For The Future at Huawei   
· 15 students selected among all Belgian and Luxembourg universities

· Une image contenant flèche

Description générée automatiquement Spend two weeks at Huawei headquarters in China and learn basics on

· telecommunication.

2016 · Apr Strategy weekend with BCG (Boston Consulting Group)   
· 15 students selected among all Belgian universities

· Une image contenant flèche

Description générée automatiquement Spend three days at BCG headquarters in Berlin to learn about consultancy and solve

· strategy cases in group.

2016 · 2017 Member of the team ‘OUFTI’  
· OUFTI is a nano-satellite developed at the University of Liege for a ESA project

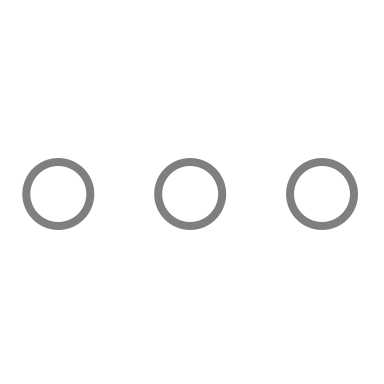
· Une image contenant flèche

Description générée automatiquementLearn basics on spatial telecommunication and temperature sensors.

· Une image contenant flèche

Description générée automatiquementSpend two days in Noordwijk to attend its assembly at ESA (European Spatial Agency)

· headquarters.

**Others**

**Languages** French: native · English: proficient· German: beginner  
**Origin**  23/09/1996 (27yo) · born in Liege, Belgium

**Computing** MATLAB · Julia · Python · Latex · Word · PowerPoint · Excel · Canva · Word · Illustrator

**Skills** Creativity · Curiosity · Teamwork · Leadership · Authenticity

**Interests** Aerial sports: silks, pole · Sport: running, hiking · Travel: as much as possible