

Camille Mitchell

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Current position: Master research student in the Woolf lab at Harvard Medical School

Education

2018 - Present **EPFL** MSc. in Life Sciences Engineering, minor in Neuroprosthetics

Courses include: neuroscience – molecular, cellular and circuit mechanisms, behaviour and cognition – brain-computer interaction, biomaterials, flexible bioelectronics, data analysis

Master thesis: “Investigating the pathogenic mechanism of C9orf72-associated ALS/FTD using spinal cord and cortex organoids as model systems”

Advisor: Full Professor Clifford Woolf, MD, PhD. Harvard Medical School, U.S.A.

2015 - 2018 **EPFL** BSc. in Life Sciences and Technology

Courses include: analysis, algebra, probability and statistics, physics, programming, signal and systems, fluid mechanics, physiology and anatomy, molecular biology, immunology

Third year abroad: at the University of British Columbia

2013 - 2015 **International School of Haut-Lac** - Bilingual International Baccalaureate

Awards

Student Bertarelli Fellowship Program in Translational Neuroscience (2019-2020) – The scholarship awards up to 5 students per year in any EPFL faculty with an excellent academic background and motivation to pursue translational neuroscience research. The student is funded for 1 year in a laboratory from the Program in Neuroscience at Harvard Medical School.

Fellowship with Movetia for an exchange program at the University of British Columbia – Selection based on GPA, four students from Life Sciences and Technology.

Within the 2% highest GPAs in the Bachelor of Life Sciences and Technology at EPFL (2018)

Research experiences

2019 **Project in Neuroprosthetics (Masters)**

Project title: “Hybrid and multi-layer soft neural implants to record spreading depolarizations in traumatic brain injuries”

Advisor: Full Professor Stéphanie Lacour, PhD. Laboratory for Soft BioElectronic Interface. EPFL, Switzerland

2018 **Internship at UCB Pharma (Masters)**

Project title: “Assessing the feasibility of using ligand affinity chromatography to identify critical quality attributes in biological therapeutics”

Advisor: John O’Hara, PhD. Director of Characterization at UCB. UCB, Slough, UK

2018 **Experimental Microbiology Research Project (Bachelor)**

Research question: “Which RND efflux pump(s) are responsible for the decrease in kanamycin resistance in *E. coli*?”

Advisor: David Oliver, PhD. Instructor in the Department of Microbiology and Immunology. UBC, British Columbia, Canada

2017 **Biochemistry Research Project (Bachelor)**

Project title: "Elucidating the genetic pathway of non-shivering thermogenesis, using mice as model organism"

Advisor: Associate Professor Kristina Schoonjans, PhD. Laboratory of Metabolic Signaling. EPFL, Switzerland

Publications

Gabeff, V., **Mitchell, C.**, Tai, I., & Wu, Y. C. (2018). Assessing the contributions of the multidrug efflux pump components *acrE* and *acrA* in mediating resistance to kanamycin in *E. coli* BW25113: steps towards the generation of *acrA/acrE* double mutants using CRISPR/Cas9 system. *JEMI*, 22, 1-12.

Skills

Cellular and molecular biology techniques includes: spinal cord organoid culture, induced pluripotent stem cells and embryonic stem cell culture, CRISPR/Cas9 gene editing for gene knock-out and knock-in, cryosectioning, immunostaining, Western Blot, PCR, confocal microscopy.

Programming skills: C++ object-oriented programming – Matlab for numerical analysis, data analysis, signal processing – Python for applied data analysis, machine learning – Java – LaTeX.

Microfabrication, clean room experience: design, fabrication, characterization of multi-layer electrode implants using autoCAD software, spin-coating, femtosecond laser, metal evaporation, photolithography, electromechanical testing.

Assessing critical quality attributes of biological therapeutics: high-pressure liquid chromatography (HPLC), mass spectrometer (MS), biologics stability screening platform (UNcle).

Teaching experience

2015-2020 **Elite IB Tutor** – Tutor in Mathematics, Chemistry and Biology for the International Baccalaureate as part of the Elite IB Tutors team. Private tutoring and class teaching (workshops).

Extracurricular

2005-2020 **Piano and music theory** – Conservatoire de Vevey

2016-2017 **Volunteer event organiser** – As part of the Life Science association at EPFL

2015-Present **Distance running** – Lausanne half-marathons

2015 **Volunteer work** – at the Cabane des Vignettes mountain hut, cleaning and cooking

2014 **Duke of Edinburgh's International Award (Gold)**

Languages

- Bilingual in French and English
- German, Goethe B1 level