Jeremi Chabros

5th Year Medical Student
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https://github.com/jeremi-chabros

Summary

I am a medical student with a strong interest in Clinical Neurosciences, specifically Neurosurgery. My aim is to become an academic surgeon working to advance and promote technologies in fields of neurotrauma, neurocritical monitoring, disorders of CSF and its dynamics, and cerebral autoregulation.

Education

University of Cambridge School of Clinical Medicine, Cambridge, UK — 2021 – 2024 (expc.)
Medicine (MB BChir)

University of Cambridge, Cambridge, UK — 2018 – 2021
BA (Hons) in Neuroscience
Thesis: *The Emergence of Network Dynamics in Developing Cortical Circuits*
Supervisor: Dr Susanna Mierau MD DPhil (Brigham and Women's Hospital, Harvard Medical School)

Research experience

Student researcher — Apr 2020 – Present
Division of Neurosurgery, Department of Clinical Neurosciences,University of Cambridge, Cambridge, UK
Developing computational methods for mathematical modelling of cerebrospinal fluid dynamics using infusion studies.
Clinical Supervisor: Mr Alexis Joannides MA PhD MB BChir FRCS(SN) (Honorary Consultant Neurosurgeon)
Computational Supervisor: Dr Peter Smielewski PhD (Principal Investigator)

Student researcher — Apr 2020 – Present
University of Cambridge, Cambridge, UK
Studying neuronal network dynamics in murine cortical cultures and human cerebral and spinal cord organoids.
My work includes refining existing and developing new computational tools for the analysis of multi-electrode array (MEA) recordings. Methods include control engineering, graph theory, and time-frequency analysis.
Supervisor: Dr Susanna Mierau MD DPhil (Brigham and Women's Hospital, Harvard Medical School)

Research Intern — Nov 2017 – Dec 2017
Institute of Organic Chemistry, Polish Academy of Sciences, Warsaw, Poland
Synthesis, purification, structural and functional evaluation of a new class of dendrimes, drug transporting molecules with potential applications in the treatment of glioblastoma.
Supervisor: Prof. dr hab. Zofia Urbanczyk - Lipkowska

Publications and presentations

Chabros et al. 2022. *Cycling-related craniospinal injuries admitted to a Major Trauma Centre in the cycling capital of the UK*. [Submitting for publication].

Chabros et al. 2022. *Optimisation of a mathematical model of cerebrospinal fluid dynamics using infusion studies*. [Presentation]. International Symposium on Intracranial Pressure and Brain Monitoring, 14 - 18 November, Cape Town, South Africa

Mierau et al. 2022. *Computational tool for comparing development of cellular-scale network activity from microelectrode array (MEA) recordings of 2D neuronal cultures and 3D human cerebral organoids*. [Poster]. FENS Forum 2022, 9-13 July, Paris, France

Skills

Experimental & data analysis skills

Time Series Analysis ∘ Mathematical Modeling ∘ Fluid Dynamics ∘ Bayesian Optimization ∘ Nonlinear Dynamics ∘ Nonlinear Optimization ∘ Parallel Computing ∘ Electrophysiology (MEA) ∘ Control Engineering ∘ Graph Theory ∘ Neural Networks ∘ Time-frequency Analysis

Programming languages

MATLAB (MEX, UI Applications, Parallel Computing)	Proficient
Python	Intermediate
Julia	Intermediate
C/C++	Basic
LaTeX	Intermediate

Accomplishments

National Neuroanatomy Competition - Winner

EU Contest for Young Scientists - 2nd award

E(x)plory Science Contest - Special Award

Neuronus IBRO&IRUN Neuroscience Forum - Most Active Participant Award

Minister of Education Scholarship

Prime Minister of Poland Scholarship

Extracurricular activities

Collegium Invisibile, Warsaw, Poland 2022 – Present

Collegium Invisibile is an elite academic society that enables outstanding Polish students to undertake individual studies based on tutorial from distinguished scholars. I have been admitted alongside 10 other top students.

Associate Clinical Supervisor 2022 – Present

Supervising junior clinical students.

Mentor, Project Access May 2018 – Present

Project Access is a non-profit organization dedicated to helping underprivileged applicants by offering mentorship from current university students. I mentor medicine and medical sciences applicants.

Interests

Science education, access and advocacy ∘ Handball (Cambridge Half-Blue Award) ∘ Typography