Jeremi Chabros

Final Year Medical Student
School of Clinical Medicine
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Education

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

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

Research experience

Student researcher   Apr 2022 – Present
Brain Physics Lab, Division of Neurosurgery, Dept of Clinical Neurosciences, University of Cambridge
Improving diagnostics of cerebrospinal fluid (CSF) disorders. Developed a novel method of analysing CSF dynamics using Bayesian optimisation with robustness and accuracy superior to the state-of-the-art methods.
Computational Supervisor: Dr Peter Smielewski (Principal Investigator)
Clinical Supervisor: Dr Alexis Joannides (Honorary Consultant Neurosurgeon)

Student researcher   Mar 2022 – Present
Division of Neurosurgery, Dept of Clinical Neurosciences, University of Cambridge
Researching neurotrauma and patient outcomes using Trauma Audit and Research Network (TARN) datasets.
Supervisor: Prof Peter Hutchinson (Professor of Neurosurgery)

Student researcher   Apr 2020 – Present
Synapse & Network Development Group, Dept of Physiology, Development & Neuroscience, University of Cambridge
Studying cellular-scale network dynamics in 2D cortical cultures and 3D human cerebral and spinal cord organoids. Developing computational tools for the analysis of microelectrode array (MEA) recordings.
Supervisor: Dr Susanna Mierau (Neurologist & PI, Brigham and Women's Hospital, Harvard Medical School)

Publications & Presentations

1. Mierau et al. 2023. *A Cellular-Scale Network Approach to Understanding Cognitive Dysfunction in Rett Syndrome and Autism Spectrum Disorder (ASD)*. Poster. International Society for Autism Research Annual Meeting, 3-6 May 2023, Stockholm, Sweden

2. Chabros et al. 2023. *Improving assessment of CSF dynamics in infusion studies using a Bayesian approach*. Oral. Society of British Neurological Surgeons, 29–31 March 2023, Cork, Ireland

3. Chabros et al. 2023. *Exploring the incidence and patterns of cycling-related craniospinal injuries: insights from a Major Trauma Centre*. Oral. Society of British Neurological Surgeons, 29-31 March 2023, Cork, Ireland

4. Chabros et al. 2022. *Optimisation of a mathematical model of cerebrospinal fluid dynamics using infusion studies*. Oral. International Symposium on ICP and Brain Monitoring, 14–18 November, Cape Town, South Africa

5. Sit*, Feord*, Dunn*, Chabros* (shared 1st authorship) 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

6. Dunn et al. 2020. *Comparing spike detection in 2D murine cortical culture and 3D human cerebral organoid micro-electrode array (MEA) recordings*. Poster. FENS Forum 2020, 12 July 2020 [Online due to the COVID-19 pandemic]

Skills

Experimental & data analysis skills

Time-Series Analysis ○ Time-Frequency Analysis ○ Network Neuroscience ○ Control Engineering ○ Mathematical Modeling ○ Electrophysiology (Microelectrode Arrays) ○ Optimisation (Bayesian & Nonlinear)

Programming

MATLAB (MEX, UI Applications, Parallel Computing)	Proficient
Python, Julia	Advanced
LaTeX	Intermediate

Accomplishments

UK National Neuroanatomy Competition 2023– Winner (clinical category and overall)

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Gordon Holmes Prize in Clinical Neurosciences (Royal Society of Medicine) – Top 5

European Union Contest for Young Scientists – 2nd award

E(x)plory Science Contest – Special Award (MILSET Expo-Sciences Europe)

Neuronus IBRO&IRUN Neuroscience Forum – Most Active Participant Award

Path to Harvard (Harvard Club of Poland) – Laureate

International Brain Bee Neuroscience Competition – Winner (Poland), Finalist (World Championships)

Polish Children's Fund (KFnrD) – Programme for Exceptionally Gifted Students

Minister of Education Scholarship (a merit-based award for the most outstanding students in the country)

Prime Minister of Poland Scholarship (a merit-based award for the most outstanding students in the country)

Extracurricular activities

National Coordinator, International Brain Bee   February 2023 – Present

National Coordinator for International Brain Bee, overseeing UK's chapter of the largest global neuroscience competition that inspires 50,000+ students from 60+ countries annually to pursue careers in neuroscience. Lead team of 20+ in fundraising, charity management, outreach and student engagement.

Associate Clinical Supervisor, University of Cambridge School of Clinical Medicine   Sep 2022 – Present

Teaching physical examinations and foundations of clinical medicine to undergraduates and junior clinical students.

Student, Collegium Invisibile, Warsaw, Poland   May 2022 – Present

Collegium Invisibile is a prestigious academic society enabling outstanding Polish students to undertake individual studies under guidance of distinguished scholars. Admitted among ten best students in Poland.

Goalkeeper, Cambridge University Handball Club & Cambridge Handball Club   Oct 2018 – Present

Cambridge Half-Blue Award for sports excellence. Paul Day Sports Scholarship. Placed 3rd in National University Championships. Playing in Premier Handball League.

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 have helped multiple neuroscience, medicine and medical sciences applicants to get into Oxford, Cambridge, UCL, and Imperial.

Interests

Data science & visualisation ○ Fly fishing & fly tying ○ Typography ○ Paleontology ○ Skiing