

February 1, 2022

Applying social science research methods and neuroethics analyses to understand patient perspectives toward informed consent for invasive neurosurgical interventions.

Project Description: Many patients participate in invasive neurosurgical research for which they will experience minimal to no clinical benefit. Their perspectives on research participation, as well as on informed consent processes, have received limited attention. The goals of this project are to i) evaluate the quality and comprehension of the informed consent process using standardized assessment tools at six-months post-discharge; ii) determine participant attitudes toward neuroethics themes such as big brain data privacy and open access releases; iii) explore participants attitudes and motivations for participating in invasive neurosurgical research on human cognition and its diseases for which they will experience no direct clinical benefit.

The Neuron to Brain Lab is recruiting a Master's student to contribute to a neuroethics project as part of our NIH-funded project on *Neuronal Mechanisms of Human Episodic Memory*. This project will be co-supervised by Dr. Taufik Valiante and Dr. Daniel Buchman. The project will focus on applying both qualitative and quantitative research methods to answer the study objectives. This project will utilize the lab's access to research participants who are part of a research ethics board (REB) approved neurosurgical studies, as well as a wealth of collaborations between the lab and other neuroscientists at the Krembil Brain Institute, the Centre for Addiction and Mental Health (CAMH), and the Dalla Lana School of Public Health at the University of Toronto.

Level of Study: Master's

Skill Requirements:

- The candidate's education should include a primary focus on neuroscience, bioethics/neuroethics, public health, or social sciences (e.g., sociology, anthropology).
- In the field listed above that was not the "primary focus" of the candidate's previous education, the candidate should have some level of training or be able to demonstrate their interest/engagement in the field. At minimum, the candidate should be familiar with advanced topics in qualitative research methods and survey-based research. If this is not the case, further explanation as to why the candidate wants to transition into this new domain, what skills

prepare them for this transition, and how they will learn any additional necessary skills will be required.

- Strong communication, collaboration, and writing skills are vital for successful interdisciplinary work.

Additional Skills:

- Intellectual curiosity across disciplines including bioethics/neuroethics, neuroscience, and social science research methods.
- Creativity, problem solving, and critical thinking.
- Ability to serve as a “liaison” across disciplines and with collaborators with diverse backgrounds.
- Initiative and self-motivation.

Learning Outcomes: The prospective student will gain direct experience in empirical neuroethics research under the supervision of Drs. Valiante and Buchman, and hone skills including qualitative research design, data collection, and analysis, as well as survey design and analysis. The student will be further exposed to the variety of neuroscience research comprising the Neuron to Brain Lab, including wet lab electrophysiology, clinical iEEG, and the design of neuromodulatory devices. The student will participate in weekly lab meetings of the Neuron to Brain Lab and will be included in the daily activities of the Intracranial EEG (iEEG) pillar; through this latter experience, the student will be exposed to cutting-edge neuroscience research conducted in a highly technical clinical setup. The student will also have the option of joining Dr Buchman’s research group in the department of Education at CAMH, where they will be exposed to other researchers conducting projects using social science research methods in bioethics and related fields using a variety of theoretically informed approaches. The student will also be integrated into the University of Toronto Joint Centre for Bioethics community.

How to Apply: To apply, please fill out this Google Form: <https://forms.gle/bZbNKCcdRhrdurtEA> Indicate that you are interested in joining the lab as a Master’s Student in the iEEG pillar, and mention this specific job posting. Please include all your post-secondary transcripts, and as part of your Resume include a brief statement (~1 page) outlining any research experience you have and your interest in this position.

Please note that all prospective graduate students must simultaneously and independently apply through the School of Graduate Studies (SGS) at the University of Toronto. You may apply directly to be a Master’s Student in the Valiante Lab via the Biomedical Engineering (BME) program; you may also apply via the Dalla Lana School of Public Health.