

## Research Opportunities in Integrative Structural Biology of Membrane Proteins

Dr. JY (Eric) Lee's laboratory at the **University of Ottawa Faculty of Medicine** is recruiting new students and/or fellows to join our CIHR/NSERC-funded projects and study the biology and chemistry of **integral membrane proteins**. We employ an integrative approach by combining protein engineering and enzymology, crystallography, electron microscopy, live-cell imaging, and *in silico* bioinformatics and molecular simulation. We look for self-motivated individuals who will demonstrate passion and creativity towards characterizing the structure-function relationship of important pathological/physiological targets and thrive in a collaborative environment. To apply, please send your **CV** and a **letter of intent** to Dr. Lee: [jyh-yeuan.lee@uottawa.ca](mailto:jyh-yeuan.lee@uottawa.ca). Successful candidates will be notified for interviews, at which time reference letters or writing examples may be required for certain positions. Application will remain open until positions are filled.

### **Postdoctoral Fellow/Research Associate (Starting in 2023; 2-year)**

**Role and responsibilities:** 1) develop and determine approaches for structural determination by X-ray crystallography and/or cryo-electron microscopy (cryo-EM); 2) use biophysical, biochemical, cell biology and bioinformatics methods to characterize the structure-function relationship of membrane proteins; 3) write manuscripts for publications and research proposals for grant applications; 4) supervise and/or mentor graduate and undergraduate research students; 5) take opportunities to collaborate internally or externally; 6) maintain lab instruments and reagents; 7) maintain legible and detailed lab notes.

**Requirement:** 1) PhD/MD/DVM/PharmD (recent or to-be doctorate graduates are highly encouraged to apply); 2) **must** have experience (or expertise) in large-scale protein purification (preferably membrane proteins) and macromolecular structural biology, especially in X-ray crystallography and cryo-EM (with mass spectrometry and/or confocal/super-resolution microscopy as a plus); 3) extensive experience in molecular biology and protein expression in yeast and bacteria systems (with insect or mammalian system as a plus); 4) good interpersonal skills; 5) fluency in written and spoken English (with French as a plus).

### **Research Assistant/Technician (Starting date TBD)**

**Role and responsibilities:** 1) maintain lab instruments and reagents; 2) cell growth and coordinate schedules of lab equipment usage, e.g., shaker incubator, FPLC, etc. 3) assist the PI in training and supervising new students; 4) administrative support in equipment booking, waste pickup, and reagent ordering; 5) maintain lab protocols and safety procedures, e.g., radiation swipes, biohazardous waste management, etc. 6) assist postdocs and students; 7) maintain legible and detailed lab notes.

**Requirement:** 1) BSc or MSc with extensive research experience in protein biochemistry and molecular biology; 2) familiar with yeast and bacterial cell culture, as well as membrane preparations for membrane protein purification; 3) good interpersonal skills; 4) fluency in written and spoken English (with French as a plus).

### **Graduate Student (Starting from Fall 2023; 1-2-year MSc / 4-year PhD)**

**Role and responsibilities:** 1) develop and determine approaches for projects using biophysical, biochemical, cell biology and bioinformatics methods to characterize the structure-function relationship of membrane proteins; 2) write manuscripts for publications and research proposals for fellowship/scholarship/internship applications; 3) supervise undergraduate research students; 4) take opportunities to collaborate internally or externally; 5) maintain lab instruments and reagent; 6) maintain legible and detailed lab notes.

**Requirement:** 1) BSc or MSc in structural biology, biophysics, biochemistry, biotechnology, or related fields; 2) for PhD, **must** have experience (or extensive knowledge) in protein purification (preferably membrane proteins) and structural biology (especially in X-ray crystallography and/or cryo-EM); 3) preferably have experience in recombinant protein expression and purification; 4) good interpersonal skills; 5) fluency in written and spoken English.

### **Undergraduate Student (Starting from Summer 2023)**

**Role and responsibilities:** 1) undertake assigned projects by working as a team (2-3 students) with fellow undergraduate and/or graduate students; 2) write and generate publication/conference-quality figures and presentations; 3) write research proposals for scholarship/internship applications; 4) take opportunities to collaborate internally or externally; 5) maintain lab instruments and reagent; 6) maintain legible and detailed lab notes.

**Requirement:** 1) majors in structural biology, biophysics, biochemistry, biotechnology, or related fields; 2) good academic performance (usually cGPA  $\geq$  7.5) and passion of basic research in life sciences; 3) preferably have plan to stay for honors' thesis research; 4) take opportunities to collaborate internally or externally; 5) maintain lab instruments and reagent; 6) maintain legible and detailed lab notes.

### **About us:**

Dr. Lee's laboratory (<https://www.leejylab.org/>) focuses on the structural and functional characterizations of membrane proteins that regulate cholesterol and phospholipid homeostasis, with a long-term goal to target these proteins for pharmacological and therapeutic development. We are located at the Roger Guindon Hall, the University of Ottawa medical campus, and at the heart of the Ottawa Health Sciences Centre. City of Ottawa is the capital city of Canada and situated at the border of Ontario and Québec, a bilingual city with a broad spectrum of cultural diversity, as well as inclusiveness of various international communities.