

## **Overseas Summer Undergraduate Research Opportunities Programme in Science (UROPS) at University of Toronto, Department of Pharmacology and Toxicology ([in-person](#))**

### **Programme Overview**

The largest pharmacology & toxicology department in North America. It is situated in downtown research hub consisting of the core department located on campus and affiliates located at internationally-recognised hospital-based research institutes. The department has outstanding and diverse research environment in clinical pharmacology, drug discovery, drug toxicity, cancer, neuropharmacology/ addiction and pharmacogenetics.

### **Requirements**

- Students will conduct research in a faculty member's laboratory
- Students will be enrolled in PCL courses (1.5 Uof T credits) with course requirements including:
  - project proposal
  - written reflections
  - oral presentations
  - brief scientific communications
  - final written report

Refer [here](#) for the department's website and [here](#) for more details on the summer research programme.

Refer to below for research projects available. **Please DO NOT contact the supervisors.**

### **Location**

The programme takes place in Toronto, Canada.

### **Dates**

The programme takes place from **13 May 2024 to 02 August 2024**. (Special Term Part 1 & 2, 12 weeks)

### **Credit Transfer**

The research can be mapped to a 4 units Science dummy exchange course code counting towards unrestricted elective.

For mapping to the UROPS course code, please do check with the respective departments' UROPS Coordinators.

Do note that additional assessment may be required from the student by the NUS department for transferring of credits to a UROPS course. Not all UROPS course code can be counted towards major requirements. Please check what requirements the UROPS will count towards and if you are unsure, please check with your department.

PCL courses may be mapped to NUS courses, subject to approval.

Students can transfer a total of 12 units from a maximum of 2 overseas summer/winter programmes without having to pay tuition at NUS during their course of study. Any additional units mapped will be subjected to NUS Special Term fees.

[Course mapping and credit transfer for online summer programmes is not allowed.](#)

### Eligibility Criteria

NUS students must:

- Be a full-time Faculty of Science student.
- Have a clean disciplinary record.
- All Year 2 and Year 3 students may apply
- Minimum GPA of 4.0
- Be fully vaccinated
- Not intending to graduate at the end of AY23/24 Semester 2
- Not be National Servicemen who are called up for In-Camp Training (ICT). Deferment letter will not be provided.

An internal offer does not guarantee your placement in the programme. Your admission outcome is up to the discretion of the partner institution.

### Number of Places

There are 2 places available.

### Programme Cost

Students do not need to pay NUS Special Term fees or tuition fees to University of Toronto if they do not exceed the credits transfer limit stated under the section "Credit Transfer" above. However, students are responsible for their own airfare, accommodation, meals, personal expenses, etc.

Estimated cost (*Please note that the figures provided are only estimates*)

Item	Cost
Return Airfare	SGD2,000
Accommodation	SGD2,000/month
Food and Transport	SGD1,500/month

### Financial Assistance

Click [here](#) to find out more about the various financial assistance schemes offered by NUS.

## Programme Application Procedure and Deadline

Login to [Education Records System \(EduRec\)](#) and submit your application under External Study Type “Research Attachment/Internship/Industrial Attachment”, External Study Setup ID: **02629**. Please refer to [Guide for Student Programme Application](#) BEFORE your application. You will need to log on to [NUS WebVPN](#) before accessing the Guide and EduRec.

Application Deadline: **21 December 2023, 11:59pm Singapore Time**

### Documents required (upload into your online application in EduRec):

1. Latest NUS unofficial transcript (downloadable from EduRec).
2. Curriculum Vitae. Highlight any prior research experience that you may have to support your application.
3. Personal Statement with statement of research interest and future goals, including your area of research interest/project, why you are interested in the mentioned area/project, etc. Please indicate clearly the project and supervisor you are interested to work with. **Please do not contact the research supervisor at University of Toronto for a placement before receiving an internal offer from NUS.**

### Note:

- The NUS internal offer and subsequent nomination to University of Toronto does not guarantee your placement in the programme. Selection is done by and at the discretion of the University of Toronto to be offered admission into the programme.
- Allocation of project is done by University of Cambridge

If you face difficulties uploading the documents, submit your documents via the MS Form [here](#) instead by **21 December 2023, 11:59pm Singapore Time**.

Applications would be deemed incomplete even after submission if the required documents are not received by the stipulated deadline, and therefore disqualified from the application.

To be fair to students who abide by the deadline, incomplete or late application will strictly not be considered.

## Insurance

All students travelling overseas for activities or purposes approved, endorsed, organised, sponsored or authorised by NUS will be covered by the NUS Student Travel Insurance Policy. Click [here](#) for more information.

Exclusions to the NUS Student Travel Insurance may apply. Students are to ensure that they have sufficient travel insurance coverage, and may consider purchasing additional travel insurance if required.

## Contact Details

If you have any questions, please submit your enquiry via the MS Form [here](#).

## 2024 University of Toronto - Pharmacology & Toxicology (PCL) Summer Research Projects

\*The number of positions is for the whole programme and not for NUS only

**DO NOT contact the supervisors.**

No.	Supervisor	Positions	Project Description	Clinical/ non-clinical	On/Off campus	Additional Requirements	Visa
1	Stefan Kloiber	1 to 2	<b>Clinical research on mood and anxiety disorders.</b> For more information, please see <a href="https://psychiatry.utoronto.ca/faculty/stefan-kloiber">https://psychiatry.utoronto.ca/faculty/stefan-kloiber</a> .	clinical	Centre for Addiction and Mental Health	mandatory vaccinations and antibody titers; institutional on-boarding	study permit + immigration medical exam
2	Jack Uetrecht	1	<b>Mechanisms of idiosyncratic adverse drug reactions.</b> Most idiosyncratic drug reactions are mediated by the adaptive immune system, and often involve reactive metabolites of the drug. The research will involve investigation of the initial immune response to drugs that are associated with idiosyncratic drug reactions.	non-clinical	on-campus		study permit
3	Patricia DiCiano	1	<b>Combined and separate effects of cannabis and tobacco on simulated driving and related measures.</b> The student would be involved in the day-to-day activities of the research project. This would involve phone screens, running the driving simulator, assessments, administering questionnaires	non-clinical	Centre for Addiction and Mental Health	mandatory vaccinations and antibody titers; institutional on-boarding	study permit + immigration medical exam
4	Krista Lanctot	1	<b>Work on meta-analysis paper.</b> For more information on research focus (neuropsychiatric treatment and underlying neurobiology), please see <a href="https://sunnybrook.ca/research/team/member.asp?page=172&amp;m=102">https://sunnybrook.ca/research/team/member.asp?page=172&amp;m=102</a>	non-clinical	Sunnybrook Hospital	mandatory vaccinations and antibody titers; institutional on-boarding	study permit + immigration medical exam

5	Liisa Galea	4 to 8 (up to 2 students per project)	<p><b>1. Diet and Cognitive Health in an Animal Model of Alzheimer's Disease.</b> Investigating the role of a western diet and sex on normal aging and in the development of Alzheimer's disease. Explores Glucagon-like peptide-1 (GLP-1) and a GLP-1 and estradiol conjugate as a potential treatment option to mitigate the negative effects of western diet consumption on brain and metabolic health</p> <p><b>2. Sex differences in microglia-mediated processes on cognitive health in middle-age in an Animal Model of Alzheimer's Disease.</b> Understanding the influence of sex and APOE genotype on hippocampal plasticity and cognition</p> <p><b>3. Sex Differences in Negative Cognitive Bias, a symptom of depression</b> Characterizing sex differences in the neurons recruited during depression and examining the effects of chronic stress on these circuits. Using DREADDs to inhibit these neurons and mFISH to examine neuron type and activity.</p> <p><b>4. The effects of an IL-1R antagonist in a rodent model of postpartum depression and offspring stress resiliency</b> Using a rodent model of postpartum depression (PPD) to probe the effects of immune signaling in antidepressant efficacy and how maternal treatment impacts offspring stress resiliency.</p>	non-clinical	Centre for Addiction and Mental Health	mandatory vaccinations and antibody titers; institutional on-boarding	study permit + immigration medical exam
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