



Pharmacology & Toxicology UNIVERSITY OF TORONTO



Graduate Program Information Session Wednesday October 9th, 2024 at 7:00 – 8:00 pm

[Zoom link](#)

Learn more about our graduate programs!

- ❖ M.Sc. – Applied Clinical Pharmacology
- ❖ M.Sc. and Ph.D. – Thesis Stream

Topics included in session

- ❖ Application process
- ❖ Potential career opportunities
- ❖ Finances
- ❖ Informal talk session with graduate students

Speakers

- Dr. Peter McPherson – Graduate Coordinator
- Dr. Cindy Woodland – ACP Director
- Dr. Rebecca Laposa – Assistant Professor
- Victoria – PharmTox Peer Navigator
- Ryan – PharmTox Peer Navigator

Graduate Studies in Pharmacology and Toxicology at the University of Toronto

M.Sc. Program – 2-year program

two streams:

Applied Clinical Pharmacology (course-based)

Thesis-based

Ph.D. program

4-year program – if completed M.Sc.

5-year program – if 'direct entry'

Ph.D. transfer from M.Sc. program

Graduate Studies in Pharmacology and Toxicology at the University of Toronto

Graduate Program

98 Graduate Faculty members

178 Graduate Students:

44 thesis-based MSc

31 Applied Clinical Pharmacology

103 PhD students


[Biology & Medicine](#) » [Pharmacology](#)

Best Universities for Pharmacology in the World

Updated: February 29, 2024 EduRank

Below is a list of best universities in the World ranked based on their research performance in Pharmacology. A graph of 96.5M citations received by 3.52M academic papers made by 3,471 universities in the World was used to calculate publications' ratings, which then were adjusted for release dates and added to final scores.

3. University of California - San Francisco

 United States | California

For Pharmacology

#3 in North America

#3 in the United States



Acceptance Rate 13% • Enrollment 3,140 • Male:Female 35:65 • Founded 1864

[Statistics »](#)

[Rankings »](#)

4. University of Toronto

 Canada | Ontario

For Pharmacology

#4 in North America

#1 in Canada

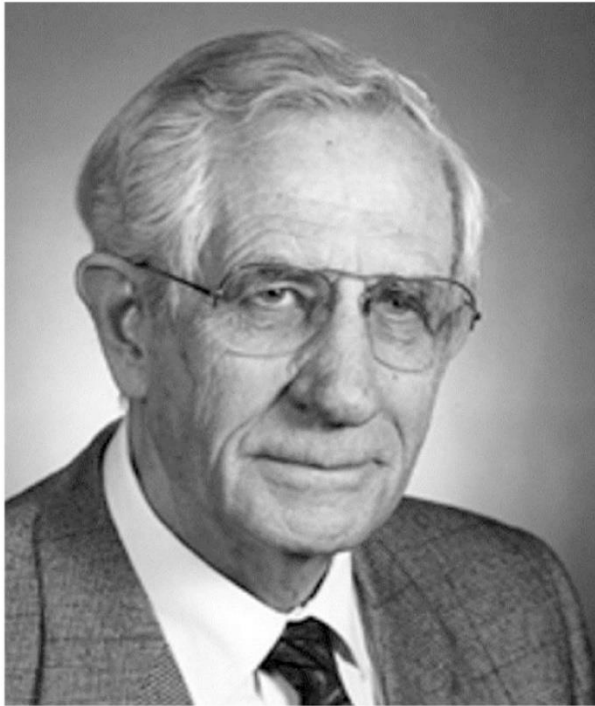


Enrollment 27,651 • Founded 1827

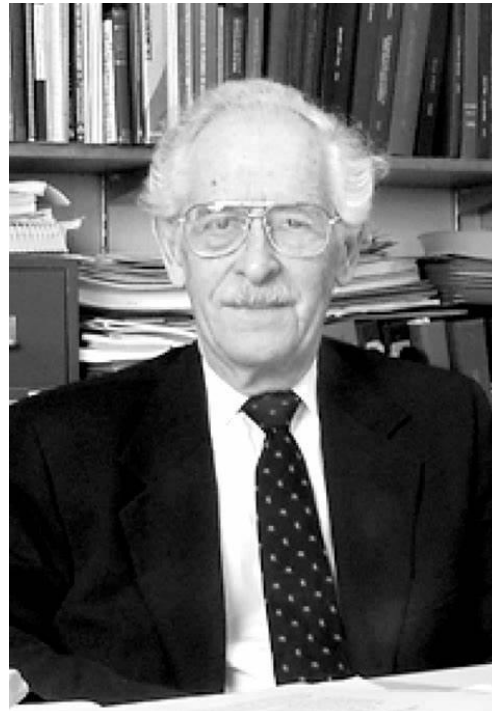
[Statistics »](#)

[Rankings »](#)

History of Research Excellence



Dr. Werner Kalow
“Father of Pharmacogenetics”



Dr. Harold Kalant
Pioneer in Alcohol and
Drug Addiction Research



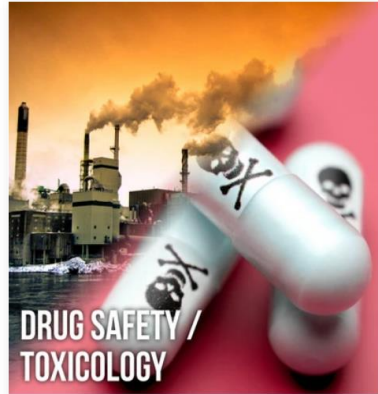
Dr. Philip Seeman
Dopamine hypothesis in schizophrenia

Graduate Studies in Pharmacology and Toxicology at the University of Toronto

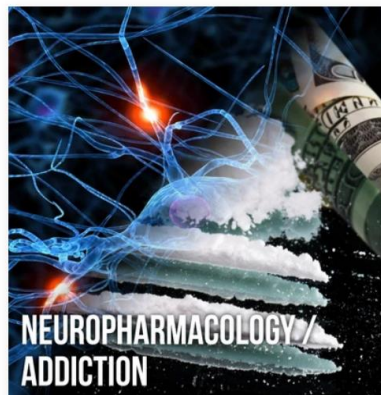
Research Platforms



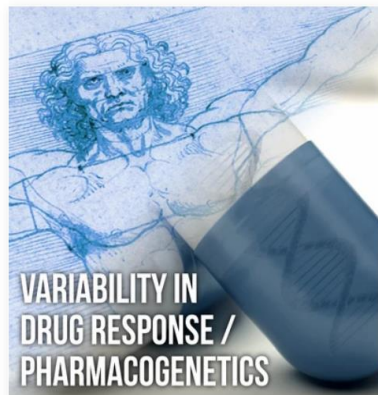
Mechanisms of Drug Action /
Drug Discovery >



Drug Safety / Toxicology >



Neuropharmacology /
Addiction >



Variability in Drug Response /
Pharmacogenetics >

Research Areas Offered:

Alcoholism and drug addiction

Neuropharmacology

Biochemical and molecular pharmacology

Receptor pharmacology and signal transduction

Cardiovascular pharmacology

Pharmacogenetics and pharmacogenomics

Drug metabolism and pharmacokinetics

Toxicology

Biomedical Toxicology – Collaborative Specialization

Career Opportunities for Graduates

- **Pharmaceutical and biotechnology industries**

- Research laboratories
- Clinical studies coordinators
- Regulatory affairs
- Management and administration
- Business development and venture capital
- Consulting

- **Government**

- Health Protection Branch (Federal)
- Environmental laboratories (Provincial and Federal)
- Forensic toxicology (Provincial)

- **Academic**

- University professors
- Community colleges and secondary schools

- **Biomedical Research Laboratories**

- Hospitals
- Research Institutes
- University laboratories

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ACOP

APPLIED CLINICAL PHARMACOLOGY

Director: Cindy Woodland, PhD

Applied Clinical Pharmacology

- A 2-year, course-based program leading to an MSc in Pharmacology
 - Advanced Standing Option: 1 year (no practicum)

www.pharmtox.utoronto.ca/acp

Program Features

- Curriculum *customized to your interests and career goals*
- Small class size (approximately 16 students)
- Integrated coursework (8 full course equivalents, FCEs)
 - 5.5 required FCEs
 - 2.5 elective FCEs

Curricular Breadth

- Clinical Pharmacology
- Drug Development
- Applied pharmacology techniques
- Clinical Study Design and Evaluation
- Regulatory Guidelines and Procedures
- Professional Development
- Career Preparedness

Skill Development

- Critical Thinking
- Data Analysis
- Problem-Solving
- Effective Communication
- Teamwork
- Networking



Experiential Learning

- Independent clinical research project
- Full-time practicum opportunities to explore career interests in the workplace
 - Pharmaceutical companies
 - Clinical and contract research organizations
 - Government agencies
 - Hospital research sites
 - Communications and consulting firms



Major Research Project

- Participation in clinical pharmacology research on a topic of your choice in a setting of your choice
- Minimum of 4 months of full-time research
- Option of extending the research project for an additional 4 months on a full-time basis
- Graduate supervisor can be affiliated with any University of Toronto unit
- Opportunity to present at conferences and to publish papers

Practicum/Internship

- Paid work with an employer for 4-, 8- or 12-months in Year Two of the program
- Intern has choice of practicum setting and employer
- Popular placements: medical affairs, medical information, regulatory affairs, market access, study start-up, clinical trial coordination, medical writing, scientific consulting
- Likely transition to permanent employment

Some of Our Placement Partners



Beyond Coursework

- The graduate student experience and ACP Teams
- Expansion of social and professional networks
- Transferable skills
- Career opportunities!



Applying to ACP

Official Transcripts

Remember to submit final grades as soon as they become available

Reference Letters

3 academic letters

Personal Statement & Resume/CV

Tell us why you would be a good candidate for ACP



REVIEW

Interview

Application Deadlines

We look forward to seeing your application before these deadlines:

- International students: **January 24th**
- Domestic students: **April 25th**

More information is available at:

<https://pharmtox.utoronto.ca/applied-clinical-pharmacology-acp>

acp.pharm@utoronto.ca

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Thesis-based M.Sc. – Two Year Program

Dedicated thesis research supported by Graduate Supervisor

Seminar at beginning of second year

Thesis write-up and defense

2 x 0.25 FCE required courses:

- **PCL3000H - Foundational Pharmacology Principles (0.25 FCE)**
- **PCL3001H - Pharmacology Research & Communication Skills (0.25 FCE)**

An Elective 0.25 FCE Course

Thesis-based M.Sc. – Two Year Program

Elective 0.25 FCE Courses

- PCL3100H Behavioural Pharmacology I – Zawertailo
- PCL3101H Behavioural Pharmacology II – Zawertailo (in 2025-2026)
- PCL3102H Clinical Neuropsychopharmacology – Lanctot / Swardfager (in 2025-2026)
- PCL3103H Fundamental Pharmacogenomics – Chenoweth/Tyndale (in 2025-2026)
- PCL3104H Small Molecule Drug Discovery – Barys-Lovejoy / Harding / Reed (in 2025-2026)
- PCL3105H Epilepsy Pharmacology – Poehlmann-Eden
- PCL3106H Dopamine Neurotransmission – Salahpour/Beaulieu (in 2025-2026)
- PCL3110H Molecular Approaches in Pharmacology Research – Recombinant DNA technology - McPherson
- PCL3111H Molecular Approaches in Pharmacology Research – Flow Cytometry - Edgar
- PCL3112H G protein-coupled Receptors – Salahpour/Beaulieu
- PCL3113H Clinical Trials - DiCiano
- PCL3114H *In silico* approaches for drug discovery – Schapira
- PCL3115H The DNA damage response in Pharmacology & Toxicology – McPherson
- PCL3116H Endocrine Disruptors – Elyse Caron-Beaudoin (in 2025-2026)
- PCL3117H Gene and Nucleic Acid-based Therapies – Hubbard & Colleagues (in 2025-2026)
- PCL3118H Career Readiness for the Pharmaceutical Industry – Zhou & McPherson (in 2025-2026)
- PCL3119H Theoretical and Applied Pharmacogenetics – Goncalves (in 2025-2026)



M.SC. THESIS?

**OR APPLIED CLINICAL
PHARMACOLOGY?**

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Ph.D. Program

Dedicated thesis research supported by Graduate Supervisor

Three Seminars at beginning, middle and end of program

Thesis write-up and defense

Course Curriculum - 3.0 FCE

- 3 x 0.25 FCE courses:

PCL3000H - Foundational Pharmacology Principles (0.25 FCE)

PCL3001H - Pharmacology Research & Communication Skills (0.25 FCE)

PCL3002H – Research Proposal (0.25 FCE)






PCL1003Y – Pharmacology Seminars (1.0 FCE) – Credit / No Credit

Elective courses (to total 1.25 FCE) made up of combination of 0.25 / 0.5 / 1.0 FCE courses in PCL and across Temerty Faculty of Medicine

Collaborative Specializations

Collaborative Specializations give you an opportunity to explore an interdisciplinary area complementary to your home degree program.

Pharmacology participates in seven collaborative specializations:

- [Addiction Studies](#) 
- [Cardiovascular Sciences](#) 
- [Musculoskeletal Sciences](#) 
- [Neuroscience](#) 
- Resuscitation Sciences (*admissions have been administratively suspended*)
- [Toxicology](#)
- [Women's Health](#) 

Application to any of the above collaborative specializations may be made once you are enrolled in the Pharmacology graduate program.

PH.D. TRANSFER OR DIRECT ENTRY?



Finances for thesis-based MSc and PhD - stipends

All thesis-based students receive stipendial support

MSc \$29,235.18 + tuition

PhD \$32,265.18 + tuition

M.Sc. Tuition for domestic students	\$8,393.96
Ph.D. Tuition for domestic students	\$8,393.96
M.Sc. Tuition for international students	\$33,733.96
Ph.D. Tuition for international students	\$8,393.96

Here's a rough estimate

- Tuition of \$8393.96 paid in full in September/ Defer payment for scholarship- to be paid by April 30th
- ~\$2800-\$3100 is paid to student monthly (from principal investigator's and/or student's grant)
- ~\$1000-\$2500 is paid to student twice (UofT Fellowship)
 - once in September
 - once in January
- ~\$0-\$1125 is paid to students twice (Pharmacology And Toxicology Supplemental Funds)
 - November
 - January

Other Financial Aids/Funds/Opportunities

Work-study Positions

- Apply on CLNx (Career & Co-curricular Learning Network)
- Applications open in the summer

Teacher's Assistance

- Applications open in the summer

ACP Bursary (domestic students eligible for OSAP only)

- Applications open in the fall

UTAPs / OSAP (domestic student only)

Various Scholarships

Excellence Through Equity Graduate Scholarships

Purpose

The Excellence Through Equity Scholarships were established by the Department of Pharmacology and Toxicology to increase the number of, and support for, Black and/or Indigenous students interested in pursuing graduate studies in the Department. This award aims to recognize academic excellence and potential for contribution to research excellence and to break down some of the barriers to entering and engaging in graduate studies in an inclusive environment.

Identify as Black or Indigenous

Check out Website for further details

Graduate Admission Stats

Total applications

Approximately 300+ received / year

Total provisional acceptances

60 - 80 (25% of these are Applied Clinical Pharmacology)

New students beginning September

30 -50 / year

APPLYING TO THE PROGRAM:

- Application process is completely on-line.
- **Application Site open now: www.pharmtox.utoronto.ca > Grad Programs > Admissions**
- Separate deadlines dates for the payment of processing fee and for application documents to be received.

SEPTEMBER 2024 ADMISSION:

International applicants that are currently studying/studied outside of Canada or USA:

Deadline: **January 24, 2024**

Domestic and International applicants studying in Canada or USA:

Application Deadline: **April 25, 2024**

There are benefits to applying early! Applications are reviewed on a rolling basis.

CONDITIONALLY ACCEPTED



**BUT WAITED TOO LONG TO
SECURE A SUPERVISOR**

Questions????