

# HOW TO GET INTO PHARMACY SCHOOL

\*SLIDES WILL BE POSTED ON [BETHUNE.YORKU.CA/EVENTS](https://bethune.yorku.ca/events)\*



# WHO ARE WE?

- Fatema Ali
  - 4<sup>th</sup> year Biology Major, Medical Anthropology Minor
  - SOS Peer Mentor
  
- Ina Papadhima
  - 4<sup>th</sup> year Kinesiology Major
  - SOS Peer Mentor



# GUEST SPEAKER

- Joo-Young Lee
  - 1<sup>st</sup> year pharmacy student at the University of Toronto
  - Former York University student

# AGENDA

- Canadian Pharmacy Schools
- Focus on requirements for Ontario schools:
  - University of Toronto
  - University of Waterloo
- PCAT

# CANADIAN PHARMACY SCHOOLS

- Newfoundland
  - Memorial University of Newfoundland
- Nova Scotia
  - Dalhousie University
- Quebec
  - Université de Montréal
  - Université Laval
  - NOTE: French proficiency test is required



# CANADIAN PHARMACY SCHOOLS

- Ontario
  - University of Toronto (PCAT)
  - University of Waterloo
- Manitoba
  - University of Manitoba
- Saskatchewan
  - University of Saskatchewan



# CANADIAN PHARMACY SCHOOLS

- Alberta
  - University of Alberta
- British Columbia
  - University of British Columbia

NOTE: All universities, except for U of T and U of Waterloo, give preference to provincial residents OR require higher GPAs for out-of-province applicants



# UNIVERSITY OF WATERLOO





# UNIVERSITY OF WATERLOO

- Doctorate of Pharmacy (PharmD)
- Admits 120 students each January
  - 600 applicants
- Four year (44 month) entry-to-practice program:
  - 8 academic terms
  - 3 co-op work terms

UNIVERSITY OF  
**WATERLOO**



# UNIVERSITY OF WATERLOO

Sample timetable:

Fall 2017 Schedule				Rx2020		
Time	Monday	Tuesday	Wednesday	Thursday	Friday	
8:30			PHARM 228 LAB (001) 8:30-10:20 PHR 3026, 2009, 2022, 2024 Professional Practice 3 Cynthia Richard		PHARM 220/221 LEC/TUT 8:30-10:20 PHR 1004 IPFC 1/2 Feng Chang/Brett Barrett	
9:00	PHARM 220/221 LEC 9:00-11:50 PHR 1004 IPFC 1/2 Feng Chang/Brett Barrett	MEETINGS				
9:30						
10:00						
10:30						
11:00		PHARM 220/221 LEC 11:00-1:50 PHR 1004 IPFC 1/2 Feng Chang/Brett Barrett	PHARM 228 LAB (002) 11:00-12:50 PHR 3026, 2009, 2022, 2024 Professional Practice 3 Cynthia Richard	PHARM 220/221 LEC 10:30-12:20 PHR 1004 IPFC 1/2 Feng Chang/Brett Barrett	PHARM 220/221 TUT 10:30 - 12:20 PHR <sup>†</sup> 1008;1012;2024/1004 IPFC 1/2 Feng Chang/Brett Barrett	
11:30						
12:00						
12:30	PHARM 224 TUT 12:30-1:50 PHR 1004 Pharmacokinetic Fundamentals Dave Edwards					
1:00						
1:30			PHARM 228 LAB (003) 1:30-3:20 PHR 3026, 2009, 2022, 2024 Professional Practice 3 Cynthia Richard			
2:00						
2:30		PHARM 227 LEC 2:30-4:20 PHR 1004 Health Systems in Society Wasem Alsabbagh		PHARM 224 LEC 2:30-4:50 PHR 1004 Pharmacokinetics Fundamentals Dave Edwards		
3:00						
3:30						
4:00						
4:30						
5:00						
5:30			PHARM 232 LEC 5:00pm-7:20pm PHR 1004 Medical Microbiology Olla Wasfi			
6:00						
6:30						
7:00						
7:30						

# UNIVERSITY OF WATERLOO

## Curriculum:

<i>Year</i>	<i>Term</i>		<i>Date</i>
Year 1	Winter	Academic (1A)	January–April
	Spring	Academic (1B)	May–August
	Fall	Academic (2A)	September–December
Year 2	Winter	Work Term 1	January–April
	Spring	Academic (2B)	May–August
	Fall	Work Term 2	September–December
Year 3	Winter	Academic (3A)	January–April
	Spring	Work Term 3	May–August
	Fall	Academic (3B)	September–December
Year 4	Winter	Academic (4A)	January–April
	Spring	Academic (4B)	May–August

# UNIVERSITY OF WATERLOO

- Academic Requirements
  - Minimum university average of 75% (3.3/4.0 or 7.0/9.0)
  - Full course load is preferred (30 credits per year)
  - PCAT not required
  - Must pass interview

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# UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

## ■ **Biology**

- Introductory biology (6 credits):
  - SC/BIOL 1000 and SC/BIOL 1001
- Genetics (3 credits):
  - SC/BIOL 2040
- Microbiology (3 credits):
  - SC/BIOL 2905 or SC/BIOL 3150

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# UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

## ■ Chemistry

- General Chemistry with lab (6 credits):
  - SC/CHEM 1000 and SC/CHEM 1001
- Biochemistry:
  - SC/BIOL/BCHM 2020 (3.0) or SC/CHEM 2050 (4.0 – lab component included)
- Organic Chemistry with lab (6 credits):
  - SC/CHEM 2020 (3.0) and  
SC/CHEM 2021 (3.0)

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# UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

- **English (3 credits)**
  - Examples: EN 1001, 1002, 1006, 1201, 2011, 2012, 3172
  - To confirm course equivalency, email: [pharmacy@uwaterloo.ca](mailto:pharmacy@uwaterloo.ca)

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# UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

## ■ Math

- Mathematics (6 credits):
  - SC/MATH 1505 (6.0)
  - SC/MATH 1013 (3.0) and SC/MATH 1014 (3.0)
  - SC/MATH 1300 (3.0) and SC/MATH 1310 (3.0)
- Statistics (3 credits):
  - SC/MATH 1131 or SC/MATH 2560 (3.0)
  - SC/BIOL 2060 (3.0), HH/PSYCH 2020 (6.0),  
HH/PSYCH 2021 (3.0), or HH/KINE 2030 (3.0)

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# UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

- Humanities or Social Sciences

- 12 credits in any of the following (maximum 6 credits per course):
  - Anthropology
  - Psychology
  - Philosophy
  - History
  - Languages
  - Economics
  - Geography
  - Etc...
- Email the course syllabus to [pharmacy@uwaterloo.ca](mailto:pharmacy@uwaterloo.ca) if unsure

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# UNIVERSITY OF WATERLOO

## Application timeline\* - January 2019

<i>Date</i>	<i>Event</i>
August 14, 2017	<p>Applications are now open. Click <a href="#">APPLY</a> to access the online application.</p> <p>For detailed instructions on how to apply, please see the <a href="#">Application Instructions document (PDF)</a>.</p> <p>Your application will be acknowledged by email and you will be sent specific information on completing your online Admission Information Form (AIF) and the Reference Letter Form.</p>
September 7-19, 2017	<p>OUAC shutdown</p> <p>Applications are unavailable during this time. All applications that have been started but not submitted prior to September 7, will be deleted. The application system will be available once again on September 20.</p>
October 2017	<p><b>NEW for January 2019 Admissions:</b></p> <p><b>Registration is now open for <a href="#">CASPer (Computer-Based Assessment for Sampling Personal Characteristics)</a> and test dates are posted on the <a href="#">CASPer website</a> (Jan 24 and Jan 28, 2018)</b></p>

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December 25, 2017 - January 1, 2018	<p>Holiday break</p> <p>Although we welcome your application during the holiday break, acknowledgement emails will resume the first week of January 2018.</p>
January 2, 2018	<p>Deadline to submit the January 2019 application and pay the application fee (midnight EST).</p>
January 22, 2018	<p>Deadline to submit AIF for those that applied.</p>
January 24 and 28, 2018	<p><b>NEW for January 2019 Admissions:</b></p> <p>Applicants to complete online <a href="#">CASPer test</a> on either of these two test dates. Specific details are posted on the <a href="#">CASPer website</a>.</p>

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February 5, 2018	<p>Deadline to submit the following items (details will be provided in the acknowledgement email you will receive after you apply to the program):</p> <ol style="list-style-type: none"><li>1. Interim post-secondary transcript(s) showing final grades up to the end of the fall 2017 term as well as any course enrolment for the winter 2018 term</li><li>2. Reference Letter Form</li><li>3. Confirmation of <a href="#">English Language Requirements</a> (if applicable)</li></ol>
April 5, 2018	Invitations for Pharmacy Admission Interviews sent by email. Those not invited to an interview will also be notified by email.
April 12, 2018	Deadline to confirm attendance for your interview. If you fail to respond by this date, your interview time may be assigned to another applicant.
April 27 – 29, 2018	Pharmacy Admission Interviews and Fundamental Skills Assessment (for selected candidates).
June 1, 2018	Deadline to submit post-secondary transcripts with final winter 2018 grades.
June 7, 2018	Admission decisions communicated to all interviewed applicants.
June 21, 2018	Deadline to accept Offer of Admission to Pharmacy.
January 2019	Lectures begin

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## ■ Non-Academic Requirements

- **Pharmacy Admission Information Form (AIF)**
  - Essay about you and your involvement in activities
- **References**
  - Preferably from a pharmacist, or a physician or nurse (no relatives)
- **CASPer**
  - Must be completed on either Jan 24 or  
Jan 28, 2018 (New for 2019 Admissions)

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# UNIVERSITY OF WATERLOO

## ■ **Non-Academic Requirements**

### - **Interview**

- Conducted by faculty members and pharmacists

### - **Fundamental Skills Assessment**

- Includes a Reading Comprehension, Writing, and Basic Mathematic Skills Test (under a time limit)
- Conducted on the same day as your interview

### - **Experience**

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# ASSESSMENT FOR SAMPLING PERSONAL CHARACTERISTICS) TEST

- **New** for January 2019 Waterloo Applicants
- Assesses for non-cognitive skills and interpersonal characteristics
- 12 sections of video and written scenarios
- No studying is required for CASPer, but you should familiarize yourself with the test structure
- The only days available are:
  - January 24, 2018 (Wednesday) at 8:00 PM EDT
  - January 28, 2018 (Sunday) at 2:00 PM EDT
- Check out: [www.takeCASPer.com](http://www.takeCASPer.com)

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## ■ Co-op Program

- Community: retail pharmacy or family health clinic
- Institutional: hospitals, specialty facilities, or long term care institutions
- Government health agencies  
(Ex. Health policies)
- Pharmacy organizations
- International initiatives





# UNIVERSITY OF WATERLOO

- Application Checklist:
  - ✓ Online application (OUAC) & pay fee
  - ✓ Complete all prerequisites
  - ✓ Submit AIF
  - ✓ Completed CASPer
  - ✓ Submit reference letter and transcript
  - ✓ Attend interview (if invited)

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# UNIVERSITY OF WATERLOO

## ■ Contact Information

- **Telephone:** (519) 888-4848
- **Email:** [pharmacy@uwaterloo.ca](mailto:pharmacy@uwaterloo.ca)
- **Website:** <https://uwaterloo.ca/pharmacy/future-students>



# UNIVERSITY OF TORONTO: LESLIE DAN FACULTY OF PHARMACY



# UNIVERSITY OF TORONTO

- Doctorate of Pharmacy (Pharm D)
- Admits 240 students each September
  - 569 – 730 applicants per year
- Four year professional entry-to-practice program



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# UNIVERSITY OF TORONTO

Sample Timetable:

## FALL TERM: YEAR 1, 2016 - 2017

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00-10:00		PHM130H1 Lecture PB B150	PHM110H1 Lecture PB B150	PHM145H1 Lecture PB B150	
10:00-11:00				PHM142H1 Lecture PB B150	
11:00-12:00		PHM142H1 Tutorial PB B150	PHM145H1 Lecture PB B150		
12:00-1:00	PHM145H1 Lecture PB B150	PHM144H1 Lecture PB B150	Other Mandatory Course/Program Requirements PB B150	Co-curricular/ Extra-curricular Activities	
1:00-2:00	PHM144H1 Lecture PB B150				
2:00-3:00	PHM146H1 Lecture PB B150				PHM144H1 Lecture PB B150
3:00-4:00					PHM144H1 Optional Tutorial PB B150
4:00-5:00					PHM113H1 Lecture PB B150
5:00-6:00					

# UNIVERSITY OF TORONTO

## ■ Academic requirements

- Minimum university average of 70% (B or 6.0/9.0 or 3.0/4.0)
- Full course load is preferred (30 credits per year)
- Prerequisite courses
  - <http://www.pharmacy.utoronto.ca/pharmd/admissions/academic-requirements/subjects>
  - [http://www.pharmacy.utoronto.ca/sites/default/files/upload//pharmd/PharmD%20Admissions%202018/2B\\_I\\_Link%20from%20%202B\\_Course%20Codes\\_Ont%20plus%20select%20non%20Ont%20institutions\\_July%202017.pdf](http://www.pharmacy.utoronto.ca/sites/default/files/upload//pharmd/PharmD%20Admissions%202018/2B_I_Link%20from%20%202B_Course%20Codes_Ont%20plus%20select%20non%20Ont%20institutions_July%202017.pdf)



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# UNIVERSITY OF TORONTO: PREREQUISITE COURSES

- **Biology** (6 credits)
  - Introductory biology: SC/BIOL 1000 (3.0) and SC/BIOL 1001 (3.0)
- **Biochemistry** (3 credits)
  - SC/BIOL/BCHM 2020 (3.0) or SC/CHEM 2050 (4.0)



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# UNIVERSITY OF TORONTO: PREREQUISITE COURSES

## ■ Chemistry

- General Chemistry with lab (6 credits):
  - SC/CHEM 1000 and SC/CHEM 1001
- Organic Chemistry with lab (6 credits):
  - SC/CHEM 2020 (3.0) and SC/CHEM 2021 (3.0)
- Physical Chemistry (3 credits): SC/CHEM 2011 (3.0)



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# UNIVERSITY OF TORONTO: PREREQUISITE COURSES

- **Physiology** (6 credits)
  - HH/KINE 2011 (3.0) and HH/KINE 3012 (3.0)
  - NOTE: requirement was added in the 2017 admission cycle
- **Physics**
  - Grade 12 physics (SPH4U or equivalent) OR 6 credits of university physics



# UNIVERSITY OF TORONTO: COURSE PREREQUISITES

## ■ Math

- Calculus (6 credits):
  - SC/MATH 1013 (3.0) and SC/MATH 1014 (3.0)
  - SC/MATH 1300 (3.0) and SC/MATH 1310 (3.0)
  - GL/MATH 1930 (3.0) and GL/MATH 1940 (3.0)
  - NOTE: courses must be prerequisites for upper/advanced level calculus courses
- Statistics (3 credits):
  - SC/MATH 1131 (3.0) or SC/MATH 1532 (3.0)
  - SC/BIOL 2060 (3.0), HH/PSYCH 2020 (6.0), HH/PSYCH 2021 (3.0), HH/PSYCH 2022 (3.0), or HH/KINE 2030 (3.0)



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# UNIVERSITY OF TORONTO: PREREQUISITE COURSES

- **English (3 credits)**
  - Examples: EN 1001, 1006, 1101, 1102, 1103, 1201, 1602, 1953
  - NOTE: requirement was changed from high school English to university English in the 2017 admission cycle



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# UNIVERSITY OF TORONTO: COURSE PREREQUISITES

- **Humanities or Social Sciences (6 credits)**

- Examples: anthropology, psychology (introductory only), philosophy, history, economics, human geography, classics, literature, religion, political science, sociology
- NOTE: as of the 2017 admissions cycle, languages no longer fulfill this requirement



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- **Non-Academic requirements**
  - PCAT
  - Interview
  - Reference letters and personal profiles are NOT required



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## ■ Interview

- Multiple-Mini Interview (MMI) format
- 8 – 10 interviews, 6 – 7 minutes long each
- Interviewees are given a question/scenario and are required to discuss or enact their response
- Questions/scenarios assess non-academic attributes
  - Examples: conscientiousness, accountability, problem solving, emotional intelligence, ethical reasoning, communication skills, leadership, resilience

<http://www.pharmacy.utoronto.ca/pharmd/admissions/interviews>



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- Sample interview question:

Dr. Jackson frequently recommends homeopathic medicines to her patients. There is no widely accepted theory to suggest how homeopathic medicines work; indeed Dr. Jackson does not believe these medicines do work. She recommends homeopathic medicine to people with mild and nonspecific symptoms such as fatigue, headaches and muscle aches, because she believes that it will do no harm but will give them reassurance. Consider the ethical problems that Dr. Jackson's behaviour might pose. Discuss these issues with the interviewer.

# UNIVERSITY OF TORONTO

September  
18, 2017

Online Application Opens

December 1,  
2017

Early Bird Application Deadline

Fee: \$250

January 5,  
2018

Final Application Deadline

Fee: \$300

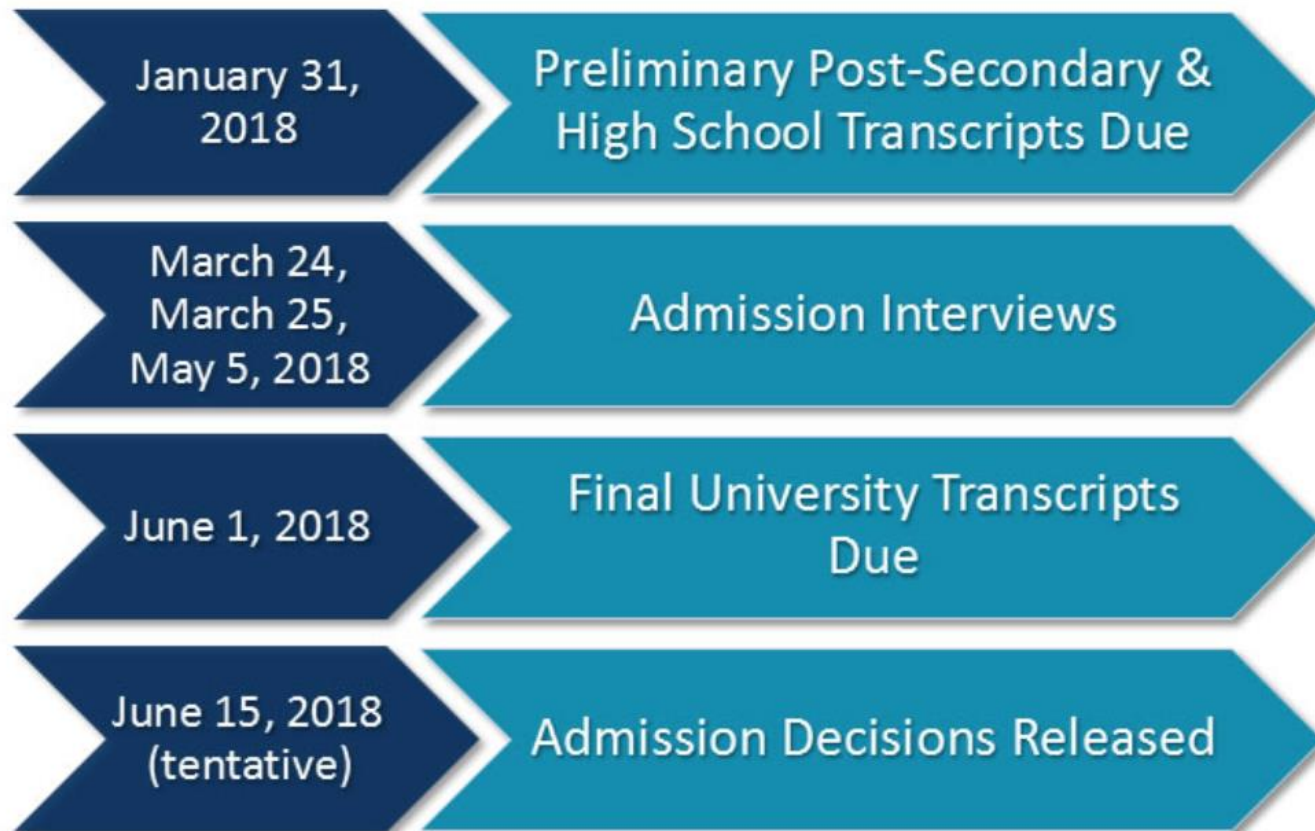
September  
2017 –  
January 2018

PCAT Registration & Tests (visit  
[www.pcatweb.info](http://www.pcatweb.info) for details)



# UNIVERSITY OF TORONTO

- Important dates:



# UNIVERSITY OF TORONTO

- Application Checklist:
  - ✓ Complete prerequisite courses
  - ✓ PCAT
  - ✓ Online application
  - ✓ University and high school transcripts
  - ✓ Interview



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# UNIVERSITY OF TORONTO: LESLIE DAN FACULTY OF PHARMACY

- **Contact Information (Admissions Office)**

- **Telephone:** (416) 978-3967
- **Email:** [adm.phm@utoronto.ca](mailto:adm.phm@utoronto.ca)
- **Website:** <http://www.pharmacy.utoronto.ca/pharmd/admissions>

# PHARMACY COLLEGE ADMISSION TEST (PCAT)

- U of T application requirement
- Length: 3 hours 25 minutes + 15 minute break
- Questions: 192 multiple choice items and 1 writing prompt
- Register online at [www.pearsonvue.com/pcat/](http://www.pearsonvue.com/pcat/)
- Registration Fee: \$210
- May write test up to 5 times
- Practice tests may be purchased on the website

# PCAT

- 4 testing windows: July, September, October/November, January
  - October 23 – 31 & November 1 – 3
    - Registration deadline has passed
  - January 3 – 4
    - Registration deadline: November 3<sup>rd</sup>
    - Late registration deadline: December 13<sup>th</sup>
- First come, first serve basis

<https://www.pcatweb.info/downloads/About/ImportantPCATDates.pdf>

# PCAT: FORMAT

- 5 sections
  1. Writing
  2. Biological Processes
  3. Chemical Processes
  4. Critical Reading
  5. Quantitative Reasoning
- Must achieve a minimum standard in each section

<https://www.pcatweb.info/downloads/about/TestDevelopmentStructure.pdf>

# PCAT: FORMAT

- New PCAT format effective 2016
- No verbal ability section
- 40% of the biological and chemical processes sections require that you use knowledge and analytical skills to answer passage based questions on research studies and experiments
- 40% of the critical reading section is composed of humanities and social science passages
- The quantitative reasoning section contains a greater proportion of basic math and algebra, and fewer calculus and pre-calculus questions

<https://www.pcatweb.info/PCAT-Updates.php>

# PCAT:WRITING

- **Writing (30 minutes, 1 prompt)**

- Provide a solution to a given problem/prompt
- Essay format
- Writing prompt content objectives
  1. Health issues
  2. Science issues
  3. Social/cultural/political issues
- Sample Prompt:

Aging populations and growing shortages of organ donor supplies result in thousands of deaths each year of people on waiting lists in the U.S. from such conditions as chronic lung disease, kidney failure, and coronary heart disease. Discuss a solution to the problems resulting from insufficient supplies of donated human organs.



# PCAT: BIOLOGY

- **Biology (40 minutes, 48 questions)**
  - General biology
  - Microbiology
  - Human Anatomy and Physiology
  - Sample question: Which sphincter in the G.I. Tract controls movement of chyme from the stomach into the small intestine?
    - a. Cardiac
    - b. Pyloric
    - c. Ileocecal
    - d. Anal

# PCAT: CHEMISTRY

- **Chemistry (40 minutes, 48 questions)**
  - General Chemistry
  - Organic Chemistry
  - Basic Biochemistry Processes
  - Sample Question: What is the product of ethyne with water and  $\text{H}_2\text{SO}_4$  in  $\text{HgSO}_4$ ?
    - a.  $\text{CH}_2\text{CH}_2$
    - b.  $\text{CH}_3\text{CHO}$
    - c.  $\text{CH}_3\text{CH}_3$
    - d.  $\text{CH}_3\text{CH}_2\text{OH}$

# PCAT: CRITICAL READING

- **Critical Reading (50 minutes, 48 questions)**
  - 3 sections:
    - Comprehension
    - Analysis
    - Evaluation
  - 40% includes interpretation, analysis, and evaluation of passages regarding humanities/social sciences

# PCAT: QUANTITATIVE REASONING

- **Quantitative Reasoning (45 minutes, 48 questions)**

- Basic Math
- Algebra
- Probability & Statistics
- Pre-Calculus
- Calculus
  
- 50% involves a practical scenario/situation

\*Online standard calculator provided

# PCAT SCORING

- Percentile ranks based on new norms (first time test takers from July 2011 - January 2015)
- Writing:
  - 6 point scale
- All else:
  - SS: Scaled score (200-600)
  - PR: Percentile rank (1-99)
- Example: “Biological Processes” SS= 407, PR: 70
- Composite Score provided as well

# PCAT: UNIVERSITY OF TORONTO

## Minimum PCAT percentile scores required to proceed to Interview stage:

Test section	Minimum Percentile Score requirements used for the four most recent past admission cycles (2014-2017)
Biology (Biological Processes)	20
Chemistry (Chemical Processes)	50
Quantitative Ability (Quantitative Reasoning)	20
Reading Comprehension (Critical Reading)	20
Composite	50
Writing	3

# QUESTIONS?

- Fatema Ali: [ali712@my.yorku.ca](mailto:ali712@my.yorku.ca)
- Ina Papadhima: [ipapadhi@my.yorku.ca](mailto:ipapadhi@my.yorku.ca)
- Joo-Young Lee: [jypharm.lee@mail.utoronto.ca](mailto:jypharm.lee@mail.utoronto.ca)