

The Executive Team

EDITORS-IN-CHIEF

NUSRAT AMIN
BONNIE NGHIEM
monograph@uoftpharmacy.com

1T4 REPRESENTATIVE

JUSTIN SARACENO
1t4monographreps@gmail.com

1T5 REPRESENTATIVE

LINDA LEE
1t5monograph@gmail.com

1T6 REPRESENTATIVE

NATHAN WONG
1t6.pharmacy.monograph@gmail.com

PHOTOGRAPHY

EDRIC PAW CHO SING
STEPHANIE WONG
pharmakon@uoftpharmacy.com

GRAPHIC DESIGN

SOPHIA LI

The articles published in The Monograph are not reflective of the Undergraduate Pharmacy Society, Leslie Dan Faculty of Pharmacy, or University of Toronto. They are strictly the opinions of their respective authors. If any of the articles are offensive, please contact the editors to discuss the matter.

Editors' Note

Dear Monograph readers,

Welcome back to an exciting and pun-filled new year! To the 1T7s, congratulations; you are about to join an ancient & honorable profession that deals with the field of apothecary for the benefit of mankind (!)

This year, the Monograph will provide you with the latest news from the Faculty and its students. As we look forward to a fresh start, it is important to stay on top academically. Check out the anticalendar for course reviews (pg. 8) and crucial advice from upper years.

For those still in vacation mode, check out the adventures of our stu-

UPS Corner

Hey Pharmacy!

To all of the upper years, we would like to welcome you back for another great year! To the 1T7s, congratulations and welcome to the phamily! We hope you had an amazing Phrosh Week and took the time to get acquainted with your new classmates as well as your phrosh leaders. Thanks to Stu, the Phrosh Committee as well as the Phrosh leaders for executing a phenomenal Phrosh Week!



Intramurals and clubs (ex. SOAPE, the Pharmacy Choir) are starting to get underway, class councils are planning a variety of events and UPS has some BIG events (Boat Cruise, Semi-Formal) in store for the upcoming school year. Your experience here is definitely what you make of it so we encourage you to get involved in the many extra-curricular activities that are available. Take advantage of all these opportunities and challenge yourself to join or participate in at least one club or activity of your choice! It's a fantastic opportunity to relieve some stress and meet other members in your class as well as upper years.

Read through the Monograph and find out what UPS and other students have been up to. See something you like and want to get involved? Want to write for the Monograph and have your work published? Feel free to contact the authors or Monograph editors!

You are also always welcome to approach either of us if you ever have any concerns, questions, or just want to say hi! Looking forward to a great year!

Duke Boampong & Jennifer Ma
President & Vice President 2013-14
Undergraduate Pharmacy Society

dents who went abroad this summer (pg. 19). Pg. 23-24 will give you a view through the window of Dr. Reilly's research and his amazing contributions to the field of cancer research.

We hope that you enjoy this first issue of the year and look out for more to come. If you have any comments, suggestions, or submissions, please e-mail us at: monograph@uoftpharmacy.com.

Your mission, should you choose to accept it: get involved, make new memories... and share! Send us your articles, stories, reviews, photos, art, poetry, or anything you would like to share with your fellow pharmacy students.

The Monograph is YOUR voice, only louder.



Nusrat Amin & Bonnie Nghiem
The Monograph Editors 2013-14

PRINTED BY

The Learning Achievement Centre
www.TLAC.ca
Toronto Printing - 525 University Ave.

UPS Council: Who's Who?



PRESIDENT Duke Boampong, 1T5

My role: Ensure the efficient and effective functioning of the Undergraduate Pharmacy Society for the purposes of enhancing the academic, social, athletic and professional student experience.

Pharmacy superhero name:
Modafinil Man - Power to maintain high energy levels (a.k.a not sleeping and drooling in the front row during lecture)



PAST-PRESIDENT Kevin Chow, 1T4

My role: To advise the current UPS Council on issues and matters, and provide guidance based on what has been previously done.

Pharmacy superhero name:
The 15-Minute-Man - Educating the public on why all prescriptions take 15 minutes. What were you thinking?...

WEBMASTER Rick Fong, 1T5

My role: I maintain and update the UPS website as well as send out class-wide and faculty-wide listservs to bring you attention to information and opportunities (including job opportunities!) that are available in and outside of the faculty.

Pharmacy superhero name: Stupendous Man, - Able to gather all relevant knowledge in pharmacotherapy, and combine matter and energy into drug molecules to precisely cure the disease states in question. Also instills a "mind" inside the drug molecules that directs them only toward target sites for disease, thus avoiding side effects!



SECRETARY XiXi Li, 1T5

My role: I'm in charge of putting together the Summer Mailout and sending it out, taking down minutes at UPS meetings, and as Chair of Points and Awards Committee, keeping track of everyone's UPS points.

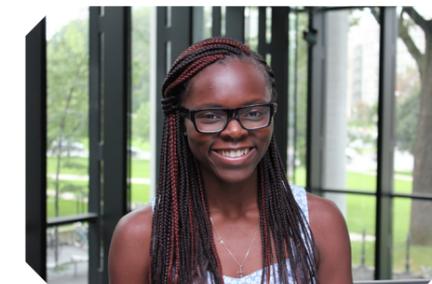
Pharmacy superhero name:
The X Factor - The ability to hear people's thoughts so I could understand him/her better.



VICE PRESIDENT Jennifer Ma, 1T5

My role: Some of the main things I'm responsible for are creating The Key, organizing the first year orientation banquet and organizing the awards banquet at the end of the year.

Pharmacy superhero name:
Januvia - I cure diabetes..



SPEAKER Damilola Egbedeyi, 1T5

My role: To chair UPS council meetings, make sure agenda items are being followed efficiently, and summarize any important points to keep the meetings flowing well.

Pharmacy superhero name:
Teva-Girl - With the power to look at any drug/OTC med and know what it was!



SENIOR FINANCE OFFICER
Angela Bains, 1T4

My role: Senior Finance Officer.

Pharmacy superhero name: Robin Hood (aka Drug Hood) - I would take drugs from rich pharmaceutical companies and give them to the people that can't afford them.



SOCIAL DIRECTOR Vicky Yu, 1T5

My role: As social director I'm in charge of planning faculty wide events such as the interprofessional boat cruise and semi formal.

Pharmacy superhero name: Antibio-Vic - like antibiotic - get it? My super hero power would be the ability to boost anyone's immune system!



SENIOR EXTERNAL AFFAIRS OFFICER Monica Sanh, 1T5

My role: Secure sponsorship for UPS events and act as the CSHP liaison

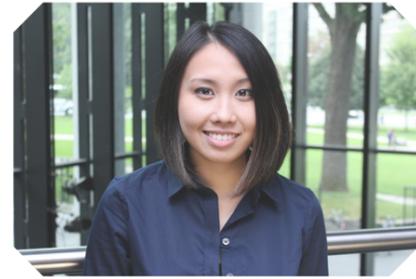
Pharmacy superhero name: MediMon - Making drugs appear at my call.



EVENTS CO-DIRECTOR
Amir Ali-Imani, 1T6

My role: As events directors, we're in charge of not only organizing and running several major events throughout the year, but also keeping track of all other events and updating the student body about it.

Pharmacy superhero name: Homeopathy Man - I literally do nothing, but people still give me credit for helping them.



JUNIOR FINANCE OFFICER
Helen Huang, 1T6

My role: Junior Finance Officer

Pharmacy superhero name: Storm - The ability to control weather.



JUNIOR EXTERNAL AFFAIRS OFFICER Chia Hua Chung, 1T6

My role: To organize community outreach initiatives and solidify UPS sponsorship for all our amazing UPS events!

Pharmacy superhero name: The VaccinAsian - I would eradicate that yellow fever!



EVENTS CO-DIRECTOR
Sarah Fu, 1T6

My role: See Amir's description above.

Pharmacy superhero name: Laser-Dispenser - I would be able to administer medications to patients by shooting them in the form of a laser (that comes out of my eyes). Very impractical, enormously fun.



MALE ATHLETICS DIRECTOR
Kevin Yang, 1T5

My role: I'm in charge of organizing and ensuring attendance for male intramurals. I also work with the co-ed and female athletic directors to organize and run athletic events for the faculty.

Pharmacy superhero name: Anti-Resistance Man - My power is the ability to prevent (or reverse) resistance to carbapenems so we can use it on every infection thus saving millions of lives and making ID an easier course.



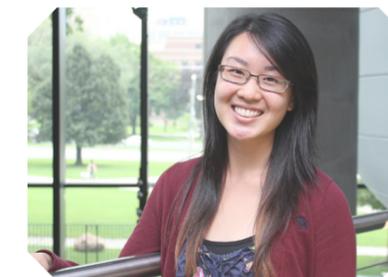
YEARBOOK CO-EDITOR
Edric Paw Cho Sing, 1T5

My role: We're responsible for capturing pharmacy school spirit through our camera lens and compiling yearbooks filled with fond memories. Our Pharmakon team will be at every social, athletic, and professional event working hard to get you from your good side.

Pharmacy superhero name: Pow Chow - The ability to perform Anna Kendrick's "Cup Song" without giggling or messing up (a work in progress).



FEMALE ATHLETICS DIRECTOR
TBA



YEARBOOK CO-EDITOR
Stephanie Wong, 1T5

My role: We're responsible for snapping pictures at every pharmacy event, and along with our hard working and talented team, we compile the mini time capsule called The Pharmakon.

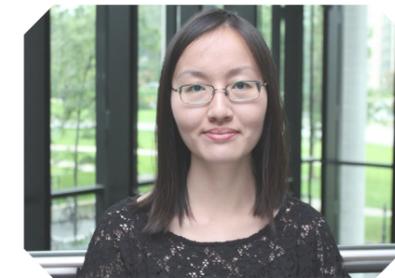
Pharmacy superhero name: Strong Wong - my superhero power would be the ability snap pictures with the blink of an eye so we'd never miss a moment for Pharmakon.



CO-ED ATHLETICS DIRECTOR
Hazel Gamboa, 1T6

My role: Along with the male and female athletic reps, I'm responsible for organizing faculty wide athletic events. I'm also responsible for all co-ed intramural sports.

Pharmacy superhero name: Herbal G - I would be able to harness herbal medicine from all natural products and cure the common cold.



MONOGRAPH CO-EDITOR
Bonnie Nghiem, 1T5

My role: I guess you're looking at the end result of it... for better or worse.

Pharmacy superhero name: The Bonster Monster - Lots of rhyme, less reason.



MONOGRAPH CO-EDITOR
Nusrat Amin, 1T5

My role: You're reading it right now!

Pharmacy superhero name: Dilantin Girl - stopping people from twerking anywhere, anytime.



SENIOR CAPSI REPRESENTATIVE
Alysha Prata, 1T5

My role: I work closely with the Junior CAPSI Representative, local UofT CAPSI council, and CAPSI national council to bring UofT Pharmacy students all of the wonderful swag, resources and events throughout the year!

Pharmacy superhero name: Competent Compounder - The ability to make the most complicated compounds with grace, speed and accuracy.



SENIOR IPSF REPRESENTATIVE
Wilson Cheng, 1T5

My role: The International Pharmaceutical Student Federation is an advocacy organization aiming to promote improving public health through information, education, networking, publications and professional initiatives. I bring networking opportunities to meet fellow pharmacy students across the world through our Student Exchange Programs and annual World Congress, held in the Netherlands this year.

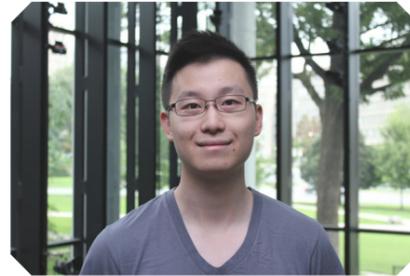
Pharmacy superhero: I'll be the hero pharmacy deserves, but not the one it needs right now. Pharmacists will hate me. But I can take it. Because I'm not their hero. I am the silent guardian and a watchful protector. I am the Audit.



JUNIOR CAPSI REPRESENTATIVE
Aarti Patel, 1T6

My role: I will be working closely with Alysha and the Class Reps to bring you the best events and opportunities CAPSI has to offer this upcoming year!

Pharmacy superhero name:
Alexander Fleming – Anti-B Power.



OPA STUDENT BOARD MEMBER
Kenny Chan, 1T4

My role: As OPA Student Board member, I help facilitate the communication and cooperation between the Ontario Pharmacists Association and the UPS Council.

Pharmacy superhero name:
Mr. STEMI - With the power to cause or relieve heart attacks.



UTSU REPRESENTATIVE
Suyoung Aaron Chin, 1T5

My role: Discuss some of the major issues, events, and services that are provided by the U.T.S.U and promote them within our pharmacy faculty.

Pharmacy superhero name:
The Reader – Can read/interpret any prescriptions within seconds.



JUNIOR IPSF REPRESENTATIVE
Aoran Zhu, 1T6

My role: Junior IPSF Representative

Pharmacy superhero name: Phlash - the ability to counsel and dispense at light speed.



1T4 VICE PRESIDENT Sugi Thiva

My role: I am responsible for the clothing, name tag sales, and various 4th Year Events. Also I will be coordinating the Prof. Auction which everyone should check out.

Pharmacy superhero name:
BetaMan 2 - He is an agonist for change making citizens breathe a little easier when he is on the job.



1T5 PRESIDENT
Karina Nataprawira

My role: I work with the council to plan and implement social & academic events, advocating for the class interest to the faculty, and to make sure that everyone has the best experience possible! :)

Pharmacy superhero name: Karina-tron - cure all car-sickness, seasickness, motion sickness... maybe even love-sickness.



1T5 VICE PRESIDENT Peter Lam

My role: Working closely with all members of class council to ensure our class enjoys this school year, while having a smooth transition into our graduating year

Pharmacy superhero name: Pootar - I can eat as much as I want and will never be full. The endless flavours!



1T6 VICE PRESIDENT Stuart Alp

My role: I am the 1T6 Vice President.

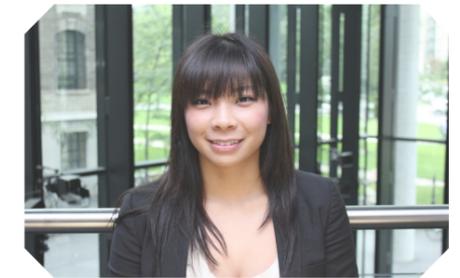
Pharmacy superhero name:
If I were a super hero I would be Statin Stu - I would help reduce your cholesterol.



1T4 PRESIDENT Davin Shikaze

My role: Work with Sugi to make sure 1T4-related business is taken care of. Offer UPS council opinions from an experienced 4th year.

Pharmacy superhero name: I'm not too sure what a pharmacy superhero is, but having Professor Utrecht's drug knowledge would be nice.
Editors: So, Utrechtin?



1T6 PRESIDENT Carol Nguyen

My role: Plan and run meetings with the council, make sure everyone is doing their work. I work closely with Stu, our VP, to plan Phrosh week and future events for our class.

Pharmacy superhero name: Honey Cocaine (dubbed by my classmates) - Making friends with everyone.

{Anti-calendars

FIRST YEAR COURSES

By NATHAN WONG
1T6 Monograph Representative

WELCOME, CLASS OF 1T7! To help you start off the year on the right foot, here is a bird's-eye view of what you can expect in first-year pharmacy.

PHM110: Health Systems I – H. Boon

These first 6 courses make up the first (fall) semester of first year. While the course is coordinated by Dr. Boon, she calls in different experts to field questions, give talks, and develop lecture notes. You will see this style of course a few more times before you're done. There are two writing assignments, so polish up your research skills and remember your essay formats. In regards to the exam, Dr. Boon takes class submitted questions and answers then puts them directly into the exam if she likes them.

PHM112: Pharmacy Informatics and Clinical Trials

M. Rocchi, A. Taddio

Dr. Rocchi teaches the first half on Informatics while Dr. Taddio fields the latter half. Informatics is a way of wetting your feet before second semester's MTM class (below). Spend some time with the blue book if you can; it'll help for the mid-term. Clinical trials lay the foundation for everything we know about medication. Dr. Taddio takes you through things using different trials as examples and makes things relatively simple. By the end you'll have a good background on pharmaceutical resources.

PHM142: Metabolic Biochemistry and Immunology

J. Henderson, P. O'Brien

This course will keep you on your toes in the first semester. There are key things you will learn to pick out and you will have to know them very well if you want to stand a chance. There are a lot of biochemical pathways to learn, so focus on the important parts. Do the presentation for the bonus marks, you may find the marks will come in handy. Make sure you take the time to do the assignments well as they are free marks you don't want to pass up on. If you keep your wits about you and put in the time, you might even learn something.

PHM144: Pharmacokinetics – C. Cummins

Dr. Cummins is one of the nicest professors you'll meet and she makes the math-based, slightly confusing, PK course tolerable-bordering on fun. Dr. Utrecht has similar questions every year so fish out the important concepts and you're golden. Dr. Dubins punctuates his notes with great examples and problems to work through, and his friendly and joking de-

meanor will keep you listening. Do the homework to keep on task or you'll find yourself cramming for the exam.

PHM145: Human Anatomy and Histology for Pharmacy

D. Ballyk

Dr. Ballyk teaches a tailored anatomy class to focus on the important things to know. It is very much a memorization based course but you'll want to go to class as not everything is in the notes and she may have exam questions based on spoken material. Class is enjoyable and Dr. Ballyk teaches well and is a pleasure, throwing in a joke or two. Study hard for the first exam because things will get harder later and you'll want the higher marks for a buffer.

PSL205: Basic Human Physiology – N. Kee

This is the online course, and there's really only one class you'll have to attend. Having the course modules online makes it easy to fall behind though, so be wary. The lectures are kept on a timer though, so you have three lectures a week that will become unavailable next week. Dr. Kee will have different lecturers fielding different topics to varied results. Overall though, the course is not too difficult and you'll find many similar topics to material you've studied before.

PHM101: Pharmacotherapy 1 - Foundations & General Medicine I - L. Raman-Wilms, S. Yamashita

The latter 6 courses mark the winter half of the year and make you step up your game. This course (Gen med) and PHM 105 (MTM) in particular are especially important to your development as pharmacists. Gen med is built around the care plan method of working through a patient's illness. Make sure you get this basic concept down as you'll be applying it regularly throughout your time here and especially during this final exam. There is a big focus on asthma and chronic obstructive pulmonary disease (COPD) and you will use this knowledge again frequently. This is one class you would best not skip so do your best to pay attention.

PHM105: Medication Therapy Management I - M. Rocchi

MTM marks the more practical side of pharmacy courses. You'll be learning about different categories of drugs each week and ideally remembering the major points on which to counsel on in mock consultations with your peers. There are a variety of other tasks that make up a set of cognitive skills which you are expected (and will) master by the end. You'll get a few zeroes at first as you learn how things work so use them as a stepping stone and you'll be fine. Lectures are helpful when she addresses common issues, but for the large part, the exams are common sense.

PHM114: Social and Behavioural Health

A. Thompson, Z. Austin

Dr. Thompson goes into the social determinants of health. The essay can be a bit vague and expectations, mysterious, but talk with the TAs to work through it. Dr. Austin teaches the latter half and it is much like a psychology course. I heartily recommend attending as his lectures are some of the most entertaining of the year. It helps to let all the behaviourism schools of thought sink in but the final exam is quite similar from year to year so practice them for sure.

PHM140: Molecular Pharmacology

J. Wells, S. Angers, P. Backx, C. Cummins

MolPharm was the course that got everyone worried during the winter. Dr. Wells starts off by giving a phonebook sized tome of photocopies and expects you to fish out the important bits for regurgitation on his parts of the exams. There is a wealth of old exam material for practice and he reuses a 90% of it so absolutely go through them and know them well. Angers and Cummins have material that is relatively easier, and they do their absolute best in presenting it in an understandable manner. Memorize the few details there are and the marks will come like rainbows after the storm of Wells. Backx falls somewhere in between the extremes; his material is dense, but presented fairly. His exam questions are fair, but time consuming.

PHM141: Pharmaceutics MacGregor, Chalikian, Wu

R. MacGregor, T. Chalikian, S. Wu

Ceutics is much like PK: math based application to drug development. It wasn't particularly difficult but requires more understanding than memorization. Dr. Macgregor has you recalling basics that you thought you escaped from and applies them in to pharmacy. Dr. Chalikian has a similar (smaller) set of printed notes to Dr. Wells which are very helpful and he draws from them considerably. Dr. Wu has very colourful notes which make the important concepts stand out. There is also a plethora of past exams as well which you should go through, especially for Dr. Chalikian's material (hint hint).

PHM143: Pathobiology & Pathology - R. Bendayan

If you have as bad a memory as I do, you may find Patho to be difficult as there are only two memorization-based multiple choice exams. But if you polish up your studying skills, you may praise the relatively lower workload. More good news, the lecture material mirrors topics in Gen med and MTM, giving a pleasant feeling of déjà vu. Each section is taught by different experts who bring different perspectives but also varied expectations. Exam questions are made up by individual professors and professionals. They tend to be more detailed and require more than simple regurgitation of facts.

SECOND YEAR COURSES

By LINDA LEE
1T5 Monograph Representative

PHM201: Pharmacotherapy II - Dermatology & EENT

D. Sibbald

If you have ever had itchy flakey skin or a weird bump on your face, you will want to listen in during this class. This course will be partly taught as didactic lectures to get you started in thinking about PQRST2, but then it will drastically shift over to the panel format. If you are afraid of public speaking, try not to worry too much about the panels (even though you must pass them), prepare for them like you would a test but remember that you are allowed to bring in paper notes. Oh yeah, remember Zinc Oxide (you'll understand soon enough).

PHM202: Pharmacotherapy III - Endocrinology, Nephrology & Urology – M. Battistella, H. Halapy

This course along with PCT 2: Dermatology & EENT will be the first of many courses you will be taking that explore specific therapeutic topics. Try to retain your notes and the information you learn in these courses because it WILL come up again, not only during your MTMs but also during your practice in pharmacy. For PCT3 specifically, the pattern is pretty straight forward: y didactic lectures on a topic, then given a patient case on that topic to 'work up' with a group, using the therapeutic thought process you learned in Gen Med in first year. For the exams, focus on the therapeutic thought process, be specific and include all the parts of the thought process. you don't have to recreate everything but the more you can recall the easier it will be for your care plan to complete.

PHM205: Medication Therapy Management

D. Kalamut, C. Natsheh

MTM 2 is a continuation of MTM 1, but it will also be an evolution of that course. During the technical skills section of the lab, you will work-up and complete a patient case while also accepting a verbal Rx which will become the focus of your patient counselling encounter later on in the lab while the normal chaos of phones and prescription checking goes on around you. Studying in groups after each PCT class or workshop could also help you refine your notes for these labs.

PHM212: Research Methods for Pharmacy

A. Taddio, L. Maccarthy

This course continues from the first year research methods course and will even repeat a lot of the same information. The most difficult part is distinguishing between all the terminology used in the course, so focus on that and using the definition to apply to the articles and scenarios that are given.

PHM241: Topics in Pharmaceutical Quality & Clinical Laboratory Medicine - C. Allen, R. Reilly, D. Dubins (Lab)

In the old curriculum the first year Pharmaceutics course was actually a whole year course, but now it has been split into two courses with this one containing the remaining sections and the laboratory section. The labs are pretty fun making tablets, lollipops and the occasional rectal suppository, so try not to work yourself up too much preparing for them. For the lecture section of the course, everything tested will be something that was presented during the lecture so try to pay attention even though the material does get a bit dry.

PHM242: Microbiology of Infections Diseases

I. Crandall

“If it’s moist and it’s not yours, don’t touch it!” -the most memorable, meaningful and hilarious comment Prof. Crandall made to us on the first day of class. It is something that you will quickly realize you do want to follow. This is a rollercoaster ride through the nastiest and dirtiest organisms you can think of and with the quirky comments, you are prone to actually enjoying and, better yet, remembering it for the exam. Prof. Crandall never tests anything not on his presentation slides, so sit back, relax and please cover your mouth when you sneeze.

PHM230: Physical Assessment & Injection Technique

R. Cambly

Textbook, textbook, textbook! Physical assessment is the one course that you will do better in, if you have access to the recommended textbook. Many of the exam questions will come from or be related to the textbook., The lectures provide a rough but for full definitions of any terms and explanations of assessments, you will need to see the textbook. Don’t let this scare you though, the course is really laid back, especially during the labs and the nurses are great and they will teach you lots during the labs if you ask.

PHM203: Pharmacotherapy IV - Infectious Diseases

G. Wong, N. Dewhurst

Infectious Diseases, also known as ‘ID’ is another PCT course that becomes a continuation of Microbiology while also being an elaborate memory puzzle as you try to retain the names of all the antibiotics from amoxicillin to vancomycin, to which organisms they can be used to treat. ‘Was it neisseria meningitidis or neisseria gonorrhoeae? or maybe it was just E.Coli?’ ...you get my drift. ID will not be easy, but as long as you start early, practice often and keep up with the lecture and workshop material you start to develop...*resistance*.

PHM204: Pharmacotherapy V - Cardiovascular Diseases

N. Crown, H. Kertland

Studying for other courses will take up a lot of your time but you do need to make sure you balance your time for cardio since it is the other big course alongside ID that will influence your success in the second semester. ID and Cardio function very similarly as they alternate their workshops with each

other so you only need to ‘work up’ one case a week. But don’t let your guard down: one case every week will quickly drain you, so working with others to refine your notes and understanding of the concepts will help you greatly and give you the best chance at providing the best care plans to hand in during the workshops. Take all this information to *heart* and make sure to *beat* it to a rhythm where you will get things done.

PHM206: Medication Therapy Management III

D. Moy, S. Singh

By this point you might be thinking you got the whole ‘MTM’ thing down and are ready to go straight into being a pharmacist. MTM 3 will show you that you still have a long way to go, as it completely changes in lab structure. In this lab course, you will be interviewing professional actors acting as patients or physicians or caregivers of your patient and it will be completely your responsibility to obtain all the necessary information to make an informed and appropriate recommendation. You will not have access to internet resources and you will have a time limit from the second you say ‘Hello,’ so be prepared, save your notes from PCT classes, and bring them.

PHM213: Health Economics and Pharmacoeconomics

P. Grootendorst

This course is relatively straightforward and will focus on information presented in the lectures while asking you to apply the concepts to different situations. If you have any previous economics or business experience, you will need to worry a lot less about the core concepts, but for those who haven’t had any experience, there was a custom textbook that was prepared for the course and it was extremely useful. Try to get an early start on the assignments once they’re posted because writing them the night before will haunt your dreams!

PHM214: Practice Management - B. Wilson

Bill Wilson is a legend in pharmacy. He will tell you about his tales of success... and some that were not-so-successful, but the bottom line is it’s all **GOLD** to him, as it should be to you. With an immense wealth of knowledge and experience that he is more than willing to share with you, take up his offers for things such as resume proof-reading! Just keep in mind that when it comes down to exam studying, **ACRONYMS** are your best friend for remembering all the lists in his slides.

PHM240: The Science of Pharmacotherapy - J. Utrecht

In the previous curriculum, this course was called Medicinal Chemistry and had long been a staple for the third year of pharmacy. Not much has changed since then; you will hear from previous students that it is a course to remember for one reason or another. A much different structure from every other course in pharmacy, as it will be primarily taught by you and your fellow class mates! The one thing to be told about this course: please be brief, talk slowly and loudly into the microphone, this will help not only yourself to get a better presentation grade but your classmates as they try to scribble down what you just said to study for exams.

THIRD YEAR COURSES

By JUSTIN SARACENO

IT4 Monograph Representative

Don’t look now, but that may just be a light at the end of the tunnel. Although Tox is the only course kept from last year for this year’s 3rd-year class, there’s a few other shared courses courses that second years may be able to find relevant here too. That being said, most of this is just a reflection back on some of my many fond and fuzzy memories from last year.

PHM320: Pharmaceutical Care (“Self Care”) -V. Arora

Coordinated by Vinita Arora with lectures delivered mainly by guest speakers,the content was based on topics commonly seen in community practice where OTCs play a role in their management. I wouldn’t recommend bringing your lunch to class as many lecturers revolved around pleasant subjects such as constipation, vaginal infections, urinary incontinence and ostomy care... which kind of makes me wonder why so many students end up calling it “Self Care”. Then again learning about the Bristol stool chart was pretty sweet. That was exactly what my stool diary needed. As far as tips go, reading through the Patient Self Care text or the lecturer’s notes was pretty well all you needed to study for the exams.

PHM321: Pharmaceutical Care II (“Therapeutics”)

Woods, Shaw

No doubt this course is where the money’s at. You get to learn all about putting together care plans, assessing therapeutic alternatives and of course working through the beloved therapeutic thought process. The fun started with infectious diseases and ended somewhere around osteoporosis. There were also 3 CSSs (group seminars) on UTIs, asthma/COPD, and diabetes just to give you more bang for your buck. This is also the type of course that caused everybody’s adrenal glands to meltdown before each of the 3 exams. As much stress as it was, I guess it was at least nice to freak out about something other than receptor binding profiles... as sadistic as that is. I would recommend staying on top of the lectures because cramming for exams isn’t really feasible here (ditto with the CSS). The DiPiro handbook is helpful for boiling down the pathophysiology, compared to the unabridged textbook. Use it to whip through the patho and then Therapeutic Choices or RxFiles to focus on the detailed therapeutic alternatives.

PHM322: Pharmacology & Medicinal Chemistry - J. Utrecht

I think that some of this course is now in 2nd year. Mercifully 3rd-year medchem was nothing like the one from 2nd year. Basically, the class is based around a series of questions which students answer individually while in a group up at the front. You have lots of time to get the answers in advance, and as long as you look mildly prepared you can get some pretty easy marks. The rest of the marks are divided up into randomly weighted midterms and a final, featuring questions based off the questions in class. I recommend filtering out the filler most students spew out. Look at what the question asks and write down an answer in 1 or 2 sentences. This really helps with the cumulative final. Also, for

the sake of your classmates, when it’s your turn to rock the mic try not to sound like you just downed 30 RedBulls. Keep your voice at a reasonable speed and volume and skip the hyperbole.

PHM323: Applications of Pharmaceutical Analysis - R. Reilly

This course was taught by Dr. Reilly, a man with a mysterious history. Rumor has it that sometime in the past, he injured his scapula in a skiing accident, only to acquire superpowers when he was injected with a nanogram of Technetium during an ensuing bone scan. Unfortunately for our class, these superpowers were limited solely to his knowing absolutely everything there is to know about Technetium. So was the state of our experiences with Dr. R in second year. This year, I found 323 at least marginally interesting and for a second there I almost knew the difference between a xumab and a mumab. Plus you can do reasonably well if you just study off the class slides. Overall, I give this course 93 Technetiums out of 98.

PHM324: Pharmacokinetics

D. Dubins, M. Piquette-Miller, S. Pang, S. Walker

Despite featuring an All-Star cast, this course was about as stimulating as a handful of diazepam. The majority of the course is based off equations so that you can do fancy things like figure out a drug’s clearance, dosing, and levels. I knew things were getting serious when they told us that it’s not actually ADME, it’s DADME. If this course now exists under some other title, make the most out of the 3 assignments as a way of getting marks. Each of the 2 exams were grueling 3-hour beatings that caused my hand to form into a claw; not fun at all.

PHM325: Introduction to Toxicology - P. Wells

This course is a lot like doing the limbo, only it’s a lot less fun and a lot more painful. But seriously, how low can you go? This course ruined a good chunk of 1T4s summer so if you’re going to stay on top of any course this is a good candidate. The main problem with this course is its exams. Each exam is based on only one (or two, on the final) topic, so if you get a topic that you weren’t able to cover in detail you’re in trouble. You also have to reproduce the exact figures from the right lecture in their entirety or you’ll get docked big. And even that will only get part marks, until you write everything out in exquisite detail. If you strike out on all of those you can end up with a freakishly low grade. To his credit, Wells tells you clearly what he expects you to know for the exam. I encourage you to write down everything he says verbatim at this point and make sure that you can draw these figures out in your sleep.

PHM326: Pharmacy Practice Management - B. Wilson

Billson ran this course like a rented mule. His lectures were filled with interesting stories, but studying for exams was another story, unfortunately, given that his slides were mostly random lists that he only haphazardly talked about in class. I remember having to make a mnemonic to remember the mnemonics I had made in order to remember all these lists. I’m guessing this is what rocket scientists do while they go through school.

I'd recommend going to class given that he only reads random things off random slides, so come exam time it's tough to know what to study. Then again, could anyone really be that hard on a course where you actually get marks for handing in your resume?

PHM328: Professional Practice - D. Moy, S. Knowles

Once again our class got another dose of professionalism. Overall this was a straightforward and useful course. The first half focused on drug interactions and adverse drug reactions/events. The second half focused on the pyramid of scientific literature and how to critically appraise RCTs and meta-analyses. Spoiler alert: Dr. Oz and Oprah aren't at the top of the evidence pyramid. Good luck explaining that to Jane Doe.

PHM329: Pharmacy Practice Lab - A. Lee, K. Tan

The 3rd year PPL (similar to MTMs, in newspeak) added a patient case where you were expected to put together a care plan, in addition to taking a verbal and processing two written scripts for the technical section. The counseling section started off simple enough with the first two labs testing device demonstrations and information gathering, but after this you had to be prepared to manage things like rheumatoid arthritis, diabetes, emergency contraception, etc. Despite these topics being covered in Therapeutics, being prepared to counsel on the meds and pick up DTPs took preparation and composure.

The TA acted as the patient and you were allowed to consult any hard references you wanted (usually the CPS, PSC, TC or Rx-Files) during the interview. The basic structure was to first get the patient information you need, determine any DTPs, and then, if the Rx was safe, provide counseling. If you missed a key question (e.g., allergies, pregnancy) or a key DTP (e.g., wrong antibiotic) it was usually an auto fail. The counseling was a far cry from the previous years' PPLs where most students recited speech-like scripts. There was usually little time left after looking through references and crossing your fingers that it's safe to give the med to the patient. It pays to be prepared for labs. If you're really in a pinch, at least read through Therapeutic Choices for topics you aren't familiar with. Just try to listen to what your patient is telling you to help clue you in about the primary issue in the scenario.

PHM330: Clinical Biochemistry, Pathophysiology, and Pathology - Crandall and friends

I think that 1T5 took a part (or all) of this course in 2nd year. Coordinated by Crandall, this is a good course to have for a full year. The course covers a wide range of mainly non-infectious diseases (renal, hematological, endocrine disorders, etc.), taught exclusively by guest lecturers through which the quality of the lectures varied substantially. I remember spending 4 hours (2 classes) with some pathologist on cardiology and the only thing I walked away with was the punch line from a joke... his slides were a joke too, a bad joke. Other presenters were also shockingly bad, so brace yourself. The exams were pretty straightforward to study; slides and lecture notes were all that you needed. Bonus: several topics also coincided with what we were learning in PHM 321, which made me feel warm and fuzzy inside.

**Exceptional People,
Exceptional Care!**

The Huron Perth Healthcare Alliance, a group of four rural hospitals in Southwestern Ontario, was created to maintain and improve the quality of local healthcare services in the communities we serve. Live an enviable lifestyle in a world-renowned, rural community within easy driving distance to Kitchener, London and Toronto.

For career opportunities within the Alliance please visit:
www.hpha.ca



**External Affairs
& UPS Present...**

**The External Affairs
Student Writing Award**

Two annual awards which recognize students who promote and raise awareness about opportunities offered by OPA and CSHP (1 award for each organization)

Criteria:

- Be an active student member of either CSHP or OPA
- Submit an article to the Monograph, between September and April, about a service provided by the organization that you are a member of. Examples include conferences, CE events, social events, etc.

Award value:

- 1 year membership in the organization
- Plaque with your name on it presented to you by a CSHP or OPA member at the UPS Awards Night in April

Questions?

Contact external@uoftpharmacy.com

**1-MINUTE READ:
5 THINGS YOU NEED TO KNOW**

"1 Minute Read" is a short list of recent things happening in healthcare that have an impact on the world of Pharmacy. References supplied upon request. You can check out all the previous "1 Minute Read" articles at www.soape.ca

1) ODB is limiting the amount of blood glucose test strips reimbursed after a report by CADTH showed limited clinical benefit in patients not on insulin. As of August 1st, patients managing their diabetes with medications other than insulin will only be reimbursed for 200 or 400 test strips (depending on their risk for hypoglycemia).

2) Canada's largest grocery retailer Loblaw buys the country's largest pharmacy chain, Shoppers Drug Mart, for \$12.4 billion. Loblaw acquires Shoppers' 1200 drug stores across Canada.

3) A safety review found prolonged use of Calcitonin nasal spray, a second-line treatment for osteoporosis, to slightly increase the risk of cancer. Although calcitonin injectable products will remain available, the nasal spray products will be taken off the market as of October 1st.

4) TalkRocket Go is a medical app that enables stroke victims with speech difficulties to communicate again. It has been added to Ontario's Assistive Devices Program to help cover some of the costs for patients.

5) Familiarize yourselves with the new Canadian Diabetes Association 2013 Clinical Practice Guidelines! A Quick Reference Guide can be found at: <http://guidelines.diabetes.ca/Browse.aspx>

As always, www.SOAPE.ca has our publications ahead of time!

Seann Seto
President 2013-2014

SOAPE
Students for Optimizing and
Advocating Pharmacy Endeavours

Hello Pharmacy!

First of all, we would like to congratulate the incoming Class of 1T7 and welcome them to the Faculty! Welcome back, the class of 1T6, 1T5, and 1T4. Hope you all had a fantastic summer :)

This summer between June 1st and 4th, we had our CAPSI National Meeting in beautiful Charlottetown, PEI. Attending were 31 National members who discussed, debated, and planned for this upcoming year. On the agenda was implementing the expanded scope of practice, sponsorship opportunities, events to hold throughout the school year, and symposia topics. The symposia topics you have to look forward to this year are on how to market yourself as a Pharmacist (what employers are looking for) and the continuum of care in hospital and community pharmacies.

Here is a quick look at what else we have in store for all UofT Pharmacy students, who are also all CAPSI members!

In September, everyone can pick up their handy CAPSI agenda and the first year students can get their Apotex/CAPSI backpack. Also, be sure to look out for our various fundraising events (including samsa sales, CAPSI cupcake sales, and pill

bottle candy grams) throughout the month for the CIBC Run for the Cure. If you're interested in joining our UofT CAPSI team, you can do so at: http://www.runfortheCure.com/site/TR/RunfortheCureFY14/Ontario/443739217?pg=team&fr_id=1724&team_id=54338



In October and November, we'll be holding our competitions! Everyone is welcome to compete in the OTC, PIC, compounding, and student literacy competitions. We will also have our mock OSCE, but this year it will be available to both third and fourth year students.

One of the new initiatives planned for this year is a used PCAT Book Fundraiser!

We'll be asking students to generously donate their old PCAT Books during the first semester – more details to come.

Our most adored CAPSI event is Professional Development Week, and this year it will be held in Vancouver, British Columbia! For more information about this student run conference, check out the website: <http://pdw2014.ca>.

We will be sure to keep you updated throughout the year on all our events from the NCAA basketball pool to the Mr. Pharmacy pageant during Pharmacy Awareness Month to lunch and learns in collaboration with CSHP (Canadian Society of Hospital Pharmacists) and CPhA (Canadian Pharmacist Association).

We hope everyone has a great year, and look forward to seeing all the students at our events!

Alysha Prata & Aarti Patel
Sr. CAPSI Rep & Jr. CAPSI Rep
torontosr@capsi.ca & torontojr@capsi.ca



By IDA-MAISIE FAMIYEH, 1T4

On July 16th 2013, approximately fifty pharmacy students strode in clusters through the familiar doors of the Leslie Dan Faculty of Pharmacy in their lab coats. It was a picture reminiscent of early morning professional practice labs. Their expressions revealed their zeal to volunteer and the proud feeling that comes with applying one's knowledge for the education of others. These pharmacy students dedicated their time, knowledge and skills to mentor the students of The Summer Mentorship Program (SMP) in the Health Sciences.

The University of Toronto SMP was established in 1994 by the Faculty of Medicine. The aim of the program is to address the concern about the under-representation of Aboriginal and Black students in the health professions at the University and throughout Canada. The SMP is designed for students with academic potential, an interest and aptitude for the sciences, and particularly for those who otherwise would not have the opportunity of mentorship available. Fifty high school students, 16 years and over, mainly from Aboriginal and African-Canadian backgrounds, are accepted to complete this intensive four-week program.

Over four weeks, the students visit the various health professional faculties - pharmacy, medicine, nursing, dentistry and social work - to learn more about these professions and their importance in healthcare. The program seeks to spark an interest in these professions and help students make informed and realistic decisions about their career paths. Students have the opportunity to shadow practitioners and clinicians in the community and in affiliated hospitals, to obtain firsthand exposure to their professional practices. The students are also assigned to mentors, current students of the health professional faculties, for academic and career-related help. The mentors serve as role models, providing supportive guidance and inspiring the students to pursue degree studies in the health sciences.

Once a student of the SMP, I deeply acknowledge the positive impact it has on the lives of these young adults. Not only did the program influence my academic decisions and career path henceforth, it also helped build my self-confidence as I navigated my way through the Canadian education system and cultural environment. Due to the instrumental role that the SMP played in my life, I decided to give back by coordinating the program in 2011 and 2012. Initially, pharmacy was not part of the affiliated health professional faculties. I advocated for the collaboration of the SMP with the Faculty of Pharmacy to provide the students the opportunity to learn more about the profession. This year marked the third year of Pharmacy's involvement with the program.

A half-day activity session was organized with the goal of educating SMP students on what pharmacy is all about. The day began with a welcome address by Professor Doris Kalamut, the faculty co-ordinator of the program. Justin Saraceno, Duke Boamong, and I, Ida-Maisie Famiyeh, then gave presentations on admissions and careers, student life, and the pursuance of dreams respectively. The SMP students were then divided into 2 groups to alternatively participate in the two activities of the

day; pharmaceutical and professional practice lab activities.

The pharmaceutical lab activities, organized by Professor David Dubins, gave students the unique opportunity to compound and formulate various dosage forms such as tablets, suspensions, and suppositories with the aid of highly competent pharmacy student volunteers. The importance of dosage forms in pharmacy practice was highlighted during the professional practice lab activities where volunteers guided the students through the prescription handling process. The students learned the important roles pharmacists play in recognizing drug therapy problems, the steps taken to resolving them, and the process of dispensing an accurate prescription. They also had an up-close look at the verbal prescription and counselling process.

Since its initiation, the Pharmacy field visit has become one of the most acclaimed events of the SMP program, through the efforts of volunteers and faculty members. It is hoped that these visits will resonate with the students throughout their education and influence their decisions when pursuing healthcare careers, while continuing to promote diversity within the health professions.

For more information about the SMP, please contact:
Professor Doris Kalamut doris.kalamut@utoronto.ca
Ida-Maisie Famiyeh im.famiyeh@mail.utoronto.ca



Ontario College of Pharmacists

Putting patients first since 1871

We are the registering and regulating body for pharmacy in Ontario.

For information on registration, please go to our website at

www.ocpinfo.com

PHARMACY ATHLETICS



Welcome back Pharmacy, and congratulations to the 1T7s!

Pharmacy athletics is a great way to get away from the daily grind of school and get to know your future colleagues, while staying active! Be sure to sign up for one (or more) of our many intramural teams. There are male, co-ed, female teams for a wide variety of sports such as basketball, hockey, volleyball, soccer, ultimate frisbee, and water polo. We will have sign up sheets posted in the student lounge so be on the look out!

We also organize the Robax Cup which is a year-long interclass competition. The class with the most wins at the end of the year will be crowned the Robax Cup champions! Participation counts so make sure all

your classmates show up to support your class!

Participating in pharmacy athletics will also earn you UPS points, a chance at winning an MVP award for an intramural team or being featured as our male or female athlete of the month! Getting involved is the best way to make the most of your four years at the faculty so come out and join us!

Kevin Yang
Male Athletics Director

Hazel Gamboa
Co-ed Athletics Director

athletics@uoftpharmacy.com



TORONTO NEIGHBOURHOODS

By NATHAN WONG, 1T6 Monograph Rep

Yet another welcome for the 1T7s into UT's pharmacy phamily! Needless to say many of come from different universities and can't wait to experience the city. Even if you are from Toronto, I'm willing to bet there are countless areas that you've never explored. So welcome to "The City Within a Park".

Yonge Street

If you've been to Toronto at all, chances are you know where Yonge Street is. Spanning the length of the eastern half of the U, it features the Eaton Center, three floors of typical mall fare, at Dundas Street. City events are held regularly at the nearby Dundas Square and Nathan Phillips Square. Stand around here admiring the various buskers and performers and you may find yourself assailed by the regular religious fanatics (BELIEEEEEVE). This area is a good place to start with its annual Nuit Blanche arts festival, held in early October, where the city is shut down at night for pedestrians to admire

various art projects from local and international talents. Heading up Yonge Street, you'll find scores of restaurants (including pharmacy favourite: Salad King), clothing stores, and strip clubs! Yes strip clubs!

The Annex and Koreatown

The Annex, located directly above U of T on Bloor and Koreatown, consists of bars, stores, and activities tailored to student interests. You can play cheap billiards (\$3.50/hr on weekdays) at the Annex Billiards club or hit up the Royal Ontario Museum when it's free for students on Tuesdays. And if you are a foody, then - Madison's has various daily deals, Future is a little café with two vices, beer and cake, and just around the corner is a hole in the wall called The Green Room. Cheap beer in a dark and crowded atmosphere is the motif here.. Heading past Honest Ed's, You'll find the infamous Snakes & Lattes board games café. There is also a \$5 all you can sing karaoke place nearby at BMB. Of course the area is dotted with delicious Korean food and even a small Korean grocery store.

Chinatown

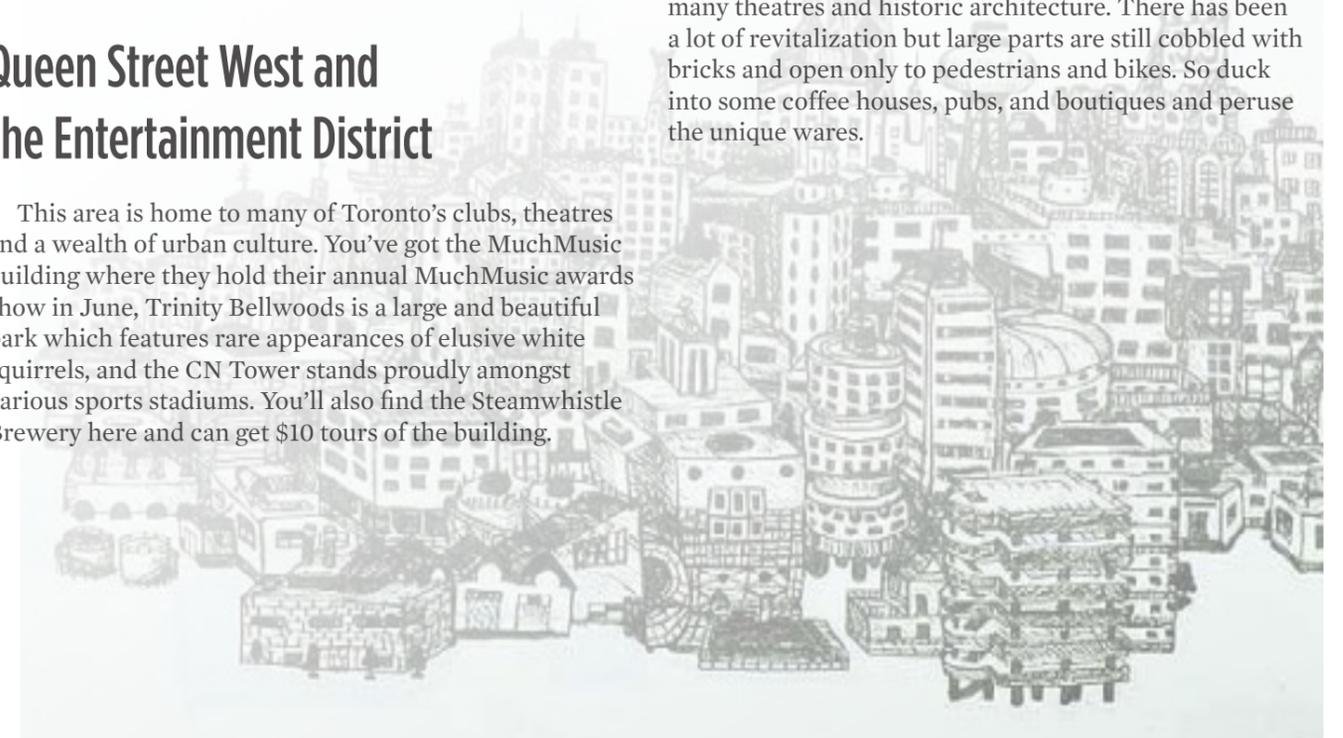
Southwest from campus, we have Chinatown which is centered on Spadina and Dundas. At its corner, you will find the Art Gallery of Ontario with its free entrance after 6pm on Wednesdays. Walking west, you'll pass numerous restaurants, bubble tea cafés, and every kind of knick-knack knock off store you'd expect from Chinatown. Upon reaching Spadina, you'll notice the prominent Dragon City Mall with its Sky Dragon Dim Sum, Owl of Minerva Korean restaurant, bubble waffles, and ofcourse karaoke. There are a fair number of grocery stores around as well as banks which are key because most grocery stores prefer taking cash. And continuing up along Spadina, there is a brand new board games café called Castles which charges \$2.50/hr.

Kensington Market

Just west of Chinatown, you'll hit Kensington, where you will find an abundance of fresh fish, meat, and vegetables. There is a huge Latin American presence here, complete with tacos, empanadas, churros, and jerk chicken. You will also run into few clothing stores here, but one that catches your attention is the specialized costume store, pulling out scary ghouls and sexy maids for Halloween, green top hats and belt buckles for St. Patrick's day, and Santa hats during December. Continuing west, you'll find Toronto Western Hospital, which has free shuttle bus service between it and Toronto General, providing easy access to the lazy.

Queen Street West and the Entertainment District

This area is home to many of Toronto's clubs, theatres and a wealth of urban culture. You've got the MuchMusic building where they hold their annual MuchMusic awards show in June, Trinity Bellwoods is a large and beautiful park which features rare appearances of elusive white squirrels, and the CN Tower stands proudly amongst various sports stadiums. You'll also find the Steamwhistle Brewery here and can get \$10 tours of the building.



Harbourfront and Toronto Islands

The Harbourfront is a great place to visit on a nice day. There is a music park inspired by Bach's Suite No. 1 in G Major for unaccompanied cello and different sections represent different dance movements. Nearby is the wadedocks, an artistic feature that bridges the gap between the land and the sea. The Harbourfront Centre is a large gallery for arts and crafts. It features free concerts, a small boating pond in the summer, and an ice skating rink in the winter. As you continue on you'll find the port where you can take a short ferry ride (\$7 return trip) to Toronto Island. You'll also find a small amusement park, kayak and boat rentals for the water and bike and amusing quadrupeds for the roads. And to get rid of those exam stress, you can relax on the abundant grass or nice sandy beaches. There's even a clothing optional beach for the brave!

St. Lawrence and the Distillery District

St. Lawrence Hall is rich with history and used to be the center of city events. But now according to National Geographic, the area is better known as the world's best food market. It features farm fresh local goods, antiques, restaurants, bakeries, and meat shops – a chef's dream. Try the smoked meat, the jarred marmalade, or the delectable sweet pastries. There is a historic walking tour with the official historian of the area, Bruce Bell that receives favourable reviews. Or you can venture a bit further down into The Distillery District and kick back with a nice cold microbrew. The Mill Street Brewery is located here along many theatres and historic architecture. There has been a lot of revitalization but large parts are still cobbled with bricks and open only to pedestrians and bikes. So duck into some coffee houses, pubs, and boutiques and peruse the unique wares.

A TALE OF TWO WORLDS / A TALE OF TWO LUNCHES

by JUSTIN SARACENO, IT4 Monograph Rep

What is the longest you've gone without human contact? If you've ever tried to beat the campaign mode in the original Starcraft you may have a pretty solid record to lay claim to, but my own record is my trek out to Algonquin Park last year after a busy summer of work. With less than a week before the start of school, I figured that a 4-day, 33 km hike through the bush would be a great way to get some peace and relaxation. Without seeing anyone or having any reception on my phone, I started to appreciate the isolation of where I was and what I was doing. Yet it wasn't until I was hiking the final few kilometres of the trail when I started to hear the barely audible drone of trucks roaring down Highway 60 that I fully appreciated the solitude in which I had just spent the past few days.

Several short hours later, I found myself smack dab in the middle of Toronto rush hour. I had spent an extra hour or so catching up with the beautiful scenery along the last lake I hiked by on my journey, forcing me into F1 mode in order to get the rental back, reaching the agency and handing over the keys with only 10 minutes to spare before closing time. As I walked through the busy downtown core carrying my oversized backpack with a garbage bag sheathed tent strapped underneath, I began to think of the stunning contrast between where I was now and my setting only a few hours prior.

Just as every inch of the forest was teeming with life, every inch of the city was bustling with cars and people. Passersby were shooting me peculiar glances, as if I were homeless or something. It was all rather amusing. As I crossed the street in front of my place I saw an acquaintance from the building that I lived in and greeted him: "Hey man, how have you been?" I said, trying to sound like some kind of hippie from California. "Hey I'm good, how are you?" he asked, seeming somewhat uncomfortable. "Well, actually man, it's been a really hard summer for me because I kinda got kicked out because I ran out of money for rent. You don't have a few bucks I can borrow, do you?"

As he awkwardly took out his wallet and fumbled around for change I eventually lost my ability to control my laughter and told him I was just messing with him. I'm not really sure he believed me after I walked off toward home, but I found it all the more amusing.

On a sunny day this past summer, I was having lunch outside and soaking up some rays when a middle-aged man approached and asked if he could share a seat at my table. It wasn't long before we struck up a conversation. He was at the hospital because his wife was being treated for a serious heart arrhythmia (suspected WPW); she was currently up in the cath lab for imaging and potentially to receive radiofrequency ablation treatment. He had come home earlier in the day to find her unconscious on the floor and his world had been turned upside down, he said. I did my best to reassure him that the cardiology department at the hospital was one of the best and that thanks to the latest technology, the procedure wasn't overly invasive.

Eventually, he brought up something else that had been bothering him. A few days ago his nephew, who was supposedly about my age, had just been diagnosed with brain cancer. For a second I was at a loss for words, but then I remembered those handy empathy skills from first-year pharmacy communications. "I can't imagine how difficult that news must be for your family..." His nephew had been given 5 years. Then I was caught off-guard when he proceeded to suggest that there's so much research being done nowadays that a breakthrough could be right around the corner. Before I knew it, I found myself being asked about what was coming next. The first thing that I thought of were the major advantages personalized cancer medicine would bring to treating patients.

By genotyping tumours, you are potentially better able to select for therapies that are likely to give a response. This is already being done when treating certain cancers (e.g., Trastuzumab in breast cancer over-expressing HER2). As the costs for genetic sequencing decrease and the evidence increases for selecting specific therapies based on tumor genetics, it is widely believed that this practice will be of benefit to many more patients in the near future. He then asked me if I thought that cancer could be cured. I explained that everyday research helps build up our understanding. I explained about biologicals, how they are made, and how they could become the mainstays of therapy as they get better and better at hitting specific targets. Sitting back down at my desk with my lunch only half-eaten, I was surprised with what I had just said. As a pragmatic person, taking an overly optimistic perspective is not something I do too often. With many challenges still to overcome in cancer medicine, I was at least able to give my lunch friend a better understanding of some of the promising technologies that are largely expected to revolutionize the field.

The common denominator between these two stories is that in both instances, I was surprised with how a change in perspective brought some interesting insight. I had never really thought about how far we've come in terms of tackling cancer and how to share that with a friend, relative or patient struggling to understand current advances in therapy. It wasn't until I encountered the hopeful perspective of the gentleman over lunch that I ended up connecting and verbalizing all of the information that had been residing somewhere in the back of my head. With my anecdotal walk through the city after returning from Algonquin, I realized that not everyone who appears dishevelled and reeks is really homeless. Admittedly slightly less profound than the first, maybe this can be used to my advantage to do some serious panhandling. That should help me at least get started on that long tedious path of paying back all the tuition and other expenses I've been deferring for too long...

~POSTCARDS FROM ABROAD~

The Namibian Experience by DINA CAROVSKA and MONA YOUNIS, IT4

Namibia is a small country located just north of South Africa. It has a population of about 2 million people, with 500,000 of them residing in the capital city of Windhoek. It is one of the least densely populated countries in the world with vast areas of inhospitable desert separating the different tribal groups dispersed throughout the Northern and Central parts of the country and the Western Coast. Its amazing landscape includes everything from mountains, sand dunes, deserts, an ocean, a canyon and more. Fun fact: it is the only country in the world where an ocean physically touches a desert!

The majority of our summer internship was spent volunteering at the Katutura Health Centre, which is an anti-retroviral pharmacy located in Windhoek, Namibia. Most of our days at the clinic were spent dispensing ARVs and counseling patients on the importance of adhering to their regimen.

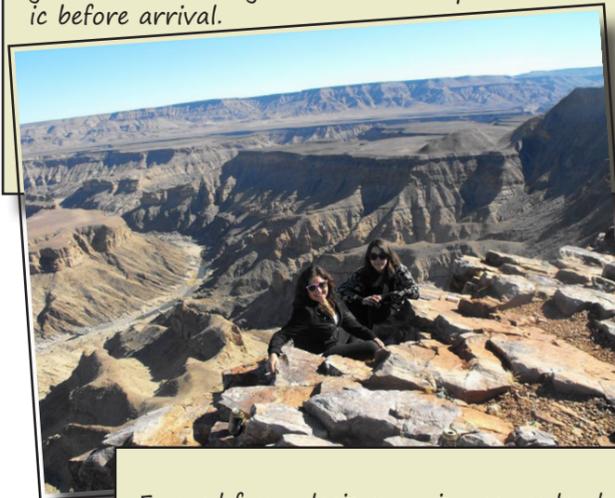
We also worked on a research project aimed at assessing the effectiveness of the pediatric disclosure process used at the clinic while also following up on the project implemented by last year's interns, Erin and Amber-Lee.

For students hoping to participate in this internship next year, we also created a training manual to allow you to familiarize yourself with the processes of the clinic before arrival.



We tried to optimize the time we had by doing as many new, fun, and exciting things as we could!

One of our most memorable trips was our adventure down to the South of the country to visit the Fish River Canyon - the second largest in the world, after the Grand Canyon in Arizona.

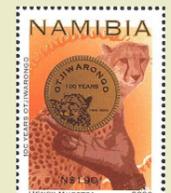


Formed from glaciers moving across land millions of years ago, the enormosity of the Fish River Canyon still had a peacefulness that was simply amazing.

As the boat slowed down to a dead stop, it wasn't even 10 min. before we saw A MASSIVE GREAT WHITE SHARK swimming by the boat looking for something to eat.

We were staring at this creature we had been avoiding our whole lives, waiting in line for a chance to be face to face with it, and then another one came. We heard, "PUT YOUR WET SUITS ON...it's time to go in." We climbed into the cage with a SHARK ALREADY 3 METRES AWAY.

We took a deep breath and were submerged, the sharks trying to get the bait right in front of our eyes. Jaws opened, heading towards the cage, great whites seen only on TV were staring at us with their dead black eyes. We had survived, and also faced our fears.



Feels of China

By JOYCE WANG, 1T6

I began my tour of Beijing on August 15, 2013. There are many aspects of the city that I want to make a note of to reflect the modern life in China, my native country.

The city of Beijing is well structured and divided into 7 rings. Tiananmen Square is in the centre, and everything within the 2nd ring is considered downtown or “the real” Beijing. The seventh ring outlines the border between Beijing and the next province, Henan. I stayed at the 4-star Metro Park Lido Hotel, located outside of the 4th ring. Services are available in many languages and I’m surprised and impressed with their quality of service. From what I understand, there are 16 million Beijing citizens and 8 million temporary citizens without Beijing passports.

Due to the large population and limited resources, prices have been skyrocketing over the past several years. Property and daily living costs have become much more expensive, furthering the gap between people of different social statuses. For example, the centre of Beijing or any new high rise can easily cost up to 50,000 RMB (about \$8000 Canadian) for one square metre, and range from 20,000 to 30,000 RMB near the outskirts (\$3,000-\$5,000 CDN).

A pair of jeans equivalent to Levi’s or Hollister costs around 800 RMB or \$130 Canadian. At San Li Tun, a famous bar street and tourist attraction, three friends and I spent 900 RMB in total (\$150 CDN) for four drinks, some popcorn, and a fruit plate. In Canada, this might have cost around \$40. On the other hand, in Hou Hai (Back Sea), drinks and food cost much less, attracting students and the youth. There are definitely a lot of places in Beijing to have a good time in, but it is important to be wary of the area.

As I sit in Starbucks, I see people who drive Porsche and Audi luxury cars while many others ride bicycles or squeeze onto busses and subways. There are people who impulsively spend a couple of thousands a night and there are others who barely make enough to cover rent and food every month. The sense of identity must be very different for individuals in this city, and possibly also the rest of China.

I think to myself, I am lucky to study at a well-known university and have a bright future. Because of the large population in China, it is incredibly competitive to get admitted into any program at a reputable university. So yes, it is true that people can choose their lifestyles and determine their future, but their chances at success is also

much smaller. It is harder for many people in China to get to where they want in life, compared to us in Canada.

I think to myself, what would I have become if I had stayed in China? I was from a middle class family, had a comfortable lifestyle, and had good enough grades in school. But would my perspective change? What would my sense of identity be and would I still feel the same about status quo, empathy and compassion? Or would I take things for granted and become materialistic, not by choice but due to societal biases. Would I compare myself to others and have a sense of superiority or feel inferior?

All these are questions make me wonder a little about fate and realize how fortunate I am to be where I am. The bigger picture is that there are many others my age that live very different lives. In a society where money and power ensures a sense of security, there are people working much harder just to achieve a secured lifestyle. The lifestyle I have now, which I sometimes take for granted, could require much more work and effort in another part of the world. I feel a sense of gratefulness for the life I have and hope to make the best of it.

Dreaming of the Delacorte Theater: Summer in the heart of New York City

By LINDA LEE, 1T5 Monograph Rep
& JON CHANG, 1T5

If you are reading this, school has already started and you are now once again strapped down by the heavy burden to study hard while you would rather daydream the minutes away....

How about the following an image? A place called the *Delacorte Theater* in New York City. This is a massive outdoor open atmosphere theatre established in 1962 and located in the heart of New York’s Central Park, just off 80th St. Its massive 1900+ seating capacity can fit the entire U of T Pharmacy student population, and more, at the same time.

The Delacorte Theater’s main at-

The Pharmacist: ZOMBIE APOCALYPSE

By ARMAN ZERESHKIAN, 1T4

Prologue: It is often that I have friends and acquaintances ask me about the utility of pharmacists in modern society. Most of us have been trained well enough to have a spiel ready for this not just for our friends but for our patients. You know the one I’m talking about: how we are the last line of defence against bad prescribing, we help patients with side effects, we can dose adjust, inject, pharmacotherapy this and that, and so forth! But when someone asks me about the utility of any profession in modern society, I ask myself, what would they do in a zombie apocalypse?

Chapter 1: The Beginning

It is the year 2031. The world began coming to an end in 2020 when the prison systems decided to use human experimentation to cut costs. It wasn’t short after that the experiments went wrong and massive breakouts resulted in the contamination of most people in the city of Detroit. We were smart and managed to quarantine the infection from passing the Canadian border but other cities around the world were not so lucky. To address this oncoming zombie apocalypse, health care, education, and military funding were diverted to coping and fighting this zombie infection if it were to ever cross our borders.

On July 30th, 2029, the infection managed to cross our borders and quickly spread in Toronto, Vancouver and Montreal. The infection affected the elderly faster than others and they were able to spread it to others within days. This was bad news for pharmacists who were working on the ODB turnover date of August 1st, easily infected by the hordes of elderly patients yell-

ing about the cost of their medications. traction is called Shakespeare in the Park where annually produced plays are shown on the live stage for free! The theatre was established on the belief that all forms of art (including theatre) should be available to the public for free, and they definitely nailed this belief right on the spot. Many famous actors are occasionally involved in the production of a play and may even be cast in a main role. Notable examples have included Denzel Washington, Al Pacino, and Meryl Streep.

This past summer, Delacorte Theater featured a musical adaption of Shakespeare’s *Love’s Labour’s Lost*. If you haven’t heard of *Love’s Labour’s Lost*, there

is plenty of information out there about the play which you can peruse. You can think of this version of the play as an episode of *Glee*, written by Shakespeare, filled with dazzling costumes of all different imaginable colours, with a working Jacuzzi hot tub, containing a fabulous singing Spaniard named Armado, with confetti falling from the sky, all rounded off with a complete marching band.

Still, one cannot fully explain how amazing the actual play was to see. The production quality and effort put into each performance were in our opinion at least as good as than in Broadway musicals. Definitely recommended

By 2031 my friends and I had made it as far as Moose Factory, Ontario. News reports on the radio were becoming fewer and fewer, but most of the country to the south had been over-

run and it was a constant race north. There were theories out there that in the winter months the zombies would slow down and their movements became sloppier due to the colder temperature hindering their movements. So our plan became to keep going north. It wasn’t long till my friend Tom ran out of his asthma medication.

This is where I came in! The faculty had anticipated this and spent a lot of time looking at plant sources for treatment of common ailments. They had also trained their students how to properly prepare these medications from the plants. It’s for that reason that I carried a bag of various plants, herbs and seeds along with other medication. In the event we could find a safe haven to finally settle down from the zombie hordes, I could plant the seeds and start my own pharmacy.

But that was not meant to be. *To be continued?...*

to be seen if you ever do get a chance. A word of caution: the Delacorte Theater is very popular and many people start waiting in line at 6 AM with camping equipment, books and lawn chairs to wait for the ticket distribution at noon. It can even get worse when famous actors participate in the production of the play. When Al Pacino was cast in a play a few years ago, the ticket line started at 4 AM and exceeded 4000 people every day.

But don’t let that drain your hopes - if you show up at least 2 hours ahead of time, you still have a good chance at getting a ticket. Cheers and happy dreams!

THE MONOGRAPH 21

{ Research in Pharmacy

Alongside the daily hum of student and staff activity inside the Pharmacy Building, there is a constant simmering of activity higher up above the vaulted reaches of the atrium: the research laboratory and office spaces spanning the 9th to 12th floors.

The Leslie Dan Faculty of Pharmacy lays claim to some 60-odd talented research leaders within their fields, including some cross-appointments to the Dept. of Pharmaceutical Sciences, as well other University departments and academic clinical sites.

The Pharmacy Building is home to a considerable number of researchers who conduct their work on-site, divided among the three main pillars of research: Molecular Pharmacology & Toxicology, Pharmaceutics & Pharmacokinetics, and Clinical, Social & Administrative Pharmaceutical Sciences.

This month, meet **Professor Raymond Reilly** (turn over to pg. 24-25), Associate Dean of Research, and cutting-edge cancer researcher in Pharmaceutics & Pharmacokinetics.

A wealth of research effort can also be found elsewhere in and around the area.

Next to the University campus, closest at hand are the “Hospital Row” pillars: University Health Network (including Toronto Western and Toronto Rehab), Mount Sinai Hospital, and the Hospital for Sick Children. To the southeast is the Keenan Research Centre at St. Michael’s, while Women’s College Hospital lies on the east bank of Queen’s Park.

Taking into account as well the MaRS Centre for Innovation, which houses well-established research labs along with cutting-edge biotechnology start-ups, the Faculty is located within a truly exciting hub, the **Discovery District**.

For pharmacy students interested in research, there are numerous opportunities to explore.

WHAT IS **DUE**? By ERIN CHUNG, 1T4

Drug Use Evaluation (DUE) is defined by the World Health Organization as “a system of continuous, systematic, criteria-based drug evaluation that ensures the appropriate use of drugs.” It involves a comprehensive review of medications administered to patients to ensure appropriate prescribing or dispensing, positive outcomes, and improve quality of patient care, as investigated through prospective, concurrent, or retrospective studies. The results are then used to initiate actions to improve drug therapy for patients.

When I was first introduced at the Toronto General Hospital Pharmacy staff meeting as “the DUE summer student”, I noticed confusion on the faces of other pharmacy students and technicians. I was not entirely sure, myself, about what I would be doing.

Then I began my summer work with Donna Lowe, PharmD, who is the Drug Utilization Coordinator at TGH. It was a wonderful learning opportunity that went beyond our school curriculum. Over the course of four months, I worked on three projects with differ-

ent teams of pharmacists and physicians: (1) reviewing the efficacy of sildenafil in pulmonary hypertension post-heart transplant; (2) literature search update on dabigatran drug interactions; and (3) outcomes of piperacillin/tazobactam vs. other antibiotic therapy in patients with ESBL-associated bacteremia. These studies will be published in the near future. I was also able to explore different clinical areas of UHN by shadowing pharmacists in the Cardiovascular ICU, Medical/Surgical ICU, psychiatry, thoracic surgery, respiratory unit, and the outpatient oncology pharmacy.

This summer, I learned that many hospital pharmacists are actively involved outside of their clinical roles, in research and teaching – including Donna Lowe and Karen Cameron, to both of whom I am grateful for coordinating summer student projects and learning activities.

Erin welcomes questions about DUE, research, or hospital pharmacy practice. She can be reached at erin.chung@mail.utoronto.ca.

PHARMALOGUE

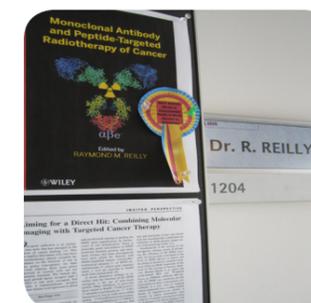
In conversation with Professor Raymond Reilly



Toss the words “cancer therapy” around a room, and you’re sure to elicit a minefield of opinions - some enthusiastic and some grim. Established protocols for chemotherapy and radiotherapy are often powerful weapons, but they are notoriously draining upon the body’s metabolic reserves, resulting in the troubling and often debilitating side effects that exacerbate an already weakened and painful state.

The past 20 years, however, have seen the emergence of targeted cancer therapy, an approach that seeks to hone in on and cause damage more specifically to cancerous cells, rather than healthy ones.

At the Leslie Dan Faculty of Pharmacy, the Laboratory of Molecular Imaging & Targeted Radiotherapeutics (LMIR) led by Professor Raymond Reilly has been developing unique ways to target cancer cells, using high-precision techniques involving radiopharmaceuticals. The lab has two main areas of research: developing new imaging agents for cancer, and developing new radiopharmaceutical therapeutic agents.



Radiopharmaceuticals are drug molecules with a radioactive isotope component. They are administered at lower doses for use as imaging agents, while higher doses are typically for therapeutic use. “We’re trying to develop imaging agents [to] tell what kind of properties a tumour has, and then select patient-specific targeted therapy,” explains Prof. Reilly. “Also, imaging agents to reveal whether a patient is benefiting from a given therapy.” In fact, one of the radiopharmaceuticals developed in the LMIR is entering clinical trials as a new imaging agent for breast cancer, testing whether a given patient will respond to a targeted, monoclonal antibody (mAb) drug called trastuzumab (Herceptin).

The use of radioisotopes may also one day help to “overcome” resistance to Herceptin, “a drug [to which] HER-2-positive breast cancer patients respond very well,” says Reilly, but one in which resistance has tended to emerge beyond the 1st year of therapy. Viable follow-up therapy options remain far and few between.

Reilly highlights the cancer biology concept of the cancer stem cell. Most well-known is the leukemia stem cell, discovered here in Toronto by Dr. John Dick, an internationally renowned cancer researcher at Toronto General Hospital. Cancer stem cells are posited as the “seed” from which cancer is said to originate, and the main reason why established therapies have been imperfect in “curing cancer”. Chemo- and radiotherapy do indeed kill the more differentiated tumour cells, but allow the stem cells to remain and survive. These will eventually enable repopulation of the tumour, leading to recurrence of cancer.

“We’re trying to develop a radiolabelled antibody treatment that targets the leukemia stem cell to hopefully eradicate it, so that you could envision, in the future, actually curing someone of cancer and not just causing remission of their disease.”



The lab works with mouse models of cancer, grafting in human tumour tissue cultures. Nuclear medicine is very much based on cell biology. Working to target a particular cell surface protein called CD123 on the leukemia stem cell, one strategy is to take the specific mAb and attach a radioisotope, then enable internalization into the nucleus. The radioactivity is useful in imaging to see general localization to tumour sites. Attached to the mAb, they also enable the researcher to detect specific drug delivery and local effects.

With his evident passion for this specialized line of work, it’s interesting to note that Reilly had not planned on a pharmacy career involving research, much less one spent in

academia. “When I graduated, I thought I’d be a pharmacist working in community pharmacy,” he says. A couple of years into the job, he felt the impetus to explore something different. One of his former professors at the Faculty had been Prof. Fred Teare, who taught a 4th-year elective course on Analytical Toxicology. Fond memories of the course seemed to point to forensic toxicology as a potential career direction.

Teare persuaded his former student to instead look more into the promising field of nuclear pharmacy – then known as “radiopharmacy” – which would combine his pharmacist credentials with specialized training in compounding, analysis, and quality control of radiopharmaceuticals. Reilly went on to complete both a Master’s degree and residency training in nuclear pharmacy, then over a decade as nuclear pharmacist at Princess Margaret and Toronto General Hospitals.

“Keep your mind open to possibilities... interact with your professors [who] can give you lots of ideas about opportunities for the future,” Reilly advises. To elaborate: “My advice is to consider that you’re actually studying pharmacy as a field. There’s lots of applications for that knowledge [including] to take your education and combine with [another] degree or qualification.” Pharmaceutical legal analyst, pharmaceutical investment consultant, and intensive care specialist are just a few examples.

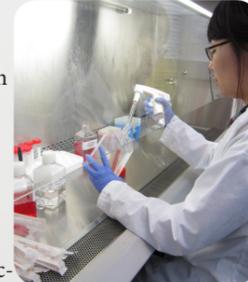
“I’ve taken away a lot from my training and my time as a nuclear pharmacist [to apply] in what I do in my research right now,” such as “an awareness of pharmaceutical quality. The courses that I took as a pharmacy student on pharmaceutical quality control, formulation, pharmacology, physiology, and pathology... all gave me the ability to read the clinical literature and appreciate it from a different point of view.”

So what makes the radiopharmaceuticals being developed by the LMIR “better” than standbys such as Technetium-99m? Specific properties which can improve their utility in imaging and therapy. “The radioisotope we are using, Indium-111, emits two types of radiation,” explains Reilly. “Gamma radiation is good for imaging. The other type are very low-energy Auger electrons, which also travel very short microdistances - less than the thickness of a human hair.” Given the energy per unit distance, the potential damage that these kinds of isotopes wreak is great when deposited into specific spots, such as localized tumours, while sparing healthy tissues out of range. Reilly likens the difference in damage to swinging a baseball bat in a small, crowded room, as compared to a wide open field.

Take it from the past-winner of the Association of Faculties of Pharmacy of Canada Pfizer Award, among other accolades: the pathways of the clinician and the researcher do not have to diverge. A simple case in point: the processes that Reilly is overseeing in preparing radiopharmaceuti-

The Training

- BScPhm, University of Toronto
- MSc in Nuclear Pharmacy, U of T
- Residency in Nuclear Pharmacy, Chedoke- McMaster Hospital, Hamilton, ON
- Nuclear Pharmacist, UHN
- PhD in Medical Biophysics, U of T
- Full-time research & teaching at Leslie Dan Faculty of Pharmacy, 2003



Career Highlights

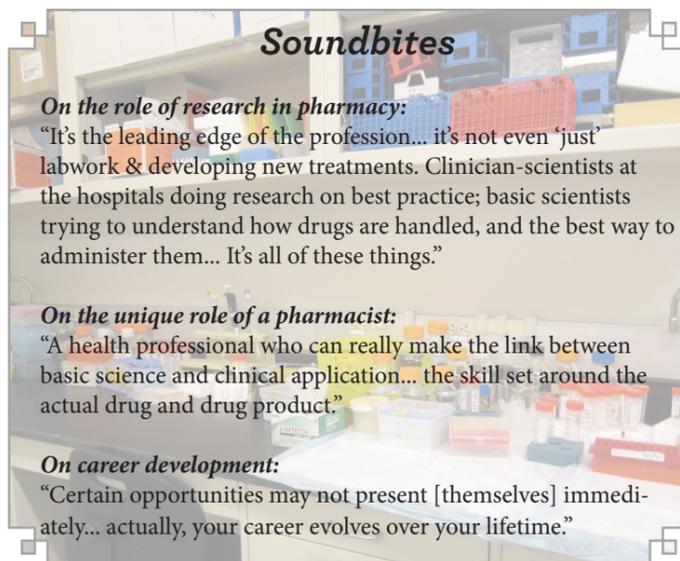
- Professor, Faculty of Pharmacy
- Associate Dean of Research
- Principal Investigator, Laboratory of Molecular Imaging & Targeted Radiotherapeutics, Pharmacy Building, 12th floor
- Oversee graduate students, post-doc fellows
- Teaching in undergraduate pharmacy
- Representative of the research, the profession, and the Faculty at various events, including Research Matter Conference, Ottawa, April 2013, and media platforms
- <http://www.citynews.ca/2013/09/12/citynews-cynthia-mulligan-braves-edgewalk-to-raise-breast-cancer-awareness/>

Soundbites

On the role of research in pharmacy:
“It’s the leading edge of the profession... it’s not even ‘just’ labwork & developing new treatments. Clinician-scientists at the hospitals doing research on best practice; basic scientists trying to understand how drugs are handled, and the best way to administer them... It’s all of these things.”

On the unique role of a pharmacist:
“A health professional who can really make the link between basic science and clinical application... the skill set around the actual drug and drug product.”

On career development:
“Certain opportunities may not present [themselves] immediately... actually, your career evolves over your lifetime.”



cals for clinical trials are “based on the same principles as the [agents] I made for 15 years as a nuclear pharmacist.”

This past spring, Reilly was the sole health research delegate at the Research Matters conference hosted by the 21 Ontario universities at the House of Commons, speaking about the resonating impact that academic research can have. It is hoped that with increased understanding of targeted therapy, translational research will enable greater finesse in providing cancer therapy to the right patient, in the right way. As Reilly says, “Research [is] actually part of the field & profession of pharmacy. The only way to move things forward - to have new treatments for the pharmacist to advise the patient on 10-15 years down the road - is to have someone in the lab, developing them.” ■

ABBY & BRITTANY

By YIN CHENG, 1T5

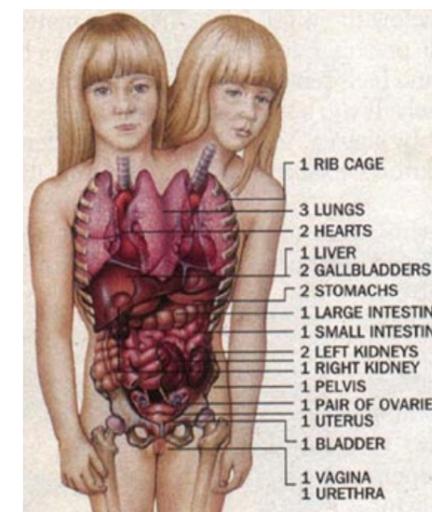
You know how all the cool people caught the season finale of *Mad Men*, *Suits*, *Game of Thrones*, and *Dexter*? You know what I was watching? TLC. That’s right, TLC, formerly known as The Learning Channel. This programming is flaw free. Every show is full of overly-fertile types, angry bridezillas, and hormonal couponers. My current favourite is, of course, *Here Comes Honey Boo Boo*, which features a chunky little pageant princess and her family.

Recently, though, I discovered TLC’s *Abby & Brittany*. Ay Chihuahua, they are CONJOINED TWINS! This is a phenomenon I wish I knew more about. Apparently, conjoined twins occur in roughly 1 to 50,000 to 200,000 births. Southwest Asian and African parents are slightly more likely to have conjoined twins. There are two main theories as to why conjoined twins happen: 1) Fission – where the fertilized egg splits partially, or 2) Fusion – where the fertilized egg does separate completely, but stem cells on one twin fuse to those on another (I call this the “Class 5 Clinger” theory).

Abby and Brittany Hensel are dicephalic parapagus twins. They have separate heads but joined bodies; what’s particularly interesting is that each twin controls one half of the body. Despite this division, they are incredibly coordinated. They can clap, play the piano, walk, run, and *drive*.

Watching them drive is nothing short of miraculous. They control parts of the car on their respective parts of the body. They control the steering wheel together. They have two individual Social Security Numbers, thus have two driver’s licenses. They each had to take their turn taking the written and practical driving tests. While at school, because they took up only one spot in a classroom, and oftentimes only turned in one assignment between the two of them, they were charged 1.5 times tuition. On planes, they purchase just one ticket. When they write emails or use the computer, they type and respond as if joined at the mind. Whoa!

This whole thing led me to think of how they access the health care system. Think about it! They have 2 heads, 2 spines, 2 arms, 2 hearts, 4 lungs, and 2 stomachs. They share 1 diaphragm, 1 enlarged liver, 3 kidneys, 1 large intestine, 1 bladder, and 1 reproductive system. If they had a urinary tract infection, would the doctor bill them both for a visit? Or would they bill per organ? Do they have one health insurance policy or two separate ones? If the doctor wrote a prescription for ciprofloxacin, would it matter which twin actually took the medication? How would the Narcotic Monitoring System work? Presumably if they were



PICTURE FROM VERASTIC.COM

Canadian, they would have separate OHIP numbers and cards. Thus, if one twin received a script for Tylenol 3’s on Monday, and the other twin received a script for Percocet on Wednesday (let’s presume they went to different walk-in clinic doctors), would this be considered double doctoring? Would this be considered an early refill? I know these are a series of wild hypothetical questions, but this is the stuff my brain thinks about.

But wait! From a pharmacy services point of view, Abby and Brittany would only need one flu vaccine (they share a circulatory system). If you were to provide them with a MedsCheck, though, would you bill both of them? What if Abby and Brittany applied to pharmacy school? Would they write one PCAT, but get separate MMIs? What if the admissions committee decided one was less qualified for

admission? If they were to be admitted, though, for convenience, it may make more sense for them to submit shared assignments and shared examinations as they have done in high school and university. Would they apply separately or together for licensure? Once practicing, if allegations were brought forward towards one twin only, would the other twin be obligated to share in that guilt and possibly repercussions.

Abby and Brittany, having majored in education at Bethal University in St. Paul, Minnesota, have individual teaching licenses. Logically, they would require a job in which they can share teaching space. In their first teaching position, they each receive half a salary. They hope, however, to be able to negotiate in the future once they are more experienced, because they both have something to contribute, and clearly although they share one salary, they have more to offer as a team than one person. Paying twins with two individual teaching licenses one shared salary seems like an interesting legal issue.

Conjoined twins must also confound the legal system. If you charged one twin, and attempted to incarcerate them, you would inevitably end up illegally detaining the other twin. Historically, such charges have been dropped. In the 17th century, a Parisian conjoined twin accused of stabbing a man to death was let off because it would have been illegal to execute the innocent twin. As to civil rights: in the 19th century, Chang and Eng were conjoined twins who married two sisters and had 10 and 12 children, respectively. These brothers were joined at the liver, yet had separate pelvises and reproductive systems. Abby and Brittany share a pelvis. They have both expressed an interest in getting married and having children. Can a child have two legal biological mothers? From a bioethics point of view, what would happen if one twin protested the reproductive rights of the other? Whose right to the womb would preponderate?

This is the stuff I wish I knew more about. What an extraordinary pair!

DINING OUT: SWEET EATS AND TREATS

By JOANN BAN, IT5



PICTURE FROM "SEVEN IMPOSSIBLE THINGS BEFORE BREAKFAST"

Whether you're new to Toronto, looking to fill up on a night out with friends, or finding a relaxing atmosphere for a first date, these spots are guaranteed to make that special lunch or dinner even better!

The Grilled Cheese – 66 Nassau St.

If you have an hour to kill in between classes, swing by Kensington Market and grab a gourmet grilled cheese sandwich. "Apple Crisp" is my top pick! Filled with caramelized apples, guacamole, and cheddar, and a side of potato chips and a pickle, this sandwich will fill any craving for melted cheese goodness.

Fusilli's - 531 Queen St. E.

An intimate Sicilian eatery tucked away in Corktown, this little restaurant is not only inexpensive, but is the perfect place for a cozy night out and mouth-watering pastas! Must-tries include the salmon fettuccine and the gnocchi melenzene.

Best of all, this is a small family-owned restaurant in which the owner will make up any dish you want if the menu doesn't suit your tastes.

Ciao Wine Bar - 133 Yorkville Ave.

If you're craving some Italian dessert after a night out and just happen to be in the Yorkville area, stop by Ciao Wine Bar. For those chocolate-and-nut-lovers, and namely, Ferrero Rocher fanatics, the Chocolate Baci Bombe will satisfy any cravings you have in this domain. It is essentially a very rich, golf-ball-sized Ferrero Rocher with a dark choc-

olate-cruled coating, a hazelnut praline filling, and a base made of wafer – and one of my favourites!

Wish - 3 Charles Street E.

The service is definitely not something to boast about when it comes to this restaurant. However, if you're looking for an outdoor patio, and a fancier place to have brunch with some girlfriends, I'd definitely recommend *Wish*. The brunch menu offers dishes that definitely bring breakfast and lunch together. The icing-sugar-coated challah French toast with caramelized bananas will meet anyone's craving for a sweet, sugary breakfast. Feeling like lunch? Go for the charlotte: poached eggs and parmesan fondue drizzling down a smoked salmon topped English muffin.

Guu Izakaya - 398 Church St.

Pretty much everyone I know who has been to this place can't help but rave about it so I thought it deserved a spot on this list. This place has a mission to make you feel welcome and leave you smiling as you leave. This restaurant is a hustle-and-bustle of cooks and waiters chanting and cheering in Japanese and loud chatter from a crowd of people eager to enjoy Japanese tapas-styled creations. Dishes like the saba, a hot plate of grilled mackerel seasoned with dill, garlic and lemon, and the kinoko bibimbap, a bowl of rice and mushrooms infused with cheese and seaweed, always keep me returning for more.

RECIPE: JAPANESE RED BEAN DESSERT

By MELISSA LAM, IT5

Makes two pies (8 or 10" pie trays)



PHOTOS BY AUTHOR

Ingredients

- 2 cups of glutinous rice flour
- 1/2 cup of rice flour
- 3/4 cup of sugar
- 2 eggs
- 1 tsp of baking powder
- 1 + 1/3 cup of milk
- 3/4 cup of oil
- 1 can of red bean paste

Instructions

1. Preheat oven to 400- 425°F.
2. Mix dry ingredients and wet ingredients in separate bowls; then mix everything together.
3. Use a spoon to cover the pie tray with a thin layer of the mixture.
4. Put the pie trays into the oven to bake until the edges are light golden brown (should take 8 to 10 min).
5. Remove the pie trays from the oven and spread red bean paste on top of the baked layer.
6. Cover the red bean paste with the remainder of the mixture.
7. Bake until the pies are light golden brown (30 to 40 min).



2 TYPES OF RICE FLOUR

STEP #5: SPREADING RED BEAN PASTE



Hope, Strength, Humanity

At Lundbeck, our approach to innovation is shaped by our Danish origins, a centuries-old tradition of respecting every individual and taking care of one another in times of need. It's part of our culture, and it's something we know Canadians take to heart.

This focus on the individual has already helped us become specialists in CNS disorders, changing the lives of people all over Canada. And now we're applying that same passion and drive to oncology. Creating partnerships, working with healthcare professionals and putting patients first will always be an important part of everything that we do, and we will continue to lead the way as we branch out into oncology.

At Lundbeck, caring is our culture.





I don't know what you heard about me
But you can't get narcotics out of me,
Especially none of that morphine
Caus I'm learning pharmacy at U of T.

I don't know what you heard about me
But you can't get narcotics out of me,
Especially none of that morphine
Caus I'm learning pharmacy at U of T.

You come September 3rd, pay 16000 dollars.
OSAP is not enough so you gotta borrow from mama,
Wish I could get Uetrecht's money to deal with this drama.
He's feeding us knowledge and they pay him cause they wanna.

And then we got Bendayan, no problem has ever got her,
Voice is so sweet can calm even an armada.
Rocchi, we miss her and still think about her
And we got students tryina know everything about her.

Got to dress to impress, and know how to talk,
Professionalism, when you have to call the doc.
I ain't that student tryin' to hurt you and have you misled,
I'm that student tryin' to tell you to take all your meds.

Gota be careful or a patient could wind up dead,
Statin drugs are what you take before you go to bed.
Look Mr. This is simple, you can't see,
You talkin' with me, a pharmacist from U of T

I don't know what you heard about me
But you can't get narcotics out of me,
Especially none of that morphine
Caus I'm learning pharmacy at U of T.

Ch-ch-ch-CHI-UNIT
S I X T Y Per C E N T yolo the way to be,
It's the A-Team of the twenty sixteen
And y'all know we're doin' EPE.

S I X T Y Per C E N T yolo the way to be,
Internationally known and locally respected
Now what you know about the PharmD.

Yeah now all the students are asking for Stephane,
About to show you why he's the man you can count on.
You're dead wrong if ya think that he ain't fly,
Soon enough he's gona be known worldwide.

He's down with his boy Zubin, they like a crew
We love you guys, Dubins we love you too.
U O F to the Tizzy, pills from us just might make you dizzy.

As the interim Dean, Heather's renowned,
And Wednesday's the day when Yamashita's in town.
We got business in Houses so Doris is not around,
And we got Shirley, so SXE, I know my sieves now.

And us students are just here to learn,
Number one thing address the patient's concern, word.
We always gotta match up the DIN,
And external label goes on drugs for the skin.

I don't know what you heard about me
But you can't get narcotics out of me,
Especially none of that morphine
Caus I'm learning pharmacy at U of T.

I don't know what you heard about me
But you can't get narcotics out of me,
Especially none of that morphine
Caus I'm learning pharmacy at U of T.

In Hollywood, they say "there's no business like
show business";
In the pharmacy, we say, "there's no business like
Avapro business".

BY CHI-UNIT
(THE ARTIST FORMERLY KNOWN
AS CHI ZHANG, 1T6)

THE MONOGRAPH