

THE MONOGRAPH

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The Voice of the Pharmacy Student



Photos Courtesy of PHARMAKON

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CO-EDITORS' NOTE

Hello Readers!

We present to you the second issue of The Monograph! This issue is filled with a variety of interesting articles. Everything from a possible new reversal agent for dabigatran to must-have fashion accessories for the Fall! We hope you find something that speaks to you! Also, be sure to try out the study break puzzles!

Once again a special thanks to our Staff Writers, Monograph Representatives, Staff Editor, and to Pharmakon! We have a few more issues coming out in the new year so feel free to shoot us an email at monograph@uoftpharmacy.com with any articles or artwork. Good luck on your exams and happy holidays!

Sandra Wood and Yumna Ahmed

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Who is Walton?: A Feature on the UPS Points System

The UPS Points System was developed in 1994 with the goal of rewarding students who go the extra mile to support their Class, Faculty, and UPS in academic, social and athletic initiatives. Since then, the UPS Points System has undergone many changes. We've highlighted some common questions below!

1) Who is Walton?

Helen Walton joined the Faculty of Pharmacy in 1941 as Secretary to the academic staff as well as librarian. In 1953, she became Secretary to the Dean and in 1973 she became the Faculty Secretary, until she retired in 1985 after nearly 45 years of service. Because of her dedication and perseverance, it's only fitting that the highest Faculty Participation Award is named after her! Including the Walton Award, there are 5 participation awards available to individual students. The individual awards are:

- Walton Award* – 225 UPS Points (56 non sport)
- Dean's Award* – 170 UPS Points (43 non sport)
- Plaque Award* – 110 UPS Points (28 non sport)
- Pharmacy P Award* – 60 UPS Points (15 non sport)
- Social Participation Award* – 47 Social Points

2) Who is eligible for points and awards?

All pharmacy students are eligible to collect UPS Points! If you have enough points, any student can win any of the five awards just mentioned. You can view your UPS Points at <http://upspoints.uoftpharmacy.com>. If you have any difficulties accessing your UPS Points account, e-mail the UPS Webmaster, Ran Shu, at webmaster@uoftpharmacy.com.



3) What are some of the other awards?

The awards previously mentioned are Faculty Participation Awards, however, there are additional individual awards available including the Dr. Murray Freedman and Jock McCrossan Awards for outstanding athletes. There are also class awards including the Shoppers Drug Mart Award for the Class with most people earning 6+ UPS Points. Right now, the Class of 1T9 is in the lead with 87 people!

4) Do I get points for events outside the Faculty?

For the most part, yes! If the event helps promote the profession of pharmacy or our Faculty, it may be eligible for points. An example of this is Women's Hockey, where Pharmacy doesn't have a team, but a few of our students play on an interprofessional team with other health professions and are eligible for points! E-mail the UPS Secretary, Alexandra Kourkounakis, at secretary@uoftpharmacy.com if you have questions about whether or not an event qualifies for UPS Points.

Happy point earning!
Shane & Tiana

Calendar of Events – November 2015

- 5th: UPS Lunch and Learn – La Roche-Posay (PB B150)
o12:00 pm - 2:00 pm
- 9th - 13th: Charity Week
- 14th: Curling Bonspiel
o1:00 pm - 3:00 pm
- 18th: OPA Dinner & Learn #3 – Medical Directives
o6:00 pm - 7:30 pm
- 19th: UPS Lunch & Learn - OPA (PB B150)
o12:00 pm - 2:00 pm
- 20th: Career Fair (PB Atrium)
o4:00 pm - 7:00 pm
- 26th: Pharmafacts Bowl - House Event (PB B150)
o12:00 pm - 2:00 pm
- 27th: Holiday Party & Photos (PB Atrium & PB 210)
o12:00 pm - 3:00 pm

UPS Position of the Month – Executive Secretary



This month, our featured member is UPS Executive Secretary, Alexandra Kourkounakis. Many people know that the Executive Secretary records meeting minutes, but you may not know the other really cool things this position is responsible for! The UPS Summer Package is compiled by the Executive Secretary and combining all items into one comprehensive package saves students from writing over 300+ cheques!

Additionally, the Executive Secretary is in charge of the Points and Awards Committee and helps determine who receives all the awards mentioned earlier. Furthermore, the Executive Secretary manages activities related to the UPS Clubs Form such as new club registration. To find out more about what the Executive Secretary does, feel free to message Alex.

Student of the Month – Sia Badie (1T9)



Over the past couple of years, Sia has been at the forefront of various initiatives advocating for mental health awareness among youth. While being involved in a student theatre group that showcased campus resources, Sia heard about "jack.org", a national organization that aims to reduce stigma associated with mental health. From there, Sia has been strongly involved in this initiative. He has been the Creative Director

of the annual student-led Jack Summit, which brings together high school and postsecondary students from all Canadian provinces and territories in an effort to increase conversations surrounding mental health. In this role, he has even been interviewed by CBC! For being a voice promoting national change surrounding mental health, the UPS has selected Sia Badie as the Student of the Month for October!

CAPSI Corner!

By Areeba Zaheer, Senior CAPSI Representative (1T7)
and Maria Moreno, Junior CAPSI Representative (1T8)

Hey Pharmacy!

They say time flies when you're having fun! CAPSI had an eventful October thanks to all of you! We wrapped up our 4 major CAPSI Competitions, and in case you missed the winners, they are listed below:

- **Prescription Information Competition:** Erin Cicinelli (1T7)
- **Over the Counter Competition:** Erin Cicinelli (1T7)
- **Student Literary Competition:** Chia Hui Chung (1T6)
- **Compounding Competition:** "Kevin's Angels" (Kevin Tang, Bea Laset, Jennifer Wang, Amy Su) (1T7)

We can't wait to see our winners represent us in Nationals at Professional Development Week (PDW)!

CAPSI would also like to announce the winner of Pfizer's Guy Genest Passion for Pharmacy Award, Tiana Tilli (1T7), our current UPS President! Congratulations Tiana!

The next few months will be pretty busy for us as we finalize the logistics for PDW! We are so excited to see all the enthusiasm surrounding this conference. Coming up on November 26th is the annual Pharmafacts Bowl, which we encourage all of you to attend! It is a big game of pharmacy trivia and the winners go on to represent our school nationally at PDW.

Xoxo CAPSI!

Maria & Areeba



UPS Athletics - Intramurals and More!

Hello Pharmacy!

It's been a busy month for Athletics in Pharmacy! Check out our updates below!

Curling Bonspiel

Athletics is hosting its annual Curling Bonspiel event on November 14th at the Leaside Curling Club. Our very own varsity curling athlete, Deanna Cadwell, will be providing instruction for this event. We are looking forward to having another great event so we hope to see you there!!

Special thanks to our sponsors: Pfizer, National Bank, McKesson, OPA, Mint Pharmaceuticals, Roche (Accu-Chek), Sanofi, STI Technologies, Rexall, Bayer, and Hydralyte.

UofT-Waterloo Soccer Event

UofT Pharmacy collaborated with Waterloo and created a Soccer event between the two faculties. Even though we didn't come home with a victory, we played a fantastic game! It was a great start to the soccer rivalry which will hopefully grow into a yearly tradition.

From the words of our professional soccer insider, Gyula Lukacsovics: "September 20th, 2015 marked a very important day in the history of Leslie Dan Pharmacy athletics as Waterloo hosted the inaugural Ontario pharmacy soccer cup game. After trailing Waterloo 3-0 in the second half,



our team (captained by Harry Kang) managed to fight back and even it up at 3, thanks to a stellar second half hat-trick from David Tom. Due to an unfortunate penalty call (and sending off of Michael Marsella) late in the game, Waterloo came out on top 4-3. Regardless of the result, this game will hopefully inspire future inter-school athletic events. On that note, we're in line to host this event next year to take back what is rightfully ours... #waterpoo"

We look forward to having a strong showing next year with lots of UofT fans out to support our team. Great job everyone!

Male Athlete of the Month

Gyula Lukacsovics is a multisport athlete who is part of the Men's and Co-ed Basketball, Co-ed Flag Football, Men's Volleyball, Men's Hockey, and Captain of the Men's Soccer team. He was also a key part in coordinating the first UofT-Waterloo Soccer game. He played pivotal roles in keeping both the Men's soccer and Men's hockey team undefeated. He is looking to keep up his strong play during the playoffs. Great work and good luck for the playoffs!

Female Athlete of the Month

Alaina Charlton has had a very strong start to her intramural career in Pharmacy. She is a great team player and a fantastic addition to the Women's Soccer team, stepping up her play in the past few games. Without ever having played a game, Alaina came out to join the Women's Flag Football to assist them in their first victory.

Male Athletics Update

The Men's Basketball team had a strong season led by their veteran captain Komail Nadeem. The team was able to get wins against Law, Medicine, and SGS and they finished their regular season with a 3-2 record, thus securing a playoff spot. Their first game is against Rotman on Nov. 12 @ 8:30 pm in the field house at the athletic centre. Good job on your season and we look a strong performance in the playoffs.

The Men's Flag Football team have had a rough season but had great games. The team was led by their veteran quarterback and captain Michael Marsella. Great job team on your season and we look forward seeing you again next year.

The Men's Hockey team are off to a strong start and are currently undefeated in their season. The team looks to continue their hot streak in final game of the regular season against Woodsworth on Nov. 15 @ 10pm at Varsity Arena. Captained by Michael Briganti, the team will look forward to an equally strong playoff performance. Good luck team!

The Men's Soccer team finished their regular season undefeated, going 5-0. They have secured themselves a first round bye in the playoffs and await the winner of Medicine v. Architecture. Their first playoff game will be on Nov. 15 @ 7:30pm on the back campus east field. Captained by Gyula Lukacsovics, the team is looking to go deep into the playoffs in their quest to be intramural champions. Good luck team!

The Men's Volleyball team started off the season strong with 2 wins coming against Skule and KPE/New College. Led by their captain Quang Vuong, they will try to climb the standings and make a push for a playoff spot. Their final game is against the UC Gryphons on Nov. 17 @ 7:05pm in the upper gym at AC. We wish you luck team!

For the winter semester we will be fielding teams in BASKETBALL, HOCKEY, INDOOR SOCCER, and VOLLEYBALL. If you have any questions feel free to contact any of the UPS Athletic Directors or the Captains of their respective sports. Be sure to sign up for IMLEAGUES and we look forward to an even stronger performance next semester.

Female Athletics Update



The Women's Basketball team has had a fantastic season! Led by Leigha Laporte, they are currently 2nd in the standings and have won 3 out of 4 of their games! With one game left to play, they will look to improve their record in order

to bounce into playoffs.

The Women's Flag Football team has been working hard towards spiking in the standings. Captained by Caroline Colozza, the team has been working hard and improving their play week by week. Thanks to their 2 game winning streak, they have managed to grab a playoff spot!

The Women's Hockey team has had a slippery season and is looking to regroup to start on a high note next year. Any female hockey players that are interested in playing should contact Élise De Francesco and come out to a game to give it a shot!

The Women's Soccer kick started their season with a tie and a win. Falling 1-0 in a close game against PT/OT, they rebounded with 2 wins in their final 2 games. Caroline Colozza will lead this team into playoffs. Their first game is November 15th @ 1:30 pm on Back Campus.

The Women's Volleyball team could not have had more success this season. Captained by Melissa Taylor and Deanna Caldwell, they were undefeated in their 5 regular season games. They have their eyes set on the prize and look to win their first playoff game November 23rd @ 9:15 pm at Goldring.

For the winter semester we will be fielding teams in BASKETBALL, HOCKEY, INDOOR SOCCER, and VOLLEYBALL. If you have any questions feel free to contact any of the UPS Athletic Directors or the Captains of their respective sports. Be sure to sign up for IMLEAGUES and we look forward to another great season next semester.



Co-ed Athletics Update

The Co-ed Basketball team have played hard all season and earned themselves a spot in the playoffs. Their quarterfinal playoff game is against Law this Thursday at

9:45pm in Field House 3 of the Athletic Centre.

The Co-ed Flag Football team had a tough time against the first two teams but secured a spot in the playoffs with a win against New College's "Animal Spirits". Their quarterfinal playoff game is against PT/OT B on Sunday November 15th at 3:15pm in the Front Campus Field.

The Co-ed Ultimate Frisbee team had a good start but had tough competition in the last two games. They secured a spot in the playoffs after a win against Medicine and look to continue their streak against New College this Saturday at 5 pm in the Back Campus Field.

The Co-ed Division 1 Volleyball team earned a spot in the playoffs after a stellar performance all season. Their semi-final game is against PT/OT A at 9:45pm in the Sports Gym 3.

The Co-ed Open Division Volleyball teams enjoyed good seasons and received quarterfinal playoff games against UTKSA/ KCUTSA and IMS. Both games are at 7:15pm in Sports Gyms 1 and 3 respectively.

There are two Co-ed sports upcoming in the Winter semester: the Co-ed Hockey team and Inner-tube Waterpolo team. If you are interested in playing for either team and/or want more information, contact Élise De Francesco (elise.defrancesco@mail.utoronto.ca) for Hockey and Kyle Acton (kyle.a.action@gmail.com) for Inner-tube Waterpolo.

Yours truly!

Philip Kim, Elise De Francesco and Jonathan Mak
UPS Athletics

PMP: Mentoring and Inspiring Students!

The Pharmacy Mentorship Program (PMP) is a student-run organization that aims to connect pharmacy students with pharmacists from various fields of practice. These areas of practice include: Community, Hospital, Industry, Family Health Teams, Government, Academia, and Research. This year, PMP has had great success with a record high of 275 pharmacy student mentees and 193 pharmacist mentor participants!

On September 30th of this year, PMP successfully ran its annual Meet and Greet Event with a record high number of attendees. This event fostered an informal atmosphere for 33 mentors and 114 mentees to engage in conversation. As well, students were given the opportunity to network with pharmacists from various fields of practice.



During the upcoming term, PMP will be hosting its annual Career Night Event. Stay tuned for more details to come during the winter term!

Lastly, the Pharmacy Mentorship Program would like to thank Professor Doris Kalamut, David White, and the Enhancing the Student Experience Fund for their continued support in our initiatives. The Pharmacy Mentorship Program attributes its success to their meaningful contributions.

Warm Wishes,

Jason Yung and Samier Kamar
Co-Directors, Pharmacy Mentorship Program 2015-2016

SOAPE Initiatives!

By Maria Moreno

COMPLETED:

CPhA and OPA Conference

We managed a booth to raise awareness about SOAPE and our initiatives. We also displayed the findings from last year's focus group initiative on "Perspectives of Pharmacy Students on Expanded Scope and Interprofessional Collaboration".

Pharmacy101

Geared towards incoming first year students, this event introduced 1T9s to SOAPE (of course!), the basics of the pharmacy profession, and provided a general overview of tasks we need to complete. Here's what one 1T9 student had to say: "I felt like I knew what was going on!"

Bake Sale

SOAPE held a bake sale in the atrium where we sold macaroons, cookies, and other delicious treats that satisfied everyone's sweet tooth! The proceeds from the bake sale will go towards SOAPE initiatives that advocate for the profession of pharmacy

SOAPE 1 Minute Read: 5 Things to Know!

By Faisal Adam and Jasneet Dulai

1. Researcher Christopher Bettinger from Carnegie Mellon University is working on a "smart pill" which will have electronic sensors powered by charged ions in the gut and will be able to control when and where the contents of a drug are released.
2. Developed by two University of Waterloo grads, PopRx is a smartphone app that allows patients to take a picture of their medication at home and have refills delivered by their local independent pharmacy within a few hours.
3. The World Health Organization's International Agency for Research on Cancer stated that processed meat is carcinogenic. They found that a person who eats 50 grams of processed meat a day (equal to a hotdog or two pieces of bacon) has

and further pharmacy students' learning experiences.

UPCOMING:

Flu Shot Campaign

SOAPE Planning Committee members will be volunteering at Snowdon Pharmacy's Flu Shot Clinic. They will assist with the flu shot clinic and help guide patients through the process. Furthermore, SOAPE will be putting up posters around UofT campus to encourage students to get their flu shot by their local pharmacist. We will also be updating our posters this year so you will see some new friendly faces around campus!

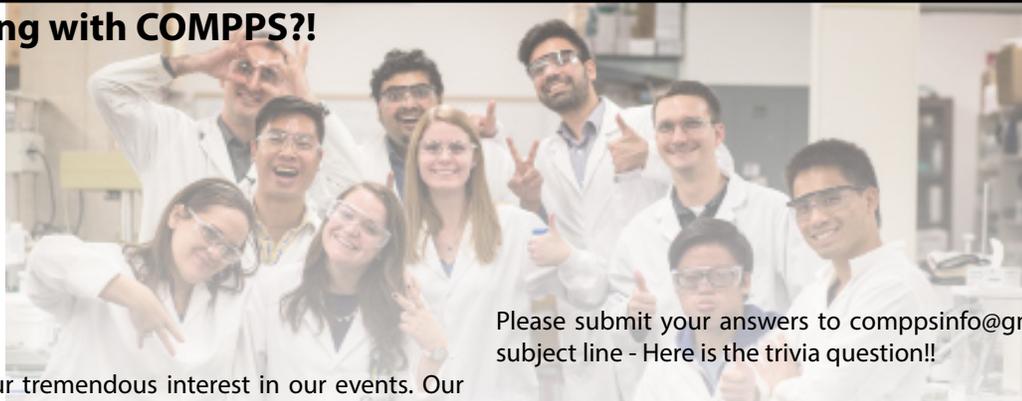
Diabetes Fair

This event takes place in the atrium of the Leslie Dan Building. We will have different companies who carry anti-diabetic agents and devices come in and showcase their products to pharmacy students. With diabetes being a health issue we will help manage as future pharmacists, be sure to keep an eye out for this event in November!

an 18% increased risk of developing colorectal cancer.

4. Researchers in New Zealand analyzed over 100 published studies and found that calcium supplements only offered a 1% increase in BMD in those over the age of 50 and will not decrease fracture risk.
5. A new study on obesity from the University of California has further developed the link between elevated sugar consumption and negative health effects. Researchers intervened in the diets of 33 children, replacing the sugar in their diets with starch while keeping the total calories constant. In nine days, researchers found that the intervention cohort had reductions in blood pressure, triglyceride, LDL levels, weight and improved glucose tolerance.

What's Cooking with COMPPS?!



Hey Pharmacy!

Thank you all for your tremendous interest in our events. Our first workshop of the year, Back to the Base-ics was a super success, and actually sold out within the first 24 seconds!!! We hope all those who got the opportunity to participate, enjoyed it. After the very successful first workshop, your COMPPS Executive Team is in full swing preparing the next set of events for you. Some of the super cool events we have lined up for you include a Suppository/Lip Balm Workshop happening later in November, speed meeting with compounding pharmacists and/or formulation scientists; and a tour of one of the pharma companies in the GTA. But first we'd like to welcome all of our newly elected members to the COMPPS 'phamily' including Shane Nirula, Kevin Tang, Chelsea Geen, Brittany Nicholls and Jason Chio.

We are also pleased to announce our very first trivia challenge!! The first 2 people to submit correct answer to the question below will be awarded guaranteed spots to our next workshop!

Please submit your answers to comppsinfo@gmail.com with a subject line - Here is the trivia question!!

Question: If Mr. AB comes to your pharmacy with a prescription that requires you to compound 60 ml of 5% (w/v) suspension of drug X, what volume of vehicle would you use to make final product considering following information. Suspension contains 1.5% (w/v) sodium carboxymethyl cellulose as suspending agent, 0.2% (w/v) sorbic acid as preservative, 5% (w/v) aluminium chloride as a source of counterions and the rest is vehicle. Assume the density of final suspension to be 1.4 g/ml and density of vehicle itself to be 1.25 g/ml.

Finally, don't forget to visit our new website compps.uoftpharmacy.com and follow us on facebook at [learn2compps](https://www.facebook.com/learn2compps)

Until next time, Keep Calm and Keep Compounding!!
COMPPS Exec Team

CAPSI: Student Literary Competition - First Place Submission!

The Implementation of E-Prescribing Nationwide

By Chia Hui Chung (1T6)

The benefits of electronic prescribing (e-prescribing) towards patients and the Canadian healthcare system have been known for many years, which include increased inter-professional collaboration, improved patient adherence and convenience, as well as synchronized access to a patient's medication profile. Canadian political parties have addressed the importance of a national e-prescribing plan in addition to a comprehensive electronic health record system (1). Meanwhile, the Blueprint for Pharmacy champions the implementation of e-prescribing in all pharmacies as one of its key projects (2). However, a 2014 survey conducted by the Canadian Pharmacists Association (CPhA) and the Canada Health Infoway revealed that eighty-eight percent of respondents never receive e-prescriptions through a physician e-prescribing system (1). In order to increase the uptake of e-prescribing in our country, it is important to discern the progress that has been made, its barriers to implementation and how we can improve the uptake of e-prescribing moving forward.

In 2001, the Canada Health Infoway was established, which has been publically funded to support Drug Information Systems (DIS), electronic medical records (EMRs) and other supporting infrastructure to facilitate e-prescribing in our country (3). In 2006, the CPhA and the Canadian Association of Chain Drug Stores were proactive in forming a National e-Pharmacy Taskforce to

champion e-prescribing initiatives and provided recommendations for the implementation of e-prescriptions nationwide. In addition, Health Canada has stated that there are no regulatory restrictions to generating e-prescriptions as long as they abide by the regulations that govern written prescriptions (4). Currently, DIS infrastructure is implemented in six provinces to permit authorized healthcare providers, including pharmacists, to access the medication profiles of patients. In Canada, the prevailing strategy is to have a DIS in place before e-prescribing can be performed. Meanwhile, the adoption of EMR systems in Canada has increased to seventy-nine percent among physicians, which bodes well since it will be the means by which e-prescriptions are generated (5). In 2014, a national survey of Canadian community pharmacists with access to EMR-generated prescriptions revealed that digital prescriptions increased the legibility of prescriptions, improved the productivity of pharmacy staff, and aided in the correct selection of drug doses and the drugs themselves (6). Despite our progress as a nation, we lag behind the United States (US) where fifty-eight percent of all prescriptions are e-prescribed and an e-prescribing network is in place, which processed one billion prescriptions in the last year alone (5). These startling statistics then beg the question: Why are we behind in e-prescribing relative to our American counterpart?

It is known that there are many barriers to implementing e-prescribing nationwide. A recent survey of four hundred Canadian Medical Association (CMA) members cited the main challenges to e-prescribing. In contrast to the US where ninety-five percent of US pharmacies accept digital prescriptions, a main barrier to implementation in Canada is a lack of awareness of the pharmacies which accept e-prescriptions (5,7). Another barrier is the issue of EMR usability, which includes the lack of a full electronic patient record for every Canadian patient (7). The majority of Canadian pharmacies are not electronically connected to physician clinics through a secure network. The lack of intra-operability between pharmacy management software, DIS, and EMR infrastructure also creates challenges in providing seamless care (8). In addition, the cost of upgrading digital health solutions across all provinces is enormous with the federal government investing up to \$500 million to expedite the implementation of digital health solutions (9). In 2009, the US announced that it would spend \$19 billion to increase the use of health information technology and estimated that e-prescribing would save the government over \$22 billion within ten years (10). Incentives are currently lacking for prescribers and pharmacists to move away from the status quo, especially when the initial costs of upgrading EMR and pharmacy management systems may not be fully reimbursed by the government (7).

Despite the many challenges in finding solutions to facilitate e-prescribing, a number of strategies can be proposed to advance this initiative. Since physicians are not adequately informed of participating pharmacies that accept e-prescriptions, it is important to develop accessible provincial directories which inform prescribers of the pharmacies that have incorporated this service. In addition, it is imperative for EMR software to integrate e-prescribing capabilities which include functions to alert prescribers of potential drug interactions and adverse effects, while providing evidence-based support and generic options for patients. The CMA is currently advocating for a comprehensive strategy, which includes financial support for acquiring such systems along with appropriate training (11). This support would ensure that every prescriber has the ability to generate e-prescriptions which optimize healthcare spending, especially at a time when drug spending has become the second-largest category of health expenditure nationwide (12). Since e-prescribing is anticipated to improve health outcomes and reduce healthcare costs, financial incentives may be provided for pharmacies and prescribers to adopt e-prescribing. Pharmacies which have upgraded their pharmacy management systems to accept e-prescriptions can be financially rewarded through pay-for-performance models since EMR and DIS infrastructure would greatly facilitate the tracking of healthcare performance measures.

In 2013, the CPhA and CMA created a joint statement on electronic prescribing, which stated: "By 2015, e-prescribing will be the means by which prescriptions are generated by Canadians"⁸. Although this healthcare milestone has not been achieved, it has been demonstrated that the acceptance of e-prescriptions at any local pharmacy can become the new norm in prescribing. However, this ideal situation can only be achieved if we reflect upon our successes in e-prescribing thus far and promote con-

tinual leadership in providing solutions to the overarching challenges within our healthcare paradigm.

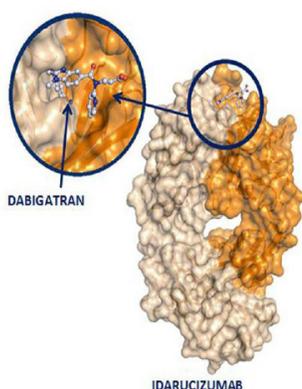
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Idarucizumab: Dabigatran Reversal Agent

By Lauren Ferruccio, Staff Writer (1T6)

When the first new oral anticoagulant (NOAC), dabigatran, was brought onto the Canadian market, there was much excitement over an anticoagulant option that does not require frequent blood monitoring, and does not have as many drug and food interactions as warfarin. A previous attempt at developing such an agent had failed over concerns regarding hepatotoxicity. However, initial enthusiasm over dabigatran was tempered by the lack of a rapid-acting reversal agent. Dabigatran was quickly followed by rivaroxaban, apixaban, and most recently, edoxaban, which is under consideration for approval by Health Canada. With more use of these agents, the need for a reversal agent has increased.



There have been several lawsuits against the drug companies responsible for these NOACs, due to incidents of severe and sometimes fatal bleeding. Current management of bleeding in patients taking NOACs includes transfusions, hemodialysis (for dabigatran), and activated charcoal. Prothrombin complex concentrate (PCC),

which is useful for emergency warfarin reversal, is not effective at reversing the effects of dabigatran, although it may have some benefit in the reversal of rivaroxaban and apixaban. Tranexamic acid, typically used in trauma pa-

tients, has little evidence for its use in these situations, but it may be considered for life-threatening bleeding. None of the available options are particularly effective.

Idarucizumab (Praxbind) is an antibody fragment that was approved by the FDA in October, and it binds to dabigatran to rapidly neutralize it. In a study of patients who required emergent reversal of dabigatran due to severe bleeding or emergency surgery, administration of idarucizumab 2.5 g IV x 2 doses given 15 minutes apart resulted in complete reversal for 89% of patients within four hours (RE-VERSE AD).

Complete reversal was defined by the percent of dabigatran that was bound to idarucizumab. This is a surrogate marker, and it remains to be seen whether or not idarucizumab improves clinical outcomes for these patients. The original trial was not powered to detect such differences, and 18 of the 86 patients died. There is also some question regarding the dosing of idarucizumab; increases in dabigatran were seen 12-24 hours after the initial idarucizumab dose and may reflect the redistribution of dabigatran. A second dose of idarucizumab may provide additional benefit to patients.

Idarucizumab is currently under consideration for approval by Health Canada. It is likely that with increasing clinical experience, the true success of idarucizumab will become clear. It is certainly promising, and given the lack of effective alternatives, we can only hope that idarucizumab lives up to its expectations.

Nitrofurantoin in Renal Impairment – When Is It Safe To Use?

By Anja Kovacevic, Monograph Representative (1T6)

Nitrofurantoin is one of the most commonly prescribed antibiotics for the treatment of uncomplicated urinary tract infections, as well as for long-term prophylaxis in women with frequent recurrent UTIs. This medication is a great first line treatment option for most patients with an uncomplicated urinary tract infection, as it is fairly well tolerated, cost effective, and has a narrow spectrum of activity. Most importantly, it is very effective against E.coli, which is the most common bacterial pathogen found in patients with community-acquired UTIs.

However, the activity of nitrofurantoin is dependent on its urinary concentration. As a result, nitrofurantoin should be used with caution in patients with renal impairment as these patients may have difficulty achieving adequate urinary concentrations of nitrofurantoin, putting them at risk for treatment failure.

Nitrofurantoin has been listed in the American Geriatrics Society Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. In the 2012 update to the AGS Beers Criteria, it was recommended that nitrofurantoin be avoided in all patients

with an estimated creatinine clearance less than 60 mL/min. The newest update to the AGS Beers Criteria, published in October 2015, has changed this recommendation to indicate that nitrofurantoin should be avoided in patients with an estimated creatinine clearance less than 30 mL/min. These guidelines also advise that nitrofurantoin is safe to use for short courses of treatment in patients with an uncomplicated UTI and creatinine clearance greater than 30 mL/min. However, they recommend that the use of nitrofurantoin for long-term prophylaxis should still be avoided in elderly patients and those with creatinine clearance less than 60 mL/min. The risks of using nitrofurantoin long-term in these patients include the potential for side effects such as pulmonary fibrosis, liver toxicity, and peripheral neuropathy, as well as the risk of treatment failure.

I was inspired to write this article because of my recent experiences during a hospital APPE rotation. During my rotation, I followed two patients, both elderly women (>85 years of age), who were admitted to the hospital with urosepsis, along with a history of chronic recurrent UTIs. One woman was on long-term

nitrofurantoin for prophylaxis, while the other had completed a 5-day course of nitrofurantoin prior to admission. In both cases, owing largely to their advanced age, these women had impaired renal function (CrCl < 30 mL/min) and had been prescribed these medications in the community, eventually ending up in the hospital with severe infections requiring multiple days of admission, and IV antibiotics.

Key Points:

- Nitrofurantoin is safe for use in patients with CrCl > 30 mL/min
- For long-term prophylaxis, extra caution should be used, and nitrofurantoin should be avoided in the

elderly and in those with CrCl < 60 mL/min

- Other prophylaxis options include:
 - SMP/TMX 200mg/40mg PO qhs
 - Trimethoprim 100mg PO qhs
- Other options for treatment of an acute uncomplicated UTIs: SMP/TMX, trimethoprim, or ciprofloxacin for 3 days of therapy
- If you see an elderly patient filling a prescription for nitrofurantoin or MacroBID, make sure to check their other medications/medical conditions for signs that they may have renal impairment, and to ask if they have ever been told that they have impaired kidney function.

Tamoxifen: does this breast cancer drug offer a new approach in the fight against MRSA?

By Allison Barre, Staff Writer (1T9)

Methicillin resistant *Staphylococcus aureus* (MRSA) has emerged as a significant threat to health worldwide and is now the second leading cause of hospital acquired infections, which can result in delayed wound healing, pneumonia and sepsis. MRSA is resistant to all penicillin-like antibiotics and those suffering from infections are 64% more likely to die than those infected with antibiotic-susceptible *S. aureus*.

Unfortunately, this threat is not going away anytime soon. The development of new classes of antibiotics is slowing and the overuse of antibiotics is leading to more resistant strains of bacteria. The problem has progressed to such an extent that the WHO warned last year that we are entering into the post-antibiotic era – a terrifying proposition.

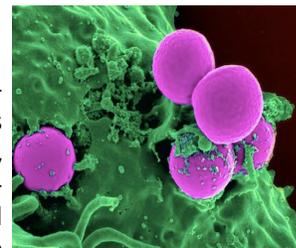
In response, researchers from the University of California, San Diego School of Medicine and the Skaggs School of Pharmacy have turned to existing drugs for inspiration. A study released in *Nature Communications* on October 13 revealed that the breast cancer drug tamoxifen enhances white blood cell response in laboratory experiments and also increased survival of MRSA-infected mice. Senior author, Victor Nizet, MD commented on the “need to open the medicine cabinet and take a closer look at the potential infection-fighting properties of other drugs that we already know are safe for patients”.

Tamoxifen is a common drug used to treat breast cancer that was first discovered in 1977 and works by targeting the body's estrogen receptors. Previous research had demonstrated that tamoxifen has widespread effects on a variety of cells within the body and it specifically affected how cells produced sphingolipids.

Sphingolipids are known to play a role in regulating the activities of neutrophils, and this fact gave the San Diego group the inspiration to examine whether tamoxifen could positively impact neutrophil activity against bacteria like MRSA.

Initial experiments showed that when human neutrophils were incubated with tamoxifen, the immune cells were better able to phagocytose. The main reason for this seemed to be a

three-fold increase in the production of neutrophil extracellular traps (NETs). NETs are a meshwork of DNA, proteins and enzymes that neutrophils secrete in order to trap and kill pathogens. They contribute to the immune response by concentrating antimicrobial peptides in a localized area, preventing spread of infection, and containing inflammation.



Tamoxifen also protected MRSA-infected mice. Those treated with the drug had a 35% survival rate after 5 days, while the control mice were all dead within 1 day. Other estrogen receptor targeting drugs did not have the same effect, suggesting that the immune activity of tamoxifen is independent of estrogen receptor activity.

The immune effects revealed here are not unprecedented – tamoxifen has been studied for treatment of hepatitis C, herpes and yeast infections – but this is the first time it has been shown to act against bacterial infections. However, the researchers were quick to note that the findings may not extend to all bacterial species – several bacteria possess the ability to evade NET capture.

While these results are exciting, the authors remain cautious about use of Tamoxifen “off-label” for use in severe MRSA infections. They feel that “the proper approach...would be to conduct a trial of patients with antibiotic resistant infections in which tamoxifen would be added to the current standard-of-care”. Further study will reveal how exactly this chemotherapy drug might be used to battle resistant bacterial infections in humans.

References:

- 1) http://ucsdnews.ucsd.edu/pressrelease/breast_cancer_drug_beats_superbug
- 2) Corriden et al. (2015). Tamoxifen augments the innate immune function of neutrophils through modulation of intracellular ceramide. *Nature Communications*, 6:8369. Retrieved from <http://nizetlab.ucsd.edu/Publications/Tamoxifen-NETs.pdf>

Are We Going to Be Making Enough? A Look into the Canadian Pharmacist's Salary

By Rana Khafagy, Staff Writer (1T6)



We've all heard it- Canadian pharmacists aren't making good money. Everyone seems to know this but what they may not know is the context of this discussion. Yes, the annual pharmacist's salary in Canada has decreased over the years. Now go back and re-read that statement. The pharmacist's salary in Canada has decreased over the years. That is not to say that Canadian pharmacists are not paid well compared to other countries.

According to PayScale, the average pharmacist's salary in 2014 was \$80,700 in Canada. That makes Canada the third top-paying country for pharmacists. Second place goes to Switzerland where the average pharmacist's salary is \$83,600 and it's probably no surprise that the highest paying country is the United States where pharmacists generally take home \$107,000 -

\$118,000 annually. However, it is estimated that US salaries are largely affected by the pharmacist's years of experience, employer, and geographic location whereas these aren't huge salary determinants in Canada. In other words, don't have high hopes for moving to the US after graduation and making that kind of money right away.

Now let's look at the fourth highest paying country for pharmacists. That would be the United Kingdom where pharmacists average \$57,000 a year. To put that into context, city brokers in the UK made an average of \$205,000 in 2014. And in fifth place we have Germany where pharmacists make an average of \$44,800 yearly.

I don't know about you but I'll take that \$80,700.

Are Community Pharmacies Selling Sugar Pills for Profit?

By Sara Temkit, Staff Writer (1T7)

When it comes to homeopathy, there are many skeptics. Homeopathy is a medical philosophy and practice that began in Germany in the 1700's, and has spread rapidly throughout the rest of Europe. The premise of homeopathy is that "like cures like". For example, if a substance causes a symptom in a healthy person, giving the person a very small amount of that same substance may cure the illness. The more dilute the homeopathic substance, the greater its potency is thought to be. Theoretically, according to WebMD, the homeopathic dose enhances the body's normal healing and self-regulatory processes.

However, those of us who took Professor Jack Utrecht's 2nd year "Science of Pharmacology Course" heard time and time again that homeopathics are nothing but sugar pills. According to Dr. Utrecht, with every drug that we have ever seen thus far, there is a dose-response curve. As we decrease the dose, we also decrease the response.

There are many other scientists that would agree with Dr. Utrecht. One of my pharmacy friends told me that there was another professor, during her undergraduate Drugs 101 course, who successively diluted cyanide and drank it in front of the class—to prove the point that successive dilutions negate both the efficacy and toxicity of drugs.

Some scientists also talk about the harms of homeopathy, such as the use of remedies that have not been shown to raise antibody levels as opposed to validated MMR, polio, and anti-malarial vaccines. According to a study conducted by Edzard Ernst



Do YOU see anything wrong with this picture?

and Katja Schmidt in the UK, many homeopathic doctors are against immunization in children. There is also potential harm in using homeopathic remedies as a substitute to conventional therapies for life-threatening or chronic illnesses, such as cancer.

Given that so many scientists and learned individuals think that homeopathy is nonsense, why do we continue to sell homeopathic medicines along with rigorously tested products on our pharmacy shelves? Is that even ethical?

I decided to ask my pharmacist and pharmacy student colleagues these baffling questions. Imagine my surprise when during my EPE-2, one of the pharmacists told me that she regularly uses homeopathics to treat insect bites and stings, allergies, and several other ailments. The IPG pharmacist informed me that her European pharmacy curriculum is much more positive about homeopathics and she mentioned terms like "energy", "life force", and "water memory".

In the News: Pharmacy Perspectives

This newfound information – could bring us to a whole other debate – about the merits of Canadian-bred pharmacists vs. IPG pharmacists. But, let us focus now on the most obvious question: why do people continue to use homeopaths despite the glaring scientific evidence that they are not effective?

The obvious answer: they begin to feel better after using the homeopathic substance. One can say that perhaps homeopathy is best at curing things that would soon pass away, such as colds and insect bites. Or perhaps the individual is just experiencing a placebo effect. But, how can we be so sure?

Some believers of homeopathy would say that sometimes something works, even if we are not able to explain why. Just because we lack a logical explanation for a phenomenon, does that mean that we automatically dismiss it? As one patient

said: “I take the approach that if seeing my homoeopath once a month improves my health, then I am happy with that. I don’t care how it works, I just know that for me it does”.

In this debate about homeopathy, we need to balance harm prevention with respect for patient autonomy. At the end of the day, it is up to the patient to decide whether he or she wants to use homeopathic substances. Patients have a right to choose cultural, spiritual or traditional therapies, even if they are not scientifically proven to be of benefit. That in and of itself is the only reason that these homeopathic remedies continue to exist on our product shelves. Of course, this does not mean that we ignore the possible risk to the patient. If the patient is choosing to avoid immunization or using a homeopathic remedy instead of chemotherapy, they have to be informed of the potential risks.

In the News: Current Events

Justin and His Cabinet

By Yannan Liu, Staff Writer (1T9)

When Pierre Elliot Trudeau first took Canada by storm in 1968, he won us over with his charisma and no-holds-barred attitude (just search up the “fuddle duddle” incident of 1971). Now nearly half a century later, we are graced with a new Trudeau. A Trudeau with so much luscious hair and charm that we call him “Justin” when we have only ever called the other party leaders Mr. Mulcair and Mr. Harper. Justin is who was elected as the Prime Minister on October 19th 2015, and Justin is who will enter office on November 4th, 2015.

Justin’s victory of course didn’t come easily without a huge to-do list. He still has to address the many questions regarding the Liberal’s stance on the Trans-Pacific Partnership (which they have yet to unveil). He also has to respond to the many demands regarding amendments to Bill C-51, and of course, follow through

with decriminalization and legalization of marijuana.

In the meantime, Justin has surprised us all, introducing a cabinet which includes 15 women out of the 31 members. When asked why, he simply shrugged and answered “because it’s 2015”. In terms of addressing minorities, he has appointed a number of members of visible minorities in the cabinet, ranging from aboriginals, South African, Afghani, Chinese and Dutch members holding important positions like Minister of National Defence. Additionally, the cabinet is filled with members of both old and new, from seasoned veterans to rookie MPs. And while many may question his ability to lead, or the credibility of his promises, he is no doubt on a very good start.

For now it is needless to say... Do us proud Justin!



Apps to Help You Reach Your Fitness Goals!

By Donna Yang, Staff Writer (1T9)

I am sure everyone has a bunch of apps downloaded on your phones and tablets for various uses and purposes. Here, I will introduce free apps (compatible for both iOS and Android) that you can add to your devices. These apps are useful for helping you get started on a fitness routine and ultimately, to reach your goals. Although I don't have any listed here, there are pedometer apps you can download if you are ever curious and wanted to keep track of your steps, distance and calories burned throughout the day.

Nike+ Training Club



Do you ever want to start working out but don't know how? Well this app developed by Nike can be part of your solution. There are 100's of workouts available to help you meet different fitness goals at different fitness levels. Additionally, workouts have videos as part of the tutorial to help you out!

Nike+ Running

Nike+ Running is an app that will keep track of the distance, speed and calories burned for your run. It is an excellent app to help you record your training progress while running outdoors, especially when preparing for a race or attempting to meet a new personal goal.



Daily Yoga

If you are a newbie and down to try yoga, this is the app for you. Daily Yoga provides different yoga workout poses with videos for tutorial along with background music. In fact, there are plans available for you to choose from. The catch of this app is that a subscription will be required when proceeding to advanced modules.



30 Minute Workouts

By Shireen Cotton, Staff Writer (1T8)

As health professionals, we have a responsibility to exemplify healthy living, and be a role model for our patients. We tell our patients to eat right and exercise, lose weight and they will get rid of all their ailments! (And also by purchasing some handy medications from our pharmacies.) The reality of being a pharmacy student, trying to actually live a healthy lifestyle, is a lot more difficult.

As I write this, I should be working out. This is the time I planned to go to the gym. I even set my alarm. It's not happening today, and it didn't happen yesterday either. I know we can all relate to this moment. You think, "why am I getting up to work out right now??" *Insert expletives here*

"I have a cold," I tell myself. "I'm just listening to my body."

The clock is ticking and soon it will be too late to go anywhere. "I'll just work out after class" I think, but somehow, after 3 hours of Derm and 2 hours of Micro, and probably sticking around school to finished 90000 other things, working out seems like a sick joke.

Not only have I missed my workout but now, after all that thinking I am on the couch binging on Smart Pop and M&Ms.

Midterm season tests all of our willpower and lately I've often found myself laying in bed, battling guilt for not exercising or just giving up and pressing snooze 3 more times. So, I've found one sort-of solution to this problem:

It turns out that you don't have to work out for a full hour. You can get just as much out of half an hour if you push a little harder. By doing circuits and high intensity interval training for cardio and focusing on different body areas each day, you can split up



enough exercises to consistently work out half an hour, at least 5 times a week. For example, Monday focus on cardio, Tuesday abs and back, Wednesday legs, Thursday arms, Friday cardio. Alternate whatever schedule works for you. Pick 4-5 exercises in each category, (eg. Arm day could be biceps curls, triceps kickbacks, push-ups and shoulder presses) and do 15-20 reps of each and repeat the cycle 4 times. Give yourself a half an hour time limit and I guarantee you will be sore. You can always supplement this with intramurals or your favorite team sports! None of this waking up at dawn business; it gives you an extra half hour to sleep in and more importantly it gives you less of an excuse. We are supposed to know how to take care of our bodies. So at least half an hour of exercise a day seems a lot more reasonable.

For today though, I really do have a cold. I really am trying to listen to my body because pushing too hard is not going to help me get better. But wait, it's a double lab day? In the middle of midterms? I guess I'll just pop 2 Tylenol Colds and chug a Red Bull...

Please Don't Stop the Music!

By Josephine Vu, Staff Writer (1T9)

Calling all music lovers! Fall is in full swing and the weather may be cooling down but there is still plenty to explore around town. Put down your pumpkin spice lattes and trade in your apple-picking excursion for something that is sure to bring music to your ears.

What: Friday Night Jazz

Where: Ripley's Aquarium - 288 Bremner Boulevard

Why: Do you like sharks? Do you like jazz? This is the event for you! Ripley's Aquarium is offering a unique new way to enjoy the aquarium in the evening with Friday Night Jazz. Pay for admission to Sharks After Dark starting at 7pm and explore the deep blue while feeling the rhythm and blues! (See what I did there?)

Things to know:

- Every second Friday of the month 7pm – 11pm
- Cash bar available
- Included with Sharks After Dark Admission Price (reduced general admission: \$24.98)
- Get tickets online or at the door

What: Free concert series

Where: Canadian Opera Company (COC) - 145 Queen Street West

Why: The COC's Free Concert Series takes place at the Richard Bradshaw Amphitheatre, one of Toronto's most structurally interesting spaces. Running from September to May, the series brings artists from all around the world to share their talent. With a large variety of concert types to choose from and a number of performances throughout the week, it's a great way to try something new and broaden your musical library!

Things to know:

- Six different series: vocal, piano, jazz, dance, chamber, and world music
- Concerts take place most Tuesdays and Thursdays at 12:00pm, and some Wednesdays at 12:00pm or 5:30pm
- Admission is first-come, first-served (seating is limited so get in line early!) Latecomers will not be admitted.
- Food is permitted, but quiet chewing is encouraged
- FREE

What: Freefall Sundays

Where: Supermarket - 268 Augusta Avenue

Why: Supermarket is one of Kensington Market's most popular locales and is a great place to de-stress with a beer on any given Friday or Saturday night. It turns out that Supermarket is a great place to de-stress on Sundays as well—with some local talent (and maybe another beer). Freefall Sundays is an open mic event that showcases local talent ranging from your coffee shop crooners to spoken word poets. The cozy venue and live acoustics make for the best kind of lazy Sunday.



Things to know:

- Full drink and food menu available
- For audience members: performances start at 7pm
- For performers: sign up list opens online on Facebook at 5pm (same day) and spots are claimed in person at 7pm at the venue. Supermarket also has in-house, keys, drum kit, and amps available for performers to use so if you've got musical chops, sign up for Freefall Sundays and show them off!

Lifestyle: Fashion

Top 3 Must-have Accessories for Sweater Weather!

By Jennifer Wang, Staff Writer (1T7)



The perfect pair of black boots: Whether it's running to class or walking down Queen's street, these beauties have got you covered! The pointy toe adds a touch of elegance to the sleek shape and the small heel makes these shoes extra comfortable! (pictured: Vagabond Marja available at Capezio Shoes \$179)



The blanket scarf: Wear it as a shawl, a wrap or use it as a blanket for those power naps between class! So versatile and so on trend. (pictured: Multi Color Plaid Fringe Scarf available at Shelnside \$15.47)



The wear-with-everything watch: Need I say more? This pretty watch adds the perfect amount of sparkle to any outfit (not to mention it helps you count down the minutes till class ends)! (pictured: Classy Sheffield available at Daniel Wellington \$149)

Tasty's Caribbean Restaurant.

By Luo Fei Liu, Staff Writer (1T9)

Whether you are in the midst of midterms or just about to celebrate its end, there's always a good reason to go out and grab a bite. If you are wondering where to go, I recommend Tasty's Caribbean Restaurant. It's cheap, fast, and great tasting – a rare combo these days!

Their daily lunch special includes chicken (jerk, fried, or stew), rice (with or without beans), and a choice of a side (coleslaw, vegetables, or salad) for \$5.99+tax. If you stay on campus to study, there's a dinner special too! It only costs a dollar more and you get almost double the amount of food. The only precaution

is that their hot sauce lives up to its name so be careful not to douse your plate with it!

The staff is friendly and the service is just as good as their food. Located near campus, it's probably not the first time you've heard of it but if you haven't or were ever hesitating to try it out, it's a must try!



I Mexican't Even at These Places!

By Shakira Hakim, Staff Writer (1T8)

There's so much diversity in Toronto that it's high time the food joints followed suit. Long gone are the days where Mexican food consisted of corn, beans, and chili peppers. There's now a spectrum of classic to fusions that has my taste buds tingling. Here are my top picks for places that not only make me salivate, but are good enough to make the cartel swap out drugs for tacos.

here or a drizzle of honey there. My favorites include Pollo Frito, In Cod We Trust, Tostada de Ceviche, and most definitely the Arctic Char Tostada. Also, the Mexican Meatballs are a nice appetizer to share. Be sure to grab a paleta because when are you ever going to be able to eat a Nanaimo bar in popsicle form!?



Located just a few blocks away in Kensington Market is Seven Lives Tacos. I have to apologize to the vegetarians and fist bump the pescetarians on this one – it's a whole lotta fish. Boasted by many as the best tacos in the city whose title I can't argue with. They got a double taco encasing the goods so it makes it easier

(and less messy) for gobbling. The seafood and dressings pack a punch of flavor. Try the Blackened Mahi Mahi if you want to exercise sweet/sour or the Gobernador for a spicy/sour combo. This place has very limited seating and it's highly likely you're going to have to stand around awkwardly to eat.



Now Maizal is the furthest away in distance but it's definitely the closest to my heart. This restaurant is located in Liberty Village and is quite simply, beautiful. It's a wonderful date spot and a great choice for vegetarians and meat-eaters alike. The food is wholesome, affordable, and delicious. They are famous for their

quesadillas but they've recently added a whole lot more to their menu. I enjoyed the Chicken Pibil quesadilla, Tacos Dorados Pollo, and everything else I've gotten here. They've got a nice assortment of drinks. If you want a Mexican version of a chai tea try their Horchata, but if you'd like to flirt with temptation then opt for the sangria instead. Also, check out my favorite thing about this place – their quirky washrooms!

If you keep going west you'll see a skull on a storefront. You've arrived at La Carnita where the ambience is hip and happening like the Pharm Phresh crew. Just like my Phriends, this place only begins to operate after 5 pm. Be sure to put your name down as soon as you enter the door because you're most likely going to have to wait. Many of their tacos have a tasty spin to them – either by throwing in some apple pieces



We can end full circle to grab dessert at Kensington market. Tucked a little ways in is a Churro place called Pancho's Bakery. They serve their churros up and out fresh from a beacon of oil. If that doesn't sound delicious, then get them stuffed with variants of sauce like Dulce de leche or Chocolate. Pro tip: Grab napkins cause it can get quite sticky!



Using Gochujang for Pork Belly Stir-fry

By Xuan Yao, Staff Writer (1T9)

Spicy Pork Stir-Fry

Ingredients:

2 tablespoons of gochujang (Korean spice sauce)
300g pork belly
2 cloves garlic
1 teaspoon ginger
1 tablespoon soy sauce
1 tablespoon cooking wine
1 medium onion
1 tablespoon cooking oil



Instructions:

1. In a bowl combine soy sauce, cooking wine and gochujang
2. Finely chop the garlic and ginger and add to the sauce

3. Cut the pork belly meat into bite-size pieces and add to the sauce
4. Let the meat marinate for 1 hour
5. After marinating the meat for 1 hour, dice the onion and set aside
6. Heat pan on medium heat and add cooking oil
7. Add the onion to pan and stir-fry for 3 minutes
8. Add the meat along with the sauce into the pan and stir-fry for 5-10 minutes
9. Cover the pan with lid for another 3 minutes
10. When the meat is cooked through, serve with rice

Yo' Momma's Kitchen!

By Kyle Acton (1T7) in association with Culinary Awareness in Pharmacy

In this issue, we dive into the magical and lustrous world of the English Sunday Roast. This classic dish is su-per easy to make and requires little prep time!

The Ingredients

Roast
~5 lbs (2.2kg) of beef roast
salt and pepper to taste
2 tbsp melted butter
1/2 cup of red wine
1/2 tsp sage
1/2 tsp mint
1 onion, sliced
2 cloves of garlic, minced

Gravy
1 tbsp butter
1 tbsp flour
1/2 cup water
1/4 tsp sage
1/4 tsp mint

How to:

Step 1: Rub your meat!

Start by preheating the oven to 350 F. Rub down the roast with as much salt and pepper as you like. Typically, you'll need enough to feel a 'scratchy' texture.

OPTIONAL: Rub in some paprika and some red pepper flakes for additional flavour.

Step 2: Prep it!

For an easier clean up, spray your baking pot with a light mist of cooking spray. Then add the melted butter, red wine (don't be afraid to be rather liberal), onions, sage, mint, and garlic to the



pot and cover with the lid.

Step 3: Cook it!

Pop that beauty in the oven and leave it there for 2 to 3 hours. Rotate the roast every hours or so for best re-sults. In the mean-time, you can study, clean, or lounge on the couch and relish the mouth-watering smell com-ing from your oven. Once done, let sit for about 10 minutes and serve.

Step 4: The Gravy (optional)

The easy way: Strain the remaining liquids from the pot into and mix with store-bought gravy mixes.

The authentic way: Melt butter in a skillet. Whisk in flour until smooth roux. Add water and mix until smooth paste formed. Season with sage and mint. Add in liquids from the roast pot and boil, stirring until thickened.

Bon Appetit!

Make your own Uncle Tetsu Japanese Cheesecake!

By Jennifer Wang, Staff Writer (1T7)

Have you ever walked by Bay and Dundas and seen the small but consistent horde of people waiting outside of a Japanese bakery called Uncle Tetsu's Cheesecake? You know, the ones that wait hours in rain, snow and even hail? You would've thought they were giving away cakes for free with people waiting like that but these light and perfectly sweetened cakes go for \$10 and about 2 hours in line. If that super tough PCT course eats up all your time, never fear! You can now make your own Japanese Cheesecake right at home with this tried and tested, easy-to-follow recipe (and study while you wait for it to bake)!

Ingredients:

140g/5 oz. fine granulated sugar
6 egg whites
6 egg yolks
50g/2 oz. butter
250g/9 oz. cream cheese
100ml/3 fluid oz. milk
1 tbsp. lemon juice
60g/2 oz. cake flour /superfine flour
10g/0.5 oz. cornstarch
1/4 tsp. salt



Instructions:

1. Melt cream cheese, butter and milk over a double boiler. Wait

until the mixture is cool before folding in the sifted flour, salt and cornstarch. Fold in egg yolks, lemon juice and mix well.

2. Whisk egg whites until foamy. Add in the sugar and whisk until stiff peaks form.

* Tip#1: Make sure the bowl and whisk are completely grease free, otherwise the egg whites will not rise!

3. Add the cheese mixture to the egg white mixture and mix well. Pour into an 8-inch round cake pan.

* Tip#2: Lightly grease and line the bottom and sides of the pan with parchment paper for easy removal.

4. Bake cheesecake in a water bath for around 1 hour and 10 minutes or until set and golden brown at 160 degrees °C (320 degrees °F).

* Tip#3: You can check if the cheesecake is cooked by poking it with a toothpick, it's done if no crumbs stick to the toothpick!

* Tip#4: If the cheesecake is cooked and the top isn't golden, use the broiler for a few seconds until the top is perfectly golden (be careful and watch the broiler because it burns easily!)

* Tip#5: Let the cheesecake cool in the oven otherwise it may cool too fast and crack.

Makes one 8-inch cheesecake, 12 (or in my case, 1) servings.

Entertainment: Literature

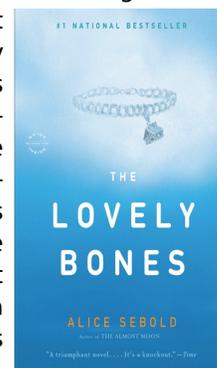
Recommended Reads: The Lovely Bones by Alice Sebold

By Naomi Lo, Staff Writer (1T8)

This is a "throwback" review, similar to the popular "TBT" (Throwback Thursday) hashtag that unfailingly appears on my newsfeed on a weekly basis. I've chosen this particular novel since a recent film called Brooklyn, which has been receiving widespread critical acclaim, has a lead actress in 21-year old Irish-American Saoirse Ronan. Despite her young age, I have admired her for quite a while, and one the reasons is her role in the 2009 film, The Lovely Bones. Personally, I think the film itself (besides Ronan's acting) falls slightly short of expectations, and did not do this poignant story justice. Hence, in order to have a full appreciation of the story, I highly recommend reading this novel when you have any spare time on your hands. However, a word of caution, this novel does contain disturbing subject matter that can be upsetting for some readers. Thus, if you have any reservations, then you might want to skip this one.

In The Lovely Bones, the tale begins with an inconceivable incident, one that involves the main character, 14 year old Susie Salmon. She herself narrates the unimaginable story from her point of view, and gives a no holds barred account of how she is raped and murdered by her next-door neighbor. However, she is able to continue to describe the aftermath of the homicide to readers, as she enters her "Heaven" and looks upon the world from above. There is no specific mention of God, or any

religious divinities, and Susie never receives any judgment after dying. Instead, the story focuses not on Susie's soul, but on her loved ones, the people still living and having to cope with her death. There is great in each of her family with their own means reflecting their per-strength of their love how in the face of tre- and pain, a person's and feelings can be open. It can bring out as well as the worst in Susie's father, Jack, is guilt for not protect-



and telling contrast member's reactions, of coping with grief sonality, and the for Susie. It illustrates mendous sorrow hidden emotions brought out in the the best in people people. For instance, overwhelmed with ing his daughter, and obsessively searches for the one responsible. On the other hand, Susie's mother, Abigail, cannot handle the loss of Susie, and chooses to run away from it all, forsaking her responsibilities as a mother. As the years pass, and the grief begins to wane, the Salmon family is able to slowly move on, with Susie's memory still in their hearts. However, time cannot unwind, and not all regrets or mistakes in the past can be amended. It just goes to show how devastating a death of a loved one can be, and how the grief can last a long time, changing a family irrevocably.

Five New TV Shows to Distract Yourself from Midterm Grades:

By Jessie Tong (1T9)

I'm sure everyone is having a fantastic 2015 fall term with spectacular grades, killer outfits and healthy diets. If you nodded to yourself from reading that, please go away now. No, I'm kidding of course. But really, just silently stay in that corner—no one likes a show off. There is no need to worry for the rest of my sleep-deprived, sweatpants wearing and fast food filled phamily, because I have got you covered. As some important person somewhere probably has said or will say: "there is no better way to get over your own drama, than to delve into someone else's." Here are my top 5 recommendations for the new TV series this fall!

1. Crazy Ex-Girlfriend



What an opener huh? Rebecca Bunch (Rachel Bloom) is a brilliant, but unhappy lawyer at a major law firm in NYC. After a chance run-in with her summer camp "true love" Josh Chan (Vincent Rodriguez III) from 10 years ago, she decides to move to West Covina, California to be with him. The CW has been going strong with several "shouldn't be good, but actually are really good" (Exhibit A: The 100) shows these recent years. Crazy Ex-Girlfriend

is no exception. There's humor, musical numbers (yes, a la Glee), drama and heart. What more can you ask for?

2. The Last Kingdom

Now here's a show from BBC America that'll fill your Game of Thrones cravings. The Last Kingdom is a British TV adaptation of Bernard Cornwell's book series, The Saxon Stories. Set in the 9th century, many British kingdoms are under attack of the Danes. The show revolves around our main protagonist Uhtred (Alexander Dreyfuss), who has an unusual upbringing and must choose his allegiance between the warring lands. Adventure and action? Check. Cool period costumes? Check. Difficult names to remember? Check, check and check!



3. The Grinder

Rob Lowe. Humor. Rob Lowe. Lawyers. Watch. Now.



4. Blindspot

Jane Doe (Jaimie Alexander) is found in a body bag in Times Square with no clothes and no memories, just a LOT of intriguing tattoos. I'll start off by stating that this show is largely a police procedural for now. And you've probably guessed the basic premise: Jane Doe works with another police officer to solve crimes with the use of her tattoos. Ah yes, the old good pairing of "regular" cop with a special not-cop protagonist. There's a whole slew of them this season including others such as Limitless and Minority Report. Against its TV competition, Blindspot is familiar, but enjoyable and show moments of potential that can be developed into a great series.



5. Scream Queens

Twenty years after a Wallace University's sorority pledge death, more murders on campus begin to occur and the bodies start to pile. Ryan Murphy's Scream Queens boasts a cast with more young Hollywood celebrities than the Teen Choice Awards, including Emma Roberts, Lea Michele, Abigail Breslin, Keke Palmer, Nick Jonas, Ariana Grande and many more. At the epicenter of all the madness is Emma Roberts, who plays Chanel Oberlin. She's the Queen Bee of Kappa House (which is very reminiscent of her previous role as Madison Montgomery from American Horror Story) and pretty much carries the over-the-top horror comedy. The show parodies college Greek life and slasher films with same finesse and fun that catapulted Glee (Ryan Murphy's other brainchild) to superstardom.



Note: You'll notice that Netflix original shows are conspicuously missing from my list and that's for a reason. I want to give you guys some fun ideas for study breaks, not fail you out of school!

Fall 2015: What's in Theatres?

By Alessia Forestieri, Staff Writer (1T7)



Now that there are at least a few weeks until exams start, I highly recommend using some of your free time visiting your friendly neighbourhood movie theatre! There have been some exciting and interesting movies released this fall – “Room” and “The Martian” are just two of the movies currently in theatres that are worth checking out

Room



I was slightly hesitant to watch this movie when I heard that it was coming out. I had read the book that it was based on, written by Emma Donoghue, and was not sure that the storytelling style that had worked so well in the book would translate well in a film. It did not take long for the movie to prove me wrong, however, as it managed to strike the same delicate balance that the book had. The movie is told from the point of view of Jack, a five-year-old boy that has lived his entire life in “room” with his mother and does not know that there exists anything beyond its four walls. By focusing on Jack, a little bit of distance is placed between the audience and the horrible reality of their situation: Jack’s mother had been kidnapped and for years has been forced to live in a shed in her captor’s backyard. This film is obviously sometimes quite heavy and emotional, but at its core it is an uplifting story of courage and love.

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One of the reasons that this movie shines is because of the amazing talent of its two principal cast members. Jack is played perfectly by Jacob Tremblay, who manages to capture all of the emotions of a child discovering the world for the first time. Brie Larson plays Jack’s mother and I was pleasantly surprised that the actress that I had seen in supporting roles in so many movies (“21 Jump Street” and “Scott Pilgrim vs the World”, to name a few) was able to hold her own in a lead role, and that she did it

spectacularly.

Just in case this review hasn’t convinced you to add this movie to your must-see list, you should know that “Room” won the prestigious Grolsch People’s Choice Award at the Toronto International Film Festival this year and that Brie Larson is on many critics’ lists of Oscar nomination predictions.

The Martian

One of the nice things about this movie is that it is exactly what you expect it to be after watching the trailer. Matt Damon plays the character of Mark Watney who is an astronaut that gets left behind on Mars after the rest of his team evacuates the planet during an emergency. NASA, and the rest of the world, finds out that Watney is still alive on Mars and the U.S. Government spends what must be billions of dollars to rescue him.



The majority of the movie is about Watney’s struggle to survive alone for years on a planet with minimal provisions. He does this mostly by using his super botany skills to grow potatoes, by using explosive science to make water and by cracking lots and lots of jokes. There are, of course, setbacks along the way to rescue and there are plenty of moments where the audience is moderately worried about Watney’s survival. There are also many great scenes back on Earth where an almost too large and talented supporting cast plays NASA officials trying to figure out a way to save their stranded astronaut. Overall, I thought that the movie was very entertaining and I really only had two complaints: despite the claims that all the science checks out I thought the ending was a little too far-fetched. Also, there was way too much disco music.

The Neighbourhood Leaves Us Feeling Wiped Out!

By Faizan Baig, Staff Writer (1T9)

Alright, back with another album review! This time, fresh out of the studio is The Neighbourhood with Wiped Out! The Neighbourhood formed in 2011, making them a relatively new band, but even with that they've gained a lot of popularity with hits like Sweater Weather from their first album, I Love You. Jesse Rutherford leads the band as vocalist, with Jeremy Freedman and Zach Abels on guitar, Mikey Margott as bassist and Brandon Fried keeping the beat moving along on the drums. After releasing their first album in 2013, they went onto producing a mixtape in 2014 titled #000000 & #FFFFFF ('Black and White' in hexcode). Literally as I write this, they have released their newest album Wiped Out!, a more experimental and easy-to-listen-to sounding record, a definite change from their previous album. Unfortunately, there's no really edgy backstory to Jesse like our previous band's lead singer. Though Jesse does sport an illuminati tattoo on his neck, and really loves black and white, as 90% of all pictures of the band on google are in black in white. So, I was going to do another track-by-track listen and review of the album, but because some people didn't enjoy the length and detail, *cough, the Co-Editors ;) * this review will be more condensed. Here we go:

1. A Moment of Silence
2. Prey
3. Cry Baby
4. Wiped Out!
5. The Beach
6. Daddy Issues
7. Baby Came Home 2/Valentines
8. Greetings From Califournia
9. Ferrari
10. Single
11. R.I.P. 2 My Youth

Moment of Silence is basically just that, 30 seconds of nothing, just silence. Prey is a really good start to the album, with a nice surfer sound and a touch of gloomy beaches. Cry Baby uses a really nice powerful bass to deliver the song and keeps you nodding along. Wiped Out! as the title track of the album impressed me, Jesse was able to show off some of his fast spoken word in the middle, reminiscent of the mixtape that was released the year before. Coming to the middle of the album we have The Beach, which keeps the atmosphere of the album continuing along. What is this atmosphere you might ask? Basically it feels as though you're sitting at a beach while it's raining and you're thinking about your ex, but now you're sud-

denly driving in your car down the road at the cold end of a summer trying to enjoy the slightly warm air one last time. Baby Came Home 2/Valentines is a sequel to one of their previous songs, and the acoustic guitar mixed in with Jesse's vocals just really take it home. Switching it up from the last two songs, Greetings From Califournia gives us a catchy start and a nicely paced song, which drives us to Ferrari. This song is the poster boy of their experimental side, definitely a bit different from the rest of their album, The Neighbourhood does push us out of our comfort zone with this one. Coming towards the end, Single is an alright song, probably the weakest on their album, and there isn't much to remember with this one. Finally, probably my favorite on the album, R.I.P. 2 My Youth is a song that will leave you singing along and nodding your head to. It probably comes the closest to the sound from I Love You., and I would have actually wanted this song at the beginning of the album as a good segue into their newer sound.

I really did enjoy listening to this album, but not so much as their first album, which I would definitely suggest you to listen to if you enjoyed any of the songs on Wiped Out!. Very chill, very cool, and the tiniest tinge of hip-hop keeps you going to the next track and makes you hit repeat when you're all done. This is basically the type of album you would blast after finishing 5 midterms in 2 weeks and you want to start winding down to the end of the night. Jesse Rutherford takes us on the mellowest ride of our lives, especially with tracks like The Beach, Baby Came Home 2/Valentines, Greetings From Califournia and R.I.P. 2 My Youth.

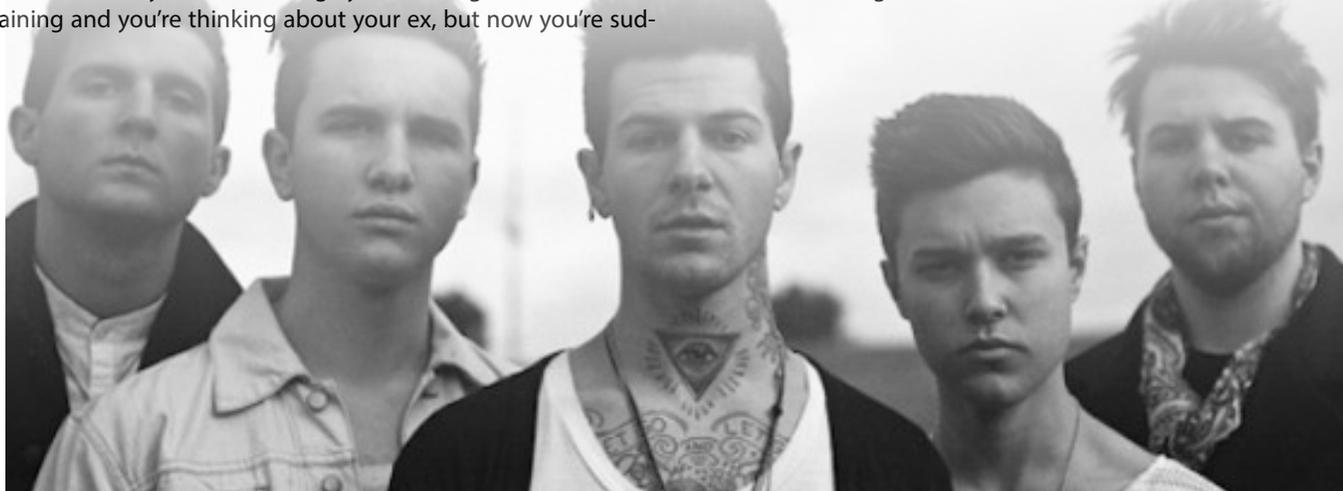
I would rate this album 3 and a half Ambiens out of 5 for its lullaby-esque feel

If you enjoyed this album, or any of the tracks, I would recommend you try these ones!

I Love You. by The Neighbourhood
AM by The Arctic Monkeys
Trilogy by The Weeknd

If you have any questions, comments, concerns, inquiries, suggestions, don't hesitate to email me at faizb@hotmail.com. I don't have a clue for what I'm going to do for the next album review, so please let me know if you'd like to see a review for an upcoming album!

Thanks for reading.



Campus Drama and Distant Lovers

By Lyudmyla Pashkivska, Staff Writer (1T9)

On September 18th I attended the opening performance of George F. Walker's play *We the Family* at the Hart House. As the title suggests, it dealt with the theme of family, specifically intercultural relationships. The play is a tragedy. Out of twelve characters eight died and two lost their freedom. The author laces dark and often discriminatory humor throughout the dialogue and the storyline. It made me quite uncomfortable at times, and at the same time it reaffirmed my belief that all people are equal and should not be judged by their race, belief or origin. Although I avoid all movies and books with sad endings, I would definitely see *We the Family* again.

Summary

This play takes place after a marriage between Jonas, a man of Jewish, Irish and Canadian descent, and a Chinese woman named Lucy. After they leave for their honeymoon, they are kidnapped and held for ransom. David, Jonas' father, asks the kidnappers to keep his son and daughter-in-law for a longer time. David verbally abuses his Irish wife Lizzie, in a darkly comedic way. He also has a Russian girlfriend, Sonia, who he sends to her gangster father to get assistance. Instead, the mobster forces his daughter to marry his business partner and eventually kills the newlyweds. David also hires an assassin to kill Ali, a Palestinian, because he knows that he that slept with his girlfriend and falsely believes that he also slept with his wife. Lizzie guesses that David was involved with the death of her son and her friend. She kills her husband and is imprisoned. The Chinese side of the family consists of the bride's stepmom Jenny and sister Lucy. They are dealing with the death of the father of the family, who committed suicide due to his astonishing gambling debt. At the end of the play the stepmom also commits suicide. David's parents die during the play due to natural causes after living in an intercultural relationship for forty-seven years. The sisters of the married couple engage in a romantic and supportive relationship.

Interpretation

In my opinion, the play showed that people should be evaluated individually rather than clumping them together, using stereotypes. There are people with a variety of characters, abilities and beliefs in every nation around the world. By shoving all in same category we lose the chance to get to know them. This can be seen during the interactions between Sonia and her partners

Ali and David. She does not want to marry Ali because Palestinian guys just want to "cook, clean, walk behind [them] like f*****g slaves and sometimes screw" However, David, a Canadian Jewish man sends her to her Russian father that forces her to marry and become a slave. All men in the Middle East are not abusive husbands. Ali treats other characters well and is a principal at a school. Therefore, it is likely that he would treat her well in comparison to David who only uses the other characters without regard for their wellbeing. By believing in stereotypes, Sonia lost her freedom and a chance to be in a loving relationship.



Sonia and David

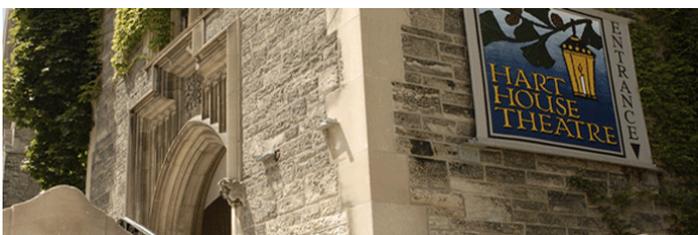
The Stage and the Actors

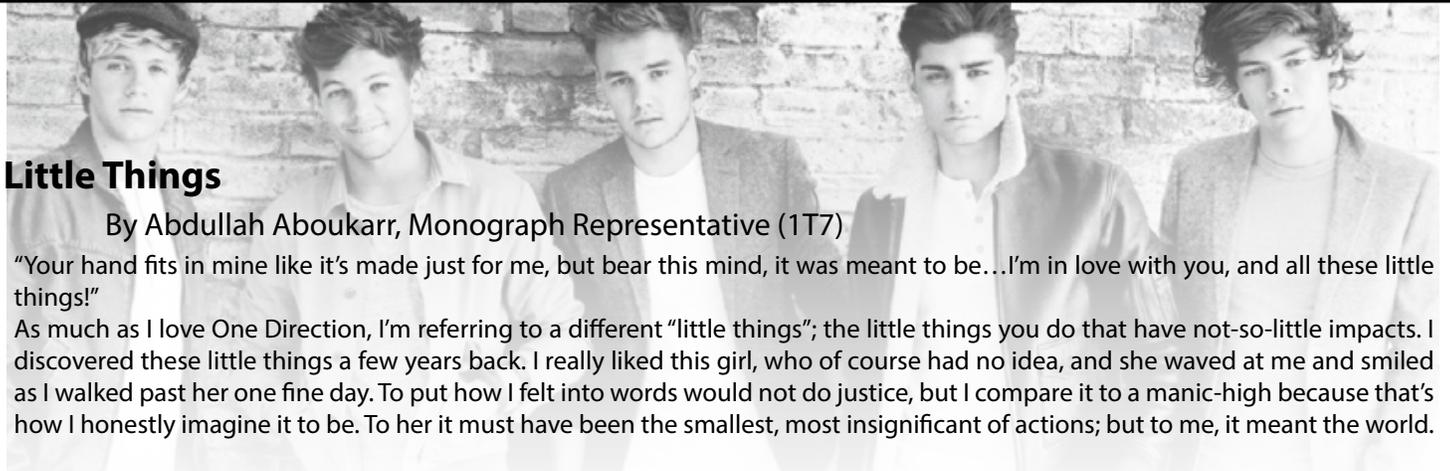
Though this was a low budget production, the set was very cleverly designed. The stage contained different levels of platforms that allowed one area to be subdivided, creating a feeling of distance. There were large, translucent photos of the sky risers at the back that placed the events in a city. They were cleverly lit up with different coloured lights. The music was interesting remixes of recent songs. For example, when Sonia and David were kissing in a dark alley, Lady Gaga's Love Game was playing, the lyrics "Let's have some fun, this beat is sick I wanna take a ride on your disco stick" with an ethnic instrumental layer.

Truly multicultural.

Conclusion

This production was relatable, entertaining and though provoking. The audience around me seemed to like it as well. At the opening scene, Lizzie the wife was standing over her husband's shoulder as he clicked away on his laptop, her disapproving glare made the audience laugh even before any lines we said. And though there was cringing, there was even more laughter to follow. It was refreshing, and despite being a tragedy, it shows that intercultural relationships can work.





Little Things

By Abdullah Aboukarr, Monograph Representative (1T7)

“Your hand fits in mine like it’s made just for me, but bear this mind, it was meant to be...I’m in love with you, and all these little things!”

As much as I love One Direction, I’m referring to a different “little things”; the little things you do that have not-so-little impacts. I discovered these little things a few years back. I really liked this girl, who of course had no idea, and she waved at me and smiled as I walked past her one fine day. To put how I felt into words would not do justice, but I compare it to a manic-high because that’s how I honestly imagine it to be. To her it must have been the smallest, most insignificant of actions; but to me, it meant the world.

This brings me to my point. We’re in a professional program with an extremely professional workload. There are so many times when I feel super inspired and ready to change the world, only to remember I have a care plan to write; a care plan that probably won’t be marked. I get extremely discouraged and I feel really selfish, but then I remember that smile and wave. I remember how I don’t need to go out of my way to make a change in the world. A simple smile, a few kind words, even treating a stranger to a coffee can make a world of a difference in their life. When you’re thinking back about that day, it’s not even something you’ll remember because of how insignificant it was. Yet you probably made someone’s day that much better. Even the happiest, nicest, most jolly people need a pick-me-up once in a while.

So whenever you watch a Marvel movie and feel ready to save the world, don’t let reality bring you down. It’s the little things that matter most!

My Earliest Memory

By Mariam Sadar (1T7)

I don’t really know when nothingness turned into consciousness for me. Pinpointing a time when I went from believing I was one with the world to becoming a distinct body separate from it- from viewing it, rather than being ‘it’ - is near impossible. But awareness one day did come, and with it, one of my earliest memories.



I remember the sounds first. The bustling of a busy city street, cars honking and indistinct conversations somewhere above my head. They swelled up, then died down again- like an anti-climatic end to a crescendo; a faint

sense of disappointment after a tantalizing build up. I was about five years old, my small hand held firmly in my mother’s much larger hand. I remember looking up at her, her raven black hair neatly coifed at the nape of her neck, her fair skin slightly flushed from her rushing to the bus station with her two small kids. Her lips were painted a bright red, little tufts of air escaping her lips in the cold December air, back when she used to wear lipstick. Although surrounded with so much unfamiliarity, I remember feeling safe. There’s nothing quite like it - it is an altogether singular experience. I was comforted by the scent of her jasmine-scented perfume and the silkiness of her kameez pressed gently against my cheek as I moved against her in the gathering crowd.

Slush flew up and splattered against the pavement as the bus pulled up and groaned to a stop in front of us. A brief glimpse of myself in the reflection of the door; a bright pink turtle neck peaking up under a puffy blue jacket. Hair tied up high on my head like a palm tree, my mom’s go-to style those days. Later, she would progress to a very fashionable bowl cut for a young girl of six.

The memory then fades and cuts to my brother and I sitting on either side of my mother. I am sitting closest to the window, the bus station growing smaller and smaller as we move away. She has handed us our favourite chocolate, ‘Mr.Big’, undoubtedly a clever tactic in keeping us occupied during the trip. Clever and effective. And that’s where the memory ends. As quickly as it had began. Abruptly, with chocolate on my face, staring out through the window at the blurry scenery beyond, and my little feet swinging back and forth. Content and happy. Not knowing my destination, but overjoyed at the journey.

Why I remember this of all things is a mystery. There’s nothing particularly remarkable about it. It is something now, as an adult, I would consider mundane. A routine winter-time commute home, I would rather sooner forget, than remember every detail so vividly. But memories are strange things, aren’t they? What sticks and what falls asunder. How the most insignificant things can describe a moment in time for a person and the faintest of smells can trigger the most painful of remembrances. Sights, smells, tastes and sounds melded and pieced together to define a life-time, telling a story that has only one author; a story that has only one reader.

PharmaSass: Midterms

By Anonymous 1T9

Ah, midterm season, everyone's least favourite 13-letter phrase beginning with the letter M (second least favourite is "methemoglobin").

A week before each exam my mind fills with this sense of urgency, which leads to note-printing, which leads to cue-card making, which leads to frantic subway studying, which leads to yelling "OATPs ARE INHIBITED BY GRAPEFRUIT JUICE" at poor, innocent bystanders. Given that (the bulk of) midterms are now behind us, perhaps it would be healthy to reflect back on the last two months with newfound lightness. I have decided to phrase these reflections as a list, specifically: 7 things you didn't expect when you started your first year at the Leslie Dan Faculty of Pharmacy.

1. You thought undergrad would prepare you better.

Whether you did 2 years or 4 years, a Master's or a PhD, be honest, you thought you would be better prepared for this. Coming in to my first semester, I was sure 4 years of undergraduate study skills would prepare me for professional schooling. I am not ashamed to say that I was quite wrong and that study skills do not uniformly transfer across courses; let alone schools and fields of study. It should come as news to no one that studying for a general chemistry course at a small-town (relative to Toronto) university is very different than studying for Pharmacokinetics at the University of Toronto. Ah, September-me. So young. So foolish.

2. Molecular Pharmacology.

Ok – seriously. What is this course? So many people have told me to study hard for it that I have half-considered picking up a textbook and getting started before the course even starts. Why is it so difficult? Why is this the only course people talk about in first year? Do they teach magic in Molecular Pharmacology? Does Professor Snape teach Molecular Pharmacology? I would appreciate any and all further information into why this is "the course to look out for". I am kept up at night with anticipation for this course (am I kidding? You'll never know.).

3. There are hundreds of reasons to be late.

Here is a hypothetical situation that could occur on the way to a 9AM Anatomy Lecture: you leave your house at 8AM (normally a good time) to discover there is construction on your street, so you have to take a longer route. When you arrive at the appropriate intersection, you have to walk around an enormous puddle (now legally considered a lake) to get to the subway station. At the subway station, you have to wait 5 minutes for the train to come, 2 minutes for everyone in front of you to board, 30 seconds to realize you won't be making it on this train, and another 5 minutes to wait for the next one. On the subway, someone in a train ahead of you has activated an emergency alarm. 5 minutes pass. It then starts raining so the train slows to deal with "difficult track conditions ahead". You arrive at College station. The

police have shut down College between Yonge and University. You take an alternate route and arrive at PB just in time for your professor to say "thank you, any questions? No? See you all next week!"

4. Coffee flows like money.

It's essentially the currency that I have observed. Did your friend pay your cover fee at a club? Buy them a coffee before class next week. Want someone's study notes? Buy them a coffee before class next week. Want to join a study group? Buy them all coffees before showing up to the study group. Want to take a nap in class and want to ask for your friend's notes at the end of lecture? Buy them a coffee before class. Do you have a question about anything? The answer is probably "coffee".

5. Being tired – always?

Closely tied to number 4 – in the last few weeks, glimpses have been caught of people sneaking in quick naps before, during, and after classes. And I don't find this surprising at all. I feel tired frequently. At first, I wondered if this tiredness and constant napping was due to academic exhaustion, but perhaps



it is also due to mental exhaustion. Maybe even emotional exhaustion. It is possible that all pharmacy students have simply been listening to Adele's "Hello" on repeat. It is also possible that people found the results of the first Health Systems assignment highly distressing. It could be a combination of the two – you decide.

6. Eight courses.

EIGHT. EIGHT? EIGHT. When I first got my schedule back in July I double, triple, and quadruple-checked to make sure I was not hallucinating. I emailed an upper-year friend. I laughed (cried?) out loud because I thought it was a joke and then I realized it was July and there is unfortunately no such thing as July Fools' Day. I do not understand how my classmates are cool, calm, and collected all the time, because I feel like I appear very much sweaty, anxious, and erratic all the time. When I first told my dad that I would be taking eight courses he rolled his eyes and said, "don't exaggerate", to which I replied, "... why would I make this up?" That seemed to stump him.

7. Making lasting friendships.

Personally, I had thought I hit my cap in my undergraduate education. I had always been told that I would make my best friends in university. With no expectations for further education, I spent time forming good relationships and strengthening them. After applying and being accepted into this daunting program, I did not expect to click as well as I currently am with my classmates.

Doing an undergraduate degree in Life Sciences has a certain reputation for fostering competitive, one-dimensional academic success stories. What pleasantly surprised me about Pharmacy is that we are referred to as “colleagues” because of the likelihood of this happening in the future. Furthermore, we are able to bond on a level deeper than academics (i.e. this entire article). We are roughly two months in to the year and I know these friendships are here to stay.

Ultimately, this program continues to redefine and alter my expectations of what it means to be a budding professional. While the feeling of writing midterms was similar to the discomfort of being too hot with the blankets on, but cold with the blankets off, I am glad we all went through the gruelling process together. Cheers to being one month closer to our white coats, 1T9s!

Why are PB's Front Door's So Difficult to Open?: A PPI Investigation

By Jimmy Tieu, Staff Writer (1T7)



The struggle of opening the PB doors as depicted in the 1T7 Class Council video: “Things Pharmacy Students Do”

PB is a beautiful place. Housing talented staff and students, its pods glowing at night accompanied by large see-through glass windows; the building is actually quite inviting. However, PB has an awkward way of greeting its guests, presenting them with its infamous front doors.

While looking nice from the exterior, these doors aren't the most user friendly ones in the world. Quite simply put, these doors are heavy. This problem is compounded by the fact that the automatic button doesn't always work, the cold winter wind adds to the difficulty and leaving the building through the two middle doors can often be a challenge in itself. Some pharmacy students know this feeling all too well.

“I swear I pulled and pushed against it, and it never opened. I even slammed against it and I didn't go anywhere” complains Annie (Quynh An) Le, a 1T7 student. Even the newest generation of pharmacy students is quickly noticing PB's special quirks. “The heaviness of the door is my rate limiting step for making it to class on time” comments Sasha Ryan (1T9).

But why must these doors be so difficult to open? Was it a cost savings measure by the faculty? Perhaps they were constructed as a metaphor for the hardships of being a pharmacy student.

Either way, I decided to investigate the true answer to this mystery.

There was no clearer place to start my investigation than the entrance to PB itself. Walking around the building, I quickly noticed that all doors, whether being an entrance or side exit, were of the same style and unfortunately, weight. But with few other clues that could be found, I decided that using the Internet was the next best option.

Surprisingly, the Internet also provided little answers to this problem. It turns out googling “why are doors heavy” is not the most efficient search to be done. I did, however, learn that doors cause 300,000 injuries in the United States each year.

To really find some answers, I decided to talk to the Chair of the Leslie Dan Faculty of Pharmacy Joint Health and Safety Committee, Zarko Zlicic. I quickly learned that the heaviness of the doors isn't for metaphorical reasons, but because of the school's ventilation system. In fact, PB's ventilation system is intentionally set to have a slightly lower internal air pressure compared to the outside air pressure.

The reason the system is set differently in PB is due to the number of labs (no, not your MTM lab) we have on the upper floors. “This is usually the case with laboratories - to keep any potential contamination from various hazards escaping the building” explained Zarko. “The fact that there are numerous fume hoods throughout the building only adds to the pressure differential that makes the doors feel heavier than they really are”.

As I made my way out of PB after a long day of lectures, I find myself back at the start of my investigation. With motion sensor doors becoming the norm in malls and other buildings, perhaps I've become too spoiled over the years. If anything, PB's doors are providing pharmacy students quick, upper body workouts dosed twice daily. Ok maybe not, but other than travelling in groups and relying on others to open the doors, this is how I'll look at the issue.

Sorry, the Person You're Trying to Reach is...Busy

By Sunny Wang (1T7)

"Maybe..." The magical little five-letter word we all utter quietly under our breath as our minds race through our week's schedule to determine if we can commit to plans with friends/significant others/family/colleagues/clubs/or really anyone else striving for a little piece for our day. Why are we so unsure? Is it because we don't want to hang out with these people? No. Is it because we're anti-social? Quite the opposite. It's simply a symptom of a sickness we're suffering through collectively as a generation – the condition of being "busy".

It's becoming a trend, an epidemic, whatever you want to label it as, but we see it in all our friends. When on the receiving end, we are left wondering why these people just can't seem to make time in their days. Am I not important enough to deserve half an hour of their time? But who are we to question them? We're just as bad, if not worse; cancelling plans last minute and being afraid to commit because we're literally running out of hours in the day. Snarky comments from the past generations don't help either. "Why are you so busy? Back in our day, we had time to stop and smell the roses" "Why can't you just make more time?" Why? Why? Why?

The truth is, it's simply a different time from "back in their day". We are *expected* to be busy. People question your life choices when you're not. We are *expected* to be in school, studying 24 hours a day. We are *expected* to hold down a part time job, to pay for our own tuition and expenses, because god knows we'll be taking our student loans to our graves if we didn't. We are *expected* to participate in sports to stay active and healthy. We are *expected* to be social, to stay sane and network with new people. We are *expected* to participate in extracurricular activities, to beef up our resumes for job applications. We are *expected* to date and find love. Need I continue?

"Jack of all trades, master of none" is a phrase I often hear used to describe our condition. I propose an amendment. "Jack of all trades, master of all (and then some)". Because this is what's expected of us in order to be a normal functioning member of society. Everybody is just as busy as anyone else. Everyone is putting in the 10,000 hours. So how are we supposed to distinguish ourselves from all the other high-functioning lifeaholics out there? By out-busy-ing them! Your competition is a certified swim instructor? You compete for the varsity swim team. Your friend works part-time for a pharmacy? You work part-time for three. We are stuck in an endless cycle of measuring our achievements against those of our peers, forever trying to justify our worth by keeping ourselves busy.

This idea of measuring our value based on how busy we are is so engrained into our thinking that we're incapable of living any other way. As high-functioning life-aholics, we are addicted to the idea of stacking achievements on top of each other, like playing cards as part of a juvenile party trick. Only instead of impressing our little cousins, we are trying to impress ourselves by justifying our worth based on how high our tower gets. But

as expected, the house of cards comes crashing down sooner or later.

Our age group carries with it the highest prevalence of depression and mood disorders. In fact, cases of students failing to cope with the pressure have prompted many Ontario universities to institute "fall reading breaks" to alleviate the situation. But we all know slapping a Band-Aid on a bullet hole never helps. These "reading breaks" might as well be named "two-days-for-you-to-catch-up-with-all-the-things-in-life-you-don't-have-time-for-normally, like-eating-and-showering", because that's exactly what they are.

Here's what I'm proposing. Instead of relying on others to help mend the situation, why not stop the bleeding at its source ourselves? I'm not suggesting that anyone should drop everything, board the next flight to Europe, and spend 2 months "finding yourself" by neglecting all your responsibilities. All I'm proposing is for us to take a moment for ourselves every once in awhile, and appreciate all the small victories we achieve in our lives everyday. Small victories like completing a good workout at the gym. Or having the courage to smile at a stranger at the coffee shop. Or writing this piece for the Monograph. Minute things that don't seem to matter in the grand scheme of things, but has the effect of slowing our day down, and allow us to relish in a brief moment of joy that makes everything else seem ok. That's what I'm proposing. That's how we can learn to un-busy ourselves.



Drugs and the Gaia Hypothesis

By Natasha Dogra, Staff Writer

In the plethora of environmental problems that our world seems to be facing presently, there is one which directly relates to the pharmaceutical field. This problem is the improper disposal of medical drugs.

Much research has been conducted studying the effects of improper drug disposal, many of which have concerning results. Some research suggests that only a small percentage of patients correctly dispose of expired medication. Moreover, the media has also highlighted the issue of improper chemical and medical waste dumping at a larger scale by certain companies across the globe.

Such dumping as well as other routes of environmental exposure to pharmaceutical compounds have serious repercussions that may not be well known amongst the public. Some negative impacts include unusual and sometimes dangerous variances in the development of animals exposed to medical waste. For instance, many studies, as summarized by the Washington Post, suggest that fish exposed to synthetic hormones either directly or through the maternal effect, may showcase a reduced ability to fertilize eggs. Although the bulk of this research analyzes the impacts on aquatic environments, similar studies sampling sediment also indicate a level of impact from pharmaceutical waste. For instance, a very interesting article in the EMBO reports written by Alistair B.A. Boxall discusses the ways veterinary medications such as antibacterials, can impact microbial organisms found in the soil. This is of concern as certain microbes contribute to the breakdown of pesticide, which is a well-known chemical contributor to environmental concerns.

With this information in mind I introduce the discussion

Tech Talk: Surface Book vs Macbook Pro 13

By Yannan Liu, Staff Writer (1T9)

When almost everyone from sister to your third cousin twice removed seems to have an iWatch, iPhone and Macbook, it is pretty hard to turn any heads when it comes to new tech gadgets or products. But where almost everything else has failed, Microsoft's new Surface Book seems to be an exception. With both devices at 13 inches and similar price points, it's tempting to compare the two. And when Microsoft boldly claimed that their Surface Book was twice as fast as the Macbook Pro, it was inevitable that someone will put the two head to head. What was surprising wasn't the fact that Microsoft lied in that statement, but that when benchmarked (by PCWorld and Wired), the Surface Book was actually THREE times faster than its 13 inch Apple counterpart. Now of course, "faster" is a purely subjective term, but quantitatively, while the Surface Book may suffer a

of a thought provoking theory: The Gaia hypothesis. This theory suggests that the earth can be observed as a large organism as the living and non-living components of the planet interact in such a way that they are able to sustain life. This theory opens a door to a new perspective. It can alter our minds to view the earth as a patient rather than a planet. If the earth is a patient it would be of concern to us that this patient is being exposed to not only human medications but veterinary medications. It would be of concern to us that chemicals from metabolizing various unnatural compounds are floating around within her system as well. We would think, what ingredients does she no longer need? Is she receiving a duplicated or excessive dose of something? Is her system deviating from homeostasis due to an adverse reaction?

This begs the question, that if our drugs are influencing our environment, how may we implement 'greener' change in our practice to allow for a reduced negative impact.

We may want to ask ourselves:

- Are we as future health care workers doing our part in understanding how pharmaceutical drugs impact the environment?
- Are we well versed on the correct disposal of various medications?
- Will we emphasize the explanation on the correct disposal of our patients' medication?
- When making recommendations or opinions, will we do so with the environment in mind?

These are questions I do feel will be very important to discuss and reflect on in the years to come both as students and future health care workers.

couple hours of shorter battery life, it does make up for it by having three times the processing power when it came to graphical rendering and gaming as well as 4k video playback. While all of these characteristics may sound great on paper, benchmarks will not replace actual customer experience; so keep your eyes peeled for any more reviews and feedback in the near future.

Just some things to keep in mind as you plan out your Black Friday shopping in the next couple of weeks! Yannan, out!

Sargent Beautiful

By Natalie Ternamian, Staff Writer (1T8)

"It's not what you look at that matters, it's what you see."
- Henry Thoreau

I come from a family of artists. My parents' hobbies include sketching and painting, and so it shouldn't surprise you if I tell you they first met in an art class. It was therefore fitting, that their son, my brother, should also excel in the arts. I, however, am the black sheep of the family when it comes to talent in the visual arts. But while I, myself, am not an artist, I do enjoy looking at things that are beautiful. So when my brother announced that the Metropolitan Museum of Art in New York City (the Met) was hosting a John Singer Sargent exhibition over the summer, it was instantly settled; my family was going to the Big Apple.

We've been lucky enough to have frequented the museum many times before, and so going back was much like returning home. To me, the Met has always been a place of awe and inspiration. I have many fond memories at the Met. As a child, I would run around my favourite exhibit, the Temple of Dendur (see panorama above). Many years later, I would return to gaze at the breathtakingly beautiful Charles James designer dresses just last year (see photo on the left). This time, however, after paying a visit to our old favourites, we settled into the exhibit that we had



travelled so far to see: *Sargent: Portraits of Artists and Friends*.

But before I get ahead of myself, I should tell you a little bit about the artist himself. John Singer Sargent was born in Italy in 1856 to American parents who cultivated his interest in music and art. He was trained at the prestigious École des Beaux-Arts in Paris and,

fast forward a couple years, he went on to become one of the leading American portraitists of his generation. He captured the images of actors and other influential peoples of his time and has painted some of the most recognizable pieces of impressionist art including *El Jaleo*, *Madame X*, and *Ellen Terry as Lady Macbeth*.

We took our time walking through the stunning 90 piece exhibit, and paid homage to the classics. It's a surreal experience to see such well known pieces of art, just a few feet from your view! As we continued through the exhibit, I was drawn to one oil painting in particular that was titled, *In the Garden, Corfu* (1909) (see photo on the right). The painting is light,



airy and fresh. It features a young woman reading a book under the shade of a large tree. I imagined a light spring breeze gently blowing through the scene. Finally, my eyes landed and rested on her exquisite dress and her pale yellow shawl, which accurately portrayed the classic elegance and beauty of the impressionistic art.

I stepped closer to admire the painting and to further inspect the shawl. It was then that I noticed Sargent's individual brush strokes (see photo to the right). Surprisingly however, the strokes seemed dull and listless. They were lifeless! It was as though after years of sitting on the canvas, the strokes were heavy, stiff and insipid.



I was confused. At one position, the colours merged together in perfect harmony, but at another, the mix of colours were grimy and harsh. As we walked through the rest of the exhibit, I noticed the same thing happening to the remainder of his paintings, and so I attributed this duality as merely a characteristic of Sargent's work.

But on our way home, I kept thinking about the shawl, the angles of light, the person seeing the painting and the painter himself. I kept thinking about how something could look so beautiful from one angle or position, but when you get closer, it could look so very far from beautiful. Indeed we know that beauty is in the eye of the beholder because beauty is relative. But maybe, if we do not think something is beautiful, we must only shift our gaze to see that thing as beautiful. So this summer, Sargent reminded me that it is possible to see beauty in everything – you only must seek to find it.

[Want more art in the comfort of your own home? Google search the words "Art Project" and select the result "Art Project – Google Cultural Institute." In the search bar at the top left, type "The Metropolitan Museum of Art" and voilà, art at your fingertips!]

The Discovery of Opiate Receptors

By Shan Liu, Staff Writer (1T9)

The receptor theory was first proposed by Paul Ehrlich and John Newport Langley in 1905, as they noticed that the actions of nicotine and curare seem to have a shared target. Surely, the pharmacological profile of opioids seems to be mediated through a receptor. Unlike anesthetics, opioids have a rigid and defined structure, which can serve as the basis for receptor binding. Some opioids can exert very potent effects at very small doses. Most evidently, if you inject naloxone to someone overdosed on heroin, the antidotal effect is seen within seconds.

But they are exogenous chemicals. Why would the body produce receptors for things that are not native to the body? Before endorphin and enkephalin were identified, this receptor idea was unthinkable.

The problem with opioids was not front-page worthy until the late 1960s, when ¼ of the soldiers enlisted in Vietnam War became addicted to heroin. President Nixon launched a War on Drugs. But how can scientists come up with cessation or harm reduction methods without understanding the molecular mechanisms of opioids, the nature of addictions?

With the abundance of grants for research in this field, Avram Goldstein, a pharmacologist from Stanford University, and Candace Pert, a graduate student from Johns Hopkins University, took on the task of identifying the opiate receptor.

Goldstein conducted two experiments to measure the non-specific binding to tissues, and specific binding to receptors. He incubated tissues with cold (unlabelled) dextrophan, then added hot (radioactive) levorphanol to it.

Theoretically, all the non-specific binding sites would be occupied by dextrophan, while all the receptors would be occupied by levorphanol. Therefore, the radioactivity count should correlate to the amount of receptor present. Goldstein got good results, even though the binding site for levorphanol that was involved was not the opiate receptor. The science community was not impressed, because this method was just too iffy.

Solomon Snyder, a professor at JHU, wondered what can be done to reduce the ifiness. He assigned Candace Pert to the task.



Candace Pert (left) and Solomon Snyder (right)

Candace Pert attempted Goldstein's method with different drugs, under different temperatures, at different incubation times, and with refined washing techniques. Nothing worked. Until one day Candace rinsed the tissue with radioactive naloxone.

Candace co-authored the paper with her mentor, Solomon, who received the Lasker Award for his research on opioid receptors. She, however, was not considered for the award, for she was "only a graduate student".

As Candace did not receive the credit that she deserved, she wrote a letter to the Lasker Award foundation to protest. Although the foundation did not change their decision on the award recipient, her protest was thought to have prevented Solomon from receiving a Nobel Prize.

Candace passed away in 2013, and Solomon was invited to her funeral. After this many years, their relationships that revolved heavily on opiate receptors had a harmonious ending at last.

Study Break!

ANSWERS FROM LAST ISSUE:

3	8	1	4	2	6	5	9	7
4	9	2	1	5	7	6	8	3
5	6	7	3	8	9	2	1	4
7	3	4	6	9	2	8	5	1
2	1	8	5	7	3	4	6	9
6	5	9	8	4	1	7	3	2
9	4	6	7	1	8	3	2	5
8	2	5	9	3	4	1	7	6
1	7	3	2	6	5	9	4	8

EASY SUDOKO

6	5	7	2	1	8	4	3	9
4	9	2	6	5	3	1	7	8
1	3	8	7	9	4	2	5	6
9	6	1	5	2	7	8	4	3
5	7	3	8	4	1	9	6	2
2	8	4	3	6	9	7	1	5
8	1	6	4	3	2	5	9	7
3	2	9	1	7	5	6	8	4
7	4	5	9	8	6	3	2	1

INTERMEDIATE SUDOKO

Rebus Puzzle Answers:

- 1) Blood thinner
- 2) Melanoma
- 3) PCAT
- 4) Lisinopril
- 5) Mast cell
- 6) Beta blocker
- 7) Adderall
- 8) High blood pressure
- 9) Birth control
- 10) Over-the-counter medications

We had an overwhelming response to our Pharmacy Shout-Outs this issue! Check them out below! If you forgot to give a shout-out this issue, not to worry! We'll be featuring the "Pharmacy Shout-Outs" in every issue of The Monograph!

Enjoy!

Shout out to Areeba Zaheer, a strong independent woman who don't need no man!

Shout out to Tess Simpson for taking few minutes out of her day to hear me out and give me a well needed hug ! Much needed and appreciated !!

This one goes out to the girl in black, Lucy Li, harbinger of happiness and waving in pharmacy. Never stop.

SHOUT OUT TO EVERYONE IN MY 1T9 CLASS FOR BEING SO SUPPORTIVE AND HELPFUL TO EACH OTHER

Welcome back from the land of fiddles and friendly sea-folk, Jake! Happy to have you back home :)

"To Professor Dubins! Thank you for making pharmacokinetics my favourite class, you're a lyrical genius ;) and your jokes are ridiculous. Thank you for making us all laugh AND learn at the same time." -1T9 Student

HAPPY BIRTHDAY to my wonderful friend Elise De Francesco who is turning 23 this month! You're one year closer to being able to complain about the \$100 deductible every August! Cheers friend!!"

-Your Friend JAKE

Hi Ben Chan!
Don't forget to take your Viagra today!
- Best Lab Buddies

Shout outs to Brenda Thrush for being the best registrar around! I don't know what I would do if Brenda wasn't always there to remind me when and how to pay my tuition, apply for OSAP, etc. BThrush4eva!

Shout out to the beauts of Team Pharma! Thanks for always being there for me <3 #wegotthis

Shoutout to Andrew Attia for his nonchalant jokes during PK study sessions. Keeping the mood strong when times were rough

"Shout out to Jason Stacey for always providing to those in desperate need!" -Catan

Faizan Baig you are just something else. I've been crushing on you so hard. Your goon aesthetic makes me fall in love with you even more each and every day. Go for the gold!

Hey PK, just wanted to let chu know that you helped me through pharmacy more than you know; your optimism that seems to have an infinite half life and your upbeat attitude that saturates the bodies of those around you :D stay cool man, stay cool. P.S. I'm also loving the Korean culture.

Dear Dave & Dunc,
You two precious gems melted my heart at Phollies. #marryme #mr.pharmacy2016

Shout out to Yousef Al-Enzi for screaming "SCUR!" literally everywhere in the pharmacy building, at all times of the day and night. Shrem!

"Sarosh, you are actually too cool for school. It is like you're the result of an illegitimate love-child between Wacka Flocka Flame and Tupac. Please help me be more like you. God bless." -Mark Hoang

Shout out to Dana Shan !!!! Your sooo awesomeeee and great but sadly not as awesome and great as a certain person who is even more awesome and great and beats you in everything. lol hahahah

Pharmacy Shout-Outs!

Shout-Out to my man Nirojan AKA Papa Biceps

ShoutOut to the Pharmacy Building for being awesome!

The second cup girl is a qt.

Shout out to Ben Chan for being such a good cook. He bakes cakes for you even if it's not your birthday! :)

Everyday when you're walking down the street, everybody that you meet
Has an original point of view
And I say HEY! hey! what a wonderful kind of day!
Where you can learn to work and play
And get along with Abdullah!

"Shout out to Steph Rankin for keeping things so ridiculously real." -Yina Xu

To the guy on third floor who always uses the same computer and leaves his stuff there, Y U NO LET OTHERS SIT THERE

I love you Jon Nhan

"Hey Shannon, you're so cool." -John Cena

Shout-out to Erica! I think you are one of the prettiest girls of 1T9 :P

Whoever said pharmacy didn't have any eye candy clearly hasn't seen you. On behalf of girls everywhere, keep making Wednesday mornings more bearable. Mhmm.

Shoutout to Faraz and Samier for being the funniest MCs!!!!

Shout out to my lil 1t8 nuggs who are having a rough week with diabetes and dermatitis! *FIGHTING* don't stop

"Shoutout to the sidewalks for keeping me off the streets" -Ash

Mona,
Knowing you are in this program makes my days brighter, even if I don't see you everyday!

Shoutout to Garry Truong for being a balla Diabetes SGS partner. He put the team on his back! I'm surprised his back ain't broke.

Shout out to Chantal Trieu for always being a shining light in times of darkness

Shannon, you mumbai fire, you can rescue me any day ;) I wanna mix up some masala heat with you and see what we can make at the end of the day. Call me asap.

Study Break!

Cryptogram – Close call for the patient

By Selwyn Chui, Staff Writer (1T9)

Each letter has been replaced by a different one – figure out the conversation that happened by solving the cipher! Answer will be released next issue!

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
											W						V								

" J N A Y J B V Y Y N U E F S T S W W S O T N Q Z X W Y Z "

J B V Y Y J S U Y Z Q Y V P N K X O J S W

C S O S Z B Y P " " D X J ' S U N W W Y V L S T

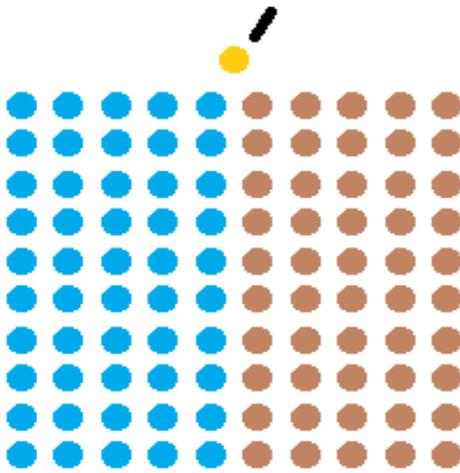
J E Q Y O S T S W W S O - S Z J B N J N Q V E D W Y U ? "

" S Z Y Y J B Y O W Y J U Y L Y J K E X Z J N V J Y P

E O T W N V S J B V E U K T S O S O Z J Y N P "

Puzzle: "If I had to be trapped anywhere for the rest of my life, it'd definitely be Costco."

By Selwyn Chui, Staff Writer (1T9)



We are a group of 101 pharmacy students trapped by an evil truck driver in a Costco Wholesale store. Things aren't looking good, but luckily there's plenty of food & water, plus we're all very clever -- if a conclusion can be logically deduced, we can instantly figure it out. Every night at midnight, the evil driver brings in a new shipment of medications. One day, out of mercy, he tells everyone that whoever can write down his/her own eye colour correctly will be allowed to leave, while the rest stay. Unfortunately, Costco recently decided to stop stocking mirrors, even in washrooms. Additionally, everyone can see each other and can keep count of their eye colours, but otherwise they can't communicate, because then this puzzle would be too easy.

Inside the Costco, there are **50 students with brown eyes** and **50 with blue eyes**, as well as **1 super keener student with gold eyes**, but nobody knows their own eye colour ("I could have **green eyes** for all I know!"). Fortunately, the driver is impressed by the keener's MTM skills, and allows the keener to say one thing to everyone else. The keener decides to say, "I see someone with blue eyes." Who leaves Costco, and how many nights afterward? (Answer will be released next issue!)

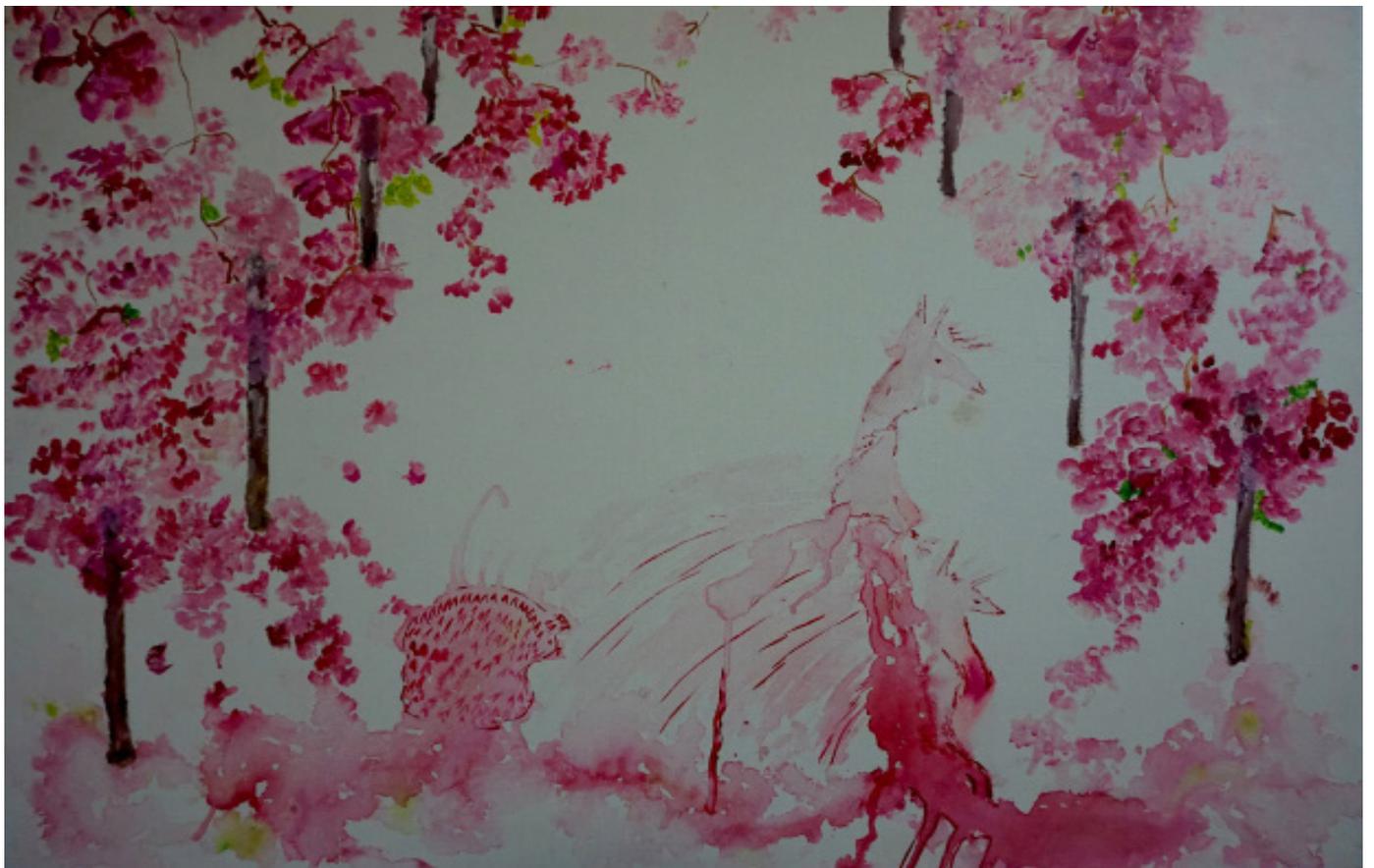
Art Attack!



Arpit Shah (1T8)



Jeffrey Tso (1T8)



Mengdi Fei (1T8)