

# MONOGRAPH

Volume 24, Issue 4

*~ International Edition ~*

Music Breaks  
Language Barriers



Life After PharmD:  
What's Next?



Healthcare Perspectives:  
Japan's Healthcare System

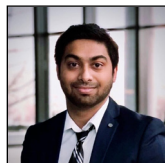




## The Monograph Team



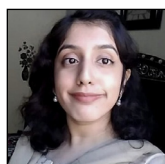
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## Hello Phriends!

Salut, bienvenido, privet, and welcome to Vol. 24, Issue 4 of The Monograph! We are excited to share the International Issue with you guys as the term is almost coming to an end!

As it is the International Issue, this issue contains many International themed articles. Want to learn more about APPE rotations abroad? Read Aqsa Ali's (2T5) interview with various students to learn about their experience. You will also find in this issue interesting healthcare perspectives: Japan's Health Care System written by Mackenzie Richardson (2T5), History of Medicine by Amira Bouchema (2T6), and the White Coat Ceremony by Sara Rough (2T6).

We also feature the Top 5 Toronto Bubble Tea Chains ranked by Ruby Ung (2T4), Riding Bicycles towards Better Therapeutic Pathways by Huy Pham (2T4) and dive into several recipes that you can start meal prepping for exam season! Some of these recipes include a pizza and pasta salad by Lina Lo (2T5) and kimchi jigga by Sarah Choe (2T6).

Of course, there are also puzzles, artwork, and photography from many of your classmates!

As usual, we have a lot going on in this issue for you all! We are very excited to have had so many people contributing to the Monograph and we hope you will consider submitting for the next and last issue of the year!



*Joham Ahmad and Ruba Ullah*

Monograph Co-Editors 2022-2023

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# UPS ADDRESS

Hey phamily!

We hope you all had a restful reading week and took some time for self-care. We know you are in the middle of midterm season right now but always feel free to reach out to us if you need any support. We are so close to completing the 2022-2023 academic year so hang in there and goodluck!

The month of March brings us the festivities of Pharmacy Appreciation Month (PAM)! A huge thank you to CAPSI and all our clubs for the wonderful PAM-related events and initiatives they are hosting all month long. We hope you especially enjoyed the delicious PAM-cakes that made their long awaited return as part of this year's PAM Kickoff. For this month we also wanted to share our appreciation for all of YOU! Thank you for choosing UofT pharmacy and joining an allied force of professionals that are paving the way for accessible patient care. We hope you take some time during the busy season to support the events happening this month and help spread advocacy for the position.

Specific to the UPS, the 11th Ontario Pharmacy Student Integrative Summit (OPSIS) is finally making its in-person return to Niagara falls after several years. We are so excited to share all the amazing events and socials we have planned with everyone who was able to purchase a ticket. You can expect hundreds of dollars worth of prizes, networking opportunities with industry-leading sponsors and an unforgettable experience with a falls-view. For those who were unable to snag a spot, have no fear, our UPS Semi-Formal is also quickly approaching and returning for its in-person debut after 3 years. This time around we have actually decided to combine the UPS Awards Night with our semi-formal to host our first ever UPS Semi-Formal Awards Gala on April 5th at Hart House. Join us as we celebrate all YOUR wonderful achievements with our traditional awards ceremony

paired with a buffet dinner, bar and dancing!

Be sure to send yourself some love and appreciation during the stresses of midterms. As we near the end of the term and enter exam season, prioritize your health and wellbeing in whatever shape or form you see fit. Again, the UPS is here for YOU! Don't hesitate to contact us with any questions, concerns or suggestions. Stay slaying and happy PAM everyone <3

Your besties from other testes,



Al-amin Ahamed  
UPS President 2022-2023



Rachel Ma  
UPS Vice-President 2022-2023







Hello Pharmacy,

With the international edition of this Monograph publication, IPSF wanted to provide you with a snapshot of our events during PAM 2023, as well as into the summer, advocating for current health issues faced globally. This year, we are focusing our campaign on **Medication Awareness**, with one focus being on drug safety.

On March 10th, we hosted a medication disposal event (aka “**Pill Drop**”) in collaboration with CAPSI and Discovery Pharmacy to promote proper medication disposal. In turn, this reduces the risk of patient and environmental harm, while encouraging safe medication practices regarding storage and expiry dates.

And we’re not finished just yet! We have some more exciting events lined up for March that you should definitely keep an eye out for:

### **Naloxone Training Workshop (end of March)**

With the growing importance of public health issues concerning opioid overdoses, we will be hosting a naloxone training workshop in collaboration with Discovery Pharmacy to encourage pharmacy students to change the course of our current opioid crisis. We will cover different aspects of opioid stewardship, as well as providing hands-on experience with this vital life-saving medication.

### **Fundraiser for Drug Free Kids Canada (end of March)**

An important aspect of our health campaign is our annual fundraiser, where all proceeds will go towards our chosen charity, which is Drug Free Kids Canada. Their mission is to ensure all young people are able to live their lives free of problematic substance use and addiction. For those who remember our mini bake sale from February with CAPSI, that will be returning as one means of fundraising. We will also have a gift basket raffle, where donations are linked with raffle entries. Finally, we will be posting a prompt connected to our

health campaign for you to rack up some UPS points. Read more about the charity here:

<https://www.drugfreekidscanada.org/>

Finally, if you’re looking for an excuse to travel, IPSF’s **68th World Congress** will be held in Bali, Indonesia in August 2023. Delegate registration will open on March 4, 2023 (further details to be posted). But in the meantime, check out this presentation below if you want to learn more about this conference and to have a mini (virtual) study escape to Bali:

<https://tinyurl.com/356h8eut>

We hope to see you come out to these events in promotion of international medication awareness and if you have any questions, please do not hesitate to contact your IPSF UofT representatives.

Wishing you all the best with exams,

**Alissa Kong and Sasha Mohindra**

IPSF Senior and Junior Representatives 2022-2023

PharmD Candidates

University of Toronto

IPSF HEALTH CAMPAIGN 2022-2023

## MEDICATION AWARENESS

Fundraising for Drug Free Kids Canada

### U of T Pharmacy Pill Drop

Friday, March 10 | 11:30am-3:30pm  
Leslie Dan Faculty of Pharmacy, 144 College St. (First Floor)

Safely dispose of your expired or unused medications. Please do not remove labels as this facilitates identification of medications being disposed of.

Hosted By: CAPSI TORONTO

Medication Disposal By: UNIVERSITY OF TORONTO LESLIE DAN FACULTY OF PHARMACY





# UPS Athletics Update



## *Hi Phamily!!*

We hope this semester has been going well, here are a few updates from athletics!

In order to motivate us to stay moving throughout mid-terms we hosted our yearly 7-Day Winter Fitness Challenge. It was a great success, thank you to everyone who participated. With over 30 participants we were able to reach a week's total of 1,281,078 steps!! Congratulations to our top three finishers Katarina Pessina (127,786 steps), Samra Ghazi (109,324 steps), and Deep Shah (105,146 steps).

As for what is to come, we are excited to announce that we are bringing back the popular Student vs Faculty Basketball game! Prior to the pandemic every year UPS Athletics partners up with the faculty to compete in a basketball game. Be sure to join us March 23rd, 2023, 6pm-8pm. The game will be held at the Goldring Center in the Kimmel Field House. We encourage everyone to join us for a fun time, no experience is required. Even if basketball isn't your cup of tea, we would really appreciate some support on the sideline cheering us on! Let's make sure to keep the student winning streak alive!



Co-ed Basketball Team

We also are excited to announce that the OPA Soccer Cup will be happening again this year. This is an event where we compete in a soccer match against the pharmacy students at Waterloo, the date is set for April 1st, 2023. The game is taking place in Guelph this year and we will be arranging a bus to get us to and from the field. Make sure to block the day off as we want to reclaim the trophy after last year's devastating loss.

We hope everyone has been enjoying intramurals! We would like to congratulate the Co-ed basketball team on their success this semester currently standing second on the leaderboard with a record of 3 wins and 1 loss. Keep up the great work and we wish you all the best going forward. We would also like to give a shoutout to both



Women's Volleyball Team

mixed and women's volleyball teams! Both teams have been crushing it this season, still undefeated with records of (3-0) and (4-0) respectively.

We appreciate the continued support and are looking forward to what's to come! If you have any questions or concerns, please feel free to contact us at [athletics@uoftpharmacy.com](mailto:athletics@uoftpharmacy.com).

*- Hamza Farah, 255 (Jr. Athletics Director)*





## Ensuring Better Patient Outcomes When Dealing with a Diverse Population

By: Meriam Salih, 2T6

One of the greatest strengths of our Canadian population is our diversity. How many people on a global scale can say they grew up going to school where they not only learned about different practices from around the world but also got to witness and take part in them? It's an experience that helps us build awareness, but as healthcare practitioners, this also brings on new challenges in providing quality and effective care to the population. Some of the challenges can include language barriers, misunderstanding of different practices, and lack of training to accommodate these factors. While addressing these issues can appear to be a daunting task, there are many simple techniques we can accommodate into our practice to overcome these barriers.

First, look around you at your team. Is it a diverse group that can accommodate many different languages and cultures? The team is not just limited to those that surround you in the pharmacy, it can involve members in other parts of the store and even team members who are currently absent but can be contacted by phone. If all of these options are unavailable, tools such as Google Translate can help in a pinch. Having a pen and paper on hand can also be such a great fix in a pinch, adding another mode of communication between patient and provider. What's most important is that the patient feels respected when they see that their healthcare provider is doing their best to accommodate them and make sure that all of their concerns are fully understood.

Second, is to listen with the intent to understand be-

fore responding. Diverse populations mean very diverse practices, some of these may come as a shock to us if we have never heard of them before. Instead of responding, it is important to understand the layers of these practices and what they involve, and most importantly, why they are so important to the patient. Health for many is so much more than just physical well-being, it is a holistic process that involves mind, body, and spirit and the picture of health will look different for everyone. As healthcare providers, we need to accommodate these ideas when planning out treatment.

Finally, our ability to provide care for a diverse population also requires us to build our skills to help us better communicate. This can involve taking language courses to help build up a medical vocabulary in other languages. Ask yourself what your patient population looks like and what skill set could you gain that would help to enhance the care that is provided to them. A story I recently heard was about a pharmacist who took it upon themselves to learn sign language. A patient who was unable to communicate verbally was overjoyed to learn that they could communicate directly with their pharmacist using sign language. This led to the pharmacist identifying many issues with their current therapy that had been missed by other providers, and these issues were addressed. But most importantly, this situation built a stronger relationship between patient and provider, one that is built on trust and through this will lead to better and more fulfilling outcomes for both patient and provider.



# Monograph Q&A

INTERNATIONAL



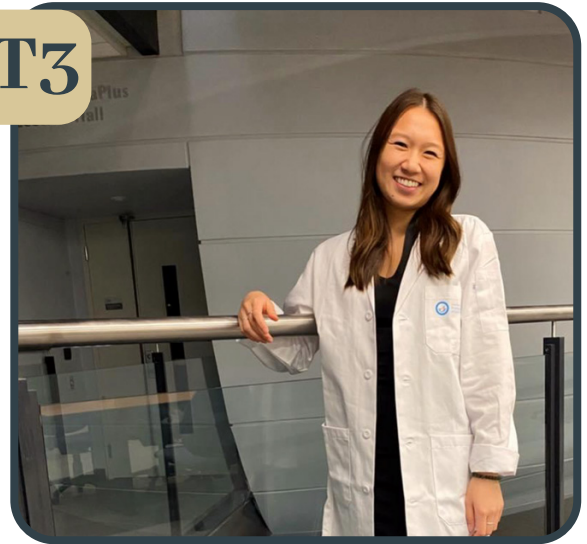
CLINICATION ROTATION

INTERVIEWS CONDUCTED BY AQSA ALI, 2T5

## Interview with Carmen Lin, 2T3

**What made you decide on taking on a placement at State University of New York in Buffalo?**

I chose an international placement because I wanted to explore a new city. Originally, I had planned to do a placement in Japan, however due to COVID-19, my placement was cancelled. This led to me choosing the University of Buffalo, which I completed remotely, and I really enjoyed my experience. My goal was to meet new people and make connections with people around the world. I was able to meet my super supportive preceptor and professor during my placement and he has opened many doors for me in terms of career development.



**Describe your experience. What did your daily responsibilities consist of you doing?**

Since I was working remotely, I had a lot more flexibility in terms of my scheduling compared to physically being in an office or pharmacy setting. I had flexible working hours that allowed me to complete my work by certain deadlines and I attended a couple of meetings every week to discuss tasks to do and reflect on what I learned. My preceptor was very focused on my personal career goals, and we always reviewed what I wanted to get out of the rotation. It was a research and academia based rotation, so I was able to work on a Phase IV clinical trial! I did a lot of reading to learn about the trial and then wrote an article and abstract to be published officially, which was really neat since it was my first time participating in a work environment like that.

**Did you need to do any preparation for the placement beforehand?**

Before a rotation starts, I always ask my preceptor if there is anything I can do to prepare beforehand. Most of my preceptors tell me that we learn on the job, and that was the case here.

**Would you recommend others to also apply for a clinical placement offered in other countries? What are the benefits?**

Yes! I totally would recommend anyone to travel abroad. It gives you a new perspective on pharmacy overall and what you could possibly do with your PharmD aside from the traditional roles such as community or hospital



pharmacy. You can also meet new people across the world, which I think is super cool. I think that if I had the original opportunity to travel to Japan, I would have been completely immersed in their culture and enjoyed a lot of tourism while working at the same time.

### **What is your advice for students to have a successful clinical rotation?**

My rotation was research and academia based, so it was really different than your regular community and hospital rotations. The expectations, tasks, work environment, etc. were all foreign to me. My advice to students is to go into any rotation with an open mind and try to get the most out of your time wherever you may be placed.



## **Interview with Tahani Dakkak, 2T3**

### **Which country did you end up having your placement?**

I had my placement in Shiga, Japan

### **What made you decide on taking on a placement abroad?**

Before pursuing pharmacy, I pursued a Master's in global health management and travelled to Uganda for three months. This experience drastically broadened my worldview and made me interested in international education.

### **Describe your experience? What did your daily responsibilities consist of you doing? What did you need to do to prepare for going abroad for the placement?**

My experience was beyond incredible. Japan is a safe, clean country with a rich culture. My rotation was at Ritsumeikan University in Shiga. The rotation was a non-direct patient care focused on testing the hepatotoxicity of acetaminophen. My daily responsibilities included conducting experiments and documenting findings. To do so, I had to learn and conduct several laboratory techniques. To prepare for going abroad, I tried to learn basic Japanese and educate myself about the Japanese culture as well as have regular meetings with my preceptor to prepare for my research and stay in Japan.

### **Would you recommend others to also apply for a clinical placement abroad?**

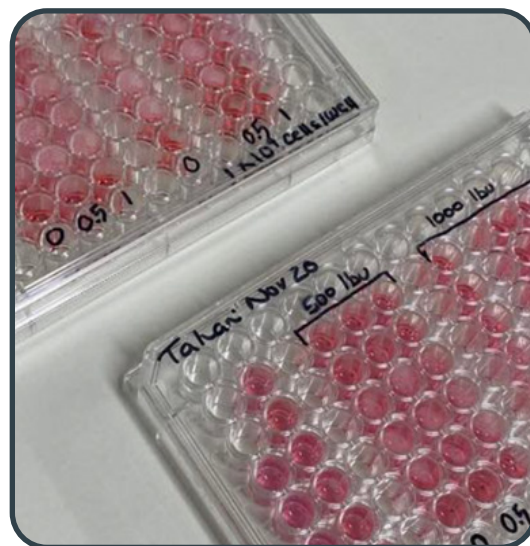
I would highly recommend all students to pursue global health education when offered.

### **What are the benefits of taking on a placement in another country?**

Global health education allows you to build a global network and enhance unique skills such as intercultural communication, adaptability, and self-reliance. It provides you with a new perspective of the profession you're pursuing and the unique challenges each country encounters.

### **What is your advice for students to have a successful clinical rotation abroad?**

Choose your rotation wisely. Pick a research area or a field that you're truly interested in. Don't forget to have fun and explore!





## Interview with Misha Krivykh, 2T3

**Which country did you end up having your placement?**

Japan!

**What made you decide on taking on a placement abroad?**

It was the combination of wanting to experience something different than what we prepared for in class, and wanting to see what's outside of Canada after a year of lockdowns and at-home learning. It felt like it would be a good opportunity to bounce back and pick up on new experiences.



**Describe your experience? What did your daily responsibilities consist of you doing?**

During the week I worked in the laboratory with other students at Ritsumeikan University. The students in my preceptor's lab were in various stages of education – some were 3-6th years, while others were Masters students, and there was one PhD student, and all were studying either clinical pharmacy (i.e. equivalent to our pharmacy school curriculum) or pharmacy research. I was carrying out an in-vivo study with laboratory mice, testing out a hypothesis regarding chemotherapy and a PPI. Every day I would take readings and give medication to the mice. I then took samples from the mice and presented my findings from histology and MPO (myeloperoxidase) activity. Additionally I was able to conduct a cell viability procedure to test out the same type of medication on a cell culture, and present those findings as well. On weekends I travelled to different places in Japan,



including Hiroshima, Osaka, Kyoto, and Sapporo! My preceptor and the students at the laboratory provided me with tips on activities in various cities, foods to try, and hotels to book. It was thanks to these recommendations that I attended the annual Japanese snow festival in Sapporo!

Additionally, I had the chance to shadow direct patient care – a community pharmacy in Kyoto, and a hospital pharmacy in Shiga Prefecture.

**What did you need to do to prepare for going abroad for the placement?**

Aside from logistical preparations such as getting a VISA and flights, I did not have to do much preparation. All the theory behind the project I was conducting in the lab I was able to catch up on with a few select papers that my preceptor picked out. The other students were more





than happy to show me how to conduct procedures I was unfamiliar with (e.g. taking samples, performing MPO activity assays, cell culturing).

However, I do regret not taking the time to learn basic Japanese – this would have saved me a lot of headache given that in many places English is spoken very little or not at all. Going to a restaurant or checking in to a hotel was sometimes awkward, fortunately I had translating applications to assist me.

**Would you recommend others to also apply for a clinical placement abroad?**

Absolutely – it is an incredibly rewarding and fulfilling

experience and it will help you become the best healthcare practitioner that you can possibly be.

**What are the benefits of taking on a placement in another country?**

I think that one of the biggest benefits of an international rotation is it allows you to become more accustomed to communicating with and working with individuals that have cultural backgrounds vastly different from you. I personally found the experience of being a minority and experiencing a language barrier a good learning experience as it gave me a better idea of how some patients we encounter may be experiencing something similar, and how it is on us as healthcare professionals to do everything in our power to make them feel comfortable, welcome, and cared for. Additionally, seeing how healthcare operates in a different country may help open your mind to the different ways in which we can modify our healthcare systems for higher efficiency and better patient outcomes.

**What is your advice for students to have a successful clinical rotation abroad?**

Keep an open mind, get to know the people on your team (chances are, they are as excited to meet you as you are them!), ask many questions, try new things/foods (Japan is great for this FYI), see new places (and for this too), and most importantly have fun!

## Trillium Health Partners: APPE Site Review

By : Amar Deonandan, 2T3

One of the few APPE sites I got to work at was at Trillium Health Partners' Mississauga Hospital, located on the Queensway and Highway 10 in Mississauga Ontario. A large hospital, some of their specialties include cardiology and neurosurgery. Earlier last year, I completed a 5-week rotation on their 3C Geriatrics Unit, which is sort of an intermediate between short-term acute care and long-term complex continuing care.

I would arrive on-site for 8:00am, where my first responsibility was to listen to our pharmacy communications meeting. This meeting would provide important info including staff call-ins, COVID and hospital admission statistics, and important circulating news for our department and the hospital.

I would then complete follow-ups on all the patients I was following from the day before. Since patients can be on this unit for up to a month at a time, follow-ups became an important part of this rotation, which included parameters such as general vitals, routine SCr monitoring and pertinent lab values related to a drug intervention I performed. I would then communicate any issues with my preceptor, and potentially workup a new patient before we attended rounds at around 11am.



# Cherry Blossom Season ~ Hanami (花見, “flower viewing”)

Matt Isaac, 2T4

The emergence of Cherry Blossoms in Toronto dates back to 1959. 2000 Sakura trees were presented to the city by the Japanese ambassador to Canada, Toru Hagiwara. They were given on behalf of the citizens of Tokyo in appreciation for Toronto’s acceptance of re-located Japanese Canadian refugees after the Second World War. Today, Sakura trees can be found flourishing all throughout Toronto and the fleeting blooming season brings about a time of wonderment for many of the residents in the city.

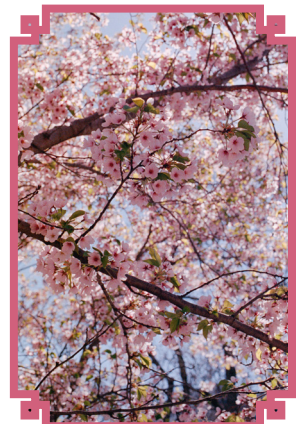
For the centuries that Japan used the lunar calendar, Sakura’s bloomed just after the start of the new year, signifying new beginnings. Interestingly enough, the blossoms appear in Toronto at the end of our school year and at a transitional period when many of us will start our summer EPE rotations.

Because the blossoms appear for only about a week before gracefully falling like snow, they have long been a symbol of the impermanence and transience of things, of life, and of love.

The delicate Sakura blossoms are all the more cherished because of the brief time we can see them each year. It has become a timely reminder for me that the time we spend together in pharmacy school is fleeting and must be lived and enjoyed to the most.

Below are some of the film photos I took from last years Cherry Blossom Season. They include shots from the ever-so popular High Park & Trinity Bellwood’s, but also from my favourite viewing areas in Ramsden Park and Exhibition Place!

Be sure to catch them this year around the end of next month going into the first week of May!



One of the few APPE sites I got to work at was at Trillium Health Partners' Mississauga Hospital, located on the Queensway and Highway 10 in Mississauga Ontario. A large hospital, some of their specialties include cardiology and neurosurgery. Earlier last year, I completed a 5-week rotation on their 3C Geriatrics Unit, which is sort of an intermediate between short-term acute care and long-term complex continuing care.



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I would then complete follow-ups on all the patients I was following from the day before. Since patients can be on this unit for up to a month at a time, follow-ups became an important part of this rotation, which included parameters such as general vitals, routine SCr monitoring and pertinent lab values related to a drug intervention I performed. I would then communicate

any issues with my preceptor, and potentially workup a new patient before we attended rounds at around 11am.

During rounds, I would pay particular attention to my patients, listening for any new updates that were not reflected yet on the patient chart. These rounds were highly interprofessional, and there was as much focus on patient disposition (life after discharge) as there was with clinical issues. Rounds often contained a geriatrician, a physical therapist, an occupational therapist, a speech-language therapist, the pharmacist, and several nurses. I would use this time to clarify unknowns and the general game plan for the patient that would assist me in my workup. Immediately after rounds, I would confirm any interventions I would like to make, and communicate these potential changes to either the geriatrician, or the nurse practitioner, who would give me the okay to do so.

After lunch, I would follow up on any new or unresolved issues and use the time to complete any outstanding responsibilities, including reading guidelines, completing discharge reconciliations, or running outside for free ice cream, which would then conclude my clinical day.

Overall, I'd say this rotation was a very positive experience that gave me the opportunity to brush up on my clinical skills and allowed me to maintain a great work-life balance. Hopefully, this can give you a bit of a sense of what you'd expect when you complete your institutional direct patient care rotations in the future.

## *Interested in contributing to The Monograph?*

Submit your articles, artwork, and puzzles to your Class Rep!

2T6 - Radhika Thakkar

2T5 - Aqsa Ali

2T4 - Ruby Ung

2T3 - Amar Deonandan





## Life After PharmD: What's Next?

AQSA ALI, 2T5

It's crazy to think how this semester is almost over and we all will be heading out to do our placements soon during the summer. However, for some, this will be the last semester being in the pharmD program and a step closer to pursuing careers in pharmacy. Here are some of our soon to be 2T3 graduates talking about their experience in the program and their advice they have for current pharmacy students!

### How does it feel to be graduating this year?

It feels surreal! I can't believe how quickly the time has passed. It feels like just yesterday I was in my first year of the program sitting in orientation, getting to know my classmates, and worrying about how I would manage a 6-7 course-load per semester – and here we are, almost at the finish line!

### What are you most looking forward to after graduating?

After a long nine years of university, I am looking forward to first and foremost celebrating this milestone with my classmates, friends, and family. Second to that, I'm also looking forward to taking a small break before jumping into practice. I hope to take some time in the summer to unwind, spend time with family and friends, and possibly get some travelling in before I start the next chapter of my pharmacy journey.

### What are your plans to do next?

In September, I will be starting a Year 1 General Residency Program at the University Health Network (UHN) and hope to continue working in community practice part time. I am incredibly excited (and nervous) to start this new chapter. I anticipate that it will be a challenging year ahead, but I look forward to a year of new experiences and learning the ins and outs of hospital pharmacy practice. Not to mention, my co-residents are also fellow 2T3 classmates – so I am thrilled to work alongside some familiar faces!

### What has been your most memorable experience being in the PharmD program?

The most memorable experience for me would be my involvement with the Initiative for Mental Health

Awareness in Pharmacy (IMHAP). I had the pleasure of participating as an executive team member during my second and third years of the program. I worked with a wonderful team to raise mental health awareness and engage students in various initiatives throughout the years. Taking on leadership and communication-focused roles was something that took me outside of my comfort zone and ended up being very rewarding and meaningful experiences for me.

### What is one key advice you could go back and tell your first-year self?

I would probably encourage my first-year self to get involved and not to be afraid to meet new people. Unfortunately, most of my second and third years were during the height of the pandemic, so I wish I made more out of the time spent learning in person and getting to know my classmates.

### Any advice for current pharmacy students?

The first piece of advice I would give current pharmacy students is to not get bogged down or discouraged by receiving subpar grades on assessments. Take these experiences as an opportunity to receive feedback and identify gaps in knowledge so that you are aware of what your strengths and areas for improvement are.



Jenna Rizzo, 2T3

I would encourage students to try and fill in the gaps as they progress through the program (i.e., office hours, EPE/APPEs, studying for licensing exams).

My second piece of advice is to branch out and be open to new experiences. This could look different for everyone. Some examples are to join extracurricular activities (i.e., intramurals, clubs, councils) or seek out opportunities for work in various pharmacy practice areas. These are great ways to connect with classmates, meet pharmacists/mentors and establish skills that will carry with you in your future practice, wherever you end up.

### **How have these 4 years in the program changed you?**

I definitely feel like I learned A LOT throughout the last four years. Separate from the extensive amount of clinical information we are exposed to in the program, I have certainly grown as a person and developed a great deal of compassion and resilience. It was a challenging four years but invaluable, to say the least.

### **How does it feel to be graduating this year?**

It's really bittersweet. I'm really happy that I'll FINALLY be free from school, not have to worry about coursework, and finally make a full-time income but I'll also miss the friends and experiences I made along the way as full-time commitments make those experiences harder to form. I guess to earn something you do have to give up something, but life does continue to go on.

### **What are you most looking forward to after graduating?**

To be honest...I don't really know. I've been so absorbed in trying to complete the program I haven't really thought about what to do. Not the first time this happened though.

### **What are your plans to do next?**

I plan on writing my PEBCs in May, which are coming in sharp after finishing my last APPE at Toronto General Hospital. While I have finished the majority of my prep, I still have a couple topics left to wrap up before writing that exam and licensing.

Then I will be starting my PGY-1 General Residency at Trillium Health Partners. It will be a challenging year but I hope to significantly sharpen my clinical and academic practice skills to make me a competent hospital clinician. I will have quite a few co-residents, all of

which are 2T3s from UofT, so I'm grateful to be entering in with such an amazing support system.

### **What has been your most memorable experience being in the PharmD program?**

My most memorable experience would have to be PDW in Saskatoon in January 2023. While traveling there was a bit outside my comfort zone, I had the opportunity to party and learn alongside many like-minded people across the country, many of whom are now amazing friends. I was able to meet some influential people, including CPhA's CEO Dr. Danielle Paes and the team at RxFiles. I also had the opportunity to compete in CAPSI's National Patient Interview Competition, where I brought 2nd place for UofT. Even if you are on the fence about attending, I'd say just do it (you may even see me at PDW Toronto next year!)

### **What is one key advice you could go back and tell your first-year self?**

Do not settle. If you feel that a job experience is not working out for your best interests for your growth, don't be afraid to let go and move on. In the end, you need to remember to look out for yourself as other parties may not necessarily have your best interests at heart.

### **Any advice for current pharmacy students?**

While completing your coursework and obtaining good grades are important, they should not be the entire focus of your pharmacy experience. Everyone will finish with the same degree so you need to find ways to differentiate yourself. Obtain part-time jobs in different fields (i.e., community, hospital, industry, etc.).

Attend school events and network! Remember, in the end, it's not entirely about what you know, it's about WHO you know. I also attribute my positive pharmacy experience to my extracurricular involvement during my time here. Do not hesitate to take part in various clubs-like student council, intra-



Amar Deonandan, 2T3



murals, and academic clubs. The sum of an involved, inviting pharmacy school experience is the sum of our students who participate, and we need to encourage everyone to help contribute to student life. No matter how hard academics get (I remember second year second semester), do your best to get involved. You won't regret it.

### **How have these 4 years in the program changed you?**

While I definitely have gained a handful of clinical knowledge, I feel like I changed a lot more mentally from this program. Before pharmacy school, I was definitely a quieter and more reserved person. However, by being in this program, I found more opportunities to get involved, was challenged with an increasingly complex workload, and approach problems I never thought I'd approach before. Definitely think about your own characteristics as you move through the program in addition to the clinical skills you learn.

### **How does it feel to be graduating this year?**

Graduating this year feels bittersweet. I've been in university for 9 years now and it's weird thinking that after almost a decade, this chapter of my life is finally coming to an end. Nevertheless, I couldn't be more ecstatic to be finishing and it's a relief to finally see the light at the end of the tunnel! I can finally celebrate all my hard work and see how much I've grown professionally and as an individual.

### **What are you most looking forward to after graduating?**

When you've been in university for 9 years, the first thing you look forward to is finally being able to RELAX. While I'm excited to jumpstart my career in industry, I am looking forward to going on vacation more than anything, and I am currently planning a trip to Greece after graduation! I'm also hoping to hold off on working this summer to take a well-deserved break before I start residency. There are a lot of things I plan to do such as spending more time with family and friends, learning a new instrument, taking up bartending, training for a half marathon, and doing lots of roller-skating!

### **What are your plans to do next?**

I am beyond thrilled to have matched with Gilead for the 2023-2024 industry residency and will be joining

the company as their first ever medical affairs resident! As a resident I'll be pioneering the program for them and providing structure, while also getting some hands-on experience in medical affairs. Starting a career in industry has been a long-term goal for me since undergrad, and pursuing medical affairs was one of the reasons why I became interested in pharmacy school. It's an incredible feeling to have come this far and see all my goals come into fruition.

### **What has been your most memorable experience being in the PharmD program?**

While I have several fond memories in pharmacy school with some amazing people, the most memorable experience was winning 3rd place in the H2I business competition. To this date, it is one of my biggest accomplishments and I got to achieve it with some of my closest friends in pharmacy school. Throughout the competition I gained several skills and experiences that helped me to build character and confidence, but most importantly I had a lot of fun participating with my team!

### **What is one key advice you could go back and tell your first-year self and for current pharmacy students?**

Enjoy your pharmacy school experience to the fullest while you can and be kind to yourself. Focusing on academics is important, but it isn't everything (trust me, I know it's a lot easier said than done). Join a club/organization, get involved, meet new people, go to that social! Not only will you gain valuable experiences and skills to bring forward in a potential future career, but you'll also gain valuable friends and networks that can potentially last a lifetime.

After my 9 years of university, I've learned that balancing school, extracurriculars, and social life is so important, and these are the years of your life that you should be enjoying as much as possible. Take advantage of it.

### **How have these 4 years in the program changed you?**



Marigrace Gorospe, 2T3

While I've gained an extensive amount of knowledge over these past 4 years, what's most meaningful to me is that I've become more confident in myself. At the beginning of the program, I questioned if I would be prepared to practice at the end of the 4 years. Now that I'm almost done, I know that I may not have all the answers, but I've become resourceful and developed a resilient attitude to help me practice in the real world. More importantly, the confidence I gained after going through the challenging hurdles of pharmacy school has crept its way into other aspects of my life. I find myself getting outside my comfort zone more often and recently, I gained the courage to take swimming lessons to practice long distance swimming and improve my stroke technique. Overall, through all my accomplishments in pharmacy, I've become confident that I can achieve anything I put my mind to, and I hope my fellow phriends can say the same.

#### **How does it feel to be graduating this year?**

I'm so excited to graduate! I'm going to miss my time in university, but after several years of hard work I'm happy to move on to the next chapter of my life. It feels rewarding and healthy to move forward!

#### **What are you most looking forward to after graduating?**

I look forward to the independence and autonomy that comes with a career, as well as being able to work within a field that I love. As much as I enjoyed my time as a student, I won't miss the midterm season.

#### **What are your plans to do next?**

I'm going to be doing an industry residency at Sano-fi next year, and will hopefully continue working in medical affairs afterwards. I have been wanting to go down this path for many years, so I'm really excited to start the residency program. Ideally, it will be nice to do some community work on the side as well – I want to maintain and practise that skillset.

#### **What has been your most memorable experience being in the PharmD program?**

All the memories I've made with my friends! The

program has introduced me to amazing people who I know will be lifelong friends and for that, I couldn't be more grateful.

#### **What is one key advice you could go back and tell your first year self?**

Make lots of friends – connections are everything. Take your learning seriously, it's not about doing well on a test. Take advantage of the resources UofT has to offer – we pay so much money for resources that we often don't realize even exist (whether it relates to sports, wellness, writing and career services, our school offers almost anything you can think of). But also, enjoy yourself! You're only young once and will never get the years of being a university student back, so take advantage of having relatively little responsibility and enjoy your time outside of school.

#### **Any advice for current pharmacy students?**

Make solid notes and keep them well organized so that you can look back at them years down the road and use them to study for the PEBC exam. Get to know your classmates and even professors as well as possible because these are going to be your peers, and pharmacy is a small world.

#### **How have these 4 years in the program changed you?**

I have a newfound sense of professional identity and a greater sense of purpose. Becoming a healthcare professional comes with profound responsibility because you literally have people's welfare in your hands. Professional school can be challenging, both academically and personally. You're going to experience setbacks or failures along the way, but these experiences allow you to develop resilience and the ability to persevere in the face of adversity.

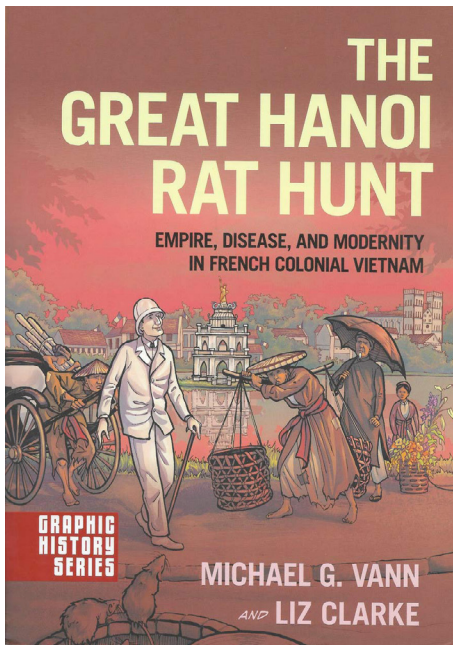
*Thank you*

to all of our 2T3 students in sharing their experience in the PharmD program and words of advice for current students. We wish you luck and all the best in your careers in pharmacy! 🥰



Aysan Tafazoli, 2T3





## Le Grand Hà Nội E-Rat-dication of Thành Thái 14

Xinh Được-Sĩ (Anonymous)

*Rats die to the left, Rats die to the right!  
When people see dying rats it is as if they see tigers:  
A few days after the rats have died,  
People die like a collapsing wall.*

*“Death of Rats” by Shi Daonan (1765-1972)*



Vietnamese history has always been a side interest of mine. Candidly, I’m more inclined towards the monarchical period Việt Nam but the colonial period is okay too. The period between the mid-19th century and 1945 has some interesting aspect: the Great Famine of 1945, Nguyễn Ái Quốc’s (Hồ Chí Minh) activity at the 1919 Paris Peace Conference, Sài Gòn as the “Pearl of the Orient”. However, one surprising event I was not aware of was the Great Hanoi Rat Massacre of 1902. The Great Hanoi Rat Hunt: Empire, Disease, and Modernity in French Colonial Vietnam by Michael G. Vann and Liz Clarke recounts this very event, a public health measure by the colonial government to prevent disease outbreaks during the Third Bubonic Plague Pandemic that occurred from 1859 to 1959.

The cover of the book is worth highlighting as it exemplifies New Imperialism. There is a distinct contrast between the French colonizer dressed in a white suit and the Vietnamese colonized dressed in darker, more brown garments. The book itself is divided into five parts: a graphic history proper that depicts the massacre, English translations of primary sources, the historical contexts, the process behind the writing of the book, and guidelines on how the book can be incorporated into a curriculum. There is a timeline that summarizes the history of Việt Nam, France and the world, though I am curious about the exclusion of the invasion and subsequent occupation of Cambodia, as well as the Sino-Vietnamese War. Vann also provides some suggested readings on the history of Việt Nam, France, imperialism, diseases and rats, some of which I’ve already read. The authors have done a great job in creating an immer-

sion into colonial Việt Nam and depicting the tensions between the French and the Vietnamese. The graphic history uses the perspective of both the French officials and the native Vietnamese population. The visual also displays the history and wonder of Hà Nội as a city; an intersection of traditional Vietnamese buildings and French colonial urban architecture. Vann even notes in the afterword the transformation Hà Nội had undergone from 1997 to 2014, a city lined with remnants of colonial period and communist propaganda now metropolis touched by globalization and yet who’s buildings preserve the memories of Buddhist, Confucian and French influence.

The book outlines the ironies and hypocrisies of the French colonial empire. The modern science of urbanism with the hopes of improving public health resulted in further spreads of airborne and water-borne diseases. The consequences of actions by an “enlightened”, “superior” and “civilized” people being dismissed as the product of ignorance and racial inferiority. The sew-





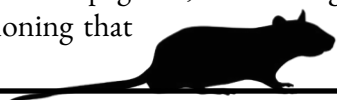
age system, a symbol of modernity, that was designed to keep the “French Quarter” sanitary allowed for the proliferation of brown rats. The 1902 Hanoi Exhibition, an international showcase of French progress and civilization that was threatened by the rat infestations and plague outbreaks, ended up increasing the disease burden on the city. However, there is one piece of irony that I found *très magnifique*. Without revealing too much, the French offered bounties to address the rat problem, improve public hygiene and to teach the “backwards” Vietnamese about the value of entrepreneurship and earning cash payments. And so the rats were hunted, so much in fact that they were concerned that the corpses would spread diseases. And these “backwards” Vietnamese did practice entrepreneurship and found their own way of obtaining economic success (and, the role of rats as disease vectors aside, in an arguably sustainable way), just not the way the French wanted. There’s a cruel and unusual *schadenfreude* that can be derived from that. I would also regard how the “civilized” colonists beheaded some Vietnamese who resisted as being barbaric, and thus ironic, if it didn’t call upon memories of the French Republic’s early days.

This book, published in 2019, also touches on the Sino-phobia that arose as a response to disease outbreaks during the early 20th century (\*cough\*). It seems that the conventional wisdom at the time was that the only way to defeat an epidemic is to burn it. There were some Vietnamese resistances against the public health measures that were “for their own good” (at the capital city no less). However, one can’t blame them for their cynicism given that “for their own good” had resulted in their homes and belongings getting burned down, the destruction of temples and pagodas, and forced labour. It is also worth mentioning that

mortality rates were substantially higher among the non-White Vietnamese and Chinese community (\*cough\*). In addition, there were apparently mass, mandatory vaccination campaigns (unless they’re White), with people being given cholera and bubonic plague vaccines that I suspect were of questionable efficacy and questionable safety.

Considering my anti-imperialist, left-leaning views and an odd nationalistic affinity towards the abstract concept of “Việt Nam” (for context, read the introduction of *The Penguin History of Modern Vietnam* by Christopher Goscha), if I were transported back to that period, I’d imagine I would find myself a member of a Vietnamese nationalist organization like the *Việt Nam Quốc Dân Đảng* (Vietnamese Nationalist Party). I’d also likely raise questions about my dialect. Circumstances could lead me to be a part of revolts and assassinations in spite of my personal aversion to political violence. And it’s one, two, three, what am I fighting for? Look ‘round you, country’s bit of a jam. A free and independent Việt Nam. And it’s five, six, seven, open up the pearly gates. Well, no time like now to make a cry, “Imperialism! It’s time to die!”

Inflammatory speech aside, the book is an educational look into mid-19th to early 20th-century Việt Nam and the dynamics of French colonialism and New Imperialism. It’s a pretty humorous read. To close off, I’ll mention Hoàn Kiếm Lake and how the French had erected a miniature Statue of Liberty. The statue has since been removed in 1945 for obvious reasons. However, if one were to erect a Statue of Liberty (or rather, a Statue of Liberation), it has to depict a turtle with a sword in its mouth because that makes significantly more sense than a statue of a Roman goddess with an open skirt.





# HEALTHCARE PERSPECTIVES:

## Japan's Health Care System

Compared to our American neighbors, most Canadians are incredibly proud of our health care system. This is somewhat shocking, as if you turn on almost any news station these days, you will inevitably see an article or opinion piece about how the Canadian health care system is falling apart. Although this position may seem very paradoxical (being proud of our shambolic health care system), I think it highlights an important truth: the Canadian health care system is good, but it could be better.

But how can we improve it? One source of inspiration could be looking at health care systems in other countries, and seeing what works well and what doesn't. Having lived in Japan for six years, I am familiar with the ins and outs of the Japanese health care system, so let's take a quick look at some interesting features and difference between the Canadian and Japanese systems.

### 1. Cost Structure – Show Me the Money

In Japan, health care isn't free. The way it works is that everyone receives an insurance card from their employer. People who are self-employed, unemployed, or students can apply to the national government directly for an insurance card. Although the cards are different, the plans are the same: the government pays for 70% of health costs, while the individual pays for 30%. Patients who are low income while paying for a high amount of health costs can apply for special government subsidies to help cover the costs of health care, and certain health conditions are eligible for special reimbursement. For example, the government fully covers costs related to giving birth (probably in an effort to bolster the declining population).

### 2. Drugs and Dental Included

One of the good things about the Japanese system is that the insurance plans mentioned above include dental coverage, vision, and medications. On a personal note, I found drug prices to be pretty similar to what is paid here in Canada, but dental to be a lot cheaper. One of the nice things about Japan is that there is an abundance of dentists who have to compete with one another for patients. This means that getting cleaning, fillings, or whitening won't hurt your pocket as much as it will here in Canada.

Mackenzie Richardson, 2T5

### 3. Emphasis on Early Detection

A unique aspect of health care in Japan is that annual health check-ups are mandatory for students from Grades 1 – 12. Each year, a mobile health clinic visits elementary, middle and high schools to give students a check-up, including: weight and height, vision check, hearing check, lifestyle questions, urinalysis, and chest x-rays for TB detection. Sometimes, ECGs are also performed on students. Large companies may also mandate employees to get annual check-ups, which may take place at the company or at a smaller clinic. Workers in the food service industry may also be required to give fecal samples to check for any pathogens. This emphasis on screening and detection is interesting. It may mean that more serious illnesses are caught early, but it may also create a lot more false-positives.

### 4. No Family Doctors

In Japan, the hospital is the chief location for administering health related services. If you are sick or need health care, you go to the hospital or a smaller local clinic. If you need a specialist, you can approach one directly or be referred to one by the doctor at the emergency department of the hospital you visited. There are no family doctors. Even annual health checks are usually performed by special teams of medical professionals rather than by each individual patients family doctor. I think that this is often very good for patients, as it means that you don't need to wait for your family doctor to decide what to do or depend on their judgement: if you feel a specialist visit is important, you can go see one.

### 5. Shorter Wait Times

The wait times for basically all services in Japan is a lot shorter than for services here in Canada. The reason for this may be that the ratio of health care professionals (especially nurses) per patient is higher in Japan, but I am not sure that this is the only reason. I can confidently say though that even during the Covid-19 pandemic, wait times in hospitals for simple procedures like x-rays or ECGs was on the order of minutes to hours, not days to weeks. This is something that, if possible, we should definitely emulate here in Canada.



# The Expanded Scope of Practice of Pharmacists in Ontario

Myuran Yoganathan, EVOLVE Events Coordinator

In recent years, the Ontario government has approved regulations that expand the scope of practice for pharmacists in Ontario.

As of December 11, 2020, pharmacists have the authority to:

- Administer the flu vaccine to children as young as two years old
- Renew prescriptions in quantities of up to one year's supply

As of July 1, 2022, pharmacy professionals have the authority to:

- Perform certain point of care tests (POCT) for chronic conditions to assist with medication management and treatment of patients

Most recently, as of January 1, 2023, pharmacists have the authority to rescribe drugs for the following minor ailments:

- Allergic rhinitis
- Candidal stomatitis (oral thrush)
- Conjunctivitis (bacterial, allergic and viral)
- Dermatitis (atopic, eczema, allergic and contact)
- Dysmenorrhea
- Gastroesophageal reflux disease (GERD)
- Hemorrhoids
- Herpes labialis (cold sores)
- Impetigo
- Insect bites and urticaria (hives)
- Tick bites, post-exposure prophylaxis to prevent Lyme disease
- Musculoskeletal sprains and strains
- Urinary tract infections (uncomplicated)

While these advancements in our scope of practice do allow pharmacists to provide greater care to more On-

tarians, some say that these steps do not go far enough. For example, Ontario has been quite cautious in their approach to minor ailment prescribing, since as of now, we can only prescribe for 13 minor ailments. Pharmacists in Nova Scotia on the other hand, are able to assess and prescribe for 33 minor ailments.

Alberta has been leading the race in terms of expanding the scope of practice of pharmacists for over a decade now. This includes allowing pharmacists to prescribe any Schedule 1 drug and taking even bolder steps such as opening walk-in clinics led only by pharmacists.

## Pharmacists are playing an expanding role in the delivery of quality, patient-focused care.

*But in Ontario, there is still the opportunity to do more.*

☒ Implemented in jurisdiction
 ☒ Implemented with limitations
 ☐ Pending implementations
 ☐ Not implemented

	BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	NWT	YT	NU
Renew/extend prescriptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Change drug dosage/formulation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Make therapeutic substitution	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prescribe for minor ailments/conditions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Initiate drug therapy independently	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order and interpret lab tests	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Administer a drug by injection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regulated Pharmacy Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

\*Information provided by the Canadian Pharmacists Association ([www.pharmacists.ca](http://www.pharmacists.ca))

As Ontarian pharmacists, we are still not able to order lab tests or make therapeutic substitutions when adapting a prescription. Allowing pharmacists to perform these tasks not only helps reduce the burden on hospitals and emergency clinics, but also ensures that more Ontarians have quicker access to quality care.

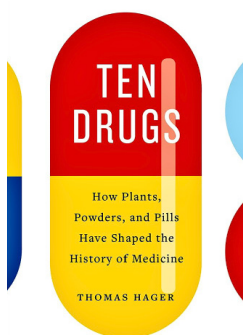
Despite the considerable advancements that have been made in the scope of Ontarian pharmacists, there is still room to improve. Pharmacists are some of the most accessible healthcare professionals, and at the moment, our skills and expertise are being underutilized.



# Ten Drugs: How Plants, Powders, and Pills Have Shaped the History of Medicine



By Amira Bouchemma  
2T6 COMPPS Class Representative



In a time filled with obligations, midterms, labs and so on, it is easy to become complacent with our journey to become future pharmacists. School is great, and the content we learn is great, but none of us really enjoy those academic obligations. We can sometimes feel even hopeless in the choice that we made, sometimes even questioning the reason why we chose this field in the first place. We start to look at our school more like a chore rather than something we fell in love with long ago. As such, sometimes what we need is an elixir of love. Something invigorating that reminds us of why we love what we do. The elixir of love that I propose is Thomas Hager's *Ten Drugs: How Plants, Powders, and Pills Have Shaped the History of Medicine*.

This book, overall, should be every pharmacist's (or soon-to-be) comfort read. The 320 pages make it a comfortable read—especially for commuters—and the language used in the book is simple, easy, and less filled with our own jargon (don't expect any pharmacokinetics terms in this). It reminds us of the art and beauty of compounding and drug discovery. It reteaches us the underlying old traditions and methods that contributed to the art of compounding pharmacy, an art that we now with commercialization, look at less and less.

The book creatively goes through ten drugs that have marked and shaped the landscape of pharmacy, but also elaborates on the multiple and sometimes even creative ways that pharmacists, apothecaries, and now pharmaceutical companies have arrived at discovering these drugs. It goes through how they were formulated and

administered and the different ways that they were enhanced or tainted. From opium to statins, Hager takes us back in time and walks us through the colourful history of compounding by embedding important information in beautiful storytelling.

Additionally, the beauty of this book is not that it just takes us back into history, but also takes us on a voyage across the world. From Japan to Germany or even the Ottoman Empire, this book sheds a light on a virulent propelling factor in drug discovery: culture. Culture, ideologies, and perspectives on morality, contribute to each chapter, highlighting the desperation, ambition, and creativity that each discovery was fleshed with. This book takes on an adventure and allows you to look through the mundane life of many and how it contributed to these discoveries. It demonstrates how some of these drugs have fuelled wars or stopped some altogether.

Altogether, this book should be your number one must-read, and in fact, I recommend reading it at least once a year to remind you why you are here. This book is a source that seeks for us to be humble and to appreciate the hard effort that previous generations, and humanity, have put in to survive. It enlightens us about certain aspects of our profession that we take for granted like dispensing as well as the beauty of compounding that is attached to our profession. It also warns us of the mistakes that we've made throughout our journey, acknowledging that we can bear equal harm and benefice.

This book, in the end, is an ode to the pharmacists of the past and our reminder of the great things that humanity can accomplish together, compounding one day at a time.



## Pharmacy Choir's Music Corner: A Woman's Journey to Creating Rock 'n'Roll Throughout Time

Sasha Mohindra, 2T5

Time itself has been the foremost factor for the advancement of music to become what it is today. Music is an industry with many pioneers who pushed for equality among racial and gender differences and brought people of all backgrounds together. With each step, doors to new subgenres opened and pushed for hope, creativity, and emotion to shine. Individuals were given a voice through music. The battle for gender equality was always present and over time, gained stronger voices; today we turn to look at Janis Joplin, with more artists to come in future articles!

Strength through music to break color barriers occurred by many great, but mostly male and American pioneers: Muddy Waters, Carl Perkins, Bo Diddley, Marvin Gaye, Robert Johnson, Charley Patton, Duke Ellington, Stevie Wonder, Elvis, etc. The problem is, in a male-dominated industry no matter how many females were pushed into the early music industry, it was not widely accepted. The battle for gender equality began and in 1961-63, 'girl groups,' took to stages; female subjectivity was finally represented [1]. This was the start of

a female push toward breaking into a male-dominated industry.

Janis Joplin was a voice for women's struggles to break through this gender boundary in rock music and led the way for other female artists. She has stated, "Women in the business give up more than you'd ever know". Although she had a difficult time with fame, she was a significant blues-influenced singer. Janis got into basic blues around 17 and moved into a bluegrass band singing in folk clubs/bars until she joined the Holding Company [2]. She became the lead singer of the band Big Brother and was known as the "best white blues singer of all time" [3]. Her power poured through in her breakthrough as "she lifted a huge audience at the Monterey International Pop Festival to a standing ovation, [and was called], the major female voice of her generation" [4]. Despite feeling like an outcast and the trouble with alcohol and drugs she faced, she never stopped advocating for women.

Janis also spoke out about normalizing women to be



independent, without needing to care for a family. At that age, being wives and mothers deprived women of a sense of identity and left them wondering 'is this all' at times. Her efforts created a path for a new generation of independent female singers, musicians, and songwriters by the 1970s, who then could also show the world their talent too. Although she passed away at 27, her music started to knock down walls put up against females over the years and continues to stand with the legacy it helped start. The music industry is not yet perfect; however, it has taken a step forward and grown more gender-inclusive. Women continue to shine and share new messages through music with the world, thus, the spotlight falls on the new generations as they continue to advocate for a gender-inclusive industry; music is a language that unites us. Until the next time when Pharmacy Choir writes about another female breakthrough artist who changed the game of rock and roll, keep rocking on!



### Citations

1. Brackett, David. *The Pop, Rock, and Soul Reader: Histories and Debates*. Fourth edition. New York, NY: Oxford University Press, 2019.
2. Hentoff, Nat. "We Look at Our Parents and..." *New York Times*, 1968
3. Hunt, Andrew. Prof Hunt's Rock 'n' Roll History Blog, 2020. <https://rockhistory105.tumblr.com>.
4. Zandiria F. Robinson, page 572, as cited in Brackett, David. *The Pop, Rock, and Soul Reader: Histories and Debates*. Fourth edition. New York, NY: Oxford University Press, 2019.

### CLUBS CORNER

## *A Cruising Year for PDBC*

After a 2.5-year hiatus, many students might not know what Pharmacy Dragonboat Club (PDBC) is. We are a co-ed recreational dragon boat team that aims to embody the values of healthcare by providing an inclusive environment for young healthcare professionals to embrace fitness, grow as teammates and forge lasting relationships.



*Our team always ends each training slot with a quick team photo.*

## CLUBS CORNER

Throughout the school year, we host various fundraisers to help support our summer season! Everything we raise helps us pay for jerseys, transportation, lake practices and competitions. We also host training slots/practices twice weekly, with each session running an hour long at Hart House gym. The session consists of our PDBC's trainers teaching recruits about weight lifting, followed by a cardio session – all designed by our Head Dryland Coach, Deep Shah. Our mission at these practices is to create a fun and safe environment for everyone and uphold the philosophy of getting comfortable with being uncomfortable in order to achieve our greatest success. We learn how to get out of our comfort zone, push each other to new limits, and foster a sense of community. The training that we put in now not only prepares us for the summer season but also boosts our team's morale. PDBC's executive team would like to give a huge shout-out to a few of our recruits, Aaron Nguyen, Ryan Hazleworth, and Tara Smeriglio for their dedication to attending our training slot.



September Trial Paddling Session at Sunnyside Paddling Club

This summer, PDBC will be competing in the Toronto Islands Dragon Boat Festival (TIDBF). We are excited for all new and returning paddlers that will be taking part in this regatta. Prior to the 2-day regatta, we will be practicing at Sunnyside Paddling Club every few weeks to develop our paddling technique and endurance. Our summer goal is not only to compete at Toronto Islands but bring home the TIDBF trophy!

If you are interested in joining our team, follow us on IG @pharmacy.db and join our Facebook group! As always, no fitness and paddling experience is required. We can't wait to see you on the water!

*A few words from our recruits...*

*"I really like the flexibility of the workouts and how each trainer tailors their day based on what the attendee wants to improve. Very great experience and I feel comfortable attending each time!"*

– Aaron Nguyen 2T6

*"I love how supportive everyone is during training! Especially the dry land coaches, they always encourage you to push harder. It's a great way to destress outside of class!"*

– Nuha Maliath 2T6

*"I love that I get to learn more about how to exercise while also preparing for a dragon boating competition coming up in the summer. I also get to spend some fun quality time with phriends and make new ones!"*

– Tara Smeriglio 2T5

*"Dragon boat trainings has been a fun way for me to exercise with my friends and destress from school"*

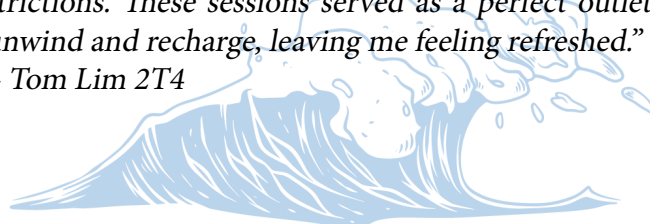
– Kelly To 2T6

*"I really enjoy the training slots! I'd say that my favourite part is getting to socialize and bond with the team. While working out and training, we share many laughs and it really makes the sport fun!"*

– Stefanie Caramanna 2T6

*"I thoroughly enjoy attending training sessions led by Jason, our session leader. He provided valuable advice and tips on strength and endurance training, which have proven essential for both my dragon-boat and academic pursuits. I am also thankful for the opportunity to socialize with pharmacy colleagues whom I haven't had the chance to interact with due to COVID-19 restrictions. These sessions served as a perfect outlet to unwind and recharge, leaving me feeling refreshed."*

– Tom Lim 2T4







## ***Canadian Pharmacy Mentorship Program***

**By: Katarina Pessina (NCODA UofT Director of Communications 2022-23), Jenny Ma (NCODA UofT President 2022-23), Huy Pham (NCODA UofT Vice President 2022-2023)**

### **Background: A Canadian-Centered Need**

The National Community Oncology Dispensing Association (NCODA) is an international, not-for-profit organization committed to developing unique resources to help oncology teams deliver top-tier care. Their mission is to empower oncology professionals to deliver positive, patient-centered outcomes by providing leadership, expertise, quality standards, and best practices. NCODA has Professional Student Organization (PSO) chapters established throughout North American pharmacy schools, in which students are provided access to tools, educational and networking opportunities, and other helpful resources to help guide their training and career trajectories.

The NCODA Pharmacy Mentorship Program (PMP) was founded, knowing that there is an increasing interest and growing role for pharmacists in the field of oncology, and limited opportunities for exposure in pharmacy school curricula. However, the NCODA PMP is limited to students affiliated with American PSOs and associated mentors practicing in the United States. For that reason, in collaboration with the University of Alberta, the University of Manitoba, and Memorial University of Newfoundland, the University of Toronto's Leslie Dan Faculty of Pharmacy is proud to have recently established a Canadian-wide oncology PMP. The goal of our PMP is for mentees to connect one-on-one with an experienced oncology pharmacist, to gain insight into clinical, industry and academic career paths while receiving leadership and professional development resources.

### **About the Mentorship Program**

Our Canadian program came to fruition in late 2022

and officially launched in January 2023, during which time mentors and mentees were matched based on career goals, areas of interest, and personal hobbies as expressed through applications. Initial communications were established with icebreaker-style questions to create a safe space for mentees to gain comfort in reaching out to their mentors. The expectation is for mentors and mentees to have at least one meeting per month this semester. The program requires a minimum of 1-hour total time commitment per mentor/mentee pairing throughout the academic year, although more time commitment/frequent meetings are encouraged if both parties agree upon this level of commitment. In-person discussions are highly encouraged to facilitate ease of communication and foster development of professional relationships. However, in cases of distant pairing, remote options such as Zoom and Microsoft Teams are appropriate.

During these encounters, students can seek advice about professional and personal development topics, allowing mentors to guide them based on their background and experiences. Topics which we have suggested to our participants include CV review, interview tips, letters of intent guidance, work-life balance, selecting/preparing for Advanced Pharmacy Practice Experience (APPEs), and networking advice. Mentors are encouraged to share practical and real-world experiences with mentee(s) to guide their academic and professional journeys. They are expected to provide honest, transparent and supportive advice for mentees to achieve their goals. Opportunities for mentees to shadow their mentors are not required, but may be offered based on the nature of the work and the working environment.

## Looking Ahead

In order to ensure the future success of our program, our PSO has created evaluation and feedback forms to gather experiences and identify areas for improvement. Monthly check-in surveys with students are designed to help track progress and ensure smooth interactions. A final feedback form to both mentors and mentees once the program wraps up in May 2023 will enable a program evaluation for future iterations of the Canadian mentorship program. We are proud to share that our program has seen a successful launch since its inception this past year, and we look forward to seeing it grow and evolve in future years!



## Japanese Eats... In Japan!

By: Misha Krivykh, 2T3



Many countries around the world have different delicious contributions to world-wide cuisine, and this could not be truer than in the case of Japan – the land of sushi, mochi, and tempura. Over the last six weeks I have had a chance to explore different facets of Japanese eating, ranging from convenience store-level bites to fancy restaurant treatment, and have been blown away every single time.

One of the biggest shockers to me was how cheap food is in Japan compared to Canadian pricing – an onigiri (a delicious rice triangle that has a filling – either tuna mayo, shrimp, grilled chicken, or plums – and is wrapped in seaweed) costs the equivalent of 0.70 – 1.30 CAD. One to three of those onigiri is enough for a filling meal. If you paid more than 15 CAD for a meal in Japan, it is probably because you got something fancy or unusual (e.g. beef katsu).

The customs with regards to ordering food in Japan do differ from those in Canada. Customer service is of utmost importance, yet tipping is frowned upon and should never be done. Additionally, waiters prefer to give you time, and unlike in Canada, they do not come up to you take your order at random, but rather will wait for you to call them (some restaurants provide you with a call button, while in others you simply waive). Similarly, instead of waiters coming up to you with the bill, you pay the bill at the cash register upon exiting. Additionally, many places, especially smaller restaurants, are cash-only, so it is prudent to have a lot of cash on hand if going out in town. Some popular restaurants may have a seating capacity that exceeds demand, which means your wait time for a seat may range anywhere from 30 minutes to two hours. At this point reservations may be the way to go, however only some restaurants accept reservations. I ran into a huge problem on my trip to Sapporo, where in downtown virtually no restaurant serving local cuisine was available on a walk-in basis as they were booked for the entire night.

Convenience store eats are surprisingly common and robust in Japan – the quality of a microwavable meal in the local 7/11 is great. Various options are available, including sushi, noodle soups, salads, and fried chicken cutlets/skewers. It is not uncommon for both tourists and locals to go to one of these convenience stores for a quick and cheap meal.

They are also great for the great selection of Japanese



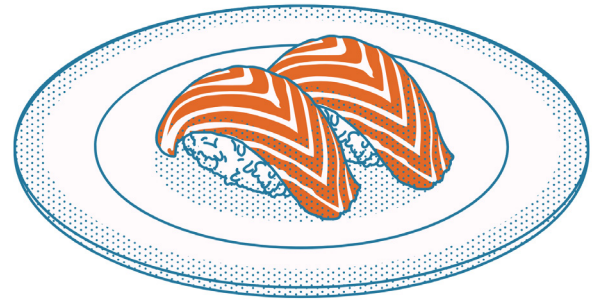
desserts available – donuts, cream puffs, red-bean cakes, and ice cream waffle sandwiches. The best deserts in my opinion are in Kyoto though, as matcha (green tea powder) is often employed as a key ingredient there, and it is a ubiquitous one: matcha ice cream, matcha mochi, matcha cookies, matcha pudding are all delicious conclusions to your meal.

If you are looking for beverages, vending machines in Japan serve pop, juice, water, energy drinks, hot coffee/tea, hot soup, and even ice cream. The vending machines can be found almost everywhere (it was actually somewhat scary to find a beverage machine in an otherwise empty forest).

If one wants something a little tastier than convenience store food, other options (besides cooking at home of course) are available. Small ramen shops are available virtually everywhere – they are bar-esque establishments where you order outside using a machine. Many places offer tempura bites, including soba shops – restaurants that specialize in the namesake type noodle which is made of buckwheat (a much healthier grain as it has a lower glycemic index). Soba noodles were one of my most memorable eats, due to their unique and delicious taste, and the fact that they are frequently served in places that serve tempura shrimp. More meat-heavy options are available – restaurants specializing in beef katsu, curry katsu, and wagyu beef. Having gone to one wagyu beef restaurant, I can definitely say it is worth the hype – the meat is juicy and tender, and is cooked in front of you to the consistency you select. While price is a valid concern, you can bring it down if you order it in cities where the beef comes from (e.g. Kobe).

One cannot discuss Japanese food without mentioning sushi. Sushi can be found in some restaurants that specialize entirely in different foods (e.g. the soba noodle shop types mentioned earlier). However if one specifically wants sushi, one goes to one of two types of restaurants – a conveyor-belt type restaurant, or a fresh fish type place. Conveyor belt restaurants are the cheaper option, however they do not lack for taste or quality. As the name suggests, dishes are delivered to you by an automated conveyor belt, however the ordering is completed with a tablet computer at your desk, and dishes are sent to you directly. The sushi selections are different from those in Toronto – there is less of a focus on maki rolls, and more on nigiri-type sushi (and of course west-

ern-type maki rolls such as the California and Philadelphia roll are completely absent from menus). In fresh fish type places, the price is a little higher, but the fish you get are typically just out of the water. Whether or not the price difference is worth the marginal quality/taste increase is questionable, I personally found that I was happy with just the conveyor – belt type restaurants.



There are two other notable differences to mention when it comes to Japanese sushi compared to Canadian sushi. First is the near-complete absence of the AYCE (All You Can Eat) business model. I asked locals about it, and they mentioned a few restaurants that they heard of, but they are not popular as a concept. The second is that sushi restaurants are much more focused on... sushi. The few non-sushi items I was able to find in conveyor-belt restaurants are variations of miso soup, karagee chicken, and fries. Canadian sushi restaurants tend to have a broader menu, incorporating dishes such as ribs, chicken fried rice, and even going so far as to have fusion items like the Vietnamese pho.

So there you have it. In Japan you are unlikely to go hungry, something delicious awaits you around the corner!

## *Interested in contributing to The Monograph?*

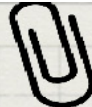
Submit your articles, artwork, and puzzles to your Class Rep!

2T6 - Radhika Thakkar

2T5 - Aqsa Ali

2T4 - Ruby Ung

2T3 - Amar Deonandan



# Examining: *The Pharmacy Professional's Guide to Résumés, CVs & Interviewing* (in résumés format)

Huy Pham  
Class of 2024

## OBJECTIVE

A book that intends to help those in pharmacy write or enhance their résumés, curricula vitae and letters, and prepare for job interviews

## SUMMARY OF QUALIFICATION

- Designed with a specific focus on pharmacy professionals, whether they're early practitioners, intending to have a new direction, or returning after a hiatus
- Author has over 30 years of experience as a pharmacy practitioner, educator and administrator, having analyzed hundreds of résumés and CVs and conducted many interviews
- Touches upon pharmacy career planning and personal statements
- Provides some sample résumés, curricula vitae, and cover letters for reference
- A very helpful and highly recommended resource for pharmacy students and pharmacists

## PERSONAL EXPERIENCE

### Doctor of Pharmacy Student

Sept. 2020 - Present

University of Toronto, Ontario

- Attempted to find at Gerstein Science Information Centre under RS122.5 .R43 2001 to no avail
- Noted its availability at the Toronto Reference Library
- Considered one of the foundational resources for creating own curricula vitae
- Compared suggested headings to those found in résumés and curricula vitae
- Created a professional portfolio that displays professional development and publications

### Undergraduate Student

Sept. 2016 - August 2020

University of Ottawa, Ontario

- Found initially at the Morisset Library during first year
- Utilized to find key words to use in résumés
- Took some inspiration from some of the sample résumés
- Employed to build initial draft curriculum vitae

## SKILLS AND ABILITIES DEVELOPED

### Career Planning

Chapter 1-2

- Develop career objectives and personal statements
- Explore careers options for pharmacy professionals



## **Résumés**

Chapter 3-4

- Summarize professional background and qualifications in a brief and concise manner
- Use action words to highlight attributes and achievements
- Quantify achievements whenever possible
- Organize résumés into sections to improve readability
- Identify areas of improvements and revise appropriately

## **Curriculum Vitae**

Chapter 4-5

- Outline personal, educational and professional experiences in a comprehensive manner
- Reflect on one's professional journey
- Evaluate what is relevant and important to put on curriculum vitae
- Emphasize unique positions and accomplishments to aid in distinguishing oneself
- Highlight activities and achievements of one's practice rotations

## **Job Searches and Interviews**

Chapter 9-11

- Apply job searching techniques
- Appraise position offers
- Prepare and practice responses to common interview questions

## **Letters**

Chapter 12-14

- Compose cover letters that effectively present information
- Inspect letters for overly complex wording and phrasing

## **PROFESSIONAL AFFILIATIONS**

American Pharmacist Association

2001 - Present

## **PUBLICATIONS THAT ARE ALSO HELPFUL**

### **Book Chapters**

Theesfeld, M.L., Traynor, A.P. Curriculum Vitae Preparation. In: Bookstaver, P.B., Caulder C.R., Smith, K.M., Quidley, A.M. Roadmap to Postgraduate Training in Pharmacy. McGraw-Hill; 2013.

Philbrick, A.M., Sorensen, T.D. Interview Process. In: Bookstaver, P.B., Caulder, C.R., Smith, K.M., Quidley, A.M. Roadmap to Postgraduate Training in Pharmacy. McGraw-Hill; 2013.

### **Presentations**

Corman, C. "Writing a Curriculum Vitae/Essay/Letter of Intent" presented as part of the CSHP Pharmacy Residency Application Roadmap.

Corman, C. "Residency Interview Preparation" presented as part of the CSHP Pharmacy Residency Application Roadmap.

Gautam, M. "Personal Branding & Networking" as part of PHM215: Management, Communication and Collaboration



## *Class of 2T6 White Coat Ceremony*

*Sara Rough, 2T6*

On January 25th 2023, the Class of 2T6 was officially inducted into the profession of pharmacy. It felt so surreal to put on the white coat, as it signified the true beginning of becoming a professional pharmacist! After working hard to get in to the PharmD program as well as during the first semester, it was nice having a ceremony dedicated to celebrating our accomplishments.

Although parents and other guests could not attend in person, it was nice to have the option of a YouTube livestream for them to watch at home. My family and friends continually support me on my journey to being a pharmacist and by extension we're happy to virtually attend the ceremony to show that support. My parents have also been excited to show anyone and everyone the YouTube video of the ceremony as they are so proud of me! I'm sure the families of my fellow classmates are doing the same and expressing how proud they are of them. Overall, the YouTube video is also a nice reminder of the day that me and my fellow 2T6 classmates can look back on for years to come.

Having the ceremony in January as opposed to September was nice for a few reasons. The first being that having had the first semester to meet people, we got to celebrate the day with classmates that we now call Phamily! It gave a sense of closeness that we wouldn't have had if we had the ceremony in September, a time when we were still strangers. The second reason that made the

January ceremony special directly relates to the turning point in our education. First semester felt more like a year in undergrad with our classes comprising of mainly course work. Second semester, however, we've started to learn more about skills related to the pharmacy profession like patient counselling and pharmacotherapy. With the change in course style and content, having the ceremony in January connects to that change and truly signified an induction into the pharmacy profession!

To my fellow 2T6's, I just want to say congratulations on making it this far! I know it has been a whirlwind of a semester and a half but you are all doing an amazing job. Keep up the great work! It has been nice getting to know many of you and I am so proud to call you my Phamily! I cannot wait to make many more memories in the coming years. I am also excited to see what amazing pharmacy professionals we will all be. For now, wear your white coats proudly and keep working hard!



**2023**  
**WHITECOAT**  
**INDUCTION**  
**CEREMONY**





# MUSIC BREAKS LANGUAGE BARRIERS

Radhika Thakkar, 2T6

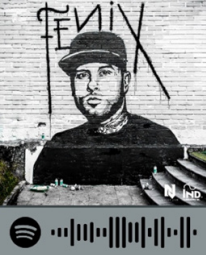

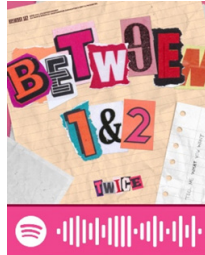

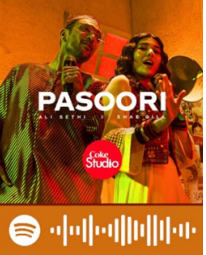


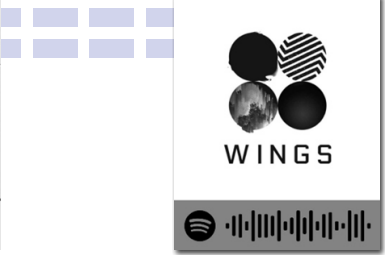
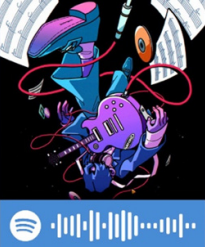

Music is not confined by any region, ethnicity or language, and if the past decade has shown us anything they are definitely taking a back seat in the world of music. The rise of Latin, Bollywood, Jpop (Japanese Pop) and Kpop (Korean Pop) is proof that music is more about the power of feeling than understanding. Even mainstream Western artists have seen the attraction and collaborated with popular artists such as Bad Bunny, Luis Fonsi, AR Rahman, Fujii Kaze, BTS, Seventeen, Blackpink and TXT.

As an avid listener of all those genres of music, I can guarantee you'll be asked by someone,

"How can you listen to it; you don't understand a word?"

Here is how I like to look at it, why do some people listen to instrumentals when there is an absence of lyrics? Music has the amazing advantage of being able to connect directly on an emotional level, without needing to understand a single word spoken, almost like downloading an emotion. The additional advantage of listening to music where you don't understand the language is you get to slowly learn a new language. When you hear similar words or phrases in multiple songs, you start to recognize their meaning. While you can't become completely fluent in Spanish, Hindi, Korean or Japanese, you can definitely form sentences!

Immersing yourself in new genres of music, can be intimidating and that's why I'm here to recommend some of my favourite songs to get you started.

	<p><b>Hasta El Amanecer</b> by Nicky Jam</p> <p><b>LATIN</b></p> <p><b>Bailando</b> by Enrique Iglesias</p>			
	<p><b>Pasoori</b> by Shae Gill &amp; Ali Sethi</p> <p><b>BOLLYWOOD</b></p> <p><b>Kesariya</b> by Pritam &amp; Arijit Singh</p>			
	<p><b>Overdose</b> by natori</p> <p><b>JPOP</b></p> <p><b>Shinunoga E-Wa</b> by Fujii Kaze</p>		<p>Listening to different music is refreshing as you step into a whole new world. At the core, music is a way to connect everyone together. No matter who you are and where you are in the world, music is music and it demands to be heard and felt, irrespective of language.</p>	

# Riding Bicycles towards Better Therapeutic Pathways

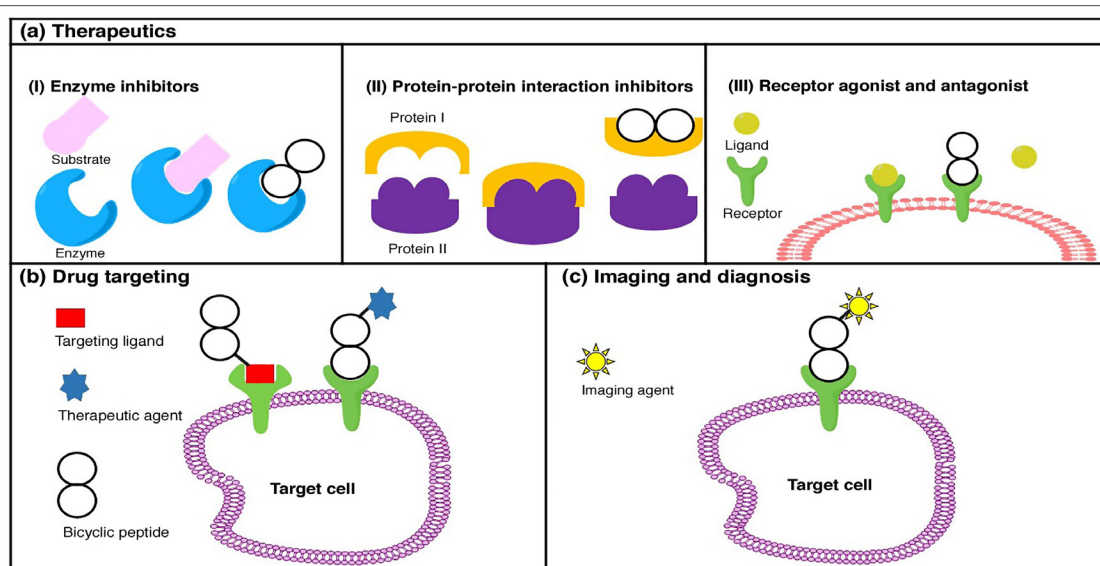
By: Huy Pham, 2T4

Bicycles or bicyclic peptides are short polypeptides with two rings that induce conformational rigidity. These constraints on the conformation enable greater binding affinity and selectivity. These molecules have a molecular mass of 1-3 kilodaltons, which allows them to have greater tissue penetration than larger therapeutic proteins as well as a greater ease of synthesis. Given these factors, bicycles can potentially combine the pharmacodynamic properties of high target affinity and specificity associated with biologics and the pharmacokinetic properties of good tissue penetration associated with small molecules. Each ring of the bicycle can have independent functions, enabling bifunctionality and entirely novel mechanisms of action.[1-3] The actual structure of the bicyclic peptides can exist in the form of a head-to-tail cyclized macrocyclic peptide with an additional internal linkage, a peptide with two partially overlapping loops, two separate macrocyclic peptides by a linear backbone, and a handcuff-shaped structure where the peptide chains are connected to a small molecule backbone.[2] Bicycles may be employed as single stand-alone units or as subunits for the assembly of complex structures such as bispecific tandems and higher order multimeric bicycles. Bicycles can also be conjugated to a payload such as a small molecule or biologic, with the bicycle acting as a precision guidance system towards a target interest. Structural diversity can be facilitated by the alteration of primary structure of bicycles either at the rings themselves or the sequence between each

reactive group, changing the symmetry of the rings or changing the scaffold.[4]

The library construction of bicycles can be performed either through chemical or biosynthetic means. The first bicyclic peptide library contained nine peptides constructed using an on-resin cyclization method that involved native chemical ligation and intramolecular disulfide formation.[5] To improve the structural diversity of the peptide library, researchers employed the split-and-pool method, a mainstay in the chemical synthesis of bicyclic peptide libraries. The split-and-pool method has four steps: the equal division of the solid phase carriers, the coupling of one different amino acid block through solid-phase peptide synthesis, the mixing of the compounds, and the repetition of the prior steps until peptides of a target length are synthesized. The characterization of the resulting cyclic peptide is done using one-bead-two-compound technology, where the peptides are synthesized on bi-layered microbeads. The peptide synthesized on the outer layer is cyclized and tested for activity while the peptide synthesized on the inner layer remains linear and is used for sequencing. [2,6,7]

A major player in bicycles is Bicycle Therapeutics, who have several products undergoing preclinical and clinical development. One of their pipeline products is BT7480, a conjugated bicycle composed of two CD137





bicyclic peptides and one Nectin-4 bicyclic peptide linked together through three-arm PEG chain. The CD137 bicyclic peptide components facilitate the binding to T-cells and the Nectin-4 bicyclic peptide component facilitates the binding to tumour cells that express Nectin-4.[8,9] Preclinical studies observed that BT7480 was efficacious in reducing tumour growth, inducing complete regression and resistance to tumour cell rechallenge.[10] BT7480 is currently undergoing an open-label phase I/II study assessing efficacy and safety alone or in combination with nivolumab in advanced solid malignancies associated with Nectin-4 expression.[11] One other product by Bicycle Therapeutic that targets Nectin-4 is BT8009, is a conjugate composed of a Nectin-4-binding bicyclic peptide and a mono-methylauristatin E payload, connected by a cleavable valine-citrulline (Val-Cit) linker.[12] BT8009 too is undergoing a phase I/II clinical trial, evaluating the drug as monotherapy and in combination with pembrolizumab.[13]

Another product by Bicycle Therapeutics is BT5528, a bicycle toxin conjugate. It consists of a bicyclic peptide that targets the erythropoietin-producing hepatocellular (Eph) receptor EphA2, which is overexpressed in a variety of solid tumours, a MMAE antimetabolic payload and a Val-Cit linker. Preclinical results indicate favourable efficacy and profile, especially relative to an antibody-drug conjugate carrying the same MMAE payload.[14] BT5528 is currently undergoing a phase I/II clinical trial assessing its efficacy and safety as monotherapy and in combination with nivolumab in advanced solid tumours with high EphA2 expression.[15]

The therapeutic potential goes beyond the treatment of cancers. Bicycle Therapeutics is collaborating with AstraZeneca to develop inhalation formulations of bicycles, as well as possible applications in cardiovascular and metabolic diseases. In the field of ophthalmology, Bicycle Therapeutics is partnering with Oxurion for the development of the plasma kallikrein THR-149 for the treatment of diabetic macular edema. A phase I dose-escalation trial has shown it to be well tolerated and safe in patients.[16] In addition, data from Part A of the KALAHARI Phase II trial found that high-dose THR-149 (three monthly 0.13 intravitreal injections) is safe and well-tolerated, and results in central subfield thickness stabilization and improvements to visual acuity. Part B is recruiting.[17,18] Bicycles might also be a

useful tool against antimicrobial resistance, with multiple Penicillin Binding Protein 3 inhibitors being identified, the synthesis of an antimicrobial bicyclic peptide with activity against multidrug resistant *Acinetobacter baumannii* and *Pseudomonas aeruginosa*, [19] and one peptide observed to be a nanomolar protease inhibitor. [20]

Bicycles combine the properties of both small molecule drugs and larger biologics. As a result, they present a pathway towards a next-generation of therapies, whether it's in oncology, immunology or neurology. Within the near future, bicycles might appear as classical inhibitors or as mechanisms for facilitating more selective drug targeting.

## References:

- Ahangarzadeh S, Kanafi MM, Hosseinzadeh S, Mokhtarzadeh A, Barati M, Ranjbari J, et al. Bicyclic peptides: types, synthesis and applications. *Drug Discov Today*. 2019 Jun;24(6):1311–9.
- Feng D, Liu L, Shi Y, Du P, Xu S, Zhu Z, et al. Current development of bicyclic peptides. *Chin Chem Lett*. 2022 Nov;108026.
- Rhodes CA, Pei D. Bicyclic Peptides as Next-Generation Therapeutics. *Chem - Eur J*. 2017 Jul 27;23(52):12690–703.
- Bicycle Therapeutics. Platform [Internet]. Bicycle Therapeutics. 2022 [cited 2022 Dec 30]. Available from: <https://www.bicycletherapeutics.com/approach/platform/>
- Sun Y, Lu G, Tam JP. A Thioester Ligation Approach to Amphipathic Bicyclic Peptide Library. *Org Lett*. 2001 May 1;3(11):1681–4.
- Joo SH, Xiao Q, Ling Y, Gopishetty B, Pei D. High-Throughput Sequence Determination of Cyclic Peptide Library Members by Partial Edman Degradation/Mass Spectrometry. *J Am Chem Soc*. 2006 Sep 8;128(39):13000–9.
- Liu R, Marik J, Lam KS. A Novel Peptide-Based Encoding System for “One-Bead One-Compound” Peptidomimetic and Small Molecule Combinatorial Libraries. *J Am Chem Soc*. 2002 Jun 6;124(26):7678–80.
- Hurov K, Lahdenranta J, Upadhyaya P, Haines E, Cohen H, Repash E, et al. BT7480, a novel fully synthetic Bicycle tumor-targeted immune cell agonist<sup>TM</sup> (Bicycle TICATM) induces tumor localized CD137 agonism. *J Immunotherapy Cancer*. 2021 Nov;9(11):e002883.
- Upadhyaya P, Kristensson J, Lahdenranta J, Repash E, Ma J, Kublin J, et al. Discovery and Optimization of a Synthetic Class of Nectin-4-Targeted CD137 Agonists for Immunology. *J Med Chemistry*. 2022 Jul 12;65(14):9858–72.
- Papadopoulos KP, Dowlati A, Dickson A, Hirschberg S, Westrup S, Upadhyaya P, et al. A combined phase I/II study of a novel bicycle tumor-targeted immune cell agonist BT7480 in patients with Nectin-4 associated advanced malignancies. *J Clin Oncol*. 2022 Jun 1;40(16\_suppl):TPS2689–TPS2689.
- Study BT7480-100 in Patients With Advanced Malignancies Associated With Nectin-4 Expression - Full Text View [Internet]. *ClinicalTrials.gov*. [cited 2022 Dec 30]. Available from: <https://clinicaltrials.gov/ct2/show/NCT05163041>
- Mudd GE, Scott H, Chen L, van Rietschoten K, Ivanova-Berndt G, Dziedzic K, et al. Discovery of BT8009: A Nectin-4 Targeting Bicycle Toxin Conjugate for the Treatment of Cancer. *J Med Chem*. 2022 Oct 7;65(21):14337–47.
- Study BT8009-100 in Subjects With Nectin-4 Expressing Advanced Solid Tumor Malignancies - Full Text View [Internet]. *ClinicalTrials.gov*. [cited 2022 Dec 30]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04561362>
- Bennett G, Brown A, Mudd G, Huxley P, Van Rietschoten K, Pavan S, et al. MMAE Delivery Using the Bicycle Toxin Conjugate BT5528. *Mol Cancer Ther*. 2020 Jul 1;19(7):1385–94.
- Study BT5528-100 in Patients With Advanced Solid Tumors Associated With EphA2 Expression - Full Text View [Internet]. *ClinicalTrials.gov*. [cited 2022 Dec 30]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04180371>
- Dugel PU, Khanani AM, Berger BB, Patel S, Fineman M, Jaffe GJ, et al. Phase 1 Dose-Escalation Study of Plasma Kallikrein Inhibitor THR-149 for the Treatment of Diabetic Macular Edema. *Transl Vis Sci Technol*. 2021 Dec 23;10(14):28.
- A Study to Evaluate THR-149 Treatment for Diabetic Macular Oedema - Full Text View [Internet]. *ClinicalTrials.gov*. [cited 2022 Dec 30]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04527107>
- Khanani AM. Phase 2 Results of THR-149 in Patients with DME: KALAHARI Study Part A [Internet]. Oxurion. 2022 [cited 2022 Dec 30]. Available from: [https://oxurion.com/wp-content/uploads/2022/07/THR-149-part-A\\_Angiogenesis\\_Khanani-final.pdf](https://oxurion.com/wp-content/uploads/2022/07/THR-149-part-A_Angiogenesis_Khanani-final.pdf)
- Di Bonaventura I, Baeriswyl S, Capocchi A, Gan BH, Jin X, Siriwardena TN, et al. An antimicrobial bicyclic peptide from chemical space against multidrug resistant Gram-negative bacteria. *Chem Commun*. 2018;54(40):5130–3.
- Ullrich S, George J, Coram AE, Morewood R, Nitsche C. Biocompatible and Selective Generation of Bicyclic Peptides\*\*. *Angew Chem Int Ed Engl*. 2022 Aug 22;61(43).

# MY TOP 5 TORONTO BUBBLE TEA CHAINS

Ruby Ung, 2T4



## #1. The Alley

- **My recommended drinks:** Royal #9 Milk Tea, Brown Sugar Deerioca with Soy Milk, and Passionfruit Green Tea (comes with tapioca & pineapple jelly).
- The Alley is my favourite bubble tea since I'm a huge fan of milk tea and I find that their milk tea is the best! I'm also slightly bias since I used to work there. There's also many walkable locations close to UofT so you can easily get your bubble tea fix!
- Cons about the Alley is that it is on the pricier side but I do think the quality tastes better.



## #2. Coco

- **My recommended drinks:** Roasted Milk Tea with QQ (when available), 2 Ladies, Mango Yakult with Coconut Jelly.
- Coco is one of the cheaper bubble tea chains that I find still have good bubble tea! There's a variety of drinks from milk teas, fruit teas, and slushes. Another plus is their Tea of the Month (TOTM) promotions which price their drinks for cheaper. There's also many walkable locations close to UofT so you can easily get your bubble tea fix!
- Cons about Coco is when they don't have QQ available. This is my favourite topping to get with milk tea! There's some taro bits and it's a bit chewier than tapioca.



## #3. Mr. Sun

- **My recommended drinks:** Mango Green Tea with Mango Tapioca & Konjac Jelly, Oolong Milk Tea.
- Mr. Sun has really good flavoured tapioca like mango tapioca, strawberry tapioca, and specialized flavours that they only do over the weekends. Personally, I think Mr. Sun has the best Mango Green Tea and I feel like the other bbt places listed can't compare. The specialized fruity toppings go very well with the Mango Green Tea!
- Cons about Mr. Sun is the absence of locations in downtown Toronto! I've only seen 2 locations which are in Pacific Mall and in K-Town by Finch Station.



## #4. Gong Cha

- **My recommended drinks:** Pearl Milk Tea, Peach Green Tea with Lychee Konjac Jelly and Coconut Jelly.
- Similar to the Alley I think their original milk tea is really good but they have less milk tea options in comparison. However, they have other unique things like milk foam and also serve bubble waffles too so it's good for a quick dessert fix!
- Cons about Gong Cha are that there aren't as many locations and it is on the pricier side but again, I do think the quality tastes better.



## #5. Chatime

- **My recommended drinks:** Jasmine Green Milk Tea, Peachy Lychee Green Tea with Coconut Jelly.
- There are lots of Chatime locations making it convenient to get your bubble tea fix! There's even a Chatime within a 5 minute walk from the Pharmacy Building. Another plus is their Tea of the Month (TOTM) promotions which price their drinks for a cheaper price.
- Cons: prices have increased and most toppings cost >\$0.50. I also don't think Chatime is at the same level in terms of "quality" like the Alley, Gong Cha, or Mr. Sun but the prices are around the same price now.



## INGREDIENTS

- 3 cups of kimchi (over-fermented preferred) cut into bite sized pieces
- ⅓ cup kimchi brine (juice from kimchi)
- 250g of pork belly (or pork shoulder)\*
- 1 white onion
- 5 green onions
- 1 pack of tofu
- 2 teaspoons soy sauce
- 1 teaspoons sugar (or maple syrup)
- 1 tablespoon gochujang (hot pepper paste)
- 1 teaspoon toasted sesame oil
- 2 teaspoons gochugaru (Korean hot pepper flakes)\*\*

\*Usually about half a pack from the store

\*\* Optional

## INSTRUCTIONS

1. Use a medium sized pot and put it on high heat.
2. Slice the pork belly into bite sized pieces and brown in the pot on high heat. A neutral tasting oil can be used if it is sticking.
3. Once the pork is browned, add 3 cups of water (about the same volume as the kimchi you will be using).
4. Cut the butts off of the green onion and throw them into the pot and turn the heat down to medium-high. Set the rest of the green onion to the side.
5. Add the white onion slices and the green onion butts to the pot. Tip: count the green onion butts before you put them in because you will be removing them.
6. While you are waiting for the green onion butts to flavor the soup, cut up the tofu into bite sized cubes, cut the rest of the green onion into small pieces and put to the side.
7. Take out the green onion butts from the pot.
8. Add in the kimchi, kimchi brine, and half of the green onions and stir. Then add in the soy sauce, sugar, gochujang, and sesame seed oil and stir.
9. Cover and let it cook for 10 minutes.
10. Taste the stew and adjust to your liking.
11. Add in the tofu and allow to boil for 10 minutes.
12. Taste the stew again and adjust if needed.
13. Try one kimchi from the stew. If it is soft, then it is done cooking. If not, allow it to cook some more and try again.
14. Top with the remaining green onions.
15. Eat hot and serve with rice.

I hope that you give this recipe a go and make it your own! I'm happy to have shared it with you, and I hope that you can share it with others as well.



## Kimchi Jjigae is for Sharing

Sarah Choe, 2T6

A few years ago, my landlord was telling me about his amazing flight on Air Korea when he had 'Korea's national dish.' I remember thinking, "which dish are you talking about?" because it had never occurred to me to choose one national dish. If you were to ask me today, however, my go-to response for 'Korea's national dish' would be kimchi jjigae because of how well-loved it is. Kimchi jjigae is a stew made from kimchi and pork belly, and is one of the few recipes I can confidently say I've absolutely mastered over my years away at university living without parental supervision. I love it not only because it tastes amazing, but also because it is a way for me to connect with my friends and represents the resilience that is ingrained in Korean culture. Kimchi jjigae is traditionally made from kimchi, or fermented cabbage, that has been over-fermented. Kimchi was made in Korea for a long time as a way to preserve vegetables like cabbage or radishes over Winter. In the past, it would be made in the Fall and then buried underground and over the course of the Winter it could be taken out a bit at a time so that people could have vegetables all year 'round. Today, kimchi is made all the time, and thanks to refrigerators, we don't have to keep it cold underground. However, something that will always be true is that kimchi doesn't stay perfectly fermented all the time, it eventually becomes over-fermented and doesn't taste as good anymore. When this happens though, it can be made into new dishes like kimchi jjigae! This dish transforms something that would have gone to waste into a new and maybe better creation. If you try this recipe, I hope that you can appreciate this transformation and will be as excited as I get to eat it with those around you. Kimchi jjigae is great for sharing, so I recommend you use this recipe to make a big pot and share it with your friends and family!



# 2 Super Easy Recipes for Students on the go!

*Lina Lo, 2T5*

Here are 2 super simple recipes you can make when you're in a rush to get to class!  
They're really easy to make and are delicious!

## INGREDIENTS:

- 3 cups of fusilli pasta (or any kind of pasta you desire really)
- Sun-Dried Tomato Salad Dressing or Pasta Salad Dressing Mix Packages Vegetables of your choice.
  - Suggestions: canned corn niblets, feta cheese, bell peppers (diced), carrots (diced or shredded), raw onion (diced), celery, boiled eggs, cherry tomatoes

## DIRECTIONS:

1. Cook your pasta in a large pot of boiling water (can take up to 6-8 minutes). Drain cooked pasta and rinse well with cold water.
2. While you wait for the pasta to cook, wash and chop your desired vegetables
3. in a big bowl, mix your vegetables and cooked pasta with sun-dried tomato salad dressing or the pasta salad dressing mix packages
4. Bon Appetit! Store any leftovers in a container in the fridge

## Pasta Salad



## INGREDIENTS:

- 4 slices of bread
- 1 cups of tomato sauce
- 1.5 cups of cheese (of your choice)
- Any pizza toppings you desire! (Suggestions: Mushrooms, onion, pepperoni, bacon, chicken, basil)

## DIRECTIONS:

1. Lightly toast your bread
2. Spread tomato sauce onto your slices of toast
3. Sprinkle your cheese all over the toast
4. Add the toppings of your choice onto the "pizza"
5. Put your "pizzas" into your toaster oven until cheese is melted and toppings are cooked!
6. Top with basil or seasonings (i.e. chilli flakes) if desired.

Enjoy!!!

## Pizza Toast





Name: \_\_\_\_\_

## Countries of the World

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

Find the following words in the puzzle.

Words are hidden → ↓ and ↘ .

ALBANIA  
BAHAMAS  
CANADA  
DENMARK  
ERITREA  
FIJI  
GREECE  
HUNGARY

IRELAND  
JAMAICA  
KENYA  
LEBANON  
MADAGASCAR  
NEPAL  
OMAN  
PHILIPPINES

QATAR  
RWANDA  
SOUTH KOREA  
TURKEY  
UGANDA  
VIETNAM  
WALES

# SHOUTOUTS

**Shout out to Simran (2T1)  
for being the most  
supportive APPE buddy in  
our hospital rotation! <3**



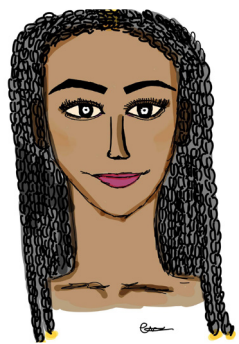
**Shout out to the  
526 pham <3**

**Shout out to the 2T4 student  
council! Thank you all for working  
so hard to engage a class that has  
never met up before. Really  
appreciate the warmhearted emails  
with the gif <3**



**Shoutout to every single 2T2  
for being YOU!**

## Artist Spotlight

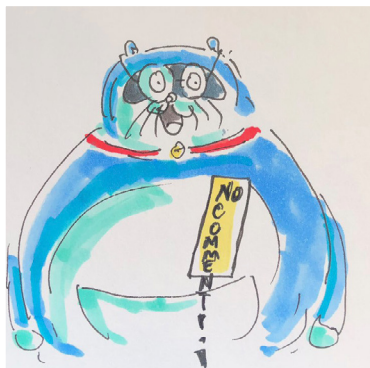


Christina Kang, 2T5



*"Sabih and Simba"*

Martin Ho, 2T3

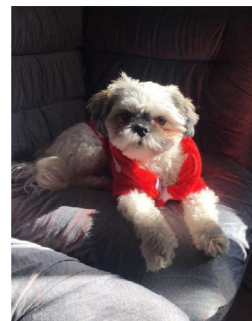
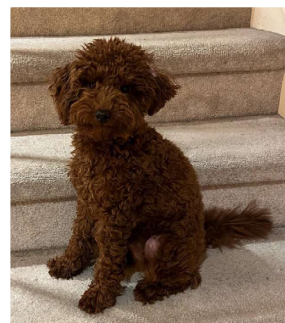


Khoa Vu, 2T3

## Behind the Lens



Sabih Jamil, 2T3

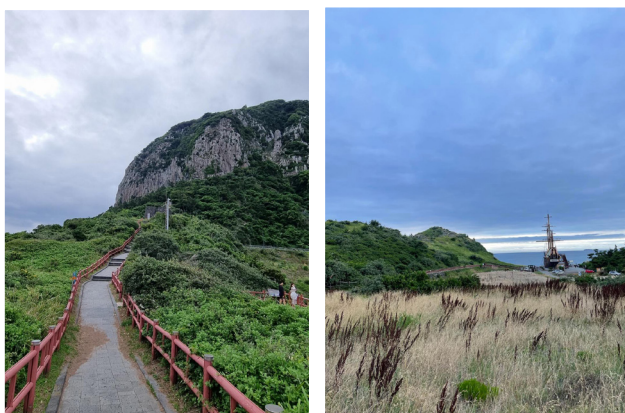


**Lucky, Boba & Mochi**  
Jessica Chan, 2T5





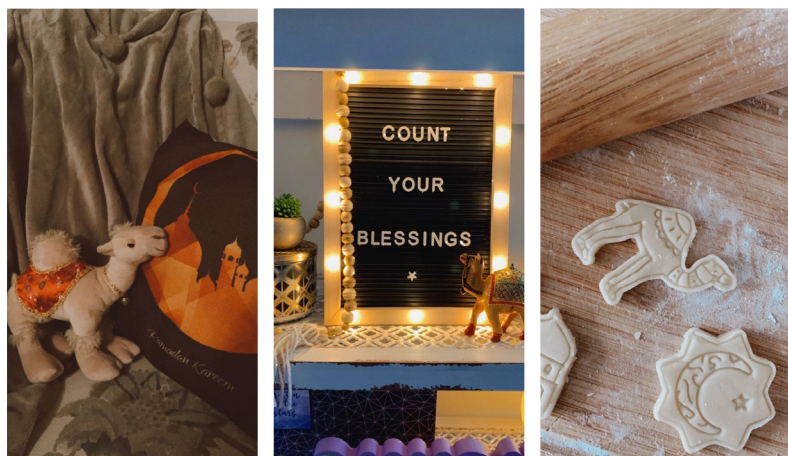
Kay-Ann Ormsby, 2T5



Christina Kang, 2T5



Donna Hoang, 2T3



**Ramadan Festivities**  
Ayman Lakhani, 2T5



**Mexico**  
Deep Shah, 2T6





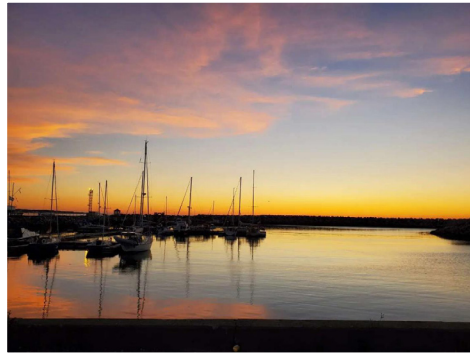
**Portugal**  
Prima Zhao, 2T4

**Dubai & Chicago**  
Radhika Thakkar, 2T6

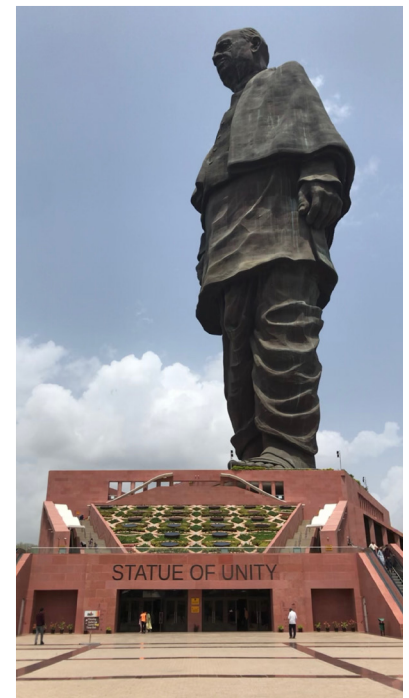


**Cherry Blossoms**  
Matt Issac, 2T4

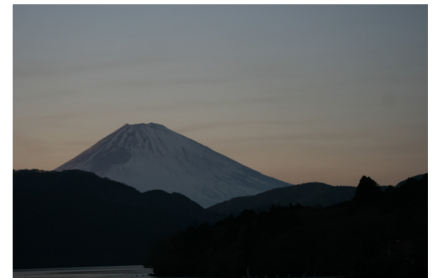




**Summer**  
Lina Lo, 2T5



**India - Statue of Unity**  
Purvi Mahida, 2T6



**International**  
Cameron Ho, 2T3

**Japan**  
Misha Krivkyh, 2T3