

# Pharmacy Phile

University of Waterloo School of Pharmacy

Issue 84 | November and December 2019



# In this Issue

1-2 - President and VP's Address

3-4 - CAPSI Corner

5-6 - OPA Update

7-8- CSHP: Infection Inception: Enlisting viruses in the war on drug-resistant bacteria

8-9 - Co-op Chronicle Interview with Emma Peters

10 - SOPhS Communications

## President and VP's Address

As the weather gets colder, the parkas come out, and fall colours have changed into winter branches, the University of Waterloo School of Pharmacy has just wrapped up another busy term. This time we've also closed the chapter of an entire decade filled with student success, pharmacy innovation, and forward thinking, as we enter the new year of 2020.

November was quite a busy time for events ranging from student-led initiatives, to faculty sponsored galas. Just like every fall season, SOPhS had the pleasure of organizing and bringing the classes together with our annual Fall Phormal at Crowne Plaza. Thankfully, everyone had a chance to dress up, grab some refreshments, and share good company before their exam season picked up. As always, the event was a success

thanks to the efforts of the social representatives!

November saw the launch of the annual Movember campaign, as a collaboration between SOPhS and OPhiG. Our student body banded together to sport some serious lip leather, get active, and raise awareness for mens health. The campaign was a major hit and resulted in a total fundraised amount of \$2,879, all being donated towards a great cause.

Our school was also fortunate enough to host two distinguished members of our profession, Alan Malek and Jen Baker from the Ontario Pharmacists Association. This open forum and fireside chat was run by the new restructured UW OPA Student Chapter, and gave a deep insight into the future of our profession, and ways students

can get involved and advocate too.

Late in the month, our student body welcomed the incoming class of 2023 with open arms, as part of the annual meet and greet. The meet and greet is a time where the incoming class can meet each other, play ice-breaker games, and bond over a friendly meal, prior to their formal start of pharmacy school in January. Thank you to all that came out, and we're excited to have you back, full-time, this January.

December was rounded off with the annual Egnog Social, an event from faculty to celebrate the holidays season. The social was a great time for professors and students alike, to share some holidays treats and a glass (or two) of delicious eggnog, and reflect about the rigorous semester. From the cheerful

*Continued on next page...*

# President and VP's Address (cont.)

Christmas music, to the array of fine foods and desserts, the faculty never fails to put on such lighthearted and fun event.

As the holiday season approaches, we'd just like to take the time to wish the outgoing cohorts the best of luck in their work semesters coming up. To the Rx2022's, good luck on your first co-op term - take it all

in, apply the knowledge you've learned over the past year, and represent our school with professionalism in everything you do. To the Rx2020's, this is it, home stretch! You're approaching the end of your four years as you move on to rotations, we wish you success in this final chapter!

On behalf of SOPhS, and the student body of the University

of Waterloo School of Pharmacy, happy holidays and happy new year.

Yours truly,

- Kean Sarani and Meena Shweitar, *President and Vice President*



# CAPSI Corner

Another year, another term, and another new class to welcome to the School of Pharmacy! Congratulations to the new members of our community, Rx2023, for starting their journeys as future healthcare professionals! We hope you enjoyed orientation week, and we wish you the best of luck as you navigate through the excitement of your first term of pharmacy school. We'd also like to welcome back Rx2021 from their second co-op term, and Rx2020 before they head off to rotations in March!

With three cohorts of pharmacy students on campus for the beginning of the winter term, UW CAPSI is excited to offer tons of events to the members of our student community. Not sure what UW CAPSI is? Read on!

What is CAPSI?

UW CAPSI (Canadian Association of Pharmacy Students and

Interns, University of Waterloo Chapter) is an association of pharmacy students and interns that advocate for the interests of Canadian pharmacy students in the 10 pharmacy faculties across Canada. As a local chapter, UW CAPSI is active in



both our student and our local community. We promote high quality educational seminars to supplement our learning, raise awareness about relevant issues in our community, and nurture a positive attitude and generosity among our members. We encourage all students to dream big, aim high and take chances in seeking new opportunities!

What does CAPSI do?

Speaking of seeking new opportunities, elections for UW CAPSI council positions will be held this term, including a Rx2023 Class Representative. This will be the perfect chance to get involved as a leader in your student community and

help bring to life some of the most popular events the School of Pharmacy has to offer! This term, UW CAPSI will be bringing back events for our members such as the Pharmacist "Meet and Greet", Pharma-

cist Awareness Month (PAM), and volunteering for elementary school outreach.

Just at the beginning of January, our national CAPSI representatives headed over to Montréal for Professional Development Week (PDW) 2020, an annual four-day conference that brings together Canadian pharmacy students from coast-to-coast. Here, they discussed updates on PAM, wellness,

# CAPSI Corner Continued

and communication initiatives to enhance the experience of CAPSI members. Involvement with CAPSI means being a part of a strong network of peers who are passionate about the pharmacy profession and the student experience!

How can I learn more about CAPSI?

Whether we've convinced you enough to run in the UW CAPSI elections or you're still on the fence about even joining as a member, UW CAPSI is available to answer any questions you may have! For Rx2023, we will have a presen-

tation to outline the details of a UW CAPSI membership, and we will also have a booth at the Clubs Fair where current members of the council will be present to answer questions and help sign you up for a membership.

Where can I keep up to date with CAPSI events?

UW CAPSI is on Facebook and Instagram! If you're into #hashtags, attention-grabbing emojis, and the liberal use of random gifs and stickers found after scrolling for 5 minutes to find the "perfect one", we've got it covered! Our Facebook

and Instagram will have all the information you need for every event we are holding this term. So, follow us on our platforms and you'll never be left wondering why everybody else got free food and knowledge at that one Lunch and Learn you didn't know about ☺.

Facebook: Capsi Waterloo

Instagram: @capsiuwaterloo

Whether it's your first few months, last few months, or somewhere in between, good luck to all in our amazing pharmacy community!



# OPA Update: UW's First Open Forum with OPA's Senior Leadership Team

With the efforts of the UW OPA Student Chapter, UofT OPA Student Chapter and OPA Staff, the first ever OPA Open Forum was held late November. Allan Malek (Vice-President & Chief Pharmacy Officer of the OPA) and Jen Baker (Chair of the OPA Board of Directors) paid a visit to the School of Pharmacy to address the hot topics and questions about Pharmacy from our student body.

The forum was also broadcasted online allowing UofT students and UW students away on their co-op/rotations to remotely attend the event. Additionally, students that tuned in remotely had the opportunity to submit their questions online with their answers broadcasted live.

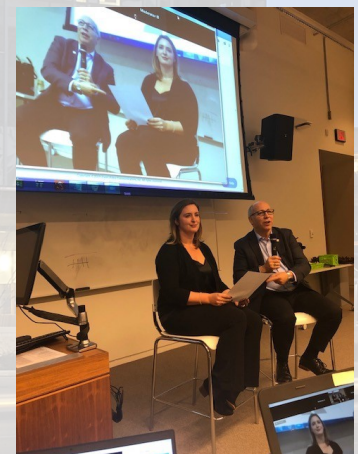
Despite the cuts in healthcare impacting Pharmacy, Jen and Allan spoke of the importance of our profession establishing a negotiation process with the government. This will open up the table for future discussions. Additionally, Jen and Allan have shared the upcoming news on how common ailment prescribing will develop in Ontario. Surveys have already been sent out to acquire input from pharmacists, interns and students. The collected responses will help assess which common ailments will benefit most from this new scope of practice. Additionally, SLT has further emphasized that a new, more stable agreement must be negotiated to ensure a more sustainable reimbursement framework takes place for new scopes of practice.

Other questions of interest, such as talks for an established provincial EHR/Clinical viewer and OPA's role in helping address the drug shortage problem were also brought up. The rise of Amazon is both an interesting and concerning topic expressed by many in our profession. Hearing different perspectives from SLT were both insightful and encouraging. Allan expressed that the profession must never waiver and Jen suggested that Amazon's involvement can be an opportunity for Pharmacy to further evolve.

Our student chapter, the School of Pharmacy, and its students express their sincere thanks to Jen and Allan for visiting. We are confident that their attendance will continually open the doors for more leaders to connect with our school. Lastly, welcome Rx2023s to the School of Pharmacy and we're confident your next four years will be memorable. Stay tuned for updates for the new year with PAM and the OPA cup just around the corner!

Sincerely,

- Joshua Pusong, UW OPA Student Chapter Vice-Chair



# CSHP — Infection Inception: Enlisting viruses in the war on drug-resistant bacteria

By Adam Magill

## The Concept

When Steffanie Strathdee and her husband Tom traveled to Egypt in 2015, neither expected that it would almost cost Tom his life. Although Tom took antibiotics after suddenly becoming ill, his condition quickly deteriorated. After an emergency trip to Germany, Tom was diagnosed with an infected abdominal abscess, caused by *Acinetobacter baumannii* — a bacteria notorious for exhibiting multi-drug resistance. As conventional therapy failed, he slipped into septic shock. Tom ultimately survived his infection, however, utilizing a therapy long shelved by Western medicine: phage therapy.<sup>1</sup>

That's right, I'm talking about bacteriophage; those bacteria-infecting viruses you learned in about in 1st year biology that look like an alien spaceship. The basic concept behind phage therapy is simple: bacteriophage selectively target bacterial cells and kill them as new virions are assembled and released from the host. In essence, when a bacteria infects a human, we could treat by giving those pathogenic bacteria a viral infection. It's almost perfect karma.

The idea of utilizing phage to fight infections is not new — medicine has been experimenting with phage therapy since the early 20th century. Predictably, interest in phage fell off the cliff after we discovered broad-spectrum antibiotics. But the idea of using them as a therapeutic has seen a recent resurgence with the advances in DNA sequencing and editing technologies.<sup>2,3</sup> This year alone, several novel phage therapies will enter clinical trials and big pharma is starting to take notice. Just this past year, Johnson & Johnson entered into partnerships with two biopharmaceutical companies developing therapeutic bacteriophage.<sup>4</sup>

## The Hurdles

Like all viruses, each species of phage has evolved to infect a particular type of cell and we have only begun to scratch the surface of discovering, characterizing and classifying them. But recent advances in DNA sequencing technology has dramatically enhanced our capacity to do this. Advances in genetic engineering and synthetic virology may even allow us to engineer viruses with the specific characteristics and targeting we want.

Beyond the scientific and manufacturing hurdles, one major obstacle we can expect is public perception. We would have to sell the public on a treatment that Western medicine shelved almost a century ago and was really only used in Russia and Eastern Europe until quite recently. Oh but don't worry, the ones we use nowadays are genetically modified. That's right, these miracle bugs are also GMOs. Given the challenges faced in convincing some patients to inject a dead virus to prevent infections, it's probably safe to project challenges selling the public on the idea of using genetically modified live viruses to treat infections.

*Continued on next page...*

# CSHP – Infection Inception: Enlisting viruses in the war on drug-resistant bacteria (Continued)

## The Hope

If you've spent more than 10 minutes listening to a lecture from Prof. Barrett, you know that antibiotic resistance is a serious global threat. We know that pharmacists can and should play a role in here, but current prospects aren't looking so great. Pathogens we used to treat routinely are starting to show resistance to our last known effective treatments. On top of this, the pipeline for traditional antibiotics is not looking so hot with companies focused on antibiotic development increasingly going belly-up and the ones remaining find themselves in a precarious state.<sup>5</sup>

There are valid concerns with the use of phage in humans. But given the looming crisis and our inability thus far to adequately tackle it defensively, there's a clear need to focus on new offensives. Success of phage would add an entirely new class of therapy to our antimicrobial toolbox. There's even early evidence showing that when phage is used in conjunction with traditional antibiotics, organisms that survive bacteriophage can become re-sensitized to the antibiotics they were previously resistant to.<sup>2</sup> Phage therapy has been overhyped in the past but the hope is that with this new momentum in R&D, we are now approaching a point where it may start to take off.<sup>2</sup>

So what will pharmacist's role in phage therapy look like? It's hard to say for sure, there's still a lot of research ahead. It would depend on the scale that we ultimately ended up using it and that's if these therapies end up a success at all. It's also important to realize this wouldn't be quite like any other treatment we've learned about before and might require more than a few extra microbiology lectures. But if we already handle vaccines, antibodies and other biologics, it really isn't too much of a stretch to imagine covering phage too. Whether it's phage or some other next-generation therapy that comes along, it will, of course, be up to us to take early initiative and continue to define our role as the drug experts. Even if those drugs become viruses.

## References

- How Sewage Saved My Husband's Life from a Superbug<sup>1/2</sup>Steffanie Strathdee<sup>1/2</sup>TEDxNashville [Video]. YouTube. <https://youtu.be/AbAZU8FqzX4>. Published Oct 17, 2017. Accessed Jan 2, 2020.
- Schmidt, C. Phage Therapy's latest makeover. *Nat Biotechnol*. 2019;37:581-586
- Derek ML, Koskella, B, Henry C. Phage therapy: An alternative to antibiotics in the age of multi-drug resistance. *World J Gastroentero*. 2017;8(3): 162-173
- Zarley, BD. These superbug-fighting viruses are making a comeback. <https://www.theverge.com/2019/7/5/20682988/phages-antibiotic-resistance-bacteria-virus-research-health>. The Verge. Published Jul 5, 2019. Accessed Jan 3, 2020.
- Jacobs A. Crisis looms in antibiotics as drug makers go bankrupt. *New York Times* [iOS App]. Published Dec 26, 2019. Accessed Dec 26, 2019.



# Co-Op Chronicle: Interview with Emma Peters (Rx2021)

## Pharmacy Student at Preston Medical Pharmacy

Interviewer: Alicia Dakins (Rx2021)

**Pharmacy Phile: Tell us about a typical day on the job at your pharmacy.**

Emma Peters: Every day when I got to the pharmacy, I would look at our daily activities list to see what was on my schedule for the day. We schedule appointments with patients daily for diabetes education, medication reviews, INR appointments, and medication follow up. I would meet with the patients in the pharmacy or in their home to provide these services. We also had many phone calls scheduled to check up on our patients after potential medication changes, hospital discharge, illness, or for various other reasons. This was also my responsibility.

Throughout the day I would also be given tasks from the pharmacists that I could do for them, like answering drug info questions from doctors, doing quarterly blister pack reviews, and checking prescriptions. I also had long term projects I was working that I would work on if I had down time. Needless to say, it was a very busy day.

**PP: What lessons from our first two years of pharmacy school were you able to put into practice while on your co-op?**

EP: The classes that I found most helpful for working at Preston Medical Pharmacy were definitely IPFC 3 and Professional Practice 4 which provided me with diabetes knowledge. I used these a lot during the diabetic foot care appointments and providing diabetes education. I also used my OTC knowledge from IPFC 1 and 2 for recommending products to patients for self care. And, of course, Jeff Nagge is the only reason I could even begin providing INR measurements and warfarin adjustments.

**PP: What was the most interesting experience you had on the job during your term?**

EP: The most interesting experience I had during co-op was the opportunity for me to do the annual medication reviews for the group homes that we support at our pharmacy. The group homes house and support patients with various cognitive disabilities. This was the first time I was able to work with a large number of patients with a lot of these conditions, many of which I had never heard of. Often these patients were being treated with off label indications due to many of them being considered "dual diagnosis" (patients who have both a cognitive disability and a mental health condition). I had to really learn to adjust my goals to align with the patient's goals and how I communicate with cognitively disabled patients. It also taught me that sometimes you need to advocate harder to specific patients, because they do not have a voice of their own (sometimes literally).

**PP: In light of what you saw on co-op, what are you most looking forward to learning more about in third year?**

EP: I am looking forward to learning about mental health medications as I worked a lot with these, especially when working with the patients in the group homes. I often had to do a lot of research to even understand the indication, let alone the guidelines for these medications. There are so many medications and a lot of variations, even within the same class. I am excited to learn about how to best support patients with mental health conditions.

*Continued on next page...*

**PP: Tell us about some of the additional clinical services your pharmacy offered and how you were able to get involved.**

EP: Preston Medical Pharmacy offers many different clinical services. All their full-time pharmacists are certified Diabetes Educators, so they focus a lot of time on their Diabetes services. They get many referrals for diabetes education by the Waterloo-Wellington Diabetes group and follow many patients long term and educate on pharmacological and non-pharmacological aspects of having diabetes. They also run a monthly diabetes footcare clinic. They also run an INR point of care testing clinic and adjust warfarin dosages under medical directive from many physicians in the area. They also provide significantly more in-depth medication reviews than anything I had seen with MedsCheck and write letters daily to prescribers to suggest solutions to drug therapy problems. I was lucky enough to get to actively participate in all their clinical services offered and I learned so much about expanded scope. I hope to incorporate many of these services into my future practice.

**PP: What advice would you give to a student looking to arrange a co-op term at your Preston Medical Pharmacy?**

EP: Be prepared to put in the work and learn a lot. You will learn what it is like to be a real pharmacist and you will do more pharmacist work than you would at most co-ops. They usually provide you with some good resources to know, but I brushed up a lot on my anti-coagulation notes and diabetes guidelines. Even though there was material I had not covered, the pharmacists are all very supportive and will re-

view topics with you. This job provides you with a lot of opportunities to shine and I learned more in 4 months at this job than I had in my many years as a pharmacy assistant.

**PP: How has your experience this term affected your views on the profession as a whole and/or your personal goals for the future?**

EP: I had never worked at a community pharmacy that I would describe as working to their full scope until I worked at Preston Medical Pharmacy. The pharmacists at Preston Medical taught me the importance of putting the patient first and providing them with holistic care. And after working with them, I realized that the only real way to do this is being more than a pill counter. Putting the time and work in to provide additional services leads to better outcomes not only for your patients, but for your business as a whole. Preston Medical Pharmacy is doing community pharmacy right.

**PP: What is the best part about working in community pharmacy?**

EP: My favourite part about community pharmacy, and the reason why I want to spend my future pharmacist years in community, is the ability you to spend time with, and get to know, your patients. I made many great connections with the patients at Preston Medical Pharmacy and we had the opportunity to work collaboratively to meet their health goals. Though it does make it very difficult when this relationship ends, it makes the work so much more worth it when you get to follow someone and see them achieve the level of health they always desired. I am lucky that I will have the memories of the relationships we made and the changes we made in patients' lives.



# SOPhS Communications: Let the Roaring Twenties Commence!




Have an opinion about our expanded scope of practice? Experience something on co-op that you'd like to share?

SOPhS encourages you to submit an article for the Pharm Phile newsletter! Submissions can be sent to [pharmsoc@uwaterloo.ca](mailto:pharmsoc@uwaterloo.ca) by the end of every month for inclusion in the next edition!

If you have any interest in becoming involved with the SOPhS Communications Committee please send an email our way!

*Photos courtesy of CAPSIUWATERLOO (Instagram)*

# SOPhS 6 Week Calendar

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
 <b>Week 1</b>	Jan 26	27	28 Clubs Fair 4:30pm PPAG D/L 6:30 pm	29 RxPRN Bell Let's Talk Day 2023 Orientation Event 12:30 pm	30 Hospital Residency Info Night 6 pm	31	Feb 1
<b>Week 2</b>	2	3 CAN Meeting 12:30 pm	4	5 SOPhS Meeting 6 pm	6 Candy Gram Sales Start	7	8
<b>Week 3</b>	9	10 S2BN Residency Info Night 5:30 pm	11 OPA- We Are the People with Kathleen Leach	12 Candy Gram Sales End SOPhS Social 8 pm	13 RxPRN Movie Night 6 pm	14	15
<b>Week 4</b>	16	17	18	19	20	21	22 CAN Coldest Night of the Year 7 pm
<b>Week 5</b>	23	24	25	26 Kawasaki Disease Event 6:30 pm	27	28	29
<b>Week 6</b>	Mar 1	2	3 CAPSI Kickoff Brunch 7 pm	4 Industry Residency Info Night 6 pm SOPhS Meeting 6 pm	5	6	7

**SOPhS Calendar Notes:** Please note that event dates may be subject to change Contact SOPhS if you are unsure of an event date. You may also find this information on the SOPhS Google Calendar (<http://tinyurl.com/jo3awk7>). If you would like to add an event to the SOPhS calendar please email the SOPhS secretary at [secretary@sophs.ca](mailto:secretary@sophs.ca).