



Goodbye Vanguards - Class of Rx2011

In this, the last newsletter for the Vanguard Class of the University of Waterloo School of Pharmacy, a few students have shared their memories and words of wisdom as they leave for the world of pharmacy practice. I would like to congratulate each member of the graduating class on your achievements and thank you all for persevering through a new program to make things a little easier for all of us following in your footsteps. By the time we enter practice you will have undoubtedly accomplished great things and all of us left behind can't wait to become your colleagues in the next few years. You are Waterloo Pharmacy and we know you will continue to build a great reputation for our school. Good Luck!

As I try to prepare for my final university exams, I realized that I need to also submit my final newsletter article. It's nice how things are all coming to an end, but it truly is bitter-sweet. Vanguards, I'd like you all to recall a time in your lives where you got accepted into pharmacy school and you were promised that a beautiful school will be built for you right in the heart of downtown Kitchener come January 2008. Then something came up. A crane strike that delayed the building process for a full year. Do you also remember being in the basement room of RCH at The University of Waterloo, where we encountered characters such as Michael Jackson, the WWE federation, and the Taliban all during our professional

practice exam? I will never forget the moment when I saw Lisa Craig leaving the class to tell those drunk engineer kids to keep it down. Then second term came around and we were upgraded to the second floor of RCH where we had windows! Wait did we? Either way, the room was still not up to standards. Yet after all this, I think of those times as the best year of pharmacy school and that is because we truly banded together as a class and became one large dysfunctional family in order to survive 10 hours of class in one room with no breaks. So as we all pack up our bags and transition from back pack to briefcase, never forget all the great memories you have had at this school and please try to keep in touch with your dysfunctional family (student and faculty alike) throughout your career.

It has been an honour to represent you guys,

John Thai - Vanguard Class Representative

Enjoy the ride. Things will not go smoothly and you'll be surprised by all the forks in the road but before you know it, it will all be over and you'll look back and be thankful for the tough times because those are the moments that will have made you into a prepared, strong and ready professional you will become by the end. The world awaits you so take the next four years to grow not only into a great pharmacist but also a better you. - RF

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A Message from your SOPhS President:

This particular month, August of 2011, is going to mark a significant time in history for the University of Waterloo School of Pharmacy. It will symbolize the graduation of the vanguard group of students, our pioneers of this very school we call home.

There are simply not enough words to describe the gratitude and appreciation that we, the student body, have for the vanguard students.

I would like to give a special thanks to all the vanguards for their leadership, enthusiasm, perseverance, and living in the spirit of why not.

It is because of the vanguard students that SOPhS even exists and has grown to the capacity of where we currently stand. It was vanguard students who created a yearbook for the school of pharmacy, formed a local CAPSI chapter, created a UW residency night, started PIC (Pharmacy Investment Club), and many other traditions we all partake in. Traditions such as open mic night, pharmacy phormal, phrosh week, pharmacy athletics, run for the cure, an annual golf tournament, and the list could go on and on.

The vanguard students are truly inspirational and have taught many of us that the pharmacy school experience goes well beyond academics but involves creating lasting friendships and getting involved both inside and outside of the classroom, in whatever capacity that may be.

I had the privilege of working with many vanguard students in various clubs and organizations and I had the honour of awarding certificates of appreciation to those that have been involved with SOPhS for many years in varying capacities. Those students included Claude Charbonneau, John Thai, Tiffany Niro, Sheri Howard, Ashley Gubbels, and Angela Puim. These students have been mentors for many SOPhS council members and the student body as a whole. Their dedication to the school is truly remarkable and have remained hardworking in various endeavors right through to graduation. I know that they, along with many other vanguards will continue to remain committed to the school well beyond their student years, whether it is in the alumni program, as coop employers, coaches, mentors, or advisors. They will foster the UW pharmacy family and will create a reputable name for Waterloo Pharmacy Graduates.

I wish all the vanguard students the best of luck as you embark on your careers as pharmacists. May you continue to lead and inspire. I do hope that you will all stay connected to the school, although you may be leaving us as fellow students, you will always remain part of the UW pharmacy family and we will need your support in the future.

Good luck to all students writing exams this spring! To the 2013's, I hope your co-op placements finish up well over the next few weeks. It has been a very busy spring term all around and I commend all students on making it through.

Kaitlin Bynkoski

Pharmacy Students Take Over Canada's Wonderland

To celebrate the end of our first year classes, just over 30 students from Rx 2014 including 2 students from Rx 2012 journeyed to Canada's Wonderland. Of course we had to make our statement everywhere we went including starting the wave in the Top Gun line, racing on the magic carpets in the waterpark and of course, having occasional team huddles. Thanks to Mahmood El-sweisi and Tamer Akkila for organizing such a successful trip. What a perfect way to end such a roller coaster of a year!

Saleema Bhaidani, Rx 2014



Pharmacy Students at Canada's Wonderland on July 27th, 2011.

Class Rep Updates

The end of third year for Rx2012 is here! Reflecting back (yes, I used the word reflect), third year was another great year and I think we are all looking forward to our fourth and final year and all the excitement that will come with it. Some things that stuck out this year were the great social events, like the ice cream sundaes, BBQs, open mic night and many others!! Despite the busy term we had, Rx2012s still made time for fun. We had a great turn out at the Arabian Nights Formal with Rx2014 and the night was a blast! Personally, the highlight of my night was the video awards. It definitely made me proud of my class, our creativity and our accomplishments throughout the years. As we are approaching the end of this term and our last coop term, I'd like to wish Rx2012s the best of luck and I can't wait until we see everyone again for our final year together!

Dianna Sabbah - Rx2012

Hope all of you are enjoying the great summer weather and your respective co-ops. I would like to say thank you for all of your valuable feedback regarding Town Hall. Please feel free to e-mail me at m7joshi@gmail.com with any questions or concerns should they arise. There is only 1 month left to enjoy this great summer so make it count everyone!

Mohan Joshi - Rx2013

Classes are officially finished and exams are approaching quickly. I couldn't be happier with how first year has gone and I'm excited for all of us to get our first pharmacy co-op experience underway. We have had an amazing year and a video has been made to illustrate just a small portion of our experiences this year: www.youtube.com

Recently, we have had a lot of opportunities to spend time together doing non-curriculum related activities. PHiG events, pharmacy formal, pub nights, intramural hockey final (1st years vs. 2nd-4th years), and a trip to Canada's Wonderland are just some of the events we have shared together. I wish everyone the best of luck on your final exams and a successful co-op term!

Jeff Baxter - Rx2014

Continued from Page 1 (Click to View)

Relax, you've made it. Treat pharmacy like the team sport it is, and enjoy the ride. The bonds you form and the people you meet, will be more important than the things you memorize to pass tests. - ER

"Failure is the only opportunity to begin again more intelligently." - MR

Celebrate the successes and survive the upsets, but keep moving forward. Graduation is just the beginning and it will be because of this program, and sometimes in spite of it, that you'll be a great pharmacist! - BB

Put on your seat belts because it will be a fast and bumpy ride, but also don't forget to get involved and have FUN:)) - SR

Enjoy the student life and strive for balance - CC

Do your own thinking, do what ever you want, and do it well. - SC

Remember that it is not all about marks, tests and assignments! Make sure you enjoy the time you have in pharmacy school because it really is the best 4 years of your life. - TN

Try to take the time out to spend with your classmates during your final year no matter how busy you are. - JT

Have fun - be a nice person - smile => - AH

If there was ever a time to reflect, it would be now. Over the past 4 years I have had the privilege of meeting some of the most amazing people and have had many unique

and exciting experiences. BUT, of course, the path was not always smooth. I hope that some of you will find this advice useful on your journey to becoming pharmacists.

- Buy a laser printer (I learned the hard way after using an ink cartridge in a week!)

- Some sort of pdf-editing software is an essential tool

- Always go to see your exams- profs are humans too, so double-check their math!

- Don't pick co-op jobs based on location alone or you will miss some great opportunities

- Textbooks are overrated (sleep, on the other hand, is not)

- Please be good to your group-mates and do your fair share of the work

Most of all, don't forget why you wanted to be a pharmacist in the first place. School can be challenging and will wear you down, but don't let it make you jaded. Best of luck.

- Anon.

Where does the time go? Cliché, I know, but so true. My heart is breaking a little today as I bid you all a very fond and most sincere farewell. I will miss your visits in between classes and study breaks for chocolate and the quick hallway chats to catch up, but most of all, I will miss you. As you walk out the door for the final time as a UW Pharmacy student, I will be thinking of you and wishing you well.

Please keep in touch and let me know where you are and what you're doing – engagements, weddings, babies, etc. (My personal email is tuckersmom61@gmail.com.) So, off you go. Just as I continue to proudly watch my own children grow into adulthood, find their way and step into 'the real world', know that I am just as happy for you. Take care, be safe and have a long, happy, healthy life.

Louise...aka. Den Mother.



CAPSI Update

Hello CAPSI members!

Thank you to everyone who came out to UW CAPSI's OTC week in mid July! As one of the coordinators of the event, I am excited to announce it was one of the best attended events that UW CAPSI has ever run. OTC week, packed with student educational events, has UW CAPSI excited to run it again next year.

The week started off with a guest lecture from OPA's Pharmacist of the Year, Lisa Craig. "Although we've briefly covered cough and colds self-care in class, Lisa Craig's lecture on cough and cold and her personal experience as a pharmacist helped me to solidify my knowledge and clarify some questions in regards to treatment. Especially because we'll be on co-op in the Fall, thorough knowledge of this topic will definitely be very useful when interacting with patients seeking advice on medications for colds," stated Katerina Ilina (1st year). Upper year students used this event to reunite with one of their favourite professors and reinforce their knowledge on assessments, care plans and follow-ups.

The most popular event of the week, mock OTC OSCEs, allowed students to travel as a group through six different scenarios. Case topics included GERD, sinusitis, yeast infections, allergies, diarrhea, and athletes foot. Sara Dawood (1st year) comments, "It was a great experience since we got to practice counselling with a standardized patient, and got feedback on our performance right away!" Thank you to all of the fourth year evaluators and CAPSI council mock patients who did a fantastic job!

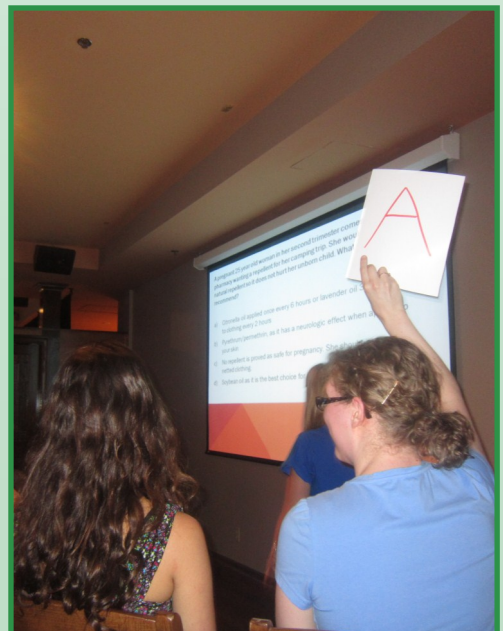
Finally, the week ended off with a social event at McCabes. OTC PharmPhacts was a huge success, with four rounds of trivia and a final winning team composed of Dina Danial (1st year), Saleema Bhaidani (1st year), Carly Stoneman (1st year), and Shannon Hart (3rd year). Mixed teams allowed first and third year students work together to solve trivia questions.

Thanks again to everyone who attended and gave us feedback to improve the events for next year! See you at OTC week in 2012!

Sarah Johnson (UW CAPSI Jr. Education and Outreach Coordinator)

Kaitlin Bynkoski (UW CAPSI Sr. Education and Outreach Coordinator)

OTC Week Photos



Community Action Now!

This term, CAN organized a 30 Hour Famine event, during which students had the opportunity to step into the shoes of the countless individuals who face a daily struggle of starvation. Prior to the famine, students participated in a number of different fundraising initiatives such as a scrumptious bake sale and an exciting (and competitive!) foosball tournament.

The famine kicked off at exactly 8:00AM on Friday, July 17th, with most of us attempting to squeeze in last-minute mouthfulls before the famine officially began. The night of the event was a fun-filled one, with entertaining distractions of all sorts to keep our minds off the hunger. We participated in exciting games, movies, ping-pong, music- you name it! By the end of the night, most of us were far too exhausted to even think about food. A few of us were brave enough to rough it out and spend the entire night at school.

Waking up the next morning was a mixture of exhaustion and excitement. We were scheduled to break our fast at 2:00PM- it felt as if this time couldn't come any sooner! And food never tasted better. After those first few bites came the realization that each of those 30 hours was well worth it. Overall, this event was an amazing experience- not only was it great to spend quality time with fellow students (all while participating in a good cause), but it was also very enlightening. There are millions of people around the globe who live on empty stomachs each and every day, without the promise of a nice meal after 30 hours of starvation, and without the many distractions and luxuries that we had to keep us from eating. If you didn't have a chance to participate this year, don't fret! We will be making this an annual event and next year's famine will be even bigger and better! You now have a year to prepare, so we won't be taking any excuses!

Stay tuned for more CAN activities!

Top Right: Playing a game of taboo to make time pass quicker!

Top Left: An intense round of foosball!

Middle Right: Half way there! Hungry but happy.

Lower Right: Kiran and her sister Gagan treating school like home

Middle Left: 30 hours of hunger end at Crabby Joe's

Lower Left: Feast Time!

CAN 30 Hour Famine Photos



Run For The Cure

Amount raised so far: \$2,691

Number of current team members: 10

Goal: \$7500

This is a call to pharmacy students to sign up and invite your friends and family to join our team too. Remember the Run for the Cure is on October 2 and it's a 5K FUN run or walk...so anyone of any athletic level can participate! SOPhS will also be holding an event on Saturday October 1 so it will be a worthwhile weekend to come back to KW for. Keep an eye on your SOPhS emails for more details.

I would like every participant to try and raise \$150 to cover their registration fee and help contribute to our fundraising goal!

Click here to sign up or donate:

www.runfortheure.com/goto/uwpharmacy

CAPSI Competition!

Remember, the UW School of Pharmacy Run for the Cure team is competing against other pharmacy schools to raise the most money and win a prize at PDW! So far we have a commanding lead with the next school at \$400, but remember, those schools are on break right now and some have many more students than us, so they can raise a lot of money quickly!

Join the team and ask your friends and family to donate to keep us ahead of the other schools and help UW meet our goal of \$7500. You will also help our National CAPSI team meet its goal of \$20,000.

Beach Party Success

The beach party was a HUGE success! We were able to raise \$1000 for our team that night. Thank you everyone for participating in the event.

Congratulations to the 2014s for winning the Volleyball Tournament! The championship game was close, but you definitely came out on top beating the Vanguard by a few points. But don't forget that the Vanguard class did beat the 2013s!!!

A special thanks to the Beach Party Planning Committee: Kaitlin Bynkoski, Ashley Renaud, Lindsay Bennett, Jillian Grocholsky, Stacey D'Angelo, Monique Potvin, Robyn McArthur, Sarah Johnson, Jessica Karam, Megan Brockman, Mahmood El-Sweisi.

Golf Tournament

The Run for the Cure Golf Tournament 2.5 was also very successful bringing in \$1075. Going into the tournament there was a big rivalry between last year's winning team and the faculty team. The Pharmstaph team of Jeff Nagge, Dr. Edwards, Peter Gdyczynski and Ken Potvin won the tournament with a score of -9, beating Super Breast Friends (last years winners) by one stroke!

Thank you to everyone who came out to participate and help us raise money again this year.

A special thanks to Angela Puim and Kaitlin Bynkoski for helping to organize this event.

Sheri Howard – Run for the Cure Team Captain



Top: Best Female Team (Jeannine Oliver, Aliya Kassamali, Lindsay Bennett, Catherine Learner)

Bottom: Winning Team (Peter Gdyczynski, Dr. David Edwards, Jeff Nagge, Ken Potvin)

Front Page: Best Dressed Team (John Thai, Anthony Amadio, Matt DeMarco, Noah Bates)

See Page 11 for pictures from the RFTC Beach Party.

PharmD Update

There have been many questions about the status of the proposed entry-level PharmD (ELPD) program here at Waterloo. The reality is that the University of Toronto's (UofT) request to convert their BScPhm program to the PharmD as the entry-to-practice degree has not yet received a final decision by either the pan-Canadian committee that evaluates credentials to practice for all professions or by the appropriate ministries in Ontario. This means that uWaterloo is no further ahead in our objective to do the same here, despite having a curriculum approved by Waterloo's Senate.

UofT has recently announced a combined BScPhm-PharmD program, which will allow some (not all) students the opportunity to complete both degrees with an additional 12 months of training beyond the regular Bachelor timeline. In light of this development at UofT, and the frustrating ongoing delay in any decision by the government about the ELPD, the management team at the School of Pharmacy has renewed discussions with University of Waterloo administrators and planners regarding implementation of the PharmD degree. The most likely option would be a combined BScPhm-PharmD. Students would choose whether they want to receive only the BScPhm or continue on to also receive the PharmD.

The proposed PharmD curriculum requires one additional semester to complete. It is possible that tuition for the PharmD will be higher than the BScPhm but we cannot provide an accurate estimate for tuition at this time. This program would still require government approval but we are optimistic that this would be granted since it does not eliminate the BScPhm option and would not involve a change in the entry-to-practice requirements. We recognize that this subject is important to you and we pledge to keep the student body informed as we continue to explore our options.

Dave Edwards, Ken Potvin, Nancy Waite

The Sinai Experience

If you Google search “Mount Sinai Hospital, Toronto” and click on their website, the first message you see is, “Bright Minds. Big Hearts. The Best Medicine.” I can attest to these statements through my past four months on co-op. Mount Sinai Hospital is a competitive placement, that had many worthy applicants. So far, it has been a phenomenal opportunity for me because I am challenged on a daily basis.

On my first day of placement, I arrived to the 15th floor full of excitement and nervousness. I had never worked in a hospital or visited an intensive care unit (ICU) prior to this experience. In the past when I thought of an ICU, I imagined a lot of sick, bed-ridden patients receiving a plethora of treatments that would eventually make them better. Boy was I in for a surprise.

ICU is “Intensive” for a reason. My initial visit to the ICU was a strange experience. For the first time, I saw many patients being supported only by mechanical ventilators, patients that were heavily sedated on pain medications, patients’ with sepsis and some extremely delirious patients. Let’s just say I was a little shocked my first day.

As the days turned into weeks, I began to discover the difference that not only the pharmacist, but all health care professionals had on the well-being of the patients. Even with the grim statistics that roughly half of the ICU patients will pass away, everything that can possibly be done to improve a patient’s life is tried to exhaustion.

Every morning begins with rounding on patients for roughly three hours. ICU rounds involve medical residents, fellows, attending physicians, pharmacists, physiotherapists, dieticians and charge nurses going from room to room, running through a head to toe assessment of the patient with their personal nurse (a 1 to 1 ratio of nurse to patient help achieve continual care). Medications are reviewed, drug levels checked and plans are made for further treatment. The amount of knowledge that all the health care practitioners possess is unimaginable. It is made evident through the daily teachings that ensue over some delicious (and free!) lunches. Topics such as brain death, inotropic education, lung recruitment, toxicology and many more are discussed daily.

After lunchtime I perform my dispensing duties for the ICU. I fill the 24 hour unit dose cart with medications for each patient and

deliver the carts when cart exchange occurs. Although this task may seem monotonous after time, it is really important to realize that even the little things like ensuring a correct medication is delivered can make a huge difference. This fact becomes evident when later on in the day, a nurse approaches you asking for antibiotics their patient requires because the patient has a life threatening infection that is slowly spreading to the brain. No pressure, right?

In the afternoon I usually work on research projects and have take part in clinical discussions. To date, I have completed a drug formulary request, antibiotic administration chart, hyponatremia presentation (an extremely DRY topic) and an immunoglobulin administration chart. Completing these projects is definitely rewarding, especially when some of the work is posted in the ICU and used daily. Clinical discussions are discussions that my preceptor and I have on a daily basis, regarding either interesting topics or interesting journal articles. I have gained an invaluable amount of knowledge from this portion of the day.

I wanted to give everyone a snapshot view of what a day in the ICU at Mount Sinai amounts to. It is an excellent place to work

and the staff here is amazing! I am forever grateful to my preceptor, Lisa Burry for being a phenomenal mentor and teacher. I’d also like to thank Christine Truong and Marc McIntyre, two pharmacists that I have worked side by side with. If the opportunity presents, don’t turn down working with the brightest minds and the biggest hearts; those people who truly are the best in medicine.

Caitlin Meyer - Rx2013



Phormal Pictures



Hospital vs. Industry vs. Community Pharmacy

by Robyn McArthur - Rx2013

For those of you who know me personally, you know my journey to pharmacy school was anything but short! I completed an undergraduate degree at Western before pursuing research in interprofessional collaboration for the university. Choosing pharmacy was not a hard decision, because it combines skills and knowledge from both of these experiences. Pharmacy is one of the few health-related professions that has a ton of flexibility in career choice. I have worked in a variety of settings, and I am always eager to see where the profession can take me (I spent a day this week shadowing at the local FHT in Barrie). I thought I would share my thoughts on each experience for those who are curious to explore the profession like me. This article is strictly opinion-based (I have not used any formal references).

HOSPITAL PHARMACY

I volunteered for a hospital pharmacy as a part of my Grade 12 coop program. I was involved in many interesting special projects like recommending the addition of a drug to the formulary, shadowing pharmacists on rounds and participating in therapeutic drug monitoring.

“The Goods”: The pharmacist acts as a valued member of the healthcare team, and many of them are specialized to a particular area of the hospital. Unique and intensive clinical situations are dealt with here, making every day mentally-stimulating.

“Downfalls”: Hospital stays are for the most part a small snapshot of a patient's experience in healthcare. Unlike community practice, you do not always build long-term relationships with patients.

COMMUNITY PHARMACY

My coop this term is at a Zehrs Pharmacy, which to most people may sound uninteresting, but I have had many unique experiences here. On top of technical work, I am involved in patient consults and chronic disease prevention programs.

“The goods”: Patients get to know you, and want to know what you think. I can see how patients are attached to certain pharmacists, because I have seen the impact that pharmacists can make in this setting.

“Downfalls”: Spending a large amount of time dealing with insurance plans, fax machines and minimum interval days can off-

put the role of the pharmacist.

PHARMACEUTICAL INDUSTRY

For my first coop term, I was at Septodont Novocol Pharmaceuticals Inc. Here, I spent most of my time in research for new formulations and quality assurance.

“The goods”: Industry allowed me to apply my inner nerd to something useful. I would typically be opposed to a research-based position, but developing formulations for effervescent tablets was a good challenge. Independence and creativity are treasured qualities for someone hoping to pursue industry.

Journal Club #3 Summary

Fidaxomicin vs. Vancomycin for *Clostridium difficile* infection

Due to the exposure of broad-spectrum antibiotics, patients can acquire a *C. difficile* infection. Recently there has been an increase in the incidence and severity of *C. difficile* particularly with the hypervirulent strain type of NAP1/B1/027. Fidaxomicin is a macrocyclic antibiotic that has been shown to be eight times more active in vitro compared to vancomycin. It has minimal systemic absorption with high fecal concentrations. It exhibits narrow spectrum activity with good activity against *C. difficile* and most strains of staphylococci and enterococci.

This study is a prospective, multicentre, double-blind, randomized, parallel-group, phase 3 clinical trial that was designed to be a non-inferiority study. The primary outcome of this paper was to look at the rate of clinical cure for both per-protocol populations and modified intention-to-treat populations. The secondary endpoint was to look at the rate of recurrence of *C. difficile*. Patients included were at least 16 years old with a *C. difficile* diagnosis and had confirmed toxin A, B, or both in stool specimens within 48 hours before randomization. They were allowed up to 4 doses of metronidazole or vancomycin in the 24 hour period before randomization and no other concurrent treatments for *C. difficile*. Patients were excluded if they had life-threatening *C. difficile*, toxic megacolon, previous exposure to fidaxomicin, a histo-

“Downfalls”: I would like to apply more clinical knowledge than telling someone in the lunchroom what they should put on a rash.

I hope this gives you some insight into the major differences I've noticed while in all three positions. In the next coop terms, I challenge you to jump outside of your comfort zone and try something new!



ry of ulcerative colitis, Crohn's disease, or more than one occurrence of *C. difficile* infection within 3 months before the start of the study.

After randomization, patients were treated with either fidaxomicin 200mg q12h (with intervening matching doses of placebo) or vancomycin 125mg q6h. Fecal samples were taken to verify infection. The per-protocol analysis included 528 patients out of the 629 patients enrolled in the study. This study found that the rates of clinical cure with fidaxomicin were non-inferior to those with vancomycin in both the modified intention-to-treat analysis and the per-protocol analysis. There was significantly fewer patients in the fidaxomicin group than in the vancomycin group that had a recurrence of the infection.

The strengths identified in this paper included: proper randomization and stratification of patients, strong primary and secondary endpoints that were measurable, and the implications of this trial could be practice-changing to improve antimicrobial stewardship and clinical outcomes. The weaknesses identified in this study: intention-to-treat analysis should not be used in a non-inferiority study, there was bias due to the funding and authors, and of the base-line treatment being too long in the inclusion criteria.

Louie T.J., *et al.* Fidaxomicin versus Vancomycin for *Clostridium difficile* infection. *N Engl J Med* 2011; 364: 422-31.

Presented by: Aman Hansra & Merna Hanna



Blurbs on Herbs

“Ginseng is a tonic to the five viscera, quieting the animal spirits, stabilizing the soul, preventing fear, expelling the vicious energies, brightening the eye... and prolonging life.”

(Translated from the 1st known written account on the medicinal use of *Panax ginseng*, Shen Nong’s *Classic of Materia Medica*, the Ancient Chinese Canon of Medicine dated from the 1st century).

Issue 18 – Asian Ginseng (*Panax ginseng*)

(aka: Asiatic/Chinese/Korean/Oriental/Tibetan Ginseng, Red Ginseng, White Ginseng, Renshen)

Welcome back to our ongoing series on the most popular forms of ginseng used as natural health products. In this issue (Part 2 of 3) we continue with a focus on the Asian variety, *Panax ginseng*, the most common herb used in Traditional Chinese Medicine (TCM), with a history of use of over 2,000 years (although it may have been consumed in the Manchurian mountains as food up to 5,000 years ago). *Panax ginseng* is a prized medicinal for its tonic and adaptogenic properties; in TCM it is used to treat Shengmai Yin, defined as a Qi and Yin deficiency with cardiac palpitation, shortness of breath, faint pulse, and spontaneous sweating.

The cultivation of ginseng is a massive industry throughout Asia, particularly in China and South Korea. Ginseng is typically grown through propagation from cultivar seeds (wild seeds are rare). Seedlings grow for 2 - 3 years, are transplanted, and then grown for an additional 2 - 3 years. It is typically harvested at 4 - 6 years (quality & potency of ginseng is believed to increase with age). After harvest, leaves are removed

and the roots cleaned, dried, and processed. Root drying is done via baking at low temperatures for extended periods of time and then resting the roots in the sun. After this process is repeated 2 - 3X, the result is White Ginseng (a pale yellow colour). Red ginseng (reddish-brown and translucent) is prepared by placing the roots in a closed steam-chamber for an extended period of time prior to baking until proper dryness is reached. The steam process also brings out different phytochemicals in the final ginseng product.

Description and Habitat: Ginseng grows 7 - 21 inches in height when wild. The root is creamy yellow or white resembling a parsnip with branched rootlets that often form the shape of a human body. The plant produces clusters of red berries (edible). As a slow-growing perennial that has historically been over-harvested, it is uncommon to find wild ginseng. Growing regions scatter in the mid and high latitude forests of eastern Asia. Ginseng cultivation requires brown forest soil under coniferous and broad-leaves mixed forest in areas with moderate precipitation. Industrial pollutants and pesticides are an increasing problem in cheaper ginseng products that do not undergo rigorous quality testing.

Medicinal Constituents: The properties of Asian and North American ginseng (NAG - *Panax quinquefolius*) are attributed to numerous root triterpene saponins called ginsenosides, over 30 of which have been characterized. *Panax ginseng* has far more Rg1 than NAG; Rg1 is thought to be a slight central nervous system stimulant, hypertensive, anti-fatigue agent, anabolic (stimulates DNA, protein, and lipid synthesis), and mental acuity and intellectual performance enhancer.

Medicinal Use: *Panax ginseng* has purported tonic and adaptogenic properties including: increasing appetite, increasing blood volume, increasing strength, enhancing general resistance, enhancing physical performance, enhancing memory, reducing fatigue, reducing stress, strengthening the immune system, improving mental acuity, improving vitality, and improving overall quality of life. It is highly regarded in times of illness and convalescence.

Typical Dosages: Modern pharmaceutical dosage forms include, but are not limited to, chewables (e.g. gummies, tablets), caplets,

capsules, strips, lozenges, powders, or liquids (dosed in drops, teaspoons, or tablespoons). Ginseng is also found in countless TCM combination products containing numerous other herbs; dosages in TCM tend to be higher than doses used in Western Herbalism. Health Canada permits single *Panax ginseng* products to be dosed in a range of 0.5 g - 9 g per day of dried root and/or rootlets as powder, decoction, infusion, non-standardized extract, or standardized extracts (0.008 - 0.27 g total ginsenosides/day).

Evidence: *Panax ginseng* is a huge focus of TCM research and it is not surprising that most of the clinical studies are Chinese in origin (they tend to be published in English as well). Overall, the *in vitro* experimental data on ginseng extracts and isolated ginsenosides is far more prevalent. There is good evidence suggesting: ginseng may improve some cognitive functions such as abstract thinking and math skills (but not memory) in healthy middle-aged people; it may decrease fasting blood glucose levels and HbA1c in patients with type 2 diabetes (200 mg/day); and may help men with erectile dysfunction (900 mg/day). There is insufficient evidence for its effects on improving athletic performance, menopausal symptoms, quality of life, congestive heart failure, resolving infections (influenza, bronchitis), preventing cancers, or other indications.

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Fresh from the Pharm

A Culinary Blog by Chelsea Barr

Blueberry Brown Sugar Muffin Cookies

Everyone knows that the best part of a muffin is the top. Everyone also knows that sometimes a whole muffin is too much, and a snack the size of a cookie would probably be better. Enter the muffin cookie! It tastes soft like a fresh blueberry muffin and yet is small like a cookie! It also helps that there is a delicious brown sugar cookie base and just a hint of cinnamon and nutmeg.

Here's a secret. These muffin cookies might make the ultimate study snack! Bring em' to a fishbowl and I guarantee they'll be gone before you know it! Plus, they're good any time of the day, which is definitely a bonus when you've been studying for hours with no end in sight.

Brown Sugar Blueberry Cookies

makes 12-15+ cookies

1/4 cup margarine

3/4 cup packed brown sugar

1 egg

1 teaspoon vanilla extract

1 3/4 cups all-purpose flour

1/4 teaspoon salt

1/2 teaspoon baking powder

1 1/2 teaspoons pumpkin pie spice

1 tablespoon milk

3/4 cup fresh blueberries

Preheat oven to 375.

Beat margarine and sugar with an electric mixer until smooth. Add egg and vanilla, mixing well until combined, about 2 minutes. Stir in flour, baking powder, salt, and 1 1/2 teaspoons cinnamon with the mixer on low speed. Mix until dough comes together. Add in milk. If dough is still crumbly, add milk 1 tablespoon at a time until it comes together. Fold in blueberries gently with a spatula – it is okay if they break a bit! Refrigerate for 30 minutes. Remove dough from fridge and roll into 1 1/2 inch balls or scoop out with an ice cream scooper. Bake at 375 for 10-12 minutes. Let cool completely.

Enjoy!!



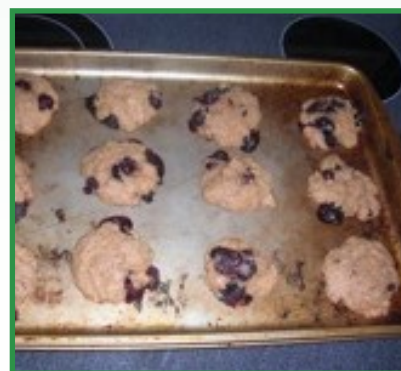
Oh my, brown sugar, how I love thee!



Refrigeration is key, especially in the summer! My dough was a gooey mess!



Mmmmmmm.....muffin cookies!!!



Blurbs on Herbs

Continued from Page 9

Asian Ginseng in Pharmacy Practice: Considering its long history of use in TCM and by hundreds of millions of people around the world, *Panax ginseng* is considered a fairly safe herb (FDA grants it GRAS - Generally Regarded As Safe status), although it may interact with some antidiabetic medications, anticoagulants/antiplatelet medications, and may prolong the QT interval in combination with some other herbs (e.g. bitter orange, country mallow). Health Canada recommends ginseng products for adults only, although TCM products are used in children; ginseng should not be used in infants. To ensure that your patients receive quality products, always suggest a product that has an NPN. Many available TCM products are improperly imported into Canada and have not been evaluated for safety, efficacy, and quality. Seized “ginseng products” coming into Canada from China are routinely evaluated by Health Canada. In the past, several products were found to contain antidiabetic medications (e.g. metformin), heavy metals, other toxic herbs, or no ginseng at all (based on biochemical markers). Buyer beware!

Jason Budzinski (Pharm 2011)

Interprofessional Update

Hey Pharmers! Congratulations on making it to the end of the year in (hopefully) one piece!

Just a reminder that even though many of us will be away on co-op, there will still be events going on from September-December including an interprofessional bbq, case study and an interprofessional wine and cheese night! Make sure to stay tuned to your monthly newsletter as these events get closer and try to make it back to Waterloo for some networking and reuniting with classmates!

Good luck with exams and with co-op!

Jessica Karam

Society of Pharmacy Students -
Interprofessional Representative
University of Waterloo School of Pharmacy
jkaram@uwaterloo.ca



Run For The Cure Beach Party



Communications Update

Thanks again for making it this far through the newsletter! First off, congratulations to the Vanguard, you guys have been awesome and I know the next few years will be some of the most exciting of your lives.

There are a few new things happening with communications. First, we finally bought a SOPhS camera and a sign out policy will be in effect starting in September if you need it for events. We are in the process of overhauling the SOPhS website so you may not see much up there now but come January it should be nice and new! Lastly, the poster boards in the student lounge will finally be organized with SOPhS information. This should be ready for the fall.

If you didn't notice this newsletter is a little more interactive; all of the page references are actually links! Try it! If you have any suggestions to help us further improve please let me know!

Good luck with your last exams!

Dave Hughes
SOPhS Communications Director

Pharmacy Phile
ISSUE 25 - August 2011

News & Upcoming Events

First Ever Grad Formal!

On August 12th the first ever University of Waterloo School of Pharmacy Grad Formal will take place which sets the stage for our first graduating class to enter practice. Only Vanguard class members are invited to this event but it's still an exciting time for all students. Congratulations Vanguard!

Social Event - Pharmacy Kickball Game & BBQ

Get ready for the first social event of the term! Pharmacy Kickball & BBQ on Sunday, September 18th at 11:30 am at the CIF baseball diamonds (main campus). The details are still being finalized but mark your calendar early so that you don't miss it. IPFC is not a good enough excuse!

Please check out the calendar on the next page, or check out the weekly SOPhS Updates for information about all other events. If you have an event coming up that you would like to inform students about please submit an article for a SOPhS Update to pharmsoc@uwaterloo.ca using the guidelines available on the SOPhS website.


Society of Pharmacy Students (SOPhS)

University of Waterloo School of Pharmacy



10A Victoria Street
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SOPhS 6 Week Calendar

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Exams	7	8 Newsletter Release	9	10	11	12 Grad Formal at Delta	13 Exams End
Break	14	15	16	17	18	19	20
Break	21	22	23	24	25	26	27
Break	28	29	30	31	September 1	2	3
UW Frosh Wk	4 Newsletter Submissions Due	5 Labour Day	6	7	8	9	10
Week 1	11	12 First Day of Classes Newsletter Release	13	14	15	16	17

SOPhS Calendar Notes

Please note that event dates may be subject to change. Contact SOPhS if you are unsure of an event date

Beginning in the Fall Term the new SOPhS Office will have a hard copy of the calendar for students to use. In addition, there will be dedicated calendars for each class on the new SOPhS website in January.

If you would like to add an event to the SOPhS calendar please email Caitlin at c3meyer@uwaterloo.ca