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University of Waterloo
School of Pharmacy

[Pharmacy Phile]

March 17, 2009

[Issue #8]

Welcome to Spring

This Friday marks the first day of spring, but equally important, it marks 11 days of classes left for the term! It has been a busy time for everyone and I know we are all looking forward to a bit of rest and relaxation. I want to start by going over a few highlights since the last issue:

The first-ever *Housing Edition* of the newsletter was sent out at the start of reading week and was a great success. Congratulations to all the happy sublet-owners! Plans are in place to have another housing edition for people to advertise sublets for the fall term (when 2nd year students are in school and 1st year students go on co-op).

Pharmacy Awareness Week 2009 was celebrated the first week of March. How aware were you? Check out the article on Page 3 to read about all the great events from this week.

At the beginning of March, SOPhS held Elections for the future council. After a grueling campaigning process (including posters that wall-



papered the student lounge and awe-inspiring speeches), the new council was announced. Congratulations to all students who participated in this process and good luck to those that were elected to the council!

I am always looking for students that are interested in getting involved with the newsletter. If you have any interest in writing articles or helping out with assembly and editing please let me know!

Good luck to everyone as we head into the home stretch!

Jean Cameron
Communications Director

Briefs

Tubing Rescheduled: the CAPSI tubing event has been rescheduled for Thursday, March 19th (same time and details). For more information, contact: waterloocorep2@capsi.ca.

Thanks to everyone that made it out to the Student Issues Meeting on March 13th. A lot of good ideas were put forth and will be passed on to university administration.

Be sure to check out Social Hour: every Friday during the common break from 11:30-12:20 in the student lounge!

End of term is fast approaching! Here are some upcoming events that you don't want to miss:

March 28th - Toronto trip: UW vs. U of T Pharmacy Hockey Game! Sign up for the bus and come cheer on our team!

April 2nd - Dancing in the Dark at Vault Lounge 9pm (see ad on Page9)

April 4th - Open Mic/Talent Night 7-10pm at the Bombshelter Pub on main campus (see details and sign-up information on Page 3)

Yearbook Update

Hi Everyone,

I just wanted to let you know that yearbook profile pictures and yearbook sales will be happening March 16- March 20 in the Lobby of the building around the lunch hours (11:30-1:30). The class of 2012 **MUST** get their headshot picture taken by a member of the yearbook committee during this week, otherwise Watcard pictures or a blank space will be used! The class of 2011 has the option to get their picture re-taken if they want, or just use last years.

This year the yearbooks will be hard

-cover, full colour, and 80 pages in length. The cost will be \$20, and you will receive your book in December (or January if you're on coop). The cost to purchase a yearbook after April 1 is \$30.

Also, I still need pictures from the following events:

- White coat ceremony
- McGinnis 1st year meet and greet from January
- Random first year pictures

If you're interested in sharing your pictures for use in the yearbook or

are available to take pictures during the summer term please come talk to me (Emily) or email me at: yearbook@sophs.uwaterloo.ca

Lastly, if anyone has any good ideas regarding a name for our yearbook, please submit them to the email address above or fill out the form in the student lounge.

Thanks!



Pumpkin's Cooking Corner

This time on Pumpkin's Cooking Corner we're going to go over a student's staple:

spaghetti sauce. This meal is not only delicious and nutritious, it's cheap and lasts a long time! Years ago when I first wanted to make spaghetti sauce I had to ask quite a few people before someone could actually tell me how to make it. When asking family and friends as to how they made spaghetti sauce I was often told "I... I can't tell you." It's not that they didn't want to tell me, they just felt that it was impossible to put into words. Try it yourself; you may also receive the strange response I did. One reason for this ridiculous response is the simple fact that you'll never make the same sauce twice, which is yet another plus. The following

recipe has quite a few extras from the "typical" sauce, but I guess everyone does it differently. You can't get it wrong.... well maybe you can. I once added pickled hot peppers and it killed my sauce. Don't do that.

Enjoy!

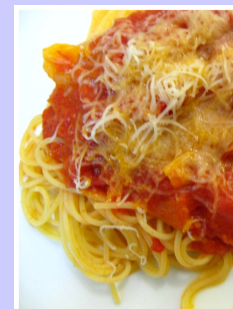
Ingredients:

1 chopped onion
 2-3 cloves of garlic
 2-3 chopped Italian sausages
 1 fresh, hot pepper
 1 lb ground beef
 1 large can of ground (or diced) tomatoes
 1 large can of tomato sauce (Primo)
 1 small can of tomato paste
 1-2 bay leaves
 1 tablespoon basil
 1 tablespoon oregano
 1 teaspoon Italian seasoning
 1 teaspoon black pepper

1 tbsp sugar (white or brown)
 3/4 cup dry red wine
 1/4 cup shredded carrots
 1/4 cup chopped parsley
 1 cup sliced zucchini
 1 cup sliced fresh mushrooms

Protocol:

1. Sauté onions, garlic, sausage, and pepper.
2. Add ground beef and cook until just brown (cook it until you can break it up).
3. Add remaining ingredients
4. Simmer for 3 hours



Pharmacy Awareness Week 2009

Pharmacy Awareness Week (PAW) is an annual event that promotes the profession of pharmacy. This year's theme was "Your Pharmacist is an important companion on your journey to good health" and Waterloo celebrated with a variety of events. The week kicked off with a special speaking event bringing awareness around HIV/AIDS and the pharmacist's role in these patients' lives. Two guest speakers, Danny and Carol, shared their unique perspectives and experiences with the University of Waterloo School of Pharmacy students and faculty. Danny is a pharmacist who specializes in care for HIV/AIDS patients in the Guelph, Cambridge, Kitchener, and Waterloo regions. He shared his experiences regarding medication management, the pharmacist-patient relationship and the importance of acceptance, understanding and flexibility when it comes to helping patients with such a socially stigmatized illness. Carol shared her inspirational story of living with AIDS and sharing the illness with her husband. Her resilience and strength was a testament to the courage that many patients

discover when dealing with a long term illness. Both guest speakers opened our minds to the possibilities within the practice of pharmacy and how patient centred care is the pillar of this profession.

Tuesday, March 3 we starting selling the popular "I ♥ MY PHARMACIST" t-shirts, which were a huge success! These were partially sponsored by Bobby O'Brien's. If you're interested, we still have a few large and x-large shirts left. Wednesday evening was the health fair at Kitchener City Hall. This event was an opportunity for students to promote the profession to the general public through five informative displays, each targeting a different area of health. The wide range of topics included: Kids and Medicine, Operation Wash-up, University of Waterloo Pharmacy School, Managing your Blood Pressure, Beyond Google, and Using the CPSO website. The goal was to emphasize the increasing involvement of the pharmacist in health care and to make the community aware of the services that are available to them. Our goal for next year is to expand the health

fair to 10 booths and offer a few key speakers addressing topics of interest to the community. We'll be looking for volunteers so if you're interested, start thinking of an area of pharmacy or health in general that you'd like to help us promote!

The week ended with a social event at Bobby O'Brien's just down the road from our Victoria St. building. With a variety of pharmacy-themed drink offerings and free appetizers, the event was a chance to relax and socialize for all who attended.

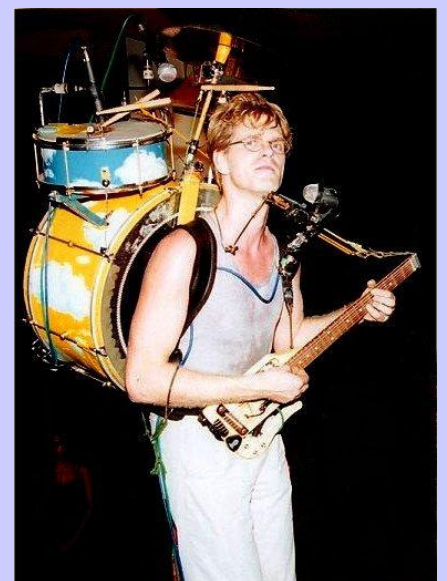
Although PAW is over for the year, we still have one more event coming up this Thursday. We will be taking the University of Waterloo Pharmacy booth over to main campus to give students an idea of the profession, the education required, and a student's perspective on our program.

Thank you to everyone who helped to make CAPSI's PAW events a success! If you have any suggestions for PAW 2010, we'd be happy to hear them.

Calling All Talent!

The SOPhS Social Committee is inviting all interested students and staff to get re-acquainted with those talents you've had to put on hold for the last three months, and take part in the End of Term Open Mic/Talent Night! The event will take place at the Bombshelter Pub on main campus on April 4 from 7-10pm. The night will be filled with musical acts and skits, and any other performances you would like

to share with your classmates! If interested in participating, please contact John Sewell (johnsewell@hotmail.com) or Jeffrey Wong (wongjeffrey87@yahoo.com) by March 20. We need YOU to make this show a success, so dust off that old guitar or start warming up those vocal chords, and get your submissions in!



Would you give 15 minutes of your time if it might save a life?

Alysha is a delightful five year girl who should be enjoying junior kindergarten, friends and fun. Last fall Alysha was diagnosed with Acute Lymphoblastic Leukemia. She has bravely been enduring multiple rounds of chemotherapy. Due to a genetic mutation in her cancer cells called the Philadelphia chromosome, she will require a bone marrow transplant. To date no suitable bone marrow donor has been found.

One Match is the national bone marrow registry that is run by Canada Blood Services. Registration takes minutes at www.onematch.ca. You will be asked to complete some basic personal and health information. If you are eligible to join the registry you will be asked to provide four buccal swabs.

Another way you might consider helping Alysha and many others like her, would be to donate blood. To date, Alysha has received two blood transfusions and will likely require many more.

Alysha is my neighbour, the daughter of friends of mine and one of my children's friends. As a parent this is one journey you hope to never have to take.

Thank you for considering this urgent appeal.

Heather Chase.

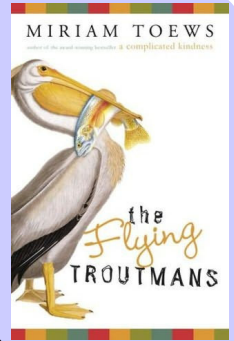


Required Reading

The Flying Troutmans

Author: Miriam Toews

Miriam Toews is a Canadian-born author who first rocked the literary world with her award-winning novels *Summer of my Amazing Luck* and *A Complicated Kindness* (also highly recommended!). Her latest novel, *The Flying Troutmans*, lives up to Toews' excellent literary standards. This novel is just the right combination of cynical humour and heart-warming emotion. The story begins when Hattie Troutman leaves Paris for Winnipeg after hearing her sister has been admitted to a psychiatric hospital. Not sure what to do with her sister's 2 children, Hattie packs them into a van and departs on a adventurous road-trip to look for their long-lost father. If you can find the time, this novel is definitely worth a read!



[Pharmacy Phile]

Page 4

Triturating Tracks

Jet Black Stare
In This Life
2008

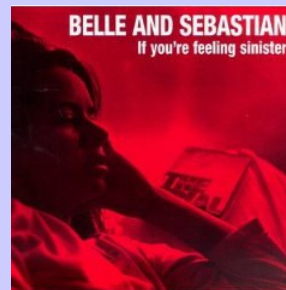
I'm letting you in on a big secret - Jet Black Stare. There's only one phrase to capture this bands 2008 debut album - "consistent speaker shredding quality". Nearly every song from this post-grunge/hard rockin' band is screaming with hit potential. Put Jet Black Stare into your Sony walkman, sit back, buckle up, and prepare for take off!

Ultra tracks - *Ready to Roll* (go to website for free listen), *Fly*, *Poster Princess*



Belle and Sebastian
If You're Feeling Sinister
1996

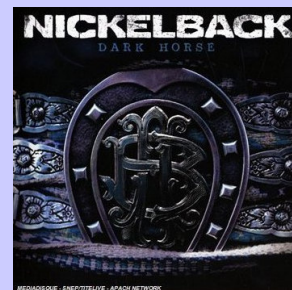
This Scottish band's second album is part folk rock and 60's pop with beautiful intricate melodies. The lead vocalist gives it a majestic feel while the songs are whimsical and sweet, but not overly so. They have the ability to take plain subjects and give them interesting and emotional twists, much like early Paul Simon. If you listen to the song, 'Get Me Away From Here, I'm Dying' and don't enjoy it I'll give you your money back.



Nickelback
Dark Horse
2008

Nickelback's sixth record release "Dark horse" without a doubt builds on the success of band's previous albums. This new album includes radio-friendly tunes such as "If Today Was Your Very Last Day". It also incorporates heavier, post grunge rock sounds such as "Burn it to the Ground". The second song on the disc, which is played frequently on the radio, parallels the emotional ballads that made "All the Right

Reasons" so successful. This recent release has a solid line up for anyone that likes rock and is definitely worth listening to on iTunes.



Stress Management

Stress has become part of our everyday vocabulary. In fact, over the course of the past week you have probably heard the word “stress” and “anxiety” countless times, whether it be from roommates, friends, family members, or others. Stress is common. Stress is familiar. We might even find ourselves asking “What more do I really need to know about stress? Just thinking about stress is *stressful!*” Well, since stress can often be misunderstood and mismanaged, a helpful step toward managing stress is to increase our understanding of stress.

What is Stress?

Stress denotes the changes that we undergo as we experience and adjust to our continually changing environment. It has physical and emotional effects and can create positive or negative feelings. As a positive influence, stress creates anticipation and excitement and can compel us into action. Remember how stress helped to motivate and inspire creativity for your last class presentation? Or, remember how it helped you study just a bit more efficiently for that midterm? As a negative influence, stress can result in discomfort, anger and rejection, or even some health problems (e.g., headaches, upset stomach, insomnia).

Although almost everyone responds to some situations (e.g., death of a loved one, beginning or ending a relationship) with a high level of stress, individuals respond differently to most situations. Situations or experiences become stressors for an individual only if they are construed as threatening or dangerous.

For example, while most of us cringe at the thought of having to parachute from an airplane; some find it a challenge. Similarly, while most of us avoid contact with snakes; others keep them as pets. Finally, while most of us experience anxiety at the thought of presenting in front of a class; others get totally motivated and excited by such tasks.

Ask yourself whether you are making a difficult situation a disaster.

Coping with Stress

So the goal, then, is not to eliminate stress BUT to learn how to manage it and even use it more productively. Here are some handy tips:

Don't ignore your problems.

If you failed the first test of a course, try not to fret. Instead, decide what you can do to increase your chance of success next time, whether it be through meeting with your prof, finding a study group, attending a study skills workshop, talking with a friend, etc.

Assess what you might be able to change. Determine whether you can avoid or eliminate the stressors.

Are you working too many hours? Is this interfering with your educational goals?

Look for ways to reduce the intensity of your reaction to stress.

Ask yourself whether you are making a difficult situation a disaster.



Consider taking a more grounded perspective. “Gee this is only a 5 minute presentation and it’s worth just 5% of my grade”.

Take better care of yourself.

Build physical and emotional well-being through regular exercise (take a stretch break, try a 5 minute walk/day), sleep (7-9 hrs/night), nutritional eating (don’t forget to drink water!), and watch what you smoke and drink. Why not try cutting back caffeine by having one less coffee per day?

Stay in touch with supportive people.

Remember, if you are feeling stressed chances are that others are feeling that way too. So, call or message a mutually-supportive friend.

Try Counselling Services’ Stress Management Workshop (3 sessions)

Learn to deal with what stresses you through various practical strategies and techniques. For more information, see our website at www.adm.uwaterloo.ca/infocs/workshops/stress.html

For Additional Information:

- CALL Counselling Services, 519-888-4567 ext. 32655
- ASK about our workshops or personal counselling with Christine Tauer Martin, Science Counsellor
- SIGN UP in Needles Hall, Room 2080
- EXPLORE our website: www.adm.uwaterloo.ca/infocs/
- EMAIL Christine Tauer Martin at ctauerma@uwaterloo.ca

Submitted by: Christine Tauer Martin, MSW, RSW; Written by: Kathy Winter, Ph.D., C.Psych., & Karen Rittinger, MSW, RSW, Counselling Services

From the Bench- March Edition

The intramural regular season is finishing up, and playoffs will be starting next week. See below for a synopsis of each team's regular season.

March Madness Bracket Challenge:

Want to submit a bracket for the second annual Pharm NCAA March Madness Bracket Pool? The seeds were released on Sunday, and you have until Wednesday March 18th to fill out your bracket and submit \$5 to your athletic reps.

We will be releasing details about how to join the online group on Monday March 16th. Be sure to check your e-mails.

We have booked Zeke's on Friday night from 6pm on to gather and watch some of the games. Feel free to show up anytime to catch the greatest sporting event on earth.

Intramural Updates:

Second Year Teams:

The Carlos Boozers (bball advanced): Strong play from big men Matt DiGiovanni and Greg Becotte combined with the guard skills of Gabe Geurts

have this team sitting at 5-1. They have a shot at winning the overall title if they keep it together in the playoffs. Key non-pharm additions of Bryan Picco and Laura Becotte (Greg's sister) complete their stacked roster.

The Pharmers (bball intermediate): Key plays from Anthony Amadio, Mat DeMarco, and Bill Patrianakos in the last half of the season have this team listed as a threat for the playoffs.

Globex Corporation (intermediate dodgeball): Two costly losses this season keep the team out of the top ten (oddly, both losses occurred the day after pharm social events...), but this team will challenge all teams in the postseason.

The Remedy (advanced hockey): Scheduling conflicts have permitted only 3 games to be played thus far, so the team has to play the remaining 3 this upcoming week. Good luck!

The Solution (advanced hockey): The second hockey pharm team has managed 2 wins and 3 ties, but plans to turn those into wins in the playoffs.

Materazzi's Mob (intermediate soccer): Impressive plays from Mat

DeMarco, Mike Collins, and Pawel Przeracki have led this team to a 4-1-1 record.

First Year Teams:

Pharmacy Volleyball (intermediate): The first year pharmacy kids have been showing their skills thus far, sitting at 3-2 (at the time that this article was written).

The Ballers (beginner volleyball): Nothing but struggles this year, as the team locked a 0-5 record. There's still some time to make a strong playoff run.

Pharm Goaldiggers (intermediate soccer): This group of first year footballers have some work to do in the offseason. Perhaps late night studying for pharmaceuticals midterms played a factor on this squad's 0-6 record. Good effort team!

Prescription for Pain 2x Repeats (intermediate dodgeball): With a roster that lists over 20 players, only a proud few would march onto the hardwood for some high-paced action. This team hopes to improve on its winless season next term.

Athlete of the Month

Mina Mikhail

When it comes to pharmacy intramural sports, there are several athletes that come to mind when you think of dedication to sport. However, very few of us have battle wounds to prove it. The lonely exception is Mina Mikhail.

Last week in a second year intermediate soccer game, Mina was involved in some sort of midfield collision that left several bodies in a heap on the floor. When the dust settled, every-

body seemed to be relatively injury-free, until the players on the floor took a look at Mina. Mina was sporting an impressive imprint of a soccer shoe...on his face.

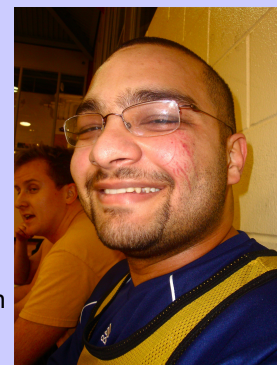
There is no valid explanation of how it happened. How does somebody get kicked in the face from body-on-body contact? How could officials not see this happening? And how does an impact like that leave noticeable marks from an indoor soccer shoe that doesn't have any cleats? There are some things that just don't have any explanations.

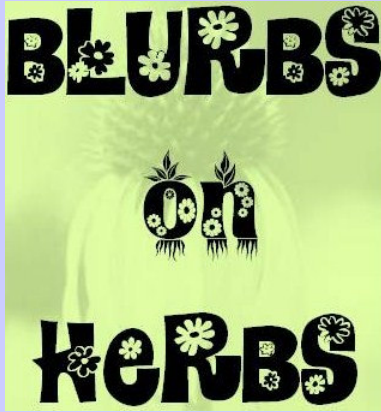
So for the last week, Mina has been

sporting a physical badge of honour that shows his dedication to UW Pharmacy Athletics. We're all proud of you, Mina.

Just so you know, Mina was not hurt in the incident, and the other player was not acting intentionally.

Think you have somebody that can be named Pharmacy Athlete of the Month? Let us know, athletics@uwaterloo.ca





BLURBS ON HERBS

First, I would like to send out 'props' to the 1st year students. I recently had the opportunity to guest-lecture in PHARM 150 again and the turnout and questions following the lecture were great... as you may know, I can talk endlessly about herbals and natural health products (NHPs)! One of the questions that came up was about garlic, that wonderful, stinky, delicious, herb with a long culinary tradition that vampires loath and chefs love, especially for spaghetti sauce. Essentially, the question asked was whether or not individuals consuming large quantities of garlic in their diet could potentially experience adverse drug reactions similar to those observed in some case studies involving patients taking large quantities of garlic supplements. Well the answer to that is yes, but it depends on how much raw garlic is consumed in the diet. Consider the following recommendations from an herbal company for its customers, selling garlic over the internet (keep in mind this is their recommendations for given indications):

- for 'normal maintenance of health', 'influenza', 'cholesterol', and 'other ailments as advised': take 2 bulbs in the morning before breakfast
- for 'joint pains, rheumatism, and arthritis': take 2 bulbs in the morning before breakfast and 1 bulb before retiring to bed
- for 'hypertension' and 'increased energy': take 2

bulbs in the morning before breakfast and 2 bulbs before retiring to bed

- *to 'combat existing flu': take 4 bulbs in the morning before breakfast and 4 bulbs before retiring to bed*
- *for 'cancer': take 3 bulbs in the morning before breakfast and 3 bulbs before retiring to bed; for 'advanced cancer': take a total of 10 garlic bulbs a day, in split doses, in the morning and before retiring to bed*

When dosing oneself with raw garlic in these quantities (note that we're discussing bulbs in this case versus cloves as commonly used in cooking) it is relatively easy to approach or exceed the same levels of phytochemicals as one would expect to find in commercially prepared garlic NHPs. Dried powdered extracts of garlic are highly concentrated and it is not uncommon to find strengths of 10:1, 20:1, or 40:1 in commercial NHP preparations (meaning X grams of dried plant material have been extracted and dried down to 1 gram in the final product). What is certain is that if you are consuming 2 - 10 bulbs of garlic a day, you may also require a few packs of breath-freshening gum for the duration of your garlic therapy!

Issue 2 - Garlic (aka: old man's treacle, stinking rose) (*Allium sativum*)

Although the name 'garlic' is of Anglo-Saxon origin, being derived from *gar* (a spear) and *lac* (a plant), in reference to the shape of its leaves, common garlic (a member of the same group of plants as onion, leeks, chives, shallots, 'crow garlic', 'field garlic', etc.) is of such antiquity as a cultivated plant that it is truly impossible to definitively trace its region of origin in the world. From the earliest times of recorded human history, the use of garlic has been noted spiritually, as a food, and medicinally. For example, there is a Mohammedan legend that says "when Satan stepped out from the Garden of Eden after the

fall of man, Garlick sprang up from the spot where he placed his left foot and Onion from that where his right foot touched". Theophrastus accounted that the Ancient Greeks placed garlic on the piles of stones at cross-roads as a supper for Hecate, although the eating of garlic was seen by a few as a vulgarity due to its smell; persons who partook of it were not allowed to enter the temples of Cybele. Its use as a medicine and food was prominent during the building of the Egyptian pyramids, was a staple of Roman soldiers, and has a long history of use in Ayurvedic and Traditional Chinese Medicine. One interesting historical account for its medicinal use was as the principal ingredient in 'Four Thieves Vinegar', an aromatic vinegar made in the 1720s in Marseilles by thieves who consumed it liberally so that they could plunder the dead bodies of plague victims with complete security under its protective powers. Similarly, garlic was used as an antiseptic in England following WWI, and was in such great demand that the government offered huge payments to farmers for its mass production.

Recently, garlic has had a recent resurgence in popularity as it is claimed to help prevent heart disease including atherosclerosis, high cholesterol, high blood pressure, and cancer. As a NHP, numerous garlic products will be encountered in your future pharmacy practice, most commonly being capsule preparations of dried powdered extracts. It should be noted that not all garlics are equal in their potency or levels of constituent compounds (medicinally, fresh herb is always preferred to dried herb): there are more than 60 varieties grown throughout the world, from lowland plains to the Himalayan mountains, and it is used ubiquitously as a herb for cooking and in traditional medicine. Additionally, there is some concern that marketed garlic preparations may not generate an adequate amount of the active ingredient to be effective, and some preparations, like 'odourless garlic',

Blurbs on Herbs- Continued

have been found to not contain active compounds at all.

Description and Habitat: The garlic plant has a stem about 2 feet high, is leafy below the middle with leaves being glasslike in resemblance, and terminates in an umbelliferous head of pink, red or whitish flowers, intermixed with enveloped bulbs. The bulb is the only part eaten and used medicinally, and is compound in nature, consisting of numerous bulblets, or 'cloves,' grouped together between membranous scales enclosed within a whitish skinned-sac (known as a calyptriform or horned spathae). It is believed to be indigenous to the southwest of Siberia, having spread from there into Europe and the Mediterranean where it became naturalized and cultivated routinely. Other varieties of garlic are considered indigenous to parts of Asia Minor and Central Asia, but garlic is now cultivated in gardens throughout the world. Garlic has an acid, warm taste, and a disagreeable, pungent, 'alliaceous' odour.

Medicinal Constituents: All parts of the plant, but more especially the bulbs, have a strong, offensive, very penetrating and diffusible smell, and an acrimonious, almost caustic taste attributable to an acid sulphur-based volatile oil. This sulphide oil is an allyl radical, which is present in all the onion (*Allium*) family. Water dissolves a small amount of it, but is readily soluble in ether and alcohol. Garlic readily yields its properties to alcohol, vinegar, acetic acid, and boiling water by infusion, thus these formulations are routinely found used in traditional preparations. Many of the pharmacological effects of garlic are attributed to specific compounds occurring within the complex mixture of sulphur-based molecules comprising the volatile oil: alliin (the primary medicinal con-

stituent and marker compound for product standardization), ajoene, and other organosulfur constituents such as S-allyl-L-cysteine. When intact cells of garlic are broken, alliin comes into contact with the enzyme allinase in garlic, producing alliin, an unstable, odiferous compound. Fresh garlic contains approximately 1% alliin, and 1 mg of alliin is converted to 0.458 mg alliin. The amount of alliin in commercial garlic preparations is dependent upon the method of preparation: processes that involve maceration of the garlic clove increase the activity of allinase, while freeze-dried garlic may contain little or no alliin. Heat and steam distillation is used to produce garlic oil from crushed garlic, which converts alliin to allyl sulphides, compounds with high antimicrobial activities. Commercial oral garlic preparations are often enteric coated to protect the active constituents from degeneration by stomach acid.

Traditional Medicinal Use: Many marvellous effects and healing powers have been ascribed to garlic owing to the absorption of its volatile oil, the stimulating action of which causes thirst, promotes the activity of the various excretory organs, as the skin, kidneys, and mucous membranes of the respiratory tract. Garlic possesses stimulant and stomachic properties in addition to its other virtues: it is diaphoretic (induces perspiration), diuretic, expectorant, stimulant, and rubefacient. Garlic has been used as a vermifuge, to treat rheumatism, and is beneficial for coughs, catarrhal affections, pertussis, hoarseness, and calculous diseases. It was also used to treat 'hysteria' when sniffed into the nostrils (*ouch!*), and externally applied in ointments and lotions to disperse hard swellings, and as a poultice for scrofulous sores. As a topical antiseptic, its use has long been recog-

nized. In WWI, raw expressed juice was diluted with water, put on swabs of sterilized moss, and applied to wounds in the control of suppuration- the lives of thousands of men were saved by its use. Syrup of garlic has long been used as a medicine for asthma, hoarseness, coughs, difficulty of breathing, and other disorders of the lungs (including pneumonia), being of particular virtue in chronic bronchitis, on account of its powers of promoting expectoration.

Modern Use: Garlic is mostly used for its antihyperlipidemic, anti-hypertensive, antispasmodic, diaphoretic, expectorant, immunostimulant, and antithrombotic effects, and for its reported activity against bacteria, fungi, nematodes ('worms'), and viruses. Orally, garlic is used to lower cholesterol (total and 'bad'/low density lipoprotein), treat hypertension, coronary heart disease, age-related vascular changes and atherosclerosis, and to prevent a variety of cancers. It is also used to treat diabetes, osteoarthritis, and for immune system stimulation in the prevention and treatment of wide variety of bacterial and fungal infections. Other oral uses for garlic include treatment of fever, coughs, headache, stomachache, sinus congestion/allergic rhinitis, rheumatism, gout, asthma, and bronchitis. Topically, garlic oil is used for a variety of conditions including bacterial and fungal infections (e.g.: athlete's foot), gout, hemorrhoids, warts, and corns.

Typical Dosages: Traditional oral doses - of fresh chopped garlic 1 - 2 drachms; of fresh expressed juice 10 - 30 drops; of syrup (Garlic USP) 1 drachm; of tincture (fluidextract) ½ - 1 drachm; of wine 1 glass (3 - 4 bulbs macerated in a quart of proof spirit). Traditional topical doses are not specified but range in gram quantities of raw garlic macerated into poultices to a few drops of essential oil applied directly



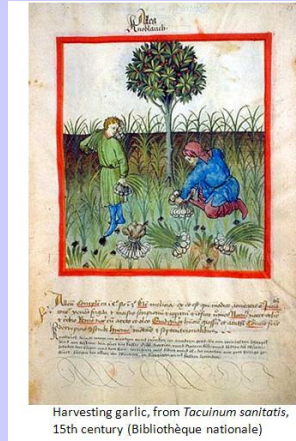
Blurbs on Herbs- Continued

to warts/corns or incorporated into creams and ointments. Modern oral doses vary with condition being treated. For hyperlipidemia, of garlic extract 600 - 1200 mg given 3X per day in divided doses has been used in clinical trials, or 300 mg 3X per day of garlic powder extract standardized to 1.3% alliin; of fresh garlic 4 g per day. For hypertension, of garlic powder extract 600 - 900 mg daily or 2400 mg of aged-garlic extract has been used. Studies for the prevention of colorectal cancer have used 3.5 - 29 g of fresh or cooked garlic per week. Topically, for *Tinea* infections, clinical studies have used the garlic constituent ajoene as a 0.4% cream, 0.6% gel, and 1% gel applied 2X per day for 1 week. For warts, a lipid garlic extract is typically applied 2X per day for 1 - 2 weeks, and for 10 - 20 days for corns (aqueous extracts appear to be less effective).

Evidence: Some clinical studies have demonstrated that taking regular doses of garlic powder orally slows the development of atherosclerosis in the aortic and femoral arteries (900 mg per day over 4 years). Others have shown a link between dietary garlic consumption and a decreased risk in the development of both colorectal and gastric cancers (garlic supplements, particularly aged-garlic supplements were not as effective). Garlic powder taken orally has also been shown to have antiplatelet properties in both patients with cardiovascular disease and in healthy volunteers, and has been found to have various antithrombotic activities. Evidence also exists for the use of garlic in treating hypertension, and some clinical research shows that taking garlic orally can modestly reduce blood pressure in both patients with hypertension and in people with normal blood. As a pest-control agent, people consuming high doses of garlic (1200 mg daily)

over a 20-week period seem to have a reduced number of tick bites when compared to controls. Clinical evidence suggests that taking garlic orally is not effective in the prevention of breast or lung cancer, or to treat diabetes, familial hypercholesterolemia, ulcer-induced infections (i.e.: against *Helicobacter pylori*), or peripheral arterial disease. Evidence about the effects of garlic on cholesterol and triglyceride levels is contradictory (many trials have serious design flaws and are low-quality studies), and patients with hyperlipidemia should be advised that taking garlic supplements is unlikely to provide a clinically significant reduction in cholesterol or triglyceride levels. Similarly, there is insufficient evidence available to accurately assess the use of garlic orally for treating the common cold and other forms of cancer, and topically for treating warts and corns. However, topically, garlic gel containing 0.6% ajoene seems to be as effective as terbinafine 1% cream for *Tinea corporis* (ringworm) and *Tinea cruris* (jockitch); garlic gel containing 1% ajoene seems to be as effective as terbinafine 1% cream for *Tinea pedis* (athlete's foot).

There is also a variety of *in vitro* evidence for garlic extracts and its constituents: S-allyl mercaptocysteine has been shown to have activity against erythroleukemic, breast, and prostate cancer cells; the constituent ajoene has been observed to induce apoptosis in human leukemia cells; allicin and ajoene have shown activity against *Escherichia coli*, methicillin-resistant *Staphylococcus aureus*, *Salmonella enteritidis*, and *Candida albicans*; and a variety of compounds show activity against a variety of pathogenic viruses: herpes simplex virus type 1 and 2, parainfluenza virus type 3, vaccinia virus, vesicular stomatitis



virus, and human rhinovirus type 2.

Garlic in Pharmacy Practice: Garlic, particularly when used in low quantities such as cooking, is generally regarded as safe and poses little health risk to most patients. In medicinal quantities, garlic taken orally has dose-related adverse effects, which commonly include breath and body odour, mouth and gastroin-

testinal burning or irritation, heartburn, flatulence, nausea, vomiting, and diarrhea. These effects can be more pronounced with consumption of raw garlic or in patients unaccustomed to eating garlic. Gastrointestinal upset can also occur from changes to intestinal flora. Garlic's effect on platelet function is well known, and consumption of dietary garlic or supplements can cause platelet dysfunction, prolonged bleeding time, bleeding behind the eye, and postoperative bleeding; be sure to monitor and counsel patients who are taking ASA and other antiplatelet/anticoagulant drugs (e.g.: warfarin) and inform persons requiring surgery to discontinue garlic prior to surgery and inform their physician of their garlic use. Garlic taken orally can interfere with the metabolism of many other drugs through the inhibition of various cytochrome P450 isozymes. Be sure to check the medication history of patients who are HIV positive (garlic can interfere with protease inhibitor metabolism), or those who have just received organ transplantation (garlic can interfere with cyclosporine). Asthma has been reported in people working with garlic and other allergic reactions associated with garlic include rhinitis, conjunctivitis, urticaria, anaphylaxis, and angioedema. Topically, exposure and application of fresh garlic or essential oil can cause dermatitis, eczema, blisters, and scarring. Be sure to counsel patients in these areas.

Jason Budzinski (Pharm 2011)

Continuation of Pharmacy Phile, Issue 7 Q&A: Who's Single & Available?



Last month's bachelor-of-the-month segment was so popular, Dr. Love has decided to run another article featuring some more eligible men from the class of 2011. There aren't many left, but have no fear ladies, these guys are quite spectacular. Last month we profiled the triple threat of Josh Brady, Greg Becotte, and Anthony Amadio. We expected Greg and Anthony to remain single...but Brady? Simply a shocker...

Bachelor #1: Josh Brady....Again

About: Despite the onslaught of ladies that Brady has been dealing with over the last month, he still hasn't found the girl of his dreams. Or, the ladies of 2012 aren't trying hard enough. This hunk of man-meat won't come easy.

Hobbies: As you can tell from the picture above, Josh has been nicknamed Brady Gaga due to his sick moves on the local dance floors. Just Dance. Think you can keep up?

Looking for: Fame and fortune.

**Bachelor #2: Mat DeMarco**

Nickname: "Duzzo" (pronounced doo-zoh)

About: Mat DeMarco holds an honours degree in Life Sciences from Queens University. Hailing from Sudbury, Mat shares many Northern Ontario qualities that people have come to love about him.

Hobbies: Mat is a killer hockey player who shreds up defenders with the very best. The former AAA standout still cheeses it up for the Pharm intramural team, and is one of the top goal scorers of each season thus far. He also loves seafood, and enjoys taking girls out to some of his favorite restaurants around town. An anonymous good friend was quoted as saying "his hands might as well be claws for cracking shellfish open." We would love to publish Mat's cell phone number for ladies to call...but there's a good chance he has lost it at least four times this week.

Looking for: To "rattle" people... whatever that means.

Bachelor #3: Bill Patrianakos

Nickname: Spilly P

About: This bachelor is as greek as they come. Bill holds a Physiology and Pharmacology degree from the University of Western Ontario, where he graduated in 2006. When not around Waterloo, Bill spends most of his time on the mean streets of Toronto.

Hobbies: Many of us are lucky to travel overseas once in our lives, but Bill has been back to Greece a whopping nine times. Rumour has it he is always looking for a travel buddy for those special getaways. Bill is also an excellent student, as it is not uncommon to see Bill's black CRV (which he calls the Bat-mobile) in the parking lot late at night around the pharm building. Despite all the jet-setting and studying, Bill manages to play on several intramural sports teams as well.

Looking for:
To keep it real.



Fundraising Event: DANCING IN THE DARK

April 2nd, 2009

9 pm

VAULT LOUNGE (19+)

First year pharmacy students Taline Shalvardjian, Mihir Patel, Alia Thawer, Joanna Owens, Andrea Forgione and Marilyn Jung are running a fundraising event for the CNIB (The Canadian National Institute for the Blind).

The event, cleverly coined "Dancing in the Dark", involves a vision health awareness component that will help people understand the role of the CNIB in communities across Canada, as well as what it would be like to live with vision loss.

Tickets are only \$10 each and may be purchased in advance in the Student Lounge on the following dates:

- Monday March 16, 23, 30 at 12:30 - 1:00pm
- Tuesday March 17, 24, 31 at 11:30am - 1:00pm
- Friday March 20, 27 at 11:30am - 12:30pm

Support from fellow pharmacy students would be greatly appreciated since this event is aimed for students in the Kitchener-Waterloo area.

Incentives to come: FREE glow sticks! (while supplies last), supporting the CNIB, and cool activities while learning about vision loss!

Hope to see you at The Vault Lounge located at 8 Erb Street West

Times: 9-10pm Vision health awareness, 10pm Dancing in the Dark

All proceeds will go to the CNIB branch in Kitchener-Waterloo. For more information about the CNIB, check out www.cnib.ca