WELCOME TO THE FAMILY, GRYPHONS.

O'SNAP O-WEEK 2021

CONTENTS

IN THIS ISSUE

MEET YOUR ENGSOC i

WELCOME! AN INTRO TO O'SNAP 1

DESIGNING A PROSTHETIC AT TETRA SOCIETY OF NORTH AMERICA 2

7 ACTIVITIES TO ENJOY ON CAMPUS 3

LETTER FROM A SECOND YEAR 5

10 TIPS FOR THRIVING IN FIRST YEAR 6

SEE SPOT RUN! RUN, SPOT, RUN! 8

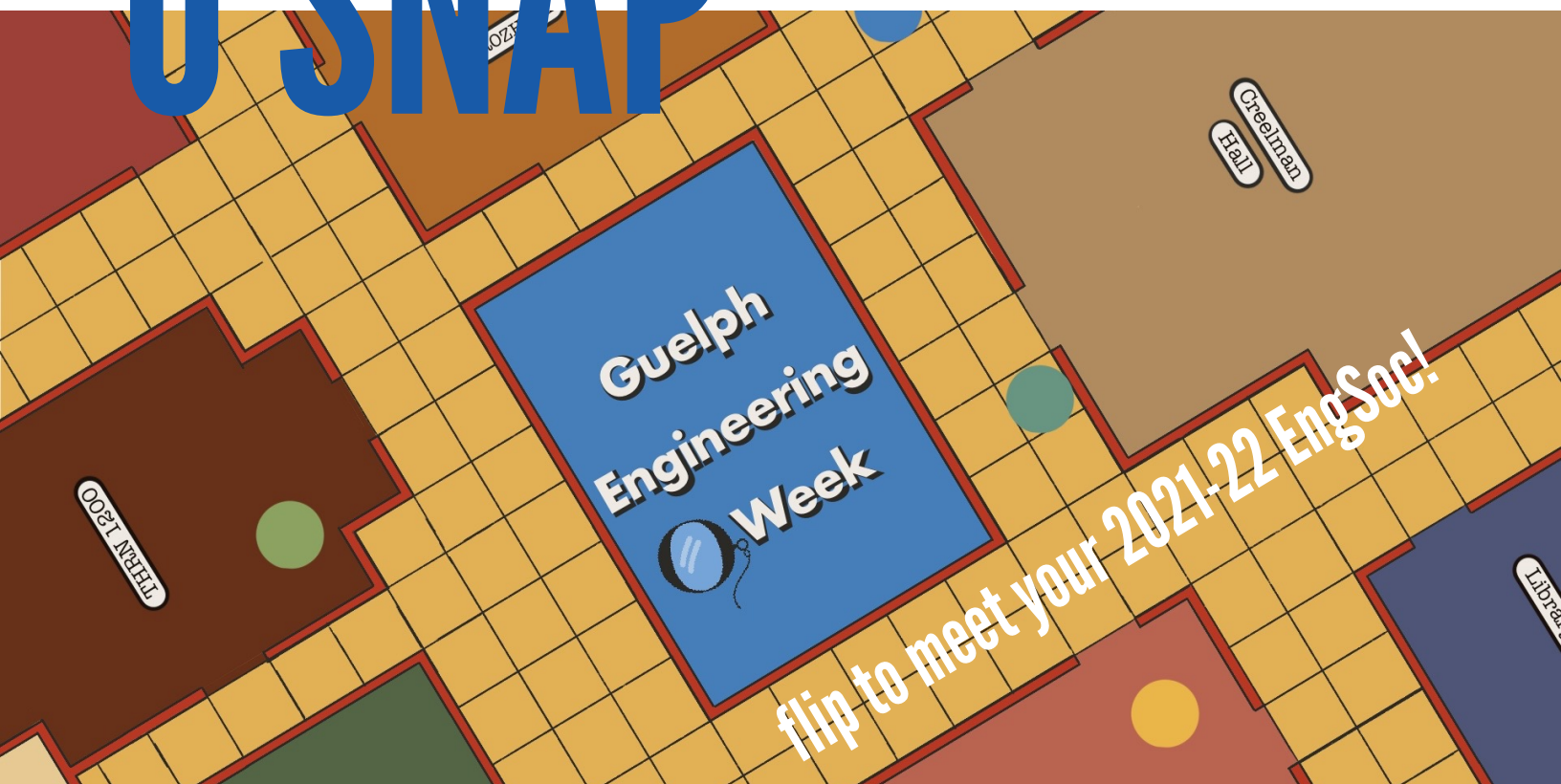
FRITO LA(D)Y 10

MY DEGREE SO FAR 11

POTATO BUGS: A BRIEF DEEP-DIVE 13

OH, SNAP.

WELCOME TO O'SNAP





Grace Ly
President



Charlotte Reich
VP Internal



Kristen Cimolai
VP External



Ethan Kennedy
VP Finance

Jon Ervy Torculas
VP Operations



Gregory Chapman
GES Chair



Zohrah Varsally
GES Secretary



Qianying Mao
THRN Manager



Goral Prajapati
Equity, Diversity, Inclusivity



Cora Wilson
Merchandise



Jasmine Monique Vergara
Special Events



Olivia Gair
O'Snap



Anastasiya Kubrak
3rd Year BIO/BIOM



Ricardo Quadras
3rd Year COMP/ES&C



Vanessa Dinh
3rd Year MECH



Maegan Segne
3rd Year ENVR/WATR

ENGSOC 2021-22

ENGSOC 2021-22



Lienne Poon
VP Student Affairs



Katherine Haines
VP Social Affairs



Katherine Idzik
VP Social Affairs



Grace Hickey
VP Academic Affairs



Abhilasha Banik
Arts



Madeline Baron
Athletics



Mallory Stephens
Athletics



Hayden Fretz
Communications



Simontika Chowdhury
Special Events



Lauryn Lim
2nd Year Rep



Shaan Saharan
2nd Year Rep



Julia Billings
3rd Year BIO/BIOM



Matt Krahn
4th Year COMP/ES&C



Kasra Abedinnejad
4th Year ENVR/WATR

Natalie Cochrane
4th Year BIO/BIOM

Rosalee Thomlison
4th Year MECH

O'SNAP

Guelph Engineering Society's Monthly Newspaper

Welcome!

Liv Gair, O'Snap Coordinator

Dear First Year,

Welcome, and congratulations on starting your engineering career at UofG! My name is Liv - I'm the O'Snap Coordinator on this year's Engineering Society (EngSoc), and it's my job to put out one of these newspapers (*O'Snaps*) every month. I'll be starting my second year of Biomedical Engineering this fall.

This year we decided to try something a little different and make an extra issue of O'Snap specifically for the incoming first years during O-Week, to show you a few different ways you can get involved with it during your time at Guelph.

First year can be scary when you're first going into it, because you have no idea what to expect. Inside this issue, you'll find samples of several different kinds of articles, from advice pieces, to personal reflections, to research papers, all from upper years who remember being in your position, and who want your first year to be as fun as it can possibly be.

If you like what you see in this O'Snap, we need writers for our September and October issues! Write about anything that interests you, pick a category (**personal reflection**, **interest piece**, **research commentary**, **list**), and email it to **ogair@uoguelph.ca**.

If you have any questions about what or how to submit, or you just want to chat about first year, feel free to get in touch with me (at the same email)!

Oh, and when you see me on campus, come over and say hello!

Have fun crushing your first year, Gryphons! You're going to do great things!

Designing a Prosthetic at Tetra Society of North America

by Julia Billings, 3rd Year BIO/BIOM Rep

Hey Gryphons,

I am currently apart of Tetra Society of North America! **Tetra Society of North America** is a non-for-profit organization that provides volunteer engineers across Canada to design and construct custom assistive devices for people with disabilities.

At Tetra, our focus is to find solutions to overcome environmental barriers faced by people with disabilities. We work with clients to design and build assistive devices that are custom-made for the individual – these are devices that are often not available commercially or cost prohibitive.

This year I had the opportunity to work with the design and build team at Tetra Society of North America. I worked alongside Nicola Billings and Zion Maynard to redesign a client's **rotationplasty*** prosthetic. This experience helped me gain knowledge on medical devices, collaborate with faculty members and research specific design and materials throughout the project.

Our concept design consists of carbon fiber composite thigh holster, a custom shoe platform with a hinge that replicates the angular mechanics in the knee. The bottom portion consists of a hydraulic mechanism and aluminum foot plate that promotes natural gait.

If you would like to join Tetra Society of North America please feel free to contact us at **tetraon@tetrasociety.org** or **billingn@uoguelph.ca.**





***A rotationplasty** is a surgery done for bone cancer near the knee.

The surgery involves removing the middle part of the leg (including the tumor) and reattaching the lower leg at the thigh, but rotated 180 degrees.

This allows the ankle joint to function as a quasi-replacement knee joint - which, when accompanied by a prosthetic, is far more functional than an above-the-knee leg amputation.

source: *Cleveland Clinic*

7 Activities to Enjoy on Campus

by Maddy Baron, Athletics Coordinator

After a long year of virtual school, we're finally getting to spend some time on campus this fall!

Some students may be moving into residence and will get to spend the entire year on campus, with endless opportunities for fun. Others may have some classes and labs on campus and will be looking for something to do (other than study!) to kill some time between classes.

If you fall into either of these groups, look no further because I have compiled a list of 7 fun activities to enjoy on Guelph's beautiful campus!

1) **Arboretum** – Located behind East residences and the soccer complex, the arboretum is 400 acres of greenspace for you to enjoy! This place is absolutely beautiful in the fall and is a fun place to go for a walk or take some pictures! Visiting the arboretum is a great study break and an easy way to enjoy the great outdoors.

2) **Conservatory and gardens** – The conservatory is a glass greenhouse located between the UC and Alex hall. It's filled with exotic plants and is a super peaceful place to read a good book or look around and listen to some music. In the winter months, it's a great place to escape for some warmth... you can almost pretend you're on a tropical vacation!

3) **Public skate and swim** – Public skating and swimming are great activities to stay active while on campus and they are both free for all U of G students! All you need to do is grab your skates or swim trunks, book a timeslot and you're good to go! The hidden gem of the pool is the hot tub, which is a great place to chill after a long day of classes. Unfortunately, the hot tub is closed right now due to COVID but hopefully as restrictions ease it will open again!! Link for online booking: **https://app.squarespacescheduling.com/schedule.php?owner=21189629**

4) **Johnston Green** – Johnston green is the large lawn located right in front of the Johnston residence building. If you are looking for some chill time, grab yourself a book, a picnic blanket and some snacks and enjoy a peaceful afternoon out on the green. If you are more into sports, grab a frisbee, ball, spikeball net and some friends and head over to Johnston green. The opportunities are endless!

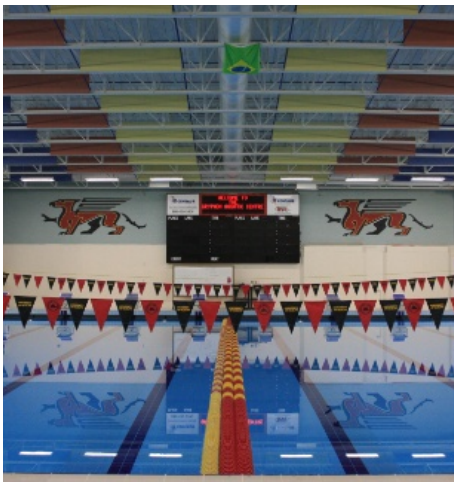
5) **Rent a room (in res)** – For the students living in residence, renting a room is a great way to spend time with friends. Most of the residence buildings have either movie lounges, study rooms, or activity rooms (ping pong, pool table etc.) that you can book (for free!) for a couple of hours.The easiest way to do this is to talk to the people at the help desk or ask your RA if your building has any common spaces you can book.

The dairy barn – Visiting the dairy barn is a classic U of G activity – do you know any other universities with cows and horses? Embrace your inner Aggie and go visit the animals... even just to say you did it! To get to the dairy barn, follow Reynolds walk across Gordon street to the OVC side of campus and you should see a white barn.

Food - Last but not least, enjoy one of the things Guelph is famous for – the food! I promise, Guelph's food will not disappoint and there are so many options. Depending on what you're looking for, my top three recommendations are the Bullring (for a coffee and the ~vibes~), Gryph's (to watch a sports games and enjoy some wings) and Creelman (all around 10/10 food).



The Arboretum in the fall!



the pool!



Dairy barn :)



Creelman Hall

Fun fact: part of Engineering Design I (ENGG*1100) is learning how to draw buildings like an engineer.

One of the buildings you can draw for your assignment is Creelman!

Letter From a Second Year

by Layane Al-Habian, 2nd Year Biomed

Hello there Gryphons - you are no longer Future Gryphons! You are a part of the family now!!

Congratulations on everything that you have done to get here, your position is definitely well-deserved.

Before I started my first year, I used one of those FutureMe websites to send myself an email on the last day of first year. One of the questions I asked myself was “How was it? Was it as hard as they say it is?”

And ah, as Olivia Rodrigo says, “God, it's brutal out here.” But in all seriousness, Guelph has the best sense of community. It's insane. No matter what time it is you will find someone willing to help you, even if it is at 4 AM.

Actually, that's the way I met my friend group! I came into Guelph not knowing anyone - no one from my high school joined me in Engineering at Guelph. Working on an Engineering Design I (ENGG*1100) report last minute at 3 AM, my friend (shout-out to Goral Prajapati) made a group chat so we could talk to each other and stay motivated to continue working.

So yes, it is brutal out here, but after the first year is over (man, does it FLY by), you just develop this love-hatred towards engineering. It's challenging, yet so rewarding.

Some things I wish I knew coming into first year are:

1. **It is okay to not do as well as you are used to doing in high school**. I'm not saying it’s impossible, but you will have a slip here and there and it is OK. You can cry about it - take some time for yourself, but then you need to get up back on track.

2. **Embrace your mistakes, you will learn tons from them**. As Michael Jordan says, I’ve failed over and over and over again in my life and that is why I succeed.

3. **Be yourself**, don’t be afraid to explore clubs, activities, classes, new hobbies, etc.

4. **Don’t let imposter syndrome hit you hard**, you worked really hard to get here, you deserve it, you earned it, you belong here and don't compare yourself to others.

5. Sometimes you need to **stop what you are doing and just take a deep breath**. That course, final, or assignment you are worried about will pass. You are going to be OK!

At the end of first year, do not forget to look back and reflect on all the amazing memories and things you have accomplished. Best of luck, and we can’t wait to see what you all will achieve Gryphons !!

10 Tips for Thriving in First Year

by Abhilasha Banik, Arts Officer

Hey Gryphons!

So college is about to begin, and I'm sure you have a lot on your mind!

How do I survive the first year? Will I make friends? Will uni treat me well enough? Will I make amazing lifelong memories here?

And the biggest question that crosses our mind is **am I fit for engineering?** Well, here are a few things I feel you should do to have and amazing college experience!

1) **Make Friends:** Many times, due to the loads of homework and assignments that we get from school, we forget to socialize and make friends. Well trust me, making friends is really important to have a fulfilling experience. Start doing this by attending the o-week events.

2) **Get involved:** Join clubs, attend events, and explore and show your talents. Throughout your degree, you will get many opportunities for this.

3) **Get organized:** This advice is for all the folks like me :P...throughout high school I was a big procrastinator. But soon in my first semester I realized that I really need to organize myself and try to complete the course work along with the lectures. Because even if you try to do it you will always realize you are behind on one course or the other. So make a planner and organize your schedule. Marking all the deadlines would be a great way to do this and, in this process, you will never miss any deadlines which might have happened to a lot of us. You will be getting a lot of homework and assignments and keeping them all in mind along with the weekly quizzes AND exams would be really difficult.

4) **Find a hobby:** Studies will be important, but you should also find out some type of a hobby which you could practice in order to destress yourself. You could learn a new sport or form a band with your friends. Such hobbies also force you to step out of your room and explore your campus, helping you stay sane and refreshed.

5) **Reach out for help:** When in need, don't forget to reach out for hep to your friends, professors or the resources provided by the university. Remember that we're all in this together and if you feel like you are falling behind or something's bothering you, don't be too shy or afraid to ask for help.

6) **Explore your campus:** Well, this year classes aren't fully online and you get to come to the campus! Explore your campus and learn about every nook and corner so you don't feel out of place. However, remember to always wear your masks and maintain proper distance from others while you're at it.

7) **Don't let your grades define you:** Throughout your engineering degree, you will come across many exams or courses where you might end up getting extremely low grades. Even if you've been a top scorer at high school, you might fail an exam. Don't be too hard on yourself if that happens! Just work harder and reach out to your professor or a TA for extra help. It has happened to most of us.

8) **Learn to say no:** Don't feel obligated to try something you're not willing to do under peer pressure. Saying you don't want to or you're not comfortable won't ruin your relationship with anyone.

9) **Enjoy the summer before classes begin:** Try and make the most out of the few days you're left with before college starts. Talk to friends, play games. If you're interested, try to learn how to code or improve your Microsoft skills... they'll come in handy once classes start!

10) **Remember to call your family everyday:** Most of you will be moving out of your city when you come to uni ...some of you might be coming from a different country. So no matter how busy you are, remember to call back home at least once everyday and talk to your family! 😊

See Spot Run! Run, Spot, Run!

by Hayden Fretz, Communications Coordinator

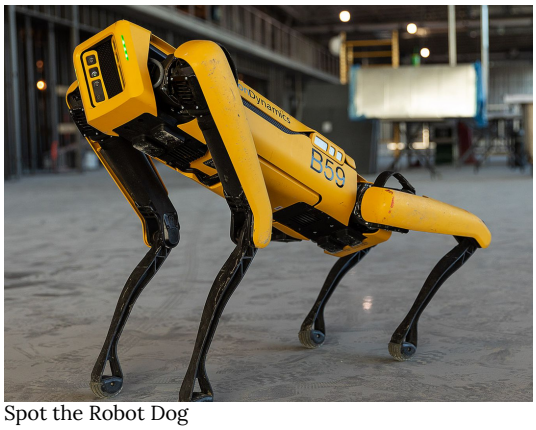
Go fetch! Roll over! Okay, now shake a paw? – That is, if paw is the right word...

No doubt by now you've seen videos of Boston Dynamics' incredible (although slightly daunting) progress in robotics and automation. Maybe you've even been lucky enough to see it in person. For those less vexed in the popular culture of science fiction turned reality, what exactly would you picture if I were to tell you to imagine a robot dog? If you dig real deep into your childhood memories, perhaps a blurry image of an i-Dog would surface – or maybe a picture of Goddard from *Jimmy Neutron*?



Goddard (bottom right - Pinterest) and an i-Dog (top left - Entertainment Earth)

Well, at least that's what would have crossed my mind! This time, as it often proves to be, truth is indeed stranger than fiction – because if you asked me as a 10-year-old what the future of dog technology would hold, I certainly would not have guessed THIS:



Spot the Robot Dog
photo by Becca Farsace / The Verge



Spot inspecting a mine in Kidd Creek, near Timmins Ontario
photo by Boston Dynamics

Is this the fascinating lovechild of multiple Keanu Reeves movies? Although neither *The Matrix* nor *John Wick* were strangers to spending large sums of money on their productions, if you can spare it, Boston Dynamics' Spot can now be yours for only **$75,000 USD**.

Pocket change right?

So, while it may be in our best interests to stick it out (at least for a while) with the furry friends we already have, that doesn't mean we can't have fun with android's best friend in the meantime. (But let's not fool ourselves. Some of the most fun dogs in our lives have always been our friends' dogs anyway!)

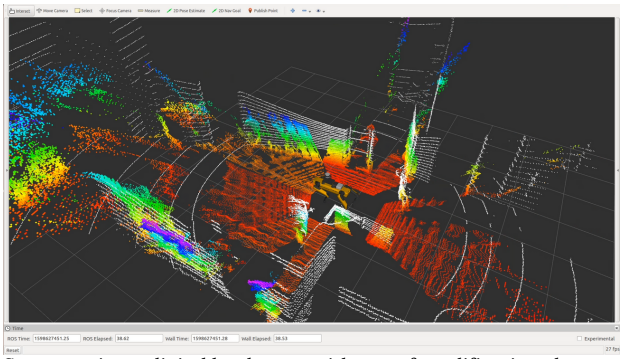
What exactly can we get Spot to do then? (In other words, what old tricks can we teach a new dog?)

Inspection (or going where humanity dare not go... alone)

Why put a worker in more danger than they face every day? At a staggering maximum depth of 3km, many hazards such as, gas leaks, and tunnel collapses lurk below the surface of mines around the world. As a robot, Spot is much better suited to the extremes and risks of these professions. Even if it isn't possible to eliminate all risks for workers, Spot can reduce the frequency of injuries or deaths, raising the bar for work conditions around the world.

Cartography (or the boujee word for mapping things)

Forget photo maps and sonar! Sometimes the best defence is a good offense. With the right tools and software loaded, Spot can be sent into the unknown first to digitally map practically any terrain it passes over. This is a particularly exciting development in robotics – while humans are certainly capable of recording their own paths, and robots following a predetermined path, the ability to combine both tasks is still on the cutting edge of technology. The prospect of having a robot explore treacherous terrain, and in turn develop a comprehensive form of navigation – all in real time – is certainly enough to make any scout and engineer alike salivate with anticipation of the possibilities.



Spot creating a digital landscape with use of modifications by *Clearpath Robotics*
photo by Clearpath Robotics



Spot equipped with its articulated arm capable of performing tasks such as picking up small objects and opening doors.
source: Fortune

Now a couple points for the specs nerds... Or future dog show judges...

Spot can traverse terrain at a maximum speed of 1.6 m/s on slopes of an angle up to +/- 30°
or carry weight of up to 14kg (30.9lbs) ...all while remaining functional within a temperature range of -20 to 45°C (-4 to 113°F)!

The Bottom Line:

While currently less capable in some respects than our current canine coworkers, Spot undeniably displays considerable merit in fields where the environment is dangerous or unmapped. Although its current price may be a little high for most of us who could just use a companion, it may not be long before Spot is house-trained to work with those who require assisted living (Some service dogs are estimated to cost up to $50,000 CAD over their working lifetime – not a long shot from Spot 's current price tag). In the meantime, keep an eye out for Spot's adventures anywhere the world could use an extra set of robo-paws! – And for the love of all things engineering (and dance), take a few minutes of your day to check out this unbelievable – no, seriously it looks like CGI – performance by Boston Dynamics (and *Spot* of course!)

Frito La(d)y

by Lienne Poon, Vice President of Student Affairs

This past co-op term I worked for *PepsiCo Foods* at their *Frito Lay* plant in Cambridge, Ontario and I want to tell you all about it because I love what I do and I know it's probably not a job that any of you expected engineering to be able to take you.



At my site, we have 8 co-op students (3 from U of G), all working different roles in different departments. I'm in the packaging department and my role is basically that of a packaging team supervisor.

My duties include things like checking chip bags to make sure they have good seals and have no chance of leaking air or splitting open, checking to make sure the date codes on the bags and shipping boxes are correct, and above all, I'm there to help my team as best I can so that they are able to do their jobs as best *they* can. It's a really fast paced job, and involves a lot of walking, which I really like because I recently learned that I'm very bad at sitting at a desk all day for work.

Additionally, I work with people from different departments, like processing, quality, and scheduling, to make sure that we're making the best product we can, as well as stay on track to fill orders.

This will be my 3rd co-op job. My last two terms were both also in food manufacturing, but I worked on the line for one, did R&D for the other, and I have to say, food manufacturing is so cool!!! As someone who likes to cook and bake at home, **it's truly amazing to see how the things I do at home to make food are scaled up to epic proportions to meet the demands of the population.**

I've honestly learned so much at this co-op from developing more of my transferrable skills, to making relationships with the operators and asking them questions, to the upper management, and I would 10/10 recommend it to anyone who's considering applying. It's not a really technical job, which isn't what you'd expect for an engineering student, but I found that having that technical knowledge from school really helped me to understand the machines and processes a lot better.

Also, here's something no one expected, engineers actually make great leaders because of our problem-solving skills and results-oriented mindset. *PepsiCo* is known in industry to create great leaders, which is why some employers actually seek out, and try to recruit, former and current *PepsiCo* employees, and if you are given the opportunity to work here, like I was, I would 110% tell you to take it because it will be an amazing experience.

My Degree So Far

by Gregory Chapman, GES Chair

Hello everyone! This is probably the 20th introduction you have received to the School of Engineering but allow me to be the 21st! Welcome to the Gryphon Family, and more specifically, to Guelph Engineering!

My name is Gregory (or Greg) and as you are all entering your first year, I am entering my fourth and final (if everything goes to plan) year of school here. I am going to use this article to reflect on my time with the School of Engineering, and maybe this will allow you all to gain insight into what life will be like for the next few years. A little disclaimer: my thoughts might be a little scrambled, but bear with me. ☺

FIRST YEAR

Just like many of you already have, I moved into residence in first year. My room was Seaway 262 in Maritime Hall, and I had no idea what to expect.

O-Week can be very overwhelming as you feel like you must meet new people instantly, and if you don't, you're going to be left out to dry. This is simply not the case, as meeting new people comes organically and new friends come to you when you least expect it. I met all the people I am currently living with (minus 1) in the engineering O-Week groups, and so many more friends through all the classes you'll take that are common between the disciplines.

First year is a special one, because you truly feel like the campus is your own. I would get up two hours early for class just so I could go to get Creelman for breakfast. My friends and I would spend countless hours in the library, not just for studying, but also for playing chess and *Super Smash Bros*. For the Teddy Bear Wheelchair project in Engineering Design I (ENGG*1100), my group would spend late nights - till 2 in the morning sometimes - in Thorn being stressed and excited at the same time. You didn't even have to worry about making a commute, because your home was a short walk away.

Classes were a lot of fun in first year. Design I made me realize that I chose the right program, as the projects were fun to do but also challenging in the right way. **I enjoyed introductory programming so much that it made me realize that I wanted to be a Computer Engineer**.

However, in my second semester, my marks took a bit of a hit that I wasn't expecting. I was extremely worried and stressed. One thing that I learned was that there's no way that I could've lived up to the impossibly high standard I set on myself. **I had to take a step back and realize that I was doing my best, while learning and having fun in the process. Although it is hard to receive bad marks, you can always bounce back. Don't be afraid to make changes, and don't be afraid of change.**

SECOND YEAR

Although first year is a huge change, second year is arguably just as big. There are a lot of new things to discover. In my case, I lived in a house for the first time with 5 of my friends, and there were new positives and challenges as well. The one thing that I enjoyed the most about living with

my friends is the freedom. We could do whatever we wanted, and nobody was there to stop us. We went downtown a lot and spent a lot of late nights playing games and having deep conversations. Sometimes though, I felt myself getting too carried away with the freedom, and my marks were affected accordingly. **It's okay to experience a little too much freedom though, because it allows you to discover how you work best and how to moderate yourself with friends.** I learned that it is okay to not spend every night out, and that working and having fun is a fine balance.

Classes were harder as they are more specialized, and this is the year that six courses a semester is introduced. Don't be intimidated by this; although it seems like a lot to handle, you will get used to it and learn how to balance everything. I am still learning things about myself and how I manage time and I am almost done my degree! (**pro tip that I learned this year: keep a planner!** It is super useful for keeping track of little assignments and dates that could slip through the cracks) One thing you need to be aware of though is maintaining good mental health. **Always schedule time in for yourself to have fun and unwind.** It goes a long way and could make your degree a whole lot easier!

THIRD YEAR

A very large bombshell was dropped at the end of my second year, which was the fact that there was a little thing called a global pandemic. This completely flipped the whole year on its head, and we had to adjust to the changing world. **My friends and I stayed sane throughout first semester because we had each other**. We would play Spikeball in our backyard, had more deep conversations and gaming sessions, and went for night walks.

The transition to online classes was interesting to say the least. There were pros and cons to the situation. One positive is rolling out of bed a few minutes before class starts and not being late. There also seemed to be a lot more time to do work. However, negatives included not having that face-to-face interaction that so many of us need for our work.

My second semester my friend group was split up as half of us moved away for co-op and the other half stayed in Guelph. I lived with my friend in a basement apartment which was an interesting time. A flood in our basement forced us to move out, **but it was nothing an engineer couldn't handle**.

And with that comes my fourth and final year. I'm excited to see what is in store this year at Guelph and to hopefully see things go back to normal. If you ever see me in person, don't hesitate to reach out and say what's up. I'm looking forward to meeting new people in engineering and I hope you all have a great first year!



Photo: my friends and I on the cannon, which you'll see when you come to campus!

Potato Bugs: A Brief Deep-Dive

by Liv Gair, O'Snap Coordinator

Remember playing outside with your friends as a kid, looking for and picking up bugs, even if just to stare at them for a second? Along with butterflies, caterpillars, and grasshoppers, I always used to like what I called *potato bugs* (this is the real name for a much more frightening thing). You might also know them as *roly-polys*, but these are often called the *common pill-bug* or *common woodlouse* (**spoiler-alert:** doesn't eat wood, isn't a louse), scientifically named *Armadillidium vulgare*. Growing up, it was lore among my friends that brown potato bugs were safe to pick up and hold, but if they were orangey, they might bite you.



a "potato bug"
source: Wikimedia Commons, published under public domain

When I sat down to write this article, I was intending to write something thought-provoking about (perceived) toxic plants and animals and their use in modern medicine. During my research for that, I stumbled upon a number of interesting facts about potato bugs, and there I was so captivated that I absolutely *had* to share them with you. Relive my ridiculous-question-ridden, insect-nerd childhood with me, would you?
Note: in an effort to make this as thoroughly-researched as possible, I've cited all my sources at the end :)

Are potato bugs even bugs (i.e. insects) at all?
Turns out the *-bug* part in *potato bug* and *pill-bug* is a misnomer. *Armadillidium vulgare* is actually an isopod. What's an isopod, you say? If you take a look at the taxonomic hierarchy of the potato bug (a little boring, but I'm a biomed, this stuff is like crack to me), you'll see that isopods are part of the order *Isopoda*, which is part of the subphylum *Crustacea*, which - you guessed it - encompasses crustaceans.

If you compare this taxonomy to that of another well-loved insect - for instance, the monarch butterfly (*Danaus plexippus*), you'll see that the commonality between the two stops at the phylum. Both butterflies and potato bugs are part of the phylum Arthropoda. **Arthropod** is Latin for "joined feet" and, according to Berkeley University, arthropods are classified as being invertebrates with the following characteristics: a segmented body, segmented (or *jointed*) legs, an exoskeleton, bilateral symmetry, a molting habit, and internal organs that are arranged inversely to ours.

Beyond this, a monarch butterfly is part of the sub-phylum *Hexapoda* (arthropods with six legs: three pairs of two) and the class *Insecta*, while a pill-bug (as mentioned) is part of the sub-phylum *Crustacea*, which differentiate themselves from other arthropods by the arrangement of their appendages. Of the four classes associated with Crustacea, potato bugs are part of *Malacostraca*, which also includes lobsters, crabs, and shrimp. Which means, as weird as it may seem, that a potato bug is more closely related to the food in your surf-n-turf than the other bugs in your backyard.

Are they dangerous? Do they bite? What is their purpose?

Potato bugs do not bite, sting, and can't give you a disease. They don't try to get in your food, your clothes, or rot out the wood that you have in and around your house. They're called *woodlice* because they can commonly be found in wood that is ALREADY rotted out.

They *can* invade indoor spaces in large numbers, but are particularly attracted to places that are very damp. Unless your basement is *extremely* moist, potato bugs can't survive inside for more than a few days. They subsist off decaying organic matter, including plants, but the damage they would inflict on a plant that's still living is insignificant most of the time.

So basically, they're just vibing.

What about the red-orange ones?

So, I looked into why the red ones exist and what that means. The short answer is: **nothing**. The only paper I could get a real look at on the red ones is from **1947**. That said, that paper refers to red-orange *Armadillidium vulgare* as a subspecies called *Armadillidium vulgare rufobrunneus*. The red colour is caused by some kind of genetic mutation, but they still seem to be the same non-biting, non-stinging bug.

Potato bugs are often confused with Sowbugs, which are another species of isopod that look strikingly similar to potato bugs, but have two tail-like appendages that prevent them from rolling up into a little ball, which is where potato bugs get their nickname *roly-poly*.

Conclusion

Whew, that was fun! Thanks for joining me on a Google Scholar rabbit-hole through my childhood, I hope you learned something! Let me leave you with some fun facts (also referenced):

- Potato bugs are the **only species of crustacean** that have adapted to living their lives fully on land.
- They have seven pairs of legs (14 total!), one for every segment in their exoskeleton.

References (in order of appearance):

1. "Standard report page: *Armadillidium vulgare*". **ITIS.gov** (Integrated Taxonomic Information System). Retrieved from: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=93250#null
2. "Standard report page: *Danaus plexippus*". **ITIS.gov** (Integrated Taxonomic Information System). Retrieved from: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=117273#null
3. "What is an arthropod?" **University of California, Berkeley**: Understanding Evolution. Retrieved from: https://evolution.berkeley.edu/evolibrary/article/side_0_0/whatsanarthropod_01
4. "Malacostracan | Crustacean". Edward L. Bousfield, **Encyclopedia Britannica.** Retrieved from: https://www.britannica.com/animal/malacostracan
5. "Sowbugs and Pillbugs". Michael F. Potter, **University of Kentucky College of Agriculture**. Retrieved from: https://entomology.ca.uky.edu/files/ef439.pdf
6. "Genetics of Red Body Colour in *Armadillidium vulgare*". H.W. Howard, **University of Cambridge School of Agriculture.** Retrieved from: https://www.nature.com/articles/159683a0.pdf?origin=ppub

LET THE MEMORY-MAKING BEGIN.