



## "WHAT SHOULD mathNEWS GET AS A PET?"

*GO TO TYPE » TEXT VARIABLES » DEFINE... IN THE MENU BAR, AND UPDATE THE ISSUE NUMBER, ITS VOLUME, PUBLICATION DATE, ET CETERA. CHANGES WILL TAKE EFFECT ACROSS THE ENTIRE PAPER.*

Apparently all anyone wanted to write this issue was reviews.

Welcome back for Spring Term, nerds! **mathNEWS** has a special feature this week: **mathASKS** went all out and questioned the President of the University, Feridun Hamdullahpur himself! I know, I know, we actually did it! I was surprised as you are! Feel free to page forwards if you only grabbed this issue to read insightful answers from the meme man himself.

We also have about a billion review articles, for whatever reason. I guess it was the thing to do this week? I'm disappointed no one thought to review **mathNEWS**, I was looking forwards to finding out once and for all if it's a publication worth reading or not.

Our **mastHEAD** answers will be over to my right somewhere (I know nothing about the mystical dark arts of layout: I am but a humble grammarancer), but the question they will be answering is "What should **mathNEWS** get as a pet?" Despite being the one to come up with this question, I really don't think that **mathNEWS** needs to have a pet to take care of. It might get loose in the office and drink the Orbitz we have up on a shelf, and that would be a tragedy. Maybe.

Speaking of pets, if you're interested in helping out with **mathNEWS** by becoming a writer or editor, we're always happy to accept help! There are three ways to get involved: show up at production night, fire us an email, or write a complicated letter explaining your childhood in triplicate and then set it on fire by the riverbend at the witching hour.

Speaking of the witching hour, have you ever seen a ghost? I have. Well, if you broaden the definition of ghost to include things I have definitely seen, anyway. If you redefine my roommate as a ghost, then I have definitely seen a ghost. Actually, that's a handy trick to do anything! Just redefine it as something you've done, and then boom! You've done it!

On that note, I guess I've done the **mastHEAD**!

HAPPY FRIDAY!  
TOBEDETERMINED  
EDITOR, **mathNEWS**

HARDLY ERIC		Edible goldfish
GBAD		Naked Mole Rat named Rufus
OBJECTIVE TASTES		Dragon flies (lifespan 4 months)
YABOI		MyBoi
VILLAGER		Brian Hane
HEINOUSANUS		ExtrovertED
YDDTK		an eng student
VICE MITT		An infinite number of monkeys to automate the creation of <b>mathNEWS</b> articles
YAHOO'S BIN LOCK		A soybean plant
SHAY BLAIR		A chicken thats lays pizza
BEYOND META		A winged antlered platipi
THEODORE BEAR		A bear (preferably Grizzly)
ZETHAR		A paper dragon
DIMINUTIVE REX		A frog! They so cute <3
VICEROY BUTTERFLY		MR GOOSE
THEUNDECIDED		A unimaid (half unicorn, half mermaid)
TOBEDETERMINED		anything but f&*\$#@ minions
EXTROVERTED		A vegetable
TOTALLYLEGITAUTHOR		A Parastratiosphecomyia sphecomyioides
NOT FILLER, I PROMISE		A duck
REAL WRITER		A duck
THE REALEST WRITER		A goose
FIRST THINGS FIRST		Tag, you're it!
I'M THE REALEST		An alligator
IGGY AZALEA		Bees?
SWEN HTAM		A winged lion
MR GOOSE		A viceroy butterfly
I.M. AREALBOY		A giant whale that eats puppets
FRANK		A Rufus named Naked Mole Rat
SUSAN		A pizza that lays chicken
REALPERSON00492		A grizzly (preferably a bear)
NOTAROBOT02976		A pet rock
RAPUNZEL		A chameleon named Pascal
MR. WORLDWIDE		A pitbull

Omfg we finally have a facebook page pls like <3

ANGELA LE, **mathNEWS** EDITOR FOR SPRING 2017  
ALONG WITH SHAUNDALEE CARVALHO, AND HEATHER STONEHOUSE

# HOW TO mathNEWS

Hello all. It is I, returned from a co-op term outside Waterloo. I'm a little out of practice, since I didn't submit any articles last term, as I was too busy chilling, living life, and crafting the highest quality bullshit for PD5 and for my work term report. If you too are out of practice and have forgotten how to **mathNEWS**, or if you are new and have never known how to **mathNEWS**, have no fear; I've got your back. Behold, a complete list of steps to follow if you want to **mathNEWS**:

1. Watch out for emails or signs near stairs in MC that will tell you when production nights are. If you're unobservant or you don't know where MC is\*, then just remember that the first production night is May 8<sup>th</sup>, and production nights are every other Monday after that. [Editor's note: or like our new Facebook page!]

\*If you don't know where MC is, you should probably just drop out of school.

2. On production night, show up at the MathSoc office at 6:30 pm. You'll be brought to one of MC's second floor computer labs (probably MC 2062), so if you show up late and there are no **mathNEWS** people at the office, just go directly downstairs. Do not pass GO, do not collect \$200.
3. Once you have arrived in the computer lab, get yourself set up to write comfortably. If you feel like being social, sit near other people so you can chat and minimize the amount of actual writing you get done. If you hate everyone\* or feel like being anti-social for any other reason, plug in headphones, play some music and do your best to ignore everyone.

\*Note that if you *really, really* hate everyone, you can write articles from the comfort of your own home and email your articles to [mathnews@gmail.com](mailto:mathnews@gmail.com) by 8:00 am on the day following production night.

4. Write something. Like, anything. Our standards are extremely low. Like Apple-Bottom-jeans-and-the-boots-with-the-fur low. And nothing ever gets published under your real name anyway, so you're totally allowed to suck anonymously. Basically just write something that's not super-offensive and we'll print it.
5. Pause your music/socializing/writing/dicking around when an editor announces pizza voting time. Contribute your ideas and/or votes for pizza orders. It is important to remember at this stage of the **mathNEWS**-ing process that pineapple DOES go on pizza, no matter what the haters and non-believers try to tell you. If you are not present at production night, but have written something and want pizza, email **mathNEWS** to let them know by 7:00 pm.

6. After the pizza vote, continue as before until the pizza arrives. At this point, proceed upstairs to the C&D. Try not to drool in anticipation too much; it scares the first years.
7. Eat a larger than healthy amount of pizza, cookies, and other such delicious trash that is provided to writers.
8. Loudly explain to anyone who will listen that calories honestly don't even count when the food is free.
9. Go home and sleep peacefully with a belly full of free pizza. Or go home and work on an assignment or something. I don't care, I'm not trying to tell you how to live your life.
10. Repeat forever until you graduate/drop out/die/get sick of free pizza.

THEUNDECIDED

## WE ARE NOT A NEWSLETTER

Now, one thing that **mathNEWS** is not is a newspaper. That's because newspapers must be printed on newsprint, which is a standard we clearly fall short of (as is evidenced by the creamy white paper behind this article).

The official ISSN category of **mathNEWS** falls in journal: magazine: periodical. This is the same category in which Imprint falls, as well as the New York Times.

What is a newsletter? A newsletter is "a bulletin issued periodically to the members of a society, business, or organization" (Google). Unlike a newsletter, we are not only available by subscription: you can access our news in piles in MC and DC, or on our website.

Calling us a newsletter just feels a little bit insulting, is all that I'm trying to say here. It may technically not be incorrect, the same way it would technically not be incorrect to call The Wall Street Journal a newsletter, as it does have subscribers. But the word 'newsletter' implies a certain inferiority to true newspapers and journals. As a publication that is being preserved in the Canadian National Hall of Records, we'd like to think that we have a little more cachet than the 'Jenkins family newsletter'.

Remember, words can hurt. And if you're looking to get into a war of words, I wouldn't advise doing it with us. We know words. We have the best words. No one has better words than us.

DIMINUTIVE REX

# mathASKS 134.1

*FEATURING FERIDUN HAMDULLAHPUR*

**THE EDITORS, ON BEHALF OF R/UWATERLOO: HOW DOES IT FEEL TO BE AN INTERNET MEME? IS THERE ANYTHING THAT YOU WOULD LIKE TO SAY TO OR ASK THOSE WHO ENJOY AND/OR MAKE MEMES OF YOU?**

The humour among our students has changed since I was a student, and the proof is in one or two memes my social media team has shown me. While I don't always understand them, I certainly always enjoy the creativity and intellect of our students.

**LIFEINSURANCECANADA (VIA REDDIT): WHO'S YOUR FAVOURITE MATHEMATICIAN? WHAT'S YOUR FAVOURITE THEOREM? WHAT'S A COOL APPLICATION OF MATH THAT YOU USE IN YOUR JOB?**

$2 + 2 = 16$  is a phrase I use to express the vibe a UW. Our results are exponential! Elver is probably one of my favourites as I use the Eulerian-Eulerian two-fluid model for my multi-phase flow research.

**NEATOBURRITO: I SAW YOU WALKING INTO LCBO AS I WAS WALKING OUT ABOUT TWO WEEKS AGO, AND IT WAS ACTUALLY MY FIRST TIME SEEING YOU IN PERSON. WHAT'S YOUR RECOMMENDATION FOR A GOOD CABERNET SAUVIGNON? OR ARE YOU MORE INTO SCOTCH? CRAFT BEER?**

I have a tradition to bring wine as a gift to housewarmings or as a thank you gift. This has a traditional sentiment that implies joy and prosperity may reign forever on the host. But, I don't drink cabernet sauvignon. I do like single malt, Lagavulin or Talisker.

**GENERIC AUTHOR: WHAT IS YOUR DREAM BREAKFAST? LIKE, YOUR NO-HOLDS-BARRED, ALL-YOU-CAN-EAT DREAM BREAKFAST, REAL-WORLD FEASIBILITY BE DAMNED. GO WILD.**

I thoroughly enjoy a plate of fresh tomatoes, avocado, feta cheese, fresh orange juice and perfectly crafted espresso in the morning.

**A CRAFTY PLAYER: WOULD YOU COME TO MATHSOC'S GAMES NIGHTS?**

That sounds intriguing. I can't promise but let me know more about it and I can see what I can do.

**NAMELESS GRAD STUDENT: DO YOU STILL TRY TO DO RESEARCH? IF NOT, DO YOU MISS IT?**

A: I'm fortunate to be able to have a few excellent graduate students and so together, I am able to stay connected. Research has been a big part of my career and I cannot think of my life without it. I am, together with my students able to publish 3-4 journal papers each year.

**GEORGE LAMBROU: MR. PRESIDENT, THIS TERM HAS BEEN A BIG ONE FOR mathNEWS. OUR WRITERSHIP HAS EXPANDED TO INCLUDE NOT ONLY MORE STUDENTS, BUT PROFESSORS, ADVISORS, AND UNIVERSITY PRESIDENTS TOO; THE PAPER HAS BEEN REDESIGNED FROM THE GROUND UP NOT JUST FOR READABILITY'S SAKE, BUT TO MAKE IT EASIER FOR FUTURE EDITORS TO ACTUALLY CREATE AND PUBLISH IT AS A QUALITY PRODUCT; I'VE BEEN WORKING WITH THE DEAN OF MATH'S OFFICE FOR MONTHS NOW TO SORT OUT THE MESS THAT IS OUR PAPERWORK AND ASSURE mathNEWS' CONTINUED EXISTENCE; I'VE GIVEN THREE BRAND-NEW EDITORS A HELLISH, TRIAL-BY-FIRE TRAINING EXPERIENCE, ALSO TO ENSURE mathNEWS' CONTINUED EXISTENCE; AND FINALLY, I'VE SPENT FAR TOO MANY LATE NIGHTS IN THE mathNEWS OFFICE TO COUNT, SO THAT WHEN WE FALTERED, I COULD STILL TRY TO KEEP THE DEADLINES MET, ALL TO PRESERVE A VALUABLE PIECE OF SCHOOL HISTORY. IN RECOGNITION OF ALL OF THIS HARD WORK, AND THE SANITY WE'VE SACRIFICED DOING IT, I RESPECTFULLY REQUEST THAT THE UNIVERSITY CONSIDER AWARDING US EDITORS SCHOOL CREDIT FOR OUR EFFORTS.**

I congratulate you on doing what it takes to keep the mathNEWS going. That is what Waterloo students do. I can't commit to the idea of credit for this initiative but I would certainly suggest you speak with Chris Read, Associate Provost, Students.

**THE EUROBEAT-'EM-UP: A GOOD NUMBER OF US HAVE IDEAS THAT WE THINK COULD HELP OUR SCHOOL IMPROVE IN A NUMBER OF AREAS, BUT FEEL LIKE WE HAVE NO OUTLETS TO GET THEM HEARD. HOW MIGHT ONE APPROACH BRINGING SUCH AN IDEA DIRECTLY TO YOU?**

I am happy to meet as many times as I am able to with students/groups to hear about their experience, ideas, suggestions. You are also always welcome to send an email to [president@uwaterloo.ca](mailto:president@uwaterloo.ca) or call Andrea Kelman in my office (32202). She is always happy to meet students. The mantra in our office is T.E.A.M. (Together Everyone Achieves More). Our office works together in a participative environment where new ideas and new ways of doing things are always welcome.

**MECHEM20 (VIA REDDIT): WOULD YOU CONSIDER RESTORING FULL SCOPE AND AUTHORITY TO THE OMBUDSPERSON ROLE? RIGHT NOW THERE'S LITERALLY NO ONE WE CAN GO TO AND GET EFFECTIVE CHANGE WHERE IT'S NEEDED. THINGS JUST SEEM TO BE GETTING WORSE ALONG MULTIPLE LINES WHERE THE COMMUNITY CARES ABOUT AN ISSUE, AND THE UW ADMINISTRATION DOESN'T. OUR ONLY RECOURSE THESE DAYS IS A PETITION, WHICH ONLY WORKS FOR HIGH-PROFILE ISSUES.**

I absolutely think it is important for students to have access to support on campus. We do not have plans to reinstate an Ombudsperson at the University, rather we are working in a decentralized model where students can access support via Conflict Management and Human Rights Office, Student

Success Office, Associate Dean offices, Secretariat, Student Appeals and the Equity Office.

**GBAD: WHEN WILL SOMETHING BE DONE ABOUT THE LACK OF STUDY/GROUP WORK SPACES ON CAMPUS? THERE NEVER SEEMS TO BE ENOUGH USEFUL SPACE (OUTLETS, TABLE SPACES, GROUP WORK AREAS) AVAILABLE FOR STUDENTS.**

The expansion of study spaces in public areas, within academic buildings, across campus continues to be a priority. Recently, 178 study spaces were added as part of this initiative.

The recently constructed facilities such as the AHS Addition, Hagey Hall Hub, Science Teaching Complex and Engineering 7 include dedicated study space & social space.

The soon-to-be-constructed Student Life Centre/PAC addition and the North Campus Field House will provide a significant increase in social and recreational spaces.

So, study-onwards!

**AN ANONYMOUS MATH STUDENT 2 (VIA EMAIL): WHY DOES THE SCHOOL HAVE SO MANY ENGINEERING BUILDINGS, AND SO FEW MATH ONES?**

A significant portion of the Engineering's teaching and research space is dedicated to heavy labs and wet labs. If we break it down by numbers:

Math is in 3 buildings which total approx. 66,000 square meters (710,000 square feet)

Engineering is in 9 buildings which total approx. 96,000 square meters (1,030,000 square feet)

**HATOFCHOCOLATE: AS A SOON-TO-BE-ALUMNI, WHY SHOULD I DONATE TO UW? IT SEEMS LIKE ONLY ENGINEERING BUILDINGS ARE UNDER CONSTRUCTION, AND MATH/CS SEEM TO BE CHRONICALLY UNDERFUNDED. (FOR INSTANCE, NEXT TERM'S 400-SERIES COURSES ARE HORRIBLY OVER-ENROLLED.)**

You should donate to Waterloo only if it comes from your heart. I want your engagement and relationship with the University which is most important. Many alumni who came before you did donate—and their generosity benefits us all; including you. It is a great way to pay-it-forward. We have a history of proud alumni who continue to support the University and it is a way of staying connected with your alma mater, not only as an alumni but part of the Waterloo family and its future.

While buildings under construction are a visible way to see dollars at work, faculties are responsible for prioritizing their funding needs. Alumni are empowered and can easily designate their donations to support specific Mathematics and/or Computer Science priorities.

Donations are used to support equipment and technology in classrooms and labs, libraries and athletics, student health and wellness, enhancements to learning and teaching spaces, opportunities to study and work abroad, and a robust program of scholarships, bursaries and other financial awards.

Tuition fees and government funding are Waterloo's primary source of operating revenue, but they only cover part of the entire cost of education.

Pay it forward for future Math grads!

**SHAY BLAIR: WHAT ARE YOUR FEELINGS ON UW'S REPUTATION AS A SCHOOL THAT ISOLATES AND OVERSTRESSES ITS STUDENTS? ARE THERE ANY CONCRETE PLANS TO CHANGE THIS (INSTEAD OF VAGUE REASSURANCES)?**

**SCYTHE MARSHALL: IS IT POSSIBLE THAT INSTEAD OF MAKING MORE MENTAL HEALTH SERVICES AVAILABLE AND PUBLICISED, WE SHOULD FOCUS ON MAKING POST-SECONDARY EDUCATION A LESS-UNHEALTHY PURSUIT?**

**DIMINUTIVE REX: HOW DO YOU THINK THE UNIVERSITY CAN GET BETTER AT MAKING THE STUDENTS FEEL AS IF THE UNIVERSITY CARES ABOUT THEM AND THEIR SUCCESS?**

**VERSATILE PARSLEY: IN ACADEMIA, THE MEASURE OF A STUDENT'S PERFORMANCE IS GRADES. IN WATERLOO, IT SEEMS THAT WE ALSO HAVE CO-OP JOBS AS A MEASURING STICK. WESTERN SOCIETY ALSO MEASURES PEOPLE'S WORTH BASED ON WEALTH, PRESTIGE, FAME, ETC. WE SEE LISTS LIKE "TOP 30 UNDER 30" AND "FORBES WORLD'S BILLIONAIRES LIST" AND THEY CONSTANTLY REMIND US THAT SOCIETY CELEBRATES THESE THINGS. MANY OF THE STUDENTS HERE BASE THEIR SELF-WORTH ON THEIR GRADES AND JOBS, AND IT LEADS TO MISERY. WHAT DO YOU THINK DETERMINE'S A PERSON'S WORTH?**

I appreciate that so many students have stepped forward to share their views on the importance of wellness on campus. I am going to answer these important questions together.

It is important to recognize that Waterloo differentiates itself from other organizations in many ways. Excellence of our students is in the heart of our ability to differentiate. We make no illusion that studying at UW requires hard/smart work. Our students know that, their parents know that before they decide to study here. The question is then – how can we make it more effective by providing a fun and intellectually stimulating environment and removing unnecessary and redundant work.

There are a number of things we have committed to this year and a number of things we can work towards together. I believe that the more we work together, the more we will feel connected and ensure a sense of belonging and compassion throughout our university culture.

The first step is our new Advisory Committee on Mental Health. This committee includes students, faculty and staff,

and will consult experts and community members. This committee will encourage a variety of perspectives when gathering input on mental health issues specific to our campus. I encourage you to reach out to the committee [contact form: <https://uwaterloo.ca/mental-health-wellness/contact-form>]. Together, we will develop and implement strategies that will make a lasting impact on our campus.

Another initiative we can collaborate on is addressing the social stigma of wellness centers. I encourage you to invite a friend and join us for the open house events of our health services building. Dates are still being finalized, and will be posted on <https://uwaterloo.ca/mental-health-wellness/>

A commitment to wellness does go beyond mental health. There are many measurements we can use to determine the wellness of a community. The World Health Organization (WHO) states that "Health" is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Our campus has a variety of health services that address all aspects of wellness <https://uwaterloo.ca/campus-wellness/>.

I believe that every person is of value and worthy. I believe that success can be measured in many different ways, including the healthy pursuit of dreams and aspirations. Achievement is an excellent measure of success but how you get there is also a very important measure as well. I strongly encourage you to keep moving forward in the search of your dreams, whatever they may be. Define success on your own terms and be satisfied with that internal measurement.

**ZETHAR: GIVEN THE (RELATIVELY) RECENT FOCUS ON CAMPUS UNITY AND SPIRIT, WHY DOES IT SEEM THAT THE FINANCES OF EACH FACULTY MUST BE SECURED SEPARATELY? THAT SEEMS TO BE SAYING ONE THING, AND DOING ANOTHER.**

**WALDO@<3.LE-GASP.CA: WHILE UW IS VERY WELL KNOWN FOR ITS STEM-FOCUSED PROGRAMMING, WILL THE SAME INVESTMENT AND PROMOTION OF ITS ARTS AND HUMANITIES PROGRAMMING BE MADE IN THE FUTURE?**

Each Faculty is allocated operating budget based on their activity levels (the grant and tuition funds generated by the students within the faculty)

Research funding is awarded based on applications made by individual faculty members.

Fund-raising is a shared responsibility between the faculties and the advancement office. We are working on it through our current strategic plan and building it into our future plans. Our new budget model will provide faculties with more transparent and multi-year budgeting capabilities.

**AN ANONYMOUS MATH STUDENT 1 (VIA EMAIL): WHY ARE ADVANCED-LEVEL FIRST-YEAR MATH COURSES CONSIDERED EQUAL TO THE MAINSTREAM ONES WHEN APPLYING FOR CO-OP? THE ADVANCED-LEVEL ONES CONTAIN A LOT MORE CONTENT, AND ARE A LOT MORE WORK THAN THE REGULAR-LEVEL COURSES; WHY DON'T THEY PROVIDE BENEFITS TO STUDENTS WHO USE THEM TO APPLY FOR CO-OP POSITIONS?**

This is an excellent question, and Barry Ferguson, Associate Dean of Co-operative Education, Math is the best person to ask about the specifics on this.

**VICEROY BUTTERFLY: WHY WILL THE REGISTRAR'S OFFICE ONLY ZERO-WEIGHT A TERM IF YOU DO PERFECTLY ON THE NEXT TERM? THIS SEEMS TO IMPLY THAT ILLNESSES ARE ONLY VALID IF THEY CAN DEFINITELY END, WHICH DOESN'T FIT THE EXPERIENCES OF STUDENTS WITH CHRONIC ISSUES.**

The Registrar's office does not determine the results of a student's petition. Each Faculty has a committee of instructors and/or administrators who discuss and determine the petition's outcome.

The decision to grant or deny a petition is based on the strength of the supporting evidence provided by the student (which may include medical documents indicating the chronic nature of the illness).

In the case of the Faculty of Mathematics, experience over thousands of cases guides some of the decision making. Conditional terms are given to allow students with chronic conditions to demonstrate to the Faculty and to themselves that they are sufficiently well that they can continue. "Perfect" is not expected.

The Registrar's Office communicates the decision to the student and updates the student's academic record accordingly.

FERIDUN HAMDULLAHPUR

**PSA: Mother's Day is this Sunday. Call/visit/give a gift to/thank/serenade your favourite mother(s).**

**A mathNEWS EDITOR WHO HAS MAD RESPECT FOR HER MOM**

# presTHOUGHTS

Good day, to the readers of **mathNEWS**.

I am pleased to participate in this **mathNEWS** issue specifically because of the team effort and collaboration that goes into building a newsletter such as this one. I believe it is important to build relationships and through editorial, shared passions, experiences and even humour among the group.

I can remember the importance of community newsletters in my undergraduate studies. These newsletters represent a snapshot of the experiences, thoughts, humour and collective conscious of a cohort.

The humour among our students has changed since I was a student, and the proof is in one or two memes my social media team has shown me. While I don't always understand them, I certainly always enjoy the creativity and intellect of our students.

As you learn and refine your academic skills here at Waterloo, I offer you five bold statements to consider as you refine your professional self and how you will continue to grow into the fullness of you.

And who knows, if you are lucky in your own future leadership, you might garner a meme or two along the way.

## 1. BE DIFFERENT

Because at Waterloo we have been different from the start.

For 60 years, Waterloo has delivered education differently. For a quarter century we have been known as Canada's most innovative university, and as one of the most unconventional and entrepreneurial universities anywhere.

Even from our founding, we have always believed that we have a mandate to help lead Canada — and the world — into the future.

We continue to challenge the status quo and keep challenging innovators to break open whole new fields of research and innovation for Canada and the world.

And that requires us to look at things differently.

All of us – Waterloo students, faculty, staff, alumni, and members of the Waterloo community.

Waterloo's mission, your mission, our collective spirit, challenges us to see the world differently, understand it, and improve it. So, soar in that spirit.

## 2. BE COLLABORATIVE

I recently spent some time in Korea. During my visit I was reminded that since 2014, Waterloo has worked on 159 scientific papers with Korean Universities. Quite a number of

papers in a short period of time. This really highlighted the notion of collaboration.

The inspiring notion that if we work together, whether it is economically, intellectually or for a common good, we are all better for it. I certainly believe it.

In fact, I am living proof that it is true. I was born in Turkey and moved to Canada when I was a young adult. I learned early on the importance of building international relationships and finding ways to collaborate with a variety of people. This skill has been refined for much of my career.

For example, consider the HeForShe IMPACT 10x10x10 framework that launched in 2014. This initiative holds a special place in my heart and involves 10 Heads of State, 10 CEOs, and 10 University Presidents worldwide. Each of us are positioned together to advance gender equity.

Now, we of course, all take different approaches on our objective, but we stand together, collaboratively for social change.

Emma Watson, the UN Women Global Goodwill Ambassador, was recently quoted saying, "A good university is like a tiny utopia, it's a miniature model of how the whole of society could look."

I believe this is true. That Waterloo is a mini-society, and my desire is that Waterloo's culture promotes compassion built from collaboration that fosters into innovation, bringing success for you, your peers and colleagues.

## 3. BE PROUD

The Faculty of Mathematics plays a key role in driving prosperity. With the celebration of 50 years of achievements in research and education, we know we have done our best to prepare the leaders of tomorrow for success in the knowledge economy.

We know that 72 per cent of companies surveyed in Waterloo Region say they depend on Waterloo graduates and students as a source of employment. Likewise, Waterloo contributes \$1.5 billion annually to the economy in Waterloo Region.

The Faculty of Mathematics is a big part of that success because we aim for the best:

Waterloo is ranked #1 in Canada for computer science

Waterloo is ranked 20<sup>th</sup> in the world for Mathematics (QS Rankings '15)

Waterloo is ranked 24<sup>th</sup> in the world for Computer Science (QS Rankings '15)

133,000+ have accessed award-winning free math and computer science courseware with more than two million page views since January 2015

235,000+ students in 75 countries write the Centre for Education in Mathematics and Computing (CEMC) tests each year

#### 4. BE COURAGEOUS

I believe that the courage to boldly explore new frontiers and the ambition to match ideas is at the core of who we are as an institution and who you are as a collective.

It is this notion that fuels our focus on what I call the 3 “I”s:

Internationalization- which is about expanding our reach in research, partnerships and recruitment and how we work in exciting new fields, with a global focus and international partners.

Innovation - which we define as tackling tough new challenges using new approaches, new ways of thinking, which is core to everything we do.

Interdisciplinary - which is about standing at the intersection of arts, science and technology to unlock the creativity of the entire university;

What this adds up to is impact – impact for our students, impact for our faculties, impact for our staff, for Canada and for the world.

These “I” statements come to life by the example you set during your studies here at Waterloo and after graduation.

By sharing your expertise, knowledge and experience with your peers, co-op placements and community, you display the courage to boldly explore new frontiers. By applying your knowledge outside of these academic walls, you are courageously opening new windows that challenge the status quo.

Courage will make you and this institution stronger.

#### 5. BE PASSIONATE

There is real passion at Waterloo. I have had the privilege to see it first hand during my classroom visits in the fall. I had a chance to see you in action, and speak to some of you afterwards.

I know that each of you have your own priorities. But I also know you have a collective passion.

A passion to not only learn and excel in your program but also to give back to your campus community. Even for this newsletter, George reached out to me directly to contribute. He showed an immense amount of passion (and courage!) for worthwhile cause that brings unity and humor to his peers.

Passion is driving force that generally leads to success if well placed. If it is placed incorrectly it be much less effective and come across as abrasive and pushy. I believe that passion is the fuel that sets apart leaders and rising stars from the rest.

I encourage each of you to continue to focus on what we can do together, by combining our passion, our courage, our pride and our collaboration, so we can truly make a real difference in this world.

I look forward to seeing what each of you will do in that regard.

THANK YOU,  
FERIDUN HAMDULLAHPUR, PRESIDENT  
AND VICE-CHANCELLOR AT UNIVERSITY OF  
WATERLOO.

## mathTHANKS

We would like to extend our thanks to the President of the University, who was kind enough to answer all of our questions, save one (about whether he would give free hugs to former Senate members – so the **mathNEWS** editors unfortunately cannot condone concealing yourself in bizarre locations on campus in the hopes of ambushing our President with a hug.)

We would like to extend our sincere appreciation to both Feridun himself, and the friendly members of his office who helped organize our column. I would also like to extend thanks to our former-and-possibly-future editor George, without whom this feature would never have happened.

If you have any more questions that you wish you could have asked the President, you can always ask him yourself! As he says in his article, his email is [president@uwaterloo.ca](mailto:president@uwaterloo.ca), and I'm sure his staff would be more than happy to redirect whatever questions you have to whoever can best answer them.

As for the future of **mathASKS**, our next target is secret, but in two weeks we will be interviewing the King of Linear Algebra himself, Dan Wolczuk. Have any questions for him? Email us within the next two weeks, or show up to our next production night, and we'll make sure he sees them!

TOBEDETERMINED

**blackBOX** quotes make  
me feel important.

A V.I.E. (VERY IMPORTANT EDITOR)

# LITERATURE REVIEWS IN MATHEMATICS

Suppose you've proven something. A theorem! Maybe a proposition, whatever. In your classes, obviously you're probably not breaking new ground in the area. Sad to say, your proof of the Fundamental Theorem of Algebra is probably not innovative. Sorry.

However, when doing honest-to-goodness research, things work a bit differently. You can ask yourself a question, and find yourself an answer, and that's fine, but you can't assume that it's novel simply because you've never seen it before. Someone may have already found what you've found before, and published it: maybe it was a grad student writing it down in their thesis, or maybe a newly minted researcher publishing their first real paper, or a significant contributor to the area writing their signature paper. Or maybe it was Gauss. It was probably Gauss, though chances are he didn't write it down because it was trivial.

All Gauss jokes aside, while it can be nice to discover things for yourself, in the broad view of academia the important thing is that it has been discovered. The secondary point is that it's important to recognize people for their contributions. These two aspects of research mean that when you're looking at a discovery, you should probably check if someone's already discovered it.

This has the following implications on your potential papers. Firstly, if someone's already done what you just did, you can't claim you did it first, because you didn't. Duh. But secondly, and perhaps just as importantly, someone may have done something similar but different, and a proper literature review allows the reader to understand the context of your new results. A reader wants to know why your result complements the previous results, or replaces them, or shows another perspective on a situation, and a well-written literature review illustrates this.

The above remarks hold in general, in academia, but in mathematics there are some interesting twists on this process. One main twist is the existence of MathSciNet, a website run by the American Mathematical Society, that has a not-quite-but-as-much-as-possible comprehensive database of mathematics papers, alongside reviews of those papers when available. These papers are also linked by references (to and from), and are classified into different research areas. This is an incredible resource, but it also can lead you into having a false sense of security: that you're capable of successfully performing a thorough-enough search of previous work.

Another twist is that theorems come with hypotheses attached, and different hypotheses sometimes lead to different results, or to the same results! So it's hard to determine exactly what a paper is saying without digging into the statement of any theorems; sometimes one must delve into the proofs to really understand. In many situations there are multiple variants of the same sort of theorem, all complementary, and

the goal is to distinguish the theorems while making sure that yours isn't already covered.

A third twist is that mathematics is, for better or for worse, much less strict about style guides and all the sorts of things that you spend forever learning in every other academic discipline. It's still important to properly cite things, but it turns out that it sometimes takes a miracle to find what you're trying to find. Moreover, and maybe this is just me being incredibly unlucky, there are a good number of papers which are cited as preprints or unpublished at the time of another paper's writing, thirty-plus years ago, and when you go to find the papers, they flat-out don't exist. Maybe it was never published, maybe it had a significant name change, maybe the author passed away before publishing (Ricardo Mañé, a renowned ergodic theorist, comes to mind for me); the references in mathematics are usually somewhat spotty. The other fun bit about math papers is that it's hard to publish in the really good journals, so sometimes there are important results published in remarkably obscure journals. At that point, who knows how many people know those results?

The importance of literature reviews in mathematics is fairly evident, particularly in the current state of the area. All the more reason to help new researchers become better at it: there's a reason that most universities only offer Honours bachelor's degrees when accompanied by a thesis project. UW Math is definitely an exception; it looks nice, but it's also a disservice to those future academics. At least there's a chance to get more practice at the graduate school level. If you're a grad: make the most of that opportunity! It's invaluable. Take it from someone who has just proved something, potentially a really nice result, but is full of doubt that it's actually new. Don't be like me.

SCYTHE MARSHALL

P.S. Another good thing to do is see if someone's answered your question before you even try to answer it yourself. You can save yourself time. Like, months, or years. Yeah.

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## N WAYS I HAVE TO SUBMIT ASSIGNMENTS THIS TERM

- Crowdmark
- In person
- Learn
- MarkUs
- turnitin.com
- Complicated dance, as the bees do
- By performing a dark ritual involving sacrificing a goose

VICEROY BUTTERFLY

## HOMONYM PRODUCTS

What if some common household items were literally what the name was? Never wondered this? Well now I bet you are. "But what do you mean by this, Vice Mitt?" I'm glad you asked! Let me fill you in with some excellent examples of Homonym Products™.

### LICORICE

The Snack That Licks You Back!™

### THUMB TACKS

Made from your great aunt to help you remember her (and speed up the grieving process), these items from the local morgue allow you to prick your opposable digits with reminders of your loved ones.

### HOMEWORK

Tired of paying those contractors the big bucks to do home repair? Give your bank account a break by ~forcing your children into slave labour~ paying your kids an extra dollar a month in allowance to do all the hard work!

### COOKWARE

Fancy an outing tonight, but are out of clean clothes? Get fashionable and look \*grate\* by hiding that muffin top with a muffin tin!

### MR. BIG CANDY BARS

Haven't heard of the man named Jim Big? I'm not surprised. Fifty years ago, this kind man was kidnapped by Cadbury due to what some say were "magical" powers he possessed, that allowed him to regenerate missing limbs and tissue. The Mr. Big candy bars are made with Jim Big's flesh infused into the chocolate, often painfully and always forcefully removed from Jim, a cruel practice which continues to this day. Boycott Cadbury, and tell them you don't support this barbaric practice of candy making! Vegans beware.

VICE MITT

**Why did the chicken cross the road? To fill some space.**

A BIG FAN OF BAD JOKES AND FILLER

## THE SADDEST FRIDGE

I'm subletting with friends again. What's different this time is that I am the only person in the house who makes meals involving meat.

To be clear, I'm not complaining that the vegetarians and vegans in my house are doing it wrong or anything like that. The biggest problem is that I don't want to cook a big meat dish for less than 4 people, because otherwise there are leftovers for longer than is fun. You can only have so many days of ribs or chicken or whatever before it's a sad time.

So there's no big chunks of meat in the fridge. But there's also no milk to drink, because I'm lactose intolerant and the milk drops take 24 hours to convert the lactose to glucose or whatever the thing I can digest is. There are eggs, but again, half the house won't eat them.

Theoretically, we should have a lot of vegetables. Everybody eats those! The problem, is that everybody eats them. They can't survive. Someone puts carrots in the fridge and in thirty minutes we might as well have put famished rabbits in with them. That's a dead-end. The only way vegetables can survive our refrigerator is if they're the kind nobody likes, such as by being kale or disguised as kale. The lettuce has taken to wrapping itself in kale as a survival strategy.

In the end, the only food that exists is a half dozen proto-chickens and kale. I'm accepting suggestions for creative food, having exhausted my tolerance for kale omelettes.

HARDLY ERIC

## N THINGS TO DO INSTEAD OF GETTING A JOB

You might not believe it now, but, someday, you will graduate and be free from all obligations. Not sure what to do with all this free time, you find yourself contemplating existence. Now, you could get a job... but where is the fun in that? So here is a list of other things you can do instead.

- Catch em all!
- Learn to walk on stilts
- Read all the things! Especially *Unsong*. *Unsong* is a web novel written by mad genius that can be found [unsongbook.com](http://unsongbook.com)
- Get horribly lost in Europe
- Play too many RPGs
- Learn a new language
- Play video games
- Visit your friends in other cities

BEYOND META

# INVESTIGATIVE JOURNALISM! PIZZA REVIEW

Hello everybody, it's your friendly neighbourhood investigative journalist, Theodore Bear, fresh off another work term with the University of Waterloo Department of Mysteries. Because the circumstances of my last co-op, (which were so insane that I was forced to sign 70 different confidentiality agreements just to start this study term), I'm unable to write another six-part serialized story for this run of **mathNEWS**. I'm sure some of the editors are disappointed.

However, to make up for that, I'm embarking on an investigative journalism spree, hot on the trail of new scoops to bring the most relevant and pressing issues to forefront in each new release of **mathNEWS**.

To start off: a review of Pizzeria Trammiere, in Pompeii, Italy.

Pizzeria Trammiere may look like nothing much from the outside, but within contains some of the best pizza this journalist has ever had. Located just a short walk away from the *Moregine* train station on the Sorrento line, one of the train lines that make up Naples' Circumvesuviana lines, it's also around a thirty minute walk from the Pompeii archeological site.

Stepping inside, the first thing that will catch your attention is the friendly owner and chef, Antonio. He's a very nice, friendly guy with a charming accent. If you want to sit down and eat, you'll end up eating upstairs on second floor, which has a hole-in-the-wall feel, with plastic tables and chairs. However, the pizza itself easily makes the sparse decorations worth putting up with.

For the purposes of the review, this investigative journalist had the Pizza Margherita and the Prosciutto and Arugula Pizza. In short, this pizza was probably one of the best I have ever had anywhere. The Pizza Margherita was simple and delicious, extremely well done, and had whole leaves of basil on the pizza, which really adds to the classical experience. The Prosciutto and Arugula pizza was stacked with meat and herbs. On that note, prosciutto is quite possibly the greatest meat ever known to man. It's saltiness couples with the lean cut, lacking the fat of salami, to create the perfect cured meat that can be enjoyed by itself, with mozzarella, placed on top of cooked pork and covered in a white wine sauce, and on pizza. Anyone who does not believe the greatness of prosciutto is a heretic and must be made to learn the error of their ways.

All elements of the pizza were so well done: it was cooked in a wood-fired oven, the toppings were great, the crust was great, it was seriously delicious. Also, the food is incredibly low price for such high quality. I ended up getting two full high-quality pizzas, a bottle of white wine, and a small bottle of water for

just 19 Euro (around 30\$ Canadian). It was a great experience with great food made by a friendly cook.

Antonio also has very good taste, as he believes that pineapple does not belong on pizza. This statement is coming from a native Italian pizza chef, and with it, he joins the ranks of illustrious figures such as acclaimed chef Gordon Ramsey and the President of Iceland in speaking out against the food crime that is pineapple on pizza. You'll find no crass and crappy pizzas like Hawaiian on Trammiere's Menu, which is classically Italian.

Despite its hole-in-the-wall appearance, Trammiere has some of the best pizza I have ever tasted, and possibly the best pizza in Pompeii. So, if you're out walking, and feel the sudden craving for good pizza, take a jog across Atlantic and go to Pizzeria Trammiere in Pompeii. Believe me, it's not a choice you'll regret.

½ (Theodore Bear's Seal of Approval TM)

I hoped you enjoyed the first entry in this hard-hitting series of investigative journalism. Stay tuned for the next one.

THEODORE BEAR

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## AMD VS. INTEL 2017

AMD recently released their Ryzen line of processors in March. Intel has not really made significant jumps in performance increase compared to AMD's Ryzen. Unfortunately, AMD has been slacking for the past few years, so Intel is currently known as the performance king.

Comparing their newest processors, the AMD 1800X gets a score of 1601 in Cinebench while Intel 6900k i7 gets 1474. The price for a Intel 6900k is twice as much as an AMD 1800x.

The hype was always with Intel but now with Ryzen will that change? AMD needs to shrug off the horrible reputation they have gained these past few years while Intel excelled. I think this will occur eventually, but it will take a while because general consumers don't do in depth research about benchmarks when buying a regular laptop or computer.

Additionally, for some reason, Netflix released 4k streaming to PC, but it requires you to run an Intel Kaby Lake processor. You also need to have Microsoft Edge browser (the new Internet Explorer) which is only compatible with Windows 10.

HANEUSANUS

# TO THE FIRST DAYS OF A BETTER NATION

*A REVIEW OF WALKAWAY BY CORY DOCTOROW*

Walkaway is an ambitious book. Set in the late 21<sup>st</sup> century, it attempts to tackle the question of what exactly comes after capitalism finally runs out of steam, when the overwhelming abundance of stuff and lack of need for labour finally hits its breaking point. It also tackles questions about transhumanism and how that intersects with late stage capitalism.

As if he knew that the story would be immediately described as a communist fantasy, the opening chapter begins with what is described as a "communist party", not a Party as in a political organization, but rather a party where no money is needed and "free as in beer" is no longer metaphorical but instead literal. At this party, we are introduced to three of our main characters for the story, Etcetera, Seth, and Iceweasel. Each has certain foibles, but Iceweasel, being the daughter of a sociopathic "fine old Ontario family" capitalist who does anything for power dominates the narrative. The conflict between her and her family are a facsimile for the conflict between the major two factions in the story: the walkaways and the default.

The default is everything you know about our current society. Various political factions, work in order to make money in order to eat, unless you were born lucky, and then you'll be indoctrinated to think that you deserve to pay people poorly, that you deserve to soak in their wealth for your own power.

The walkaways are people that are fed up with that. 3D printing was just the beginning. Open source chairs, open source buildings, open source mining drones to get you the raw materials you need to set up your own functioning frontier outpost in the middle of the Niagara Escarpment. Philosophically, they simply walked away from society, from their homes and families, and built anew, mainly in self-chosen communities. There are a diverse set of opinions in them, from those who want to create an actual meritocracy, to transhumanist scientists looking to cure death and give it to everyone, not just the rich. That happens to be the main plot point that ignites the main conflict between the default and the walkaways.

Overall, I enjoyed the book, it's a rather optimistic look at the future, despite large amounts of death and destruction in the book. If you are interested in post-scarcity sci-fi such as the Culture series, I'd say to give this one a shot. One thing though: the sex scenes are awful, I would say skip them unless you really enjoy them in the middle of your fiction.

ICE NINE

# A FINAL COMMENT ABOUT THE BLUE JAYS

Okay, so they had a terrible start, they've been injured, they're getting old, they haven't hit, their starting pitching has been spotty with homer and control problems, and their bullpen has had some meltdowns. Let's be real, things don't look like they're going to magically turn around in two weeks.

However, the main thing to understand about sports, love, life, whatever, is that usually, you can't predict the outcome of any given situation. You can hope, or pray, or wish with all your might that a particular scenario plays out a particular way, but many times it's out of your control. This means that sometimes, things just don't go the way you want them to.

Why does this matter? It matters because life is a lot easier to live when you take things as they come, and try not to get upset with the outcomes. So the Jays might only get back to .500, if they're lucky; so what? Just try to enjoy the little victories that we've been privy to thus far: Joe Blagini's first start, Ryan Goins swatting tape measure home runs, Kevin Pillar imitating Superman in center field, the Red Sox being trash (hint: don't throw things at people), etc. And really, being a sports fan isn't just about enjoying your own team, though you might watch them the most: Yankees outfielder Aaron Judge is incredible to watch, as is the best player in the game, Mike Trout.

As much as I hate to repeat a Maple Leaf's fan's mantra, maybe next year. That said, the Maple Leafs are actually probably good now? It's not like the Jays are that far away from contention, really; all most teams need are a couple breaks to have great seasons. It'll be okay. Really.

SCYTHE MARSHALL

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## DAN'S LEARNING TIP #1: TAKE STUDY BREAKS!

This Issue is introducing a new feature: Study Tips from the illustrious Professor Wolczuk!

Many, if not most, students tend to study in very long sessions. However, research into learning indicates that this is not a good strategy. The human brain can only process so much information at a time, and it can only focus intensely for so long.

It is recommended that your study sessions be about 45 – 60 minutes long before taking a break. Study breaks should be 10 – 15 minutes long... set a timer... don't make your breaks longer than your study sessions!

PROFESSOR DAN WOLCZUK

## 'MEMBER RUNESCAPE

If the word Runescape doesn't immediately bring back fond and frustrating memories, then it can be best explained as the poor child's World of Warcraft. If you need to have WoW explained to you, we don't have the time or page space. As a child I spent entire summers watching top down as a low-res avatar mindlessly harpooned stagnate water, fruitlessly searching for swordies but always getting tunas. Sometimes I clicked the mouse to empty my inventory but otherwise I sat there motionless, in deep concentration, all the while Rihanna's Umbrella played on repeat from the tv in the background on MuchMoreMusic.

Needless to say I played Runescape a long time ago and have now moved onto better things such as failing courses and League of Legends, #correlation, until last week when my friend informed me that amazon prime members would get a month of free runescape membership. Having never played as a member, I was too curious to pass up the opportunity. What followed was an intense spiral into the world of Member's Runescape.

Mini-games, shortcuts, better gear, better everything, there was nowhere I couldn't go and nothing I couldn't do (within game and skill cap restrictions of course). It was like being a refugee and then getting citizenship. No longer will the message, "You must be a member to access this feature", violate my monitor. If you ever need to explain affirmative action to someone, force them to play free-to-play runescape after being a member. As exciting as all these new perks were, eventually I found myself in the same spot watching a higher-res, better dressed avatar brainlessly stab water for fish, still tuna, no swordfish, never swordfish.

So why do it? Is Runescape even fun? Well, I don't think so, but neither is League of Legends or going to class or working a job. Maybe at first things are interesting, even enjoyable, but after awhile everything eventually becomes a struggle, an arduous grind. Every game, relationship and job will inevitably become boring or difficult. So you ask, why should I even get out of bed in the morning? Well to play Runescape of course. To paraphrase some guy from Youtube, when something is worth doing, like getting a sweet fishing guild cape, you're willing to suffer.

YABOI

**mathNEWS is the  
best thing that's ever  
happened to this school.**

THE 5 PEOPLE WHO WILL READ THIS

## DAVID VS GOLIATH: THE BATTLE OF CHIT-CHAT

Eye contact. Two warriors enter the ring, only one knows what's about to go down - the other is caught off guard; an unsuspecting victim. From the start, it's clear this is not a fair match.

'Hey, how's it going?'

Oh no, is he talking to me? Shit, he's looking right at me; I'm not prepared for this. I made eye-contact, it's all over now.

"You're taking French, right?"

Fuck - I think so... how did he recognize me? I knew I shouldn't have worn this hoodie for the third day in a row.

"It looks like it's going to be a fun course! I took a couple other French courses las..."

Man, alright you got this, smile and nod and this will take care of itself. He'll burn out soon, right?

Oh no, he's looking at me...

"So, how was your coop?!"

Great, let me recap my term for the 20<sup>th</sup> time - now he probably thinks I'm a huge nerd.

"Wow, that's cool, so you're like super smart, eh? My last term wa..."

What a relief. By my calculations, he should go on like this for a while. Now, to plan my exit...

"Well, I have a thing, I'll see ya later."

Yes! Walk in the opposite direction, walk away, it doesn't matter where, just away from here, who cares if it's arts just keep walking-

"See you in class tomorrow!"

Shit.

One more person I have to smile at on campus.

E-UNIT

## MIGHTIER THAN THE PEN.

Europe is taking its first breath since April 23<sup>rd</sup>, the Union is safe, the Eurozone is secure, and the Schengen agreement is still allowing people to move between countries. Marine Le Pen and her Front National have been defeated and returned to the edges of Paris where they lurked before. The European flavoured Macaron, Emmanuel Macron leapt out ahead, reassuring the rest of Europe and all the immigrants in France that France will continue to be a country invested in the world around it.

With 66% of the popular vote, Macron won the French Presidency for his new party, En Marche. Emmanuel was formerly a member of the Socialist Party, and spent some time as an Independent. Over the past few years, he has worked as both Deputy Secretary-General and Minister of Economy, Industry, and Digital Affairs for the past two administrations under the Presidency of Francois Hollande. His positions tend to be centrist, pro-European, and pro-immigration. These positions line his policies up with those of Angela Merkel, the German Chancellor, ensuring the two main pillars of the European Union will stand strong and stand together- at least until Merkel faces her own domestic election in September of this year.

What will this mean for Canada and our relationship with France? Well, not much. But this is probably a good thing. Stability in international relations will allow Canada to strengthen existing positions and reaffirm our positions and commitments regarding bilateral and multilateral agreements with France. More tangibly, a France re-committed to a united Europe, open to immigrants, and interested in economic reform will maintain a balance of power in Europe that other countries can cling to as a constant in an political sphere where an orange toddler, a narcissistic KGB agent, and a confessed murderer in power aren't the start of a joke.

GBAD

## PLUS PUISSANTE QUE LE PEN.

Europe se prend son premier souffle depuis la 23ieme April, l'union est sûr, l'Euro zone est sécurisé, et l'accord Schengen permet encore les gens voyager entre les pays. Marine le Pen et sa Front Nationale ont été vaincu et retourne aux bords de Paris ou ils se cachaient avant. Le macaron a saveur Européen, Emmanuel Macron heurte, rassurant l'Europe entier et tous les immigrant en France que la France se continuera à être un pays investi dans le monde.

Avec 66% du vote populaire, Macron à gagner la présidence française pour son nouveau parti, En Marche. Emmanuel été un membre du Parti Socialiste, et a passé du temps comme Independent. Durant les années passe, il a travaillé comme Secrétaire général adjoint de la présidence de la République

et Ministre de l'Économie, de l'Industrie et du Numérique sous le Président François Hollande. Ces positions politique tend à être centriste, pro-européen, et pro-immigration. Ces positions s'alignent avec les positions d'Angela Merkel, la chancelier allemand, c'assure que les deux piliers de l'union européen se reste ferme et reste debout- au moins jusqu'à ce que Merkel fasse face à son élection le septembre prochain.

Qu'est-ce que tous cela signifie pout le Canada et notre relation avec le France? En fin, pas trop. Mais, c'est peut-être pour le bien. Stabilité en les relations internationale permettra Canada à renforcer ses positions présentes et nos engagements concernant les accords bilatéraux et multilatéral avec le France. Plus Tangiblement, une France réintégré avec une Europe unis, ouverts à l'immigrants, et intéresser avec le reforme économique va maintenir un équilibre du pouvoir en Europe. Un équilibre dont les autres pays puisse s'accrocher comme constant dans un monde ou un enfant orange, un agent KGB narcissique, et un meurtrier confesse ayant pouvoir n'est PAS une blague.

GMAL

## SPRING TERM CANCELLED

As you may have heard in whispers around campus, the University of Waterloo's Spring 2017 term has been cancelled. This term will instead be a repetition of the Fall 2016 term. The differences will be seen primarily in the weather. You may have noticed that the weather has been a bit cooler and rainier these past two weeks than one would typically expect in May. This is nothing to be alarmed about, it is simply standard September weather. Instead of getting warmer, temperatures will continue to decrease and you should expect snow in July and August, in keeping consistent with the change from Spring term to Fall term. The official reason for the change is "Prevention of excessive enjoyment of school". Our reliable source, who has chosen to remain anonymous for personal safety reasons has explained this decision as follows:

"Having a spring term just doesn't make sense anymore. It's been a problem for a few years now. We've been finding that the combination of warmer weather and a decrease in the student population on campus has made the spring term more peaceful, and in some cases even pleasurable for students. That joy is far too much of a distraction from studying. As a result, we have decided to cancel all future spring terms until further notice, and replace them with fall terms. We are hoping that the colder weather will bring down spirits and refresh the students' focus on their studies. After all, if students are enjoying themselves, then we know we're not doing our job properly."

Our source has asked not to be contacted for further questioning. Time will tell if this decision will stick. In the meantime, please enjoy the cold and the rain.

THEUNDECIDED

# JSFUCK

Javascript is weird.[citation needed]

No, seriously. It's even weirder than you think. We've all heard the horror stories, from nonsensical implicit conversions to Javascript's own creator denouncing the language and actively trying to kill it. If you thought you'd seen the worst that Javascript has to offer...well get ready. You may have heard of brainfuck, the esoteric programming language famous for being extremely minimalist and nearly impossible to work in. Imagine, if you will, that brainfuck had fewer commands, took even longer to write anything, and was valid Javascript that executed natively on any browser and even node.js.

...yeah. The world has a github user named aemkei to thank for discovering this monstrosity. This method of programming, aptly named JSFuck, is demoed on jsfuck.com. As it turns out, only six characters are needed to write any valid Javascript code: ()!+. Absolutely anything can be built off of these characters, for example ! is false, +!+ is 1, [][] is undefined, and so on. Considering the language was not explicitly built to support this behaviour,[citation needed] sometimes code can get slightly wordy, which unfortunately means I cannot demo any code in this article. The function keyword, something pretty basic I should think, takes 400 characters. The 'hello world' program takes 24000 characters, which wolfram alpha tells me would take 8 pages. Adding a semicolon on the end bumps it up to 33000 characters, resulting in 11 pages of uninterrupted ()!+. I always knew good style wasn't worth it.

In terms of actually using JSFuck in production code, that is an option. Maybe not a viable one, but an option nonetheless. aemkei has provided a few simple scripts that will process your own Javascript files into regulation-compliant JSFuck. For some context, minified jquery takes up 4.2 million characters. As for the JSFucked un-minified jquery, I don't really know. node ran out of memory and crashed, which means it clocks in somewhere over 268 million characters. According to wolfram alpha, that corresponds to, at minimum, 88000 pages weighing 400 kilos and made of 11 trees. So yeah, if you feel like making your scripts take a few hundred megabytes each, I suggest you look into JSFuck. You will not regret it.

YOU DON'T DESERVE TO KNOW

# mathNEWS PRESENTS: MUSIC YOU'VE DEFINITELY NEVER HEARD OF

**HIGH VOLTAGE MAGAZINE - BE SURPRISED AT HOW LITTLE YOU HAVE**

Followers of this band will be overjoyed to know that this fourth album by HVM is a return to their roots in post-minimal skee-swing, with no trace of the mumblecore anthems that caused such a divided opinion on their sophomore album. The twee affectations and groundbreaking bellwork that brought them to the forefront of their genre in 2008 have been absolutely perfected, and the vocal work of frontwoman Ivanka Glibbins might be the most minimal yet. If you're a fan of Rino Di Silvestro's films or the earlier singles by Mount Renouard, this album is an absolute must-listen.

**ANN CATHRIN ERIKSEN - A BORING PERSON**

I went into this LP knowing nothing beyond that it was a series of diss tracks against the against the Norwegian Olympic handballer of the same name, and to be honest if I hadn't already known I may never have picked that up. Sure, the lyrics get profusely aggressive in songs like There Must Be Contests, but to be honest my usual attentiveness to a song's narrative was completely subsumed by the epic, throbbing bass lines and 404 beats. Each of the songs on this LP will make you feel like you've taken drugs, and then teach you why you shouldn't. I can't recommend it enough to anyone trying to get into the glitch muzak scene, especially if you wish Ross From Friends had a bit more Eastern European edge.

**VERSATO VERSATO - ON A BUG**

Future meets children's lullabies in this unbelievably chill double album by Iranian born Versato Versato. The whispery autotuned vocals woven throughout the album recall the best of recent Bon Iver (if he was completely unintelligible), with soundscapes as textured as Tycho's classic album Dive. I wish I could say more about this album, but I'm listening to it while writing and I think it's time for a nap.

OBJECTIVE-TASTE

**PSA: Starbucks still has half-price Frappuccinos from 3-6 pm until May 14<sup>th</sup>.**

A SURPRISINGLY BASIC mathNEWS EDITOR

## elseWHEN

This article was originally published in v88i2 on Friday, January 25, 2002.

mathNEWS is Younger than ...

- Star Trek
- Pong
- IBM
- The Jackson Five
- Ted Danson
- 1969
- The Flintstones
- Letraset
- Brian "Latrell" Fox
- Your mom
- The math faculty
- Dinosaurs

... but Older than ...

- Star Wars
- Video Game Consoles
- Microsoft
- Michael Jackson's face
- Cheers
- 1975
- The Simpsons
- PageMaker
- Disco Stu Pollock
- Your sister
- Imprint
- Jurassic Park

SOMEONE WHO ONCE WROTE FOR  
mathNEWS

## KUROKO NO BASKET

Kon' nichiya, minasan! Villager here, with an anime review.

With an average season rating of 8.53 on (MAL) this week we'll be looking at Kuroko no Basket. Spanning 3 seasons and 75 episodes, this Shounen sports anime is also the highest rated basketball anime (MAL).

Teiko middle school's basketball team was known for boasting a ridiculous streak of 100 consecutive championship wins. Kuroko no basket follows the 5 prodigies from the middle school's "Generation of Miracles" and their "Phantom sixth man" Kuroko Tetsuya. After graduation from middle school the Miracles went to separate high schools, one of which everyone knew was guaranteed to stand at the top.

The story follows Kuroko as he joins the newly started Seiren high school team, with hopes of proving to his

former teammates that there's much more to basketball than individual skill and playing by yourself.

The anime follows classic Shounen values of overcoming a seemingly unbeatable opponent, leaving you waiting impatiently for the main characters to inevitably come out on top. Watch as each new opponent has one ability they spam endlessly almost winning the game for their team, until they don't! The anime, with a 5 completely broken players who somehow never manage to win and an incredible amount of 1 point victories will have you literally ripping out your hair.

Watch as this anime makes introversion cool for once as the main character uses his complete lack of presence to beat players who are actually good at the game! Watch as the players have time to have full conversations with only 5 seconds remaining in the half.! Watch as every single every team is surprised by the main characters' abilities even though literally everyone has seen it before! Watch as no one questions high school kids dunking, shooting full court 3's, and glowing the colour of their hair!

As a whole, with hype soundtrack, great comedic timing and amazing animation, you'll find yourself so immersed in the games it'll leave you wondering how a basketball anime could be so exciting.

Villager rating: 8.6

VILLAGER OUT!

## FUCK THIS HOUSE

TO THE TUNE OF YOU'LL BE BACK FROM  
HAMILTON

You say

The price of this house is a price that I'm too poor to pay  
I try

to find rooms that are big but won't cause doom to our fund  
supply

Why so much?

I thought that house hunting was easy but I was quite wrong  
God I'm so out of touch

Here's a few less worse houses it seems, I'll tour them...

Fuck this house, no A/C?

That house never did reply to me

Coin laundry, ne'er again

This room's smaller than a mouse's brain

Prices rise, markets fall

I have rented houses through it all

But lately all these homes

I could set them all on fire and that wouldn't ruin the house at  
all!

Da da da dat da dat da da da da ya da. Da da dat dat da ya da!

Da da da dat da dat da da da da ya da. Da da dat dat da...

You say the bathroom's moldy and it won't get solved  
 The last person was slightly murdered and mauled...  
 And look, the roof has holes  
 What's this? A bloody pole?  
 The walls have creepy writing  
 Oh Jesus, is this haunted?  
 It's creepy and eerie and now I'm scared I'll never leave...

Fuck this house, I'm so out  
 I'll just buy a house and screw the cost  
 No landlords, it's all mine  
 That last house was clearly the last sign!  
 What's this bill? What's this loan?  
 There's so much to pay when it's my own  
 Should just rent, not be buyer  
 But I still think all the houses would be better set on fire

Da da da dat da dat da da da da ya da. Da da dat dat da ya da!  
 Da da da dat da dat da da da da ya da. Da da dat

SHAY BLAIR

# FACULTY LOGOS AS REDRAWN AND REIMAGINED BY A NON-ARTISTIC UW STUDENT

As you can see by this issue's title page, MathNEWS was desperate to find anyone willing to draw a title page, no matter how bad they are pleased to get me to lend my artistic talent to draw some cover art! I felt like one page was simply not enough to showcase my amazing pen and ink skills, so I chose to draw all the faculties because I felt that the current state of logos was not artistic enough. As well, I chose to convert the faculty slogans to emoji as well as what they look like in Wingdings.

### ENGINEERING



Here, we have the majestic EngSOC logo drawn in an artisanal fashion. After hours of hard work, I was able to nail down a free-flowing, fun and welcoming version of the original logo.

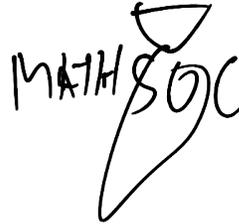
### AHS

Applied Health Sciences didn't have much of a logo online that I could find, nor any logo for a student society.



Luckily, someone made a Sesame Street themed AHS logo in 2009 for an April fools prank, so I improved that with my high levels of artistic ability.

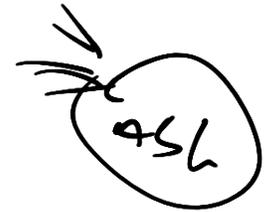
### MATH



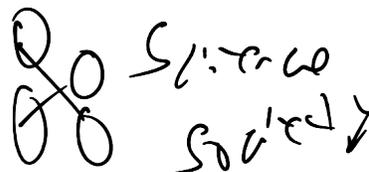
Let's be honest, the current MathSoc logo isn't very fun or enticing. With a bit of work with my pen and a piece of paper, I improved the look of the logo, so I hope that this logo gets used for the high school students trying to decide which university to sell their souls to.

### ARTS

Let's face it - the current Arts Student Union logo isn't that great. I made the logo a lot simpler, making it easily recognizable and simplifying some of its complexities. Hopefully they notice this article and choose to use my improved logo over the current one.



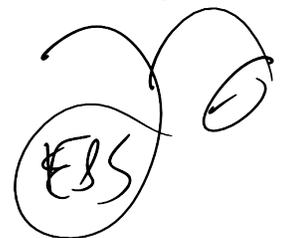
### SCIENCE



I was pretty pleased with this one, but there is no such thing as art that doesn't need improvement.

### ENVIRONMENT

I saved the best for last! This is one of my favourite logos. But still, having it redesigned by an environment student is possibly the best thing that could have ever happened. Hopefully I can convince some of the ESS staff to upgrade it to my version.



VICE MITT

**Whose idea was it to make 6 faculties at UW?**

A mathNEWS EDITOR WHO HATES INSERTING PICTURES INTO LAYOUT

## profQUOTES

SEND MOR QUOTEZ NXT TYM PLZ & THX XOXO

ENGL 306A: CLIVE FORRESTER

- “ You're going to have to memorize this shit, so get used to it.
- “ Animals don't ruminate about a government controlled by unicorns.

MATH 225: SHANE BAUMAN

“ the

CLAS 201: RONALD KROEKER

- “ Has everyone had their lunch? Okay, then I can erase [these equations] from the board.

CS 480: CARMEN BRUNI

- “ Lots of places hire mathematicians as spies. ...It's good to know math, I'm telling you.
- “ I found out you can't place a Google maps marker on Bletchley Park.

## REVIEWS NOBODY WANTS 1: SAKURA ISLAND MISO SOUP

mathNEWS has seen a heavy drought of food reviews in the past n years, which is a problem that I hope to rectify.

Thus, I begin with the miso soup at Sakura Island. Sakura Island advertises itself as a source of “traditional food treats of Japan” and as the “only Japanese restaurant in Waterloo where you can taste the true aromatic Japanese dishes”. I don't have a census of restaurants on hand, so this assertion will have to stand. More research is required.

THE SOUP:

I ordered the Sakura Special Sashimi plate from the waiter, and was greeted by my bowl of miso soup about 4 minutes later. It was served without spoon (as is traditional), and was steaming pleasantly. The bowl was nicely warm in my hands, and was clean, a key criteria for soup bowls in my opinion.

The miso itself clumped fairly quickly, so if you aren't drinking the soup quickly you'll want to stir it pretty often. The taste itself was bland to start, but quickly grew inside of my mouth. The miso retains some texture, and provided a good counterpoint to the taste. The soup was a bit more salty than most, but pleasantly so. I found the aftertaste the most

pleasant part of the whole experience, it left me satisfied and ready for the meal proper.

I paired the soup with the house sake, which turned out to be a bad idea. I recommend literally any other drink they feature, including water.

Overall, I give the soup 4 soybeans out of 5. It was pleasant, but the bland entry keeps it from a full 5. The sashimi was also decent.

YAHOO'S BIN LOCK

## gamesNEWS

Hello Everyone,

New Games' director here, I'd like to say hi to everyone who's gonna be here this spring, and to invite you all to our regular Board Games Night! It will be held every Thursday this term (and every other term) starting 6:30 in CnD (MC 3<sup>rd</sup> floor), and here are N reasons why you should come:

There will be free food! (Snacks and drinks!)

Everyone gets excited playing games, you'll make friends with everyone in no time!

If you don't want to come alone to a new event full of unknown people, you can bring your friends along! (Even in the case where you're by yourself, you'll definitely find people to play with on the spot.)

The MathSoc shelves need some rest every once in a while. By taking games off the shelf, you're helping! (Seriously, have you seen our collection of board games? It's HUGE <3, and it's all for you to enjoy!)

You get to learn new games!

You get to find people who enjoy the games you enjoy!

Everyone is welcome! If you have any questions regarding Games night, or if you need help finding a game that suits your style and/or explaining the rules of a game you never played before, I will be on site to help. Meet you on Thursday!

YOUR NEW GAMES DIRECTOR  
HYPED-UP



<--ART, TRUST

## gridCOMMENT

It's a new term, hurrah. For those of you returning from a 4-month co-op term, I am sorry to say that Convoluted isn't here with your termly dose of skillfully crafted crosswords. I am here with rubbish instead.

Head forth and solve the **gridWORD**: as usual, the most correct submission (either physically to our office in MC 3030 or via email to [mathnews@gmail.com](mailto:mathnews@gmail.com)) is eligible for a prize prepared by the editors. In the event of a tie for most correct, the tiebreaker is my favorite answer to this issue's **gridQUESTION**, "What is the perfect drink to help cool down in warm weather?"

REGARDS,  
ZETHAR

$$P = NP$$

$$P - NP = 0$$

$$P(1 - N) = 0$$

$$P = 0 \text{ or } N = 1$$

WE CRACKED AN EGG AND  
THIS EQUATION CAME OUT

### ACROSS

1. Philistine
5. Grub
10. Gluttons
14. A usually chaotic evil large giant usually found in temperate hills (in 3.5)
15. In great haste
16. Creative spark
17. Sinistral
18. Weaving
20. Screws
22. A nomic
23. Cloth measurements
24. Early
26. Summarize
30. Quicksilver
31. "\_\_\_ any drop to drink": Coleridge
32. Spot
36. Maven
37. **mathNEWS** is always looking for more of this
41. Lift
42. Ice melter
44. Exclamation of surprise
45. Transistor doubling law namesake
47. Nostalgia
51. Fronts
54. Flew
55. Defeat
56. Assailed
60. Stone coffins
63. Legal prefix
64. Border lake
65. Eg. phylum

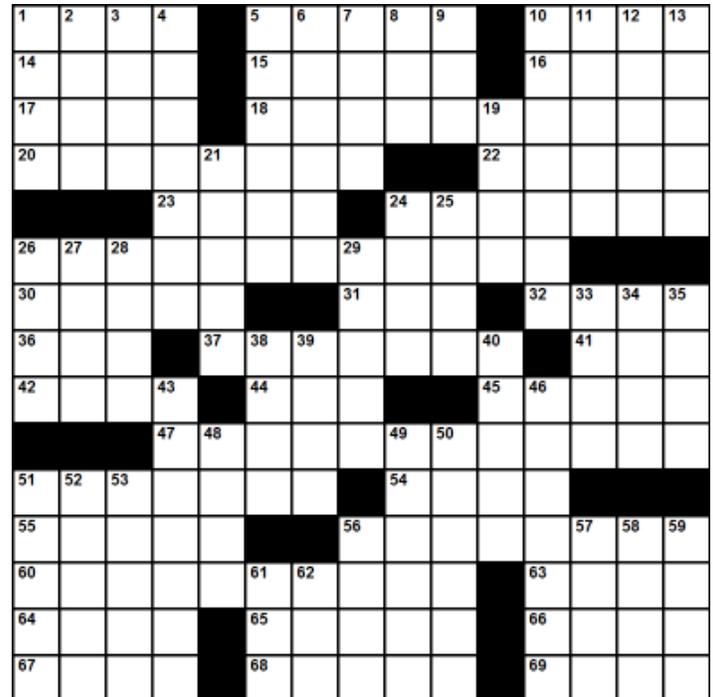
66. Computer operator
67. Greek H's
68. Fluttering
69. Articulates

### DOWN

1. Thick highlight
2. S-curve
3. "Carmina Burana" composer
4. Withdraw
5. Stone follower?
6. Surrounded by
7. Worn clothes
8. Namely (abbr.)
9. Carrier to Tokyo
10. Tot's toes
11. This is no laughing matter for learners
12. Variety
13. Lengthy narratives
19. WTO forerunner
21. Top dog
24. French party
25. Rank below marquis
26. Some corporal punishment
27. Between Bricker and Central
28. Fan
29. Set operation
33. Screen symbol
34. Metal necklace
35. Sword event
38. City on the Tiber
39. Not that
40. Run the show
43. Reveries
46. Complex Greek king

48. Edible root
49. A line of equal measure on a map
50. This term
51. Flare
52. In pieces
53. CeO2
56. Roll to the runway

57. Discovery grp.
58. Unlikely trick taker
59. Rows
61. Parents and teachers org.
62. A hedge



Drop your **gridWORD** solutions off at MC 3030. And yes, we do award points for creativity.

# lookAHEAD

SUN MAY 14

Mother's Day

MON MAY 15

Chocolate Chip Day

TUE MAY 16

WatSFiC Movie Night  
("Moon" and "Ghost in  
the Shell")

WED MAY 17

THU MAY 18

UW Math 50<sup>th</sup> anniversary  
reception

FRI MAY 19

Drop, no penalty period  
ends  
National Pizza Party Day

SAT MAY 20

SUN MAY 21

Math alumni reception

MON MAY 22

mathNEWS 134.2  
Production Night  
Victoria Day (No classes,  
yay!)

TUE MAY 23

Monday schedule used

WED MAY 24

THU MAY 25

Towel Day

FRI MAY 26

mathNEWS 134.2 is  
Published

SAT MAY 27

You @ Waterloo Day

## ARTICLE OF THE ISSUE

As is tradition, we must choose some articles to float to the top and be awarded Article of the Issue. This issue, our Informative Article of the Issue is awarded to How to **mathNEWS** by TheUndecided because it was well written, informative, and I probably should have written one like it but now I don't have to! Thanks, TheUndecided, for making my job easier.

An honorable mention in this category goes to Ice Nine for To The First Days Of A Better Nation, because I didn't know that a new Cory Doctorow book had come out and your review makes me want to read it.

The humorous article of the issue goes to Hardly Eric for his article Bees 101, mostly because I was having trouble telling the difference between bees and snakes and this really helped. Thanks, Hardly Eric! I wish you luck on your Hot Pocket science!

As always, our winning authors are welcome to come down to our office (MC 3030) for a super secret prize. If you don't catch one of our editors in the office, email us at [mathnews@gmail.com](mailto:mathnews@gmail.com) to orchestrate the handover, but forewarned if you do that I'm going to pretend we're spies having a rendezvous to hand over a briefcase.

By the way, if you were on the fence with regards to writing for **mathNEWS**, the super secret prize for writing the best article of the issue is a \$25 gift card to Conestoga Mall, so keep that in mind when you're frantically calculating the utility of showing up to production night. Also, even if you don't win article of the issue, you might find out that the real prize is the friends you made along the way!

Friendship. It's the best kind of ship you can have. Except maybe a pirate ship.

TOBEDETERMINED

What if ghosts came out of shells every time you cracked an egg? You wouldn't even know because ghosts are invisible. Which came first? The ghost egg or the space chicken?

THE PHILOSOPHICAL VOICE  
IN YOUR HEAD THAT KEEPS  
YOU UP EVERY NIGHT