



UNIVERSITY  
OF MANITOBA

# Μαθη Γραδυατε

The title that you see above is Math Graduate in Greek. This document keeps a record of the math graduates of the University of Manitoba.

Please send an email to Irene ([irene.golembioski@umanitoba.ca](mailto:irene.golembioski@umanitoba.ca)) to update your academic and/or personal milestones. Your contribution can be just a few lines or up to one page long. Pictures are welcome. In your email, please include your full name, U of M degree and year of graduation.

# Class of 2014

## PhD

Oleksandr Maizlish

Varvara Shepelska

Xiaofeng Yang

Xian Gui Zhao

## MSc

Reza Ghamarshoushtari

Fereshteh Nazari

## BSc

Kaitlin Alexander, Mathematics Honours

Che-Lun Chang, Applied Math / Economics

Colin Gaudreau, Mathematics / Physics & Astronomy Joint Honours

Joshua Hernandez, Mathematics Honours

Pei Yi Lin, Applied Math / Statistics

Yijian Liu, Applied Math / Economics

Sanwei Lu, Applied Math / Economics

Timian Kalajdzievski, Mathematics / Physics & Astronomy Joint Honours

Myroslave Polevychok, Mathematics / Economics Joint Honours

Angelee Schmidt, Applied Math / Economics

Yuzhi Wang, Applied Math / Economics

Richard Wiebe, Mathematics Honours

Xuan Zhang, Applied Math / Economics

# Class of 2015

## PhD

Varvara Shepelska

Xian Gui Zhao

## MSc

Weixi Gu

Ali Javame

Stefan Juncu

Lindsay Simpson

## BSc

Xingyu Ai, Applied Mathematics

Erica Asawo, Actuarial Mathematics

Brendan Bowman-Komorofsky, Mathematics Honours

Colin Desmarais, Pure Mathematics Honours

Shannon Huynh, Mathematics

Timothy Hoffman, Applied & Computational Math Honours

Jane MacDonald, Applied Mathematics / Computational Science Option

Saul S. Magnusson, Applied Mathematics / Economics Option

Bo Yun Min, Applied Mathematics / Statistics Option

Patrick M. Naylor, Pure Mathematics Honours

Sakib Rahman, Mathematics / Physics & Astronomy Honours

William Robinson, Mathematics / Physics & Astronomy Honours

Ruo Yang, Applied Mathematics / Economics Option

# **Class of 2016**

## **PhD**

Marina Kotovshchikova

Safoura Zaffar Jafar Zadeh

## **MSc**

Mykhailo Akhtariiev

Mahnaz Alavinejad

William Grafton

Vladimir Nosov

Lindsay Wessel

Yang Zhang

## **BSc**

Weiran Chen, Statistics / Mathematics Honours

Gidon J. Bookatz, Mathematics / Physics & Astronomy Honours

Shaun W. McDonald, Statistics / Mathematics Honours

Suraj R. Srinivasan, Mathematics / Physics & Astronomy Honours

# Alumni News

## Liji Huang (MSc 2013)

I graduated from University of Manitoba (UM) with an M.Sc. in Mathematics in 2013.

I wrote and passed three Society of Actuaries (SOA) preliminary exams in 2013 and started working at The Great-West Life Assurance Company shortly after as an actuarial assistant, in the Department of Enterprise Risk Management(ERM). You can read more about what ERM does in general on wikipedia [http://en.wikipedia.org/wiki/Enterprise\\_risk\\_management](http://en.wikipedia.org/wiki/Enterprise_risk_management).

I enjoyed my time at UM very much. The faculty of science, especially the Department of Mathematics treated me very well. I started my M.Sc. in 2010 under Professor Yang Zhang's supervision. During my years at UM, I received a lot of help and advice from different professors, from small things like a specific mathematics problem to big issues such as career decisions. I really appreciate everything they have done for me, especially the following Professors, Zhang, Williams, Lui, Zorboska, Guo, Craigen, Gunderson, Prymak, and so on.

Actuarial science is very much mathematics and statistics heavy, at least in the earlier stage of the career path, where you have to write preliminary exams. Based on personal experience, having a strong mathematics background definitely helps a great deal. I am not saying that mathematics undergraduate and graduate students should all do a career change, it is your life, do what you enjoy. But if you are curious about the actuary career path, just write a few SOA preliminary exams and see if you like it (anyone can write them, there is no prerequisite).

Thanks,  
Liji



## Alexander Maizlish (PhD 2014)

### Mathematics Graduate School at the University of Manitoba: The Once-in-a-Lifetime Opportunity I Am Glad I Took

For most of us, the graduate school experience is a journey filled with excitement from resolving your first research problem, passion from teaching your first lecture, and dedication to one of the most challenging tasks in your life. The years I spent at the University of Manitoba pursuing my master's and doctoral degrees were not an exception. I was lucky to be taught by some of the top researchers in their fields, participate in innovative collaborative projects and present my first results as a scientist at the regional and international conferences.



I joined the Department of Mathematics as a master's student after completion of my undergraduate degree at the National Taras Shevchenko University of Kyiv where I specialized in Analysis. My choice of the graduate school was mainly based on the opportunity to work with Prof. Kirill Kopotun, one of the leading researchers in Approximation Theory. During the seven years of my graduate studies, I got a chance to solve interesting and challenging problems in pure and applied mathematics, collaborate with other departments and research institutions in Winnipeg, and meet world-renowned scientists invited to our departmental seminars. This excellent academic

environment has significantly improved my research and leadership skills. I credit becoming a Vanier Scholar during my doctoral studies to the training and supervision I received in the department.

Throughout my studies at the University of Manitoba, each and every member of the department was extremely professional and welcoming. Outside normal graduate student life, I enjoyed coaching high school and undergraduate students for mathematical competitions. I

have also had an opportunity to serve on the Departmental Council which has given me a much better perspective on how the department, and an academic institution in general, functions.

Overall, I had an enriching and rewarding experience as a graduate student. Most importantly, the university gave me the knowledge of how to apply my mathematical expertise to real-world problems. According to the recent data published by the Institute for Quantum Computing (University of Waterloo), the number of publications per capita in Canada is one of the highest in the world. However, this exceptional research infrastructure does not alone contribute to the country's economic prosperity. It is the collaboration among the academic institutions and their active involvement in the industrial progress that account for the economic growth. The Department of Mathematics at the University of Manitoba provides, in that sense, a unique atmosphere where numerous multi-disciplinary ideas are being developed at a high scientific level. This aspect of my graduate training allowed me to make an impact in the workforce. Upon graduation I became employed at a software company as an industrial postdoctoral fellow where I am able to extensively use my mathematical knowledge in various engineering projects.

There are definitely very good reasons for pursuing your graduate career in mathematics at the University of Manitoba. Looking back at the years spent there, I am positive that this is a place where you can grow professionally and personally, set the start and create a solid foundation for your career.

## Kaitlin Alexander (BSc 2014)



I have known since I was 16 that I wanted to study climate change, specifically by working with mathematical models of the climate system. Initially I thought that an undergraduate program such as physical geography or environmental science would be my best option. However, I soon realized that it made more sense to first get a firm grounding in the mathematical techniques, and later learn about climatic processes on my own - certainly easier than the other way around! With this in mind, I enrolled in the B.Sc. Honours in Mathematics program. In retrospect, this was definitely the right choice to make. Studying math at the University of Manitoba thoroughly prepared me for a career in climate modelling, which is built upon differential equations, vector calculus, numerical methods,

and scientific programming. During my last term, I completed the Project Course in Mathematics, where I derived and implemented a simple model of ocean circulation under the supervision of Dr. Shaun Lui. This project was a major challenge, but was probably the most useful and rewarding course in my whole degree. I now feel like I understand the equations governing ocean circulation inside out, which will definitely be useful in the future!

In August 2014, I will be moving to Sydney, Australia to begin a Ph.D. in Climate Science at the University of New South Wales. My plan is to study the interactions between Antarctic ice shelves and Southern Ocean circulation. This research will use existing ocean models such as MOM (Modular Ocean Model) or NEMO (Nucleus for European Modelling of the Ocean), and may also include further model development. I am really excited for this next step towards a research career, and can't wait to see what the next few years will bring.

## **Myroslav Polevychok (BSc 2014)**

I am glad to have been exposed to a wide variety of knowledge in my program - in no small part due to the Mathematics Department, which offered half of the courses, which I have taken. I plan to graduate this spring and will do so with pride for the Faculty of Science, particularly the talented professors whom I had the privilege of learning from.

Something that made the last several years at the University much more than just earning an education - aside from fulfilling my interest in the subjects that I study - is finding, occupying a modest office space with, and developing strong and mutually supportive relationships with several other like-minded (literally) math students. Interaction between the patrons of Machray Hall 411 goes far beyond helping each other with assignments and with filling out graduate school applications. Indeed, a dozen excelling senior mathematics students in one office is a spectacular concentration of insightfulness, camaraderie, and talent for exciting conversation and frightfully awkward humour.

Many of my best memories of this university will be those made with the help of these people.

Myroslav Polevychok

Economics Masters Program student at Queen's University as of Fall 2014

## **Jane MacDonald (BSc 2015)**

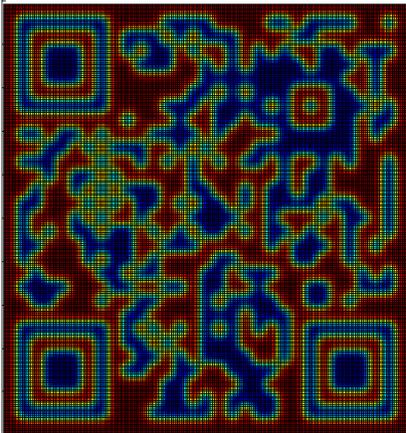
I chose to start a degree in mathematics for the simple reason I couldn't get enough of the math courses I was taking at the University of Manitoba. This decision has proven time and time again to be one of the best choices I have ever made. I had the opportunity to learn from dynamic and inspirational professors, complete a project course in the field of mathematical epidemiology with Dr. Julien Arino, involve myself with the enthusiastic outreach committee, and make long lasting friendships with likeminded comrades.

Since graduating in February 2015 I have started working with Dr. Stephanie Portet in mathematical biology. The work is wonderfully challenging and I must say I leave every weekly meeting with her saying to myself "I absolutely love the work I do!" I have most certainly enjoyed the years I spent as an undergraduate pursuing my B.Sc. Major Applied Mathematics/Computer Science Option at the University of Manitoba. I also look very forward to starting graduate studies in mathematics at the University of Ottawa this September 2015.



## Saul Magnusson (BSc 2015)

Back in the 18<sup>th</sup> century the best physicists and the best mathematicians were the same people. The field of physics hadn't quite diverged from math unto its own. And the suitability of mathematics for abstraction afforded it an incredible ability to uncover the laws governing the universe and record them in mathematical notation. Again, in the 20<sup>th</sup> century, with the birth of computer science, mathematicians were again at the helm. With advanced tools and sharp minds, skilled mathematicians allowed computer science to quickly flourish and become a world changer. I've always been attracted to both the simplicity and power of mathematics, and it's evident that no other science affords its practitioners an ability to understand the world in so complete a way. I've enjoyed my undergraduate degree at the University of Manitoba. From the all-night study sessions, to the elation of finally understanding some challenging concept.



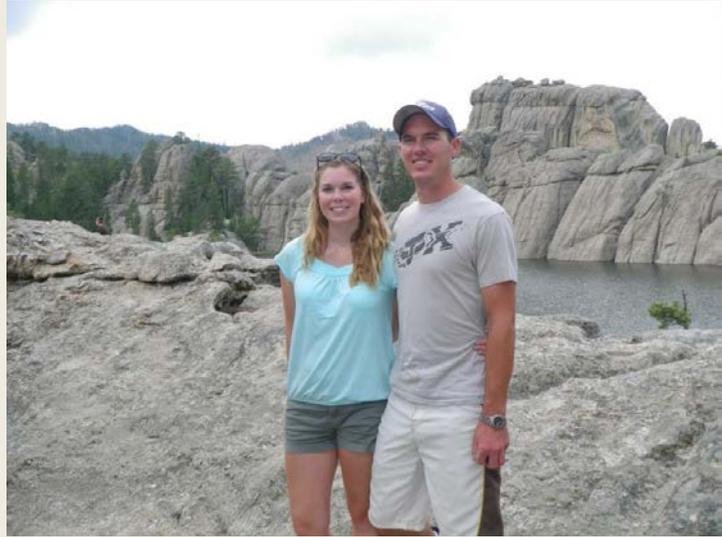
In my final year, I've gotten the chance to study image processing algorithms with Dr. Shaun Lui. From Medical scans to Digital cameras, many of the image processing schemes draw from results in Partial Differential Equations. Thus many results, some more than 100 years old could be instantly utilized to help the growth of new technology.

Left: a QR code with blurring governed by the Heat Equation.

## Lindsay Malcolm (Wessel) (MSc 2016)

[lindsaywessel@gmail.com](mailto:lindsaywessel@gmail.com)

It was during my undergraduate degree at the University of Manitoba when I became interested in mathematical epidemiology through my work with Julien Arino as well as teaching mathematics through my experience working as a lab TA. Upon completion of my B.Sc. in 2008, I had to decide whether to pursue teaching or continue on to graduate school. At that point, I decided to pursue a Bachelor of Education degree through the University of Winnipeg (completed



2010), but the thought of applying to grad school had always been in the back of my mind, and in the fall of 2013 I decided to return to the University of Manitoba to pursue a M.Sc. in mathematics.

Returning to school part-time after 3 years of working full-time was not an easy decision to make, but I'm glad I did it. I continued to work part-time with Sylvan Learning Centre during my three years of grad school (two part-time years and one full-time year) and I was also provided opportunities to teach courses in the math department at U of M as well as be a part of math initiatives such as LevelUp, restructuring of Math 1010 and Math Academy for prospective nursing students.

In my final year of grad school, I had the added blessing (or stress) of planning a wedding social and the wedding itself. Everything worked out great and I am grateful to the members of the math department for all of their support.

Now that grad school and the wedding festivities have wrapped up, life has calmed down. I am grateful for the positive experiences I have had with the math department at the U of M, during both of my degrees. Currently, I am continuing with my position as Director of Education at Sylvan Learning Centre full-time and will also be teaching a section of Math Skills in both the fall and winter terms through Continuing Education.

## Shaun McDonald (BSc 2016)

It has been five years since I graduated from Transcona Collegiate Institute. Half a decade since the last time I wore a cap and gown, waited for my name to be called, and graduated with my peers. Certainly it feels like a far shorter time than that, but so much has happened in my life since then. In just over a week, I'll put on a cap and gown again and receive my Honour's B.Sc. in Mathematics and Statistics. Four months after that, I'll be on my way to Cambridge, having recently been accepted into Part III of their Mathematical Tripos. If everything goes according to plan, one year from now I'll be wearing the cap and gown for a third time, receiving my Master of Advanced Study.

My journey through math education was not always a straightforward one. Like many young students, I didn't have any particular long-term goals in mind when I came to the U of M – I registered in University 1, picked a scattering of courses that looked interesting to me, and waited to see what stuck. Math had always been one of my favourite subjects, but until then my experience was limited to high school pre-cal. The linear algebra and calculus courses I took in U1 hinted at a larger mathematical world – a world of proofs, abstractions, and beauty – and I wanted more.

In my second year, I entered Actuarial Science. It's an excellent program, but I admit that my motivations were not entirely "correct". At the time, I was operating under the mistaken belief that becoming an actuary was one of very few career options – if not the only option – for the mathematically inclined. But I was mainly interested in the theoretical side of math: I wanted to keep learning forever, to explore increasingly abstract and deep results. When I heard an instructor say, "eventually, you will learn all of actuarial math", I knew that path wouldn't be right for me after all.

That summer, I took up an Undergraduate Research Award, working under Dr. Theo Koulis in the Department of Statistics and Dr. CJ Mundy in the Centre for Earth Observation Science. We used a branch of statistics called "functional data analysis" to describe the relationship between biomass and light transmission in Arctic ice. That summer was my first exposure to the incredible worlds of academia and statistical research. It also opened me up to the more "applied" side of math. Everything I'd experienced through the past year culminated in me registering in the Math/Stats Joint Honours program – the best of both worlds.

I officially started the program in Fall 2013. Within the first week, I was learning about field axioms and countability from Drs. Günter Krause and Nina Zorboska, respectively. Finally, this was my kind of math! The coming years would offer (no pun intended) uncountable great experiences: being introduced to abstract algebra by Dr. G.I. Moghaddam, writing a paper on pathological functions for Dr. Adam Clay's Advanced Calculus course (in which I was the *only* student), working on MATLAB until the wee hours of the morning for Dr. Shaun Lui's Numerical

Analysis assignments. Of course, I had the time of my life on the Statistics side as well, and I've continued my research work – but those are stories for another newsletter.

I didn't expect to be accepted into Cambridge – especially after my unsuccessful Rhodes Scholarship application – but I'm beyond excited to go there this Fall. At the same time, part of me is heartbroken to leave the U of M, and particularly the Math Department. This is where my adult life began, and I'll always treasure the experience, connections, and friendships I've forged here. I don't know exactly what my future will hold after Cambridge, but I can say this with certainty: through all the caps and gowns I wear, I'll always be a Bison.

