

# Felicia Maria G. Magpantay

## OFFICE ADDRESS

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## CONTACT INFORMATION

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## EDUCATION

**Ph.D. Applied Mathematics** Sept. 2008–Feb. 2012  
**McGill University**, Montréal, QC, Canada

Adviser: A.R. Humphries

Thesis: *On the stability and numerical stability of a model state dependent delay differential equation*

Pelletier Fellowship for the best thesis in the Dept. of Mathematics and Statistics

**M.Sc. Applied Mathematics** Sept. 2007–Aug. 2008  
**University of Western Ontario**, London, ON, Canada

Adviser: X. Zou

Project: *Travelling wave solutions to the post-synaptic wave potential equation with axonal and feedback connections*

**B.Sc. (Honours) Physics and Mathematics** Sept. 2004–May 2007  
**Trent University**, Peterborough, ON, Canada

Trent International Scholar

**Undergraduate Program in Physics** (transferred to Trent University, Canada) June 2003–May 2004  
**University of the Philippines Main Campus**, Diliman, Quezon City, Philippines

Oblation scholar

## ACADEMIC POSITIONS

**Associate Professor** July 2021–present  
**Department of Mathematics and Statistics, Queen's University**, Kingston, ON, Canada

**Assistant Professor** July 2017–June 2021  
**Department of Mathematics and Statistics, Queen's University**, Kingston, ON, Canada

**Assistant Professor** Aug. 2015–June 2017  
**Department of Mathematics, University of Manitoba**, Winnipeg, MB, Canada

**Postdoctoral Fellow** Aug. 2013–July 2015  
**Rohani and King Labs, University of Michigan**, Ann Arbor, MI, USA

**Postdoctoral Fellow** Feb. 2012–July 2013  
**Department of Mathematics and Statistics, York University**, Toronto, ON, Canada

## VISITING POSITIONS

**Academic Visitor** Sept. 2022–June 2023  
**Mathematical Institute, University of Oxford**, Oxford, United Kingdom

## INDIVIDUAL RESEARCH GRANTS

1. NSERC Discovery Grant  
2023–2028: \$39,000/year  $\times$  5 years  
2016–2023: \$33,000/year  $\times$  7 years
2. 2020 Ontario Research Fund – Strategic Innovation Fund (\$150,000)
3. 2019 Canadian Foundation for Innovation John R. Evans Leaders Fund (\$150,000)
4. 2017–2021 Queen’s University Research Initiation Grant (\$20,000)
5. 2015–2017 University of Manitoba Startup Grant (\$50,000)

## GROUP RESEARCH GRANTS

1. 2021 NSERC EIDM (\$1.5M/year  $\times$  2 years)  
Subcontract to Queen’s Math and Stats: \$25,000  $\times$  2 years (graduate student funding)  
Project Name: Mathematics for Public Health  
Role: Co-applicant (1 applicant, 46 co-applicants)  
Status: Active
2. 2021 NSERC EIDM (\$625,000/year  $\times$  2 years)  
Subcontract to Queen’s Math and Stats: \$75,000 (PDF funding)  
Project Name: One-Society  
Role: Co-applicant (1 applicant, 11 co-applicants)  
Status: Active
3. 2020 Digital Supercluster Award (\$1.3M, subcontract)  
Subcontract to Queen’s Math and Stats: \$67,000 (PDF funding)  
Project Name: Looking Glass led by Kings Distributed Systems  
Role: COVID-19 Predictive Modeling Co-Lead  
Status: Completed

## COMPUTING GRANTS

1. 2023–2024 Digital Research Alliance of Canada  
2023–2024: 50 core-years, estimated value of \$5,205
2. 2019–2022 Compute Canada  
2021–2022: 120 core-years, estimated value of \$14,561  
2020–2021: 101 core-years, estimated value of \$12,221  
2019–2020: 90 core-years, estimated value of \$10,873

## CONFERENCE GRANTS/FUNDING

1. Workshop on Mathematical Ecology (August 10–11, 2022)  
*Funded by the Fields Institute, Queen’s University, the Society for Mathematical Biology, the Canadian Institute of Ecology and Evolution, and the Canadian Applied and Industrial Mathematics Society*
2. Workshop on Mathematical Ecology (June 27–28, 2019)  
*Funded by the Fields Institute, Queen’s University, the Canadian Institute of Ecology and Evolution, and the Canadian Applied and Industrial Mathematics Society*

## PUBLICATIONS

### Journal Articles (published/accepted)

1. F.M.G. Magpantay, J. Mao\*, S. Ren\*, S. Zhao\* and T. Meadows\* (2023) The reinfection threshold, revisited. *Math. Biosci.* 363: 10945
2. A. Liu\*, F.M.G. Magpantay and K. Abdella (2023) A framework for long-lasting, slowly varying transient dynamics. *Math. Biosci. Eng.* 20(7): pp. 12130–12153

3. B. Morsky\*, F.M.G. Magpantay, T. Day and E. Akçay (2023) The impact of threshold decision mechanisms of collective behaviour on disease spread. *Proc. Natl. Acad. Sci.* 120(19): e2221479120
4. A. Liu\* and F.M.G. Magpantay (2022) A quantification of long transient dynamics. *SIAM J. Appl. Math.* 82(2) pp. 381–407
5. A. Le\*, A.A. King, F.M.G. Magpantay, A. Mesbahi and P. Rohani (2021) The impact of different types of infection-derived immunity. *J. Math. Biol.* 83: 61
6. A.R. Humphries and F.M.G. Magpantay (2021) Lyapunov-Razumikhin techniques for state-dependent delay differential equations. *J. Differential Equations* 304: pp. 287–325
7. L. Xue\*, X. Ren, F.M.G. Magpantay, W. Sun and H. Zhu (2021) Optimal control of mitigation strategies for dengue virus transmission. *Bull. Math. Biol.* 83(2): 8
8. N. Akhavan Kharazian\* and F.M.G. Magpantay (2020) The honeymoon period after mass vaccination. *Math. Biosci. Eng.* 18(1): pp. 354–372
9. F.M.G. Magpantay and A.R. Humphries (2020) Generalised Lyapunov-Razumikhin techniques for scalar state-dependent delay differential equations. *Discrete Contin. Dyn. Syst. - S.* 13: pp. 85–104
10. F.M.G. Magpantay, A.A. King and P. Rohani (2019) Age-structure and transient dynamics in epidemiological systems. *J. Royal Soc. Interface.* 16(156): 20190151
11. K. Nah, F.M.G. Magpantay, A. Bede-Fazekas, G. Röst, A. János Trájer, X. Wu, X. Zhang and J. Wu (2019) Assessing systemic and non-systemic transmission risk of tick-borne encephalitis in Hungary. *PLOS One.* 14(6): e0217206.
12. M. Domenech de Cellès, F.M.G. Magpantay, A.A. King and P. Rohani (2018) Waning vaccinal immunity, the end of the honeymoon, and pertussis resurgence. *Sci. Transl. Med.* 10(434)
13. F.M.G. Magpantay (2017) Vaccine impact in homogeneous and age-structured models. *J. Math. Biol.* 75 (6-7): 1591-1617
14. M. Domenech de Cellès, F.M.G. Magpantay, A.A. King and P. Rohani (2016) The pertussis enigma: Reconciling epidemiology, immunology and evolution. *Proc. Roy. Soc. B.* 283(1822): 20152309
15. F.M.G. Magpantay, M. Domenech de Cellès, P. Rohani and A.A. King (2016) Pertussis immunity and epidemiology: mode and duration of vaccine-induced immunity. *Parasitology* 143: pp. 835–849
16. R. Judson, F.M.G. Magpantay, V. Chickarmane, C. Haskell, N. Tania, J. Taylor, M. Xia, R. Huang, D.M. Rotroff, D.L. Filer, K.A. Houck, M.T. Martin, N. Sipes, A.M. Richard, K. Mansouri, R.W. Setzer, T.B. Knudsen, K.M. Crofton, R.S. Thomas (2015) Integrated model of chemical perturbations of a biological pathway using 18 *in vitro* high throughput screening assays for the estrogen receptor. *Toxicol. Sci.* 148(1): pp. 137–154
17. A.A. King, M. Domenech de Cellès, F.M.G. Magpantay and P. Rohani (2015) Avoidable errors in the modeling of outbreaks of emerging pathogens, with special reference to Ebola. *Proc. Roy. Soc. B.* 282(1806)
18. F.M.G. Magpantay and P. Rohani (2015) Dynamics of pertussis transmission in the United States. *Am. J. Epidemiol.* 181(12): pp. 921–931
19. D. Munther, Y. Luo, J. Wu, F.M.G. Magpantay and P. Srinivasan (2015) A mathematical model for pathogen cross-contamination dynamics during produce wash. *Food Microbiol.* 51: pp. 101–107
20. X. Wu, F.M.G. Magpantay, J. Wu and X. Zou (2015) Stage-structured population systems with temporally periodic delay. *Math. Method. Appl. Sci.* 38(16): pp. 3464-3481
21. F.M.G. Magpantay, M.A. Riolo, M. Domenech de Cellès, A.A. King and P. Rohani (2014) Epidemiological consequences of imperfect vaccines for immunizing infections. *SIAM J. Appl. Math.* 74(6): pp. 1810–1830
22. F.M.G. Magpantay, N. Kosovalić and J. Wu (2014) An age-structured population model with state-dependent delay: derivation and numerical integration. *SIAM J. Numer. Anal.* 52(2), pp. 735–756
23. N. Kosovalić, F.M.G. Magpantay, Y. Chen and J. Wu (2013) Abstract algebraic-delay differential systems and age structured population dynamics. *J. Differential Equations* 255(3) pp. 593–609
24. A.R. Humphries, O. DeMasi, F.M.G. Magpantay and F. Upham (2012) Dynamics of a delay differential equation with multiple state dependent delays. *Discrete Contin. Dyn. Syst. - A* 32(8): pp. 2701–2727
25. F.M.G. Magpantay and X. Zou (2010) Wave front in neuronal fields with nonlocal post-synaptic axonal connections and delayed nonlocal feedback connections. *Math. Biosci. Eng.* 7(2): pp. 421–442

## Book Chapters

1. A.A. King, M. Domenech de Cellès, F.M.G. Magpantay, and P. Rohani (2018), “Pertussis Immunity and the Epidemiological Impact of Adult Transmission: Statistical Evidence From Sweden and Massachusetts” in P. Rohani and S. Scarpino (eds.) *Pertussis: Epidemiology, Immunology and Evolution*. Oxford University Press, Oxford.

### Conference Papers

1. J.A. Collera\* and F.M.G. Magpantay (2018) Dynamics of a stage-structured intraguild predation model. *Proceedings of the AMMCS 2017*
2. F.M.G. Magpantay and N. Kosovalić (2015) An age-structured population model with state-dependent delay: Dynamics. *12th IFAC Workshop on Time Delay Systems*

### Letters (published in journals)

1. M. Domenech de Cellès, M. Riolo, F.M.G. Magpantay, P. Rohani and A.A. King (2014) Letter: Acellular pertussis vaccines and herd immunity: the epidemiological evidence. *Proc. Natl. Acad. Sci.* 111(7): pp. E716–E717

### POSTDOCTORAL SUPERVISION

1. Tyler Meadows  
Postdoctoral Fellow, Queen’s University (Sept. 2021–present, co-supervised by Troy Day)
2. Pedro Rangel  
Postdoctoral Fellow, Queen’s University (July 2020–June 2023, co-supervised by Troy Day)  
Next position: Developer, Kings Distributed Systems
3. Bryce Morsky  
Postdoctoral Fellow, Queen’s University (Jan. 2022–August 2022, co-supervised by Troy Day)  
Next position: Faculty, Dept. of Mathematics, Florida State University
4. Ling Xue  
PIMS Postdoctoral Fellow, University of Manitoba (Jan. 2017–Dec. 2017, co-supervised by Julien Arino)  
Next position: Faculty, Dept. of Mathematics, Harbin Engineering University
5. Juancho Collera  
Abel Visiting Scholar, University of Manitoba (Oct. 2016–Dec. 2016)  
Next position: Faculty, Dept. of Mathematics and Computer Science, University of the Philippines Baguio.

### GRADUATE SUPERVISION

1. Anthony Pasion  
Ph.D. Student, Mathematics and Statistics, Queen’s University (2023–present)
2. Sicheng Zhao  
Ph.D. Student, Mathematics and Statistics, Queen’s University (2020–present)
3. Ankai Liu (co-supervised by Kenzu Abdella)  
Ph.D. Student, Mathematics and Statistics, Queen’s University (2018–2022)  
Next position: Postdoctoral Fellow, York University, Toronto, Canada
4. Adam Le  
M.Sc. Student, Mathematics and Statistics, Queen’s University (2019–2020)  
Next position: Junior Data Science Specialist, St. Michael’s Hospital, Toronto, Canada
5. Linke Li  
M.Sc. Mathematics and Statistics, Queen’s University (2019–2020)  
Next position: Ph.D. Student, Biostatistics Division, University of Toronto
6. Nazila Akhavan Kharazian  
M.Sc. Mathematics and Statistics, Queen’s University (2016–2018)  
Next position: Mathematics Applications Developer, Kings Distributed Systems Ltd.
7. Clifford Allotey  
M.Sc. Mathematics, University of Manitoba (2015–2017)  
Next position: Resource Coordinator, Dept. of Mathematics, University of Manitoba.

## UNDERGRADUATE RESEARCH SUPERVISION

1. Jiayi Li (Summer 2023)  
Project: Markov genealogy processes
2. Jessie Niu (Summer 2023)  
Project: Markov genealogy processes
3. Siyuan Ren (Summer 2022)  
Project: Reinfection threshold
4. Jingjing Mao (Summer 2022)  
Project: Reinfection threshold
5. Anji Deng (Summer 2020, Summer 2021 NSERC USRA)  
Project: Mathematical modeling with imperfect/incomplete covariate information
6. Parisa Betel Miri (Summer 2020, Summer 2021 NSERC USRA)  
Project: Mathematical modeling with imperfect/incomplete covariate information
7. Linke Li (Summer 2018, Summer 2019)  
Project: Extensions of Kalman filters
8. Shikai Liu (Summer 2019)  
Project: Extensions of Kalman filters
9. Adam Le (Fall–Winter 2019)  
Project: Computing the impact of infection-derived immunity

## PRESENTATIONS (all talks are in-person and invited unless otherwise specified)

### Conferences or Workshops

1. 2023 12th Colloquium on the Qualitative Theory of Differential Equations, Bolyai Institute, Szeged, Hungary
2. 2022 Second International Conference on Dynamical Modeling, Analysis, and Applications in Mathematical Biosciences, Harbin Engineering University, Harbin, China (online)
3. 2022 CMS Summer Meeting, Memorial University of Newfoundland, St. John's, NL, Canada
4. 2021 CAIMS Annual Meeting, University of Waterloo, Waterloo, ON, Canada (online)
5. 2021 International Conference on Dynamical Modeling, Analysis, and Applications in Mathematical Biosciences, Harbin Engineering University, Harbin, China (online)
6. 2021 Canadian Mathematical Society Summer Meeting, Mathematical modelling in epidemiology and public health, Ottawa, ON, Canada (online)
7. 2021 Canadian Mathematical Society Summer Meeting, Recent advances in theory and applications of functional differential equations, Ottawa, ON, Canada (online)
8. 2021 AMS Spring Southeastern Sectional Meeting, Georgia Institute of Technology, GA, USA (online)
9. 2020 AMS Fall Eastern Sectional Meeting, Penn State University, PA, USA (online)
10. 2019 Canadian Mathematical Society Winter Meeting, Toronto, ON, Canada
11. 2019 Canadian Undergraduate Mathematics Conference, Queen's University, ON, Canada (keynote)
12. 2019 Society for Mathematical Biology Annual Meeting, Université de Montréal, Montréal, QC, Canada
13. 2019 International Council for Industrial and Applied Mathematics, Universitat de València, València, Spain
14. 2019 CAIMS Annual Meeting, Whistler, BC, Canada (contributed)
15. 2019 Southern Ontario Numerical Analysis Day, Ontario Tech University, Oshawa, ON, Canada (keynote)
16. 2019 International Workshop on Mathematical Biology, Panglao Island, Bohol, Philippines (plenary)
17. 2018 Ecological Society of America Annual Meeting, New Orleans, LA, USA
18. 2018 American Institute of Mathematical Sciences Conference on Dynamical Systems, Differential Equations and Applications, National Taiwan University, Taipei, Taiwan
19. 2018 BioMath Days, University of Ottawa, Ottawa, ON, Canada
20. 2018 Workshop on Infectious Disease Epidemiology, Banach Center, Warsaw, Poland
21. 2017 XI Americas Conference on Differential Equations and Nonlinear Analysis, University of Alberta, Edmonton, AB, Canada

22. 2017 China-Canada International Conference on Disease Modelling, Shanghai University, Shanghai, China
23. 2017 SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA
24. 2016 International Conference on Patterns of Dynamics, Freie Universität Berlin, Germany (contributed)
25. 2016 SIAM Life Sciences Conference, Boston, MA, USA
26. 2015 12th IFAC Workshop on Time Delay Systems, Ann Arbor, MI, USA
27. 2015 Mathematical Biology III session, Joint Mathematics Meetings, San Antonio, TX, USA (contributed)
28. 2014 Canadian Mathematical Society Winter Meeting, Hamilton, ON, Canada
29. 2013 CAIMS Annual Meeting, Château Laurier, Québec City, QC, Canada
30. 2013 Montréal Scientific Computing Days, Université de Montréal, Montréal, QC, Canada
31. 2013 SIAM Conference on Dynamical Systems, Snowbird, UT, USA
32. 2013 Incubation Day, York University, Toronto, ON, Canada
33. 2012 Canadian Mathematical Society Winter Meeting, Montréal, QC, Canada
34. 2012 CAIMS Annual Meeting, Fields Institute, Toronto, ON, Canada
35. 2012 CAIMS Annual Meeting, Fields Institute, Toronto, ON, Canada
36. 2012 Recent Trends in Delay Differential Equations, Cortona, Italy
37. 2011 International Congress in Industrial and Applied Mathematics, Vancouver, BC, Canada
38. 2009 International Workshop on State Dependent Delay Equations, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
39. 2009 CAIMS Annual Meeting, University of Western Ontario, London, ON, Canada

### **Seminars and Colloquiums**

1. 2023 Seminar (May 30, 2023), University of Utrecht, Utrecht, Netherlands
2. 2023 Seminar (May 3, 2023), University of Strathclyde, Glasgow, UK
3. 2023 SBIDER Seminar (Apr. 24, 2023), University of Warwick, Coventry, UK
4. 2023 Mathematical Biology Seminar (Mar. 9, 2023), University of Leeds, Leeds, UK
5. 2023 Mathematical Biology and Ecology Seminar (Feb. 3, 2023), University of Oxford, Oxford, UK
6. 2023 Applied Mathematics Seminar (Jan. 26, 2023), University of Glasgow, Glasgow, UK
7. 2022 Mathematics for Public Health Colloquium (Nov. 8, 2022), Fields Institute, Toronto, ON, Canada (online)
8. 2020 Applied Mathematics Seminar (Dec. 3, 2020), California State University Northridge, CA, USA (online)
9. 2019 Physics Colloquium (Mar. 22, 2019), Queen's University, Kingston, ON, Canada
10. 2018 CAMBAM Seminar (Jan. 25, 2018), McGill University, Montréal, QC, Canada
11. 2017 Mathematics and Computer Science Colloquium (July 28, 2017), University of the Philippines Baguio, Baguio, Philippines
12. 2017 Mathematics and Statistics Colloquium (Jan. 13, 2017), Queen's University, Kingston, ON, Canada
13. 2016 Seminar (July 19, 2016), Institut Pasteur, Paris, France
14. 2015 Mathematics and Statistics Seminar (Feb. 17, 2015), University of New Mexico, Albuquerque, NM, USA
15. 2015 Mathematics Seminar (Feb. 10, 2015) University of Manitoba, Winnipeg, MB, Canada
16. 2015 Group Seminar in Mechanical Engineering (Feb. 6, 2015) University of Michigan, Ann Arbor, MI, USA
17. 2015 Mathematics Seminar (Jan. 30, 2015) Dartmouth College, Hanover, NH, USA
18. 2014 IIMAS Seminar (Aug. 27, 2014), Universidad Nacional Autónoma de México, D.F., Mexico
19. 2013 Applied Mathematics Seminar (Sept. 20, 2013), University of Western Ontario, London, ON, Canada
20. 2013 Numerical Analysis Seminar (June 4, 2013), Università degli Studi di Trieste, Trieste, Italy
21. 2013 SHARCNet Scientific Computing Seminar (March 7, 2013), University of Ontario Institute of Technology, Oshawa, ON, Canada
22. 2013 Biomathematics Seminar (Feb. 7, 2013), Ryerson University, Toronto, ON, Canada
23. 2012 Centre for Disease Modeling Meeting (Oct. 24, 2012), York University, Toronto, ON, Canada

24. 2012 Numerical Analysis Seminar (June 12, 2012), University of Oxford, Oxford, UK
25. 2012 Centre for Disease Modeling Meeting (Mar. 14, 2012), York University, Toronto, ON, Canada

## WORKSHOP/CONFERENCE/MINI-SYMPOSIUM ORGANIZATION

1. 2023 CMS Winter Meeting, Session on Mathematical Modeling in Public Health  
Ottawa, ON, Canada  
*Co-organizers: Xiaoying Wang (Trent University) and Hongbin Guo (Public Health Agency of Canada)*
2. 2022 CMS Winter Meeting, Session on Transient Dynamics  
Toronto, ON, Canada  
*Co-organizers: Xiaoying Wang (Trent University) and Xingfu Zou (Western University)*
3. 2022 Workshop on Mathematical Ecology  
Queen's University, Kingston, Canada  
*Co-organizers: Troy Day, (Mathematics and Statistics, Queen's University), Bill Nelson (Biology, Queen's University)*
4. 2020 SIAM Annual Meeting, Mini-symposium (This meeting was cancelled due to the COVID-19 pandemic.)  
Toronto, ON, Canada  
*Co-organizers: Troy Day (Queen's University)*
5. 2019 ICIAM, Mini-Symposium on Current Trends in Applications of Delay Equations (Parts I–II)  
Universitat de València, València, Spain  
*Co-organizers: Maria Vittoria Barbarossa (University of Heidelberg) and Gergely Röst (University of Szeged)*
6. 2019 Workshop on Mathematical Ecology  
Queen's University, Kingston, Canada  
*Co-organizer: Bill Nelson (Biology, Queen's University)*

## PARTICIPATION IN WORKSHOPS AND SUMMER SCHOOLS

1. Mathematical Biosciences Institute Workshop on Socioepidemiology (March 5–9, 2018)  
The Ohio State University, Columbus, OH, USA
2. Mathematics Inspired by Immuno-Epidemiology (Aug. 24–28, 2015)  
American Institute of Mathematics, San Jose, CA, USA
3. EWM Mathematical Theories Toward Environmental Models (May 27–June 1, 2013)  
International Centre for Theoretical Physics, Trieste, Italy
4. Conference on Dynamics of Differential Equations (March 16–20, 2013)  
Georgia Institute of Technology, Atlanta, GA, USA
5. Modeling Problems Related to our Environment (Jan. 14–18, 2013)  
American Institute of Mathematics, Palo Alto, CA, USA
6. Monte Carlo Methods in the Physical and Biological Sciences (Oct. 29–Nov. 2, 2012)  
ICERM workshop, Brown University, Providence, RI, USA
7. Current Challenges in Stability Issues for Numerical Differential Equations  
CIME-EMS Summer School in Applied Mathematics (June 27–July 2, 2011), Cetraro, Italy

## TEACHING

- Winter 2024: BIOM 300 (Modeling Techniques in Biology), MATH 835 (Mathematical Biology)  
 Fall 2023: MTHE 235 (Differential Equations for Elec. and Comp.)  
 Winter 2021: BIOM 300 (Modeling Techniques in Biology, online)  
 Fall 2020: MTHE 351 (Probability I, online), STAT 268 (Statistics and Probability I, online, supporting role)  
 Winter 2020: MATH 835 (Mathematical Biology)  
 Fall 2019: MTHE 351 (Probability I), MTHE/STAT 455/855 (Stochastic Processes)  
 Winter 2019: MTHE/STAT 353 (Probability II)  
 Fall 2018: MTHE/STAT 351 (Probability I), MTHE/STAT 455/855 (Stochastic Processes)  
 Fall 2017: MTHE/STAT 351 (Probability I), MATH 121 (Calculus)  
 Winter 2017: (University of Manitoba): MATH 1300 (Vector Geometry and Linear Algebra, online)

Fall 2016: (University of Manitoba): MATH 3440 (Ordinary Differential Equations), MATH 1500 (Calculus)

Fall 2015: (University of Manitoba): MATH 3440 (Ordinary Differential Equations), MATH 1500 (Calculus)

## **COURSE DEVELOPMENT**

1. MATH 835: Mathematical Biology (Queen's University)
2. MATH 3440: Theory of Ordinary Differential Equations (University of Manitoba)

## **THESIS/PROJECT COMMITTEES**

1. Ph.D. Supervisory Committee  
2019–2023: Somya Singh (Ph.D. Applied Mathematics, Queen's University)
2. Ph.D. Thesis Examiner  
2023: Somya Singh (Ph.D. Applied Mathematics, Queen's University)  
2021: Yang Wang (Ph.D. Applied Mathematics, University of Western Ontario)
3. M.Sc. Thesis Examiner  
2020: Shengnan Kang (M.Sc. Applied Modelling and Quantitative Methods, Trent University)  
2020: Greg Harrington (M.A.Sc. Mathematics, Queen's University)  
2019: Glen Ross (M.Sc. Applied Modelling and Quantitative Methods, Trent University)  
2017: Bo Min (M.Sc. Statistics, University of Manitoba)  
2016: Jason Rose (M.Sc. Mathematics, University of Manitoba)  
2016: Mahnaz Alavinejad (M.Sc. Mathematics, University of Manitoba)
4. M.Sc. Project Examiner  
2018: Stefanie Knebel (M.Sc. Applied Mathematics, Queen's University)  
2018: Madeleine Baker (M.Sc. Applied Mathematics, Queen's University)
5. Thesis Defence Chair  
2023: Zixuan Zhao (M.Sc. Statistics, Queen's University)  
2021: Jordan Kokocinski (M.Sc. Statistics, Queen's University)  
2019: Scott Kyle (M.A.Sc. Mathematics and Engineering, Queen's University)
6. Thesis Prospectus Exam Chair  
2020: Tariq Osman (Ph.D. Candidate in Mathematics, Queen's University)  
2019: Wen Teng (Ph.D. Candidate in Statistics, Queen's University)

## **ACADEMIC SERVICE (INTERNAL)**

### **Department Committees**

1. Renewal, Tenure and Promotions Committee (2023–present)
2. Advisory Committee on Policy (2019–2021, 2023–present)
3. Ontario Graduate Scholarship Adjudication (2021–2022)
4. Colloquium Committee (2019–2021)
5. Core of the Appointments Committee
  - Applied Mathematics Search (2021–2022)
  - Statistics Search (2019–2020)
  - Mathematics and Engineering Search (2018–2019)
6. Fields@Queen's Committee (2018–)
7. Postdoc Committee (2017–2019)
8. Graduate Committee (2017–2019)
9. Social Committee (2016–2017)  
University of Manitoba, Winnipeg, MB, Canada



10. Internal Expert for the NSERC Internal Review Panel (Oct. 2016)  
University of Manitoba, Winnipeg, MB, Canada
11. Comprehensive Exam Committee for Numerical Analysis (Apr. 2016)  
University of Manitoba, Winnipeg, MB, Canada

### **University-level Service**

1. Co-organizer of Women in Science events at Queen's University (2018–present)
2. University Senate (March–August 2022, September 2023–August 2025)
3. Major Admission Awards Reader (2018, 2019, 2020)

### **ACADEMIC SERVICE (EXTERNAL)**

1. MITACS Innovation Lecture Committee (2023)
2. NSERC External Reviewer (2020, 2023, 2024)
3. Associate Editor for Mathematics in Applied Sciences and Engineering (2023–present)
4. Reviewer

2023: Journal of Mathematical Biology (x4), Journal of Theoretical Biology (x2), SIAM Journal on Applied Mathematics, Philippine Journal of Science

2022: Mathematical Biosciences and Engineering, Journal of the Royal Society Interface (x2), Journal of Biological Systems, Journal of Mathematical Biology, SIAM Journal on Applied Mathematics, Mathematical Biosciences (x2), Nature Scientific Reports

2021: Physical Review E, Acta Applicandae Mathematicae, Proceedings of the Royal Society - B, PLOS Biology

2020: Mathematical Biosciences and Engineering (x2), Journal of Applied Mathematics, Physical Review X, Physical Review Research, Ecological Modeling, Journal of Mathematical Biology, Acta Applicandae Mathematicae, Proceedings of the Royal Society - B, Physical Review E

2019: Mathematical Biosciences and Engineering, SIAM Journal on Applied Mathematics, Epidemics

2018: Journal of Nonlinear Science, Mathematical Biosciences and Engineering, Differential Equations and Dynamical Systems

2017: Discrete and Continuous Dynamical Systems B, Journal of Theoretical Biology (x2), Mathematical Biosciences (x2), Journal of Mathematical Biology

2016: Journal of Nonlinear Science, Journal of Theoretical Biology, Mathematical and Computer Modeling of Dynamical Systems

2015: BMC Infectious Diseases, Bulletin of Mathematical Biology, Communications in Nonlinear Science and Numerical Simulation, Journal of Computational and Applied Mathematics, Mathematical Biosciences and Engineering, Mathematical Biosciences, SIAM Journal on Applied Mathematics

2014: SIAM Journal on Applied Mathematics

2013: Advances in Difference Equations, Mathematical Biosciences and Engineering

5. Reviewer for the Proceedings of the Canadian Undergraduate Conference on AI (2021)
6. Reviewer for the Sir Henry Wellcome Postdoctoral Fellowships (2020)

### **OUTREACH AND PUBLIC LECTURES**

1. Volunteer Judge for the SCUDEM-SIMIODE Challenge Using Differential Equations Modeling (2022)
2. Queen's Global Summer Sustainable Freedom Lecture (2022)
3. Volunteer Category Judge at the Frontenac, Lennox and Addington Science Fair (2018)
4. Public Presentation at the University of Manitoba Faculty of Science Homecoming Luncheon (2016)
5. Women in Science, an event for high school girls held at the Manitoba Legislative Building (2015)

## **OTHER ACADEMIC DISTINCTIONS**

1. Association for Women in Mathematics Travel Grant (2015)
2. Trent University 2000's Honorary Chair (2014)
3. Best Presentation Award at the Montreal Scientific Computing Days (2013)
4. McGill University Alexis and Charles Pelletier Fellowship (2012)
5. Institut des Sciences Mathématiques Scholarship (2009-2011)
6. McGill University Molson and Hilton Hart Fellowship (2010)
7. McGill University Honourable Mention for the Teaching Assistant Award (2009)
8. McGill University Lorne Trottier Science Accelerator Scholarship (2008)
9. Trent University Herzberg Research Award (2007)
10. Top 10% Standing in the Putnam Competition (2006)
11. Trent University Lodge Physics Scholarship (2005)
12. Trent International Tuition Scholarship and Trent International Award (2004–2007)
13. University of the Philippines Oblation Scholarship (2003)
14. International Physics Olympiad Honourable Mention (2003)