SHONDA DUECK (Formerly SHONDA GOSSELIN)
Ph.D., M.Math., BSc. (Hons.)

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Curriculum Vitae

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CONTACT INFORMATION

Department of Mathematics and Statistics
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CURRENT POSITION

Associate Professor, Department of Mathematics and Statistics, University of Winnipeg,
July 1, 2014 - present.

PROFESSIONAL AFFILIATIONS

Canadian Mathematical Society
American Mathematical Society
Society for Industrial and Applied Mathematics (SIAM)
SIAM Activity Group on Discrete Mathematics.
Prairie Network for Research in the Mathematical Sciences (PNRMS)
Ottawa-Carleton Discrete Math Research Group (2006-2009)

EDUCATION

Ph.D. Mathematics, University of Ottawa, Ottawa, Ontario, July 2009. Thesis topic: *Self-Complementary Hypergraphs*. Supervisor: Dr. Mateja Sajna.

Master of Mathematics, Combinatorics and Optimization, University of Waterloo, Waterloo, Ontario, June 2005. Thesis: *Regular Two-Graphs and Equiangular Lines*. Supervisor: Dr. Chris Godsil.

Bachelor of Science (Honours), Mathematics and Statistics, University of Winnipeg, Winnipeg, Manitoba, June 2003. Thesis: *Chip-Firing Games on Graphs*. Supervisor: Dr. James Currie.

AWARDS AND DISTINCTIONS

Faculty Level - University of Winnipeg:
Merit Award for academic year 2011-2012.
Merit Award for academic year 2010-2011.
Merit Award for academic year 2009-2010.

Doctoral Level - University of Ottawa:
Postdoctoral Fellowship, National Science and Engineering Research Council (NSERC), 2009.
    (declined in favour of tenure-track offer at UW).
Postgraduate Scholarship - Doctoral (PGS D), NSERC, 2006-2008.
University of Ottawa Excellence Scholarship, 2006-2008.
University of Ottawa Graduate Admission Scholarship in Science and Engineering (PhD), 2008.

Master's Level - University of Waterloo:
Postgraduate Scholarship - Doctoral (PGS D), National Science and Engineering Research Council (NSERC), 2005.
Provost's graduate scholarship, Faculty of Mathematics, 2004-2005.
Canada Graduate Scholarship - Masters (CGS M), NSERC, 2003-2005.

Undergraduate Level - University of Winnipeg:
Governor General's Silver Medal for highest standing in an undergraduate program, 2003.
Chancellor's Gold Medal for highest standing in Science, 2003.
University Gold Medal in Mathematics, 2003.
Two undergraduate summer research awards (USRA), NSERC, 2002, 2001.
Dr. Arnold Rogers Scholarship for academic excellence, 2002-2003.
H.V. Rutherford Scholarship for research, 2002-2003.
Lawson Scholarship in Mathematics, 2001-2002.
Isbister Undergraduate Scholarship, 2001-2002.
Two university academic proficiency scholarships, 2001-2003.
Mathematics Access and Excellence Award, 2000-2001.

PREVIOUS RESEARCH POSITIONS

Summer Research Assistant, Department of Mathematics and Statistics, University of Winnipeg, May-August 2003. Project Title: The partition dimension of Cayley digraphs. Supervisor: Ortrud Oellermann.

NSERC USRA Summer Research Position, Department of Mathematics and Statistics, University of Winnipeg, May-August 2002. Project Title: The metric dimension of Cayley digraphs. Supervisor: Ortrud Oellermann.

NSERC USRA Summer Research Position, Department of Mathematics and Statistics, University of Winnipeg, May-August 2001. Project Title: Minimum dominating sets in graphs. Supervisors: John Ginsburg and James Currie.

RESEARCH INTERESTS

Algebraic graph theory
The action of groups on combinatorial structures
Self-complementary and q-complementary graphs and hypergraphs
Algebraic hypergraph decompositions
Large sets of combinatorial designs
Hamiltonian Cayley digraphs
Metric and partition dimension of hypergraphs

RESEARCH FUNDING

2022, University of Winnipeg Major Research Grant. *The Metric Dimension and Threshold Dimension of Cayley Graphs and Hypergraphs*, $7,333.

2019, University of Winnipeg Major Research Grant. *Almost t-complementary and regular t-complementary uniform hypergraphs*, $7377.

2019, University of Winnipeg Travel Grant. *Almost t-complementary uniform hypergraphs*, The 7th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 28-31, 2019, at Simon Fraser University, Vancouver. $1000.

2016, University of Winnipeg Travel Grant. *The metric dimension of circulant graphs and their Cartesian products*, Coast Combinatorics Conference, February 13-16, 2017, Kailua-Kona, Hawaii. $1500.

2015, University of Winnipeg Major Research Grant. *The metric dimension of Cayley graphs and hypergraphs*, $7375.20.

2013, Career Focus Manitoba - Wage Subsidy. Supported summer undergraduate research student Adam Borchert, May-August 2013. Project Title: *The Metric and Partition Dimension of Hypergraphs*. $900.

2012, University of Winnipeg Travel Grant. *Algebraic Hypergraph Decompositions*, Coast Combinatorics Conference, February 18-21, 2013, Kailua-Kona, Hawaii. $2000.

2011, University of Winnipeg Major Research Grant. *Hamiltonian Cayley Digraphs*, $5000.

2011, Career Focus Manitoba - Wage Subsidy. Supported summer undergraduate research student Yizhe Zeng, May-August 2011. Project Title: *Hamiltonian Cayley Digraphs*. $900.

2011, University of Winnipeg Travel Grant. *Regular or vertex-transitive q-complementary hypergraphs* and *Paley uniform hypergraphs*. Third Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 31-June 3, 2011, University of Victoria, Victoria, BC. $1000.

2010, Career Focus Manitoba - Wage Subsidy. Supported summer undergraduate research student Grant Andruchuk, May-August 2010. Project Title: *Hamiltonian Cycles in Cayley*

Digraphs. $900.

2010, University of Winnipeg Travel Grant. Presented *Cyclically t-complementary uniform hypergraphs* at the SIAM Conference on Discrete Math, June 14-17, Austin, Texas, $1000.

2009-2010, University of Winnipeg Major Research Grant, *Cyclically t-complementary uniform hypergraphs*, $5000.

2009, University of Winnipeg Start-Up Grant, *Cyclically t-complementary uniform hypergraphs*, $5000.

PUBLICATIONS

Published in Refereed Journals

Dilbarjot, Shonda Dueck, Cyclic decompositions of complete and almost complete uniform hypergraphs. *Discussiones Mathematicae Graph Theory*, **42** (2022), 747-759.
https://doi.org/10.7151/dmgt.2303.

Nadia Benakli, Novi H. Bong, Shonda M. Dueck, Linda Eroh, Beth Novick, Ortrud R. Oellermann. The Threshold Strong Dimension of a Graph. *Discrete Mathematics*, Volume 344, Issue 7, July 2021, 112402.
https://doi.org/10.1016/j.disc.2021.112402
http://arxiv.org/abs/2008.04282

S. Gosselin. Almost *t*-complementary uniform hypergraphs. *Aequationes Mathematicae* (2019), http://link.springer.com/article/10.1007/s00010-018-0631-y

K. Chau and S. Gosselin. The metric dimension of circulant graphs and their Cartesian products. *Opuscula Mathematica*, **37**, no. 4 (2017), 509-534.

A. Borchert and S. Gosselin, The metric dimension of circulant graphs and Cayley hypergraphs. *Utilitas Mathematics* **106** (2018), 125-147.

S. Gosselin, A. Szymański and A.P. Wojda, Cyclic partitions of complete nonuniform hypergraphs and complete multipartite hypergraphs. *Discrete Mathematics & Theoretical Computer Science*, **15**, no. 2 (2013), pp. 215-222.

G. Andruchuk and S. Gosselin, A note on Hamiltonian circulant digraphs of outdegree three. *Open Journal of Discrete Mathematics*, **2** (2012), pp 160-163.

G. Andruchuk, S. Gosselin and Y. Zeng, Hamiltonian Cayley digraphs on direct products of dihedral groups. *Open Journal of Discrete Mathematics*, **2** (2012), pp 88-92.

S. Gosselin. Self-complementary non-uniform hypergraphs. *Graphs and Combinatorics*, **28** (2012), no. 5, pp. 615-635.

S. Gosselin. Constructing regular self-complementary uniform hypergraphs. *Journal of Combinatorial Designs*, **19** (2011) pp 439-454.

S. Gosselin. Vertex-transitive q-complementary uniform hypergraphs. *Electronic Journal of Combinatorics*, **18** (2011), no. 1, Research Paper 100, 19 pp.

S. Gosselin. Cyclically t-complementary uniform hypergraphs, *European Journal of Combinatorics*, **31** (2010), 1629-1636.

S. Gosselin. Generating self-complementary uniform hypergraphs. *Discrete Math.* **310** (2010), pp. 1366-1372.

S. Gosselin. Vertex-transitive self-complementary uniform hypergraphs of prime order. *Discrete Math.* **310** (2010), pp. 671-680.

M. Fehr, S. Gosselin and O. Oellermann. The partition dimension of Cayley digraphs. *Aequationes Mathematicae*, **71** (2006), pp. 1-18.

M. Fehr, S. Gosselin and O. Oellermann. The metric dimension of Cayley digraphs. *Discrete Math.*, **306** (2006), pp. 31-41.

Book Chapters:

Nadia Benakli, Novi H. Bong, Shonda M. Dueck, Beth Novick, Ortrud R. Oellermann. Chapter 4 - The Threshold Dimension and Threshold Strong Dimension of a Graph: a Survey. WIGA 2019 AWM volume, Research Trends in Graph Theory and Applications, Copyright 2021, Springer.

PRESENTATIONS

Invited Conference Presentations, Lectures, Workshops and Seminars

Cyclic partitions of complete and almost complete uniform hypergraphs, in the *Designs and Decompositions* session, at the Canadian Mathematical Society Summer Meeting, June 6, 2022, Memorial University of Winnipeg, St. John's, Newfoundland.

The threshold strong dimension of a graph, in the *Graph Theory* session, at the Canadian Mathematical Society Summer Meeting, June 5, 2022, Memorial University of Winnipeg, St. John's, Newfoundland.

Summer mini-course on *Self-complementary graphs and cyclic hypergraph decompositions*, August 10-14, 2020, for the 2020 PIMS Diversity in Mathematics: Undergraduate Womens Summer School. The course was delivered online via Zoom. It involved four lectures and three workshop sessions in which the students broke into group breakout sessions on Zoom and worked on some assigned problems. They presented their best solutions to the whole class on the last day of the course.

The metric dimension of circulant graphs and Cayley hypergraphs, Prairie Discrete Mathematics Workshop, June 12, 2018, Brandon University, Brandon, Manitoba.

The metric dimension of circulant graphs and Cayley hypergraphs, University of Manitoba Combinatorics Seminar, March 9, 2018, Winnipeg, Manitoba.

The metric dimension of circulants and their Cartesian products, 26th Coast Combinatorics Conference, February 15, 2017, King Kamehameha's Kona Beach Hotel, Kailua-Kona, Hawaii, USA.

The metric dimension of circulant graphs, Canadian Mathematical Society Summer Meeting, June 24-27, 2016, University of Alberta, Edmonton, Alberta.

Constructing Hypergraph Decompositions, Ottawa-Carleton Discrete Math Days, May 26-27, 2016, Carleton University, Ottawa, Ontario.

Cyclic hypergraph decompositions, Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Minisymposium: Cycles in Graphs II. Organizers: Ortrud Oellermann and David Gunderson. May 31 - June 4, 2015, University of Saskatchewan, Saskatoon, Saskatchewan.

Metric Dimension of circulant graphs and Cayley hypergraphs, CMS Summer Meeting, Session: Graphs and Hypergraphs , June 6-9, 2014, Delta Hotel, Winnipeg, Manitoba.

Algebraic Hypergraph Decompositions. Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Minisymposium: Discrete Math Coast to Coast - Newfoundland and the West. Organizer: Gary MacGillivary. June 10-13, 2013, Memorial University, St. John's, Newfoundland.

Cyclic decompositions of complete and complete multipartite uniform hypergraphs. Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Minisymposium: Hypergraphs. Organizers: Amin Bahmanian and Mateja Sajna. June 10-13, 2013, Memorial University, St. John's, Newfoundland.

Algebraic Hypergraph Decompositions. Discrete Math Seminar, May 14, 2013, Simon Fraser University, Vancouver, B.C.

Algebraic Hypergraph Decompositions. Coast Combinatorics Conference, February 18-21, 2013, Sheraton Kona Resort & Spa at Keauhou Bay, Kailua-Kona, Hawaii.

Decomposing Hypergraphs over Finite Fields. SIAM Conference on Discrete Mathematics, Minisymposium: Graphs and Groups. Organizer: Debra Boutin. June 19, 2012, Dalhousie University, Halifax, Nova Scotia.

Cyclic decompositions of complete hypergraphs. Prairie Discrete Math Workshop, July 22, 2011, University of Regina, Regina, Saskatchewan.

Paley Uniform Hypergraphs. Canadian Discrete and Algorithmic Mathematics Conference

(CanaDAM), Minisymposium: Finite Fields in Combinatorics I. Organizer: Daniel Panario. May 31, 2011, University of Victoria, Victoria, B.C.

Paley Uniform Hypergraphs. Algebraic Graph Theory Workshop, Banff International Research Station, April 24-29, 2011, Banff, Alberta.

Cyclic decompositions of complete uniform hypergraphs. University of Regina Mathematics Colloquium, February 4, 2011, Regina, Saskatchewan.

Cyclic decompositions of complete and complete multipartite hypergraphs. UM-UW Joint Mathematics Seminar, University of Manitoba, November 19, 2010, Winnipeg, Manitoba.

Vertex-transitive q-complementary uniform hypergraphs. Department of Mathematics, AGH University of Science and Technology, June 22, 2010, Kraków, Poland.

Vertex-transitive and self-complementary k-hypergraphs. University of Winnipeg Seminar Series, February 23, 2007, Winnipeg, Manitoba.

Contributed Conference Presentations

The threshold strong dimension of a graph, in the Contributed Minisymposium: The Metric Dimension of a Graph and its Variants II, at the 8th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 27, 2021, presented online via Zoom.

Participant, Workshop for Women in Graph Theory and Applications (WIGA), August 19-23, 2019. Team 4: *The Metric Dimension of a Graph.* We studied the problem of finding the threshold strong dimension of a graph.

Almost t-complementary uniform hypergraphs, 7th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 28-31, 2019, Simon Fraser University, SFU Harbour Centre, Vancouver, British Columbia.

The metric dimension of circulants and their Cartesian products, Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), June 15, 2017, Ryerson University, Toronto, Ontario.

Metric dimension of circulant graphs and Cayley hypergraphs, Ottawa-Carleton Discrete Math Days, May 1-2, 2014, Carleton University, Ottawa, Ontario.

Regular or vertex-transitive q-complementary hypergraphs. Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Contributed Minisymposium on Hypergraph Decompositions, June 3, 2011, University of Victoria, Victoria, B.C.

Vertex-transitive q-complementary uniform hypergraphs. Combinatorics 2010 conference, Il Chiostro Hotel, June 27-July 3, 2010, Verbania, Italy.

Cyclically t-complementary uniform hypergraphs. SIAM Conference on Discrete Mathemat-

ics, June 14-17, 2010, Hyatt Regency Hotel, Austin, Texas.

Paley-like uniform hypergraphs. Ottawa-Carleton Discrete Math Days, May 14-15, 2010, Carleton University, Ottawa, Ontario.

Paley-like uniform hypergraphs. Fourth Annual Meeting of the PNRMS (Prairie Network for Research in the Mathematical Sciences), April 30 - May 2, 2010, University of Manitoba, Winnipeg, Manitoba.

Paley-like uniform hypergraphs. Groups, Combinatorics, Algorithms and Complexity. A Conference in honor of Laci Babai's 60th birthday. March 21-25, 2010, Ohio State University, Columbus, Ohio.

Generating self-complementary uniform hypergraphs. Second Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 25-28, 2009, University of Montreal, Montreal, Quebec.

Constructing regular self-complementary uniform hypergraphs. Ottawa-Carleton Discrete Math Days, May 22-23, 2009, University of Ottawa, Ottawa, Ontario.

Vertex-transitive self-complementary uniform hypergraphs. Ottawa Mathematics Conference, May 16-17, 2009, University of Ottawa, Ottawa, Ontario.

Self-complementary uniform hypergraphs. Ottawa-Carleton Combinatorics and Optimization Seminar, April 17, 2009, Carleton University, Ottawa, Ontario.

Generating self-complementary uniform hypergraphs. Mathematics Graduate Student Seminar, November 14, 2008, University of Ottawa, Ottawa, Ontario.

Self-complementary uniform hypergraphs. Ontario Combinatorics Workshop, May 23-24, 2008, University of Waterloo, Waterloo, Ontario.
and
Ottawa-Carleton Discrete Mathematics Days, May 9-10, 2008, Carleton University, Ottawa, Ontario.

Vertex-transitive and self-complementary 3-hypergraphs. Ontario Combinatorics Workshop, April 21 - 22, 2006, Fields Institute, Toronto, Ontario.

Regular two-graphs and equiangular lines. Ottawa - Carleton Combinatorics and Optimization Seminar, November 4, 2005, University of Ottawa, Ottawa, Ontario.

Regular two-graphs and large sets of equiangular lines in Euclidean space. Ontario Combinatorics Workshop, Royal Military College, Kingston, Ontario. (May 6-7, 2004)

Maximum sets of equiangular lines in Euclidean space - a graph theoretic approach. Graduate Seminar, Department of Combinatorics and Optimization, University of Waterloo. (November 2003)

The metric and partition dimension of Cayley digraphs. Connecting Women in Mathematics Across Canada, University of Alberta, Edmonton, Alberta. (June12-13, 2003)

The metric dimension of graphs and digraphs. Canadian Undergraduate Mathematics Conference, University of Calgary, Calgary, Alberta. Joint presentation with Melodie Fehr. (July 2-7, 2002)

Conference Chairing Duties

Chair, Contributed talk session on *Graphs and Degree Constraints* at the Sixth Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), June 15, 2017, Ryerson University, Toronto, Ontario.

Chair, Contributed Minisymposium on *Hypergraph Decompositions*, Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), June 3, 2011, University of Victoria, Victoria, B.C.

Chair, Contributed talk session on *Combinatorics* at the SIAM Conference on Discrete Mathematics, June 14-17, 2010, Hyatt Regency Hotel, Austin, Texas.

Chair, Contributed talk session on *Hypergraphs* at the Second Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 25-28, 2009, University of Montreal, Montreal, Quebec.

CONFERENCE/SEMINAR ORGANIZATION

Organizer, Contributed Minisymposium on *The metric dimension of a graph and its variants* (parts I and II) at CanaDAM, May 26-27, 2021. Both parts of this minisymposium were presented online via Zoom.

Organizer, Contributed minisymposium on *Hypergraph Decompositions* at the Third Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 31-June 3, 2011, University of Victoria, Victoria, B.C.

Initiated and co-organized the first and second annual Ottawa Mathematics Conference for graduate and post-doctoral researchers at the University of Ottawa, May 1-2, 2008, and May 16-17, 2009.

Co-organizer, Ontario Combinatorics Workshop, May 1-2, 2009.

Co-organizer, University of Ottawa Math Grad Student Seminar, 2007-2009.

Co-organizer, Ottawa-Carleton Combinatorics and Optimization Seminar, January - April 2008. Organized room and equipment bookings for talks at the University of Ottawa.

PEER REVIEW

Reviewer for *Mathematical Reviews*, a division of the American Mathematical Society.

Articles Reviewed:

- Gui Zhi Zhang, Yan Xun Chang and Tao Feng, The Fine Triangle Intersections for Maximum Kite Packings, *Acta Mathematica Sinica, English Series*, Volume 29 (2013), pp. 867-882.

- Hongtao Zhao and Qingde Kang, Large Sets of Hamilton Cycle and Path Decompositions of Complete Bipartite Graphs, *Graphs and Combinatorics*, Volume 29 (2013), pp. 145-155. MR 3001604.

- Tina Helms, Heather Jordan, Maggie Murray and Stephanie Zeppetello, Extended Skolem-type difference sets, *Australasian Journal of Combinatorics*, Volume 53 (2012), pp. 221-235. MR 2961985.

- J.-C. Bermond, Y.M Chee, N. Cohen and X. Zhang, The α-Arboricity of Complete Uniform Hypergraphs, *SIAM Journal of Discrete Mathematics*, Volume 25 (2011), pp. 600-610. MR2817518.

- Peter Keevash, Daniela Khn, Richard Mycroft and Deryk Osthus, Loose Hamilton cycles in hypergraphs, *Discrete Mathematics*, Volume 311 (2011), pp. 544-559. MR 2765622.

- Reinhard Laue and Daniela Nikolova-Popova, Design of designs, *Journal of Combinatorial Designs*, Volume 20 (2012), pp. 1-22. MR2864615.

- Atif A. Abueida, James Lefevrem and Mary Waterhouse, The spectrum of non-polychromatic equitable edge colored Steiner Triple Systems, *Journal of Combinatorial Mathematics and Combinatorial Computing*, Volume 80 (2012), pp. 405-414. MR2918799.

- Robert F. Bailey and Brett Stevens, Hamiltonian decompositions of complete k-uniform hypergraphs, *Discrete Mathematics*, Volume 310 (2010), pp. 3088-3095. MR2684077.

- V. Vilfred and C. Jayasekaran, Interchange similar self vertex switchings in graphs, *Journal of Discrete Mathematical Sciences and Cryptography*, Volume 12 (2009), pp. 467-480. MR2589065.

Referee for the following scholarly journals:

Discrete Mathematics
Electronic Journal of Combinatorics
Information Processing Letters
SIAM Journal of Discrete Mathematics
Acta Mathematica Sinica English Series
Graphs and Combinatorics
Ars Mathematica Contemporanea
Discrete Applied Mathematics
European Journal of Combinatorics

Discussiones Mathematicae Graph Theory
Utilitas Mathematica
Journal of Combinatorial Designs
Canadian Bulletin of Mathematics
Discussiones Mathematicae Graph Theory
Journal of Graph Theory
Applicable Analysis and Discrete Mathematics
Australasian Journal of Combinatorics
Opuscula Mathematica

Editor for the journal Advances and Applications in Discrete Mathematics

SUPERVISORSHIPS

Thesis Examinations

Master's Thesis Examiner, student: Adam Gorr, University of Regina. Supervisors: Karen Meagher and Shaun Fallat. Thesis Title: *Eigenvalues of k-uniform hypergraphs.* Thesis Defense: August 2017.

Ph.D. Thesis Examiner, student: Alison Purdy, University of Regina. Supervisor: Karen Meagher. Thesis Title: *Variations of a Theorem of Erds, Ko and Rado.* Comprehensive Exam April 25, 2013. Thesis Defense: August 13, 2014.

Ph.D. Thesis Examiner, student: Fatemeh Alinagipour Taklimi, University of Regina. Supervisors: Karen Meagher and Shaun Fallat. Thesis Title: *Zero Forcing Sets for Graphs.* Comprehensive Exam November 23, 2011, Thesis Defense July 24, 2013.

Undergraduate Supervisions

Supervisor, summer undergraduate research student Dilbarjot, June 3 - September 27, 2019. Project: *Cyclic partitions of complete and almost complete uniform hypergraphs.*

Supervisor, summer undergraduate research student Kevin Chau, May - August 2016. Project: *The Metric Dimension of Circulant Graphs and Their Cartesian Products.*

Co-supervisor (with James Currie), summer undergraduate research student Adam Borchert, May - August 2013. Project: *The Metric and Partition Dimension of Hypergraphs.*

Supervisor, summer undergraduate research student Yizhe Zeng, May - August 2011. Project: *Hamiltonian Cayley Digraphs.*

Supervisor, summer undergraduate research student Grant Andruchuk, May - August 2010. Project: *Hamiltonian cycles in Cayley digraphs.*

TEACHING AND LEADERSHIP

Adjunct Professor, Faculty of Graduate Studies and Research, University of Regina, February 17, 2017 - February 22, 2022.

Associate Professor, Department of Mathematics and Statistics, University of Winnipeg, July 1, 2014 - present.

Courses:

Basic Calculus (Terminal) (MATH-1102), fall 2016.

Linear Algebra I (MATH-1201) winter 2022,fall 2021, winter 2020, fall 2019, fall 2018, winter 2018, fall 2016, winter 2016.

Linear Algebra II (MATH-2203) winter 2018.

Graph Theory (MATH-3401) fall 2021, fall 2019, winter 2019, fall 2017, fall 2016, fall 2015, fall 2014.

Networks, Graph Theory, and Combinatorial Optimization (MATH-4401) fall 2020.

Intermediate Calculus II (MATH-2106) winter 2022, winter 2020, winter 2019, winter 2018, winter 2015.

Discrete Mathematics (MATH-1401) fall 2021, fall 2020, winter 2020, winter 2019, fall 2018, fall 2017, winter 2016, fall 2015, winter 2015, fall 2014.

Adjunct Professor, Faculty of Graduate Studies and Research, University of Regina, July 1, 2011 - June 30 2016.

Assistant Professor, Department of Mathematics and Statistics, University of Winnipeg, September 1, 2009 - June 30, 2014.

Courses:

Intermediate Calculus II (MATH-2106) winter 2014.

Basic Calculus (Terminal) (MATH-1102) winter 2014.

Intro to Calculus I (MATH-1103), fall 2012.

Discrete Mathematics (MATH-1401) fall 2013, winter 2013, fall 2012, winter 2012.

Linear Algebra I (MATH-1201) winter 2012.

Intro to Calculus II (MATH-1104) winter 2012.

Group Theory (MATH-3202) fall 2011, fall 2010.

Graph Theory (MATH-3401) fall 2013, winter 2013, fall 2011, fall 2009.

Introduction to Calculus (MATH-1101) fall/winter 2010-11, fall/winter 2009-10.

Adjunct Professor, Faculty of Graduate Studies and Research, University of Regina, March 2011 - present.

Part-time Professor, University of Ottawa, July - August 2009, Sept. 2007 - April 2008, July - August 2006.

Courses:

Calculus I (MAT 1320) summer 2009

Advanced Functions and Introductory Calculus (MAT 1319) fall 2007, winter 2008

Introductory Vector Algebra and Discrete Mathematics (MAT 1340) summer 2006

Teaching Assistant, University of Ottawa, January 2006 - July 2009. University of Waterloo, September 2003 - April 2005. University of Winnipeg, September 2000 - August 2003. Courses: calculus, discrete mathematics, linear algebra, statistics.

Lead organizer, Ottawa Mathematics Conference, University of Ottawa, May 1-2, 2008, and May 16-17, 2009.

President, University of Ottawa Graduate Students' Association of the Department of Mathematics and Statistics, 2007 - 2009.

Vice-President, University of Winnipeg Math & Statistics Students' Association, 2001-2003.

COMMUNITY SERVICE/OTHER RELEVANT ACTIVITIES

Panelist, Careers Advice from Diverse Perspectives, 7th biennial Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), May 28, 2019 at Simon Fraser University, Vancouver, British Columbia.

Volunteer Invigilator, Math Kangaroo Contest. University of Winnipeg, March 2018 & 2019.

Volunteer Exhibitor for the Department of Mathematics and Statistics at the University of Winnipeg at the *Manitoba Science Rendezvous*, Saturday, May 7, 2016.

Volunteer Exhibitor for the Department of Mathematics and Statistics at the University of Winnipeg *Science Rendezvous*, Saturday, May 9, 2015.

Invited Speaker, "A Taste of Pi" lecture series for high school students. *Tracking Down a Network Intruder: The Metric Dimension of a Graph.* Simon Fraser University, Vancouver, B.C., May 11, 2013.

University of Winnipeg Representative, Prairie Network for Research in the Mathematical Sciences (PNRMS), 2010-present.

United Way Canvasser, Department of Mathematics and Statistics, University of Winnipeg, 2010, 2012, 2013, 2014, 2015 and 2019 fall campaigns.

Volunteer Exhibitor for the UW Faculty of Science, Rotary Career Symposium, Winnipeg Convention Centre, April 7, 2011.

Speaker, Math Kangaroo Contest. *Mathematics and Games*, University of Winnipeg, March 27, 2011.

Judge, Manitoba Schools Science Symposium, University of Winnipeg, April 23-24, 2010.

Speaker, Canadian Mathematical Society (CMS) Summer Math Camp. *Mathematics and Games*, University of Ottawa, Ottawa, Ontario, July 6-11, 2008 and June 26-30, 2009.

Organizer, Meetings and several social events and fundraisers for members of the University of Ottawa Graduate Students' Association of the Department of Mathematics and Statistics, 2006 - 2009.

Organizer, Talks on *Magic and Mathematics* and *The History of Mathematics*, meetings and social events for members of the University of Winnipeg Mathematics and Statistics Students' Association, 2001-2003.

Participant, North Central Section of the Mathematical Association of America Team Contest, representing the University of Winnipeg, November 2000 and 2001.