Curriculum Vitae[1] – Adam Van Tuyl

1. Contact Information

Address:	Adam Van Tuyl, Professor	Email:	vantuyl@math.mcmaster.ca
	Hamilton Hall 419	Web:	ms.mcmaster.ca/~vantuyl
	Department of Mathematics & Statistics	Phone:	(905)-525-9140 x 27016
	McMaster University		
	Hamilton, ON		
	L8S 4L8 Canada		

2. Education

1997 - 2001 PhD, Mathematics, Queen's University, Kingston, ON
1996 - 1997 MSc, Mathematics, Queen's University, Kingston, ON
1992 - 1996 BSc, Mathematics (Honors), Calvin College, Grand Rapids, MI

3. Work Experience

2021 -   Professor, McMaster University, Hamilton, ON
2020 - 2027 Associate Chair (Undergraduate), McMaster University, Hamilton, ON
2015 - 2021 Associate Professor, McMaster University, Hamilton, ON
2011 - 2015 Professor, Lakehead University, Thunder Bay, ON
2009 - 2013 Chair, Dept. of Mathematical Sciences, Lakehead University, Thunder Bay, ON
2006 - 2011 Associate Professor, Lakehead University, Thunder Bay, ON
2001 - 2006 Assistant Professor, Lakehead University, Thunder Bay, ON
1997 - 2001 Instructor, Queen's University, Kingston, ON

Leaves and Visiting Positions.

2022 - 2023 Sabbatical
2019   Workshop in Teams, Research Institute for Mathematical Sciences, Kyoto University; supported by RIMS
2016   Visitor, Vietnam Institute for Advanced Study in Mathematics (supported by VIASM)
2014 - 2015 Sabbatical
2014   Parental Leave
2012   Visiting Professor, Università di Catania (supported by GNSAGA)
2009   Visiting Associate Professor, Università di Catania and Genova (supported by GNSAGA)
2008 - 2009 Sabbatical

4. Research and Publications

Research Interests. Commutative Algebra, Algebraic Combinatorics, Algebraic Geometry

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[1]Last Updated: January 15, 2026

Books.

2020 1. E. Carlini, H.T. Hà, B. Harbourne, A. Van Tuyl, *Powers of ideals and ideals of powers: Intersecting algebra, geometry, and combinatorics*. Lecture Notes of the Unione Matematica Italiana, Vol. 27, Springer, 2020.

2015 2. E. Guardo, A. Van Tuyl, *Arithmetically Cohen-Macaulay Sets of Points in $\mathbb{P}^1 \times \mathbb{P}^1$*. SpringerBriefs in Mathematics, Springer, 2015.

Refereed papers. [Authorship alphabetical. Students are underlined; postdocs indicated by $\star$]

to appear 3. <u>K. Bhaskara</u>, A. Van Tuyl, S. Zotine*, The h-vectors of toric ideals of odd cycle compositions revisited. To appear Communications in Algebra (2025). `arXiv:2504.13087`

4. A.V. Jayanthan, <u>A. Sivakumar</u>, A. Van Tuyl, Partial Betti splittigs with applications to binomial edge ideals. To appear Collectanea Mathematica (2025). `arXiv:2412.04195`

5. S.M. Cooper, S. Faridi, T. Holleben, L. Nicklasson, A. Van Tuyl, Spheres and balls as independence complexes. To appear Illinois Journal of Mathematics (2025). `arXiv:2503.18490`

2025 6. T. Hibi, A. Van Tuyl, A classification of van der Waerden complexes with linear resolution. Mathematica Scandinavica 131 (2025) 465–470.

7. J. Biermann, <u>B.A. Castellano</u>, <u>M. Manivel</u>, <u>E. Petrucelli</u>, A. Van Tuyl, Down-left graphs and a connection to toric ideals of graphs. Involve 18 (2025) 437– 458.

8. A. Van Tuyl, J. Yang*, Conditions for Virtually Cohen–Macaulay Simplicial Complexes. Advances in Applied Mathematics 164 (2025) 102830.

2024 9. P. Deshpande, A. Roy, A. Singh, A. Van Tuyl, Fröberg's Theorem, vertex splittability and higher independence complexess. Journal of Commutative Algebra 16 (2024) 391–410.

10. T. Nguyen*, J. Rajchgot, A. Van Tuyl, Three invariants of geometrically vertex decomposable ideals. Pacific Journal of Mathematics 333 (2024) 357–390.

11. A. Dochtermann, R. Nair, J. Schweig, A. Van Tuyl, R. Woodroofe, Simplicial complexes with many facets are vertex decomposable. Electronic Journal of Combinatorics 31 (2024) #P4.34

12. S.M. Cooper, S. Faridi, T. Holleben, L. Nicklasson, A. Van Tuyl, The weak Lefschetz property of whiskered graphs. In *Lefschetz Properties: Current and New Directions*, U. Nagel, K. Adiprasito, R. Di Gennaro, S. Faridi, S. Murai (eds.) Springer INdAM Series, vol. 59. (2024) 97–110.

13. <u>M. Cox</u>, K.N. Vander Meulen, A. Van Tuyl, J. Voskamp, Condition Numbers of Hessenberg Companion Matrices. Czechoslovak Mathematical Journal 74 (2024) 191–209.

14. <u>B. Atar</u>, <u>K. Bhaskara</u>, <u>A. Cook</u>, S. Da Silva*, M. Harada, J. Rajchgot, A. Van Tuyl, <u>R. Wang</u>, J. Yang*, Hadamard products and binomial ideals. Journal of Pure and Applied Algebra 228 (2024) 107568.

2023 15. M. Cummings, S. Da Silva★, J. Rajchgot, A. Van Tuyl, Geometric vertex decomposition and liaison for toric ideals of graphs. Algebraic Combinatorics **6** (2023) 965–997.

16. K. Bhaskara, A. Van Tuyl, Comparing invariants of toric ideals of bipartite graphs. Proceedings of the American Mathematical Society, Series B **10** (2023) 219–232.

17. F. Abdelmalek, E. Vander Meulen, K.N. Vander Meulen, A. Van Tuyl, Well-covered Token Graphs. Discussiones Mathematicae Graph Theory **43** (2023) 767–792.

2022 18. E. Camps Moreno, C. Kohne, E. Sarmiento, A. Van Tuyl, Powers of principal Q-Borel ideals. Canadian Mathematical Bulletin **65** (2022) 633–652.

19. E. Camps Moreno, C. Kohne, E. Sarmiento, A. Van Tuyl, On the Waldschmidt constant of square-free principal Borel ideals. Proceedings of the American Mathematical Society **150** (2022) 4145–4157.

20. M. Harada, M. Nowroozi, A. Van Tuyl, Virtual resolutions of points in $\mathbb{P}^1 \times \mathbb{P}^1$. Journal of Pure and Applied Algebra **226** (2022) 107140.

21. H.T. Hà, A. Van Tuyl, Powers of componentwise linear ideals: The Herzog–Hibi–Ohsugi Conjecture and related problems. Research in Mathematical Sciences **9** (2022) Article 22.

22. T. Hibi, K. Kimura, K. Matsuda, A. Van Tuyl, Regularity and h-polynomials of Cameron-Walker graphs. Enumerative Combinatorics and Applications **2** (2022) Article #S2R17.

2021 23. T. Hibi, H. Kanno, K. Kimura, K. Matsuda, A. Van Tuyl, Homological invariants of Cameron-Walker graphs. Transactions of the American Mathematical Society **374** (2021) 6559–6582

24. G. Favacchio, J. Hofscheier★, G. Keiper, A. Van Tuyl, Splittings of toric ideals. Journal of Algebra **574** (2021) 409–433.

2020 25. L. Duong, B.K. Kroschel, M. Riddell, K.N. Vander Meulen, A. Van Tuyl, Maximum nullity and zero forcing of circulant graphs. Special Matrices **8** (2020) 221–234.

26. G. Favacchio, G. Keiper, A. Van Tuyl, Regularity and h-polynomials of toric ideals of graphs. Proceedings of the American Mathematical Society. **148** (2020) 4665–4677.

27. S. Cooper, G. Fatabbi, E. Guardo, A. Lorenzini, J. Migliore, U. Nagel, A. Seceleanu, J. Szpond, A. Van Tuyl, Symbolic powers of codimension two Cohen-Macaulay ideals. Communications in Algebra **48** (2020) 4663–4680.
Winner of Earl Taft Memorial Award 2024.

28. E. Carlini, M.V. Catalisano, E. Guardo, A. Van Tuyl, Hilbert functions of schemes of double and reduced points. Journal of Pure and Applied Algebra **224** (2020) 106187, 20pp.

2019 29. F. Galetto★, J. Hofscheier★, G. Keiper, C. Kohne, M. E. Uribe Paczka, A. Van Tuyl, Betti numbers of toric ideals of graphs: a case study. Journal of Algebra and its Applications **18** (2019) 1950226. 14pp.

30. E. Carlini, M.V. Catalisano, E. Guardo, A. Van Tuyl, Hadamard star configurations. Rocky Mountain Journal of Mathematics **49** (2019), 419–432.

31. M.E. Uribe-Paczka, A. Van Tuyl, The regularity of some families of circulant graphs. Mathematics 7 (2019) 657. 13pp.

32. B. Hooper, A. Van Tuyl, A note on the van der Waerden complex. Mathematica Scandinavica 124 (2019) 179–187.

33. S. Budd, A. Van Tuyl, Newton complementary dual of f-ideals. Canadian Mathematical Bulletin 62 (2019) 231–241.

34. T. Hibi, K. Matsuda, A. Van Tuyl, Regularity and h-polynomials of edge ideals. Electronic Journal of Mathematics 26 (2019) #P1.22. 11pp.

35. F. Galetto*, A.V. Geramita, Y.-S. Shin, A. Van Tuyl, The symbolic defect of an ideal. Journal of Pure and Applied Algebra 223 (2019) 2709–2731.

2018 35. J. Baker, K.N. Vander Meulen, A. Van Tuyl, Shedding vertices of vertex decomposable graphs. Discrete Mathematics 341 (2018) 3355–3369.

36. F. Galetto*, Y.-S. Shin, A. Van Tuyl, Distinguishing $\Bbbk$-configurations. Illinois Journal of Mathematics 61 (2017) 415–441. [Note that this paper appeared in 2018, although the journal date is 2017.]

2017 37. K.N. Vander Meulen, A. Van Tuyl, Shellability, vertex decomposability, and the lexicographical products of graphs. Contributions to Discrete Mathematics 12 (2017) 63–68.

38. J. Earl, K.N. Vander Meulen, A. Van Tuyl, Refined inertia of matrix patterns. Electronic Journal of Linear Algebra **32** (2017) 317–334.

39. J. Biermann, A. O'Keefe, A. Van Tuyl, Bounds on the regularity of toric ideals of graphs. Advances in Applied Mathematics 85 (2017) 84–102.

2016 40. C. Bocci, S. Cooper, E. Guardo, B. Harbourne, M. Janssen, U. Nagel, A. Seceleanu, A. Van Tuyl, T. Vu, The Waldschmidt constant for squarefree monomial ideal. Journal of Algebraic Combinatorics 44 (2016) 875–904.

41. J. Earl, K.N. Vander Meulen, A. Van Tuyl, Independence complexes of well-covered circulant graphs. Experimental Mathematics 25 (2016) 441–451.

2015 42. J. Biermann*, C. Francisco, H.T. Hà, A. Van Tuyl, Colorings of simplicial complexes and vertex decomposability. Journal of Commutative Algebra 7 (2015) 337–352.

43. E. Guardo, A. Van Tuyl, On the Hilbert functions of sets of points in $\mathbb{P}^1 \times \mathbb{P}^1 \times \mathbb{P}^1$. Mathematical Proceedings of the Cambridge Philosophical Society 159 (2015) 115–123.

44. E. Carlini, E. Guardo, A. Van Tuyl, Plane curves containing a star configuration. Journal of Pure and Applied Algebra 219 (2015) 3495–3505.

2014 45. A. Bhat, J. Biermann*, A. Van Tuyl, Generalized cover ideals and the persistence property. Journal of Pure and Applied Algebra 218 (2014) 1683–1695.

46. E. Carlini, E. Guardo, A. Van Tuyl, Star configurations on generic hypersurfaces. Journal of Algebra 407 (2014) 1–20.

47. K.N. Vander Meulen, A. Van Tuyl, C. Watt, Cohen-Macaulay circulant graphs. Communications in Algebra 42 (2014) 1896–1910.

2013 48. J. Biermann*, A. Van Tuyl, Balanced vertex decomposable simplicial complexes and their h-vectors. Electronic Journal of Combinatorics 20 (2013) #P15.

49. E. Guardo, B. Harbourne, A. Van Tuyl, Asymptotic resurgences for ideals of positive dimensional subschemes of projective space. Advances in Mathematics **246** (2013) 114–127.

50. E. Guardo, B. Harbourne, A. Van Tuyl, Symbolic powers versus regular powers of ideals of general points in $\mathbb{P}^1 \times \mathbb{P}^1$. Canadian Journal of Mathematics **65** (2013) 823–842.

51. E. Guardo, B. Harbourne, A. Van Tuyl, Fat lines in $\mathbb{P}^3$: powers versus symbolic powers. Journal of Algebra **390** (2013) 221–230.

52. B. Babcock, A. Van Tuyl, Revisiting the spreading and covering numbers. The Australasian Journal of Combinatorics **56** (2013) 77–84.

53. Ş.O. Tohăneanu, A. Van Tuyl, Bounding invariants of fat points using a coding theory construction. Journal of Pure and Applied Algebra **217** (2013) 269–279.

2012 54. E. Guardo, A. Van Tuyl, Separators of Arithmetically Cohen-Macaulay fat points in $\mathbb{P}^1 \times \mathbb{P}^1$. Journal of Commutative Algebra **4** (2012) 255–268.

55. E. Guardo, A. Van Tuyl, Classifying ACM sets of points in $\mathbb{P}^1 \times \mathbb{P}^1$ via separators. Archiv der Mathematik **99** (2012) 33–36.

56. H. Bergsma, K.N. Vander Meulen, A. Van Tuyl, Potentially nilpotent matrices and the Nilpotent-Jacobian Method. Linear Algebra and its Applications **436** (2012) 4433-4445.

2011 57. N. Campbell, K.N. Vander Meulen, A. Van Tuyl, Structure of nilpotent matrices over fields. Electronic Journal of Linear Algebra **22** (2011) 931-958.

58. E. Carlini, A. Van Tuyl, Star configuration points and generic plane curves. Proceedings of the American Mathematical Society **139** (2011) 4181–4192.

59. E. Guardo, A. Van Tuyl, Separators of fat points in $\mathbb{P}^n \times \mathbb{P}^m$. Journal of Pure and Applied Algebra **215** (2011) 1990-1998.

60. C. Francisco, H.T. Hà, A. Van Tuyl, Colorings of hypergraphs, perfect graphs, and associated primes of powers of monomial ideals. Journal of Algebra **331** (2011) 224-242

2010 61. E. Guardo, L. Marino, A. Van Tuyl, Separators of fat points in $\mathbb{P}^n$. Journal of Algebra **324** (2010) 1492-1512.

62. C. Francisco, H.T. Hà, A. Van Tuyl, Associated primes of monomial ideals and odd holes in graphs. Journal of Algebraic Combinatorics **32** (2010) 287-301.

63. C. Francisco, H.T. Hà, and A. Van Tuyl, A conjecture on critical graphs and connections to the persistence of associated primes. Discrete Mathematics **310** (2010) 2176–2182.

64. J. He, A. Van Tuyl, Algebraic Properties of the path ideal of a tree. Communications in Algebra **38** (2010) 1725-1742.

65. A. Van Tuyl, F. Zanello, Simplicial complexes and Macaulay's inverse systems. Mathematische Zeitschrift **265** (2010) 151-160.

2009 66. A. Van Tuyl, Sequentially Cohen-Macaulay bipartite graphs: vertex decomposability and regularity. Archiv der Mathematik **93** (2009) 451-459.

67. K. Vander Meulen, A. Van Tuyl, Zero-nonzero patterns for nilpotent matrices over finite fields. Electronic Journal of Linear Algebra **18** (2009) 628-648.

68. C. Francisco, H.T. Hà, A. Van Tuyl, Splittings of monomial ideals. Proceedings of the American Mathematical Society **137** (2009) 3271-3282.

2008 69. A. Van Tuyl, R. Villarreal, Shellable graphs and sequentially Cohen-Macaulay bipartite graphs. Journal of Combinatorial Theory, Series A **115** (2008) 799-814.

70. E. Guardo, A. Van Tuyl, ACM sets of points in multiprojective space. Collectanea Mathematica **59** (2008) 191-213.

71. E. Guardo, A. Van Tuyl, Separators of points in a multiprojective space. Manuscripta Mathematica **126** (2008) 99-113.

72. H. T. Hà, A. Van Tuyl, Monomial ideals, edge ideals of hypergraphs, and their graded Betti numbers. Journal of Algebraic Combinatorics **27** (2008) 215-245.

2007 73. H. T. Hà, A. Van Tuyl, Resolutions of square-free monomial ideals via facet ideals: a survey. Contemporary Mathematics **448** (2007) 91-117.

74. C. Francisco, A. Van Tuyl, Some families of componentwise linear monomial ideals. Nagoya Mathematical Journal **187** (2007) 115-156.

75. E. Guardo, A. Van Tuyl, The minimal resolutions of double points in $\mathbb{P}^1 \times \mathbb{P}^1$ with ACM support. Journal of Pure and Applied Algebra **211** (2007) 784-800.

76. C. Francisco, A. Van Tuyl, Sequentially Cohen-Macaulay edge ideals. Proceedings of the American Mathematical Society **135** (2007) 2327-2337.

77. M. Roth, A. Van Tuyl, On the linear strand of an edge ideal. Communications in Algebra **35** (2007) 821-832.

78. H. T. Hà, A. Van Tuyl, Splittable ideals and the resolutions of monomial ideals. Journal of Algebra **309** (2007) 405-425.

2006 79. J. Sidman, A. Van Tuyl, H. Wang, Multigraded regularity: coarsenings and resolutions. Journal of Algebra **301** (2006) 703-727.

80. J. Sidman, A. Van Tuyl, Multigraded regularity: syzygies and fat points. Beiträge zur Algebra und Geometrie **47** (2006) 67-87.

2005 81. E. Guardo, A. Van Tuyl, Some results on fat points whose support is a complete intersection minus a point. In *Projective Varieties with Unexpected Properties*, de Gruyter (2005) 257-266.

82. A. Van Tuyl, An appendix to a paper of Catalisano, Geramita, Gimigliano: the Hilbert function of generic sets of 2-fat points in $\mathbb{P}^1 \times \mathbb{P}^1$. In *Projective Varieties with Unexpected Properties*, de Gruyter (2005) 109-112.

83. E. Guardo, A. Van Tuyl, Powers of complete intersections: graded Betti numbers and applications. Illinois Journal of Mathematics **49** (2005) 265-279.

84. A. Van Tuyl, On the defining ideal of a set of points in multi-projective space. Journal of the London Mathematical Society **72** (2005) 73-90.

2004 85. E. Guardo, A. Van Tuyl, Fat points of $\mathbb{P}^1 \times \mathbb{P}^1$ and their Hilbert function. Canadian Journal of Mathematics **56** (2004) 716–741.

86. H. T. Hà, A. Van Tuyl, The regularity of points in multi-projective spaces. Journal of Pure and Applied Algebra **187** (2004) 153–167.

2003 87. A. Van Tuyl, The Hilbert functions of ACM points in $\mathbb{P}^{n_1} \times \cdots \times \mathbb{P}^{n_k}$. Journal of Algebra **264** (2003) 420–441.

2002 88. A. Van Tuyl, The border of the Hilbert function of a set of points in $\mathbb{P}^{n_1} \times \cdots \times \mathbb{P}^{n_k}$. Journal of Pure and Applied Algebra **176** (2002) 223–247.

2001 89. E. Carlini, H. T. Hà, A. Van Tuyl, Computing the Spreading and Covering Numbers. Communications in Algebra **29** (2001) 5687–5699.

90. M. Buckles, E. Guardo, A. Van Tuyl, Fat Points on a grid in $\mathbb{P}^2$. Matematiche (Catania) **55** (2000), no. 1, 169–189 (2001).

91. M. Buckles, E. Guardo, A. Van Tuyl, Fat Points on a generic almost complete intersection. Matematiche (Catania) **55** (2000), no. 1, 191–202 (2001).

Papers submitted or in preparation.

92. <u>K. Bhaskara</u>, <u>M. Y. C. Chong</u>, T. Hibi, <u>N. Ragunathan</u>, A. Van Tuyl, Levelable graphs. Preprint (2025). `arXiv:2504.02065`

93. <u>A. Saha</u>, <u>L. Tilis</u>, K.N. Vander Meulen, A. Van Tuyl, Sign patterns which require or allow the strong multiplicity property. Preprint (2025). `arXiv:2505.08967`

94. K. Saha, A. Van Tuyl, Comparing the v-number and h-polynomials of edge ideals. Preprint (2025). `arXiv:2507.05700`

95. E. Camps-Moreno, D. Dey, S. Dey, T.H. Hà, S. Landsittel, B. Oltsik, S. Roshan Zamir, A. Van Tuyl, Analytic spread of binomial edge ideals. Preprint (2025). `arXiv:2510.05915`

96. E. Guardo, G. Keiper, A. Van Tuyl, Splittings of ideals of points in $\mathbb{P}^1 \times \mathbb{P}^1$. Preprint (2025). `arXiv:2510.05628`

Expository Articles.

2019 97. A. Van Tuyl, Chromatic numbers via commutative algebra. CMS Notes **15** (2019) 14–15.

2013 98. A. Van Tuyl, A Beginner's Guide to Edge and Cover Ideals, in *Monomial Ideals, Computations and Applications*, edited by A.M. Bigatti, P. Gimenez, and E. Sáenz-de-Cabezón. Lecture Notes in Mathematics, 2083, Springer (2013) 63–94.

Software Packages.

2024 99. M. Cummings, A. Van Tuyl. The GeometricDecomposability package for Macaulay2. The Journal of Software for Algebra and Geometry. **14** (2024) 41–50
(This package can be used with the computer algebra program Macaulay2.)

2009 100. C.A. Francisco, A. Hoefel, A. Van Tuyl, `EdgeIdeals`: a package for (hyper)graphs. The Journal of Software for Algebra and Geometry **1** (2009) 1–4.
(This package can be used with the computer algebra program Macaulay2.)

Theses.

2001 101. *Sets of Points in Multi-projective Spaces and their Hilbert Functions.*
Ph.D. Thesis, Queen's University. Supervised by A.V. Geramita.

1997 102. *The Field of n-torsion points of an Elliptic Curve over a Finite Field.*
M.Sc. Thesis, Queen's University. Supervised by E. Kani.

Papers in non-refereed journals.

2001 103. E. Carlini, H. T. Hà, A. Van Tuyl, Tutorial 2: A Chess Puzzle. In *COCOA VI, Proceedings of the International School*, Queen's Papers in Pure and Appl. Math. **120** (2001) 215–221.

104. E. Carlini, H. T. Hà, A. Van Tuyl, Tutorial 3: Hilbert Function of Points. In *COCOA VI, Proceedings of the International School*, Queen's Papers in Pure and Appl. Math. **120** (2001) 227–237.

105. E. Carlini, H. T. Hà, A. Van Tuyl, Tutorial 5: The Ideal Generation Conjecture. In *COCOA VI, Proceedings of the International School*, Queen's Papers in Pure and Appl. Math. **120** (2001) 245–262.

106. E. Carlini, H. T. Hà, A. Van Tuyl, Tutorial 6: The Minimal Resolution Conjecture. In *COCOA VI, Proceedings of the International School*, Queen's Papers in Pure and Appl. Math. **120** (2001) 263–273.

1998 107. H. T. Hà, A. Van Tuyl, The graph and the image of a rational map from $\mathbb{P}^n$ to $\mathbb{P}^m$. In *The Curves Seminar at Queen's, Vol XII*, Queen's Papers in Pure and Appl. Math. **114** (1998) 141-162.

5. Grants, Scholarships, and Awards

Research Grants and Honours.

2025	Diamond Open Access Stimulus Fund, Funding from MathOA to help start an open access journal. [Co-PI with S. Faridi and T. Hà] 10,000 Euros.
2025	Mitacs Globalink Research Award Abroad [Home supervisor for Kieran Bhaskara to visit Japan to work with Kyouko Kimura in Sprin 2026] $6,000.
2014 - 2029	Discovery Grant (Individual), NSERC, $31,000/year.
2023 - 2025	Collaborative Research Group "Applications of Commutative Algebra", Atlantic Association for Research in Mathematics (AARMS). [Co-PI with S. Cooper and S. Faridi] $30,000/yr.
2024	Winner of Earl Taft Memorial Award (2024) for paper "Symbolic powers of codimension two Cohen-Macaulay ideals" in Communications in Algebra [includes $500US to be shared among co-authors]
2023	Mitacs Globalink Research Award. [Local supervisor for Aniketh Sivakumar to work at McMaster for Fall 2023] $6,000.
2023	Mitacs Globalink Research Award Abroad - Japan Society for the Promotion of Science (JSPS) [Home supervisor for Kieran Bhaskara to visit Japan to work with Akihiro Higashitani during Summer 20223] $3,000.
2019 - 2024	Discovery Grant (Individual), NSERC, $21,000/year.
2019	Workshop (Type A), Research Institue for Mathematical Sciences, Kyoto.
2015	Startup Grant, McMaster University, $30,000.
2014 - 2019	Discovery Grant (Individual), NSERC, $18,000/year.
2011	Senate Research Committee Conference Travel Fund, Lakehead, $600.
2009 - 2014	Discovery Grant (Individual), NSERC, $18,000/year.
2008	Research in Teams, Banff International Research Station.
2007	Senate Research Committee NSERC Development Fund, Lakehead, $2,500.

2006	Senate Research Committee Conference Travel Fund, Lakehead, $600.
2004 - 2009	Discovery Grant (Individual), NSERC, $8,000/year.
2002 - 2004	Discovery Grant (Individual), NSERC, $6,000/year.
2002	Visiting Assistant Professor at the Università di Genova and the Università di Catania with financial support provided by INDAM.
2001	Senate Research Committee NSERC Development Fund, Lakehead, $1,200.
2001	Dean's Faculty Development Fund, Lakehead, $1,000.

Grants for conferences and workshops.

2024-2025	CRM-Fields-ISM-SLMath-PIMS, $57,500. Co-PI with S. DaSilva, F. Galetto, E. Guardo, M. Harada, P. Klien, J. Rajchgot, for the summer school Séminaire de Mathématiques Supérieures (SMS) 2025: An Introduction to Recent Trends in Commutative Algebra, to be held at the Fields Institute, Toronto, ON, June 2025.
2025	Fields Institute and NSF, $425,000. Co-PI with D. Eisenbud, E. Gorla, M. Harada, J. Rajchgot, and H. Schenck for the program "Thematic Program in Commutative Algebra and Applications" at the Fields Institute, Toronto, ON, Jan.-June 2025.
2024-2025	Tutte Institute for Mathematics and Computation, $10,000. Co-applicant with M. Harada and J. Rajchgot for the program "Thematic Program in Commutative Algebra and Applications" at the Fields Institute, Toronto, ON, Jan.-June 2025.
2023	NSF Conference Grant, $15,000 (US) Co-applicant with S. Cooper and A. Seceleanu for the conference, "Unexpected and Asymptotic Properties of Projective Varieties" in Lincoln, NE, August 2023. [Originally to be held in 2020 but postponed until 2023 due to COVID-19]
2023	NSA Conference Grant, $15,000 (US) Co-applicant with S. Cooper and A. Seceleanu for the conference, "Unexpected and Asymptotic Properties of Projective Varieties" in Lincoln, NE, August 2023. [Originally to be held in 2020 but postponed until 2023 due to COVID-19]
2018	General Scientific Activity Grant, Fields Institute, $8,000 Co-applicant with M. Harada for workshop "Graduate Summer School in Algebraic Group Actions " held in Hamilton, ON, June 2018.
2018	General Scientific Activity Grant, Fields Institute, $3,000 Co-applicant with M. Harada and M. Zarbrocki for conference "Combinatorial Algebra meets Algebraic Combinatorics" held in Hamilton, ON, Jan. 2018.
2012	General Scientific Activity Grant, Fields Institute, $2,000 Co-applicant with T. Hà, B. Harbourne, and G.G. Smith for conference "Interactions between algebraic geometry and commutative algebra" held in Kingston, ON, October 2012.
2011	General Scientific Activity Grant, Fields Institute, $10,000 Co-applicant with S. Faridi and A.V. Geramita for conference "Combinatorial Algebra meets Algebraic Combinatorics" held in Thunder Bay, ON, Jan. 2011.
2011	Conference Grant, AARMS (Atlantic Association for Research in the Mathematical Sciences), $4,000 Co-applicant with S. Faridi and A.V. Geramita for conference "Combinatorial Algebra meets Algebraic Combinatorics" held in Thunder Bay, ON, Jan. 2011.

Scholarships and Prizes.

2000 - 2001 Ontario Graduate Scholarship, Queen's University, $17,000.
1998 - 2000 NSERC Post Graduate Scholarship B, Queen's University, $19,100/year.
1996 - 1997 R.S. McLaughlin Fellowship, Queen's University.
1996   William Rink Memorial Prize, Calvin College.
1995   NSERC Undergraduate Student Research Award, Simon Fraser University.
1992 - 1996 Presidential Scholarship, Calvin College.

Teaching Awards and Honours.

2012   Contributions to Teaching Award, Lakehead University.
2011   Nominated for Contributions to Teaching Award, Lakehead University.
2008   Contributions to Teaching Award, Lakehead University.
2002   Contributions to Teaching Award, Lakehead University.

6. Lectures and Presentations

Invited Conference Talks.

2024 Aug Vertex decomposable simplicial complexes: Uwe's contributions and influence, Uwe-fest - Conference on Commutative Algebra and its Interaction with Algebraic Geometry and Algebraic Combinatorics, Notre Dame, South Bend, IN.
2023 Jan Comparting the regularity and the degree of h-polynomials of (combinatorially defined) ideals, Joint Mathematics Meeting, Boston, MA.
2022 Dec An introduction to geometrically vertex decomposable ideals, Mathematisches Forschungsinstitut Oberwolfach, Germany.
     Sep Comparting the regularity and the degree of h-polynomials of (combinatorially defined) ideals, International Conference on Enumerative Combinatorics and Applications (Virtual).
     May Virtual resolutions of points in $\mathbb{P}^1 \times \mathbb{P}^1$, Virtual Spring Western Sectional Meeting, AMS Meeting.
2019 Jan The h-polynomial and regularity of edge ideals, Combinatorial Algebra meets Algebraic Combinatorics, University of Ottawa, Ottawa, ON.
2018 Nov Symbolic defect of ideals, Commutative Algebra and Representation Theory, Tulane University, New Orleans, LA.
     Mar Some results on f-ideals, AMS Meeting, Columbus, OH.
2017 Oct The symbolic defect of an ideal, Route 81 Conference, Cornell, Ithaca, NY.
     Jul The combinatorial algebraic topology of some pure simplicial complexes, Mathematical Congress of the Amemericas, Montreal, PQ.
2015 Oct Revisiting a conjecture of Villarreal on Cohen-Macaulay graphs., AMS Meeting, Chicago, IL.
     Feb Fat lines in $\mathbb{P}^3$, Mathematisches Forschungsinstitut Oberwolfach, Germany.
2014 Oct The independence complex of circulant graphs. AMS Meeting, Halifax, NS.
2013 Sep The $2n$-conjecture. Tulane University, New Orleans, LA.
     Jun Graph colouring information encoded into monomial ideals. International Workshop in Combinatorial Algebra, Dalhousie/St. Mary's, Halifax, NS.
2012 Dec Do square-free monomial ideals satisfy the persistence property? Combinatorial Commutative Algebra and Applications, MSRI, Berkeley, CA.

	Mar	Bounding invariants of fat points using a coding theory construction. AMS Meeting, Lawrence, KS.
2011	Dec	The minimum distance of linear codes and fat points. CMS Meeting, Toronto, ON.
2010	Nov	Revisiting the spreading and covering numbers. AMS Meeting, South Bend, IN.
	Mar	A conjecture about coloring graphs and connections to associated primes of ideals. AMS Meeting, Lexington, KY.
	Jan	Coloring graphs and associated primes, Algebraic Combinatorics meets combinatorial algebra, Kingston, ON.
2009	Oct	Sequentially Cohen-Macaulay bipartite graphs, AMS Meeting, Boca Raton, FL.
2008	Dec	Nilpotent matrices over finite fields, CMS Meeting, Ottawa, ON.
	Oct	Powers of cover ideals and their associated primes, AMS Meeting, Vancouver, BC.
2007	Oct	Shellable graphs, AMS Meeting, Chicago, IL.
	Jun	ACM sets of points in multiprojective space, Banff International Research Station, Banff, AB.
2006	Dec	Some resolutions of double points in $\mathbb{P}^1 \times \mathbb{P}^1$, CMS Winter Meeting, Toronto, ON.
	Aug	The edge ideal of hypergraphs, Fields Institute, Toronto, ON.
	Apr	Classifying ACM sets of points in multiprojective spaces, AMS Meeting, San Francisco, CA.
	Apr	Resolutions of edge and facet ideals, AMS Meeting, South Bend, IN.
	Apr	Resolutions of edge and facet ideals, AMS Meeting, Miami, FL.
	Jan	The resolutions of edge ideals, Fields Institute, Toronto, ON.
2005	Oct	On the resolutions of edge ideals, AMS Meeting, Lincoln, NE.
2004	Oct	Multigraded regularity and fat points, AMS Meeting, Nashville, TN.
	Mar	Powers of complete intersections, AMS Meeting, Tallahassee, FL.
2003	Jul	The ideal of points in multi-projective spaces, Commutative Algebra: Presentations by Young Researches, Snowbird, UT.
2002	Nov	The Hilbert functions of fat points in $\mathbb{P}^1 \times \mathbb{P}^1$, AMS Meeting, Orlando, FL.
	Oct	The defining ideal of a set of points in multi-projective space, Route 81 Conference, Kingston, ON.
	Jun	The Hilbert functions of fat points in $\mathbb{P}^1 \times \mathbb{P}^1$, Zero-Dimensional Schemes, Catania, Italy.
	Jan	The Hilbert function of points in $\mathbb{P}^1 \times \mathbb{P}^1$, Joint AMS-MAA Meeting, San Diego, CA.
2001	Jul	The eventual behavior of the Hilbert function of a set of points in $\mathbb{P}^{n_1} \times \cdots \times \mathbb{P}^{n_k}$, poster, COCOA VII Conference, Queen's University, Kingston, ON.
2000	Dec	The Hilbert function of points in $\mathbb{P}^1 \times \mathbb{P}^1$, CMS Meeting, Vancouver, BC.
	Oct	The Hilbert function of points in $\mathbb{P}^1 \times \mathbb{P}^1$, Route 81 Conference, Cornell University, Ithaca, NY.
1999	Dec	Computing the spreading and covering numbers, CMS Meeting, Montreal, PQ.
1998	May	The field of N-torsion points of an elliptic curve, Institut des Sciences Mathématiques (ISM) Graduate Student Conference, Sherbrooke, PQ.

Seminars and University Talks.

2024	Sep	Vertex decomposable simplcial complexes and some generalizations, Algebra and Algebraic Geometry Seminar, McMaster University, Hamilton, ON.
	Jan	Geometrically vertex decomposable ideals: an introdcution and new resutls. Fellowship of the Ring, Virtual Seminar.

2023	Oct	The Kruskal-Katona Theorem. Algebra and Aglebraic Geometry Seminar, McMaster University, Hamilton, ON.
	Apr	Comparing invariants of ideals. Colloquium, Tulane University, New Orleans, LA.
2022	Sep	How to find the chromatic number of a graph without colouring. Colloquium, Calvin University, Grand Rapids, MI.
	Sep	Vertex decomposable simplicial complexes: h-vectors and f-vectors. Algebra and Algebraic Geometry Seminar, McMaster University, Hamilton, ON
	Feb	Toric ideals of graphs and some of their homological invariants. IIT Bombay Virtual Commutative Algebra Seminar.
2021	Sep	Componentwise linear ideals and the Herzog, Hibi, Ohsugi Conjecture, Algebra and Algebraic Geometry Seminar, McMaster University, Hamilton, ON
2019	Apr	Chromatic numbers via commutative algebra, Colloquium, Cleveland State University, OH.
2018	Mar	Symbolic defect of ideals, Algebra Seminar, Dalhousie University, Halifax, NS.
	Mar	Studying graphs using commutative algebra and combinatorial algebraic topology, Colloquium, Dalhousie University, Halifax, NS.
2017	Nov	The Hilbert function of fat points, Algebra Seminar, McMaster University, Hamilton, ON
	Sep	An introduction to the Hilbert functions of points, Algebra Seminar, McMaster University, Hamilton, ON
	Mar	The associated primes of powers of ideals, Algebra Seminar, McMaster University, Hamilton, ON
	Jan	The Waldschmidt constant of square-free monomial ideals, Algebra Seminar, McMaster University, Hamilton, ON
2016	May	The regularity of toric ideals of graphs, Vietnam Institute of Advanced Study in Mathematics, Hanoi, Vietnam.
	May	The Waldschmidt constant of square-free monomial ideals, Vietnam Academy of Science and Technology, Hanoi, Vietnam.
2015	Sep	The Waldschmidt constant of square-free monomial ideals, Operations Research Seminar, McMaster University, Hamilton, ON.
	Sep	The Waldschmidt constant of square-free monomial ideals, Department Colloquium, McMaster University, Hamilton, ON.
	Sep	Resolutions of toric ideals of graphs, Algebra Seminar, McMaster University, Hamilton, ON
	Sep	Toric ideals of graphs, Algebra Seminar, McMaster University, Hamilton, ON
	Jan	Studying graphs using commutative algebra and combinatorial algebraic topology, McMaster University, Hamilton, ON.
2014	Nov	Colouring graphs using abstract algebra. Redeemer College University, Ancaster, ON.
	Oct	Symbolic powers of ideals of lines in projective 3-space. Queen's University, Kingston, ON.
2013	Mar	Placing queens on a chessboard. Lakehead University, Thunder Bay, ON.
	Jan	f-vectors of simplicial complexes. Lakehead University, Thunder Bay, ON.
2012	May	Star Configurations. Università di Catania, Catania, Italy.
	Apr	Balanced vertex decomposable simplicial complexes. Tulane University, New Orleans, LA.
2009	Jul	Computing Betti numbers of edge ideals of chordal graphs, Mt. Hoyloke College, South Hadley, MA.

	Apr	Detecting odd induced cycles in a graph algebraically, Redeemer University College, Ancaster, ON.
	Mar	Powers of ideals, associated primes, and connections to graph theory. Politecnico di Torino, Torino, Italy.
	Mar	Powers of ideals, associated primes, and connections to graph theory. Università di Genova, Genova, Italy.
	Mar	Powers of ideals, associated primes, and connections to graph theory. Universitá di Catania, Catania, Italy.
	Feb	What is a syzgygy? Tulane University, New Orleans, LA.
	Feb	Detecting odd induced cycles in a graph algebraically, University of Guelph, Guelph, ON.
2008	Nov	Powers of ideals, associated primes, and connections to graph theory. Memorial University, St. John's, NL.
	Nov	Powers of ideals, associated primes, and connections to graph theory. Tulane University, New Orleans, LA.
	Oct	Powers of ideals, associated primes, and connections to graph theory. McMaster University, Hamilton, ON.
	Oct	Generalizing separators of points. Queen's University, Kingston, ON.
	Feb	Powers of edge ideals and cover ideals, Cornell University, NY.
	Feb	Splittable ideals and edge ideals of chordal graphs, Cornell University, NY.
2007	Nov	Odd cycles in graphs and edge ideals, (colloquium) Michigan Tech. University, MI.
	Oct	Odd cycles in graphs and edge ideals, (colloquium) Lakehead University, ON.
	May	Edge ideals and chordal graphs, Universitat de Barcelona/Universitat Politècnica de Catalunya, Spain.
	May	Edge ideals and chordal graphs, Universität Osnabrück, Germany.
	May	Edge ideals and chordal graphs, KTH, Stockholm, Sweden.
2005	Jan	Establishing a dictionary between commutative algebra and graph theory, Wilfrid Laurier University, ON.
2004	Jul	Commutative algebra and graph theory, (Discrete Math Seminar) Queen's University, Kingston, ON.
	May	Multigraded regularity and fat points, Università di Genova, Genova, Italy.
	Apr	Multigraded regularity and fat points, (Curves Seminar) Queen's University, Kingston, ON.
	Feb	Macaulay's growth theorem, (colloquium) Lakehead University.
2003	Feb	Placing queens on a chessboard: an introduction to algebraic combinatorics, (colloquium) Lakehead University, ON.
2002	Jun	The eventual behavior of the Hilbert function of points in multiprojective spaces, Università di Catania, Italy.
	May	The Hilbert functions of ACM sets of points in multiprojective spaces, Università di Genova, Italy.
	May	The eventual behavior of the Hilbert function of points in multiprojective spaces, Università di Genova, Italy.
	Apr	An introduction to algebraic geometry and the algebra-geometry dictionary,(colloquium) Calvin College, MI.
2000	Nov	The Hilbert function of points in $\mathbb{P}^1 \times \mathbb{P}^1$, University of Michigan, MI.
	Oct	The Hilbert function of points in $\mathbb{P}^1 \times \mathbb{P}^1$, (Curves Seminar) Queen's University, Kingston, ON.
1999	Oct	Points in $\mathbb{P}^n \times \mathbb{P}^m$, (Curves Seminar) Queen's University, Kingston, ON.

7. Conferences and Workshops Attended

Research Conferences.

2026	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Halifax, NS.
2025	Dec	CMS Winter Meeting, Toronto, ON.
	Sep	Route 81, Queen's University, Kingston, ON.
	Jan-June	Commutative Algebra and its Applications Thematic Program, Fields Institute, Toronto, ON.
2024	Aug	Uwefest - Conference on Commutative Algebra and its Interaction with Algebraic Geometry and Algebraic Combinatorics, Notre Dame, South Bend, IN.
2023	Apr	Interactions between Topological Combinatorics and Combinatorial Commutative Algebra, Banff International Research Station, Banff, AB.
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Waterloo University, ON.
	Jan	Joint Mathematics Meeting, Boston, MA.
2022	Nov	Subvarieties in Projective Spaces and Their Projections, Mathematisches Forschungsinstitut Oberwolfach, Germany.
	Sep	International Conference on Enumerative Combinatorics and Applications (Virtual).
	May	Macaulay2 at Cleveland State University, Cleveland, OH.
2020	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Dalhousie University, NS.
2019	Dec	CMS Meeting, Toronto, ON.
	Jul	RRAGE: Ragnar's Ramifications in Algebra and Geometry Emerging Workshop, Fields Institute, Toronto, ON.
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, University of Ottawa, ON.
2018	Nov	Commutative Algebra and Representation Theory, Tulane University, New Orleans, LA.
	Jun	Recent trends in syzygies, Banff International Research Station, Banff, AB.
	Apr	AMS Meeting, Columbus, OH.
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, McMaster University, Hamilton, ON.
2017	Dec	CMS Meeting, Waterloo, ON.
	Jul	Mathematical Congress of the Americas, Montreal, PQ.
2016–	Dec	CMS Meeting, Niagara Falls, ON.
	Aug	Introductory workshop to combinatorial algebraic geometry, Fields Institute, Toronto, ON.
	Apr	AMS Meeting, Fargo, ND.
2015–	Oct	Route 81 Conference, Queen's University, Kingston ON.
	Oct	AMS Meeting, Chicago, IL.
	Feb	Mini-Workshop: Ideals of Linear Subspaces, Their Symbolic Powers and Waring Problems, Mathematisches Forschungsinstitut Oberwolfach, Germany
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Queen's University, Kingston, ON
2014	Dec	CMS Meeting, Hamilton, ON.
	Oct	AMS Meeting, Halifax, NS.
2013	Sep	Interactions between Commutative Algebra and Algebraic Geometry II, Tulane University, New Orleans, LA.
	Jun	Commutative Algebra and Combinatorics, CMS Meeting, Halifax, NS.

	Jun	International Workshop in Combinatorial Algebra, Dalhousie and St. Mary's, Halifax, NS.
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Fields Institute, Toronto, ON.
2012	Dec	Combinatorial Commutative Algebra and Applications, MSRI, Berkeley, CA.
	Oct	Route 81 Conference ("TonyFest"), Kinston, ON.
	Mar	AMS Meeting, Lawrence, KS.
2011	Dec	CMS Meeting, Toronto, ON.
	Jul	MONICA (Monomial Ideals, Computations and Applications), Castro Urdiales, Spain.
	May	19th Ontario Combinatorics Workshop, Toronto, ON
	Jan	Algebraic Combinatorics meets Combinatorial Algebra VIII, Thunder Bay, ON.
2010	Dec	CMS Meeting, Vancouver, BC.
	Nov	AMS Meeting, South Bend, IN.
	Mar	AMS Meeting, Lexington, KY.
	Jan	Algebraic Combinatorics meets Combinatorial Algebra, Kingston, ON.
2009	Oct	AMS Meeting, Boca Raton, FL.
	May	Ontario Combinatorics Workshop, Waterloo, ON.
2008	Dec	CMS Meeting, Ottawa, ON.
	Nov	Clifford Lecture Series: Tropical Algebra, Tulane University, New Orleans, LA.
	Oct	Route 81 Conference, Queen's University, Kingston, ON.
	Oct	AMS Meeting, Vancouver, BC.
	Sep	KUMUNU, University of Nebraska, Lincoln, NE.
	Jun	Macaulay 2 Worksop, Snowbird, Salt Lake City, UT.
	May	Commutative Algebra: Connections with Algebraic Topology and Representation Theory, Lincoln, NE.
2007	Oct	AMS Meeting, Chicago, IL.
	Jul	International Symposium on Symbolic and Algebraic Computation (ISSAC), Waterloo, ON.
	Jun	Commutative Algebra and its Interaction with Algebraic Geometry, Banff International Research Station, Banff, AB.
2006	Dec	CMS Meeting, Toronto, ON.
	Oct	Syzygies and Hilbert Functions, Banff International Research Station, Banff, AB.
	Aug	Computational and Combinatorial Commutative Algebra, workshop at the Fields Institute, Toronto, ON.
	May	AMS Meeting, San Francisco, CA.
	Apr	AMS Meeting, South Bend, IN.
	Apr	AMS Meeting, Miami, FL.
	Jan	Combinatorial Inverse Systems, workshop at the Fields Institute, Toronto, ON.
2005	Oct	AMS Meeting, Lincoln, NE.
	Oct	Midwest Algebra, Geometry and their Interactions Conference (MAGIC), University of Notre Dame, South Bend, IN.
	May	Wiegandfest, University of Nebraska, Lincoln, NE.
2004	Oct	AMS Meeting, Nashville, TN.
	Jun	Projective Varieties with Unexpected Properties, Sienna, Italy.
	Mar	AMS Meeting, Tallahassee, FL.
	Jan	Inverse Systems meet diagonal coinvariants, Queen's University, Kingston, ON.
2003	Jun	Commutative Algebra: Presentations by Young Researchers, Snowbird, UT.

	Jun	COCOA VIII: Summer School and Conference, Cadiz, Spain.
2002	Nov	AMS Meeting, Orlando, FL.
	Oct	Route 81 Conference, Queen's University, Kingston, ON.
	Jun	Joint AMS-UMI Meeting, Pisa, Italy.
	Jun	Zero-Dimensional Schemes, Catania, Italy.
	Apr	Classical Invariant Theory, Queen's University, Kingston, ON.
	Jan	Joint AMS-MAA Meeting, San Diego, CA.
2001	Jan	COCOA VII Summer School and Conference, Queen's University, Kingston, ON.
2000	Dec	Canadian Mathematical Society Winter Meeting, Vancouver, BC.
	Oct	Route 81 Conference, Cornell University, Ithaca, NY.
	Sep	AMS Meeting, Toronto, ON.
	Jun	PRAGMATIC 2000: Special Rings of Algebraic Geometry, a summer school at the Università di Catania, Italy.
	Feb	Zero-Dimensional Schemes and Applications, Università di Napoli, Naples, Italy.
1999	Dec	Canadian Mathematical Society Winter Meeting, Montreal, PQ.
	Jul	Free Resolutions and Linear Systems, a summer school at Bayreuth, Germany.
	Jun	COCOA VI Summer School and Conference, Torino, Italy.
1998	Dec	Canadian Mathematical Society Winter Meeting, Kingston, ON.
	Oct	Route 81 Conference, Queen's University, Kingston, ON.
	May	Graduate Colloque, Université de Sherbrooke, Sherbrooke, PQ.
1997	Oct	Route 81 Conference, Cornell University, Ithaca, NY.

Mathematics Education Conferences.

2009 Jun   Bridging Mathematics to Mathematics Education, York University, Toronto, ON.

8. Service to the Profession

Editorial Boards.

2023–   Journal of Algebraic Combinatorics

Committees.

2022–2024 Atlantic Association of Research in the Mathematical Sciences (AARMS) Scientific Review Panel
2022–2024 Publications Committe, Canadian Mathematical Society.
2020–2021 Doctoral Prize Committee, Canadian Mathematical Society.
2017–2020 Endowment Grants Committee, Canadian Mathematical Society.

Conferences organized.

2025 Jan   Co-organizer of "Thematic Program in Commutative Algebra and Applications" with D. Eisenbud, E. Gorlo, M. Harada, J. Rajchgot, and H. Schenck, at the Fields Institute in Toronto, ON. This program is a six month program [As part of this conference, we received $425,000 in funds from the Fields Institute and National Science Fundation.]

2023 Dec   Co-organizer for a special session in "Commutative Algebra" with S. Bisui and T. Nguyen at the Canadia

2023 Aug   Co-organizer of "Unexpected and Asymptotic Properties of Algebraic Varieties" with S. Cooper and A. Seleceanu, at the Univerity of Nebraska-Lincoln. [As part of our original submission, S. Cooper, A. Seleceanu, and myself received $15,000 (US) from an NSF Conference Grant and $15,000 (US) from an NSA Conference

		Grant]*(This conference was supposed to be held in May 2020, but was postponed due to COVID-19.)*
2023	Apr	Co-organizer of "Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra" with M. Bigdeli, S. Faridi, S. Murai. This is a Banff International Research Station (BIRS) conference to be held in Banff, BC *(This conference was a new submission based upon the cancelled conference described below.)*
2020	Nov	Co-organizer of "Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra" with S. Faradi, S. Murai, I. Novik, and T. Hà. This is a Banff International Research Station (BIRS) conference in Banff, Canada (*This conference ended up being cancelled due to COVID-19.*)
2019	Dec	Co-organizer for a special session in "Commutative Algebra" with S. Cooper and S. Faridi at the Canadian Mathematical Society Winter Meeting in Toronto, ON.
2018	Dec	Co-organizer for a special session in "Symbolic and Regular Powers of Ideals" with S. Cooper and S. Faridi at the Canadian Mathematical Society Winter Meeting in Vancouver, BC. (*Due to health reasons, I couldn't attend the conference, but I had helped pick the speakers.*)
	Jul	Co-organizer for "Graduate Summer School in Algebraic Group Actions" with M. Harada in Hamilton, ON. [As part of this conference, M. Harada and myself received $8,000 from the Fields Institute.]
	Jan	Co-organizer for "Combinatorial Algebra meets Algebraic Cobminatorics" with M. Harada and M. Zabrocki, Hamilton, ON. [As part of this conference, M. Harada, M. Zabrocki, and myself received $3,000 from the Fields Institute.]
2017	Dec	Co-organizer for a special session in "Applications of Combinatorial Topology in Commutative Algebra " with S. Faridi at the Canadian Mathematical Society Winter Meeting in Waterloo, ON.
	May	Co-organizer of "Ordinary and Symbolic Powers of Ideals" with C. Francisco and T. Hà. This was a Banff International Research Station (BIRS) conference held in Oaxaca.
2016	Dec	Co-organizer for a special session in "Recent advances in commutative algebra" with S. Faridi at the Canadian Mathematical Society Winter Meeting in Niagara Falls.
	Apr	Co-organizer for a special ssesion in "Commutative Algebra and Its Interactions with Combinatorics and Algebraic Geometry" with S. Cooper at NDSU, Fargo, ND.
2014	Dec	Co-organizer for a special session in "Commutative Algebra: Interactions with Algebraic Combinatorics, Algebraic Geometry, and Representation Theory" with A.V. Geramita at the Canadian Mathematical Society Winter Meeting in Hamilton.
2013	Sep	Co-organizer for "Interactions between Commutative Algebra and Algebraic Geometry II" with H.T. Hà and B. Harbourne at Tulane University.
	Jun	Co-organizer for a special session in "Commutative Algebra" with J. Biermann, S. Faridi, and A. Hoefel at the Canadian Mathematical Society Summer Meeting in Halifax.
2012	Oct	Co-organizer for Route 81 Conference ("TonyFest") with H.T. Hà, B. Harbourne, and G.G. Smith at Queen's University, Kingston, ON. [As part of this conference we received $2,000 from the Fields Institute.]
	Oct	Co-organizer for a special ssesion in "Combinatorial Commutative Algebra" with H.T. Hà and C. Francisco at Tulane University, New Orleans, LA. [I could not attend this conference, but I helped in picking the speakers.]

2011 Jan   Co-organizer for "Combinatorial Algebra meets Algebraic Cobminatorics" with S. Faridi and A.V. Geramita, Thunder Bay, ON (2011). [As part of this conference, S. Faridi, A.V. Geramita, and myself received $10,000 from the Fields Institute and $4,000 from AARMS.]

2010 Dec   Co-organizer for a special session in "Commutative Algebra" with S. Faridi at the Canadian Mathematical Society Winter Meeting in Vancouver (2010).

2004 Dec   Co-organizer for a special session in "Commutative Algebra" with S. Faridi, L. Sabourin, and W. Traves at the Canadian Mathematical Society Winter Meeting in Montreal (2004).

Workshops.

2025 Jun   Instructor for Séminaire de Mathématiques Supérieures (SMS) 2025: An Introduction to Recent Trends in Commutative Algebra, Fields Institute, Toronto, ON. I was an instructor and an organizer (with S. DaSilva, F. Galetto, E. Guardo, M. Harada, P. Klien, J. Rajchgot) [1 lecture + mentoring]

2017 Jun   Instructor for PRAGMATIC (Promotion of Research in Algebraic Geometry for MAThematicians in Isolated Centres), Catania, Italy. This was a three week workshop where four instructors (E. Carlini, T. Hà, B. Harbourne, and myself) gave lectures and mentored graduate students. Students were given research problems to work on. [5 lectures + mentorship]

2011 Jul   Instructor for the workshop *MONomial Ideals, Computations and Applications (MONICA)*, CIEM (International Centre for Mathematical meetings), Castro Urdiales Cantabria, Spain.

2006 Jul   Instructor for the workshop *Computational and Combinatorial Commutative Algebra*, Fields Institute, Toronto, ON. [3 lectures + tutorial]

2002 Jun   Tutor for the workshop *COCOA VIII Summer School*, Cadiz, Spain. [1 lecture + tutorial]

Professional Memberships.

- Canadian Mathematical Society (since 1998).
- American Mathematical Society (since 1997).
- Mathematical Association of America (2006-2024).

Refereeing and Reviews.

- Reviewer for Mathematical Reviews (since 2003) [102 reviews]
- Referee for NSA-AMS Proposal [5]
- Referee for NSERC Discovery Grant Proposal [2]
- Book review proposal
- Referee for Workshop Proposal at Banff International Research Station
- Referee for a General Scientific Activity Proposal, Fields Institute [2]
- Referee for National Science Centre (Narodowe Centrum Nauki), Poland
- Referee for following journals: [if more than once, the number of times is indicated]
    > Advances in Applied Mathematics
    > Algebras and Representation Theory
    > Annales de la Faculté de Scienes de Toulouse
    > Archiv der Mathematik [3]
    > Arkiv för Matematik [2]
    > Ars Combinatoria [2]
    > Beiträge zur Algebra und Geometrie

> Bulletin of the Canadian Mathematical Society
> Bulletin of the Iranian Mathematical Society
> Bulletin of the London Mathematical Society [2]
> Canadian Journal of Mathematics [3]
> Collectanea Mathematica [4]
> Communications in Algebra [15]
> Czechoslovak Mathematical Journal [2]
> Discrete Mathematics [7]
> Electronic Journal of Combinatorics [8]
> European Journal of Combinatorics [2]
> International Journal of Algebra and Computation
> International Mathematics Research Notices
> Journal of Algebra [4]
> Journal of Algebra and its Applications [3]
> Journal of Algebra Combinatorics Discrete Structures and Applications
> Journal of Algebraic Combinatorics [14]
> Journal of Combinatorial Theory, Series A [5]
> Journal of Commutative Algebra [4]
> Journal of Algebra Combinatorics Discrete Structures and Applications
> Journal of Geometry
> Journal of the Korean Mathematical Society
> Journal of Pure and Applied Algebra [11]
> Journal of Symbolic Computation [2]
> Le Matematiche
> Mathematica Scandinavica [2]
> Mathematische Nachrichten [2]
> Mathematische Zeitschrift
> Michigan Journal of Mathematics
> Proceedings of the American Mathematical Society [2]
> Rocky Mountian Journal of Mathematics [2]
> SIAM Journal on Discrete Mathematics
> Springer Proceedings in Mathematics & Statistics
> Springer Lecture Notes in Computer Science
> Transactions of the American Mathematical Society [2]
> Vietnam Journal of Mathematics
- Referee for following conference proceedings:
> Article for a book published by de Gruyter
> Article for a book published by Springer

9. Service to the University and Department

Service at McMaster. N.B – I was on sabbatical in 2022-2023.

2026 - 2026 Search Committee for Academic Department Manager for Math and Stats.
2025 - 2025 Chair, PhD Defence of Pengfei Cai (Sept. 2025)
2025 - 2026 Colloquium Committee
2024 - 2025 Awards Committee
2024 - 2024 Faculty Appointments Advisement Committee (FAAC) (Faculty of Science)
2024 - 2024 Undergraduate Teaching Workload Ad Hoc Committee (Faculty of Science)

2023 - 2026 Associate Chair (Undergraduate)
2023 - 2024 Department Colloquium Committee
2023 - 2025 Science 1A03 Speaker
2023 - 2026 Faculty of Science Tenure and Promotion Committee
2022   Chair, PhD Defence of Matthew East (Sept. 2022)
2020 - 2022 Associate Chair (Undergraduate)
2020 - 2021 Science 1A03 Speaker
2021 - 2022 Department Appointments Committee [2 positions]
2020 - 2021 Department Appointments Committee [1 positions (CRC Tier 1)]
2019 - 2020 Department Appointments Committee [5 positions]
2018   Winter 2018, Harvey Travel Awards Adjudication, GSA.
2018 - 2019 Department Tenure and Promotion Committee
2018 - 2020 Department Colloquium Committee
2018   Chair, PhD Defence of Peter Sinclair (Aug. 2018)
2018   Winter 2018, Mathematics & Statistics Chair Selection Committee
2017   Fall 2017, NSERC and OGS Doctoral Adjudication, GSA
2017 - 2018 Department Appointments Committee [1 positin]
2017   Winter 2017 Travel Assistance Awards Adjudication, GSA
2017 - 2019 Faculty of Science representative to the Faculty of Humanities.
2016 - 2017 Department Awards Committee
2015 - 2019 Deparment Undergraduate Committee
2015 - 2024 May at Mac, Ontario University Fair, and Level II information day.
2015 - 2019 Putnam tutoring

Service at Lakehead. N.B – I was on sabbatical in 2008-2009 and 2014-2015.

2013   Organized the regional section of the Canadian Kangaroo Mathematics Contest.
2013   Provost Task Force: Organizational Structure of Orillia.
2013   Lakehead University Chancellor Search Committee.
2012 - 2013 Chair, Senate Library Committee.
2012 - 2013 Senate Executive Committee.
2012 - 2013 Senate Academic Committee.
2012 - 2013 Promotion, Tenure, and Renewal Committee (Arts & Science and Professional Schools committees).
2012   Nomination Committee for Economics Chair.
2012   Merit Committee.
2011 - 2012 Promotion, Tenure, and Renewal Committee (Arts & Science and Professional Schools committees).
2011   Internal Reviewer for Department of History Undergraduate Program Review.
2011   Nomination Committee for Physics Chair.
2010 - 2013 Senate Library Committee.
2010   Appointments Committee for Joint Position in Mathematics and Interdisciplinary Studies in Orillia (Chair).
2010   Nomination Committee for Women's Studies Chair.
2009 - 2013 Chair, Department of Mathematical Sciences.
2009 - 2010 Promotion, Tenure, and Renewal Committee (Arts & Science committee).
2008   Merit Committee.
2008   Nomination Committee for Mathematics Chair.
2007 - 2008 Hiring Committee for Tenure-Track position in Mathematics

2006 - 2012 High School Math Contest Committee.
2006   Nomination Committee for Mathematics Chair.
2006   Orillia Taskforce Committee.
2005 - 2008 Department Undergraduate Committee.
2005 - 2008 Sessional Selection Committee.
2004 - 2005 Regulations Committee.
2003 - 2004 Hiring Committee for Tenure-Track position in Mathematics.
2002   Chair Nomination Committee for Mathematics.
2002 - 2003 Hiring Committee for Tenure-Track position in Mathematics.
2001 - 2006 High School Recruitment Committee.

10. Classes Taught

All courses prior to 2001 were at Queen's University. All courses from 2001-2015 were at Lakehead University. All courses from 2015 to the present were at McMaster University. The ⋆ indicates course overload.

Year	Course No.	Course Title	Enrolment
2025-2026	Math 701/5GT3	Algebra I	8+1
	Math 3G03	Problem Solving	20
	Math 4P06/Stats 4T06	Senior Project (co-ordinator)	12
2024-2025	Math 2R03	Theory of Linear Algebra	119
	Math 4P06/Stats 4T06	Senior Project (co-ordinator)	10
2023-2024	Math 701/5GT3	Algebra I	5
	Math 4GR3	Groups and Rings	22
	Math 1XX3	Calculus for Math and Stats II	44
	Math 4P06/Stats 4T06	Senior Project (co-ordinator)	10
2022-2023		[No teaching - Sabbatical Year]	
2021-2022	Math 701/5GT3	Algebra I	13
	Math 2R03	Linear Algebra II	90
2020-2021	Math 1B03	Linear Algebra I (+ coordinator)	396
	Math 2R03	Linear Algebra II	130
2019-2020	Math 1B03	Linear Algebra I (+ coordinator)	236
	Math 3ET3	Mathematics Teaching Placement⋆	1
	Math 3GR3	Abstract Algebra	105
	Math 3H03	Number Theory	121
	Math 799	Reading course (Graded Resolutiosn)⋆ (joint with M. Harada)	2
2018-2019	Math 1B03	Linear Algebra I	357
	Math 2R03	Liner Algebra II	92
	Math 3ET3	Mathematics Teaching Placement⋆	4
	Math 3GR3	Abstract Algebra	69
	Math 4ET3	Reading Course (Algebraic Geometry)⋆	2
2017-2018	Math 1B03	Linear Algebra I	280
	Math 3ET3	Mathematics Teaching Placement⋆	3
	Math 3GR3	Abstract Algebra	40
	Math 4ET3	Advanced Topics in Linear Algebra⋆	3
	Math 4ET3/702	Algebra II	5
	Math 799	Reading course (Toric ideals)⋆	1

Year	Course No.	Course Title	Enrolment
2016-2017	Math 1B03	Linear Algebra I	295
	Math 1XX3	Calculus for Math and Stats II	200
	Math 3ET3	Mathematics Teaching Placement*	1
	Math 3U03	Combinatorics	31
2015-2016	Math 1XX3	Calculus for Math and Stats II	120
	Math 3V03	Graph Theory	30
	Math 4ET3/702	Algebra II	6
2014-2015		[No teaching - Sabbatical Year]	
2013-2014	Math 3375	Theory of Cryptology	32
	Math 4301/5301	Honours Seminar	5
2012-2013	Math 1271/3071	Discrete Math/Discrete Math for Engineers	41
	Math 4301/5301	Honours Seminar	14
	Math 5119	Abstract Algebra* (joint with Dr. G. Lee)	2
2011-2012	Math 1271/3071	Discrete Math/Discrete Math for Engineers	55
	Math 2275	Linear Algebra II	40
	Math 4301	Honours Seminar*	7
	Math 5132	Algebraic Geometry*	3
2010-2011	Math 1281	Discrete Math	52
	Math 2231	Ring Theory	12
	Math 3211	Reading Course (Groebner Bases)*	1
	Math 4301	Honours Seminar*	6
	Math 5213	Abstract Algebra* (joint with Dr. G. Lee)	1
	Math 5301	Graduate Seminar*	1
2009-2010	Math 1281	Discrete Math	36
	Math 2231	Ring Theory	12
2008-2009		[No teaching - Sabbatical Year]	
2007-2008	Math 1281	Discrete Math	49
	Math 2255	Linear Algebra I	38
	Math 2233	Group Theory	8
	Math 4211/5281	Abstract Algebra*	2
	Math 5331	Operations Research Seminar*	2
2006-2007	Math 1281	Discrete Math	54
	Math 2255	Linear Algebra I	45
	Math 2030	Calculus for Engineers II	110
	Math 5211	Reading Course (Algebraic Geometry)*	1
	Math 5211	Reading Course (Linear Algebra)*	1

Year	Course No.	Course Title	Enrolment
2005-2006	Math 1281	Discrete Math	55
	Math 2255	Linear Algebra I	50
	Math 2275	Linear Algebra II	50
	Math 5211	Reading Course (Combinatorial Commutative Algebra)*	1
	Math 4211/5281	Abstract Algebra*	3
2004-2005	Math 1281	Discrete Math	44
	Math 2231	Ring Theory	22
	Math 4301	Honours Seminar (Galois Theory)	4
2003-2004	Math 1281	Discrete Math	77
	Math 2010	Calculus for Engineers I	150
	Math 2231	Ring Theory	22
	Math 2233	Group Theory	14
2002-2003	Math 1281	Discrete Math	55
	Math 2010	Calculus for Engineers I	110
	Math 2233	Group Theory	11
	Math 4301	Honours Seminar (Algebraic Number Theory)	2
2001-2002	Math 1281	Discrete Math	55
	Math 4231	Ring Theory	2
	Math 4233	Group Theory	2
	Math 4213/5213	Introduction to Commutative Algebra	3
1998-2001	Math 126	Differential and Integral Calculus [Queen's University]	120

11. Highly Qualified Personnel

PostDocs.

1. Mahrud Sayrafi (co-supervised with Dr. M. Harada and Dr. J. Rajchgot) Jan. 2025 - July 2026
2. Alexandre Zotine, (co-supervised with Dr. M. Harada and Dr. J. Rajchgot) Aug. 2024 - July 2026
3. Thái T. Nguyen, (co-supervised with Dr. M. Harada and Dr. J. Rajchgot) Sep. 2022 - July 2024.
4. Jay Yang, (co-supervised with Dr. M. Harada and Dr. J. Rajchgot) Aug. 2021 - July 2022.
5. Sergio Da Silvia, (co-supervised with Dr. M. Harada and Dr. J. Rajchgot) Aug. 2020 - July 2022.
6. Jeremy Lane, (co-supervised with Dr. M. Harada) Aug. 2019 - July 2022.
7. Johannes Hofscheier, (co-supervised with Dr. M. Harada) Aug. 2017 - July 2019.
8. Federico Galetto, (co-superivsed with Dr. M. Harada) Aug. 2015 - July 2018.
9. Jennifer Biermann, Aug. 2011 - July 2013.

PhD Students.

1. Naveena Ragunathan, Jan. 2026 - Aug 2029 (in progress)
   Thesis title: *TBD*.
2. Kieran Bhaskara, Sept. 2023 - Aug. 2027 (in progress)
   Thesis title: *TBD*.
3. Craig Kohne, (co-supervised with Dr. A. Deza) Sept. 2017 - Dec. 2024 (completed)
   Thesis title: *Monomial ideals with a prescribed Waldschmidt constant*
4. Graham Keiper, Sept. 2016 - Aug. 2022 (completed)
   Thesis title: *Toric ideals of finite simple graphs*
5. Eduardo Camps, Jan. 2020-June 2020 (Visiting Ph.D. student from Escuela Superior de Física y Matemáticas, IPN, Mexico)
6. Beatrice Picone, (co-supervised with Dr. E. Guardo) Sept. 2015-December 2018 (Completed)
   Thesis title: *Homological invariants of some special varieties*
   (Picone was a PhD student at the Università di Catania, Italy.)
7. Miguel Eduardo Paczka, Jan. 2018-June 2018 (Visiting Ph.D. student from Escuela Superior de Física y Matemáticas, IPN, Mexico)

PhD Committees.

1. Nathan Heisz (supervsied by C. Franc) Ph.D. candidate, McMaster University [On Supervisory Committee] (Expected, 2028)
2. Illya Kierkosz (supervsied by M. Harada and J. Rajcghot) Ph.D. candidate, McMaster University [On Supervisory Committee] (Expected, 2028)
3. Silas Vriend (supervised by M. Harada) Ph.D. Candidate, McMaster University [On Supervisory Committee] (Expected, 2027)
4. Gangadeep Virk (supervised by C. Franc) Ph.D. Candidiate, McMaster University [On Defense Committee-Internal Examanier] (Completed, 2023).
5. Jie Chen (supervised by H. Boden), Ph.D. Candidate, McMaster University [On Supervisory Committee] (Completed, 2023).
6. Lindsay White (supervised by H. Boden and A. Nicas), Ph.D. Candidate, McMaster University [On Supervisory Committee] (Completed, 2016).
7. Amay Cheam (supervised by Paul McNicolas) Ph.D. Candidiate, McMaster University [On Defense Committee-Internal Examanier] (Completed, 2016).
8. Lauren Dedieu (supervised by Megumi Harada) Ph.D. Candidiate, McMaster University [On Defense Committee-Internal Examanier]. (Completed, 2016)

External Committee Member.

1. Jounglag (John) Lim, Ph.D. Candidate, Clemson University, Expected 2026.
2. Bidwn Chakraborty, Ph.D. Candidate, Indian Institute of Technology, Kharagpur, 2022 [External Report on Ph.D Thesis]
3. Iman Jafarloo, Ph.D. Candidate, Università degli Studi di Torino, Italy, 2019 [External Report on Ph.D. Thesis]
4. Benjamin Cameron, Ph.D. Candidate, Dalhousie University, Canada, 2019 [External Committee Member]
5. Gabriele Calussi, Ph.D. Candidate, Università di Firenze and Pergugia, Italy. 2018 [External Report on Ph.D. Thesis]
6. Davide Bolognini, Ph.D. Candidate, Università di Genova, Italy. 2015 [External Report on Ph.D. Thesis; attended Ph.D. defense]

7. Oscar Fernández Ramos, Ph.D. Candidate, Universidad de Valladolid, Spain. 2012 [External Report on Ph.D. Thesis]
8. Augustine (Tina) O'Keefe, Ph.D. Candidate, Tulane University, New Orleans, LA. 2012 [Ph.D. Committee]
9. Augustine (Tina) O'Keefe, Ph.D. Candidate, Tulane University, New Orleans, LA. 2009 [Comprehensive Exam]
10. Aurora Llamas Núñez, Ph.D. Candidate, Centro de Investigación Y de Estudios Avanzads del Instituto Politécnico Nacional, Mexico 2011 [External Report on Ph.D. Thesis]

MSc Students.

1. Abhilash Saha, September 2025 - April 2027
   Project Title: *TBD*
2. Naveena Ragunathan, September 2024 - Dec 2025
   Project Title: *The van der Waerden complex and the Lefschetz properties*
3. Aniketh Sivakumar (co-supervised with A.V. Jayanthan) September 2023-May 2024
   Project Title: *Betti splittings of binomial edge ideals*
   (Aniketh was a student at IISER Pune, India)
4. Kieran Bhaskara, September 2021-August 2023
   Project Title: *Comparing invariants of toric ideals of graphs*
5. Runyue Wang (co-supervsied with Dr. J. Rajchgot) September 2021-April 2023
   Project Title: *Frobenius Splittings for the toric ideals of graphs and ladder determinantal ideals*
6. Maryam Nowroozi, (co-supervsied with Dr. M. Harada) Sept 2019 - May 2021
   Project Title: *Virtual resolutions of points in sufficiently general position in $\mathbb{P}^1 \times \mathbb{P}^1$*
7. Jarvis, Kennedy, (co-supervised with Dr. M. Harada) Sept 2019 - August 2020
   Project Title: *An Algebraic Condition for a Complex to be Virtual.*
8. Michael Cox, (co-supervised with Dr. K.N. Vander Meulen) Sept. 2017 - Dec. 2018.
   Project Title: *On condition numbers of companion matrices*
9. Jason Palombaro, Jan. 2017 - Dec. 2017.
   Project Title: *On the Groebner bases of ideals of points in $\mathbb{P}^1 \times \mathbb{P}^1$.*
10. Michael Riddell, (co-supervised with Dr. K.N. Vander Meulen) Sept. 2016 - June 2017
    Project Title: *Zero forcing number of circulant graphs.*
11. Sam Budd, Sept. 2016 - June 2017.
    Project Title: *A introduction to f-ideals and their complements.*
12. Becky Hooper, Sept. 2016 - June 2017.
    Project Title: *Shellability of the van der Waerden complex.*
13. Ashwini Bhat, Sept. 2010 - May 2012.
    Project Title: *Associated primes of powers of the Alexander dual of path ideals of trees.*
14. Kevin Jurcik, (co-supervised with Dr. W. Huang) Sept. 2007 - Aug. 2009.
    Project Title: *Open Shop Scheduling to Minimize Makespan.*
15. Jing (Jane) He, Sept. 2005 - May 2007.
    Project Title: *The path ideal of a tree and its properties.*

MSc Committees.

1. Illya Kierkosz (supervsied by Dr. M. Harada, Dr. J. Rajchgot) M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed 2024)
2. Mike Cummings (supervsied with Dr. M. Harada, Dr. J. Rajchgot) M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed 2024)

3. Nathan Heisz (supervised by Dr. C. Franc) M.Sc. Candidate, McMaster University [On Defense Committee-Internal Examiner] (Comppleted 2023)
4. Sullivan MacDonald (supervised by Dr. E. Sawyer) M.Sc. Candidate, McMaster University [On Defense Committee-Internal Examiner] (Completed 2023)
5. Büşra Atar (supervsied by Dr. M. Harada, Dr. J. Rajchgot) M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2023)
6. Adrian Cook (supervsied by Dr. M. Harada, Dr. J. Rajchgot) M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2023)
7. Myles Marin (supervised by Dr. M. Lovric), M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2018)
8. Julia Gibson (supervised by Dr. M. Harada), M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2018)
9. Craig Kohne (supervised by Dr. M. Harada), M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2017)
10. Graham Keiper (supervised by Dr. I. Hambleton), M.Sc. Candidate, McMaster University, [On Defense Committee-Internal Examiner]. (Completed, 2016)

NSERC Undergraduate Summer Research Students.

1. Leona Tilis (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2024.
   Project Title: *Nonsymmetric Strong Multiplicity Property*
2. Mike Cummings, Summer 2022.
   Project Title: *Symbolic defect of points in $\mathbb{P}^1 \times \mathbb{P}^1$*
3. Mike Cummings (co-supervised with Dr. J. Racjchot and Dr. S. Da Silva) Summer 2021.
   Project Title: *Toric ideals of graphs and geometric vertex decomposability*
4. Joseph Voskamp (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2021.
   Project Title: *Condition numbers of companion matrices*
5. Fady Abdelmalek (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2020.
   Project Title: *Double vertex graphs*
6. Esther Vander Meulen (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2019.
   Project Title: *Double vertex graphs*
7. Fady Abdelmalek (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2019.
   Project Title: *Double vertex graphs*
8. Biran Falk-Dotan (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2016.
   Project Title: *Refined interia of zero-nonzero patterns*
9. Jonathan Baker (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2015.
   Project Title: *Shedding vertices of vertex decomposable graphs*
10. Jonathan Earl, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2014.
    Project Title: *Matrices with zero-nonzero patterns*

11. Jonathan Earl, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2014.
    Project Title: *Independence complexes of circulant graphs.*
12. Catriona Watt, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2012.
    Project Title: *Graded Betti numbers of some edge ideals.*
13. Ben Babcock, Summer 2011.
    Project Title: *Combinatorial Commutative Algebra.*
14. Hannah Bergsma, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2011.
    Project Title: *Inertially arbitrary patterns.*
15. Ben Babcock, Summer 2010.
    Project Title: *Revisiting the spreading and covering numbers.*
16. Hannah Bergsma, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2010.
    Project Title: *Construction of Nilpotent Patterns.*
17. Natalie Campbell, (co-supervised with Dr. K. Vander Meulen at Redeemer University College) Summer 2009.
    Project Title: *Nilpotent Patterns over Finite Fields.*
18. John Kimball, (co-supervised with Dr. G. Lee) Summer 2005.
    Project Title: *Graded Betti numbers of edge ideals.*
19. Olivia Wdowiak, Summer 2003.
    Project Title: *Regularity of fat points.*

MITACS Undergraduate Summer Research Students.

1. Abhilash Saha (co-supervised with Dr. K.N. Vander Meulen of Redeemer University College) Summer 2024.
   Project Title: *Non-symmetric strong multiplicity property*

2. Aniketh Sivakumar, Summer 2022.
   Project Title: *Symbolic defect of points in $\mathbb{P}^1 \times \mathbb{P}^1$*

Honours Projects Supervised.

1. Hannah Nardone, Sept 2025-April 2026
   The v-numbers of van der Waerden complexes (Math 4P06)
2. Will Prangley, Sept 2024-April 2025
   Bier spheres (Math 4P06).
3. Justin Gebel, Sept 2024-April 2025
   Frobenius splittings for toric ideals of bipartite graphs (Math 4P06).
4. Antonio Nigrio, Sept 2023-April 2024 (co-supervised with Dr. J. Rajchgot),
   Hilbert polynomials of toric ideals of bipartite graphs (Math 4P06).
5. Runyue Wang, Sept. 2020-April 2021 (co-supervised with Dr. J. Rajchgot)
   Project Title: *Minimal resolutions of the Alexander dual of the Van Der Waerden Complex.* (Math 4P06)
6. Adrian Cook, Sept. 2020-April 2021 (co-supervised with Dr. J. Rajchgot)
   Project Title: *Symbolic defect of the cover ideal of disjoint grpahs.* (ArtSci 4C06)
7. Eden Petruccelli, Sept. 2019-April 2020
   Project Title: *Vertex decomposibility and the regularity of down-left graphs.* (Math 4P06)

8. Prabin Niroula, Sept. 2018-April 2019
   Project Title: *Powers of edge ideals and their multiplicities.* (Math 4P06)
9. Michael Chong, Sept. 2017-April 2018
   Project Title: *Levelable independence complexes.* (ISCI 4A12)
10. Dominque Dupont-Jillings, Sept. 2016-April 2017
    Project Title: *Reduced Simplicial Homology and Circulant Graphs* (Math 4P06)
11. Lindsey Daniels, Sept 2013-April 2014 (co-supevised with Dr. G. Lee)
    Project Title: *Group Theory and the Rubik's Cube.*
12. Mitchell Gallinger, Sept 2012-April 2013 (co-supervised with Dr. J. Biermann)
    Project Title: *Gröbner Bases: ideal membership and graph colouring.*
13. Jesse Krauel, Sept. 2012-April 2013 (co-supervised with Dr. J. Biermann)
    Project Title: *Some methods of primality testing.*
14. Jessica Reinikka, Sept. 2011-April 2012
    Project Title: *Mutually orthogonal Latin Squares and their applications.*

Other Supervision.

1. Emily Keaveney, Winter 2020, Math 3ET3.
2. Emily Keaveney, Spring 2019, Math 3ET3.
3. Monika Sandoval, Spring 2019, Math 3ET3.
4. Olivia Epelbaum, Winter 2019, Math 3ET3.
5. Kelly Morrcelino, Winter 2019, Math 3ET3.
6. Mithula Selvagnanam, Fall 2018, Math 3ET3.
7. Lauren Boria, Spring 2018, Math 3ET3.
8. Katie Chiasson, Spring 2018, Math 3ET3.
9. Katrina Moic, Fall 2017, Math 3ET3.
10. Katie Chiasson, Fall 2017, Math 3ET3.
11. Victoria Piccioni, Winter 2016, Math 3ET3.
12. Vishal Malik, May-June 2014 (co-supervised with Dr. M.G. Viola)
    Project Title: *Introduction to Homology.*
13. Matheus Bordin Marchi, May-August 2014
    Project Title: *Primality Testing.*
    (Marchi was an exchange student from Brazil; as part of his exchange he had to do an independent study. He was formally enrolled in Math 3211 SA/SB/SC/SD; I supervised this project.)