

Jason P. Bell

CONTACT INFORMATION

Department of Pure Mathematics
University of Waterloo
Waterloo, ON, Canada

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RESEARCH INTERESTS

Noncommutative Algebra, Arithmetic Dynamics, Algebraic Combinatorics, Theoretical Computer Science.

EMPLOYMENT

- **Professor.** University of Waterloo, Waterloo, ON, *2013–Present*.
- **Associate Professor.** Simon Fraser University, Burnaby, B.C., *2010–2012*.
- **Assistant Professor.** Simon Fraser University, Burnaby, B.C., *2005–2010*.
- **Assistant Professor.** University of Michigan, Ann Arbor, MI, *2002–2005*.

EDUCATION

- **Postdoc**, 2002–2005. University of Michigan, Ann Arbor, MI.
Mentor: Toby Stafford.
- **PhD in Mathematics**, 2002. University of California, San Diego, CA.
Dissertation: *Examples in finite Gelfand-Kirillov dimension*. Advisor: Professor L. W. Small.
- **MSc in Mathematics**, 1999. McGill University, Montreal, QC.
Thesis: *The Equivariant Grothendieck groups of the Russell-Koras contractible three-folds*. Advisor: Professor K. P. Russell.
- **BMath in Pure Mathematics**, 1997. University of Waterloo, Waterloo, ON.

BOOKS AND CHAPTERS

1. Bell, J.; Ghioca, D.; Tucker, T. *The dynamical Mordell-Lang conjecture*. Mathematical Surveys and Monographs, 210. American Mathematical Society, Providence, RI, 2016. xiii+280 pp.
2. Bell, J. *Growth functions*. Commutative algebra and noncommutative algebraic geometry. Vol. I, 1–24, Math. Sci. Res. Inst. Publ., 67, Cambridge Univ. Press, New York, 2015.
3. Adamczewski, B.; Bell, J. *Automata in Number Theory*. To appear in Handbook of Automata Theory. Submitted 2014, 27 pages.
4. Bell, J. *Applications of algebra to automatic sequences*. To appear in Sequences, Groups, and Number Theory. Submitted 2016, 31 pages.

PUBLICATIONS

1. Bell, Jason; Shparlinski, Igor E. Power series approximations to Fekete polynomials. *J. Approx. Theory* **222** (2017), 132–142.
2. Bell, Jason P.; Satriano, Matthew; Sierra, Susan J. On a dynamical Mordell-Lang conjecture for coherent sheaves. *J. Lond. Math. Soc.* (2) **96** (2017), no. 1, 28–46.
3. Adamczewski, B.; Bell, J. P.; Delaygue, É.; Jouhet, F. Congruences modulo cyclotomic polynomials and algebraic independence for q -series. *Sém. Lothar. Combin.* 78B (2017), Art. 54, 12 pp.
4. Bell, Jason; Ghioca, Dragos; Reichstein, Zinovy On a dynamical version of a theorem of Rosenlicht. *Ann. Sc. Norm. Super. Pisa Cl. Sci.* (5) **17** (2017), no. 1, 187–204.
5. Bell, Jason; Launois, Stéphane; Nolan, Brendan A strong Dixmier-Moeglin equivalence for quantum Schubert cells. *J. Algebra* **487** (2017), 269–293.
6. Bell, Jason; Zhang, James J. Zariski cancellation problem for noncommutative algebras. *Selecta Math. (N.S.)* **23** (2017), no. 3, 1709–1737.

7. Bell, Jason P.; Chen, Shaoshi Power series with coefficients from a finite set. *J. Combin. Theory Ser. A* **151** (2017), 241–253.
8. Bell, Jason; Launois, Stéphane; Sánchez, Omar León; Moosa, Rahim Poisson algebras via model theory and differential-algebraic geometry. *J. Eur. Math. Soc. (JEMS)* **19** (2017), no. 7, 2019–2049.
9. Bell, Jason P.; Greenfeld, Be’eri Free subalgebras of graded algebras. *J. Algebra* **483** (2017), 145–162.
10. Bell, Jason P.; Wu, Kaiyu; Wu, Shelley The Dixmier-Moeglin equivalence for extensions of scalars and Ore extensions. *Groups, rings, group rings, and Hopf algebras*, 1–14, *Contemp. Math.*, 688, Amer. Math. Soc., Providence, RI, 2017.
11. Bell, Jason P.; Ingalls, Colin; Ramkumar, Ritvik Embeddings of quotient division algebras of rings of differential operators. *Israel J. Math.* **219** (2017), no. 1, 411–430.
12. Bell, J.; Heinle, A.; Levandovskyy, V. On Noncommutative Finite Factorization Domains. *Trans. Amer. Math. Soc.* **369** (2017), no. 4, 2675–2695.
13. Bell, J.; Coons, M. Transcendence tests for Mahler functions. *Proc. Amer. Math. Soc.* **145** (2017), no. 3, 1061–1070.
14. Bell, J.; Zhang, J.. An isomorphism lemma for graded rings. *Proc. Amer. Math. Soc.* **145** (2017), no. 3, 989–994.
15. Bell, J.; Lenagan, T.; Rangaswamy, K. Leavitt path algebras satisfying a polynomial identity. *J. Algebra Appl.* **15** (2016), no. 5, 1650084, 13 pp.
16. Bell, J.; Gonçalves, J. Free algebras and free groups in Ore extensions and free group algebras in division rings. *J. Algebra* **455** (2016), 235–250.
17. Bell, J.; Rogalski, D. \mathbb{Z} -graded simple rings. *Trans. Amer. Math. Soc.* **368** (2016), no. 6, 4461–4496.
18. Bell, J.; Coons, M.; Hare, K. Growth degree classification for finitely generated semigroups of integer matrices. *Semigroup Forum* **92** (2016), no. 1, 23–44.
19. Bell, J.; Lagarias, J. $3x + 1$ inverse orbit generating functions almost always have natural boundaries. *Acta Arith.* **170** (2015), no. 2, 101–120.
20. Bell, J.; Ghioca, D.; Tucker, T. Applications of p -adic analysis for bounding periods of subvarieties under étale maps. *Int. Math. Res. Not. IMRN* (2015), no. 11, 3576–3597.
21. Bell, J.; Ghioca, D; Tucker, T. The dynamical Mordell-Lang problem for Noetherian spaces. *Funct. Approx. Comment. Math.* **53** (2015), no. 2, 313–328.
22. Bell, J.; Madill, B. Iterative algebras. *Algebr. Represent. Theory* **18** (2015), no. 6, 1533–1546.
23. Bell, J.; Bugeaud, Y.; Coons, M. Diophantine approximation of Mahler numbers. *Proc. Lond. Math. Soc.* (3) **110** (2015), no. 5, 1157–1206.
24. Ara, P.; Bell, J. Primitivity of prime countable-dimensional regular algebras. *Proc. Amer. Math. Soc.* **143** (2015), no. 7, 2759–2766.
25. Bell, J.; Lagarias, J. A Skolem-Mahler-Lech theorem for iterated automorphisms of K -algebras. *Canad. J. Math.* **67** (2015), no. 2, 286–314.

26. Bell, J.; Madill, B.; Shinko, F. Differential polynomial rings over rings satisfying a polynomial identity. *J. Algebra* **423** (2015), 28–36.
27. Bell, J.; Jedwab, J.; Khatirinejad, M.; Schmidt, K.-U. Three-phase Barker arrays. *J. Combin. Des.* **23** (2015), no. 2, 45–59.
28. Bell, J.; Brzozowski, J.; Moreira, N.; Reis, R. Symmetric groups and quotient complexity of Boolean operations. Automata, languages, and programming. Part II, 1–12, *Lecture Notes in Comput. Sci.*, 8573, Springer, Heidelberg, 2014.
29. Bell, J.; Leung, W. The Dixmier-Moeglin equivalence for cocommutative Hopf algebras of finite Gelfand-Kirillov dimension. *Algebr. Represent. Theory* **17** (2014), no. 6, 1843–1852.
30. Bell, J.; Coons, M.; Hare, K. The minimal growth of a k -regular sequence. *Bull. Aust. Math. Soc.* **90** (2014), no. 2, 195–203.
31. Bell, J.; Miles, R.; Ward, T. Towards a Pólya-Carlson dichotomy for algebraic dynamics. *Indag. Math. (N.S.)* **25** (2014), no. 4, 652–668.
32. Bell, J.; Rogalski, D. Free subalgebras of division algebras over uncountable fields. *Math. Z.* **277** (2014), no. 1-2, 591–609.
33. Bell, J.; Casteels, K.; Launois, S. Primitive ideals in quantum Schubert cells: dimension of the strata. *Forum Math.* **26** (2014), no. 3, 703–721.
34. Ahmady, A.; Bell, J.; Mohar, B. Integral Cayley graphs and groups. *SIAM J. Discrete Math.* **28** (2014), no. 2, 685–701.
35. Abrams, G.; Bell, J.; Rangaswamy, K. On prime nonprimitive von Neumann regular algebras. *Trans. Amer. Math. Soc.* **366** (2014), no. 5, 2375–2392.
36. Adamczewski, B.; Bell, J. Diagonalization and rationalization of algebraic Laurent series. *Ann. Sci. Éc. Norm. Supér. (4)* **46** (2013), no. 6, 963–1004.
37. Bell, J.; Drensky, V.; Sharifi, Y. Shirshov’s theorem and division rings that are left algebraic over a subfield. *J. Pure Appl. Algebra.* **217** (2013), no. 9, 1605–1610.
38. Bell, J.; Coons, M.; Rowland, E. *The rational-transcendental dichotomy of Mahler functions.* *J. Integer Seq.* **16** (2013), no. 2, Article 13.2.10, 11 pp.
39. Bell, J.; Rogalski, D. Free subalgebras of quotient rings of Ore extensions. *Algebra Number Theory* **6** (2012), no. 7, 1349–1367.
40. Bell, J.; Smoktunowicz, A. Rings of differential operators on curves. *Israel J. Math.* **192** (2012), no. 1, 297–310.
41. Bell, J.; Burris, S.; Yeats, K. On the set of zero coefficients of a function satisfying a linear differential equation. *Math. Proc. Cambridge Philos. Soc.* **153** (2012), no. 2, 235–247.
42. Bell, J. Transcendence Degree of Division Algebras. *Israel J. Math.* **190** (2012), 195–211.
43. Abrams, G.; Bell, J.; Colak, P.; Rangaswamy, K. Two-sided chain conditions in Leavitt path algebras over arbitrary-sized graphs. *J. Algebra Appl.* **11** (2012), no. 3, 1250044, 23 pp.
44. Bell, J.; Burris, S.; Yeats, K. Monadic second-order classes of forests with a monadic second-order 0-1-law. *Discrete Math. Theor. Comput. Sci.* **14** (2012), no. 1, 87–107.

45. Bell, J.; Casteels K.; Launois, S. Enumeration of H -strata in quantum matrices with respect to dimension. *J. Combin. Theory Ser. A* **119** (2012), no. 1, 83–98.
46. Adamczewski, B.; Bell, J. On vanishing coefficients of algebraic power series over fields of positive characteristic. *Invent. Math.* **187** (2012), 343–393.
47. Abrams, G.; Bell, J.; Rangaswamy, K. The Dixmier-Moeglin equivalence for Leavitt path algebras. *Algebr. Represent. Theory* **15** (2012), 407–425.
48. Bell, J.; Bruin, N.; Coons, M. Transcendence of generating functions whose coefficients are multiplicative. *Trans. Amer. Math. Soc.* **364** (2012), no. 2, 933–959.
49. Bell, J.; Casteels, K.; Launois, S. Enumeration of torus-invariant strata with respect to dimension in the big cell of the quantum minuscule Grassmannian of type B_n . *Contemp. Math.* **562** (2012), 27–40.
50. Bell, J.; Small, L.; Smoktunowicz, A. Primitive algebras of low Gelfand-Kirillov dimension. *Contemp. Math.* **562** (2012), 41–52.
51. Bell, J.; Young, A. On the Kurosh problem for algebras over a general field. *J. Algebra* **342** (2011), 265–281.
52. Adamczewski, B.; Bell, J. An analogue of Cobham’s theorem for fractals. *Trans. Amer. Math. Soc.* **363** (2011), no. 8, 4421–4442,
53. Bell, J.; Burris, S.; Yeats, K. Spectra and Systems of Equations. *Contemp. Math.* **558** (2011), 43–96.
54. Bell, J.; Burris, S. Comptons Method for Proving Logical Limit Laws. *Contemp. Math.* **558** (2011), 97–128.
55. Bell, J.; Ghioca, D.; Tucker, T. The dynamical Mordell-Lang problem for étale maps. *Amer. J. Math.* **132** (2010), no. 6, 1655–1675.
56. Bell, J.; Rogalski, D.; Sierra, S. The Dixmier-Moeglin equivalence for twisted homogeneous coordinate rings. *Israel J. Math.* **180** (2010), 461–507.
57. Bell, J.; Burris, S.; Yeats, K. Characteristic points of recursive systems. *Electron. J. Combin.* **17** (2010), no. 1, Research Paper 121, 34 pp.
58. Bell, J.; Launois, S. On the dimension of H -strata in quantum algebras. *Algebra Number Theory* **4** (2010), no. 2, 175–200.
59. Bell, J.; Smoktunowicz, A. Extended centres of finitely generated prime algebras. *Comm. Algebra* **38** (2010), no. 1, 332–345.
60. Bell, J. A dichotomy result for prime algebras of Gelfand-Kirillov dimension two. *J. Algebra* **324** (2010) 831–840.
61. Bell, J.; Launois, S.; Lutley, J. An automaton-theoretic approach to the representation theory of quantum algebras. *Adv. Math.* **223** (2010), no. 2, 476–510.
62. Bell, J.; Charlier, E.; Fraenkel, A.; Rigo, M. A decision problem for ultimately periodic sets in nonstandard numeration systems. *Internat. J. Algebra Comput.* **19** (2009), no. 6, 809–839.
63. (9) Bell, J.; Bober, J. Bounded step functions and factorial ratio sequences. *Int. J. Number Theory* **5** (2009), no. 8, 1419–1431.
64. Bell, J. Division algebras of Gelfand-Kirillov transcendence degree 2. *Israel J. Math.* **171** (2009), 51–60.

65. Bell, J. Centralizers in domains of finite Gelfand-Kirillov dimension. *Bull. Lond. Math. Soc.* **41** (2009), no. 3, 559–562.
66. Bell, J.; Colak, P. Primitivity of finitely presented monomial algebras. *J. Pure Appl. Algebra* **213** (2009), no. 7, 1299–1305.
67. Bell, J.; Hare, K. On \mathbb{Z} -modules of algebraic integers. *Canad. J. Math.* **61** (2009), no. 2, 264–281. [Corrigendum: On \mathbb{Z} -modules of algebraic integers. *Canad. J. Math.* **64** (2012), no. 2, 254–256.]
68. Bell, J.; Launois, S.; Nguyen, N. Dimension and enumeration of primitive ideals in quantum algebras. *J. Algebraic Combin.* **29** (2009), no. 3, 269–294.
69. Bell, J. Simple algebras of Gelfand-Kirillov dimension two. *Proc. Amer. Math. Soc.* **137** (2009), no. 3, 877–883.
70. Bell, J. Logarithmic frequency in morphic sequences. *J. Théor. Nombres Bordeaux* **20** (2008), no. 2, 227–241.
71. Bell, J.; Gerhold, S.; Klazar, M.; Luca, F. Non-holonomicity of sequences defined via elementary functions. *Ann. Comb.* **12** (2008), no. 1, 1–16.
72. Bell, J.; Farina, J.; Pendergrass-Rice, C. Stably just infinite rings. *J. Algebra* **319** (2008), no. 6, 2533–2544.
73. Adamczewski, B.; Bell, J. Function fields in positive characteristic: expansions and Cobham’s theorem. *J. Algebra* **319** (2008), no. 6, 2337–2350.
74. Bell, J.; Smoktunowicz, A. The prime spectrum of algebras of quadratic growth. *J. Algebra* **319** (2008), no. 1, 414–431.
75. Bell, J. p -Adic valuations and k -regular sequences. *Discrete Math.* **307** (2007), no. 23, 3070–3075.
76. Bell, J.; Goh, T. Exponential lower bounds for the number of words of uniform length avoiding a pattern. *Inform. and Comput.* **205** (2007), no. 9, 1295–1306.
77. Bell, J.; Gerhold, S. On the positivity set of a linear recurrence sequence. *Israel J. Math.* **157** (2007), 333–345.
78. Bell, J. Noetherian algebras over algebraically closed fields. *J. Algebra* **310** (2007), no. 1, 148–155.
79. Bell, J.; Skandera, M. Multicomplexes and polynomials with real zeros. *Discrete Math.* **307** (2007), no. 6, 668–682.
80. Bell, J.; Burris, S.; Yeats, K. Counting rooted trees: the universal law $t(n) \sim C\rho^{-n}n^{-3/2}$. *Electron. J. Combin.* **13** (2006), no. 1, Research Paper 63, 64 pp.
81. Bell, J. A generalised Skolem-Mahler-Lech theorem for affine varieties. *J. London Math. Soc.* (2) **73** (2006), no. 2, 367–379. [Corrigendum: “A generalised Skolem-Mahler-Lech theorem for affine varieties” *J. Lond. Math. Soc.* (2) **78** (2008), no. 1, 267–272.]
82. Bell, J.; Minei, M. Spectral analysis of the affine graph over the finite ring. *Linear Algebra Appl.* **414** (2006), no. 1, 244–265.
83. Bell, J.; Burris, S. Partition identities. II. The results of Bateman and Erdős. *J. Number Theory* **117** (2006), no. 1, 160–190.

84. Bell, J. A generalization of Cobham's theorem for regular sequences. *Sém. Lothar. Combin.* 54A (2005/07), Art. B54Ap, 15 pp.
85. Bell, J.; Hare, K. A classification of (some) Pisot-cyclotomic numbers. *J. Number Theory* **115** (2005), no. 2, 215–229.
86. Bell, J. Examples in finite Gelfand-Kirillov dimension. II. *Comm. Algebra* **33** (2005), no. 9, 3323–3334.
87. Bell, J. Unavoidable and almost unavoidable sets of words. *Internat. J. Algebra Comput.* **15** (2005), no. 4, 717–724.
88. Bell, J. A gap result for the norms of semigroups of matrices. *Linear Algebra Appl.* **402** (2005), 101–110.
89. Bell, J. On the values attained by a k -regular sequence. *Adv. in Appl. Math.* **34** (2005), no. 3, 634–643.
90. Bell, J.; Garsia, A.; Wallach, N. Some new methods in the theory of m -quasi-invariants. *Electron. J. Combin.* **11** (2004/06), no. 2, Research Paper 20, 32 pp.
91. Bell, J. Dirichlet series whose partial sums of coefficients have regular variation. *Israel J. Math.* **144** (2004), 343–365.
92. Bell, J.; Burris, S. Partition identities. I. Sandwich theorems and logical 0-1 laws. *Electron. J. Combin.* **11** (2004), no. 1, Research Paper 49, 25 pp.
93. Bell, J.; Small, L. Centralizers in domains of Gelfand-Kirillov dimension 2. *Bull. London Math. Soc.* **36** (2004), no. 6, 779–785.
94. Bell, J. The Hilbert series of prime PI rings. *Israel J. Math.* **139** (2004), 1–10.
95. Bell, J.; Burris, S. Asymptotics for logical limit laws: when the growth of the components is in an RT class. *Trans. Amer. Math. Soc.* **355** (2003), no. 9, 3777–3794.
96. Bell, J. Examples in finite Gelfand-Kirillov dimension. *J. Algebra* **263** (2003), no. 1, 159–175.
97. Bell, J.; Small, L. A question of Kaplansky. Special issue in celebration of Claudio Procesi's 60th birthday. *J. Algebra* **258** (2002), no. 1, 386–388.
98. Bell, J. Sufficient conditions for zero-one laws. *Trans. Amer. Math. Soc.* **354** (2002), no. 2, 613–630.
99. Bell, J. A proof of a partition conjecture of Bateman and Erdős. *J. Number Theory* **87** (2001), no. 1, 144–153.
100. Bell, J. The equivariant Grothendieck groups of the Russell-Koras threefolds. *Canad. J. Math.* **53** (2001), no. 1, 3–32.
101. Bell, J. When structures are almost surely connected. *Electron. J. Combin.* **7** (2000), Research Paper 36, 7 pp.
102. Bell, J.; Bender, E.; Cameron, P.; Richmond, L. Asymptotics for the probability of connectedness and the distribution of number of components. *Electron. J. Combin.* **7** (2000), Research Paper 33, 22 pp.
103. Bell, J.; Borwein, P.; Richmond, L. Growth of the product $\prod_{j=1}^n (1 - x^{a_j})$. *Acta Arith.* **86** (1998), no. 2, 155–170.

104. Bell, J.; Djokovic, D. Construction of Baumert-Hall-Welch arrays and T -matrices. *Australas. J. Combin.* **14** (1996), 93–107.

SELECTED INVITED
PRESENTATIONS

1. PIMS distinguished lecture, U. Lethbridge. *Linear recurrences, dynamics, and automata*. Dec. 2017.
2. Kolchin Seminar, CUNY. *New methods in hypertranscendence*. Oct. 2017.
3. Banff International Research Station. *S-units and D-finite power series*. Sept. 2017.
4. XXII Coloquio Latinoamericano de Algebra, Quito, Ecuador *Primitive ideals and the Dixmier-Moeglin equivalence*. Aug. 2017.
5. Algebra Extravaganza, Temple University, Philadelphia. *The Dixmier-Moeglin equivalence for D-groups*. July 2017.
6. Mathematics of the Americas, Montreal. *A Dynamical Mordell-Lang conjecture for sheaves*. July 2017.
7. Bar Ilan University, Israel. *The Dixier-Moeglin equivalence for D-groups* June 2017.
8. Groups, Rings, and Group Rings, Spa, Belgium. *Graded nilpotent algebras*. June 2017.
9. Joint Mathematics Meetings, Atlanta, GA. *Algebraic independence of G-functions and Lucas congruences*. Jan. 2017
10. Vancouver, Canada. *Diagonals of rational power series and their uses in combinatorics, number theory, and computer science*. FPSAC, July, 2016.
11. De Paul University, Chicago. *Linear recurrences in positive characteristic and finite-state machines*. Mathematics Colloquium, May 2016.
12. University of California, San Diego. *Linear recurrences and Automata*. Mathematics Colloquium, February 2016.
13. Loyola University, Illinois. *Free subalgebras and subgroups in quotient division rings of Ore extensions*. AMS sectional meeting, October 2015.
14. Workshop on Automatic Sequences, Liège, Belgium. *Algebraic power series and diagonals of rational functions and Cobham's theorem and its extensions*, Plenary talks, May 2015.
15. University of Colorado, Colorado Springs. *Game theory and the evolution of altruism*. Distinguished lecture, October 2014.
16. Fudan University, Shanghai, China. *The Zariski cancellation problem*. Workshop on Noncommutative Algebraic geometry, August 2014.
17. ERC Research Period on Diophantine Geometry, Cetraro, Italy. *Automorphisms of varieties and potential density*, July 2014.
18. ICALP, Copenhagen, Denmark. *Symmetric Groups and Quotient Complexity of Boolean Operations*, July 2014.
19. Oberwolfach Institute, Germany. *The Dixmier-Moeglin equivalence for Poisson algebras*. Conference on interactions between algebraic geometry and noncommutative algebra, May 2014.

20. IMPAN, Bedlewo, Poland. *Free subalgebras of division algebras*, August 2013.
21. Fields Institute, Toronto, ON. *Applications of algebra to the theory of automatic sequences*. Conference on combinatorics on words and strings, April 2013.
22. Mathematical Sciences Research Institute, Berkeley, CA. *Lectures on growth of algebras*. Introductory workshop on noncommutative algebra and representation theory, January 2013.
23. Irwin Schrodinger Institute, Vienna, Austria. *The Kurosh problem over general fields*. Conference on Golod Shafarevich groups and rank gradient, August 2012.
24. Western Washington University. *The Skolem-Mahler-Lech theorem*. Mathematics Colloquium, March 2012.
25. University of Waterloo. *Diagonals of rational functions, differential equations, and automata*. Pure Mathematics Colloquium, March 2012.
26. Toronto, Canada. *Towards an Effective Mordell-Lang Theorem in positive characteristic*. CMS Winter Meeting, December 2011.
27. University of Utah. *Critical density in positive characteristic*. AMS regional meeting, October 2011.
28. Fudan University, Shanghai, China. *Rings of differential operators*. Workshop on Noncommutative Algebraic geometry, September 2011.
29. University of Virginia. *Linear recurrences, geometry, and finite-state automata*. Mathematics Colloquium, April 2011.
30. University of Washington. *Free subalgebras of division rings*. Conference in honour of Ken Goodearl, August 2010.
31. Oberwolfach Institute, Germany. *A primitive or PI dichotomy for domains of quadratic growth*. Conference on interactions between algebraic geometry and noncommutative algebra, May 2010.
32. RIMS institute, Kyoto, Japan. *Dynamics and the noetherian property*. Conference on noncommutative algebraic geometry, August, 2009.
33. McGill University. *The dynamical Skolem-Mahler-Lech theorem*. Conference in honour of Peter Russell, June, 2009.
34. Université de Québec à Montréal. *Logarithmic frequency in morphic words*. Canadian Discrete and Algorithmic Mathematics Conference, June 2009.
35. University of Calgary. *Endomorphisms of projective schemes*. PIMS ABC algebra workshop, April 2009.
36. Washington, D.C., USA. *Laplace Transforms and 0-1 laws and Centralizers in domains of low GK dimension*. AMS and MAA joint meetings, January 2009.
37. Université de Luminy. *Cobham's theorem and its generalizations*. CIRM conference on Numeration, March 2009.
38. Banff International Research Station. *Centralizers in algebras of finite Gelfand-Kirillov dimension*. Interactions between noncommutative algebra and algebraic geometry, October 2008.
39. Davidson College, North Carolina. *Primitive ideals in Quantum matrices*. AMS regional meeting, March 2007.

40. Miami University, Ohio. *Subfields of Division algebras*. AMS regional meeting, February 2007.
41. Oberwolfach Institute, Germany. *A Dixmier-Moeglin correspondence for twisted homogeneous coordinate rings*. Conference on interactions between algebraic geometry and noncommutative algebra, May 2006.
42. University of Ottawa, Ottawa. *Automorphisms and projective varieties*. 58th Algebra Day, May 2006.
43. University of California, San Diego. *Critical density in Projective schemes*. Lance Small's 65th birthday conference, February 2006.
44. University of Oregon. *Critical density in Projective varieties*. AMS regional meeting, November 2005.
45. Taormina, Italy. *A generalized Cobham theorem*. FPSAC, June, 2005.
46. University of Waterloo. *Automatic sequences, logarithmic density, and fractals*. CMS summer meeting, June 2005
47. University of California, Santa Barbara. *Critical density in Quasi-projective varieties*. AMS regional meeting, April 2005.
48. Bowling Green, Kentucky. *Automorphisms of affine space*. AMS regional meeting, March 2005.
49. Montreal, Quebec. *Critical density in integral schemes*. CMS winter meeting, December 2004.
50. University of Waterloo. *Rational functions, Hilbert series, and forbidden subwords*. Pure Mathematics Colloquium, October 2004.
51. Chapel Hill, North Carolina. *Hilbert series of prime PI algebras*. AMS regional meeting, October 2003.
52. Baltimore, Maryland. *Affine algebras of GK dimension 2*. AMS and MAA joint meetings, January 2003.
53. San Diego, California. *Asymptotic enumeration and 0-1 laws for graphs*. SIAM meeting. August 2002
54. University of Waterloo. *Algebras of low Gelfand-Kirillov dimension*. Pure Mathematics Colloquium, December 2001.
55. San Diego, California. *A proof of a partition conjecture of Bateman and Erdős*. AMS and MAA joint meetings, January 2002.
56. University of Waterloo. *Recent developments in 0-1 laws*. Tutte colloquium, July 2000.

STUDENTS AND
POSTDOCS

1. Yi Zhu, **Postdoc**, 2015–Present.
2. Julian Rosen, **Postdoc**, 2013–2015.
3. Seda Albayrak **PhD Student**, 2017–Present.
4. Parham Hamidi **PhD Student** (Co-Supervised), 2017–Present.
5. Sylvie Davies, **PhD Student** (Co-supervised), 2016–Present.

6. Hongdi Huang, **PhD Student**, 2015–Present.
7. Ehsaan Hossain, **PhD Student**, 2015–Present.
8. Blake Madill, **PhD Student**, 2013–2017.
9. Karel Casteels, **PhD Student**. Phd Thesis: “The Combinatorial Structure of the Prime Spectrum of Quantum Matrices.” Completed in 2010. (Awarded Governor General’s Gold Medal.)
10. Pinar Colak, **PhD Student**, 2008–2012.
11. Yaghoub Sharifi, **PhD Student**, 2007–2013.
12. Pinar Colak, **MSc Student**, MSc Thesis: “Primitivity of finitely presented monomial algebras.” Completed in 2008.
13. James Parks, **MSc Student**, MSc Thesis: “The Dixmier-Moeglin equivalence for skew polynomials rings.” Completed in 2009.
14. James Ratcliffe, **MSc Student**, MSc Thesis: “Sums of rational functions.” Completed in 2012.
15. Josh Smith, **MSc Student**, MSc. Project: “The Grigorchuk group.” Completed in 2013.
16. Karlming Chen, **MSc Student**, Completed in 2014.
17. Chris Ferguson, **MSc Student**, Completed in 2014.
18. Chris Dugdale, **MSc Student**, Completed 2014.
19. Sylvie Davies, **MSc Student**, Completed in 2016.
20. Ehsaan Hossain, **MSc Student**, Completed in 2016.
21. John Campbell, **MSc Student**, Completed in 2016.
22. Seda Albayrak **MSc Student**, Completed in 2017.
23. Parham Hamidi **MSc Student**, Completed in 2017.
24. Brandon Doherty **MSc Student**, Completed in 2017.
25. Nhan Nguyen, **NSERC Undergraduate Research Assistant**, Summer 2007.
26. Jamie Lutley, **NSERC Undergraduate Research Assistant**, Summer 2008.
27. Colin Faverjon, **Undergraduate Research Assistant**, Summer 2010.
28. Yue Zhao, **Undergraduate Research Assistant**, Summer 2011 (Co-supervised).
29. Julian Sahasrabudhe, **NSERC Undergraduate Research Assistant**, Summer 2012.
30. Ehsaan Hossain, **OSAP Undergraduate Research Assistant**, Summer 2013.
31. Wing-Hong Leung, **Hong Kong exchange Research Assistant**, Summer 2013.
32. Forte Shinko, **NSERC Undergraduate Research Assistant**, Winter 2014.
33. Billy Lee, **NSERC Undergraduate Research Assistant**, Summer 2014.

34. Ritvik Ramkumar, **NSERC Undergraduate Research Assistant**, Summer 2014 (Co-supervised).
35. Daniel Spivak, **NSERC Undergraduate Research Assistant**, Summer 2014 (Co-supervised).
36. Thomas Yang, **Hong Kong exchange Research Assistant**, Summer 2014.
37. Kaiyu Wu, **NSERC Undergraduate Research Assistant**, Summer 2015.
38. Chenfangru Wu, **NSERC Undergraduate Research Assistant**, Fall 2015.
39. Raymond Cheng, **NSERC Undergraduate Research Assistant**, Summer 2016.
40. Wes Chorney, **NSERC Undergraduate Research Assistant**, Summer 2017.

AWARDS AND
FELLOWSHIPS

1. Recipient of the inaugural Mahony-Neumann-Room Prize (along with Michael Coons and Kevin Hare) for the best paper published in the Bulletin of the Australian Mathematical Society during the period 2011–2016.
2. NSERC Discovery Grant, 2006–2011; 2011–2016; 2016–2021.
3. Simon Fraser Personal Research Grant, 2005–2007.
4. Simon Fraser University Endowed Fellowship, 2005–2006.
5. Inquiry Based Learning Fellowship, University of Michigan, 2004.
6. NSERC Postdoctoral Scholarship (declined), 2002.

REFEREEING

Referee for the following journals:

- Journal of the American Mathematical Society.
- Journal of the European Mathematical Society.
- Mathematische Zeitschrift.
- Transactions of the American Mathematical Society.
- Algebra and Number Theory.
- Advances in Mathematics
- Compositio
- International Mathematical Research Notices.
- Journal of the London Mathematical Society.

SERVICE AND
PROFESSIONAL
ACTIVITIES

1. Editor-in-Chief for Communications in Algebra, Sept. 2016–Present.
2. Editor for the Canadian Mathematics Journal, Jan. 2016–Present.
3. Editor for Contributions in Algebra and Geometry, 2014–2016.
4. Editor for International Journal of Algebra and Computation, 2014–2017.
5. Member of AARMS scientific committee 2016–Present.
6. Tenure and Promotion committee, University of Waterloo, 2016–Present.
7. Graduate committee, University of Waterloo, 2014–Present.

8. DACA committee, University of Waterloo, 2013–Present.
9. Putnam Team Coach, Simon Fraser University, 2005–2012.
10. Academic Integrity Advisor, Simon Fraser University, 2007–2012.
11. ALRP committee member, Simon Fraser University, 2011–2012.
12. Member of AARMS Scientific Review Panel, 2016–Present.
13. Member of Scientific committee for CMS Winter meeting, Waterloo, Dec. 2017.
14. Organizer for AMS special session “Ring theory and related topics (celebrating the 75th birthday of Lance W. Small)”, Riverside, California, Nov. 2017.
15. Organizer for CMS special session, “Arithmetic dynamics,” Waterloo, Dec. 2017.
16. Organizer for conference “Noncommutative rings, algebraic geometry, and their interactions,” University of Edinburgh, June 2017.
17. Organizer for CRM conference “Bridges between automatic sequences, algebra, and number theory”, May 2017.
18. Organizer of BIRS “Bridges between Noncommutative Algebra and Algebraic Geometry”, September 2016.
19. Organizer of Fields Institute conference “Interactions between Model Theory and Arithmetic Dynamics,” July 2016.
20. Organizer of Fields Institute conference “Geometric Algebra: bridges between commutative algebra, noncommutative geometry, and representation theory”, July 2015.
21. Organizer of AMS Special session, “Special Session on Topics in Noncommutative Algebra and Algebraic Geometry”, Michigan State University, March 2015.
22. Organizer of CMS special session, “Connections between noncommutative algebra and geometry.” Ottawa, December, 2013.
23. Organizer of BIRS “Graph algebras: Bridges between graph C^* -algebras and Leavitt path algebras.” Banff, April 2013.
24. Organizer of BIRS “New Trends in Noncommutative Algebra and Algebraic Geometry.” Banff, October 2012.
25. Organizer of AMS special session, “Noncommutative Algebra and Geometry.” University of Hawaii, March 2012.
26. Organizer of CMS special session, “Interactions between algebraic geometry and ring theory.” CMS summer meeting, Memorial University, Newfoundland, June 2009.
27. Organizer of AMS special session, “Noncommutative algebra and geometry.” AMS sectional meeting, UBC, October 2008.
28. Organizer of the Alberta-British Columbia Algebra workshop. Simon Fraser University, British Columbia, April 2008.
29. Member of Canadian Mathematical Olympiad Committee, June 2008–2012.
30. Member of CMS Doctoral prize committee, March 2013–2014.