

Matthew Kennedy

Associate Professor
Department of Pure Mathematics
University of Waterloo

Phone: (519) 888-4567 x30346
Email: matt.kennedy@uwaterloo.ca
Web: <http://math.uwaterloo.ca/~m3kennedy>

EMPLOYMENT Associate Professor, University of Waterloo (Jul. 2017 – present)

Assistant Professor, University of Waterloo (Jul. 2015 – Jul. 2017)

Assistant Professor, Carleton University (Jul. 2011 – Jun. 2015)

EDUCATION University of Waterloo, Waterloo, Ontario (2011)

Ph.D. Pure Mathematics
Free semigroup algebras and the structure of an isometric tuple
Advisor: Kenneth R. Davidson

University of Waterloo, Waterloo, Ontario (2008)

B.Math. Pure Mathematics and Combinatorics & Optimization

SELECTED AWARDS University of Waterloo Faculty of Mathematics Research Excellence Award (2017)

University of Waterloo Outstanding Performance Award (2016)

Canadian Mathematical Society Doctoral Prize (2012)

NSERC Postdoctoral Fellowship (2011) (declined)

NSERC Michael Smith Foreign Study Supplement (2011)

NSERC Alexander Graham Bell Doctoral Canada Graduate Scholarship (2008)

NSERC Undergraduate Student Research Award (2005 & 2006)

PUBLICATIONS **Preprints**

1. M. Kennedy, T. Kolomatski, D. Spivak, *An infinite quantum Ramsey theorem*, preprint (2017), 19 pages, [arXiv:1711.09526](https://arxiv.org/abs/1711.09526).

2. M. Kennedy, N. Manor, V. Paulsen, *Compositions of PPT maps*, preprint (2017), 9 pages, [arXiv:1710.08475](https://arxiv.org/abs/1710.08475).

3. M. Kennedy, C. Schafhauser, *Noncommutative boundaries and the ideal structure of reduced crossed products*, preprint (2017), 42 pages, [arXiv:1710.02200](https://arxiv.org/abs/1710.02200)

4. M. Kennedy, *An intrinsic characterization of C^* -simplicity*, preprint (2015), 16 pages, [arXiv:1509.01870](https://arxiv.org/abs/1509.01870).

Accepted or Published

5. K.R. Davidson, M. Kennedy, *Choquet order and hyperrigidity for function systems*, accepted to Acta Mathematica (2017), 32 pages, [arXiv:1608.02334](https://arxiv.org/abs/1608.02334)

6. M. Kennedy, S. Raum, *Traces on reduced group C^* -algebras*, accepted to Bulletin of the London Mathematical Society (2017), 3 pages, [arXiv:1706.05903](#).
7. E. Breuillard, M. Kalantar, M. Kennedy, N. Ozawa, *C^* -simplicity and the unique trace property for discrete groups*, accepted to Publications Mathématiques de l’IHÉS (2017), 40 pages, [arXiv:1410.2518](#).
8. R.S. Bryder, M. Kennedy, *Reduced twisted crossed products over C^* -simple groups*, accepted to International Mathematical Research Notice (2016), 16 pages, [arXiv:1602.01533](#).
9. M. Kennedy, P. Skoufranis, *Thompson’s theorem for II_1 factors*, Transactions of the American Mathematical Society **369** (2017), 1495–1511, [arXiv:1407.1564](#).
10. K.R. Davidson, M. Kennedy, *The Choquet boundary of an operator system*, Duke Mathematical Journal **164** (2015), 2989–3004, [arXiv:1303.3252](#).
11. M. Kennedy, P. Skoufranis, *The Schur-Horn problem for normal operators*, Proceedings of the London Mathematical Society **111** (2015), 354–380, [arXiv:1501.06457](#).
12. M. Kennedy, O. Shalit, *Essential normality, essential norms and hyperrigidity*, Journal of Functional Analysis **268** (2015), 2990–3016, [arXiv:1309.3737](#).
13. M. Kennedy, O. Shalit, *Corrigendum to “Essential normality, essential norms and hyperrigidity”*, Journal of Functional Analysis **270** (2015), 2812–2815, [arXiv:1507.05059](#).
14. M. Kennedy, *Essential normality and the decomposability of homogeneous submodules*, Transactions of the American Mathematical Society **367** (2015), 293–311, [arXiv:1202.1797](#).
15. M. Kennedy, D. Yang, *A non-self-adjoint Lebesgue decomposition*, Analysis & PDE **7** (2014), 497–512, [arXiv:1302.5191](#).
16. M. Kennedy, D. Yang, *The Hopf structure of some dual operator algebras*, Integral Equations and Operator Theory **79** (2014), 191–217, [arXiv:1308.2752](#).
17. M. Kalantar, M. Kennedy, *Boundaries of reduced C^* -algebras of discrete groups*, accepted to Journal für die reine und angewandte Mathematik (2014), [arXiv:1405.4359](#).
18. M. Kennedy, *The structure of an isometric tuple*, Proceedings of the London Mathematical Society **106** (2013), 1157–1177, [arXiv:1001.3182](#).
19. A. Fuller, M. Kennedy, *Isometric tuples are hyperreflexive*, Indiana University Mathematics Journal **62** (2013), 1679–1689, [arXiv:1206.5568](#).
20. M. Kennedy, O. Shalit, *Essential normality and the decomposability of algebraic varieties*, New York Journal of Mathematics **18** (2012), 877–890, [arXiv:1207.2808](#).
21. M. Kennedy, A. Nica, *Exactness of the Fock space representation of the q -commutation relations*, Communications in Mathematical Physics **308** (2011), 115–132, [arXiv:1009.0508](#).
22. M. Kennedy, *Wandering vectors and the reflexivity of free semigroup algebras*, Journal für die reine und angewandte Mathematik **653** (2010), 47–73, [arXiv:0909.3479](#).
23. M. Kennedy, H. Radjavi, *Spectral conditions on Lie and Jordan algebras of compact operators*, Journal of Functional Analysis **256** (2009), 3143–3157, [arXiv:0803.4361](#).

24. M. Kennedy, V. Shulman, Y. Turovskii, *Invariant subspaces of subgraded Lie algebras of compact operators*, *Integral Equations and Operator Theory* **63** (2008), 47–93, [arXiv:0803.3213](#).
25. M. Kennedy, *Triangularization of a Jordan algebra of Schatten operators*, *Proceedings of the American Mathematical Society* **136** (2008), 2521–2527, [arXiv:0708.0841](#).

Reports

26. M. Argerami, S. Coskey, M. Kalantar, M. Kennedy, M. Lupini, M. Sabok, *The classification problem for finitely generated operator systems and spaces* (2016), 32 pages, [arXiv:1411.0512](#).
27. M. Kennedy, *An intrinsic algebraic characterization of C^* -simplicity*, *Oberwolfach Report* **21/2016** (2016), 46–50.
28. M. Kennedy, *C^* -envelopes of operator systems*, *Oberwolfach Report* **6/2016** (2016), 9–10.
29. M. Kennedy, *The noncommutative Choquet boundary and a connection to essential normality*, *Oberwolfach Report* **21/2014** (2014), 46–50.

GRANTS	NSERC Discovery Grant	\$85,000	2012 – 2017
	University of Waterloo Startup	\$50,000	2015 – 2017
	Carleton University Startup	\$20,000	2011 – 2015

- INVITED TALKS
- An infinite quantum Ramsey theorem*, Canadian Mathematical Society Winter Meeting, University of Waterloo, Waterloo (Dec. 2017).
- Noncommutative boundaries and the structure of reduced crossed products*, Satellite Conference on Operator Algebras for the Mathematical Congress of the Americas at the Fields Institute, Toronto, Canada (Jul. 2017).
- Noncommutative boundaries and the structure of reduced crossed products*, Concentration Week on Ergodic Theory and Operator Algebras at Texas A&M University, College Station, United States (Jun. 2017).
- Noncommutative boundaries and the ideal structure of reduced crossed products*, Canadian Symposium on Operator Algebras and Operator Theory at Lakehead University, Thunder bay, Canada (Jun. 2017).
- Operator algebras and group theory*, Colloquium at the University of Calgary, Calgary, Canada (May 2017).
- Operator algebras and analytic group theory*, Early Career Researcher Plenary Lecture at the Conference of the Australian Mathematical Society, Australian National University, Canberra, Australia (Dec. 2016).
- Noncommutative geometry and noncommutative convexity*, Plenary Lecture at the Early Career Workshop of the Conference of the Australian Mathematical Society, Australian National University, Canberra, Australia (Dec. 2016).
- An intrinsic algebraic characterization of C^* -simplicity*, Oberwolfach Workshop on C^* -Algebras, Oberwolfach, Germany (Aug. 2016).

An intrinsic algebraic characterization of C^ -simplicity*, Groups and Operators, Chalmers University of Technology, Gothenburg, Sweden (Aug. 2016).

An intrinsic algebraic characterization of C^ -simplicity*, Groups, Dynamics, and Operator Algebras, Queen Mary University, London, UK (Jul. 2016).

Boundaries and C^ -simplicity*, Lecture series at the Canadian Symposium on Operator Algebras and Their Applications, McGill University, Montreal (Jun. 2015).

An intrinsic algebraic characterization of C^ -simplicity*, Workshop on Dynamical Systems and Operator Algebras, University of Ottawa, Ottawa (Jun. 2016).

Boundaries, injectivity and C^ -simplicity*, Northern British Functional Analysis Seminar, University of Leeds, Leeds (Apr. 2016).

C^ -envelopes of operator systems*, Oberwolfach Workshop on Noncommutative Geometry and Operator Spaces, Oberwolfach (Feb. 2016)

An intrinsic algebraic characterization of C^ -simplicity*, Northwestern University Analysis Seminar, Chicago (Jan. 2016).

An intrinsic algebraic characterization of C^ -simplicity*, Canadian Mathematical Society Winter Meeting, McGill University, Montreal (Dec. 2015).

C^ -simplicity and the unique trace property for discrete groups*, Subfactors Seminar, Vanderbilt University, Nashville (Nov. 2015).

C^ -simplicity and the unique trace property for discrete groups*, West Coast Operator Algebras Seminar, University of California, San Diego (Oct. 2015).

C^ -simplicity and the unique trace property for discrete groups*, Analysis Seminar, University of Southern Denmark, Odense, Denmark (May 2015).

C^ -simplicity and the unique trace property for discrete groups*, Erikfest, University of Copenhagen, Copenhagen, Denmark (May 2015).

Boundaries, injectivity and C^ -simplicity for discrete groups*, Masterclass on Groups, boundary actions and group C^* -algebras, University of Copenhagen, Copenhagen, Denmark (Apr. 2015).

C^ -simplicity and the unique trace property for discrete groups*, Focus Programme on C^* -algebras, University of Münster, Münster, Germany (Apr. 2015).

C^ -simplicity and the unique trace property for discrete groups*, Operator algebras and analytic group theory, Colloquium, University of Alberta, Edmonton (Jan. 2015).

C^ -simplicity and the unique trace property for discrete groups*, Operator algebras and analytic group theory, Colloquium, Indiana University, Bloomington (Oct. 2014).

C^ -simplicity and the unique trace property for discrete groups*, Wabash Modern Analysis Seminar, Wabash College, Crawfordsville (Oct. 2014).

C^ -simplicity and the unique trace property for discrete groups*, Dynamics and C^* -Algebras: Amenability and Soficity, Banff International Research Station, Banff (Oct. 2014).

Boundaries of reduced C^ -algebras of discrete groups*, Summer Informal Regional Functional Analysis Seminar (SUMIRFAS), Texas A&M University, College Station (Jul. 2014).

Boundaries of reduced C-algebras of discrete groups*, Canadian Symposium on Operator Algebras and Their Applications, Fields Institute, Toronto (Jun. 2014).

The Choquet boundary of an operator system and an application to essential normality, Oberwolfach Workshop on Hilbert Modules and Complex Geometry, Mathematisches Forschungsinstitut, Oberwolfach, Germany (May 2014).

Operator algebraic geometry, Colloquium, University of Waterloo, Waterloo (Dec. 2013).

The Choquet boundary of an operator system, Colloquium, University of Nebraska, Lincoln (Nov. 2013).

Multivariable operator theory, Iowa-Nebraska Functional Analysis Seminar, University of Iowa, Iowa City (Nov. 2013).

The Choquet boundary of an operator system, Wabash Miniconference, Indiana University-Purdue University, Indianapolis (Sep. 2013).

The Arveson-Douglas essential normality conjecture, Banach Algebras and Applications, Chalmers University of Technology, Gothenburg, Sweden (Aug. 2013).

A survey of some noncommutative function theory, Focus Program on Noncommutative Distributions in Free Probability Theory, Fields Institute, Toronto (Jul. 2013).

The Choquet boundary of an operator system, Canadian Symposium on Operator Algebras and Their Applications, Fields Institute, Toronto (May 2013).

The Arveson-Douglas essential normality conjecture, Great Plains Operator Theory Symposium, University of California, Berkeley (May 2013).

The Choquet boundary of an operator system, Analysis Seminar, University of Ottawa, Ottawa (Mar. 2013).

Multivariable operator theory, Doctoral Prize Lecture, Canadian Mathematical Society Winter Meeting, Montreal (Dec. 2012).

A universal F. & M. Riesz Theorem, Canadian Mathematical Society Winter Meeting, Montreal (Dec. 2012).

Essential normality of certain commuting families of operators, Canadian Symposium on Operator Algebras and Their Applications, Queens University, Kingston (May 2012).

Essential normality and the study of commuting families of operators, Colloquium, University of Windsor, Windsor (Mar. 2012).

The essential normality of certain homogeneous submodules, Analysis Seminar, Queens University, Kingston (Jan. 2012).

The structure of an isometric tuple, Canadian Mathematical Society Winter Meeting, Ryerson University, Toronto (Dec. 2011).

The structure of an isometric tuple, Operator Theory and its Applications, Chalmers University of Technology, Gothenburg, Sweden (Apr. 2011).

q-Deformations of certain operator algebras, Free Probability Seminar, University of California, Berkeley (Feb. 2011).

q-Deformations of certain operator algebras, Functional Analysis Seminar, University of California, Los Angeles (Jan. 2011).

Wandering vectors and the reflexivity of free semigroup algebras, Canadian Mathematical Society Winter Meeting, University of Windsor, Windsor (Dec. 2009).

Wandering vectors and the reflexivity of free semigroup algebras, Workshop on Multivariate Operator Theory , Fields Institute, Toronto (Aug. 2009).

RESEARCH VISITS Visiting Researcher, University of Copenhagen, Denmark (Spring 2015)
Visiting Ph.D. Student, UCLA, Los Angeles, California (Winter 2011)

SUPERVISION

PDF

Christopher Schafhauser 2015 –
Timothy Rainone 2015 – 2016

Ph.D.

Nicholas Manor 2017 –
Zsolt Tanko 2017 –
Sam Kim 2016 –
Arthur Mehta 2016 –
Chadi Hamzo 2012 –

Masters

Bahaa Khaddaj 2016 – 2017
Nicholas Manor 2016 – 2017
Kari Eifler 2015 – 2016
Arthur Mehta 2014 – 2016

CONFERENCES
ORGANIZED

Southern Ontario Operator Algebras Seminar 2018, Fields Institute, Toronto.

Banach Algebras and Applications 2015, Fields Institute, Toronto.

Operator Algebras and Operator Theory, 2014 CMS Winter Meeting, McMaster University, Hamilton.

Banach Algebras and Abstract Harmonic Analysis, 2013 CMS Winter Meeting, Ottawa.

Operator Algebras and their Applications, 2013 CMS Winter Meeting, Ottawa.