

# Ilan Smythe

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## Curriculum vitae

### Education

- 2017 **Ph.D. in Mathematics**, *Cornell University*, Ithaca, NY.  
(expected) Advisor: Justin Tatch Moore
- 2014 **M.S. in Mathematics**, *Cornell University*, Ithaca, NY.
- 2011 **B.Sc.(Hons.) in Mathematics**, *University of Manitoba*, Winnipeg, Canada.

### Research interests

Combinatorial and descriptive set theory, mathematical logic, functional analysis

### Papers and preprints

- [1] A local Ramsey theory for block sequences. (2016) arXiv:1609.09016 [math.LO]. Submitted.
- [2] Borel equivalence relations in the space of bounded operators. (2014) arXiv:1407.5325 [math.LO].  
Accepted in *Fundamenta Mathematicae*.

### Awards and grants

- 2015 Cornell University Eleanor Norton York Award
- 2014–2016 NSERC Postgraduate Scholarship PGS–D
- 2012–2013 Cornell University Graduate Fellowship
- 2011–2012 NSERC Postgraduate Scholarship PGS–M  
NSERC Alexander Graham Bell Canada Graduate Scholarship CGS–M  
(declined: not tenable outside of Canada)
- 2011 Graduation with First Class Honours, University of Manitoba
- 2009–2011 NSERC Undergraduate Summer Research Award

### Invited talks

- Oct 2016 A local Ramsey theory for block sequences (AMS Fall Western Sectional Meeting, Special Session on Set Theory of the Continuum, University of Denver)
- Dec 2015 Turbulence and Essential Equivalence of Subspaces (CMS Winter Meeting, Montreal, QC)

### Selected research talks

- Sept 2016 Complete combinatorics for forcing with vector subspaces (Logic Seminar, Cornell)
- Sept 2016 A local Ramsey theory for block sequences (BIRS-CMO Workshop: Set Theory and its Applications in Topology, Casa Matemática Oaxaca, Mexico)

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- July 2016 A local Ramsey theory for block sequences (Toposym, Prague, CZ)
- July 2016 A local Ramsey theory for block sequences (Transfinite methods in Banach spaces and algebras of operators, Bedlewo, PL)
- May 2016 Towards a selective Gowers dichotomy (ASL North American Annual Meeting, University of Connecticut)
- May 2016 Towards a selective Gowers dichotomy (NY Graduate Student Logic Conference, CUNY Graduate Center)
- March 2016 Towards a selective Gowers dichotomy (Set Theory Seminar, Fields Institute/University of Toronto)
- April 2015 Turbulence and Essential Equivalence of Subspaces (Graduate Student Conference in Logic University of Illinois at Chicago)
- Sept 2014 Turbulence and non-classifiability of projections in the Calkin algebra (Logic Seminar, Cornell)

### Selected expository talks

- Feb 2016 Semiselective co-ideals and complete combinatorics, parts I-II (Logic Seminar, Cornell)
- Oct 2015 Finite Dictatorships and Infinite Democracies (Olivetti Club Seminar, Cornell)  
(Winner: "Best Olivetti", Fall 2015)
- Nov 2014 Metrizable separable Frechet groups, parts I-III (Logic Seminar, Cornell)
- Sept 2014 Turbulence and Classification (Olivetti Club Seminar, Cornell)
- April 2014 States, Quantum Filters and Set Theory, parts I-II (Logic Seminar, Cornell)
- Nov 2013 PFA, OCA and automorphisms of  $P(\omega)/\text{Fin}$ , parts I-III (Logic Seminar, Cornell)
- Nov 2013 Diagonalize This (Olivetti Club Seminar, Cornell)
- March 2013 MOOCs and trends in online education, Teaching Seminar (Cornell)
- March 2013 Classifying classification (Olivetti Club Seminar, Cornell)
- Feb 2013 Countable Borel equivalence relations (Logic Seminar, Cornell)
- Sept 2012 It's all fun and games... (Olivetti Club Seminar, Cornell)
- Nov 2011 A crash course in topological groups (Olivetti Club Seminar, Cornell)

### Conferences and workshops

- Oct 2016 AMS Fall Western Sectional Meeting, Special Session on Set Theory of the Continuum (University of Denver)
- Sept 2016 Set Theory and its Applications in Topology (BIRS-CMO, Oaxaca, Mexico)
- July 2016 Toposym (Prague, Czech Republic)
- July 2016 Transfinite methods in Banach spaces and algebras of operators (Bedlewo, Poland)
- May 2016 Association for Symbolic Logic North American Annual Meeting (University of Connecticut)
- May 2016 NY Graduate Student Logic Conference (City University of New York Graduate Center)
- April 2016 Appalachian Set Theory Workshop: Forcing with countable conditions (Virginia Commonwealth University)
- Jan 2016 Joint Mathematics Meetings (Seattle, WA)
- Dec 2015 CMS Winter Meeting (Montreal, QC, Canada)

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- Oct 2015 Appalachian Set Theory Workshop: Countable Abelian Group Actions (Carnegie Mellon University)
- May 2015 Appalachian Set Theory Workshop: Iteration Trees (Carnegie Mellon University)
- April 2015 Graduate Student Conference in Logic (University of Illinois at Chicago)
- April 2015 Forcing & Its Applications Retrospective Workshop (Fields Institute)
- March 2015 Association for Symbolic Logic North American Annual Meeting (University of Illinois at Urbana-Champaign)
- Dec 2014 60 Years of Dow (Cornell University)
- Nov 2014 Appalachian Set Theory Workshop: Ultrafilter space methods in infinite Ramsey theory (University of Illinois at Chicago)
- Oct 2014 Rutgers Logic Conference (Rutgers)
- June 2014 CMS Summer Meeting (Winnipeg, Canada)
- March 2014 Spring Topology and Dynamics Conference (University of Richmond)
- Jan 2014 Winter School in Abstract Harmonic Analysis, Banach and Operator Algebras (Fields Institute)
- Oct 2013 Mid Atlantic Mathematical Logic Seminar (Rutgers)
- May 2013 Association for Symbolic Logic North American Annual Meeting (University of Waterloo)
- April 2013 NY Graduate Student Logic Conference (City University of New York Graduate Center)
- Sept 2013 Appalachian Set Theory Workshop:  $C^*$ -algebras, classification and descriptive set theory (Fields Institute)
- July-Aug 2013 Summer School in Model Theory (Mathematical Sciences Research Institute)
- April 2012 Appalachian Set Theory Workshop: The HOD dichotomy (Cornell University)
- March 2012 Appalachian Set Theory Workshop: Set theory and von Neumann algebras (Carnegie Mellon University)

## Editorial work

I am currently a referee for the *Archive for Mathematical Logic*

## Teaching experience

Cornell University:

- Fall 2016 Teaching assistant for MATH 6110 – Real Analysis
  - Summer 2015 Instructor for MATH 1340 – Mathematics and Politics
  - Spring 2014 Teaching assistant for MATH 2940 – Linear Algebra for Engineers
  - Fall 2013 Instructor for MATH 1110 – Calculus I
  - Summer 2013 Teaching assistant for Summer Mathematics Institute course in Abstract Algebra
  - Fall 2012 Instructor for Ithaca High School Senior Mathematics Seminar on “Set Theory and the Foundations of Mathematics”
- University of Manitoba:
- 2008-12 Teaching assistant for various 1000-level courses including calculus and linear algebra

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## Service

Cornell University:

- 2016-present Voting member for Physical Sciences, Graduate and Professional Student Assembly (GPSA)
- 2016-present Member GPSA Communications Committee
- 2015-present Member GPSA Student Advocacy Committee
  - 2015-16 Field representative for Mathematics, GPSA
  - 2015-16 Member and GPSA liaison to Cornell Cinema Student Advisory Committee
- April 2015 Volunteer for Expanding Your Horizons: Exploring Math
- April 2014 Volunteer for Expanding Your Horizons: Exploring Math
- Spring 2013 Co-organizer of the Olivetti Club Seminar

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## Professional membership

American Mathematical Society  
Association for Symbolic Logic  
Association for Women in Mathematics  
Canadian Mathematical Society  
Mathematical Association of America

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## Other information

Date of birth May 30, 1989  
Citizenship Canadian