

CURRICULUM VITAE – DAVID CONLON

PERSONAL INFORMATION

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POSITIONS HELD

2016- : Professor, University of Oxford

2011-16 : Associate Professor, University of Oxford.

2011- : Tutorial Fellow, Wadham College, Oxford.

2010- : Royal Society University Research Fellow.

2007-10: Junior Research Fellow, St John's College, Cambridge.

EDUCATION

2004-09: PhD in mathematics, University of Cambridge.
Advisor: W.T. Gowers
Title: *Upper bounds for Ramsey numbers.*

2003-04: Part III mathematics, University of Cambridge.
With distinction.

1999-2003: BA in mathematics, Trinity College Dublin.
First class degree with gold medal.

AWARDS AND DISTINCTIONS

2014: Sectional speaker at the ICM.
2011: European Prize in Combinatorics.
2006: Smith–Knight Prize, University of Cambridge.

PUBLICATIONS

Finite reflection groups and graph norms, with J. Lee, to appear in *Adv. Math.*

Freiman homomorphisms on sparse random sets, with W. T. Gowers, to appear in *Q. J. Math.*

Almost-spanning universality in random graphs, with A. Ferber, R. Nenadov and N. Škorić, to appear in *Random Structures Algorithms.*

A note on induced Ramsey numbers, with D. Dellamonica, S. La Fleur, V. Rödl and M. Schacht, to appear in *A Journey through Discrete Mathematics: A Tribute to Jiří Matoušek.*

Hedgehogs are not colour blind, with J. Fox and V. Rödl, to appear in *J. Combin.*

Graphs with few paths of prescribed length between any two vertices, to appear in *Bull. London Math. Soc.*

Hereditary quasirandomness without regularity, with J. Fox and B. Sudakov, to appear in *Math. Proc. Cam. Phil. Soc.*

Quasirandom Cayley graphs, with Y. Zhao, *Discrete Anal.* 2017, Paper No. 6, 14 pp.

A sequence of triangle-free pseudorandom graphs, *Combin. Probab. Comput.* **26** (2017), 195–200.

Ordered Ramsey numbers, with J. Fox, C. Lee and B. Sudakov, *J. Combin. Theory Ser. B* **122** (2017), 353–383.

Combinatorial theorems in sparse random sets, with W. T. Gowers, *Ann. of Math.* **184** (2016), 367–454.

Short proofs of some extremal results II, with J. Fox and B. Sudakov, *J. Combin. Theory Ser. B* **121** (2016), 173–196.

Ramsey numbers of cubes versus cliques, with J. Fox, C. Lee and B. Sudakov, *Combinatorica* **36** (2016), 37–70.

Monochromatic cycle partitions in local edge colourings, with M. Stein, *J. Graph Theory* **81** (2016), 134–145.

A relative Szemerédi theorem, with J. Fox and Y. Zhao, *Geom. Funct. Anal.* **25** (2015), 733–762.

Recent developments in graph Ramsey theory, with J. Fox and B. Sudakov, *Surveys in Combinatorics 2015*, 49–118.

On the grid Ramsey problem and related questions, with J. Fox, C. Lee and B. Sudakov, *Int. Math. Res. Not.* **17** (2015), 8052–8084.

The Erdős–Gyárfás problem on generalized Ramsey numbers, with J. Fox, C. Lee and B. Sudakov, *Proc. London Math. Soc.* **110** (2015), 1–18.

Distinct volume subsets, with J. Fox, W. Gasarch, D. G. Harris, D. Ulrich and S. Zbarsky, *SIAM J. Discrete Math.* **29** (2015), 472–480.

Combinatorial theorems relative to a random set, *Proceedings of the International Congress of Mathematicians 2014*, Vol. 4, 303–328.

The Green–Tao theorem: an exposition, with J. Fox and Y. Zhao, *EMS Surv. Math. Sci.* **1** (2014), 249–282.

On the KLR conjecture in random graphs, with W. T. Gowers, W. Samotij and M. Schacht, *Israel J. Math.* **203** (2014), 535–580.

- Cycle packing, with J. Fox and B. Sudakov, *Random Structures Algorithms* **45** (2014), 608–626.
- Ramsey-type results for semi-algebraic relations, with J. Fox, J. Pach, B. Sudakov and A. Suk, *Trans. Amer. Math. Soc.* **366** (2014), 5043–5065.
- Extremal results in sparse pseudorandom graphs, with J. Fox and Y. Zhao, *Adv. Math.* **256** (2014), 206–290.
- Short proofs of some extremal results, with J. Fox and B. Sudakov, *Combin. Probab. Comput.* **23** (2014), 8–28.
- Two extensions of Ramsey’s theorem, with J. Fox and B. Sudakov, *Duke Math. J.* **162** (2013), 2903–2927.
- Graph removal lemmas, with J. Fox, in *Surveys in Combinatorics 2013*, 1–50.
- The Ramsey number of dense graphs, *Bull. London Math. Soc.* **45** (2013), 483–496.
- An improved bound for the stepping-up lemma, with J. Fox and B. Sudakov, *Discrete Appl. Math.* **161** (2013), 1191–1196.
- On two problems in graph Ramsey theory, with J. Fox and B. Sudakov, *Combinatorica* **32** (2012), 513–535.
- Bounds for graph regularity and removal lemmas, with J. Fox, *Geom. Funct. Anal.* **22** (2012), 1191–1256.
- Erdős–Hajnal-type theorems in hypergraphs, with J. Fox and B. Sudakov, *J. Combin. Theory Ser. B* **102** (2012), 1142–1154.
- On the Ramsey multiplicity of complete graphs, *Combinatorica* **32** (2012), 171–186.
- Weak quasi-randomness for uniform hypergraphs, with H. Hàn, Y. Person and M. Schacht, *Random Structures Algorithms* **40** (2012), 1–38.
- Large almost monochromatic subsets in hypergraphs, with J. Fox and B. Sudakov, *Israel J. Math.* **181** (2011), 423–432.
- An approximate version of Sidorenko’s conjecture, with J. Fox and B. Sudakov, *Geom. Funct. Anal.* **20** (2010), 1354–1366.
- An extremal theorem in the hypercube, *Electron. J. Combin.* **17** (2010), R111.
- Hypergraph Ramsey numbers, with J. Fox and B. Sudakov, *J. Amer. Math. Soc.* **23** (2010), 247–266.
- On-line Ramsey numbers, *SIAM J. Discrete Math.* **23** (2009), 1954–1963.

Ramsey numbers of sparse hypergraphs, with J. Fox and B. Sudakov, *Random Structures Algorithms* **35** (2009), 1–14.

Hypergraph packing and sparse bipartite Ramsey numbers, *Combin. Probab. Comput.* **18** (2009), 913–923.

A new upper bound for diagonal Ramsey numbers, *Ann. of Math.* **170** (2009), 941–960.

A new upper bound for the bipartite Ramsey problem, *J. Graph Theory* **58** (2008), 351–356.

On the existence of rainbow 4-term arithmetic progression, with V. Jungić and R. Radoičić, *Graphs Combin.* **23** (2007), 249–254.

Rainbow solutions of linear equations over \mathbb{Z}_p , *Discrete Math.* **306** (2006), 2056–2063.

SUBMITTED PAPERS Lines in Euclidean Ramsey theory, with J. Fox.

Tower-type bounds for unavoidable patterns in words, with J. Fox and B. Sudakov.

Some advances on Sidorenko’s conjecture, with J. H. Kim, C. Lee and J. Lee.

Rational exponents in extremal graph theory, with B. Bukh.

SELECTED TALKS

05/17: Recent advances in Extremal Combinatorics workshop, TSIMF, China.

04/17: Structure and Randomness workshop, Simons Institute, Berkeley.

06/16: SIAM Conference on Discrete Mathematics, Atlanta.

03/16: MINT Distinguished Lecture Series, Tel Aviv University.

07/15: British Combinatorial Conference, University of Warwick.

06/15: Connections in Discrete Mathematics, Simon Fraser University, Vancouver.

04/15: Atlanta Lecture Series, Georgia Tech.

12/14: Departmental colloquium, Yale University.

08/14: Combinatorics section, ICM, Seoul.

08/14: ICM Satellite conference on Extremal and Structural Graph Theory.

04/14: Combinatorics section, British Mathematical Colloquium, Queen Mary.

11/13: Diamant symposium, Lunteren, The Netherlands.

07/13: Erdős Centennial conference, Budapest.

01/13: Extremal and Probabilistic Combinatorics workshop, IPAM, Los Angeles.

07/12: Additive Combinatorics conference, Paris.

06/12: Perspectives in Discrete Mathematics, CRM, Barcelona.

01/12: Discrete Mathematics workshop, Eilat, Israel.

08/11: Eurocomb, Rényi Institute, Budapest.

08/11: Irish Maths Society meeting, University of Limerick.

04/11: Hypergraph Turán Problem workshop, AIMS, Palo Alto.

10/10: Discrete Mathematics seminar, Institute for Advanced Study, Princeton.

08/10: Extremal Combinatorics workshop, Frauenchiemsee, Germany.

11/09: Topics in Graphs and Hypergraphs conference, IPAM, Los Angeles.

08/09: Extremal and Probabilistic Combinatorics workshop, BIRS, Banff.

08/09: Random Structures and Algorithms conference, Poznań.
09/08: Extremal Combinatorics workshop, University of Birmingham.
08/08: Fête of Combinatorics and Computer Science, Keszthely, Hungary.
05/07: One-day colloquium in Combinatorics, Queen Mary, London.
12/06: Pure Mathematics colloquium, University College London.
07/06: Czech-Slovak Symposium on Discrete Mathematics, Prague.
04/06: Additive Combinatorics conference, CRM, Montréal.

WORKSHOPS
ORGANISED

06/18: SIAM Conference on Discrete Mathematics.
02/18: CMSA Workshop on Probabilistic and Extremal Combinatorics.
03/17: Simons Workshop on Proving and Using Pseudorandomness.
01/15: AIM Workshop on Graph Ramsey theory.
10/14: CRM Workshop on New Horizons in Additive Combinatorics.
10/14: IMA Workshop on Additive and Analytic Combinatorics.
06/14: CMI Workshop on Extremal and Probabilistic Combinatorics.
08/13: CMI Workshop on Developing Exceptional Talent in Mathematics.
08/13: Oxford Masterclasses in Combinatorics.
06/12: Mini-session organiser for SIAM Conference on Discrete Mathematics.

EDITORIAL DUTIES

2015- : Electronic Journal of Combinatorics - Editor-in-Chief
2013- : Journal of Combinatorics - Associate Editor

COMMITTEE WORK

2016- : Royal Society International Exchanges Committee.
2015- : British Combinatorial Committee.

RESEARCH
INTERESTS

Extremal and probabilistic combinatorics, particularly extremal graph theory, Ramsey theory, random structures, quasirandomness, discrete geometry and additive combinatorics.