

Alexander David Scott

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Research interests

Combinatorics, graph theory, probability, connections with statistical physics and computer science

Employment

- Professor of Mathematics, University of Oxford (2006-)
- Fellow and Dominic Welsh Tutor in Mathematics, Merton College, Oxford (2005-)

Previous:

- Reader in Mathematics at University College London (2001-2005)
- Lecturer in Mathematics at University College London (1996-2001)
- Visiting Professor, University of Memphis (1997)
- Junior Research Fellow at Trinity College, Cambridge (1993-1997)
- PhD, University of Cambridge (1995)

Grants

- PI for EPSRC grant EP/X013642/1, *DMS-EPSRC Induced subgraphs and graph structure* (approx. £450K; 2022-2027)
- PI for EPSRC grant EP/V007327/1 on *Local-Global Interactions in Combinatorics* (approx. £500K; 2021-2024)
- Co-Investigator on the Marie Curie RISE project RandNET (approx. €850K; 2021-2025)
- Leverhulme Research Fellowship (2017-2019)
- More than 20 annual grants each from the London Mathematical Society and the British Combinatorial Committee to support a One-Day Meeting in Combinatorics (1999-)
- Joint research group grant from the London Mathematical Society for OWL (Oxford, Warwick and London) seminar series with further support from British Combinatorial Committee (2005-7)
- Leverhulme Trust grant to bring Alan Sokal to the UK as Leverhulme Visiting Fellow (2005)
- Principal investigator for EPSRC grant GR/S26323/01, on *Statistical Mechanics on Graphs* (2004)
- Scheme 7 grants from the LMS to pursue joint projects with IBM (2002/2004/2007)

Editorial boards

- *Bulletin of the London Mathematical Society*, 2024-
- *Journal of the London Mathematical Society*, 2024-
- *Quarterly Journal of Mathematics*, 2024-
- *Illinois Journal of Mathematics*, 2019-
- *Combinatorics, Probability and Computing*, 2009- (Managing Editor, 1997-2009)
- *Combinatorica*, 2023-
- *Advances in Combinatorics*, 2022-
- *Innovations in Graph Theory*, 2023-

Enabling activity

Organizer or coorganizer for many meetings, workshops and seminars, including:

- Ran 23 *One-Day Meetings in Combinatorics*, at UCL (starting 1999) and then Oxford (from 2005)
- Banff workshop on *New Perspectives in Colouring and Structure* (March 2020, October 2021)
- MATRIX programme *Structural Graph Theory Downunder*, Australia (Dec 2019, spring 2023)
- Oberwolfach workshop on *Graph Theory* (January 2019, January 2022, 2025)
- Clay workshop on *Recent Advances in Extremal Combinatorics* (Oxford, December 2018)
- *Probabilistic Combinatorics: A celebration of the work of Colin McDiarmid* (Oxford, April 2016)
- Clay workshop on *Extremal and Probabilistic Combinatorics* (Oxford, June 2014)
- Committee member for EUROCOMB 2007 (Berlin), EUROCOMB 2009 (Seville), EUROCOMB 2011 (Budapest), EUROCOMB 2013 (Pisa), WG2020 (Leeds)
- *Oxford-Princeton Workshop on Graph Theory* (Oxford, May 2008)
- Newton Institute programme *Combinatorics and Statistical Mechanics* (Cambridge, Jan-Jul 2008)
- Organizer for weekly *Combinatorial Theory Seminar* at Oxford (2005-), as well as joint seminar afternoons and lecture series. Previously, organizer (2001-2005) of the weekly UCL *Pure Mathematics Colloquium*, UCL informal *Pure Mathematics Seminar*, informal *Combinatorics Seminar*, and London-area *Combinatorics and Statistical Physics working group* (2003-2005)

Invited talks

ICM invited sectional speaker 2022.

Invited speaker at: *10th Polish Combinatorial Conference (2024)*, *Discrete Mathematics Days, Alcala (2024)*, *Structure and Randomness – A celebration of the Mathematics of Timothy Gowers (2024)*, *One-Day Meeting in Combinatorics, Bristol (2023)* *IBS Workshop on Developments in Combinatorics (2023)*, *Sparse graphs coalition (2023)*, *Seymour is Seventy, Lyon (2022)*, *“Two One-Day Colloquia in Combinatorics”* at QMUL (2015) and LSE (2022), *Nankai Symposium on Mathematical Dialogues (2021)*, *Paul Erdős Lecture Series, Memphis (2019)*, *Rio de Janeiro Workshop on Extremal and Structural Combinatorics (2018)*, *Workshop on Graphs, Bellair Research Institute (2018, 2017 (3 talks), 2015)*, Tutorial lecture at Banff workshop on *Graph Coloring (2017)*, *Tutte Centenary Conference, Cambridge (2017)*, *SiGMA: Structure in Graphs and Matroids, Waterloo, Canada (2017)*, Banff workshop on *Geometric and Structural Graph Theory (2017)*, *Directed Graphs, Waterloo (2016)*, ETH workshop on *Probabilistic and Extremal Combinatorics (2016)*, *STRUCCO conference at Institut Henri Poincaré, Paris (2015)*, Banff workshop on *Methods and Challenges in Extremal and Probabilistic Combinatorics (2015)*, *Scottish Combinatorics Conference, Glasgow (2015)*, *Crossing the Boundaries: Science, Philosophy, Pseudoscience: Conference in honor of Alan Sokal's 60th birthday, École Normale Supérieure and Institut Henri Poincaré (2015)*, *Graph Theory in the Andes, Santiago, Chile (2015)*. Principal speaker at *Atlanta Lecture Series in Combinatorics and Graph Theory XXIII (2019)*; two plenary talks and one lecture to students). Plenary talks at *Graph Theory in Paris (2019)*, *EUROCOMB 2019, Bratislava (2019)*, *Random Structures and Algorithms, Zurich (2019)*, *Symposium on Graphs, Nijmegen (2018)*, *5th International Combinatorics Conference (5ICC), Monash (2017)*, *Southern Italian Workshop on Algorithms and Graphs, Bari (2016)*, *Probabilistic Combinatorics: A celebration of the work of Colin McDiarmid, Oxford (2016)*, *Fuzzy Vance Lecturer, Oberlin College (2015)*.

Seminars in Prague (2023, 2024), Princeton (13 talks between 2014 and 2024), QMUL (2024), ETH Zurich (2015, 2024), Cambridge (2020, 2017, 2023), Monash (2023), Krakow (2022/2023), Graz (2021), Moscow (2021, online), Birmingham (2018), UCL (2017), Rutgers (2016), Warwick (2019, 2015).

Outreach and engagement

Outreach activities including visits to schools, talks and enrichment classes for groups of A Level students, in person and online admissions talks, open days, pre-University bridging training for students.

Set up and co-runs the online *Discrete Mathematics and Probability Seminar* (set up in March 2020 as a resource for the mathematical community; talks also available on youtube). Also organized a one-day online *Round the World Relay in Combinatorics*, with 22 different research groups from Australia to Alaska; more than 500 people attended parts of the day (June 2021, talks also available on youtube).

External interactions have included architectural consultancy (projects in London, Paris, Frankfurt, Boston and at CEBIT); reviewing books on mathematics and related subjects for *The Economist*; and recent projects with Intel and with Novo Nordisk.

Teaching and service

Supervised 16 completed and 5 ongoing PhD dissertations, as well as numerous Masters and Undergraduate theses. Acted as PhD examiner for 36 PhD theses (27 as external examiner), and numerous Masters theses. External examiner for Cambridge first-year Mathematics degree (2021-23).

Head of Combinatorics research group (2005-). Sat on numerous job committees, and acted as mentor for many colleagues and postdocs. Played a full part in teaching, examining and administration.

In the last few years, acted as assessor for the NSA Math; Simons Foundation; Netherlands Organisation for Scientific Research (NWO); BSF (U.S.-Israel Binational Science Foundation); Israel Science Foundation; NSERC (Canada); EPSRC (UK); Deutsche Forschungsgemeinschaft (German Research Foundation); National Science Center, Poland; ERC advanced grant referee; International Centre for Mathematical Sciences in Edinburgh; Czech Science Foundation; Chilean National Science and Technology Commission; ANR (L'Agence nationale de la recherche, France). Acted as search panel member or independent external faculty assessor for Harvard, Hamburg, the Institute for Basic Science (IBS, South Korea), LSE, Qatar University, University of Vienna, Tel-Hai College, QMUL, Notre Dame, City University and Bangor. Sat on grant assessment panels for the Swedish Research Council (2021-) and EPSRC (2023). Acted on numerous occasions as a Junior Research Fellowship assessor for Oxford and Cambridge colleges. Acted as an external REF advisor for two London universities (2019/20).

Referee for many journals and conferences. Assessor for publishers including OUP, CUP, Springer, and Francis and Taylor.

Member of the LMS (joined 1996), AMS (joined 1996) and MAA (joined 2006).

(October 2024)