

Thomas Mark (Tom) Hutchcroft

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EMPLOYMENT

- 2017- **Herchel Smith Postdoctoral Fellowship.** Department of Pure Mathematics and Mathematical Statistics, University of Cambridge. Three year appointment.
- 2017- **Junior Research Fellow.** Trinity College, Cambridge. Four year appointment.

EDUCATION

- 2013-2017 **PhD** in mathematics, co-supervised by Prof. Omer Angel and Prof. Asaf Nachmias, University of British Columbia, Canada. Thesis defended June 2017. Degree conferred September 2017.
- 2015, 2016, and 2017 Research intern in the Microsoft Research Theory Group, Redmond, USA. Mentored by Alexander Holroyd and Yuval Peres.
- 2012-2013 **MMath** in mathematics (Part III of the Mathematical Tripos), University of Cambridge, UK. Pass with distinction.
- 2009-2013 **BA** in mathematics, University of Cambridge, UK. First class honours.

PUBLICATIONS AND PREPRINTS

- 2017 *Statistical physics on a product of trees*, **submitted**.
Non-uniqueness and mean-field criticality for percolation on nonunimodular transitive graphs, **submitted**.
Geometric and spectral properties of causal maps, with N. Curien and A. Nachmias, **submitted**.
Counterexamples for percolation on unimodular random graphs, with O. Angel, **submitted**.
Self-avoiding walk on nonunimodular transitive graphs, **submitted**.
The Hammersley-Welsh bound revisited, **Electronic Communications in Probability**, to appear.
Finitely Dependent Cycle Coloring, with A. Holroyd and A. Levy, **submitted**.
Harmonic Dirichlet Functions on Planar Graphs, **submitted**.
Mallows Permutations and Finite Dependence, with A. Holroyd and A. Levy, **submitted**.
The Component Graph of the Uniform Spanning Forest: Transitions in Dimensions 9, 10, 11, ..., with Y. Peres, **submitted**.
- 2016 *Hyperbolic and Parabolic Unimodular Random Maps*, with O. Angel, A. Nachmias, and G. Ray, **Geometric and Functional Analysis**, to appear.
Critical percolation on any quasi-transitive graph of exponential growth has no infinite clusters, **Comptes Rendus Mathématique**, **354(9):944–947, 2016**.
Uniform Spanning Forests of Planar Graphs, with A. Nachmias, **submitted**.
- 2015 *Interlacements and the Wired Uniform Spanning Forest*, **Annals of Probability**, to appear.
Boundaries of Planar Graphs: A Unified Approach, with Y. Peres, **Electronic Journal of Probability**, **Volume 22 (2017)**, paper no. 100, 20 pp.
Indistinguishability of Trees in Uniform Spanning Forests, with A. Nachmias, **Probability Theory and Related Fields**, **June 2017**, **Volume 168**, **Issue 1–2**, pp 113–152.
Collisions of Random Walks in Reversible Random Graphs, with Y. Peres, **Electronic Communications in Probability**, **20**, no. 63, 1-6, 2015.
Wired Cycle-Breaking Dynamics for Uniform Spanning Forests, **Annals of Probability**, **44 (2016)**, no. 6, 3879–3892..

Unimodular Hyperbolic Triangulations: Circle Packing and Random Walk, with O. Angel, A. Nachmias and G. Ray, **Inventiones Mathematicae**, **206 (2016)**, no. 1, 229–268.

AWARDS, SCHOLARSHIPS AND OTHER HONOURS

Lorraine Schwartz Prize	2017
Li Tze Fong Memorial Fellowship (declined)	2016
Microsoft Research Fellowship	
UBC Graduate Research Award	2015

TEACHING

Supervisor, Part II Linear Analysis, Cambridge.	2017
Instructor, MATH 110, UBC.	2015
MATH 110 Workshop Facilitator, UBC.	2014
Math Learning Centre Tutor, UBC.	2013-2016

INVITED TALKS

Strongly Correlated Random Interacting Processes, Oberwolfach.	2018
Combinatorics Seminar, University of Warwick.	
Combinatorics Seminar, University of Birmingham.	
Probability Seminar, University of Cambridge.	2017
Dynamics on Random Graphs and Maps, CIRM.	
Elegance in Probability (Russell Lyons' 60th birthday conference), Tel Aviv University.	
Mathematical Congress of the Americas, Montreal.	
AMS Sectional Meeting, Session on Probability Theory, Indiana University.	
Probability Seminar, Universite Paris Sud.	
Probability Seminar, University of British Columbia.	2016
Northwest Probability Seminar, Microsoft Research.	
Random Spatial Processes and Dynamics, Texas A M.	
Probability Seminar, University of Bath.	
Probability Workshop, Oxford University.	
Probability Seminar, University of Cambridge.	
Probability Seminar, University of British Columbia.	
Probability and Statistical Physics Seminar, University of Chicago.	
MSR Talk Series, Microsoft Research.	2015
Geometric Functional Analysis and Probability Seminar, Weizmann Institute.	
Horowitz Seminar, Tel Aviv University.	
Groups, Graphs, and Stochastic Processes, Banff International Research Centre.	
Probability Seminar, University of British Columbia.	2014
Probability on Trees and Planar Graphs, Banff International Research Centre.	

CONFERENCES AND SUMMER SCHOOLS ATTENDED

Strongly Correlated Random Interacting Processes, Oberwolfach.	2018
Dynamics on Random Graphs and Maps, CIRM.	2017
Elegance in Probability (Russel Lyons' 60th birthday conference), Tel Aviv University.	
Mathematical Congress of the Americas, Montreal.	
PIMS Probability Summer School, UBC.	
Random Growth Problems and Random Matrices, Centre de Recherches Mathématique.	2016
Random Spatial Processes and Dynamics, Texas A M.	
Groups, Graphs, and Stochastic Processes, Banff International Research Centre.	2015
Random Planar Structures and Statistical Mechanics, Isaac Newton Institute, Cambridge.	
Probability on Trees and Planar Graphs, Banff International Research Centre.	2014

PIMS Probability Summer School, UBC.