

Tim Austin: Curriculum Vitae

Full name: Timothy Derek Austin

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Education

- Ph.D. in mathematics, University of California, Los Angeles, June 2010
Thesis advisor: Prof. T.Tao
Thesis title: “Multiple recurrence and the structure of probability-preserving systems”
[available online through [aps.arxiv.org/abs/1006.0491](https://arxiv.org/abs/1006.0491)]
- Certificate of Advanced Study in Mathematics (postgraduate course), with distinction, Trinity College, Cambridge University, 2005 – 2006
- BA mathematics (IA [first year] 1st, IB [second year] 1st, II [third year] 1st), Trinity College, Cambridge University, 2002 – 2005

Prizes

- 2021 Ostrowski Prize
- 2021 Michael Brin Prize in Dynamical Systems
- 2020 New Horizons Prize in Mathematics

Fellowships and grants

- Principal Investigator, NSF grant DMS-1855694 (High-dimensional probability in ergodic theory and statistical physics), 2019 – 2023
- Principal Investigator, Simons Collaboration on Algorithms and Geometry, 2014 – 2017

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- Clay Research Fellow, 2010 – 2015
 - Microsoft Graduate Research Fellow, 2009 – 2010

Employment history

- Full Professor of Mathematics at UCLA, July 1st 2019 – present
- Associate Professor of Mathematics at UCLA, July 1st 2017 – June 30th 2019
- Associate Professor at Courant Institute of Mathematical Sciences, January 1st 2015 (end of Clay Fellowship) – June 30th 2017
- Assistant Professor at Courant Institute of Mathematical Sciences, September 1st 2012 – December 31st 2014
- Visiting academic at Brown University, August 2010 – June 2012
- Research Fellow for Clay Mathematics Institute, July 1st 2010 – December 31st 2014
- Visiting researcher at Microsoft Research New England, August 10th – August 28th 2009
- Research assistant, UCLA Math. Dept., July – August 2009 (summer session)
- Visiting researcher at Microsoft Research Redmond, June 15th – July 3rd 2009
- Research assistant/teaching assistant (50%/50%), UCLA Math. Dept., March – June 2009 (spring quarter)
- Research assistant/teaching assistant (50%/50%), UCLA Math. Dept., January – March 2009 (winter quarter)
- Research assistant, UCLA Math. Dept., September – December 2008 (fall quarter)
- Visiting researcher at Microsoft Research Redmond, August 25th – September 19th 2008
- Visiting researcher at Microsoft Research Redmond, July 3rd – July 31st 2006

Research interests

- Ergodic theory;
- Harmonic analysis and additive combinatorics;
- Metric geometry and its applications to geometric group theory;
- High-dimensional probability and rigorous statistical mechanics.

Professional activities

Workshops and conferences

- Co-organizer (with Miklós Abért, András Máthé and Oleg Pikhurko), workshop on Measurability, Ergodic Theory and Combinatorics, Mathematics Institute, University of Warwick (UK), July 8–12, 2019.
- Co-organizer (with Assaf Naor, Gilles Pisier, Sorin Popa and Stefaan Vaes), workshop on Approximation Properties in Operator Algebras and Ergodic Theory (part of the Long Program on Quantitative Linear Algebra), IPAM, UCLA, April 30th – May 5th, 2018.

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- Co-organizer (with Antoine Cerfon), Mathematics Colloquium, Courant Institute, AY 2012-13
 - Co-organizer (with Bryna Kra), Workshop on Discrete Methods in Ergodic Theory, Northwestern University, February 2011
 - Co-organizer (with Alexander Andoni and Assaf Naor), Embeddings Workshop, Isaac Newton Institute for Mathematical Sciences, January 2011

Departmental service

- UCLA Mathematics Committee on Equity, Diversity and Inclusion, AY 2020-21, 21-22 and 22-23.
- UCLA Mathematics Course Development Committee, AY 2019-20 and 21-22.
- UCLA Mathematics Staff Search Committee, AY 2018-19, 19-20 and 22-23.
- UCLA Mathematics Colloquium Committee, AY 2017-18 and 18-19 (chair).
- Courant Institute Fellowship Committee, Spring 2014 and Spring 2015 (for accepting applications for graduate study in Courant)

Outreach and inclusion

- UCLA Mathematics faculty advisor to undergraduate transfer students, AY 2021-present.
- Principal organizer, CSU-UCLA Mathematics Summer Bridge Program, Fall 2019-present. (This is an annual summer program at UCLA to encourage and strengthen the math PhD applications of six students from CSU Northridge, Cal State LA and CSU San Bernardino.)
- Mathematician advisor to the UCLA Curtis Center for Mathematics and Teaching, 2018-present. (The Curtis Center is a non-profit hosted by the UCLA Mathematics Department. It provides professional development and curriculum and assessment support to mathematics teachers in elementary, middle and high schools.)

Talks (2012 – present)

Named lectures

- Bernoulli Lecture, Bernoulli Center, École polytechnique fédérale de Lausanne, October 2019

Research talks at conferences

- Dynamics Week, Hebrew University of Jerusalem, July 2022
- Dynamics, Equations and Applications, AGH University, Kraków, September 2019
- Advances in Asymptotic Probability, Stanford, December 2018
- Ergodic Aspects of Modern Dynamics, Będlewo, Poland, June 2018

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- Approximation Properties in Operator Algebras and Ergodic Theory, part of the Long Program on Quantitative Linear Algebra, IPAM, UCLA, May 2018
 - Clay Research Conference, Oxford, September 2017
 - Invited Address at AMS Eastern Sectional Meeting, Bowdoin College, October 2016
 - Ergodic Theory, Fractals and Groups, Israel Institute for Advanced Studies, October 2015
 - Ergodic Theory and Combinatorics, University of Agder, June 2015
 - Southeastern Probability Conference, Duke University, May 2015
 - Dynamical Systems Workshop, University of Maryland, April 2015
 - Midwest Dynamical Systems Conference, University of Michigan, November 2014
 - British Mathematical Colloquium, April 2014
 - Special session on Ergodic Theory and Symbolic Dynamics, AMS-MAA Joint Mathematics Meetings, Baltimore, January 2014
 - Neo-Classical Methods in Discrete Analysis, Simons Institute for the Theory of Computing, UC Berkeley, December 2013
 - Ergodic Theory with Connections to Arithmetic, University of Heraklion, June 2013
 - Limit Theorems in Probability, Indian Institute of Science, Bangalore, January 2013
 - Additive Combinatorics in Paris, Institut Henri Poincaré, Paris, July 2012
 - Graphs and Analysis, Institute for Advanced Study, June 2012
 - Probability and Ergodic Theory Workshop, University of North Carolina, March 2012

Minicourses and tutorials

- Minicourse on measure concentration during week of tutorials for IPAM Long Program on “Quantitative Linear Algebra”, IPAM, UCLA, March 20th – 23rd, 2018
- Minicourse at summer school on “Graph limits, groups and stochastic processes”, MTA Rényi Institute, Budapest, September 2017
- Tutorial series at “Additive and Analytic Combinatorics”, Institute for Mathematics and its Applications, University of Minnesota, September 2014
- Minicourse at Easter School “Dynamics and Analytic Number Theory”, Durham University, April 2014
- Minicourse at “Limit Theorems in Probability”, Indian Institute of Science, Bangalore, January 2013

Departmental seminars and colloquia

- Probability seminar, UC Berkeley, April 2018
- Probability seminar, Stanford University, April 2018
- UCLA–Caltech joint analysis seminar, Caltech, March 2018
- Dynamical systems colloquium, Pennsylvania State University, February 2018
- Presentation at Simons Collaboration on Algorithms and Geometry, October 2017

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- Departmental seminar, University of Texas at Austin, March 2017
 - Departmental seminar, Northwestern University, February 2016
 - Departmental seminar, University of Toronto, February 2016
 - Departmental seminar, University of Washington, January 2016
 - Departmental seminar, University of Texas at Austin, January 2016
 - Departmental seminar, University of California, Los Angeles, January 2016
 - Analysis seminar, Princeton University, April 2015
 - Presentation at Simons Collaboration on Algorithms and Geometry, March 2015
 - Seminar, Institute for Advanced Study, April 2014
 - Group Actions and Dynamics Seminar, Yale University, February 2014
 - Geometric Analysis and Topology Seminar, New York University, October 2013
 - Analysis Seminar, SUNY Buffalo, September 2013
 - Probability Seminar, University of Chicago, May 2013
 - Groups and Dynamics Seminar, Texas A& M University, February 2013
 - Combinatorics and Probability Seminar, Yale University, February 2013
 - Graduate Student/Postdoc Seminar, New York University, October 2012
 - Departmental Seminar, Williams College, September 2012
 - Departmental Seminar, Pennsylvania State University, February 2012

Teaching and related

Teaching at Brown

- ‘Topics in Ergodic Theory’ at Brown University, Fall 2010

Undergraduate teaching at NYU

- ‘Theory of Probability’ (NYU Math-UA 233), Spring 2015, 2016, and 2017
- ‘Analysis II’ (NYU Math-UA 326), Fall 2012

Graduate teaching at NYU

- ‘Real Variables’ (NYU Math-GA 2430), Fall 2015 and 2016
- ‘Ergodic Theory’, Fall 2013 and Fall 2015 and ‘Entropy and Ergodic Theory’, Fall 2016

Undergraduate teaching at UCLA

- Course coordinator for ‘Probability Theory I and II’ (UCLA Math 170AB) at UCLA, AY 2019-present. (This role involves advising instructors on syllabus, exam content and difficulty, topics that frequently challenge students, optional material to include etc.)
- ‘Probability Theory II’ (UCLA Math 170B) at UCLA, Winter quarter 2020. (Largely responsible for syllabus re-design of Probability Theory I and II immediately before this.)

Graduate teaching at UCLA

- ‘Topics in Functional Analysis’ (UCLA Math 255B) at UCLA, Spring quarter 2022.
- ‘Functional Analysis’ (UCLA Math 255A) at UCLA, Winter quarter 2022.
- ‘Topics in Entropy and Statistical Mechanics’ (UCLA Math 254B) at UCLA, Spring quarter 2021.
- ‘Functional Analysis’ (UCLA Math 255A) at UCLA, Fall quarter 2020.
- ‘Topics in Ergodic Theory’ (UCLA Math 254B) at UCLA, Spring quarter 2020.
- ‘Functional Analysis’ (UCLA Math 255A) at UCLA, Fall quarter 2019.
- ‘Ergodic Theory and Fractals’ (UCLA Math 254B) at UCLA, Spring quarter 2019.
- ‘Real Analysis’ (UCLA Math 245A and 245B) at UCLA, Fall quarter 2018 and Winter quarter 2019.
- ‘Entropy and Ergodic Theory’, parts I and II (UCLA Math 254A and B) at UCLA, Fall quarter 2017 and Spring quarter 2018