

CURRICULUM VITAE

Name: Ivan Zachary Corwin

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Education	Courant Institute, NYU (New York, NY), Ph.D. in Mathematics 2007-2011 Harvard University (Cambridge, MA), A.B. Magna Cum Laude in Mathematics 2002-2006
Research Interests	Probability, mathematical physics, quantum integrable systems, stochastic partial differential equations, random matrix theory.
Academic positions	Full Professor, Columbia University (New York, NY) 2017- Associate Professor, Columbia University (New York, NY) 2013-2017 Research Fellow, Clay Mathematics Institute (Cambridge, MA) 2012-2016 Visiting Professor, Pierre and Marie Curie University (Paris, France) 2014-2015 C.L.E. Moore Instructor, MIT (Cambridge, MA) 2012-2014 Postdoctoral Fellow, Microsoft Research (Cambridge, MA) 2011-2012
Honors and Distinctions	Fellow of the AMS 2022 Loève Prize 2021 Simons Fellowship in Mathematics 2021 Visiting Miller Professorship 2021 Fellow of the IMS 2018 Gerald L. Alexanderson Award 2017 Packard Fellowship 2014-2019 Rollo Davidson Prize 2014 Poincaré Chair, Institute Henri Poincaré 2014-2015 Invited Lecture, International Congress of Mathematicians 2014 Young Scientist Prize, International Union of Pure and Applied Physics 2012 Clay Research Fellowship 2012-2016 Schramm Memorial Postdoctoral Fellowship 2011-2014
Grants (as PI)	<ul style="list-style-type: none">• Simons Foundation 817655, <i>Integrable Probability</i>. \$132,000 (July 2021 - June 2022).• W. M. Keck Foundation Science and Engineering Grant, <i>Extreme Diffusion</i>. \$1,000,000 (January 2021 - December 2023).• NSF DMS:1937254, <i>RTG: Research Training in Applied Mathematics at Columbia University</i>. \$1,900,000 (August 2019 - July 2024).• NSF DMS:1811143, <i>Scaling Limits of Growth in Random Media</i>. \$500,000 (July 2018 – June 2023).• NSF DMS:1804339, <i>Workshop on Transport and Localization in Random Media: Theory and Applications</i>. \$30,000 (April 2018 – March 2019).• NSF DMS:1724870, <i>Northeast Probability Seminar 2017-2019</i>. \$75,960 (September 2017 – August 2020).• NSF DMS:1642595, <i>CBMS Conference: Dyson-Schwinger equations, topological expansions and random matrices</i>. \$37,800 (August 2017)• NSF DMS:1664650, <i>FRG: Collaborative Research: Integrable Probability</i>. \$315,418 (July 2017 – June 2020).• NSF DMS:1637087, <i>Conference on quantum integrable systems, conformal field theories and stochastic processes</i>. \$29,990 (July 2016).• Packard Fellowship in Science and Engineering. \$875,000 (October 2014 – October 2019).• NSF DMS:1445391, <i>Northeast Probability Seminar 2014</i>. \$63,300 (September 2014 – September 2017).• NSF DMS:1208998, <i>Exact solvability of the Kardar-Parisi-Zhang stochastic partial differential equation</i>. \$151,826 (July 2012 – June 2016).• NSF Graduate Research Fellowship Award (July 2006 – June 2010).

Professional Service

Semester program lead organizer:

- ◇ Universality and Integrability in Random Matrix Theory and Integrable Systems (MSRI Berkeley, CA, 2021).
- ◇ New Approaches to Non-equilibrium and Random Systems (KITP Santa Barbara CA, 2016).

Summer school organizer:

- ◇ CMI-HIMR Summer School in Integrable Probability (Oxford UK, 2020).
- ◇ Park City Mathematics Institute on Random Matrix Theory (Park City UT, 2017).
- ◇ Quantum Integrable Systems, Conformal Field Theories and Stochastic Processes (Corsica FR, 2016).
- ◇ Summer Workshop on Stochastic Partial Differential Equations, (MSRI Berkeley CA, 2014).

Conference organizer:

- ◇ Graduate Research Opportunities for Women (GROW) conference (New York NY, 2024 and 2025).
- ◇ Random Growth Models and KPZ Universality (Banff CA, 2021).
- ◇ IntProb 2020 NYC (New York NY, 2021).
- ◇ Symposium on Random Matrices in Biology (New York NY, 2019).
- ◇ CMI at 20 (Oxford UK, 2018).
- ◇ Workshop on Transport and Localization in Random Media: Theory and Applications (New York NY, 2018).
- ◇ Dyson-Schwinger equations, topological expansions and random matrices (New York NY, 2017).
- ◇ Dynamics, Aging and Universality in Complex Systems (New York NY, 2017).
- ◇ Random polymers and algebraic combinatorics (Oxford UK, 2015).
- ◇ Clay Research Conference on Advances in Probability (Oxford UK, 2014).
- ◇ From Macdonald Processes to Hecke Algebras and Quantum Integrable Systems (IHP Paris FR, 2014).
- ◇ Workshop on the KPZ Equation and Universality Class (AIM Palo Alto CA, 2011).

Seminar organizer:

- ◇ Probability and the City Online Seminar (2020–present).
- ◇ Integrable Probability Online Seminar (2020–present)
- ◇ Northeast Probability Seminar (2014, 2017, 2020).
- ◇ Columbia-Princeton Probability Day (2014–present).
- ◇ Columbia-Courant Joint Probability Seminar (2013–present).
- ◇ Columbia University Symposium on Probability and Society (2017, 2020).
- ◇ New York City Integrable Probability Working Group (2016–present).
- ◇ Columbia Probability Seminar (2013–present).
- ◇ Charles River Lectures on Probability and Related Topics (2012–2014).
- ◇ MIT Probability Seminar (2011–2013).

Journal editor:

- ◇ Annales de l'Institut Henri Poincaré (Associate Editor, 2013–present).
- ◇ Bulletins of AMS (Editorial Board, 2018–present).
- ◇ International Mathematics Research Notices (Designated Editor, 2019–present).
- ◇ Journal of Functional Analysis (Editorial Board, 2017–present).
- ◇ Journal of Statistical Physics (Editorial Board, 2013–present; Guest Editor-in-Chief for special issue in honor of Joel Lebowitz).
- ◇ Probability and Mathematical Physics (Associate Editor and Founding Member, 2019–present).
- ◇ Probability Theory and Related Fields (Associate Editor, 2015–present).
- ◇ Selecta Mathematica (Editorial Board, 2015–present).
- ◇ SIGMA (Symmetry, Integrability and Geometry: Methods and Applications) (Editorial Board, 2017–present; Guest Editor for special issue in honor of Percy Deift and Craig Tracy).

Advisor (female advisees marked with *):

◊ Postdoctoral Fellows

- Guillaume Barraquand (Columbia, 2015–2018; followed by CNRS at ENS Physics).
- Jeffrey Kuan (Columbia, 2015–2018; followed by tenure track at Texas A&M).
- Hao Shen (Columbia, 2015–2018; followed by tenure track at U. Wisconsin).
- Li-Cheng Tsai (Columbia, 2016–2019; followed by tenure track at Rutgers).
- *Alisa Knizel (Columbia, 2017–2020; follow by tenure track at U. Chicago Statistics).
- Evgeni Dimitrov (Columbia, 2018–present).
- Konstantin Matetski (Columbia, 2018–present).
- Andrew Ahn (Columbia, 2020–2021).
- *Alessandra Occelli (MSRI, 2021).

◊ Graduate Students

- *Xuan Wu (Columbia, 2014–2020; followed by postdoc at U. Chicago).
- Promit Ghosal (Columbia, 2015–2020; followed by postdoc at MIT).
- Yier Lin (Columbia, 2016–present; followed by postdoc at U. Chicago).
- Mark Rychnovsky (Columbia, 2016–present; followed by postdoc at USC).
- Shalin Parekh (Columbia, 2017–present).
- Sayan Das (Columbia, 2018–present).
- *Weitao Zhu (Columbia, 2018–present).
- *Hindy Drillick (Columbia, 2019–present).

◊ Undergraduates Students

- Yujin Kim (Columbia senior thesis, 2018–2019; followed by graduate school at Courant).
- Romain Panis (ENS Paris exchange with Columbia, 2019).
- Matthew Lerner-Brecher (Columbia senior thesis, 2019–2020; followed by graduate school at MIT with NSF graduate research fellowship).
- Christian Serio (Columbia senior thesis, 2020–2021; followed by graduate school at Stanford).
- *Cassandra Marcussen (Columbia reading courses, 2020–2021).
- Julien Luzzatto (Columbia reading course, 2020).
- Charles Beck (Columbia supervised research, 2020–2021).
- *Anushka Murthy (Columbia senior thesis, 2021–2022).
- *Aya Batoul Tazi (Columbia reading course, 2021).
- Kshitij Gupta (Columbia reading course, 2021).
- Harrison Wang (Columbia reading course, 2021).
- Aswath Suryanarayanan (Columbia reading course, 2021).

◊ High School Students

- Sameer Pai (Bergen County Academies, 2019–2020; followed by college at MIT).
- Simon Sun (Bergen County Academies, 2020–2021; followed by college at MIT).
- Gregory Pylypovych (Bergen County Academies, 2020–2021; followed by college at MIT).
- *Alicia Zhang (Bergen County Academies, 2021–2022).

◊ Junior Faculty Mentoring

- Daniel Lacker (Columbia Industrial Engineering and Operations Research, 2017–).
- Amol Aggarwal (Columbia Mathematics, 2020–)

– Wenpin Tang (Columbia Industrial Engineering and Operations Research, 2020–).

University committees and initiatives:

- ◇ Columbia Initiative for Probability and Society, Director (2017–present).
- ◇ Data Science Institute, Executive Committee Member (2020–present).
- ◇ Program for Mathematical Genomics, Member (2018–present).
- ◇ Center for Cancer Dynamics, Member (2019–present).
- ◇ Columbia Quantum Initiative, Key Faculty (2019–present).
- ◇ Promotions and Tenure Committee for Columbia University Faculty of Arts and Sciences, Member (2019–2022).
- ◇ Science Plan: Computational and Theoretical Science Discussion Group Committee, Member (2019).
- ◇ Diversity, Equity and Inclusion Committee for Columbia Mathematics, Chair (2020–present).
- ◇ Columbia University Math Modeling Workshop, Organizer (2021).
- ◇ Columbia Summer Undergraduate Research Experiences in Mathematical Modeling, Organizer (2021).

Professional committees:

- ◇ Centennial Fellowship Committee (AMS, 2017-2019; Chair in 2018–2019).
- ◇ Math Meetings Subcommittee of the Committee on Meetings and Conferences (AMS, 2017–present).
- ◇ Scientific Program Committee for SPA (Stochastic Processes and their Applications) (2022).
- ◇ Program Advisory Board for Australian Mathematical Society (AustMS) Meeting (2022).
- ◇ Scientific Board for the One World Probability Seminar (2020–present).
- ◇ Co-chair for the One World Probability Seminar (fall 2020).
- ◇ Scientific Advisory Board, Institute for Computational & Experimental Research in Mathematics (2020–present).
- ◇ Scientific Advisory Committee, Mathematical Sciences Research Institute (2021–2025).

Congress Lectures

- ◇ 61st Annual Meeting of the Australian Mathematical Society 2017 (Plenary).
- ◇ International Congress of Mathematicians 2014 (Invited).
- ◇ 37th Conference on Stochastic Processes and their Applications 2014 (Plenary).
- ◇ International Congress of Mathematical Physics 2012 (Invited).

Distinguished Lectures

- ◇ ACEMS Virtual Public Lecture Series (Zoom, 2021).
- ◇ Midwest Probability Colloquium (Zoom, 2020).
- ◇ Mahler Lectures (Australia, 2018).
- ◇ Chern-Simons Lectures (Berkeley CA, 2017).
- ◇ Abel Symposium (Rosendal Norway, 2016).
- ◇ 50th Swiss Probability Seminar Celebration (Zurich CH, 2016).
- ◇ Texas Analysis and Mathematical Physics Symposium (Dallas TX, 2015).
- ◇ Charles River Lectures on Probability and Related Topics (Cambridge MA, 2015).
- ◇ Lipschitz Lectures (Bonn Germany, 2013).
- ◇ MSRI Evans Lecture (Berkeley CA, 2010).

Colloquia

- ◇ Caltech (2016)
- ◇ Centre International de Rencontres Mathématiques (2019)
- ◇ Courant Institute (2012).
- ◇ Ecole Normal Superior: Mathematics (2014).
- ◇ Georgia Tech (2018).
- ◇ Kavli Institute for Theoretical Physics (2016).
- ◇ Mathématiques Appliquées à Paris 5 (2015).
- ◇ Montreal (2016).

- ◊ Queens College (2018).
- ◊ Renaissance Technologies (2019).
- ◊ Rutgers (2016).
- ◊ Stanford University (2017, 2013).
- ◊ SUNY Binghamton (2017).
- ◊ Temple University (2015).
- ◊ University of California Berkeley (2017).
- ◊ University of California Los Angeles (2013).
- ◊ University of Chicago (2021).
- ◊ University of Connecticut (2013, 2021).
- ◊ University of Geneva (2014).
- ◊ University of Maryland (2015).
- ◊ University of Michigan (2019).
- ◊ University of Oregon (2015).
- ◊ University of Southern California (2017).
- ◊ University of Texas, Austin (2020).
- ◊ University of Toronto (2012).
- ◊ University of Virginia (2012).
- ◊ University of Washington (2015).
- ◊ Yale (2021).

Lecture Series

- ◊ 2020 PIMS Probability Summer School (Vancouver Canada, 2022).
- ◊ 50th Saint-Flour Probability Summer School (Saint-Flour France, 2021).
- ◊ Online Probability Summer School (2020).
- ◊ 3d Haifa Probability School (Haifa Israel, 2020).
- ◊ 12th Mathematical Society of Japan-Seasonal Institute (MSJ-SI) “Stochastic analysis, random fields and integrable probability” (Kyushu University Japan, 2019).
- ◊ Interacting Particle Systems and Parabolic PDEs (Banff Research Station, Calgary Canada, 2018).
- ◊ School on Random Matrix Theory (Michigan, 2018).
- ◊ Integrable Models in Statistical Mechanics, Limit Shapes and Combinatorics (St. Petersburg Russia, 2017).
- ◊ Probabilistic Perspectives in Nonlinear PDEs (Edinburgh Scotland, 2017).
- ◊ AMS Short Course on First and Last Passage Percolation Models (Atlanta GA, 2017).
- ◊ London Mathematical Society – Clay Mathematics Institute Research School (Oxford UK, 2015).
- ◊ Institute Henri Poincare (Paris France, 2015).
- ◊ New Researcher Tutorials at Seminar on Stochastic Processes (Delaware, 2015).
- ◊ Introductory School for Institute Henri Poincare trimester on Disordered System, Random Spatial Processes and Applications (Marseilles FR, 2015).
- ◊ Summer College on Non-Linear Dynamics, Instabilities and Patterns in Classical and Quantum Systems (Trieste IT, 2014).
- ◊ Summer School on Stochastic Partial Differential Equations (Berkeley CA, 2014).
- ◊ Paris 6 (Paris FR, 2014).
- ◊ Summer School on Random Matrix Theory (Bielefeld DE, 2013).
- ◊ Summer School on KPZ Equation and Rough Paths (Rennes FR, 2013).
- ◊ Simons Symposium on the Kardar-Parisi-Zhang Equation (U.S. Virgin Island, 2013).
- ◊ Chiba University (Chiba JP, 2012).
- ◊ Grandes Matrices Aléatoires (Paris FR, 2012).
- ◊ NSF Pan-American Advanced Studies Institute (Santiago CL, 2012).
- ◊ 4th La Pietra Week in Probability (Florence IT, 2011).
- ◊ Groupe de Travail at the Institut Henri Poincaré (Paris FR, 2011).
- ◊ IMPA (Rio de Janeiro BR, 2011).
- ◊ U.C. Berkeley (Berkeley CA, 2010).

Conference Lectures

- ◇ Probability and Mathematical Physics ICM Satellite (Helsinki Finland, 2022).
- ◇ Random Matrices and Random Landscapes (Lago Maggiore Switzerland, 2022).
- ◇ Modern Analysis Related to Root Systems with Applications (CIRM, Marseilles FR, 2021).
- ◇ Introductory Workshop: Universality and Integrability in Random Matrix Theory and Interacting Particle Systems (MSRI, Berkeley CA, 2021).
- ◇ Second Conference on New Developments in Probability (Tulane, 2021).
- ◇ Midwest Probability Colloquium (2020).
- ◇ Online conference on Statistical Mechanics, Integrable Systems and Probability (2020).
- ◇ Asymptotic Algebraic Combinatorics (Los Angeles, 2020).
- ◇ Symposium on Random Matrices in Biology (New York, 2019).
- ◇ Faces of Integrability (Montreal Canada, 2019).
- ◇ Scaling limits, rough paths, quantum field theory: Conclusions and future directions (Cambridge UK, 2019).
- ◇ Amir Dembo Birthday Conference (Stanford, 2018).
- ◇ Faces of Integrability (Montreal, 2018).
- ◇ Mehran Kardar Birthday Conference (MIT, 2017).
- ◇ Fourth Duke Mathematical Journal Conference (Duke, 2017).
- ◇ Classical and Quantum Integrable Systems (Dubna RU, 2017).
- ◇ Thera Stochastics (Santorini GR, 2017).
- ◇ 117th Statistical Mechanics Conference (Rutgers NJ, 2017).
- ◇ Asymptotic Representation Theory (Paris FR, 2017).
- ◇ Recent Advances in Mathematical Physics (Tokyo JP, 2017).
- ◇ AMS Special Session on Random Matrices, Random Percolation and Random Sequence Alignments (Atlanta GA, 2017).
- ◇ Clifford Lectures (New Orleans LA, 2016).
- ◇ Stochastic Partial Differential Equations (Stonybrook NY, 2016).
- ◇ Infinite Analysis 2016: New Developments in Integrable Systems (Osaka JP, 2016).
- ◇ Six-Vortex Models, Dimers, Shapes, and All That (Stonybrook NY, 2016).
- ◇ Isoperimetric Problems and Manifolds with Density (Williamstown MA, 2016).
- ◇ Random Processes and Random Media (Zurich CH, 2016).
- ◇ Random Matrices, Random Growth Processes and Statistical Physics (Stonybrook NY, 2015).
- ◇ Random Interfaces and Integrable Probability (Florence IT, 2015).
- ◇ Asymptotics in Integrable Systems, Random Matrices, Random Processes and Universality (Montreal CA, 2015).
- ◇ 113th Statistical Mechanics Conference (Rutgers NJ 2015).
- ◇ Limit Shapes (Providence RI, 2015).
- ◇ Interacting Particle Systems and Non-Equilibrium Dynamics (Paris FR, 2015).
- ◇ Fourth Abel Conference (Minnesota, 2014).
- ◇ Interface fluctuations and KPZ universality class - unifying mathematical, theoretical, and experimental approaches (Kyoto JP, 2014).
- ◇ 16th Rencontres Mathématiques de Rouen (Rouen FR, 2014).
- ◇ Stochastic analysis: Around the KPZ Universality Class (Oberwolfach DE, 2014).
- ◇ Random Matrices and Random Systems (Princeton NJ, 2014).
- ◇ Rough Paths: Theory and Applications (Los Angeles CA, 2014).
- ◇ Cornell Probability Summer School (Ithaca NY, 2013).
- ◇ Random Matrix Theory and Applications (Ann Arbor MI, 2013).
- ◇ Analytical Aspects of Mathematical Physics (Zurich CH, 2013).
- ◇ Emerging Trends in Probability Theory (Leipzig DE, 2013).
- ◇ Random polymers (Eindhoven NE, 2013).
- ◇ 108th Statistical Mechanics Conference (Rutgers NJ, 2012).
- ◇ Integrable Systems, Growth Processes and KPZ Universality (Banff CA, 2012).
- ◇ Interacting Particle Systems and Related Topics (Florence IT, 2012).
- ◇ Discrete Probability on Surfaces (Madison WI, 2012).
- ◇ Stochastic Partial Differential Equations with Applications (Istanbul TR, 2012).
- ◇ Random Polymers (Singapore, 2012).
- ◇ Random Walks and Random Media (Berkeley CA, 2012).

- ◇ UK Easter Probability Meeting (Warwick UK, 2011).
- ◇ Interacting Particle Systems, Growth Models and Random Matrices (Warwick UK, 2011).
- ◇ Disordered Media (Warwick UK, 2011).
- ◇ 4th La Pietra week in Probability (Florence IT, 2011).
- ◇ Stochastic Analysis (Oberwolfach DE, 2011).
- ◇ Random Environments (Ithaca NY, 2011).
- ◇ Interacting Processes in Random Environments (Toronto CA, 2011).
- ◇ Large Scale Stochastic Dynamics (Oberwolfach DE, 2010).
- ◇ 28th Annual Western States Mathematical Physics Meeting (Los Angeles CA, 2010).
- ◇ Interacting Stochastic Particle Systems (Montreal CA, 2009).

Seminar Lectures

- ◇ Boston University: Probability (2012), Polymer Studies (2011).
- ◇ Brown University: Probability (2015, 2013), Discrete Math (2012, 2011).
- ◇ Caltech: Mathematical Physics (2016).
- ◇ Centre International de Rencontres Mathématiques (2019)
- ◇ Columbia University: Applied Probability and Risk (2017), Informal Mathematical Physics (2015), Probability (2013, 2012², 2010).
- ◇ Courant: Probability (2011³, 2010).
- ◇ CUNY: Probability (2014, 2010).
- ◇ Delft: Probability (2011)
- ◇ Duke: Probability (2011).
- ◇ EURANDOM: Random Spatial Structures (2011).
- ◇ Georgia Tech: Probability (2012).
- ◇ Harvard: Probability (2015, 2013, 2012², 2011), Random Matrix (2012, 2009).
- ◇ IAS: Random Matrix (2013), Mathematical Physics (2011), Analysis/Mathematical Physics (2011).
- ◇ Marseilles Dynamique, Arithmétique, Combinatoire (2019).
- ◇ Microsoft Research: Theory (2011).
- ◇ MIT: Probability (2016, 2012, 2011, 2009), Combinatorics (2013).
- ◇ Northeastern University: Applied and Interdisciplinary Mathematics (2012).
- ◇ Paris 6 and 7: Probability (2014, 2011).
- ◇ Princeton: Mathematical Physics (2014), Probability (2014), Ergodic Theory and Statistical Mechanics (2011, 2018).
- ◇ Rutgers: Mathematical Physics (2012, 2018, 2020).
- ◇ Stanford: Probability (2010), Operations Research and Institute for Computational and Mathematical Engineering Joint Seminar (2017).
- ◇ Tel Aviv University: Probability (2011)
- ◇ Temple University and University of Pennsylvania: Probability (2015).
- ◇ Tokyo University: Integrable Systems (2012).
- ◇ UC Berkeley: Probability (2013), Statistics (2011), Combinatorics (2011).
- ◇ UC Davis: Mathematical Physics and Probability (2017, 2013, 2010).
- ◇ UC Irvine: Probability (2010, 2020).
- ◇ UCLA: Probability (2016, 2010).
- ◇ UIUC: Probability (2015).
- ◇ UMD: Probability (2015, 2012).
- ◇ UO: Probability (2015).
- ◇ UT Austin: Mathematical Physics (2014).
- ◇ UVA: Probability (2014, 2012).
- ◇ Université Catholique de Louvain: Probability (2011).
- ◇ University of British Columbia: Probability (2012, 2010).
- ◇ University of Chicago: Probability (2012).
- ◇ University of Geneva: Mathematical Physics (2014).
- ◇ University of Michigan: Combinatorics (2012), Analysis/Probability (2012).
- ◇ University of Rochester: Probability (2011).
- ◇ University of Toronto: Probability (2010).
- ◇ University of Utah: Stochastics (2012, 2010).

- ◇ University of Warwick: Random Matrix (2011).
- ◇ University of Wisconsin: Probability (2009).
- ◇ Weizmann Institute: Probability (2014, 2011).
- ◇ Zurich: Probability (2014, 2013).

Courses Taught

- ◇ Graduate Analysis and Probability I (Fall 2016, 2017, 2019).
- ◇ Graduate Probability II (Spring 2019, 2021).
- ◇ Probability Seminar (Fall 2016, 2017, 2018, 2019, 2020 and Spring 2019, 2020, 2021).
- ◇ Topics in Stochastic Analysis (Spring 2020).
- ◇ Supervised Reading Course (Fall 2020 in Markov Chain Mixing; Spring 2021 in Random Walks; Summer 2021 in Probability).