

## CURRICULUM VITAE

**Name:** Gregory Francis Lawler

**Born:** July 14, 1955

**Education:** B.A., 1976, University of Virginia  
M.A., 1977, Princeton University  
Ph.D., 1979, Princeton University (advisor: Edward Nelson)

**Major Fields of Interest:**

Probability and Stochastic Processes, Statistical Physics

**Honors and Fellowships:**

Wolf Prize in Mathematics, 2019  
Plenary Lecturer, ICM, 2018  
Member, National Academy of Sciences, 2013  
Fellow, American Mathematical Society, 2012  
George Polya Prize, SIAM, 2006  
Fellow, American Academy of Arts & Sciences, 2005  
Invited Speaker, ICM, 2002  
Fellow, Institute of Mathematical Statistics, 1991  
Alfred P. Sloan Fellowship, 1986–90

**Employment:** George Wells Beadle Distinguished Service Professor in Mathematics  
and Statistics, University of Chicago, 2013–  
Professor, University of Chicago, 2006–2013  
Professor, Cornell University, 2001–2006  
A. Hollis Edens Professor of Mathematics, Duke University, 2001–2003  
Professor, Duke University, 1991–2001  
Associate Professor, Duke University, 1985–1991  
Assistant Professor, Duke University, 1979–1985  
Visiting Member, Courant Institute of Mathematical Sciences,  
1981–1982, 1986–87  
Visiting Associate Professor, Cornell University, 1989  
Visiting Research Scientist, University of British Columbia, 1994–1995

**Grants:** Supported by National Science Foundation Grants, 1980–1982, 1983–

## Books:

1. *Intersections of Random Walks*, Birkhäuser, Boston (1991).
2. *Introduction to Stochastic Processes*, Chapman-Hall (1995). 2nd edition (2006).
3. (with L. Coyle) *Lectures on Contemporary Probability*, AMS Student Mathematical Library (1999).
4. *Conformally Invariant Processes in the Plane*, American Mathematical Society (2005).
5. (with V. Limic) *Random Walk: A Modern Introduction*, Cambridge University Press (2010).
6. *Random Walk and the Heat Equation*, AMS Student Mathematical Library (2010).
7. *Random Explorations*, AMS Student Mathematical Library (2022).

## Unpublished Book:

1. *Introduction to Stochastic Calculus with Applications*, used as textbook for Stochastic Calculus course for Masters of Financial Mathematics.

## Books Edited:

1. *School and Conference on Probability Theory*, ICTP Lecture Notes (2004).

## Articles:

1. *A self-avoiding random walk*, Duke Mathematical Journal **47** (1980), 655-694.
2. *The probability of intersection of independent random walks in four dimensions*, Commun. Math. Phys. **86** (1982), 539-554.
3. *Weak convergence of a random walk in a random environment*, Commun. Math. Phys. **87** (1982), 81-87.
4. *A connective constant for loop-erased self-avoiding random walk*, J. Appl. Prob. **20** (1983), 264-276.
5. (with R. Vanderbei), *Markov strategies for optimal control problems indexed by a partially ordered set*, Annals of Prob. **11** (1983), 642-647.
6. *A discrete stochastic integral inequality and balanced random walk in a random environment*, Duke Mathematical Journal **50** (1983), 1261-1274.

7. *Expected hitting time for a random walk on a connected graph*, Discrete Mathematics **61** (1986), 85-92.
8. *Intersections of random walks in four dimensions II*, Comm. Math. Phys. **97** (1985), 583-594.
9. *Intersections of simple random walks*, AMS Contemporary Mathematics **41** (1985), 281-289.
10. *Gaussian behavior of loop-erased self-avoiding random walk in four dimensions*, Duke Mathematical Journal **53** (1986), 249-270.
11. *Low density estimates for a two-state random walk in random environment*, Journal of Mathematical Physics **30** (1989) , 145-157.
12. *Loop-erased self-avoiding random walk and the Laplacian random walk*, Journal of Physics A. **20** (1987), 4565-4568.
13. *Loop-erased self-avoiding random walk in two and three dimensions*, Journal of Statistical Physics **50** (1988), 91-108.
14. (with A. Sokal), *Bounds on the  $L_2$  spectrum for Markov chains and Markov processes: a generalization of Cheeger's inequality*. Trans. Amer. Math. Soc. **309** (1988), 557-580.
15. (with J. Sylvester), *Determining resistances from boundary measurements in finite networks*, SIAM Journal on Discrete Mathematics **2** (1989), 231-239.
16. *The infinite self-avoiding walk in high dimensions*, Annals of Probability **17** (1989), 1367-1376.
17. *Intersections of random walks with random sets*, Israel Journal of Mathematics **65** (1989), 113-132.
18. *Estimates for differences and Harnack's inequality for difference operators coming from random walks with symmetric, spatially inhomogeneous increments*, Proceedings of London Mathematical Society **63** (1991), 552-568.
19. (with K. Burdzy and T. Polaski), *On the critical exponent for random walk intersections*, Journal of Statistical Physics **56** (1989), 1-12.
20. (with K. Burdzy), *Non-intersection exponents for random walk and Brownian motion. Part I: Existence and an invariance principle*, Probability Theory and Related Fields **84** (1990), 393-410.
21. (with K. Burdzy), *Non-intersection exponents for random walk and Brownian motion. Part II: Estimates and applications to a random fractal*, Annals of Probability **18** (1990), 981-1009.
22. (with J. Blum, M. Reed, and I. Shin), *The effect of cytoskeletal geometry on intracellular diffusion*, Biophysical Journal **56** (1989), 995-1005.
23. *The Edwards model and the weakly self-avoiding walk*, Journal of Physics A **23** (1990), 1467-1470.
24. (with K. Burdzy), *Rigorous exponent inequalities for random walks*, Journal of Physics A **23** (1990), L23-L28.
25. (with J. Roerdink and K. Shuler), *Diffusion in lattices with anisotropic scatterers*, Journal of Statistical Physics **59** (1990) , 23-52.

26. *Intersection probabilities for random walks*, in Mathematics of Random Media, AMS Lectures in Applied Mathematics **27** (1991), 73–86.
27. (with R. Durrett and H. Kesten), *Making money from fair games*, in Random Walks, Brownian Motion and Interacting Particle Systems, Birkhäuser, Boston (1991), 255-267.
28. (with H. Kesten), *A necessary condition for making money from fair games*, Annals of Probability **20** (1992), 855–882.
29. *Problems on the geometry of random walk paths*, in Probability Models in Mathematical Physics, World Scientific (1991), 135–143.
30. *Random walks: simple and self-avoiding*, in *Topics in Contemporary Probability and its Applications*, J. Laurie Snell, ed., CRC (1995), 55-74.
31. (with M. Bramson and D. Griffeath), *Internal diffusion limited aggregation*, Annals of Probability **20** (1992), 2117-2140.
32. *Escape probabilities for slowly recurrent sets*, Probability Theory and Related Fields **94** (1992), 91-117.
33. *L-shapes for the logarithmic  $\eta$ -model for DLA in three dimensions*, in *Seminar on Stochastic Processes, 1991*, Birkhäuser-Boston (1992), 97–122.
34. (with T. Polaski), *Harnack inequalities and difference estimates for random walks with infinite range*, Journal of Theoretical Probability, **6** (1993), 781-802.
35. *On the covering time of a disc by simple random walk in two dimensions*, in *Seminar on Stochastic Processes, 1992*, Birkhäuser-Boston (1993), 189-208.
36. (with B. Duplantier, J.-F. Le Gall and T. Lyons), *The geometry of the Brownian curve*, Bull. Sci. Math, 2<sup>e</sup> série, **117** (1993), 91-106.
37. *A discrete analogue of a theorem of Makarov*, Combinatorics, Probability, and Computing **2** (1993), 181-200.
38. *Subdiffusive fluctuations for internal diffusion limited aggregation*, Annals of Probability **23** (1995), 71-86.
39. *The logarithmic correction for loop-erased walk in four dimensions*, in Proceedings of the Conference in Honor of J.-P. Kahane, special issue of Journal of Fourier Analysis and Applications, CRC Press (1995), 347-362.
40. *Random walks, harmonic measure, and Laplacian growth models*, in Probability and Phase Transition, ed. G. Grimmett, Kluwer (1994), 191-208.
41. *Recurrence and transience for a card shuffling model*, Combinatorics, Probability, and Computing **4** (1995), 133-142.
42. (with E. Puckette) *The disconnection exponent for simple random walk*, Israel Journal of Mathematics **99** (1997), 109-122.

43. *Hausdorff dimension of cut points for Brownian motion*, Electronic Journal of Probability **1** (1996), #2.
44. *Cut points for simple random walk*, Electronic Journal of Probability **1** (1996), #13
45. *The dimension of the frontier of planar Brownian motion*, Electronic Communications in Probability **1** (1996), 29-47.
46. *Nonintersecting planar Brownian motions*, Mathematical Physics Electronic Journal **1** (1995), #4.
47. *Strict concavity of the intersection exponent for Brownian motion in two and three dimensions*, Mathematical Physics Electronic Journal **5** (1998), #5.
48. *Multifractal nature of two dimensional simple random walk paths*, *Random Walks and Discrete Potential Theory* M. Picardello and W. Woess, ed., Cambridge U. Press (1999).
49. *A lower bound on the growth exponent for loop-erased walk in two dimensions*, ESAIM: Probability and Statistics **3** (1999), 1-21.
50. *Loop-erased walks intersect infinitely often in four dimensions*, Electronic Communications in Probability **3** (1998), 35-42.
51. (with E. Puckette) *The disconnection exponent for simple random walk*, Combinatorics, Probability, and Computing **9** (2000), 441-464.
52. *Loop-erased random walk*, in *Perplexing Problems in Probability: Festschrift in Honor of Harry Kesten*, M. Bramson and R. Durrett, ed., Birkhäuser-Boston, (1999), 197-217.
53. *Geometric and fractal properties of Brownian motion and random walk paths in two and three dimensions*, Bolyai Mathematical Society Studies **9** (1999), 219-258.
54. (with W. Werner) *Intersection exponents for planar Brownian motion*, Annals of Probability **27** (1999), 1601-1642.
55. (with W. Werner) *Universality for conformally invariant intersection exponents*, J. European Math. Soc. **2** (2000), 291-328.
56. *Strict concavity of the half plane intersection exponent for planar Brownian motion*, Electronic Journal of Probability **5** (2000), paper no. 8,
57. *Cut times for Brownian motion and random walk*, Paul Erdős and his Mathematics I, Bolyai Society Mathematical Studies 11 (2002), 411-421.
58. (with O. Schramm and W. Werner), *Values of Brownian intersection exponents I: half-plane exponents*, Acta Math. **187** (2001), 237-273.
59. (with O. Schramm and W. Werner), *Values of Brownian intersection exponents II: plane exponents*, Acta Math. **187** (2001), 275-308.
60. (with O. Schramm and W. Werner), *Values of Brownian intersection exponents III: two-sided exponents*, Ann. Inst. Henri Poincaré. **38** (2002), 109-123.

61. (with O. Schramm and W. Werner), *Analyticity of intersection exponents for planar Brownian motion*, Acta Math. **189** (2002), 179 – 201.
62. (with O. Schramm and W. Werner), *The dimension of the Brownian frontier is 4/3*, Math. Res. Let. **8** (2001), 401–411.
63. (with O. Schramm and W. Werner), *Sharp estimates for Brownian non-intersection probabilities*, in *In and Out of Equilibrium*, V. Sidoravicius, ed., Birkhäuser (2002), 113–131.
64. (with O. Schramm and W. Werner) *One arm exponent for critical 2D-percolation*, Electronic J. of Probability (2002), paper no. 7.
65. *An introduction to the stochastic Loewner evolution*, in *Random Walks and Geometry*, V. Kaimonovich, ed., de Gruyter (2004), 261–293.
66. (with O. Schramm and W. Werner), *Conformal invariance of planar loop-erased random walk and uniform spanning trees*, Annals of Probab. **32** (2004), 939–995.
67. (with O. Schramm and W. Werner) *On the scaling limit of planar self-avoiding walk*, in *Proceedings of the Conference on Fractal Geometry and Applications: A Jubilee of Benoit Mandelbrot*, M. Lapidus and M. van Frankenhuysen, Vol. 2, ed., Amer. Math. Soc. (2004), 339–364.
68. *Conformal invariance, universality, and the dimension of the Brownian frontier*, Proc. International Congress of Mathematicians, Vol. III, Higher Education Press (2002), 63–72.
69. *Conformally invariant processes in the plane*, in *School and Conference on Probability Theory*, ICTP Lecture Notes **17**, G. Lawler, ed. (2004), 305–351.
70. (with O. Schramm and W. Werner) *Conformal restriction: the chordal case*, J. Amer. Math. Soc. **16** (2003), 917–955.
71. (with W. Werner) *The Brownian loop soup*, Probab. Theor. Rel. Fields **128** (2004), 565–588.
72. *The restriction property for conformally covariant measures*, in *XIV International Congress on Mathematical Physics*, J.C. Zambrini, ed., World Scientific (2005), 261–270.
73. (with V. Limic) *The Beurling estimate for a class of random walks*, Electron. J. Probab **9** (2004), 846–861.
74. (with E. Binder, R. Pemantle, H. Wilf) *Irreducible compositions and the first return to the origin of a random walk*, Séminaire Lotharingien de Combinatoire **50** (2004) #B50h.
75. *Internal set theory and infinitesimal random walks* in *Diffusion, Quantum Theory, and Radically Elementary Mathematics*, W, Faris, ed., Princeton University Press (2006), 157–181.
76. (with J. A. Trujillo Ferreras) *Random walk loop soup*, Trans. Amer. Math. Soc. **359** (2007), 767–787.
77. *Stochastic Loewner evolution*, in *Encyclopedia of Mathematical Physics*, Elsevier (2006).
78. (with M. Kozdron), *Estimates of random walk exit probabilities and application to loop-erased walk*, Electron. Journal of Probability **10** (2005), paper no. 44.

79. *The Laplacian- $b$  random walk and the Schramm-Loewner evolution*, Illinois J Math **50** (2006) 701–746.
80. (with J. Lind) *Two-sided  $SLE_{8/3}$  and the infinite self-avoiding polygon*, in *Universality and Renormalization: From Stochastic Evolution to Renormalization of Quantum Fields*, I. Binder, D. Kreimer, ed., Amer. Math. Soc. (2007), 249–280.
81. (with M. Kozdron), *The configurational measure on mutually avoiding SLE paths*, in *Universality and Renormalization: From Stochastic Evolution to Renormalization of Quantum Fields*, I. Binder, D. Kreimer, ed., Amer. Math. Soc. (2007), 199–224 .
82. *Multifractal analysis of the reverse flow for SLE*, in *Fractal Geometry and Stochastics IV*, C. Brandt, P. Mörters, & M. Zähle, ed., Birkhäuser (2009), 73–107.
83. *Schramm-Loewner evolution*, in *Statistical Mechanics*, S. Sheffield and T. Spencer, ed., IAS/Park City Mathematical Series, AMS (2009), 231–295.
84. *Conformal invariance and  $2 - d$  statistical physics*, Bulletin of the AMS **46** (2009), 35–54.
85. *Partition functions, loop measures, and versions of SLE*, J. Stat. Phys. **134** (2009), 813–837.
86. (with H. Narayanan), *Mixing times and  $l_1$  bounds for oblivious routing in 2009 Proceedings of the Fifth Workshop on Analytic Algorithmics and Combinatorics (ANALCO)*, 66–74.
87. (with S. Sheffield), *A natural parametrization for the Schramm-Loewner evolution*, Annals of Probab. **39** (2011), 1896–1937.
88. (with F. Johansson Viklund) *Optimal Hölder exponent for the SLE path*, Duke Math J. **159** (2011), 351–383.
89. (with H. Narayanan and S. Lalley), *A geometric interpretation of half-plane capacity*, Electr. Comm. Probab **14** (2009), 566–571.
90. (with F. Johansson Viklund) *Almost sure multifractal spectrum for the tip of an SLE curve*, Acta Math. **209** (2012), 265–322.
91. (with W. Zhou) *SLE curves and natural parametrization*, Annals of Probab. **41** (2013) 1556–1584
92. *Scaling limits and SLE*, Probability Surveys **8** (2011), 442–495.
93. *Fractal and multifractal properties of SLE*, Clay Mathematics Proceedings, Amer. Math. Soc. **15** (2012), 277–318.
94. (with B. Vermesi) *Fast convergence to an invariant measure for non-intersecting 3-dimensional Brownian paths*, Alea, Latin Amer. J of Prob. and Stat. **9** (2012), 717–738.
95. (with B. Dyhr, M. Gilbert, T. Kennedy, S. Passon) *The self-avoiding walk spanning a strip*, J. Stat. Phys. **44** (2011), 1–22.
96. (with B. Werness), *Multi-point Green's functions for SLE and an estimate of Beffara*, Annals of Probab. **41** (2013), 1513–1555.

97. *Continuity of radial and two-sided radial  $SLE_\kappa$  at the terminal point*, Contemporary Mathematics **590** (2013), 101–124.
98. *Comments on Edward Nelson’s “Internal set theory: a new approach to nonstandard analysis”*, Bull. Amer. Math. Soc. **48** (2011), 503–506.
99. *Defining SLE in multiply connected domains with the Brownian loop measure*, preprint.
100. (with T. Kennedy), *Lattice effects in the scaling limit of the two-dimensional self-avoiding walk*, AMS Contemporary Mathematics **601** (2013), 195–210.
101. (with M. Alvisio), *Note on the existence and modulus of continuity of the  $SLE_8$  curve*, Metrika **77**, (2014) 5–22.
102. (with T. Alberts and M. Kozdron), *The Green’s function for the radial Schramm-Loewner evolution*, J. Phys. A: Math. Theor. **45** (2012), 494015.
103. (with M. Rezaei), *Minkowski content and natural parameterization for the Schramm-Loewner evolution*, Annals of Probab. **43** (2015), 1082–1120.
104. (with L. Field), *Reversed radial SLE and the Brownian loop measure*, J. Stat. Phys. **150** (2013), 1030–1062.
105. *The probability that loop-erased random walk uses a given edge*, Electr. Comm. Probab. **19**, article no. 51, (2014).
106. *Random walk problems motivated by statistical physics*, in *Probability and Statistical Physics in St. Petersburg*, V. Sidoravacius and S. Smirnov, ed., Amer. Math. Soc. (2016), 331–372.
107. (with C. Beneš and F. Viklund), *Scaling limit of the loop-erased random walk Green’s function*, Probab. and Related Fields **166** (2016), 271–319.
108. (with J. Perlman), *Loop measures and the Gaussian free field*, to appear in *Random Walks, Random Fields, and Disordered Systems*, Springer-Verlag Lecture Notes in Math **2144**, (2015), 211–235.
109. (with L. Field), *Escape probability and transience for SLE*, Electron. J. Probab. **20**, Article no. 10 (2015).
110. *Minkowski content of the intersection of a Schramm-Loewner evolution (SLE) curve with the real line*, J. Math. Soc. Japan **67** (2015), 1631–1669.
111. (with M. Rezaei), *Up-to-constants bounds on the two-point Green’s function for SLE curves*, Electr. Comm. Probab. **20**, Article no. 45 (2015).
112. (with N. Beaton, A. Guttmann, and I. Jensen) *Compressed self-avoiding walks, bridges and polygons*, J. Physics A **48** (2015), 454001.
113. (with F. Viklund) *Convergence of loop-erased random walk in the natural parametrization*, Duke Mathematical Journal **170** (2021), 2289–2370.

114. (with X. Sun and W. Wu) *Four dimensional loop-erased random walk*, *Annals of Probability* **47** (2019), 3866–3910.
115. (with F. Viklund) *The Loewner difference equation and the convergence of loop-erased random walk*, to appear in *ALEA*.
116. (with F. Viklund) *Convergence of radial loop-erased random walk in the natural parameterization*, preprint.
117. *Topics in loop measures and loop-erased random walk*, *Probability Surveys* **15** (2018), 18–101
118. (with B. Werness) *A note on the boundary exponent and rate of escape for the Schramm-Loewner evolution*, preprint.
119. (with M. Jahangoshahi) *On the smoothness of the partition function for multiple Schramm-Loewner evolutions*, *J. Stat. Phys.* **173** (2018), 1353–1368.
120. *The infinite two-sided loop-erased random walk*, *Electr. J. Probab.* **25** (2020), paper no, 87
121. (with N. Holden, X. Li. and X. Sun) *Minkowski content of Brownian paths*, *Annales de l’Institut Henri Poincaré, Probabilités et Statistiques* **58** (2022), 455–488.
122. (with P. Panov) *Weighted graphs and complex Gaussian fields*, *Electr. Commun. Probab.* **24** (2019), paper no. 38
123. (with C. Beneš and F. Viklund), *Transition probabilities for infinite two-sided loop-erased random walks*, *Electr. J. Probab.* **24** (2019), paper no, 139.
124. *Conformally invariant loop measures*, *Proc. Int. Cong. of Math.* (2018), Vol. 1, 669–704.
125. (with M. Jahangoshahi) *Multiple paths  $SLE_\kappa$  in multiply connected domains*, preprint.
126. (with V. Healey) *N-sided radial Schramm-Loewner Evolution*, in *Prob. Theor. Rel. Fields.* **181** (2021), 451–488.
127. *Some notes on random walks in two dimensions*, to appear in proceedings of The 12th Mathematical Society of Japan, Seasonal Institute (MSJ-SI).
128. (with G. Grimmett) *Harry Kesten (1931-2019): A personal and scientific tribute*, *Notices AMS* **67** (2020), 822–831.

## Book Reviews:

1. *Random Walks, Brownian Motion, and Interacting Particle Systems, A Festschrift in Honor of Frank Spitzer*, ed. R. Durrett and H. Kesten, in *Metrika* **41** (1994) 254-255.
2. *Aspects and Applications of Random Walk*, by G. Weiss, in *SIAM Review* **37** (1995) 470-471.
3. *The Self-Avoiding Walk*, by N. Madras and G. Slade, in *Annals of Probability* **27** (1999) 606-609.

## Ph.D. Dissertations Supervised:

Damon Scott, *A non-integral dimensional random walk* (1986)

Thomas Polaski, *Estimates for differences and Harnack's inequality for functions harmonic with respect to random walk* (1991).

Emily Puckette, *Critical exponents for intersections of random walks in dimensions between 1 and 2* (1994).

Elizabeth Brooks, *Probabilistic methods for hyperbolic partial differential equations* (1996), (co-advisor with M. Reed).

Chad Fargason, *The percolation dimension of Brownian motion in three dimensions* (1998).

Mary Beth Fisher, *Variance reduction for stochastic differential equations applied to bond pricing problems* (1998).

Christian Beneš, *On some problems concerning planar random walks* (2004).

Michael Kozdron, *Simple random walk excursion measure in the plane* (2004).

José Antonio Trujillo Ferraras, *The random walk loop soup and the expected area of the Brownian loop in the plane* (2005).

John Thacker, *Properties of Brownian motion and random walk loop soups* (2006).

Brigitta Vermesi, *Intersection exponents for random walks on cylinders* (2006).

Robert Masson, *Growth exponent for planar loop-erased random walk* (2008) (co-advisor with S. Lalley).

Shawn Drenning, *Excursion reflected Brownian motion and Loewner equation in multiply connected domains* (2011).

Brent Werness, *Path properties of the Schramm-Loewner evolution* (2012).

Mohammad Rezaei, *Minkowski content and SLE curves* (2013).

Marcelo Alvisio, *Applications of stochastic calculus to the Schramm-Loewner evolution and option pricing* (2014) (co-advisor with R. Lee).

Laurence Field, *Configurational measures on Schramm-Loewner evolutions* (2015).

Mohammad Jahangoshahi, *On multiple SLE measures* (2018).

Petr Panov, *Loop soup occupation fields and Poisson cylinders* (2020).

### **Editorial Boards:**

Cambridge Mathematical Textbooks, 2015 –

Journal of AMS, editor, 2009–2013

Bulletin of AMS, associate editor, 2009–2014

Annals of Probability, editor-in-chief, 2006–2008

Electronic Journal of Probability, co-founder and co-editor, 1995–1999; associate editor, 2004–2005.

Annals of Probability, associate editor, 1991–1996

Combinatorics, Probability, and Computing, associate editor 1991–

Annals of Applied Probability, associate editor, 1997–1999

**Recent Invited Presentations:** (Special invited lectures are in bold face and mini-courses are in italics).

Workshop on SLE, University of Pennsylvania, February, 2023

Probability Seminar, Institute for Advanced Studies, Princeton, NJ, February, 2023

Mittag-Leffler Institute, Djursholm, Sweden, August, 2022.

Seminar on Stochastic Processes, Lehigh University, March, 2022.

*Special Lectures, Korean Institute for Advanced Studies Expositions*, September, 2021 (given remotely)

*Course in MSRI summer school on Conformal Geometry*, July, 2021 (given remotely)

Brandeis-Harvard-MIT-Northeastern Colloquium, April, 2021 (given remotely)

**Master Lectures, Beijing Institute of Mathematical Sciences, December, 2020 (given remotely)**

**Virginia Mathematics Lectures, University of Virginia, February, 2020.**

*Loop Measures and the Loop-Erased Random Walk, Random Media and Random Structures in Lima, Lima, Peru, January, 2020.*

Midwest Probability Colloquium, Northwestern University, October, 2019

*Loops and Loop-Erased Random Walk, Mathematical Society of Japan Seasonal Institute, August, 2019*

Plenary lecture, 2019 Canadian Mathematical Society meeting, Regina, SK, June 2019

Walking in the Brownian Zoo, Paris, France, June, 2019

Wolf Laureate lecture, Bar-Ilan University, Ramat-Gan, Israel, May, 2019

*Loops and Loop-Erased Random Walk, Tourtour, France, March, 2019*

Analysis and Geometry of Random Spaces, IPAM, Los Angeles, CA, January, 2019

**Plenary speaker, International Congress of Mathematicians, Rio de Janeiro, Brazil, August, 2018.**

22nd Brazilian School in Probability, Rio de Janeiro, Brazil, July 2018.

Montréal Summer Workshop: Challenges in Probability and Mathematical Physics, Montreal, PQ, Canada, July, 2018.

Random Conformal Geometry and Related Fields, KIAS, Seoul, Korea, June, 2018.

Columbia-Courant Probability Day, Columbia University, March, 2018.

Probability seminar, KTH, Stockholm, September, 2017.

SLE, GGF, and LQT in NYC, Columbia University, New York, March, 2017.

Colloquium and probability seminar, University of California at Irvine, February, 2017.

XIV CLAPEM, San José, Costa Rica, December, 2016.

Probability Colloquium, NYU-Shanghai, Shanghai, China, November, 2016

Random Structures in High Dimensions, Oaxaca, Mexico, June, 2016

Recent developments in SLE, Mittag-Leffler Institute, Djorsholm, Sweden, June, 2016

Everything is Complex, Saas-Fee, Switzerland, March 2016

Journée de Rham 2016, Geneva, Switzerland, March, 2016

Stochastic processes seminar, Zurich, Switzerland, February, 2016

Zurich mathematics colloquium, Zurich, Switzerland, February, 2016

Public lecture, Fields Medal Symposium in honor of S. Smirnov, Toronto, ON, October, 2015.

Colloquium, Stockholm Mathematical Centre, KTH, Stockholm, Sweden, September, 2015.

Keynote Address, IMS-China, Kunming, China, July, 2015.

Colloquium, Princeton University, April, 2015.

Probability seminar, Princeton University, April, 2015

Colloquium, Michigan State University, March, 2015

Colloquium, National University of Singapore, March, 2015.

Departmental Colloquium, Penn State University, October, 2014.

MASS Undergraduate Colloquium, Penn State University, October, 2014.

BIRS Workshop on Probability on Trees and Planar Graphs, Banff, Alberta, Canada, September, 2014.

Seminar, Kyoto University, Kyoto, Japan, September, 2014.

Stochastic Processes, Analysis, and Mathematical Physics, in honor of Masatoshi Fukushima's "Sanju", Osaka, Japan, August, 2014.

Recent Progress in Conformal Geometry, Seoul, Korea, August, 2014.

*Mini-course, University of Chicago Summer School in Analysis, June, 2014.*

Barrett lectures conference, University of Tennessee, June, 2014.

**Thomas Wolff Memorial Lectures**, California Institute of Technology, April, 2014.

Colloquium, University of Michigan, January, 2014

*Mini-course, School in Statistical Physics, Prague, August, 2013*

**KAM Mathematical Colloquium, Prague, August, 2013**

Recent Trends in Stochastic Analysis, PIMS, Vancouver, BC, Canada, July, 2013

Probability seminar, Beijing University, July, 2013

Colloquium, University of Science and Technology, Hefei, China, July 2013

*Mini-course, AMSS, Chinese Academy of Science, Beijing, China, July, 2013*

Probability seminar, Université Paris-Sud, June, 2013

Probability seminar, MIT, May, 2013

Simons Center workshop on conformal geometry, April 2013

Probability seminar, City University of New York, April, 2013

Seminar, Simons Center for Geometry and Physics, April, 2013

**Distinguished lecture, Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong, December 2012**

Advances on Fractals and Related Topics, Chinese University of Hong Kong, December 2012

Colloquium, University of British Columbia, November, 2012

Colloquium, University of Virginia, September, 2012

Oberwolfach, September, 2012

*Mini-course and lecture, St. Petersburg Summer School in Probability and Statistical Physics, St. Petersburg, Russia, June 2012*

Conformal Invariance, Discrete Holomorphicity, and Integrability, Helsinki, Finland, June, 2012

Probability and Related Aspects, Alba Iulia, Romania, May, 2012

MSRI-Evans Lecture, University of California, Berkeley, April 2012

Probability Seminar, Stanford University, April, 2012

Workshop on Conformal Invariance, MSRI, Berkeley, March, 2012

10th German Probability and Statistics Days, Mainz, Germany, March, 2012

Colloquium, Nanyang Technological University, Singapore, February, 2012

Colloquium, Stony Brook University, February, 2012

Colloquium, University of Texas, October, 2011

**IMS Wald Lectures, Miami Beach, FL, August, 2011**

Probability Seminar, University of Toronto, July, 2011

*Mini-course, Cornell Probability Summer School, Cornell University, July, 2011*

Ahlfors-Bers Colloquium, Rice University, March, 2011

Colloquium, Institute for Mathematical Sciences, National University of Singapore, February, 2011

Colloquium, University of Tennessee, February, 2011

Probability Seminar, Columbia University, January, 2011

Probability Seminar, University of Washington, November 2010

Probability Seminar, University of British Columbia, November, 2010

9th Workshop on Stochastic Analysis and Large Scale Interacting Systems, Tokyo, Japan, September, 2010.

**Doob Lecture, 34th Conference on Stochastic Processes and their Applications, Osaka, Japan, September, 2010.**

4th International Conference on Stochastic Analysis and its Applications, Osaka, Japan, September, 2010.

*Mini-course on Fractal and Multifractal Properties of SLE, Clay Institute school, Buzios, Brazil, July 2010.*

*Mini-course on SLE and Scaling Limits, PIMS summer school in probability, Seattle, June, 2010*

Conformal maps from probability to physics, Monte Verita, Switzerland. May, 2010

Probability seminar, MIT, Cambridge, March, 2010

## **Other Special Lectures and Mini-Courses**

**Distinguished visitor colloquium, University of Massachusetts, September, 2008**

*Mini-Course, ICTP, Trieste, July, 2008*

*Mini-course, Summer School in Mathematical Physics, Canberra, December, 2007*

*Short course, IAS/Park City Institute on Statistical Mechanics, Park City, Utah, July, 2007*

**Ellis Kolchin Memorial Lecture, Columbia University, April, 2007.**

**Distinguished Lectures, University of Wisconsin, March, 2007.**

**10th anniversary PIMS lecturer, University of Washington, November, 2006.**

**Medallion lecture, IMS meeting, Rio de Janeiro, August, 2006.**

*Mini-course, Kyushu University, June, 2006.*

*Mini-course, RDSES/ESI Educational Workshop on Discrete Probability, Erwin Schrödinger Institute, Vienna, March, 2006*

**Duncan Lectures, Department of Applied Mathematics, Johns Hopkins University, March-April, 2005.**

*Summer school course, Pacific Institute of Mathematical Sciences, UBC, Vancouver, BC, May-June, 2004.*

Invited hour address, AMS meeting, Phoenix, January 2004.

**Rothschild Visiting Professor Lecture, Isaac Newton Institute of Mathematical Sciences, Cambridge, UK, August 2003.**

**Barrett Lectures, University of Tennessee, April 2003.**

**Rees Distinguished Lecture Series, University of Delaware, March, 2003.**

**Invited lecture, International Congress of Mathematicians, Beijing, China, August 2002.**

*Mini-course, 6th Brazilian School of Probability, Ubatuba, Brazil, August 2002.*

*Short course and conference talk, School and Conference on Probability Theory, ICTP, Trieste, May 2002.*

*Mini-course, Mittag-Leffler Institute, Djursholm, Sweden, September - October, 2001.*

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