

Steven J. Miller

Steven.J.Miller@williams.edu (413-597-3293)

Department of Mathematics and Statistics
Williams College
Bronfman Science Center
Williamstown, MA 01267

Nationality: American.

Thesis Advisors: Peter Sarnak, Henryk Iwaniec

Research Interests: Distribution of zeros and n -level statistics for families of L -functions, especially families of elliptic curves with rank over $\mathbb{Q}(T)$, Random Matrix Theory, Random Graphs, Elliptic Curves, Additive, Analytic and Computational Number Theory, Probability Theory and Statistics, Benford's Law, Multiple Dirichlet Series, Cryptography, Sabermetrics and Linear Programming.

Education

Ph. D., Mathematics	Princeton University, 2002.
M. A., Mathematics	Princeton University, 1998.
B. S., Mathematics & Physics	Yale University, 1996 (summa cum laude).

Positions

Assistant Professor	Williams College	2008 -
Tamarkin Assistant Professor	Brown University	2005 - 2008
Visiting Assistant Professor	Brown University	2004 - 2005
Ross Assistant Professor	The Ohio State University	2003 - 2004
Visiting Scholar	Boston University	2004
VIGRE Consultant	Princeton University	2003 - 2004
Post-doctoral Fellow	American Institute of Mathematics	2003
Instructor	Princeton University	2002 - 2003
Research Scientist	Courant Institute, NYU	2002
Lecturer	Princeton University	2001 - 2002

Grants

1. NSF Grant DMS0600848 (Analysis, Number Theory and Combinatorics): *Investigations on low-lying zeros of L -functions*, July 2006 - June 2009, \$108,000.
2. NSF Grant DMS536991 (MAA Regional Undergraduate Mathematics Conferences program): *Brown University Symposium for Undergraduates in the Mathematical Sciences*, March 3, 2007, \$1,500.
3. Office of the Vice President for Research, Brown University: Conference on the Theory and Applications of Benford's Law (December 16th - 18th, 2007, Santa Fe, NM), \$5,000.
4. NSF Grant DMS-0753043 (Probability program), Conference on the Theory and Applications of Benford's Law (December 16th - 18th, 2007, Santa Fe, NM), \$13,368.
5. NSF Grant DMS536991 (MAA Regional Undergraduate Mathematics Conferences program): *Brown University Symposium for Undergraduates in the Mathematical Sciences*, March 8, 2008, \$1,500.

Organized Conferences

1. Theory and Applications of Benford's Law (with Chaouki Abdallah, Greg Heileman, Ted Hill and Fernando Perez-Gonzalez), Santa Fe, NM, December 16-18, 2007.
2. AMS Sectional Special Session on Analytic Number Theory (with Alina Bucur, Stephen D. Miller and Akshay Venkatesh), New York, NY, March 15-16, 2008.

Bibliography

Papers and Talks available online at <http://www.williams.edu/go/math/sjmillier/>

Papers

- 1- and 2-level densities for families of elliptic curves: evidence for the underlying group symmetries, *Compositio Mathematica* **140** (2004), 952–992.
- Distribution of eigenvalues for the ensemble of real symmetric Toeplitz matrices (with Christopher Hammond), *Journal of Theoretical Probability* **18** (2005), no. 3, 537–566.
- Benford's Law, values of L -functions and the $3x + 1$ problem (with Alex Kontorovich), *Acta Arithmetica* **120** (2005), no. 3, 269–297.
- Variation in the number of points on elliptic curves and applications to excess rank, *C. R. Math. Rep. Acad. Sci. Canada* **27** (2005), no. 4, 111–120.
- Incomplete quadratic exponential sums in several variables (with Eduardo Dueñez, Amitabha Roy and Howard Straubing), *Journal of Number Theory* **116** (2006), no. 1, 168–199.
- Closed-form Bayesian inference for the logit model via polynomial expansions (with Eric T. Bradlow and Kevin Dayaratna), *Quantitative Marketing and Economics* **4** (2006), no. 2, 173–206.
- Investigations of zeros near the central point of elliptic curve L -functions, *Experimental Mathematics* **15** (2006), no. 3, 257–279.
- The low lying zeros of a $GL(4)$ and a $GL(6)$ family of L -functions (with Eduardo Dueñez), *Compositio Mathematica* **142** (2006), no. 6, 1403–1425.
- Low lying zeros of L -functions with orthogonal symmetry (with Christopher Hughes), *Duke Mathematical Journal* **136** (2007), no. 1, 115–172.
- Constructing one-parameter families of elliptic curves over $\mathbb{Q}(T)$ with moderate rank (with Scott Arms and Álvaro Lozano-Robledo), *Journal of Number Theory* **123** (2007), no. 2, 388–402.
- A derivation of the Pythagorean Won-Loss Formula in baseball, *Chance Magazine* **20** (2007), no. 1, 40–48 (an abridged version appeared in *The Newsletter of the SABR Statistical Analysis Committee* **16** (February 2006), no. 1, 17–22).
- Distribution of eigenvalues of real symmetric palindromic Toeplitz matrices and circulant matrices (with Adam Massey and John Sinsheimer), *Journal of Theoretical Probability* **20** (2007), no. 3, 637–662.
- Benford's Law applied to hydrology data - results and relevance to other geophysical data (with Mark Nigrini), *Mathematical Geology* **39** (2007), no. 5, 469–490.
- When the Cramér-Rao Inequality provides no information, *Communications in Information and Systems* **7** (2007), no. 3, 265–272.
- The Modulo 1 Central Limit Theorem and Benford's Law for Products (with Mark Nigrini), *International Journal of Algebra* **2** (2008), no. 3, 119–130.
- A symplectic test of the L -Functions Ratios Conjecture, *Int Math Res Notices* (2008) Vol. 2008, article ID rnm146, 36 pages, doi:10.1093/imrn/rnm146.
- An identity for sums of polylogarithm functions, *Integers: Electronic Journal Of Combinatorial Number Theory* **8** (2008), #A15.
- A probabilistic proof of Wallis' formula for π , *Amer. Math. Monthly* **115** (2008), no. 8, 740–745.
- The distribution of the second largest eigenvalue in families of random regular graphs (with Tim Novikoff and Anthony Sabelli), *Experimental Mathematics* **17** (2008), no. 2, 231–244.

20. *Silver Scheduler: a demand-driven modeling approach for the construction of micro-schedules of movies in a multiplex* (with Jehoshua Eliashberg, Quintus Hegie, Jason Ho, Dennis Huisman, Sanjeev Swami, Charles B. Weinberg and Berend Wierenga), to appear in the International Journal of Market Research.
21. *Order statistics and Benford's law* (with Mark Nigrini), to appear in the International Journal of Mathematics and Mathematical Sciences.
22. *When almost all sets are difference dominated* (with Peter Hegarty), to appear in Random Structures and Algorithms.

Books

1. *An Invitation to Modern Number Theory* (with Ramin Takloo-Bighash), Princeton University Press, Princeton, NJ, 2006, 503 pages.

Papers under Review

1. *An orthogonal test of the L-Functions Ratios Conjecture*, submitted July 2008 to the Proceedings of the London Mathematical Society.
2. *The effect of convolving families of L-functions on the underlying group symmetries* (with Eduardo Dueñez), submitted September 2008 to Proceedings of the London Mathematical Society.
3. *Lower order terms in the 1-level density for families of holomorphic cuspidal newforms*, submitted November 2007 to Acta Arithmetica.
4. *Data diagnostics using second order tests of Benford's Law* (with Mark Nigrini), submitted September 2005 to Auditing: A Journal of Practice and Theory (revised June 2006 and November 2007).
5. Explicit constructions of infinite families of MSTD sets (with Dan Scheinerman), submitted October 2008 to the Journal of Number Theory.

Preprints

1. *Chains of distributions, hierarchical Bayesian models and Benford's Law* (with D. Jang, J. U. Kang, A. Kruckman and J. Kudo).
2. *m-paths and the $(3x + 1)$ Problem* (with Bruce Adcock and Sucheta Soundarajan).
3. *Virus propagation in certain types of networks* (with Leo Kontorovich and Amitabha Roy).
4. *Extending the support in the 1-level density for families of Dirichlet characters*.

Selected Talks (74)

L-Functions and Random Matrix Theory (24)

1. *Random Matrix Theory and elliptic curves: evidence for the underlying group symmetries*, Joint Meeting of the AMS and the UMI, University of Pisa, June 13, 2002; AMS sectional, Salt Lake City, October 27, 2002; Johns Hopkins University, Baltimore, MD, March 3, 2004; Five College Number Theory Seminar, Amherst, MA, April 20, 2004; Boston University, Boston, MA, May 13, 2004.
2. *Ranks of one-parameter families of elliptic curves over $\mathbb{Q}(T)$ and thoughts on the excess rank question*, Boston College, March 10, 2003; AMS Sectional, Boulder, October 4, 2003.
3. *Random Matrix Theory models for zeros near the central point (and applications to elliptic curves)*, AMS Sectional, Lawrenceville, NJ, April 2004; Workshop on Spectral Theory and Automorphic Forms, Montréal, Canada, May 8, 2004; Brandeis University, April 1, 2005; Brown University, September 19, 2005; Advances in Number Theory and Random Matrix Theory, Rochester, NY, June 7, 2006.

4. *From Random Matrix Theory to L-functions*, Tel Aviv University, December 23, 2004; Hebrew University, December 27, 2004; Theoretical Physics Seminar, Brown University, April 12, 2006.
5. *Identifying and breaking the symmetry group of zeros of families of L-functions*, Number Theory and Random Matrix Theory Workshop, Canadian Mathematical Society Summer Meeting, Waterloo, Canada, June 1, 2005; Collaborative Number Theory Seminar, CUNY, October 20, 2006; Rutgers University, December 12th, 2006.
6. *Finite conductor models for zeros of elliptic curves*, workshop on *L-functions*, ranks of elliptic curves, and random matrix theory, Banff, July 12, 2007; AMS Special Session on Number Theory, Wesleyan University, Middletown, CT, October 11, 2008.
7. *A symplectic test of the L-functions Ratios Conjecture*, Algebra Seminar, Brown University, September 17, 2007; AMS Special Session on *L-functions* and automorphic forms, Courant, NYC, March 16, 2008; Johns Hopkins University, Baltimore, MD, April 4, 2008; Cornell University, June 5, 2008.

Benford's Law (16)

1. *Benford's Law, values of L-functions and the $3x + 1$ problem*, Boston College, October 19, 2004; University of Michigan, November 15, 2004; University of Arizona, January 11, 2006; Brown University, March 20, 2006; Boston University, April 9, 2007 (a variant was given at PROMYS at Boston University on July 16, 2007); Special Session on Number Theory, AMS Sectional Meeting, Worcester, MA, April 25, 2009. Another variant, *Benford's Law: Why the IRS might care about the $3x + 1$ problem and $\zeta(s)$* , was given at Western New England College (2/11/08), Smith College (10/7/08), and Williams College (10/21/08).
2. *Benford's Law and order statistics*, Brown University, February 1, 2006.
3. *Poisson Summation and Benford's Law: From values of L-functions to the $3x+1$ Problem to products of random variables*, Bristol University, December 12, 2007; Workshop on Applications of Benford's Law, Sante Fe, NM, December 18, 2007.
4. *The logarithmic link between economic, hydrologic, and seismic statistics* (with Mark Nigrini), Workshop on Applications of Benford's Law, Sante Fe, NM, December 17, 2007.
5. *Chains of distributions and Benford's Law* (with Dennis Jang, Jung Uk Kang, Alex Kruckman and Jun Kudo), Workshop on Applications of Benford's Law, Sante Fe, NM, December 17, 2007.
6. *Theory and Applications of Benford's Law, or: Why the IRS should care about number theory!*, IRS, Boston office, March 28, 2008 (with Mark Nigrini).

Eigenvalue Statistics (5)

1. *Eigenvalue statistics for ensembles of random matrices: Toeplitz ensembles and Diophantine obstructions*, Probability and Ergodic Theory Seminar, Ohio State, October 30, 2003; Boston University, June 7, 2004; Brown University, September 15, 2004.
2. *Random matrix theory and real symmetric palindromic Toeplitz matrices*, Brown University, March 21, 2007.
3. *On the probability that random graphs are Ramanujan*, Expanders and Ramanujan Graphs: Construction and Applications, AMS National Meeting, San Diego, January 9, 2008.

Analysis, Number Theory, Probability and Statistics (see also the Benford's Law talks) (16)

1. *The Pythagorean Won-Loss Formula in baseball*, Brown University, September 28, 2005; Hudson River Undergraduate Mathematics Conference, April 8, 2006; SABRBoston Sabermetrics Regional Meeting, May 20, 2006; Williams College, January 15, 2008; Holy Cross, February 7, 2008; Western New England College, February 12, 2008; Connecticut Smoky Joe Wood SABR Chapter, Hamden, CT, February 16, 2008; PROMYS, Boston University, July 25, 2008; Bennington College, December 5, 2008; Middlebury College, February 19th, 2008.

2. *The Modulo 1 Central Limit Theorem*, Analysis Seminar, Brown University, September 27, 2006; The Ohio State University, January 23, 2007.
3. *When almost all sets are difference dominated*, Analysis Seminar, Brown University, September 12, 2007; Williams College, September 12, 2008; Wesleyan University, November 20, 2008.
4. *Explicit constructions of infinite families of MSTD sets* (presented by Dan Scheinerman), Number Theory Session, Joint Mathematics Meetings, January 5, 2009.

Colloquium Talks (6)

1. *Random Matrices, Random Graphs, and L-Functions*, University of Cincinnati, October 16, 2003; Brown University, October 6, 2006; Yale University, November 14, 2006.
2. *From nuclear physics to number theory: How the Manhattan project helped us understand primes*, Symposium for Undergraduates in Mathematical Sciences, Brown University, February 12, 2005; Colby College, March 8, 2005; University of Connecticut, March 22, 2005.

Undergraduate Education (7)

1. *Computers in undergraduate education and zeros of elliptic curves*, Foundations of Computational Mathematics, Computational Number Theory Workshop, University of Minnesota, August 9, 2002; NSF Workshop on Computation in Algebra, Number Theory and Combinatorics, Washington, D.C., September 21, 2002.
2. *Statistical investigations as a tool in undergraduate mathematics research: Poster and workshop sessions*, International Conference on Statistics, Honolulu, June 4, 2003.
3. *What Is Mathematics?*, panelist at RUMBUS07, Boston University, November 10, 2007.
4. *What Can I Do With A Mathematics Major?*, panelist at the Northeastern Section of the Mathematical Association of America (NES/MAA) Fall 2007 meeting, Framingham State College, November 17, 2007.
5. *The Pythagorean Won-Loss Theorem: An introduction to modeling*, Great Activities for an Introductory Statistics Class, AMS National Meeting, San Diego, January 7, 2008.
6. Workshop on Mathematicians in Mathematics Education, participant, Institute for Mathematics Education, Tucson, Arizona, March 20 - 22, 2008.

Undergraduate, Graduate and General Talks

1. Undergraduate Math Club Talks (Brown, Ohio State, Princeton and Yale). Topics include Benford's law, the circle method, cryptography, dynamical systems, mathematical riddles, the prime number theorem, probability and statistics, random matrix theory and sabermetrics.
2. Graduate Seminars (Brown, Princeton). Topics include the circle method, detecting and proving patterns, L -functions and automorphic forms, number theory, random matrix theory and sabermetrics.
3. General talks (to undergraduates, graduate students and postdocs). Topics include applying for postdocs and tenure track jobs, careers in mathematics, and using props in teaching.

Papers and Talks available online at <http://www.williams.edu/go/math/sjmiller/>

Teaching Experience

Course evaluations

The following are my recent teaching ratings (taken from the Critical Review, an undergraduate run evaluation of teaching at Brown); 1 is high and 5 is low. Three of my courses were the highest rated, and a third was the second highest (and the highest among classes with at least 10 students).

Semester	Class	Rating	Math Dept Range	Mean
Fall 07	Honors Multivariable Calculus	1.24	[1.24, 2.43]	1.69
Spring 07	Mathematical Statistics	1.15	[1.07, 2.21]	1.58
Spring 07	Honors Linear Algebra	1.39	[1.07, 2.21]	1.58
Fall 06	Abstract Algebra	1.28	[1.28, 2.91]	1.85
Spring 06	Mathematical Statistics	1.22	[1.22, 2.01]	1.54
Spring 06	Freshman Seminar	1.60	[1.22, 2.01]	1.54
Fall 05	Abstract Algebra	1.47	[1.28, 2.66]	1.61

Guided Research Classes / Programs

- Brown Math 197: undergraduate research class on Sabermetrics (2008), working on general problems and some projects for the San Diego Padres.
 Math 197: undergraduate research class on Benford's law (2007)
 Math 197: undergraduate research class on number theory and automorphic forms (2007);
 Math 197: undergraduate research class on cryptography (with Jill Pipher, 2006);
 Math 197: undergraduate research class on elliptic curves (2004–2005).
- Ohio State Program Director, Vertically Integrated Summer Program in Computational Number Theory (2004);
 Number Theory Working Group (with Vitaly Bergelson and Warren Sinnott, 2003–2004).
 Instructor, one week course on the circle method at the Ross Program, Summer 2004.
- AIM Vertically Integrated Summer Program in Computational Number Theory (with Brian Conrey,
 David Farmer, Chris Hughes & Michael Rubinstein, 2003).
- Princeton Designing and running the VIGRE Junior Research Seminar / Undergraduate Math Lab (with
 Peter Sarnak, Andrew Wiles, Ramin Takloo-Bighash, Yakov Sinai, 2000–2003).
- NYU Designing and running the VIGRE Undergraduate Math Lab at the Courant Institute, NYU (with
 Peter Sarnak and Alex Barnett, 2002).

Standard Classes

- Graduate Linear Algebra Ohio State (Summer 2004)
- Analysis and Number Theory Williams (Spring 2009)
- Abstract Algebra Brown (Fall 2005 & 2006)
- Mathematical Statistics Brown (Spring 2005, 2006, 2007 & 2008)
- Differential Equations and Vector Calculus Williams (Spring 2009)
- Discrete Mathematics Ohio State (Summer 2003)
- Honors Linear Algebra Princeton (Spring 1999); Brown (Spring 2007)
- Linear Algebra Brown (Fall 2004)
- Honors Problem Solving Ohio State (Autumn 2003)
- Honors Vector Calculus Brown University (Fall 2007)
- Freshman Seminar From Riddles to Modern Mathematics, Brown (Spring 2006)
- Reading Classics Working Group Ohio State (with Vitaly Bergelson and Warren Sinnott, 2003–2004)
- Calculus I Princeton (Summer 1999, 2000 & 2002);
 Brown (Fall 2004, Summer 2005, 2006, 2007 & 2008)
 Williams (Fall 2008)
- Fundamentals of College Algebra Ohio State (Autumn 2003)
- Basic College Mathematics Ohio State (Autumn 2003)

Advising Experience

- 2004 - present Advisor to the Brown University Undergraduate Mathematics Club and faculty advisor for Brown University's Symposium for Undergraduates in Mathematical Sciences.
- 2003 - 2004 Advisor to the Ohio State Undergraduate Mathematics Club and the Putnam team.
- 2007 - 2008: Brown University: Advised one undergraduate investigation on elliptic curves and L -functions, one on random graphs, four on Benford's Law, ten on sabermetrics, and one senior on the mathematics of bridge bidding conventions. Faculty advisor to 24 undergraduates (5 juniors, 14 sophomores, 5 freshmen). Over the summer advised one undergraduate research project in additive number theory (which was given a named grant by Brown), and two students in a mathematics education project to design handouts and web applets for introductory calculus (joint with Professor Tom Banchoff).
- 2006 - 2007: Brown University: On the dissertation defense committee for Michelle Manes (Number Theory). Advised five undergraduate investigations in the circle method, continued fractions, dynamical systems, random graphs and probability. Faculty advisor to 18 undergraduates.
- 2005 - 2006: Brown University: On the dissertation defense committee for Alina Bucur (Number Theory) and Minh Quang (Analysis). Advised four undergraduate investigations in random matrix theory, prime numbers, iterative functions and probability. Faculty advisor to 5 undergraduates.
- 2004 - 2005: Princeton University: co-advised 1 senior dissertation.
Brown University: advised five undergraduate investigations in elliptic curves and random matrix theory.
- 2003 - 2004: Princeton University: co-advised 1 senior dissertation.
American Institute of Mathematics: co-advised 8 summer undergraduate research projects.
The Ohio State University: co-advised 7 undergraduate / graduate research projects during the year, 10 over the summer.
- 2002 - 2003: Princeton University: co-advised 17 junior research projects in fall, 16 in spring; co-advised 3 senior dissertations.
Courant Institute, NYU: co-advised 3 junior research projects.
- 2001 - 2002: Princeton University: co-advised 11 junior research projects, co-advised 1 senior dissertation.
- 2000 - 2001: Princeton University: co-advised 8 junior research projects.

Computer Skills

1. Ran the VIGRE Undergraduate Mathematics Laboratory four times at Princeton, once at the Courant Institute, NYU, twice at Ohio State, and a similar program at the American Institute of Mathematics (summer 2003). Duties included helping undergraduates and graduate students investigate hot conjectures numerically and theoretically; responsible for coding and algorithm help in C, PARI, Mathematica, Maple, Matlab.
2. Graduate Liaison and Residential Computer Consultant for Computer and Information Technology at Princeton (two years).
3. I am able to LaTeX mathematical lectures in real-time. This has allowed me to post complete course notes for several undergraduate and graduate classes at Princeton, NYU and Ohio State, as well as many conferences.

Miscellaneous

- 2006 - 2008: Contacted by an instructor at the Internal Revenue Service Criminal Investigation's National CI Training Academy to discuss applications of Benford's law to corporate fraud detection. Talked (2008) to agents of the IRS's Boston office on the theory & application of Benford's law.
- 2008: Wrote several problems for the AMC 8 math competition.
- 2004 - 2008: Frequent panelist in graduate teaching workshops at Brown.
- 1998 - present: Maintain math riddles website, consistently in top ten when googling 'math riddles': http://www.williams.edu/go/math/sjmillier/public_html/riddles/riddles.html

Referee Service (35 papers)

1. Acta Mathematica (1)
2. American Mathematical Monthly (4)
3. Annals of Mathematics (2)
4. Aquatic Botany (1)
5. Canadian Journal of Mathematics (1)
6. Communications in Number Theory and Physics (1)
7. Compositio Mathematica (2)
8. Crelle's journal: Journal für die reine und angewandte Mathematik (1)
9. Duke Mathematical Journal (1)
10. Experimental Mathematics (1)
11. International Journal of Number Theory (1)
12. International Mathematics Research Notes (2)
13. Journal of the American Mathematical Society (1)
14. Journal of the London Mathematical Society (1)
15. Journal of Number Theory (6)
16. Journal of Physics A: Mathematical and General (1)
17. Journal of the Ramanujan Mathematical Society (1)
18. Journal of Theoretical Probability (2)
19. Linear Algebra and its Applications (1)
20. Mathematics Magazine (2)
21. Physica A: Statistical Mechanics and its Applications (1)
22. Proceedings of the National Academy of Sciences of the United States of America (1)

Review Service: 2 research proposals

1. Research proposal for CUNY (2004).
2. Research proposal for the NSA (2008).

Review Service: 26 papers for Mathematical Review

1. B. Binegar, *On the evaluation of some Selberg-like integrals*, J. of Math. Anal. Appl. **343** (2008), 601–620.
2. N. A. Bochkina, *Wavelet goodness-of-fit test for dependent data*, Journal of Statistical Planning and Inference **137** (2007), 2593–2612.
3. H. M. Bui and J. P. Keating, *On the mean values of Dirichlet L -functions*, Proc. London Math. Soc. **95** (2007), no. 3, 273–298.
4. H. M. Bui and J. P. Keating, *On the mean values of L -functions in orthogonal and symplectic families*, Proc. London Math. Soc. **96** (2008), no. 3, 335–366.

5. J. B. Conrey, D. W. Farmer, J. P. Keating, M. O. Rubinstein and N. C. Snaith, *Lower order terms in the full moment conjecture for the Riemann zeta function*, Journal of Number Theory **128** (2008), 1516–1554.
6. K. P. Costello, T. Tao and V. Vu, *Random symmetric matrices are almost surely nonsingular*, Duke Math. J. **135** (2006), no. 2, 395–413.
7. G. Everest, P. Ingram, V. Mahré and S. Stevens, *The uniform primality conjecture for elliptic curves*, Acta Arithmetica **134** (2008), no. 2, 157–181.
8. G. Everest, J. Reynolds and S. Stevens, *On the denominators of rational points on elliptic curves*, Bull. London Math. Soc. **39** (2007), 762–770.
9. A. Gamburd, *Some applications of symmetric functions theory in random matrix theory*. Ranks of elliptic curves and random matrix theory, 143–169, London Math. Soc. Lecture Note Ser., 341, Cambridge Univ. Press, Cambridge, 2007.
10. S. M. Gonek, C. P. Hughes, and J. P. Keating, *A hybrid Euler-Hadamard product for the Riemann zeta function*, Duke Math. J. **136** (2007), no. 3, 507–549.
11. J. P. Keating and B. E. Odgers, *Symmetry Transitions in Random Matrix Theory & L-functions*, Commun. Math. Phys. **281** (2008), 499–528.
12. J. P. Keating and S. Müller, *Resummation and the semiclassical theory of spectral statistics*, Proc. R. Soc. Lond. Ser. A Math. Phys. Eng. Sci. **463** (2007), no. 2088, 3241–3250.
13. R. Killip, *Gaussian fluctuations for β ensembles*, Int. Math. Res. Not. 2008, no. 8, Art. ID rnn007, 19 pages.
14. T. Kim, *A note on multiple L-function*, Tamsui Oxf. J. Math. Sci. **22** (2006), no. 2, 177–184.
15. A. Kuznetsov, *On the Riemann-Siegel formula*, Proc. R. Soc. A (2007) **463**, 2557–2568.
16. J. Marklof, Y. Tourigny and L. Wolowski, *Explicit invariant measures for products of random matrices*, Transactions of the AMS **360** (2008), no. 7, 3391–3427.
17. F. Mezzadri, *How to generate random matrices from the classical compact groups*, Notices of the AMS **54** (2007), no. 5, 592–604.
18. B. Rider and X. Zhou, *Janossy densities for Unitary ensembles at the spectral edge*, International Mathematics Research Notes, Vol. 2008, Article ID rnn037, 51 pages.
19. E. Rychman, *Linear Statistics of Point Processes via Orthogonal Polynomials*, J. Stat. Phys. **132** (2008), 473–486.
20. Z. Rudnick, *Eigenvalue statistics and lattice points*, Colloquium De Giorgi 2006, 45–50, Colloquia, 1, Ed. Norm., Pisa, 2006.
21. G. Sierra, *A quantum mechanical model of the Riemann zeros*, New J. Phys. **10** (2008), March, 033016, 32 pp.
22. R. Šleževičienė-Studing and J. Studing, *Gaps between consecutive zeros of the zeta-function on the critical line and conjectures from random matrix theory*, in Probability and number theory—Kanazawa 2005, 421–432, Adv. Stud. Pure Math., 49, Math. Soc. Japan, Tokyo, 2007.
23. J. Studing, *Upper bounds for the density of universality. II*, Acta Math. Univ. Ostrav. **13** (2005), no. 1, 73–82.
24. D. Ulmer, *Function fields and random matrices*. Ranks of elliptic curves and random matrix theory, 109–142, London Math. Soc. Lecture Note Ser., 341, Cambridge Univ. Press, Cambridge, 2007.
25. L. Verde-Star, *Interpolation approach to the spectral resolution of square matrices*, L’Enseignement Mathématique (2) **52** (2006), no. 3, 239–253.

26. M. Yor, *A note about Selberg's integrals in relation with the beta-gamma algebra*. Advances in mathematical finance, 49–58, Appl. Numer. Harmon. Anal., Birkhäuser Boston, Boston, MA, 2007.

Review Service: 2 books

1. E. Bombieri and W. Gubler, *Heights in Diophantine Geometry*, book review for Siam Review.
2. S. S. Epp, *Discrete Mathematics with Applications*, third edition, Thomson * Brooks/Cole, review to help revise the book for the fourth edition.