

Michael Rubinstein, Biographical Sketch

A. Professional Preparation

- Ph.D. Mathematics, Princeton University, June 1998, *Evidence for a spectral interpretation of the zeros of L-functions*.
- M.A. Mathematics, Princeton University, June 1996.
- B.A. Mathematics, Princeton University, June 1994.

B. Appointments

- 2008– Associate Professor, University of Waterloo.
- 2003–2007 Assistant Professor, University of Waterloo.
- 2003–current Researcher (part time), American Institute of Mathematics.
- Feb–April 2004 Senior Visiting Fellow, Isaac Newton Institute, Cambridge, UK.
- 2001–2003 Postdoc, American Institute of Mathematics, Palo Alto, California.
- 1999–2001 R.H. Bing Postdoc, The University of Texas at Austin.
- 1998–1999 Postdoc, Mathematical Sciences Research Institute, Berkeley, California.
- 1998–1999 Postdoc, Hewlett-Packard, Palo Alto, California.
- 1994 Intern (Summer), AT&T Bell Laboratories, Morgan Hill, New Jersey.

C. Publications

5 publications most closely related to this proposal

1. *Computational methods and experiments in analytic number theory*. Recent Perspectives in Random Matrix Theory and Number Theory, London Mathematical Society Lecture Note Series **322** (2005), editors, F. Mezzadri and N. C. Snaith, Cambridge University Press, 425–506.
2. *Integral moments of zeta- and L-functions*, with B. Conrey, D.W. Farmer, J.P. Keating, and N.C. Snaith. Proceedings of the London Mathematical Society, **91** (2005), 33–104.
3. *Low lying zeros of L-functions and random matrix theory*. Duke Mathematical Journal **109** (2001), no. 1, 147–181.
4. *Random matrix theory and the Fourier coefficients of half-integral weight forms*, with J.B. Conrey, J.P. Keating, and N.C. Snaith, Experimental Mathematics, **15** (2006), no. 1, 67–82.
5. *Secondary terms in the number of vanishings of quadratic twists of elliptic curve L-functions*, with J.B. Conrey, A. Pokharel, and M. Watkins, Proceedings of Ranks of Elliptic Curves and Random Matrix, Cambridge University Press, 15 pages, 2007.

5 other significant publications

6. *Lower order terms in the full moment conjecture for the Riemann zeta function*, with J.B. Conrey, D.W. Farmer, J.P. Keating, and N.C. Snaith, 30 pages, accepted by the Journal of Number Theory.
7. *Moments of the derivative of the Riemann zeta-function and of characteristic polynomials*, with J.B. Conrey, and N.C. Snaith, Communications in Mathematical Physics, **267** (2006), no. 3, 611–629.
8. *On the frequency of vanishing of quadratic twists of modular L-functions*, with J.B. Conrey, J.P. Keating, and N.C. Snaith. Proceedings of the Millennial Conference on Number Theory, editor, B.C. Berndt et al. A.K. Peters, Ltd, Boston **1** (2001), 301–316.
9. *Zeros of Dirichlet L-functions near the real axis and Chebyshev's bias*, with Carter Bays, Kevin Ford, Richard Hudson. Journal of Number Theory **87** (2001), no. 1, 54–76.
10. *Chebyshev's bias*, with Peter Sarnak. Experimental Mathematics **3** (1994), no. 3, 173–197.

D. Synergistic Activities

Software	Author of the L -function calculator, a C++ class library and command line interface for computing zeros and values of L -functions. Available at www.math.uwaterloo.ca/~mrubinst .
Database	Computed and made available, via the internet, the classical modular polynomials that arise in elliptic curve cryptography.
Conferences	Co-organizer for: Canadian Number Theory Association - tenth meeting, Waterloo (2008), L -functions and modular forms, American Institute of Mathematics (2007), L -functions, ranks of elliptic curves, and random matrix theory, Banff (2007), CMS number theory session, University of Waterloo (2005), AMS session on computational number theory, Boulder, Colorado (2003).
Wiki	Co-founder and co-administrator for the new L -functions and Modular Forms Wiki, August 2007, L-functions.org :9000
Outreach	Instructor for Bay Area Math Circles, 2001-2003.

E. Collaborators & Other Affiliations

(i) *Recent collaborators.*

Brian Conrey, American Institute of Mathematics.

David Farmer, Bucknell University.

John Keating, Bristol Research Institute in the Mathematical Sciences

Nina Snaith, University of Bristol.

Mark Watkins, University of Bristol.

(ii) *Graduate and postgraduate advisors.*

Peter Sarnak (thesis advisor and co-author), Department of Mathematics, Princeton University.

(ii) *Thesis supervision.*

2007–, Y. Shuntaro, Masters student, University of Waterloo.

2006–, R. Rishikesh, PhD student, University of Waterloo.