Maksym Radziwill   Curriculum vitae

CONTACT
Department of Mathematics
McGill University
805 Sherbrooke West
Montreal, QC, H3A 0B9, Canada

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http://www.math.mcgill.ca/radziwill

PERSONAL
Citizenship: Canadian and Polish
Languages: French, English, Polish, Russian (all fluent)

RESEARCH INTERESTS
Analytic number theory, L-functions, elliptic curves, automorphic forms, probabilistic number theory, probability theory, large deviations, harmonic analysis, spectral theory, sieve methods

EMPLOYEMENT
McGill University   2016-
Assistant Professor
Canada Research Chair in Number Theory, Tier II

Rutgers University   2014-2016
Hill Assistant Professor

Centres de Recherches Mathematiques   Fall 2014
Member for the special year in number theory

Institute for Advanced Study   2013-2014
Member

EDUCATION
Stanford University, California, USA   2009-2013

Ph.D., Mathematics
Thesis: *Zero distribution and size of the Riemann zeta-function*
Advisor: Kannan Soundararajan

McGill University, Quebec, CA   2006-2009

B. Sc., Mathematics
Thesis: *Large deviations of additive functions*
Advisor: Andrew Granville
First class honors

HONORS & AWARDS
1. Invited Session Speaker, ICM Rio de Janeiro   2018

2. Sloan Fellowship (60,000 USD)   2017-2019

3. SASTRA Ramanujan Prize   2016

4. Seminaire Bourbaki on work with Kaisa Matomäki   June 2016

5. Canada Research Chair II (500,000 CAD)   2016-2021

6. NSERC Discovery Grant (210,000 CAD)   2016-2021

7. McGill Start-up Grant (40,000 CAD)   2016-2019

8. NSERC Doctoral Scholarship (40,000 CAD)   2011-2013

9. FQRNT Bourse de Maitrise (15,000 CAD)   2010-2011

10. NSERC Alexander Graham Bell Schollarship (15,000 CAD)   2009-2010

PUBLICATIONS **To appear**

1. S. Bettin, V. Chandee, M. Radziwill, *The mean-square of the product of the Riemann zeta-function with Dirichlet polynomials*, to appear **J. Reine Angew. Math.**, arxiv:1411.7764

2. M. Lewko and M. Radziwill, *Refinements of Gàl's theorem and applications*, to appear **Adv. Math.**, arxiv: 1408.2334

3. V. Blomer, J. Bourgain, M. Radziwill and Z. Rudnick, *Small gaps in the spectrum of the rectangular billiard*, to appear **Annales scientifiques de l'Ecole Normale Superieure**, arxiv: 1604.02413

4. F. Luca, M. Radziwill and I. Shparlinsky, *On the typical size and cancellations among the coefficients of modular forms*, to appear **Math. Proc. Cambridge. Phil. Soc.**, arxiv: 1308.6606

5. Y. Lamzouri, S. Lester, and M. Radziwill, *Discrepancy bounds for the Riemann zeta-function*, to appear **J. Anal. Math.**, arxiv:1402.6682

6. Y. Lamzouri, S. Lester, and M. Radziwill, *An effective universality theorem for the Riemann zeta-function*, to appear **Comment. Math. Helvetici**, arxiv:1611.10325

Published

7. K. Matomäki and M. Radziwill, *Multiplicative functions in short intervals*, **Annals of Math.**, 2016 (183), no. 3, pp. 1015-1056, arXiv:1501.04585,

8. K. Matomäki, M. Radziwill and T. Tao, *Sign patterns of the Liouville and Mobius functions*, **Forum of Mathematics, Sigma**, 2016 (4), arxiv:1509.01545

9. K. Matomäki, M. Radziwill and T. Tao, *An averaged form of Chowla's conjecture*, **Algebra & Number Theory**, 2015, (9), arxiv:1503.05121

10. M. Radziwill and K. Soundararajan, *Moments and distribution of central values of quadratic twists of elliptic curves*, **Invent. Math.**, 2015 (202), no. 3, pp. 1029-1068, arxiv:1501.04585

11. K. Matomäki and M. Radziwill, *Sign changes of Hecke eigenvalues*, **Geom. Funct. Anal**, 2015 (25), no. 6, pp. 1937-1955, arxiv:1405.7671

12. Xiannan Li and M. Radziwill, *The Riemann zeta-function on vertical arithmetic progressions*, **Int. Math. Res. Not.**, 2015 (2), pp. 325-354, arxiv: 1208.2684

13. E. Gnang, M. Radziwill and C. Sanna, *Counting arithmetic formulas*, **European J. Combin.**, 2015 (47), pp. 40-53, arxiv: 1406.1704

14. A. Harper, A. Nikeghbali, M. Radziwill, *A note on Helson's conjecture on moments of random multiplicative functions*, **"Analytic number theory" in honor or Helmut Maier's 60th birthday**, 2015, arxiv:1505.01443

15. M. Radziwill, *Small gaps between zeros of $\zeta(s)$ and distribution of zeros of $\zeta'(s)$*, **Adv. Math.** 2014 (257), 6-24, arxiv:1301.3232

16. V. Chandee, Yoonbok Lee, Sheng-Chi Liu and M. Radziwill, *Simple zeros of primitive Dirichlet L-functions and the asymptotic large sieve*, **Q. J. Math.** 2014 (65), no. 1, 63-87, arxiv: 1211.6725

17. M. Radziwill and K. Soundararajan, *Continuous lower bounds for moments of zeta and L-functions*, **Mathematika**, 2013 (59), no. 1, 119-128, arxiv: 1202.1351

18. M. Radziwill, *The 4.36-th moment of the Riemann zeta-function*, **Int. Math. Res. Not.** 2012 (18): 4245-4259, arxiv: 1106.4806

In revision

19. S. Lester, K. Matomäki, M. Radziwill, *Zeros of modular forms in thin sets and effective quantum unique ergodicity*, in revision, **J. Eur. Math. Soc.**, arxiv:1501.01292

20. M. Radziwill and K. Soundararajan, *Selberg's central limit theorem for $\log|\zeta(\frac{1}{2}+it)|$*, in revision, **L'enseignement Math.**, arxiv:1509.06827

21. F. Boca and M. Radziwill, *Limiting distribution of eigenvalues in the large sieve matrix*, in revision, **J. Eur. Math. Soc.**, arxiv: 1609.05843

22. L-P. Arguin, D. Belius, P. Bourgade, M. Radziwill and K. Soundararajan, *Maximum of the Riemann zeta-function on a short interval of the critical line*, in revision, **Comm. Pure Appl. Math.**, arxiv:1612.08575

Submitted

23. K. Matomaki, M. Radziwiłł, T. Tao, *Correlations of the von Mangoldt and higher divisor functions I. Long shift ranges.*, arxiv: 1707.01315

24. S. Bettin, H. M. Bui, X. Li and M. Radziwiłł, *A quadratic divisor problem and moments of the Riemann zeta-function*, arxiv: 1609.02539

25. S. Lester and M. Radziwiłł, *Quantum unique ergodicity for half-integral weight forms*, arxiv: 1606.04119, submitted

26. M. Radziwiłł, *Limitations to mollifying $\zeta(s)$*, arxiv: 1207.6583, submitted

27. M. Radziwiłł, *A converse to Halász's theorem*, arxiv: 1109.0037, submitted

28. M. Radziwiłł, *Large deviations in Selberg's central limit theorem*, arxiv: 1108.5092, submitted

29. M. Radziwiłł, *A structure theorem in probabilistic number theory*, arxiv: 1109.0033, submitted

TEACHING

McGill University

Math 596, Topics in Number Theory	Fall 2017
Math 454, Honors Analysis 3	Fall 2016
Math 726, Topics in Number Theory	Fall 2016

Rutgers University

Math 348, Cryptography	Spring 2016
Math 477, Introduction to Probability theory	Fall 2015
Math 152, Honors Calculus II	Fall 2015
Math 477, Introduction to Probability theory	Spring 2015
Math 571, Topics in Number theory	Spring 2015

Stanford University

Math 53, *Differential equations*, Teaching assistant	Winter 2013
Math 53, *Differential equations*, Teaching assistant	Winter 2012
Math 42, *Calculus 2*, Teaching Assistant	Winter 2011
Math 115, *Analysis 1*, Course Assistant	Winter 2010

Invited conference talks

1. International Congress of Mathematicians, Rio de Janeiro, August 2018 (upcoming)

2. Riemann Hypothesis conference, Bristol, June 2018 (upcoming)

3. Mariusz Lemanczyk anniversary conference, Bedlewo, June 2018 (upcoming)

4. Interplay between number theory and analysis of Dirichlet series, Oberwolfach, November 2017 (upcoming)

5. Automorphic forms and arithmetic, Oberwolfach, September 2017

6. Analytic number theory, Introductory workshop, MSRI, February 2017

7. SASTRA University - Ramanujan memorial talk, December 2016

8. Analytic Number Theory, Oberwolfach, November 2016

9. Randomness and determinism in number theory, TU Wien, May 2016

10. Canadian Mathematical Society Winter Meeting, Montreal, December 2015

11. ICERM, "Computational aspects of the Langlands program", November 2015

12. Illinois Number theory conference, August 2015

13. Workshop on Dirichlet Series and Analysis on Polydiscs, Trondheim, June 2015

14. Analytic aspects of number theory, Zurich, May 2015

15. New directions in analytic and probabilistic number theory, Montreal, December 2014

16. Analytic Number Theory, Oxford, September 2014

17. Analytic Number Theory, Oberwolfach, October 2013

18. AMS Special Session on Modern Methods in Analytic number theory, Mississipi, March 2013

19. AMS Special Session on Analytic Number Theory, Rochester, September 2012

20. Probabilistic and Analytic methods in number theory: International conference in honour of Jonas Kubilius, Palanga, September 2011, plenary lecture

21. Mathematics Research Communities, Pretentious view of analytic number theory, June 2011

Invited seminar talks

1. Stanford number theory seminar, January 2018

2. University of Genova Number Theory seminar, July 2017

3. University of Torun Colloquium, June 2017

4. Number Theory Seminar, University of Poznan, June 2017

5. University of Vienna Colloquium, June 2017

6. MIT Number Theory seminar, April 2017

7. CRM-ISM Colloquium, November 2016

8. Rutgers number theory seminar, April 2016

9. Penn State Number Theory seminar, March 2016

10. Northwestern University Colloquium, January 2016

11. CUNY Probability seminar, November 2015

12. University of Toronto Number theory seminar, March 2015

13. Bryn Mawr Colloquium, March 2015

14. QVNTS Seminar, February 2015

15. Rutgers Number theory seminar, January 2015

16. University of Illinois-Urbana Champaign number theory seminar, April 2015

17. Princeton/IAS Number theory seminar, February 2015

18. Probability and Random Matrix Seminar (CMSA, Harvard), January 2015

19. Universite de Montreal analytic number theory seminar, November 2014

20. QVNTS Seminar, November 2014

21. Rutgers Combinatorics seminar (joint with E. Gnang), May 2014

22. Princeton number theory seminar, April 2014

23. Tel-Aviv number theory seminar, April 2014

24. Rochester number theory seminar, March 2014

25. CUNY number theory seminar, March 2014

26. Ohio State number theory seminar, February 2014

27. Temple number theory seminar, January 2014

28. Urbana Illinois-Champaign number theory seminar, December 2013

29. Rutgers number theory seminar, October 2013

30. IAS Members seminar, September 2013

31. Penn State number theory seminar, April 2013

32. Fields Institute Number theory seminar, February 2013

33. Quebec-Vermont Number theory seminar, Montreal, December 2012

34. Stanford number theory seminar, November 2012

35. Analytic number theory seminar, Montréal, November 2014, July 2012, November 2011, August 2011, November 2010, October 2010, July 2010

36. Stanford Undergraduate Mathematical Organization, Stanford, February 2010

37. Analytic number theory seminar, Stanford, September 2009 (two talks)

38. Analytic number theory seminar, Montréal, July 2008 (three talks)

Research stays

1. Orsay, February 2018

2. Goettingen, August 2017

3. University of Genova, July 2017

4. Goettingen, June 2017

5. MSRI, January 2016 - May 2016

6. Stanford, August 2016

7. Stanford, August 2015

8. Universitat Zurich, May 2015

9. Stanford, March 2015

10. York University, December 2014

11. Stanford University, August 2014

12. Tel-Aviv University, April 2013

13. Rochester, March 2013

14. Stanford, September 2013

   Centre de Recherches Mathématiques, Montréal

   15. Three month stay, July-September 2012

   16. One month stay, September 2011

Workshops

1. Mathematical Sciences Research Institute, Berkeley, "Analytic number theory", January 2016-May 2016

2. American Institute of Mathematics workshop on "Moments of zeta and correlations of divisor sums", August 2016

3. American Institute of Mathematics workshop on "Bounded gaps between primes", Palo Alto, November 2014

   Mathematics Research communities, Snowbird,

   4. Arithmetic Statistics, June 2012

   5. Pretentious view of analytic number theory, June 2011

Contributed conference talks

1. Canadian Mathematical Association meeting, Montréal, December 2012

2. Canadian Number Theory Association XII meeting, Lethbridge, June 2012

3. Turan 100, Budapest, August 2011

4. Canadian Number Theory Association XI meeting, Wolfville, July 2010

STUDENTS

1. PhD: Andrei Shubin   2016-

2. MSc: Peter Zenz   2016-2017
   (Exchange student from ETH Zurich)

3. PhD: Peter Zenz   2017-

4. PhD: Jake Chinis   2017-

POST-DOCS

1. Stephen Lester (CRM-ISM scholarship)   2016-2017
   Now: Tenure-track at Queen Mary University, London

2. Farzad Aryan   2016-2017
   Now: Post-doctoral position at Goettingen

3. Mattia Righetti (CRM-ISM scholarship)   2016-2018

4. Niko Laaksonen   2017-2018

5. Corentin Perret-Gentil-dit-Maillard (CRM-ISM scholarship) 2017-2019

6. Xianchang Meng   2017-2018

SERVICE

Conferences organized

1. Mathematical Congress of the Americas   June 2017
   Special session in Number Theory & Analysis

2. Number Theory & Probability theory   May 2018
   Month long program at the Centre de Recherches Mathematiques

3. AIM Workshop on Sarnak's conjecture   TBD 2018

Committees

1. Committee on Graduate Affairs   2016-2018

2. Organizer of the Quebec Vermont Number Theory seminar   2017-

Refereeing

Referee for the following journals: Ann. Math. (2), JAMS (2), Invent. Math (2), Duke Math (4), Forum of Mathematics: Pi, Compositio Math., Advances in Math, Algebra & Number Theory (2), Math. Annalen, IMRN (5), Trans. AMS (2), Journal LMS, Comment. Math. Helvet., Journal of Math. Anal., Quart. J. Math, Mathematika (2), Ramanujan J. (2), Journal of Number Theory (3), Acta Arithmetica (3), Proc. Cambridge. Phil. Soc., Manuscripta Mathematica, International Journal of Number theory, Electronic Comm. Prob., Functiones et approximatio, Anal. Math. Quebec (2)

Reviewer for *Zentralblatt für Mathematik*

OTHER

Computer Skills: UNIX, Latex, Python, C, C++, Assembler (x86, avr), Haskell, FPGA, OpenCL, CUDA, general interest in embedded and systems programming