

CURRICULUM VITAE

RIAD MASRI

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masri@math.tamu.edu

<http://www.math.tamu.edu/~masri/>

Current Position:

- Associate Professor, Texas A&M University

Research Interests: Analytic number theory, Automorphic forms, L -functions, Arithmetic geometry

Education:

- Ph.D. in Mathematics, U. of Texas (Austin), 8/05

Ph.D. Advisor: Fernando Rodriguez-Villegas

Academic Positions:

- Associate Professor, Texas A&M University, 9/14-present
- Assistant Professor, Texas A&M University, 9/09-8/14
- Van Vleck Assistant Professor, U. of Wisconsin (Madison), 8/08-8/10
- Postdoctoral Fellow, Centre de Recherches Mathématiques (Montréal), 5/07-6/08
- Visitor, Institut des Hautes Études Scientifiques (Paris), 2/07-4/07
- Postdoctoral Fellow, Max-Planck-Institut für Mathematik (Bonn), 9/05-12/06

Awards and Fellowships:

- Simons Foundation Grant #421991, “Number Theory Related to Special Values of L -functions and Modular Forms”, 9/2016-8/2021, \$35,000.
- QNRF Grant NPRP9-336-1-069 (Co-PI with Ahmad El-Guindy and Matthew Papanikolas), “Arithmetic Properties of Drinfeld Modular Forms”, 12/2016-11/2019, \$649,729.
- NSF Grant DMS-1162535, “Analytic Number Theory and Periods of Automorphic Forms”, 9/2012-8/2017, \$120,000.
- NSF Grant DMS-1757872 (Senior Personnel; Co-PI’s Maurice Rojas and Anne Shiu), “REU Site: Undergraduate Research in the Mathematical Sciences and their Applications”, 6/2018-5/2021, \$350,000.
- NSF Grant DMS-1460766 (Senior Personnel; Co-PI’s Maurice Rojas and Anne Shiu), “REU Site: Undergraduate Research in the Mathematical Sciences and their Applications”, 6/2015-5/2018, \$343,408.

- NSA Young Investigator Grant H98230-10-1-0225, “Investigations on Heegner Points with Applications to L -functions, Elliptic curves, and Combinatorics”, 3/2010-3/2012, \$30,000.
- Joseph Patrick Brannen Fellowship, U. of Texas (Austin), Spring 2005
- Departmental Fellowship, U. of Texas (Austin), Spring 2005
- Departmental Fellowship, U. of Texas (Austin), Summer 2000
- Texas Excellence in Teaching Award, College of Natural Sciences, U. of Texas (Austin), Academic year 2003-2004

Publications and Submitted Papers:

- (1) “Effective nonvanishing of class group L -functions for CM fields”, (with Adrian Barquero-Sanchez, Emily Peirce, and Katherine Weber), submitted for publication.
- (2) “Stark units and special Gamma values”, (with Adrian Barquero-Sanchez and Wei-Lun Tsai), submitted for publication.
- (3) “Effective bounds for traces of singular moduli”, (with Havi Ellers, Meagan Kenney, and Wei-Lun Tsai), submitted for publication.
- (4) “Faltings heights of CM abelian surfaces and special Gamma values”, (with Adrian Barquero-Sanchez), submitted for publication.
- (5) “The distribution of G -Weyl CM fields and the Colmez conjecture”, (with Adrian Barquero-Sanchez and Frank Thorne), submitted for publication. [arXiv:1708.00044v2](https://arxiv.org/abs/1708.00044v2)
- (6) “Effective bounds for the Andrews smallest parts function”, (with Madeline Locus Dawsey), *Forum Mathematicum*, accepted for publication.
- (7) “Nonvanishing of Hecke L -functions and Bloch-Kato p -Selmer groups”, (with Arianna Ianuzzi, Byoung Du Kim, Alex Mathers, Maria Ross, and Wei-Lun Tsai), *Mathematical Research Letters*, accepted for publication.
- (8) “An effective bound for the partition function”, (with Narissara Khaochim and Wei-Lun Tsai), *Research in Number Theory*, (2019), **5**:14.
- (9) “On the Colmez conjecture for non-abelian CM fields”, (with Adrian Barquero-Sanchez), *Research in the Mathematical Sciences*, special collection in honor of Don Zagier’s 65th birthday, (2018), **5**:10.
- (10) “Faltings heights of CM elliptic curves and special Gamma-values”, (with Adrian Barquero-Sanchez, Olivia Cannon, Lindsay Cadwallader, and Tyler Genao), *Research in Number Theory*, (2017), **3**:13.

- (11) “The Chowla-Selberg formula for abelian CM fields and Faltings heights” (with Adrian Barquero-Sanchez), *Compositio Mathematica*, **152** (2016), 445–476.
- (12) “Singular moduli and the distribution of partition ranks modulo 2”, *Mathematical Proceedings of the Cambridge Philosophical Society*, **160** (2016), 209–232.
- (13) “The asymptotic distribution of Andrews’ smallest parts function”, (with Josiah Banks, Adrian Barquero-Sanchez, and Yan Sheng), *Archiv der Mathematik (Basel)*, **105** (2015), 539–555.
- (14) “Hybrid bounds for quadratic Weyl sums and arithmetic applications” (with Sheng-Chi Liu), *Forum Mathematicum*, **27** (2015), 3397–3423.
- (15) “Rankin-Selberg L -functions and the reduction of CM elliptic curves” (with Sheng-Chi Liu and Matthew P. Young), *Research in the Mathematical Sciences*, **2** (2015), 2:22.
- (16) “Fourier coefficients of harmonic weak Maass forms and the partition function”, *American Journal of Mathematics*, **137** (2015), 1061–1097.
- (17) “A Kronecker limit formula for totally real fields and arithmetic applications” (with Sheng-Chi Liu), *Research in Number Theory*, (2015), 1:8.
- (18) “The average of the divisor function over values of a quadratic polynomial” (with Sheng-Chi Liu), *Proceedings of the American Mathematical Society*, **143** (2015), 4143–4160.
- (19) “Nonvanishing of Rankin-Selberg L -functions for Hilbert modular forms” (with Sheng-Chi Liu), *Ramanujan Journal*, **34** (2014), 227–236.
- (20) “Kronecker’s solution of Pell’s equation for CM fields”, *Annales de l’Institut Fourier*, **63** (2013), 2287–2306.
- (21) “Subconvexity and equidistribution of Heegner points in the level aspect” (with Sheng-Chi Liu and Matthew P. Young), *Compositio Mathematica*, **149** (2013), 1150–1174.
- (22) “The asymptotic distribution of traces of cycle integrals of the j -function”, *Duke Mathematical Journal*, **161** (2012), 1971–2000.
- (23) “Nonvanishing of Hecke L -functions for CM fields and ranks of abelian varieties” (with Tonghai Yang), *Geometric and Functional Analysis (GAFA)*, **21** (2011), 648–679.

- (24) “The asymptotic distribution of traces of Maass-Poincaré series” (with Amanda Folsom), *Advances in Mathematics*, **226** (2011), 3724-3759.
- (25) “Nonvanishing of Hecke L -functions and the Bloch-Kato conjecture”, (with Byoung Du Kim and Tonghai Yang), *Mathematische Annalen*, **349** (2011), 301-343.
- (26) “CM cycles and nonvanishing of class group L -functions”, *Mathematical Research Letters*, **17** (2010), 749-760.
- (27) “Equidistribution of Heegner points and the partition function” (with Amanda Folsom), *Mathematische Annalen*, **348** (2010), 289-317.
- (28) “Special values of class group L -functions for CM fields”, *Canadian Journal of Mathematics*, **62** (2010), 157-181.
- (29) “Probabilities as values of modular forms and continued fractions” (with Ken Ono), *International Journal of Mathematics and Mathematical Sciences*, 2009, article ID 941920.
- (30) “The scattering matrix for the Hilbert modular group”, *Proceedings of the American Mathematical Society*, **137** (2009), 2541–2555.
- (31) “On the L -functions of the curves $y^2 = x^\ell + A$ ”, *Journal of the London Mathematical Society*, **78** (2008), 663-676.
- (32) “Analytic continuation of multiple Hurwitz zeta functions” (with Jim Kelliher), *Mathematical Proceedings of the Cambridge Philosophical Society*, **145** (2008), 605-617.
- (33) “Asymptotics for sums of central values of canonical Hecke L -series”, *International Mathematics Research Notices IMRN* (2007), no. 19, 27 pp.
- (34) “Quantitative nonvanishing of L -series associated to canonical Hecke characters”, *International Mathematics Research Notices IMRN* (2007), no. 19, 16 pp.
- (35) “The distribution of zeros of Epstein zeta functions over GL_n ”, *Acta Arithmetica*, **128** (2007), 157-166.
- (36) “Multiple zeta values over global function fields”, Multiple Dirichlet series, automorphic forms, and analytic number theory, 157-175, *Proceedings of Symposia in Pure Mathematics*, **75**, American Mathematical Society, Providence, RI, 2006.
- (37) “Multiple Dedekind zeta functions and evaluations of extended multiple zeta values”, *Journal of Number Theory*, **115** (2005), 295–309.

- (38) “The Herglotz-Zagier function, double zeta functions, and values of L -series”, *Journal of Number Theory*, **106** (2004), 219–237.
- (39) “Convergence rates for uniform B-spline density estimators on bounded and semi-infinite domains” (with Richard Redner), *Journal of Nonparametric Statistics*, **17** (2005), 555–582.

Conferences/Seminars/Lectures:

- AMS special session on Recent advances and applications of modular forms, University of Hawaii at Manoa, Honolulu, HI, 3/19
- 50th Anniversary Conference, Centre de Recherches Mathématiques, Montréal, Quebec, 7/18
- AMS special session on Numbers, Functions, Transcendence, and Geometry, Denton, TX, 9/17
- AMS special session on Analytic Number Theory and Automorphic Forms, Pullman, WA, 4/17
- Number Theory Seminar, Ohio State University, 4/16
- 28th Automorphic Forms Workshop, Moab, UT, 5/14
- Number Theory Seminar, University of South Carolina, 4/14
- Number Theory Seminar, Brigham Young University, 9/13
- AMS special session on Modern Methods in Analytic Number Theory, Oxford, MS, 3/13
- AMS special session on Automorphic and Modular forms, Tucson, AZ, 10/12
- Number Theory Seminar, Emory University, 5/12
- AMS special session on Automorphic and Modular forms, Honolulu, HI, 3/12
- AMS special session on Elliptic curves, Modular forms, and Related Topics, Winston-Salem, NC, 9/11
- Conference on “The Analytic Theory of Automorphic Forms”, Oberwolfach, 8/11
- Number Theory Seminar, Texas A&M University, 10/10
- Number Theory Seminar, University of Texas (Austin), 9/10
- 24th Automorphic Forms Workshop, Honolulu, HI, 3/10
- AIM Workshop on Mock Modular Forms, Palo Alto, 3/10
- Number Theory Seminar, University of Illinois at Urbana-Champaign, 3/10
- AMS-MAA Joint Meetings, San Francisco, CA 1/10
- Plenary Speaker, SASTRA Prize Conference, Kumbakonam, India, 12/09
- Plenary Speaker, Palmetto Number Theory Series X, 9/09
- Number Theory Seminar, Boston College, 4/09
- Quadratic Forms, Sums of Squares, Theta Functions and Integral Lattices, University of Florida, 3/09
- Number Theory Seminar, University of Wisconsin, 2/09
- Colloquium, Texas A&M University, 2/09
- AMS-MAA Joint Meetings, Washington DC, 1/09
- Combinatory Analysis 2008: Partitions, q -series, and Applications, Penn State, 12/08
- Number Theory Seminar, Rice University, 11/08
- Number Theory Seminar, Texas A&M University, 11/08
- Number Theory Seminar, University of Wisconsin, 9/08

- Number Theory Seminar, Texas A&M University, 3/08
- Colloquium, Vanderbilt University, 1/08
- Quebec-Vermont Number Theory Seminar, 11/07
- Number Theory Seminar, ETH-Zürich, 12/06
- Number Theory Seminar, Max Planck Institute (Bonn), 9/06
- Oberseminar Geometrische Analysis, Universität Tübingen, 11/05
- Number Theory Seminar, Max Planck Institute (Bonn), 10/05
- Bretton Woods Workshop on Multiple Dirichlet Series, Bretton Woods, NH, 7/05

Editorial Boards:

- Research in Number Theory (2019 to present)

Departmental Service:

- Co-organizer of the REU in mathematics at Texas A&M U., 2013 to present.
- Honors Committee, 2018 to present.
- Chair, Promotion and Tenure Subcommittee, 2017-2018.
- Promotion and Tenure Subcommittee, 2017-2019.
- Awards Committee, 2016 to present.
- Undergraduate Studies Committee, 2014-2016.
- Undergraduate Honors Advisor, 2015 to present.

Advising:

Postdoctoral fellows:

- Eren Kiral, Texas A&M U. (co-advised with Matt Young), 2014-2017.
- Sheng-Chi Liu, Texas A&M U. (co-advised with Matt Young), 2010-2014.
Current Position: Tenure-track Assistant Professor, Washington State U.

Ph.D. students:

- Adrian Barquero-Sanchez, Texas A&M U. (graduated Summer 2016, Associate Professor at the University of Costa Rica)
- Narissara Khoachim, Texas A&M U.
- Wei-Lun Tsai, Texas A&M U.

Undergraduate/REU students:

- Josiah Banks, REU student at Texas A&M U.
Banks is a Ph.D. student at Purdue U.
- George Boxer, REU student at U. of Wisconsin (Madison)
Boxer won a *Churchill Fellowship*, graduated with a Ph.D. from Harvard U., and is a Dickson Instructor at the U. of Chicago.
- Lindsay Cadwallader, REU student at Texas A&M U.
Cadwallader is a Ph.D. student at Boston U.
- Olivia Cannon, REU student at Texas A&M U.
Cannon is a Ph.D. student at the U. of Minnesota.
- Peter Diao, REU student at U. of Wisconsin (Madison)
Diao graduated with a Ph.D. from Stanford U.

- Jennifer Bryson, undergraduate student at Texas A&M U.
Bryson won an *NSF Graduate Fellowship* and is a Ph.D. student at UC-Irvine.
- Robert Cass, REU student at Texas A&M U.
Cass won an *NSF Graduate Fellowship*, honorable mention for the *Goldwater Scholarship*, and is a Ph.D. student at Harvard U.
- Samuel Dittmer, REU student at Texas A&M U.
Dittmer won honorable mention for an *NSF Graduate Fellowship* and is a Ph.D. student at UCLA.
- Tyler Genao, REU student at Texas A&M U.
Genao won an *NSF Graduate Fellowship* and is a Ph.D student at the U. of Georgia.
- Arianna Ianuzzi, REU student at Texas A&M U.
- Alexander Mathers, REU student at Texas A&M U.
- Emily Peirce, REU student at Texas A&M U.
Peirce is a Ph.D. student at Rice University.
- Michael Proulx, REU student at Texas A&M U.
- Maria Ross, REU student at Texas A&M U.
- Stephanie Seybert, REU student at Texas A&M U.
- Yan (Kevin) Sheng, REU student at Texas A&M U.
- Katherine Weber, REU student at Texas A&M U.
Weber is a Ph.D. student at the U. of Minnesota.

Teaching:

Texas A&M U.

- Analytic Number Theory, M 626, Spring 2018 (Graduate course)
- Linear Algebra, M 304, Fall 2017 (two sections)
- Linear Algebra, M 323, Spring 2017
- Linear Algebra (Honors section), M 323, Fall 2016
- Linear Algebra, M 323, Fall 2016
- Analytic Number Theory, M 626, Spring 2016 (Graduate course)
- Linear Algebra (Honors section), M 323, Fall 2015
- Linear Algebra, M 323, Fall 2015
- Linear Algebra (Honors section), M 323, Spring 2015
- Introduction to Number Theory (Honors section), M 427, Fall 2014
- Linear Algebra, M 304, Fall 2014
- Complex Variables, M 407, Spring 2014
- Topics in Applied Mathematics, M 311, Fall 2013
- Linear Algebra (Honors section), M 323, Spring 2013
- Complex Variables, M 407, Fall 2012
- Methods of Applied Mathematics I, M 601, Summer 2012 (Graduate course)
- Analytic Number Theory, M 626, Spring 2012 (Graduate course)
- Topics in Applied Mathematics, M 311, Fall 2011
- Linear Algebra, M 323, Spring 2011
- Topics in Applied Mathematics, M 311, Fall 2010

U. of Wisconsin (Madison)

- Modern Algebra, M 541, Spring 2010
- Analytic Number Theory, M 749, Fall 2009 (Graduate course)
- Finite Mathematics, M 210, Spring 2009
- Elementary Matrix and Linear Algebra, M 340, Spring 2009
- Calculus with Algebra and Trigonometry I, M 171, Fall 2008

Concordia U. (Montréal)

- Fundamental Mathematics II (Business Calculus), M 209, Winter 2008

U. of Texas (Austin)

- Sequences, Series, and Multivariable Calculus, M W408D, Summer 2006
- Structure of Modern Geometry, M S333L, Summer 2006

Teaching Assistant, U. of Texas (Austin), 2000-2005

Contact Information:

Texas A&M University
Department of Mathematics
Mailstop 3368
College Station, TX 77843-3368

Office: Blocker 641F
Email: masri@math.tamu.edu
Telephone: (979) 845-7554
Web page: www.math.tamu.edu/~masri/