

Ian Wagner

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Positions Held

Postdoctoral Researcher, Vanderbilt University.

Fall 2019–

Education

B.S. Mathematics, Emory University.

Fall 2011 – Spring 2015

B.S. Physics, Emory University.

Fall 2011 – Spring 2015

Ph.D Mathematics, Emory University.

Fall 2015 – Spring 2019

Research

Research Interests

Number theory

Modular forms

Harmonic Maass forms

L -functions

Combinatorics

Publications

1. E. Alwaise, R. Dicks, J. Friedman, L. Gu, Z. Harner, H. Larson, M. Locus, I. Wagner, and J. Weinstock. *Shifted distinct-part partitions identities in arithmetic progressions. Annals of Combinatorics* (2017) 21: 4, pp. 479-494.
2. M. Locus and I. Wagner. *Congruences for powers of the partition function. Annals of Combinatorics* (2017) 21: 1, pp. 83-93.
3. I. Wagner. *Conjugacy growth series for wreath product finitary symmetric groups. Research in Number Theory* (2017), 3: 17.

4. I. Wagner. *Harmonic Maass form eigencurves*. *Research in the Mathematical Sciences* (2018), 5: 24.
5. K. Ono, R. Schneider, and I. Wagner. *Partition-theoretic formulas for arithmetic densities*. *Proceedings of Number Theory in Honor of Krishna Alladi's 60th Birthday*, Springer, accepted for publication.
6. H. Larson and I. Wagner. *Hyperbolicity of the partition Jensen polynomials*. *Research in Number Theory* (2019) 5:19.
7. I. Wagner. *The Jensen-Pólya program for various L -functions*. *Forum Mathematicum* (2020) 32:2.
8. L. Rolén and I. Wagner. *A note on Schwartz functions and modular forms*. *Archiv der Mathematik* (2020) 115, pp. 35-51.
9. M.L. Dawsey, K. Ono, and I. Wagner. *Multiquadratic fields generated by characters of A_n* . *Journal of Algebra*, (2019) 533, pp. 339-343.
10. M.L. Dawsey, K. Ono, and I. Wagner. *Fields generated by characters of finite linear groups*. *Archiv der Mathematik*, (2021) 116, pp. 487-500.
11. M. Griffin, K. Ono, L. Rolén, J. Thorner, Z. Tripp, and I. Wagner. *Jensen polynomials for the Riemann Ξ -function*. Submitted for publication.
12. R. Schneider, J.A. Sellers, and I. Wagner. *Sequentially congruent partitions and partitions into squares*. Accepted for publication in *The Ramanujan Journal*.
13. A. Babei, L. Rolén, and I. Wagner. *The Riemann Hypothesis for period polynomials of Hilbert modular forms*. *Journal of Number Theory*, (2021) 218, pp 44-61.
14. L. Rolén, Z. Tripp, and I. Wagner. *Cranks for Ramanujan-type congruences of k -colored partitions*. Submitted for publication.
15. K. Ono, R. Schneider, and I. Wagner. *Partition-theoretic formulas for arithmetic densities II*. Accepted in the special issue of the *Hardy-Ramanujan Journal* commemorating the 100th anniversary of Ramanujan's death.
16. K. Bringmann, K. Ono, and I. Wagner. *Eichler integrals of Eisenstein series as q brackets of weighted t -hook functions on partitions*. submitted for publication.
17. I. Wagner. *On a new class of Laguerre-Pólya type functions with applications to number theory*. submitted for publication.

Awards and Grants

Member, Phi Beta Kappa, 2014
Sonny Carter Scholarship, Emory University, 2014
Thomas Aliberti Award, Emory University, 2015
NCAA Postgraduate Scholarship, 2015
Schoettle Graduate Research Award, 2019
NSF Conference grant DMS-1951393, 2019
NSA Math Sciences Program conference grant, 2020

Conferences and Seminar Presentations

Cranks for Ramanujan-type congruences of k -colored partitions, UT Tyler Number Theory and Combinatorics Seminar, November 2020.

Partitions and a conjecture of John Thompson, AMS special session on partition theory and Related topics, University of Florida, Gainesville, FL, November 2019.

Partitions and a conjecture of John Thompson, Palmetto Number Theory Series, University of North Carolina at Charlotte, Charlotte, NC, September 2019.

Schwartz functions and modular forms, “Analytic and combinatorial Number Theory: The Legacy of Ramanujan,” the University of Illinois at Urbana-Champaign, Urbana, IL, June 2019.

Harmonic Hecke eigenlines and Mazur’s problem, AMS Sectional Meeting Special Session on “Recent Advances and Applications of Modular Forms,” Honolulu, Hawaii, March 2019.

Hyperbolicity of partition Jensen polynomials, AMS Sectional Meeting Special Session on “Experimental Mathematics in Number Theory, Analysis, and Combinatorics,” Auburn, Alabama, March 2019.

Harmonic Hecke eigenlines and Mazur’s problem, Low dimensional topology and number theory XI, Osaka, Japan, March 2019.

Hyperbolicity of partition Jensen polynomials, Joint Mathematics Meetings Special Session on “Partition Theory and Related Topics,” Baltimore, MD, January 2019.

Harmonic Hecke eigenlines and Mazur’s problem, New developments in the theory of modular forms over function fields, Pisa, Italy, November 2018.

Harmonic Hecke eigenlines and Mazur’s problem, Vanderbilt University Geometry Seminar, Nashville, TN, October 2018.

Thoughts on Sphere Packing, Vanderbilt University Computational Analysis Seminar, Nashville, TN, October 2018.

Harmonic Hecke eigenlines and Mazur's problem, Canadian Number Theory Association XV at Universite Laval, Quebec City, Canada, July 2018.

Hyperbolicity of partition Jensen polynomials, Combinatory Analysis Conference at Penn State University, State College, PA, June 2018.

Harmonic Hecke eigenlines and Mazur's problem, International Conference on Number Theory at SASTRA University, Kumbakonam, India, December 2017.

Harmonic Hecke eigenlines and Mazur's problem, Palmetto Number Theory Series, Knoxville, TN, September 2017.

Teaching

Vanderbilt University

Instructor, M3320/5320 Error-correcting codes and cryptography, Fall 2021.

Instructor, M2600/5600 Linear Algebra, Spring 2021.

Instructor, M2420 Methods of ordinary differential equations, Fall 2020.

Instructor, M3800/5800 Theory of numbers, Fall 2020.

Instructor, M2420 Methods of ordinary differential equations, Spring 2020.

Instructor, M2420 Methods of ordinary differential equations, Fall 2019.

Instructor, M3800/5800 Theory of numbers, Fall 2019.

Emory University

Instructor, M111 Calculus I, Fall 2018.

Teaching Assistant, M221 Linear Algebra (two sections), Spring 2018.

Instructor, M111 Calculus I, Fall 2017.

Teaching Assistant, M221 Linear Algebra (two sections), Spring 2017.

Teaching Assistant, M221 Linear Algebra (two sections), Fall 2016.

Professional Service

Co-organizer of the Shanks workshop on “100 years of mock theta functions: New directions in partitions, modular forms, and mock modular forms”, 2022.

Co-organizer of the AMS special session on “modular forms and combinatorics” at the Joint Math Meetings 2022.

Co-organizer of Number theory seminar, Vanderbilt University, 2019-present.

Advisor at the Emory University Number Theory Research Experience for Undergraduates (REU), Summer 2018.

Advisor at the Emory University Number Theory Research Experience for Undergraduates (REU), Summer 2019.

Volunteer for the Nashville Math Club for middle school and high school students, 2019-2021.

Referee work: Referee approximately 20 articles annually.

Other Activities

Emory University Men's Varsity Tennis Assistant Coach.

Fall 2015– Spring 2019

Programming Languages

Proficient with Java.

Proficient with Mathematica.

Proficient with Sage (Python)

Last updated: October 31, 2021