



- PUBLISHED PAPERS**
- Generating weights for the Weil representation of cyclic quadratic modules of even order** (with Luca Candelori and Cameron Franc). *Journal of Number Theory*, 180:474–497, 2017.
- The arithmetic geometry of resonant Rossby wave triads.** *SIAM J. Appl. Algebra Geometry*, 1(1):352–373, 2017.
- The limiting spectral measure for ensembles of symmetric block circulant matrices** (with Murat Koloğlu and Steven J. Miller; appendices with Frederick W. Strauch and Wentao Xiong). *Journal of Theoretical Probability*, 26(4):1020–1060, 2013.
- Robust coin flipping** (with John D. Wiltshire-Gordon). In *Advances in Cryptology—EUROCRYPT 2012*, pages 172–194. Springer Berlin Heidelberg, 2012.
- On the number of summands in Zeckendorf decompositions** (with Murat Koloğlu, Steven J. Miller, and Yinghui Wang). *Fibonacci Quarterly* 49(2):116–131, 2011.
- PREPRINTS**
- Indefinite zeta functions.** arXiv:1912.12364. Posted Dec 2019, submitted.
- PAPERS IN PREPARATION**
- On class field theory for orders** (with Jeffrey C. Lagarias).
- A Kronecker limit formula for indefinite zeta functions.**
- Superirreducible polynomials** (with Jonathan Bober, Lara Du, Dan Fretwell, and Trevor Wooley).
- Gauss composition with level structure** (with Olivia Beckwith).
- Polyharmonic Maass forms and Hecke  $L$ -series** (with Olivia Beckwith).
- UNPUBLISHED/OTHER**
- Indefinite Theta Functions and Zeta Functions.** Ph.D. thesis (University of Michigan), 2017. Advisor: Jeffrey C. Lagarias.
- Spherical matrix ensembles** (with Steven J. Miller), arXiv:1501.01848. 2015.
- Word-induced measures on compact groups** (with John D. Wiltshire-Gordon). arXiv:1102.4353. Posted Feb 2011.
- TEACHING**
- Topics in Modern Geometry**, University of Bristol, co-instructor, Autumn 2018.
- Calculus II**, University of Michigan, principal instructor, Autumn 2015.
- Calculus II**, University of Michigan, principal instructor, Winter 2014.
- Foundations of Computer Science**, University of Michigan, teaching assistant, Autumn 2013.
- Calculus I**, University of Michigan, principal instructor, Winter 2013.

**Differential Equations**, University of Michigan, teaching assistant, Autumn 2012.

**Calculus I**, University of Michigan, principal instructor, Winter 2012.

**Data, Functions & Graphs**, University of Michigan, principal instructor, Autumn 2011.

RESEARCH  
TALKS

Talks on **Complex Equiangular Lines and the Stark Conjectures**

CodEx Seminar, online, Summer 2020.

Number Theory Seminar, Rutgers University, Autumn 2019.

SIAM Conference on Applied Algebraic Geometry, Bern, Switzerland, Summer 2019.

Algebra and Number Theory Seminar, University of Kentucky, Winter 2019.

Number Theory Seminar, The Ohio State University, Winter 2019.

Quebec-Vermont Number Theory Seminar, McGill University, Autumn 2018.

Seminar talk to quantum physics group, University of Massachusetts Boston, Autumn 2018.

Bristol-Oxbridge-Warwick-London (BOWL) 1-day meeting, Oxford, UK, Autumn 2018.

Talks on **The Arithmetic Geometry of Resonant Rossby Wave Triads**

SIAM Annual Meeting (prize lecture), Portland, Oregon, Summer 2018.

Pure Institute Meeting, University of Bristol, Fall 2017.

University of Saskatchewan, Fall 2017.

PDE Seminar, Georgia Institute of Technology, Fall 2016.

Central AMS Sectional Meeting, Fall 2016.

Chicago Number Theory Day, University of Illinois Chicago, Spring 2015.

Talks on **Generating Weights of Modules of Vector-Valued Modular Forms for the Weil Representation**

Building Bridges: 4th EU/US Workshop on Automorphic Forms and Related Topics, Budapest, Hungary, Summer 2018.

Central AMS Sectional Meeting, Fall 2016.

**Indefinite Theta Functions and Zeta Functions**. Linfoot Number Theory Seminar, University of Bristol, Fall 2017.

**Eigenvalue Statistics for Toeplitz and Circulant Ensembles** (with Murat Koloğlu, Steven J. Miller, and Karen Shen). The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Tsukuba, Japan, Summer 2012.

**Talks on Robust Coin Flipping**

EECS Theory Seminar, University of Michigan, Winter 2012.

CRYPTO, University of California, Santa Barbara, Summer 2011.

**Distributions of Eigenvalues of Real Symmetric  $m$ -Circulant Matrices.** Young Mathematicians Conference, Ohio State University, Fall 2010.

OUTREACH

Facilitator for the Julia Robinson Mathematics Festival webinar series, Spring 2020–present.

Activity leader for the Julia Robinson Mathematics Festival, Joint Mathematics Meeting, Denver, Colorado, Winter 2020.

Led and facilitated three Michigan Math Circles for high school and middle school students, 2012–15.

Course assistant for Knot Theory course for high school students at the Young Scholars Program, University of Chicago, Summer 2009.

Co-instructor of Number Theory Seminar for high school students at the Ross Mathematics Program, The Ohio State University, Summer 2008.

Counselor at the Ross Mathematics Program, The Ohio State University, Summers 2007 and 2008.

LEADERSHIP  
AND SERVICE

Heilbronn number theory seminar organiser, University of Bristol, Autumn 2017–Spring 2019 and Autumn 2020–present.

Referee for:

**Journal of Number Theory** (1 paper)

**Journal of Mathematical Physics** (2 papers)

**Communications in Nonlinear Science and Numerical Simulation** (1 paper)

COMPUTER  
SKILLS

Magma, Mathematica, PARI/GP, Macaulay2, GAP, C, Python, Scheme, LaTeX, HTML, UNIX shell.