

# CURRICULUM VITAE

ELEANOR MCSPIRIT

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## APPOINTMENTS

Vanderbilt University, Postdoctoral Scholar

August 2024 - Present

## EDUCATION

University of Virginia

2020 – 2024

Ph.D. in Mathematics

Advisor: Ken Ono

Thesis: *Insights From Number Theory: From Arithmetic Geometry to Quantum Topology*

University of California, Berkeley

2016 – 2020

B.S. in Mathematics

Minor in Gender & Women's Studies

Summa Cum Laude

## RESEARCH PUBLICATIONS

1. L. Liles and E. McSpirit, *Infinite Families of Quantum Modular 3-Manifold Invariants*. Communications in Number Theory and Physics **18** (2024), no. 1, 237-260.
2. E. McSpirit and K. Ono, *Hypergeometry and the AGM over Finite Fields*. To appear in Contemporary Mathematics, American Mathematical Society.
3. E. McSpirit and K. Ono, *Zeros in the character tables of symmetric groups with an  $\ell$ -core index*. Canadian Mathematical Bulletin **66** (2023), no. 2, 467-476.
4. E. McSpirit and K. Scheckelhoff, *On the number of 2-hooks and 3-hooks of integer partitions*. Bulletin of the Australian Mathematical Society **107** (2023) no. 3, 432-439.
5. A. Lin, E. McSpirit, and A. Vishnu, *Algebraic relations between partition functions and the  $j$ -function*. Research in Number Theory **6** (2020) no. 2.

## EXPOSITORY PUBLICATIONS

1. E. McSpirit, *Swinerton-Dyer and the Ramanujan Congruences for  $\tau(n)$* . To appear in Ramanujan Handbook by Springer.
2. E. McSpirit, *K3 Surfaces and Ramanujan's Sum of Two Cubes*. To appear in Ramanujan Handbook by Springer.

## HONORS AND AWARDS

- AMS-Simons Travel Grant, 2024-2026
- Dean's Doctoral Fellowship, University of Virginia, 2020-2024

## CONFERENCE AND SEMINAR TALKS

- 2024 Dec Joint AMS/NZMS/AustMS Meeting  
Special Session on Special Functions,  $q$ -Series and Beyond
- Apr AMS Special Session on Elementary Number Theory and Elliptic Curves, Howard
- Mar Meeting on Plumbings and Spectra, Caltech  
Algebra, Geometry, and Number Theory Seminar, University of South Carolina
- Feb Algebra and Number Theory Seminar, Louisiana State University  
The Web of Modularity, Tulane University  
Algebra Seminar, Virginia Tech
- Jan Graduate Student Seminar, University of Virginia  
Joint Mathematics Meetings, San Francisco  
AMS Special Session on Mock modular forms, physics, and applications  
AMS Special Session on Partition Theory and  $q$ -Series
- 2023 Oct Vanderbilt University Number Theory Seminar  
AMS Special Session on Number Theory and Friends, University of South Alabama
- Sept Ramanujan–Serre Seminar, University of Virginia
- May 35th Automorphic Forms Workshop, Louisiana State University
- Apr AMS Special Session on Hypergeometric Functions,  $q$ -series and Generalizations III
- Jan Texas Number Theory and Combinatorics Seminar
- 2022 Mar Graduate Student Seminar, University of Virginia
- Jan Joint Mathematics Meetings, Virtual  
AMS Special Session on Modular Forms and Combinatorics

## ADDITIONAL CONFERENCE AND WORKSHOP PARTICIPATION

- May 2024: Shanks Conference on  $L$ -functions and Automorphic Forms, Vanderbilt
- September 2023: Merging Categorification, Gauge Theory, & Physics, Simons Collab.

- February 2023: Learning Workshop on BPS States and 3-Manifolds, ICTP
- Summer 2022: PCMI on Number Theory Informed by Computation
- May 2022: 100 Years of Mock Theta Functions, Vanderbilt University
- January 2020: Joint Mathematics Meetings, Denver

## LEADERSHIP AND MENTORSHIP

- Fall 2023: Mentor for Graduate Teaching Assistants.  
Observed and advised five first-time graduate instructors throughout the semester.
- Fall 2023: Mentor for the Directed Reading Program at the University of Virginia.
- Spring 2023–Present: Founding President of the University of Virginia AMS Graduate Student Chapter. Leader of the executive committee and organizing chapter events.
- Summer 2023: Mentor for the University of Virginia REU in Number Theory.  
Advised two projects on Shintani zeta functions and class number formulas.
- Fall 2022: Mentor for the Directed Reading Program at the University of Virginia.  
Advised a project on partitions and the representation theory of the symmetric group.
- Summer 2022: Mentor for the University of Virginia REU in Number Theory.  
Advised a project on the arithmetic of McKay numbers.

## TEACHING

### Vanderbilt University

2024 Fall Instructor of record for MATH 1300 (Calculus I)

### University of Virginia

2024 Spring Instructor of record for MATH 1320 (Calculus II)

2023 Spring Instructor of record for MATH 1320 (Calculus II)

2022 Spring Instructor of record for MATH 1220 (A Survey of Calculus II)

2021 Fall Instructor of record for MATH 1210 (A Survey of Calculus I)

Spring Teaching Assistant for MATH 3315 (Advanced Calculus and Linear Algebra)

2020 Fall Teaching Assistant for MATH 1190 (A Survey of Calculus I with Algebra)

### University of California, Berkeley

2018 Fall Teaching Assistant for MATH 1B (Calculus II)

Spring Teaching Assistant for MATH 53 (Multivariable Calculus)

## REFeree SERVICE

- Annals of Combinatorics
- International Journal of Number Theory
- Israel Journal of Mathematics
- Journal of Number Theory
- Journal of Combinatorial Theory, Series A
- The Ramanujan Journal
- Research in the Mathematical Sciences