

# Robert Dicks

## Education

- B.S., Mathematics, Emory University, Atlanta, GA, May, 2018. *Summa Cum Laude*.
- M.S., Mathematics, Emory University, Atlanta, GA, May, 2018.
- Ph.D., Mathematics, University of Illinois, Urbana, IL. Expected: May, 2023.  
Advisor: Scott Ahlgren.

## Publications and Preprints

1. E. Alwaise, R. Dicks, J. Friedman, L. Gu, Z. Harner, H. Larson, M. Locus, I. Wagner, and J. Weinstock, *Shifted distinct-part partition identities in arithmetic progressions*, Annals of Combinatorics, 21 (2017), 479-494.
2. T. Cotron, R. Dicks, and S. Fleming, *Asymptotics and congruences for partition functions which arise from finitary permutation groups*, Research in Number Theory, 2 (2016), 20.
3. T. Cotron, R. Dicks, and S. Fleming, *Congruences between word lengths statistics for finitary alternating and symmetric groups*, Arch. Math. (Basel), 109 (2017), 201-214.
4. R. Dicks, *A higher weight analogue of Ogg's theorem on Weierstrass points*. Int. J. Number Theory 17 (2021), no. 5, 1155-1162.
5. R. Dicks, *Congruences for level 1 cusp forms of half-integral weight*. Proc. Amer. Math. Soc. 149 (2021), no. 11, 4623-4638.
6. R. Dicks, *Weight 2 CM newforms as  $p$ -adic limits*, accepted for publication in *Ramanujan Journal*
7. C. Albert, O. Beckwith, I. Demetoglu, R. Dicks, J. Smith, and J. Wang *Integer partitions with large Dyson rank* submitted, <https://arxiv.org/abs/2203.08987>
8. R. Dicks, *Congruence relations for  $r$ -colored partitions* submitted, <https://arxiv.org/abs/2206.05449>
9. S. Ahlgren, N. Andersen, and R. Dicks *The Shimura lift for the eta multiplier* in preparation

## Lectures and Conference Presentations

- January, 2017. Asymptotics and Congruences For Partition Functions which Arise from Finitary Permutation Groups.  
AMS Special Session on Partition Theory and Related Topics (Beamer Presentation), Joint Mathematics Meetings, Atlanta GA.
- June, 2017. Composition of Belyi Pairs and their Monodromy Groups. CAARMS 23 Conference (Poster Presentation), Ann Arbor, Michigan.
- June, 2017. Composition of Belyi Pairs and their Monodromy Groups. CAARMS 23 Conference (Beamer Presentation), Ann Arbor, Michigan.
- July, 2017. Cartographic Groups of Regular Toroidal Graphs. Indiana Undergraduate Mathematics Research Conference (Beamer Presentation), Purdue University, West Lafayette, IN.
- July, 2017. Cartographic Groups of Regular Toroidal Graphs. Presentation at the MAA Math-Fest Conference (Beamer Presentation) Chicago, Illinois.
- March 2019. Geometric Ideas in Number Theory. Presentation in the UIUC Graduate Geometry and Topology seminar.
- December 2020. The Geometry of Modular Forms. Presentation in the UIUC Graduate Geometry and Topology seminar.

- May 2021 3-Manifolds and Number Theory. Presentation in the UIUC Graduate Geometry and Topology seminar.
- July 2021 Modular curves, Ogg's theorem, and Modular forms. Virtual Presentation in the PRiME Algebraic Geometry REU.
- December 2021 Arithmetic Applications of Modular Forms. Graduate colloquium talk.

### **Teaching and Grading**

- Fall 2018. Teaching Assistant, Calculus II (ranked as excellent).
- Spring 2019. Teaching Assistant, Calculus I (Biocalculus section).
- Fall 2019. Teaching Assistant, Calculus III (ranked as excellent).
- Spring 2020. Teaching Assistant, Calculus III.
- Fall 2020. Grader, Linear Algebra and Honors Linear Algebra.
- Spring 2021. Teaching Assistant, Calculus III.
- Fall 2021. Teaching Assistant, Calculus III.

### **Undergraduate Research Experience**

- Emory Number Theory and Arithmetic Geometry REU 2015
- Emory Number Theory and Arithmetic Geometry REU 2016
- Purdue PRiME Algebraic Geometry REU 2017

### **Undergraduate Awards**

- Spring 2017. Emory Math Department Chair's Award for Achievement.
- June 2017. Best Undergraduate Poster Presentation at the CAARMS 23 Conference.
- April 2018. Trevor Evans Award.

### **Other Activities**

- Spring 2019. Arizona Winter School participant in the study group for Michael Hopkins on Lubin-Tate spaces.
- Spring 2021. Graduate Team Leader for undergraduate research at the Illinois Geometry Lab, Arithmetic Properties of Partition Ranks.
- Spring 2021. Graduate Student Assistant for the Arizona Winter School for Alex Barrios: A Friendly Introduction to the Theory of Modular Forms.
- Spring 2022 Arizona Winter School participant in the study group for Aaron Pollack on Modular Forms on Exceptional Groups.