

# Olivia Beckwith

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## CONTACT INFORMATION

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## RESEARCH INTERESTS

- **Primary** Number theory, specifically: modular forms, harmonic Maass forms, class numbers, partitions,  $L$ -functions, elliptic curves.
- **Secondary** Theoretical chemistry, computational fluid dynamics.

## EDUCATION

**Harvey Mudd College**, Claremont, CA

- B.S. Math
- Graduation: May 2013, with distinction in math.

**Emory University**, Atlanta, GA

- National Science Foundation Graduate Fellowship
- Fifth year graduate student with advisor Ken Ono
- Expected graduation date: May 2018

## AWARDS

NSF Graduate Fellowship Research Program 2015.

Honorable Mention for NSF Graduate Fellowship Research Program 2014.

Giovanni Borelli Fellowship 2012 Honorable Mention for potential as mathematical researcher.

Honorable mention for Outstanding Presentation for *The distribution of generalized Ramanujan primes* presented by Ryan Ronan and Nadine Amersi, Young Mathematicians Conference, 2011

Dean's List 2010-2012

## PUBLICATIONS

1. *Indivisibility of class numbers of imaginary quadratic fields*. Research in the Mathematical Sciences, accepted.
2. *Extracting Aggregation Free Energies of Mixed Clusters from Simulations of Small Systems: Application to Ionic Surfactant Micelles*, with Xiaokun Zhang, Lara Patel, Robert Schneider, and James Kindt. Journal of Chemical Theory and Computation, accepted.
3. *Asymptotic bounds for special values of shifted convolution Dirichlet series*. Proceedings of the American Mathematical Society, **145**, 2373-2381.

4. *On the number of parts of integer partitions lying in given residue classes* with Michael Mertens. *Annals of Combinatorics*, accepted.
5. *The number of parts in certain residue classes of integer partitions* with Michael Mertens. *Research in Number Theory*, **1**, 11.
6. *Multiplicative properties of the number of  $k$ -regular partitions* with Christine Bessenrodt. *Annals of Combinatorics*, **20** (2016).
7. *Distribution of eigenvalues of weighted, structured matrix ensembles*. With Victor Luo, Steven Miller, Karen Shen, Nicholas Triantafyllou. *INTEGERS* **15** (2015).
8. *The average gap distribution for generalized Zeckendorf decompositions*. With Amanda Bower, Louis Gaudet, Rachel Insoft, Shiyu Li, Steven J. Miller, Philip Tosteson. *The Fibonacci Quarterly*, **51** (2013).
9. *Minkowski length of 3D lattice polytopes* With Matt Grimm, Jenya Soprunova, Bradley Weaver. *Journal of Discrete and Computational Geometry*, **48** 4 (2012).
10. *Generalized Ramanujan Primes*. With Nadine Amersi, Steven J. Miller, Ryan Ronan, Jonathan Sondow. *CANT 2011 and 2012 Proceedings*.

#### INVITED TALKS

1. *Indivisibility of class numbers of imaginary quadratic fields*, Upcoming in University of Bristol Seminar, March 14, 2018.
2. *Indivisibility of class numbers of imaginary quadratic fields*, in AMS Central Sectional Meeting, Special session on real-analytic automorphic forms, September 9, 2017, in Denton, Texas.
3. *Patterns in Integer Partitions*, In University of Pavia Dipartimento di Matematica seminar, July 4, 2017 in Pavia, Italy.
4. *Indivisibility of class numbers of imaginary quadratic fields*, In Wake Forest University number theory seminar. March 23, 2017.
5. *Patterns in Partitions*, In Kennesaw State University MathTalks weekly colloquium, February 22, 2017.
6. *Indivisibility of class numbers of imaginary quadratic fields*, In: Purdue University Automorphic Forms weekly seminar, January 27, 2017.
7. *The number of parts of integer partitions lying in given residue classes* In: AMS special session on experimental mathematics in Athens, Georgia. March, 2016.
8. *The distribution of parts of partitions in certain residue classes* In: SASTRA University, Kumbakonam, India. December 21, 2015.
9. *The distribution of parts of partitions in certain residue classes* In: Pennsylvania State University Partitions Seminar. October 27, 2015.
10. *Multiplicative Properties of the Number of  $k$ -regular partitions*. In: Joint Math Meetings, San Antonio Spring 2015.
11. *Multiplicative Properties of the Number of  $k$ -regular partitions*. In: Pennsylvania State University Partitions Seminar, 2014.
12. *Multiplicative Properties of the Number of  $k$ -regular partitions*. In: University of Florida Number Theory Seminar, 2014.
13. *Generalized Ramanujan Primes*. In: Ramanujan 125, Gainesville, Florida.

OUTREACH

Panelist for STEM Gems: Giving Girls Role Models in STEM Careers, March 16, 2017, at Emory Goizueta Business School.

Coordinator for booth in Atlanta Science Festival representing Emory Department of Math and CS, March 2016 and March 2017.

Coordinator for Emory Math Circle Groups D/C\*. Spring 2017 - Present.

Panelist for Undergraduate Research Panel for Kennesaw Women in Mathematics Day, November 17, 2016.

Coordinator for Emory Math Circle - Euler group. Fall 2016.

Instructor for Emory Math Circle. Spring 2014 - Present.

TEACHING AND ADVISING

Substitute lecturer for Foundations of Math and Intro to Number Theory courses at Emory, Fall 2015 - Spring 2017.

Adviser for Emory Research Experience for Undergraduates, Summer 2016. I mentored Sarah Fleming, 2017 Runner-up for the Schafer prize.

Calculus Instructor for Emory University, Fall 2014 - Spring 2015.

Grader and Calculus tutor for Emory University, 2013-2014.

PROFESSIONAL SERVICE

Referee: The Ramanujan Journal, Annals of Combinatorics, Mathematics of Computation, Research in Number Theory.

Coordinator for the Emory graduate student seminar in algebra and number theory. Spring 2016 - Fall 2016.

ACADEMIC ACTIVITIES

Officer for Graduate Computer Science and Math Society at Emory University. August 2015-May 2016.

Park City Mathematics Institute Undergraduate school. July 2013.

Park City Mathematics Institute Undergraduate School. July 2012.

Budapest Semesters in Math, Fall 2011.

SMALL REU at Williams College. June-Aug, 2011.

Tutor and grader for Harvey Mudd College Department of Mathematics, 2010-2013.

REU at Kent State University. June-Aug, 2010.

Grader for Harvey Mudd College Department of Physics, 2011.

Tutor for Upward Bound, January - May 2010.

Ross Mathematics Program Counselor. June-Aug, 2009.

COMPUTING SKILLS

Programming skills in Matlab, Python, Sage.

NONACADEMIC VOLUNTEER WORK

Big Brothers Big Sisters, December 2015 - August 2016.

Georgia Aquarium Volunteer, September 2016 - present.