

Lola Thompson

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EMPLOYMENT:

Oberlin College

Assistant Professor

July 2013 -

The University of Georgia

VIGRE Postdoctoral Fellow

August 2012 - July 2013

Research Mentor: Paul Pollack

Teaching Mentor: Ted Shifrin

EDUCATION:

Ph.D. in Mathematics, Dartmouth College

June 2012

Adviser: Carl Pomerance

Thesis: *Products of distinct cyclotomic polynomials*

M.A. in Mathematics, Dartmouth College

June 2009

B.S. in Mathematics, University of Chicago

June 2007

B.A. in Economics, University of Chicago

June 2007

RESEARCH PUBLICATIONS:

15. **On integers n for which $x^n - 1$ has a divisor of every degree.**
Submitted for publication. Preprint available upon request.
Joint with C. Pomerance and A. Weingartner.
14. **Systoles of arithmetic hyperbolic surfaces and 3-manifolds.**
Submitted for publication. Available online: arXiv: 1504.05257 [math.GT]
Joint with B. Linowitz, D. B. McReynolds, P. Pollack.
13. **Counting and effective rigidity in algebra and geometry.**
Submitted for publication. Available online: arXiv:1407.2294 [math.GT].
Joint with B. Linowitz, D. B. McReynolds, P. Pollack.
12. **Arithmetic functions at consecutive shifted primes.**
International Journal of Number Theory **11**, no. 5 (2015), p. 1477-1498.
Joint with Paul Pollack.
11. **Bounded gaps between primes in number fields and function fields.**
Proceedings of the American Mathematical Society **143** (2015), p. 2841-2856.
Joint with Abel Castillo, Chris Hall, Robert Lemke Oliver, and Paul Pollack.
10. **The sign changes of Fourier coefficients of Eisenstein series.**
The Ramanujan Journal **37**, no. 2 (2015), p. 223-241.
Joint with Benjamin Linowitz.
9. **Abelian surfaces with prescribed groups.**
Bulletin of the London Mathematical Society **46** (2014), p. 779-792.
Joint with Chantal David, Derek Garton, Zachary Scherr, Arul Shankar, and Ethan Smith.
8. **Variations on a question concerning the degrees of divisors of $x^n - 1$.**
Journal de Théorie des Nombres Bordeaux. **26**, no. 1 (2014), p. 253-267.
7. **Variations on a theorem of Davenport concerning abundant numbers.**
Bulletin of the Australian Mathematical Society **89**, no. 3 (2014), p. 437-450.
Joint with Emily Jennings and Paul Pollack.
6. **Distribution of squarefree values of sequences associated with elliptic curves.**
Contemporary Mathematics **606**, Amer. Math. Soc. (2013), p. 171-188.
Joint with Shabnam Akhtari, Chantal David, and Heekyoung Hahn.

5. **Practical pretenders.**

Publicationes Mathematicae Debrecen **82** (2013), p. 651-667.
Joint with Paul Pollack.

4. **On the degrees of divisors of $T^n - 1$.**

New York Journal of Mathematics **19** (2013), p. 91-116.
Joint with Paul Pollack.

3. **On the divisors of $x^n - 1$ in $\mathbb{F}_p[x]$.**

International Journal of Number Theory **9**, no. 2 (2013), p. 421-430.

2. **Polynomials with divisors of every degree.**

Journal of Number Theory **132** (2012), p. 1038-1053.

1. **Heights of divisors of $x^n - 1$.**

Integers **11A**. Proceedings of the Integers Conference 2009 (2011). Article 20, p. 1-9.

0. **Products of distinct cyclotomic polynomials.**

Ph.D. thesis, Dartmouth College (2012).

EXPOSITORY PAPERS AND SURVEY ARTICLES:

2. **An Euler φ -for-all.**

Girls' Angle Bulletin, June 2013.

1. **On the divisors of $x^n - 1$.**

Electron. Notes Discrete Math. **43** (2013), 141-149.

COURSES TAUGHT:

Assistant Professor, Oberlin College

MATH 133: Calculus I, Fall 2013, Spring 2015.

MATH 134: Calculus II, Fall 2014 (two sections), Fall 2015.

MATH 220: Discrete Mathematics, Fall 2015.

MATH 232: Linear Algebra, Fall 2013, Spring 2014, Fall 2014.

MATH 317: Number Theory, Spring 2014.

MATH 327: Group Theory, Spring 2015.

Instructor, The University of Georgia

MATH 2250: Calculus for Science and Engineering I, Fall 2012, Spring 2013.

Instructor, Dartmouth College

MATH 1: Calculus with Algebra, Fall 2009.

MATH 8: Calculus of One and Several Variables, Spring 2012.

MATH 20: Discrete Probability, Fall 2010.

UNSG 100: Graduate Ethics, Fall 2010.

PERSONAL GRANTS/FELLOWSHIPS/AWARDS:

NSF Grant DMS1601841, 2016 - 2019.

Pending. \$122,242 single-investigator grant.

AMS Simons Travel Grant, 2014 - 2016.

Awarded \$4,000 by the American Mathematical Society and the Simons Foundation.

AWM-NSF Travel Grant, 2014.

Awarded \$1,670 for travel to the Hausdorff Center for Mathematics in July 2014.

MAA Project NExT Leitzel Fellowship, 2013 - 2014.

MRC Collaboration Grant, sponsored by AMS / NSF, 2012 - 2013.

NSF VIGRE Postdoctoral Fellowship, The University of Georgia, August 2012 - July 2013.

CONFERENCE GRANTS:**Number Theory Foundation Grant.**

Awarded \$5,805.20 for the Carl Pomerance 70th Birthday Conference in Athens, GA (June 8-11, 2015). Co-PIs: Paul Pollack, Robert Rumely, Gang Yu.

NSF Grant DMS1502336.

Awarded \$20,576 for the Carl Pomerance 70th Birthday Conference in Athens, GA (June 8-11, 2015). Co-PIs: Paul Pollack, Robert Rumely, Gang Yu.

NSF Grant DMS1500710.

Awarded \$19,220 for the 29th Automorphic Forms Workshop in Ann Arbor, MI (March 2-5, 2015). Co-PIs: Mahesh Agarwal, Benjamin Linowitz.

Number Theory Foundation Grant.

Awarded \$4,920 for the 29th Automorphic Forms Workshop in Ann Arbor, MI (March 2-5, 2015). Co-PIs: Mahesh Agarwal, Benjamin Linowitz.

NSA Grant #131015.

Awarded \$15,788 for the Carl Pomerance 70th Birthday Conference in Athens, GA (June 8-11, 2015). Co-PIs: Paul Pollack, Robert Rumely, Gang Yu.

Microsoft Research.

Awarded \$5,000 for the Women In Sage 5 workshop in Portland, OR (July 28 - August 1, 2014). Co-PI: Anna Haensch.

RESEARCH PRESENTATIONS:**Polynomials with divisors of every degree**

Duke University Number Theory Seminar. November 4, 2015.

Bounded gaps between primes

Dartmouth College Mathematics Department Colloquium. May 21, 2015.

Kent State University Mathematics Department Colloquium. April 16, 2015.

North Dakota State University Mathematics Department Colloquium. March 24, 2015.

Runs of consecutive primes via the Maynard-Tao method

AMS Special Session on Analytic Methods in Elementary Number Theory.
AMS Sectional Meeting (Huntsville, AL), March 28, 2015.

Arithmetic functions at consecutive shifted primes.

American Institute of Mathematics. November 20, 2014.

Applications of the Maynard-Tao method.

AMS Special Session on Interactions between
Geometry, Group Theory, and Number Theory.
AMS Sectional Meeting (East Lansing, MI), March 15, 2015.

Clemson University Number Theory Seminar. November 14, 2014.

Exciting New Faces In Analytic Number Theory (Bonn, Germany). July 12, 2014.

Abelian surfaces over finite fields with prescribed groups.

AMS/MAA Joint Meetings, January 16, 2014.

AMS Special Session on Analytic Number Theory.

AMS Sectional Meeting (Riverside, CA), November 2, 2013.

Special Session on Heights, Diophantine problems, and lattices.

Sums of multiplicative arithmetic functions over abundant numbers.

Integers Conference. October 27, 2013.

Palmetto Number Theory Series XX. September 8, 2013.

Statistical questions about arithmetic objects

University of Georgia Number Theory Seminar. April 10, 2013.

University of South Carolina Number Theory Seminar. April 5, 2013.

The sign changes of Fourier coefficients of Eisenstein series.	
27 th Automorphic Forms Workshop (Dublin, Ireland).	March 12, 2013.
AMS Sectional Meeting (Oxford, MS),	March 2, 2013.
Special Session on Modern Methods in Analytic Number Theory.	
How often is $\#E(\mathbb{F}_p)$ squarefree?	
SouthEastern Regional Meeting On Numbers.	April 13, 2013.
AMS/MAA Joint Meetings,	January 12, 2013.
AWM Workshop on Number Theory.	
On the degrees of divisors of $x^n - 1$.	
Max Planck Institute Number Theory Seminar (Bonn, Germany).	June 26, 2013.
Emory University Algebra and Number Theory Seminar.	February 6, 2013.
University of Michigan Group, Lie and Number Theory Seminar.	October 29, 2012.
University of South Carolina Number Theory Seminar.	October 23, 2012.
Québec-Maine Number Theory Conference.	September 29, 2012.
AMS Sectional Meeting (Rochester, NY),	September 23, 2012.
Special Session on Analytic Number Theory	
Sums of distinct divisors.	
West Coast Number Theory Conference.	December 17, 2012.
Palmetto Number Theory Series XIX.	December 1, 2012.
Canadian Number Theory Association Conference XII.	June 17, 2012.
Products of distinct cyclotomic polynomials.	
University of Georgia AGANT Oberseminar.	September 5, 2012.
University of Washington Number Theory Seminar.	May 3, 2012.
PIMS/SFU/UBC Number Theory Seminar.	April 26, 2012.
CRM Analytic Number Theory Seminar.	April 5, 2012.
Brigham Young University Number Theory Seminar.	February 28, 2012.
West Coast Number Theory Conference.	December 16, 2011.
Brown University Number Theory Seminar.	December 2, 2011.
On the divisors of $x^n - 1$.	
Erdős Centennial Conference (Budapest, Hungary). (poster)	July 2, 2013.
AMS/MAA Joint Meetings,	January 5, 2012.
Special Session on New Perspectives in Multiplicative Number Theory	
Polynomials with divisors of every degree.	
Integers Conference.	October 27, 2011.
AWM Celebration of Women In Math. (poster)	September 18, 2011.
On the divisors of $x^n - 1$ in $\mathbb{F}_p[x]$.	
Maine-Québec Number Theory Conference.	October 2, 2011.
Variations on the practical numbers.	
Upstate Number Theory Conference.	April 30, 2011.
Artin's primitive root conjecture.	
MIT Seminar on Topics in Arithmetic, Geometry, Etc.	December 3, 2010.
φ-practical numbers.	
Québec-Maine Number Theory Conference.	October 3, 2010.
Canadian Number Theory Association Conference XI.	July 13, 2010.
Heights of divisors of $x^n - 1$.	
Integers Conference.	October 17, 2009.
Maine-Québec Number Theory Conference.	October 4, 2009.

RESEARCH WORKSHOPS ATTENDED:**Bounded gaps between primes**

American Institute of Mathematics, November 2014.

Sage Days 62: Women in Sage 5

Co-organizer (with Anna Haensch).
Portland, OR, July 2014.

ELEFANT: Emerging Leaders and Evolving Frontiers in Analytic Number Theory

Hausdorff Center for Mathematics (Bonn, Germany), July 2014.

ENFANT: Exciting New Faces in Analytic Number Theory

Hausdorff Center for Mathematics (Bonn, Germany), July 2014.

Workshop on Polynomials Over Finite Fields

Centre de Recerca Matematica (Barcelona, Spain), May 2014.

Arithmetic Statistics Over Finite Fields and Function Fields

American Institute of Mathematics, January 2014.

AWM Workshop, Joint Mathematics Meetings, January 2013.

One of six recent Ph.D. recipients funded to present a talk at the annual AWM Workshop.

Sage Days 42: Women in Sage 3

Co-organizer (with Jennifer Balakrishnan and Alyson Deines).
University of Washington, July 2012.

Arithmetic Statistics

AMS Mathematics Research Communities, June 2012.

Women In Numbers 2

Banff International Research Station (Banff, Canada), November 2011.

Sage Days 33: Women in Sage 2

University of Washington, September 2011.

The Pretentious View of Analytic Number Theory

AMS Mathematics Research Communities, June 2011.

Introductory Workshop: Arithmetic Statistics

MSRI, February 2011.

Connections for Women: Arithmetic Statistics

MSRI, January 2011.

Sage Days 26: Women in Sage

Microsoft Research & University of Washington, December 2010.

Sage Days 22: Elliptic Curves

MSRI Graduate Workshop, June 2010.

TALKS ON MATH PEDAGOGY:**IBL number theory (for large values of n)**

January 2015, Joint Mathematics Meetings, MAA/NSF Funded Poster Session (poster).
June 2014, Legacy of R. L. Moore Conference.

Using WeBWorK

November 2013, Math Faculty Seminar, Oberlin College.

Flipping the classroom (without turning your life upside down)

October 2013, Ohio Project NExT, MAA Ohio Sectional Meeting.

UNDERGRADUATE-LEVEL TALKS:**Twin primes and their kin**

Plenary talk.

November 2014, Southeastern Conference for Undergraduate Women In Mathematics.

Twin primes and their kin

October 2015, Butler University.

April 2014, Kenyon College.

March 2014, Oberlin College.

March 2014, University of Georgia.

Are there infinitely many pairs of twin primes?

November 2014, Clemson University Math Club.

On the divisors of $x^n - 1$

June 2013, Clemson University REU.

Curious patterns in the divisors of $x^n - 1$

January 2012, Oberlin College.

January 2012, Ursinus College.

January 2012, Whittier College.

November 2011, Goucher College.

Coefficients of Cyclotomic Polynomials

November 2009, Dartmouth Math Society.

Heights of Divisors of $x^n - 1$

September 2009, Women In Math In New England.

TALKS FOR HIGH SCHOOL STUDENTS:**Twin primes and their kin**

July 2014, Ross Mathematics Program.

The Mathematics of SET

June 2013, UGA Math Camp.

Number Theory and Security in the Digital Age

July 2010, Ross Mathematics Program.

Bertrand's Postulate

July 2009, Ross Mathematics Program.

PROFESSIONAL DEVELOPMENT:**MAA PREP Workshop on Inquiry-Based Learning**, June 2014.

Kenyon College

Partially funded by the NSF to attend a week-long workshop in which participants design a course for the 2014-2015 academic year that will incorporate inquiry-based learning methods.

Sharing Responsibility for Classroom Environments and Learning, February 2014.

Oberlin Center for Teaching Innovation and Excellence

Participated in a three-hour workshop led by Allison Cook-Sather on creating faculty-student partnerships to strengthen teaching and learning in higher education.

IBL Workshop, October 2013.

MAA Ohio Section Meeting, Cleveland State University

Participated in a two-hour introductory workshop led by Carol Schumacher on using inquiry-based learning methods.

Project NExT, August 2013.

MathFest, Hartford, CT

Participated in Project NExT, a professional development for new or recent Ph.D.s in the mathematical sciences. Project NExT addresses all aspects of an academic career: improving the teaching and learning of mathematics, engaging in research and scholarship, and participating in professional activities.

Legacy of R. L. Moore – IBL Conference, June 2013 & June 2014.

University of Texas at Austin

Funded by the Educational Advancement Foundation to attend a three-day workshop on developing and implementing inquiry-based learning techniques.

Active Learning Institute

Dartmouth Center for the Advancement of Learning, August 2011.

Selected from teaching faculty across disciplines at Dartmouth College to participate in an intensive two-day workshop on creating learner-centered educational experiences in the classroom.

Mentoring Workshop

Dartmouth Center for the Advancement of Learning, January 2010.

Participated in a four session workshop focused on developing the skills necessary to serve as a research mentor to undergraduate and graduate students.

Teaching Seminar

Dartmouth College, Summer 2009.

Participated in an intensive summer-long training course taken by Dartmouth's post-qualifying exam graduate students. The course included reading and discussion of material on the philosophy and science of learning and teaching. Participants also designed and executed two week-long mathematics workshops for high school students and guest-lectured for two class periods in a Dartmouth course (in my case, *Math 31: Abstract Algebra*).

SYNERGISTIC ACTIVITIES:

Invited Faculty Panelist

Nebraska Conference for Undergraduate Women in Math, January 2015.

Provided mentorship to undergraduates interested in pursuing careers in mathematics. Spoke in a panel on "Random bits of advice" and facilitated breakout sessions on "Research in Mathematics" and "Various Teaching Opportunities."

Instructor

UGA Math Camp, University of Georgia, June 2013.

Designed a hands-on course in graph theory for local high school students. Gave a plenary talk on the mathematics behind the card game SET.

Panelist

Sonia Kovalevsky Math Day, Dartmouth College, November 2011.

Provided advice to middle school girls on pursuing a career in mathematics.

Calculus Instructor

Summer Institute for the Gifted, Dartmouth College, August 2010.

Designed and taught individualized calculus courses based on the Renzulli learning model.

Lecturer

CTY Odyssey Program In Mathematics, Dartmouth College, May 2010 & May 2011.

Member of the organizing committee (2011). Designed and led exploratory sessions for middle school students on patterns in the prime numbers and cryptography.

Instructor

Exploring Mathematics, Dartmouth College, July 2009

Worked with three other instructors to develop and teach hands-on courses on topics from group theory and combinatorics.

Invited Panelist

Nebraska Conference for Undergraduate Women in Math, January 2009.

Provided mentorship to undergraduate women interested in pursuing graduate studies in mathematics. Chaired a session of undergraduate research talks in number theory.

Teaching Assistant

Cryptography & Security Camp, Dartmouth College, June 2008.

Assisted high school students with cryptography problem sets and programming.

Counselor

Ross Mathematics Program, The Ohio State University, Summer 2007.

Provided individualized instruction in elementary number theory to high school students using the Moore method.

CONFERENCES AND SEMINARS ORGANIZED:**Carl Pomerance 70th Birthday Conference**

Co-organizer (with Paul Pollack, Robert Rumeley and Gang Yu).

University of Georgia, June 2015.

Automorphic Forms Workshop

Co-organizer (with Benjamin Linowitz and Mahesh Agarwal).

University of Michigan, March 2015.

Cleveland Area Number Theory Seminar

Founder and Co-organizer (with Gang Yu).

Sage Days 62: Women in Sage 5

Co-organizer (with Anna Haensch).

Portland, OR, July 2014.

Panel Discussion on *Tried and true practices for IBL and active learning*

Panel Moderator and Co-organizer (with Susan Crook, William Lindsey and Taylor Martin).

Project NExT, AMS/MAA Joint Mathematics Meetings (2014).

Sage Days 42: Women in Sage 3

Co-organizer (with Jennifer Balakrishnan and Alyson Deines).

University of Washington, July 2012.

Dartmouth College Number Theory Seminar

Organizer, September 2008 - June 2010.

SERVICE TO THE PROFESSION:**MAA Ohio Committee on Section Activities**

Committee Member, Fall 2013 - Present.

Judge for MAA Student Paper Session 4

MAA MathFest (2013).

Journal Referee

The American Mathematical Monthly (2015).

Mathematical Proceedings of the Cambridge Philosophical Society (2015).

Finite Fields and Applications (2015).

Acta Arithmetica (2013).

The International Journal of Number Theory (2013).

The American Mathematical Monthly (2012).

Mathematical Reviews

Reviewer, September 2012 - Present.

Reviews: MR2904139.

SERVICE TO OBERLIN:

Sigma Xi, Oberlin Chapter

Vice President, Fall 2015 - Present.

Cognitive Science Committee

Member, Fall 2014 - Spring 2015.

Mead-Swing Lectureship Committee

Member, Fall 2014 - Present.

PROFESSIONAL AFFILIATIONS:

American Mathematical Society, 2007 - Present.

Mathematical Association of America, 2012 - Present.

Association for Women In Mathematics, 2006 - Present.

REFERENCES: Available upon request.