

Seth Harris

Curriculum Vitae

Drew University
Hall of Sciences 302
Madison, NJ 07940

Mathematics and Computer Science
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EDUCATION

Dartmouth College

Ph.D., Mathematics June 2017

Advisor: Marcia Groszek

Thesis: *On-Line Algorithms and Reverse Mathematics*

Research Areas: Logic, Computability Theory

Master of Arts, Mathematics June 2011

Case Western Reserve University

Master of Science, Mathematics January 2005

Bachelor of Science, Mathematics May 2003

Minor in Music

TEACHING

Visiting Assistant Professor - Drew University

Math 310: Foundations of Higher Mathematics Fall 2017

Math 400: Seminar in Mathematics: Mathematical Logic Spring 2017

HON 300: Honors Tutorial (independent study in Galois Theory) Fall 2016

Math 335: Abstract Algebra Spring 2016

Math 151: Calculus and Analytic Geometry II 2016–2017

Math 150: Calculus and Analytic Geometry I 2015–2017

Math 001: Preparation for Calculus 2015–2016

Students learned LaTeX to type assignments in Math 335, Math 400, and the upcoming Math 310. Students learned Mathematica to solve calculus problems in Math 150. In Math 400, students wrote a capstone paper and final presentation broadly related to logic; Beamer was introduced though not required. Math 150 and Math 151 used the online WebAssign problem database.

Graduate Instructor - Dartmouth College

Math 20: Discrete Probability Fall 2012

Math 1: Calculus With Algebra Fall 2011

Took full responsibility for the courses, designed syllabi, graded homework and exams, held office hours, and maintained the course websites. Math 20 had a substantial Matlab component, and students regularly wrote Matlab code to simulate probability experiments. Math 1 used the online WebWork problem database, for which I designed homework problems.

Mathematics Department Teaching Seminar - Dartmouth College

Intensive 10-week seminar preparing graduate students for teaching our first Dartmouth courses. Our class of 6 graduate students designed two week-long summer math camps, *Number Theory* and *Math and Games*, for local middle and high school students. Also read and discussed educational philosophy, worked to improve our public speaking and lecturing skills, and gave guest lectures in Dartmouth courses, which we videotaped and critiqued.

Teaching Assistant - Dartmouth College

Math 17: Game Theory	Fall 2013
Math 23: Differential Equations	2010–2011
Math 22: Linear Algebra With Applications	Fall 2010
Math 3: Introduction to Calculus	Fall 2009

Held group tutorial sessions three nights per week, proctored and graded exams. Taught five lectures on Combinatorial Game Theory for Math 17. Taught supplemental lectures on matrix algebra for Math 23.

Instructor - Massachusetts College of Pharmacy and Health Sciences

MAT 151: Calculus I	2006–2009
MAT 152: Calculus II	
MAT 261: Statistics	
MAT 197: Computer Applications	
MAT 150: Precalculus	
MAT 141: Algebra and Trigonometry	

Took full responsibility for the above courses, wrote and graded homework and exams, held office hours. Lectures included online demonstrations, graphing calculators, Blackboard, and statistical functions in Excel. Statistics and Computer Applications had larger projects for which I gave feedback to every student.

Instructor - Fisher College

MA 121: Basic Statistics	2007–2009
MA 107: College Algebra	
MA 106: Elementary Algebra	
MA 003: Fundamentals of Arithmetic and Algebra	

Team Instructor - Mass Insight Education, Boston, MA

2004–2006

Mathematics as a Second Language
Patterns, Relations, and Algebra

Instructed, along with a team, a content-based mathematics training institute for K–8 teachers and math coaches. Accredited by Lesley University as a graduate course in education. Taught eight-day courses *Mathematics as a Second Language* and *Patterns, Relations, and Algebra* for teachers in six urban districts throughout Massachusetts.

Graduate Instructor - Case Western Reserve University

2004

Math 121: Calculus for Science and Engineering I

Teaching Assistant - Center for Talented Youth

<i>Math Sequence</i> , Skidmore College	Summer 2002
<i>Reasoning</i> , Roger Williams University	Summer 2001

Collaborated with instructor to teach three-week mathematics courses for gifted students aged 12–16, sponsored by Johns Hopkins University. In Math Sequence, I worked one-on-one helping students learn high-school mathematics at their own pace. In Reasoning, I also presented topics in logic, set theory, and deductive reasoning.

Supplemental Instructor - Case Western Reserve University

2001–2003

Tutored students in calculus and probability, assisted students individually in weekly small group sessions, reviewed and lectured material in weekly large group sessions.

HONORS, AWARDS, SERVICE

Drew University

Supervised Honors Tutorial of Jeffrey Moorhead Fall 2016
 Jeffrey's paper was published in the Drew Review;
 the first math paper in the undergraduate journal's 10-year history.

Dartmouth College

Outstanding Graduate Student Teacher May 2011
Presented by Dartmouth Center for the Advancement of Learning
Organized Logic Seminar 2014–2015
Dartmouth College Graduate Fellowship 2009–2014

Society of Actuaries

Passed SOA Exams MLC, FM, and P 2003–2007

Case Western Reserve University

Max Morris Prize for Outstanding Undergraduate Math Major April 2003
Case Alumni Association Scholarship 2002–2003
Provost's Scholarship 1999–2003

PRESENTATIONS

New England Recursion and Definability Seminar - University of Connecticut

On-Line Algorithms and Reverse Mathematics April 2017
Evasion, Prediction, and On-Line Graph Problems May 2015

Joint Mathematics Meetings - Atlanta, GA

On-Line Algorithms and Reverse Mathematics January 2017

RISE Talk Series - Drew University

Reverse Mathematics and Computability November 2016

Logic Seminar - Dartmouth College

On-Line Algorithms and Reverse Mathematics January 2017
Bushy-Tree Forcing and Friedberg's Lemma January 2015
Graph Colorings With and Without WKL_0 April 2014
On the strength of proving a finite combinatorial statement infinitely often October 2013
The Complexity of the Finite Jordan Curve Theorem April 2013
Ramsey's Theorem for Trees February 2013

Graduate Student Seminar - Dartmouth College

The Reverse Mathematics of Sequential Finite Combinatorics November 2013
Three Notions of Algorithmic Randomness January 2012
A Crash Course In Computability Theory July 2011

RESEARCH PAPERS

Evasion, Prediction, and On-Line Algorithms, joint with François Dorais, in preparation.
On-Line Algorithms and Reverse Mathematics, Ph.D. Thesis, May 2017.

REFERENCES

Available upon request.