Grant Molnar Curriculum Vitae

Department of Mathematics, Dartmouth College, 245 Kemeny Hall, Hanover, NH 03755
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Education

PhD, Mathematics, *Dartmouth College*, Hanover, NH — Fall 2018 - Present
Advisor: John Voight

MS, Mathematics, *Brigham Young University*, Provo, UT — Winter 2017 - Summer 2018
Advisors: Michael Griffin and Paul Jenkins
Thesis: *The arithmetic of modular grids*

BS, Mathematics, *Brigham Young University*, Provo, UT — Fall 2013 - Fall 2016

Awards and Fellowships

Dartmouth Graduate Fellowship	Fall 2018 - Summer 2023
Gridley Fund for Graduate Mathematics	Fall 2018 - Summer 2019
NSF Graduate Research Fellowship Honorable Mention	April 2018
BYU Academic Scholarship	Spring 2015 - Winter 2016
BYU Math Department Scholarship	Fall 2016
BYU Math Department Scholarship	Fall 2015
BYU Academic Scholarship	Fall 2013 - Winter 2014

Research Publications and Preprints

The arithmetic of modular grids, *with Michael Griffin and Paul Jenkins*
Submitted for publication. arXiv:2012.14403

Odd, spoof perfect factorizations, *with the BYU Computational Number Theory Group*
Submitted for publication. arXiv:2006.10697

Zagier duality for level p weakly holomorphic modular forms, *with Paul Jenkins*
The Ramanujan Journal **50**, 93–109 (2019). arXiv:1709.10023

Graphs with the strong Havel-Hakimi property, *with Michael Barrus*
Graphs and Combinatorics **32**, 1689–1697 (2016). arXiv:1505.00085

Manuscripts in Preparation

Reactive means and the prisoner's dilemma, *with Feng Fu*

Telescopic, multiplicative, and rational extensions of summations, *with Robert Dawson*

Multiplicative summations into algebraically closed fields, *with Robert Dawson*

Odd, spoof quasiperfect factorizations, *with Jonathan Hales*

Expository Notes

Fast-growing series are transcendental, *with Robert Dawson*
Unpublished. arXiv:2102.12995

Teaching Experience

Dartmouth College, Hanover, NH (Instructor)

Math 1 (Algebra and Calculus)	Fall 2020

Dartmouth College, Hanover, NH (Teacher's Assistant)

Math 100 / Computer Science 49/149 (Decision Theory)	Spring 2021
Math 23 (Differential Equations)	Winter 2020
Math 3 (Calculus)	Fall 2019
Math 22 (Linear Algebra)	Spring 2019
Math 22 (Linear Algebra)	Fall 2018

Brigham Young University, Provo, UT (Instructor)

Math 112 (Calculus I)	Summer 2017

Brigham Young University, Provo, UT (Teacher's Assistant)

Math 112 (Calculus I)	Fall 2017
Math 113 (Calculus II)	Winter 2017

Brigham Young University, Provo, UT (Grader)

Math 570 (Matrix Analysis)	Winter 2017
Math 112 (Calculus I)	Fall 2015

Conference Talks

Formal summation of divergent series — September 26, 2020
2020 Maine-Québec Number Theory Conference (virtual)

The arithmetic of modular grids — October 5, 2019
2019 Maine-Québec Number Theory Conference

The arithmetic of modular grids — March 8, 2019
33^{rd} Automorphic Forms Workshop

The arithmetic of modular grids — July 17, 2018
Building Bridges: 4th EU/US Summer School + Workshop on Automorphic Forms

Zagier duality in level p modular spaces — March 21, 2018
32^{nd} Automorphic Forms Workshop

Zagier duality in level p modular spaces — March 3, 2018
2018 BYU Student Research Conference

Zagier duality in level p modular spaces — May 24, 2017
Modular Forms are Everywhere Conference

Weakly holomorphic modular forms of level 11 — March 7, 2017
31^{st} Automorphic Forms Workshop

Weakly holomorphic modular forms of level 11 March 4, 2017
2017 BYU Student Research Conference
Congruence relations in modular forms of prime levels greater than 7 March 21, 2015
2015 BYU Student Research Conference
Residues and independence numbers of graphs March 15, 2014
2014 BYU Student Research Conference

Seminar Talks

Absurd equalities and Runge's method: the degenerate case March 30, 2021
Dartmouth Algebra and Number Theory Seminar (virtual)
p-adic Hodge theory March 2, 2021
Reading Seminar on Classical and Quadratic Chabauty (virtual)
Odd, spoof quasiperfect factorizations February 9, 2021
Dartmouth Algebra and Number Theory Seminar (virtual)
A primer in social choice theory January 20, 2021
Dartmouth Graduate Student Seminar (virtual)
Examples of Kedlaya's algorithm November 19, 2020
Reading Seminar on Classical and Quadratic Chabauty (virtual)
The LCM product and Grönwall's theorem November 17, 2020
Dartmouth Algebra and Number Theory Seminar (virtual)
Reactive means and the prisoner's dilemma October 7, 2020
Dartmouth Graduate Student Seminar (virtual)
Formal summation of divergent series: an algebraic approach April 28, 2020
Dartmouth Algebra and Number Theory Seminar (virtual)
On the infinitude of the natural numbers February 12, 2020
Dartmouth Graduate Student Seminar
Variations of Hodge structures November 26, 2019
Reading Seminar on Shimura Varieties
Hodge structures November 14, 2019
Reading Seminar on Shimura Varieties
Savage's expected utility and making good decisions November 13, 2019
Dartmouth Graduate Student Seminar
Geometric and generalized calculus October 8, 2019
Dartmouth Graduate Student Seminar
Summing divergent series July 31, 2019
Dartmouth Graduate Student Seminar
Real analysis: a nonstandard approach April 17, 2019
Dartmouth Graduate Student Seminar
Why save the universe? Set theory with a universal set January 16, 2019
Dartmouth Graduate Student Seminar
The arithmetic of modular grids September 26, 2018
Dartmouth Graduate Student Seminar
The arithmetic of modular grids June 22, 2018
BYU Master's Thesis Defense

Dioids and idempotent geometry II March 13, 2018
BYU Algebra Seminar

Dioids and idempotent geometry I February 27, 2018
BYU Algebra Seminar

Zagier duality in level p modular spaces February 22, 2018
BYU Number Theory Seminar

Average values of arithmetic functions October 12, 2017
BYU Number Theory Seminar

Weakly holomorphic modular forms of level 11 February 9, 2017
BYU Number Theory Seminar

Generating functions for canonical bases of certain level 11 weakly holomorphic modular forms January 26, 2017
BYU Number Theory Seminar

High rank elliptic curves with prescribed torsion December 1, 2016
BYU Number Theory Seminar

Heuristics for elliptic curves of high rank October 20, 2016
BYU Number Theory Seminar

A lemma regarding the Feit-Thompson conjecture November 12, 2015
BYU Number Theory Seminar

Algebraic number theory and the Feit-Thompson conjecture October 1, 2015
BYU Number Theory Seminar

On Hensel's lemma February 12, 2015
BYU Number Theory Seminar

On Newton polynomials March 27, 2014
BYU Number Theory Seminar

Service and Synergistic Activities

Reviewer

zbMATH Open 2021 - Present

Referee

Journal of Number Theory 2018

K-12 Outreach

Utah Math Olympiad Committee Member 2015 - Present
Exploring Mathematics Camp Leader (Graph Theory) July 27-31, 2020
Exploring Mathematics Camp Leader (Cryptography) July 13-17, 2020
Activity Station Leader at Lebanon Ward Pi Day March 7, 2020
Volunteer at Dartmouth Sonia Kovalevsky Day May 11, 2019
Activity Station Leader at Dartmouth Science Day May 4, 2019
Math Circles Guest Speaker on Tropical Algebra February 24, 2018
Math Circles Guest Speaker on Continued Fractions October 21, 2017
Proofreader for Utah State Math Contest February 2017
Math Circles Counselor 2013 - 2015

Other

Dartmouth Graduate Student Council Representative for Math Department — 2020 - Present
- *Service Committee Member* — 2020 - Present
- *Sexual Misconduct Survey Committee Member* — February 2021
- *Budget Committee Member* — August 2020

Dartmouth Algebra and Number Theory Seminar Coordinator — 2019 - Present
BYU Putnam Team Captain — 2014 - 2016

Other

Mathematical Work

Math Tutor — 2013 - Present
Undergraduate Researcher — 2013 - 2016

Achievements and Honors

3^{rd} Place in Virginia Tech Regional Math Competition — October 2016
2^{nd} Place in Search for High Rank Elliptic Curve at 2016 CTNT — August 2016
Eagle Scout — December 2012
Black Belt in Taekwondo — August 2012

Special Training

Dartmouth Mathematics Teaching Seminar — Spring 2020
BYU Mathematics Teaching Seminar — Fall 2018

Computer Skills

Python • C++ • SageMath • Magma • Mathematica

Academic Interests

Analytic Number Theory • Arithmetic Geometry • Game Theory • Logic

Personal Interests

Reading • Writing • Philosophy • Hiking

Conferences and Summer Schools Attended

2021 Joint Mathematics Meetings — January 6-9, 2021
Virtual

Fall 2020 *Algebraic Geometry Northeastern Series* — October 23-25, 2020
Virtual

2020 *Maine-Québec Number Theory Conference* — September 26-27, 2020
Virtual

14^{th} *Algorithmic Number Theory Symposium* — June 29 - July 4, 2020
Virtual

UNCG Summer School in Computational Number Theory and Algebra: Ergodic Theory with Applications to Continued Fractions — May 18-22, 2020
Virtual

2019 *Maine-Québec Number Theory Conference* — October 5-6, 2019
University of Maine, Orono

Fall 2019 *Algebraic Geometry Northeastern Series* Boston College, Boston	September 20-22, 2019
33^{rd} *Automorphic Forms Workshop* Duquesne University, Pittsburgh	March 6-10, 2019
Building Bridges: 4^{th} *EU/US Summer School +* *Workshop on Automorphic Forms and Related Topics* Alfréd Rényi Institute of Mathematics, Budapest	July 9-20, 2018
32^{nd} *Automorphic Forms Workshop* Tufts University, Medford	March 19-22, 2018
Modular Forms are Everywhere Max Planck Institute for Mathematics, Bonn	May 15-26, 2017
31^{st} *Automorphic Forms Workshop* East Tennessee State University, Johnson City	March 6-9, 2017
2017 *BYU Student Research Conference* Brigham Young University, Provo	March 4, 2017
2016 *Connecticut Summer School in Number Theory* University of Connecticut, Storrs	August 8-14, 2016
2015 *BYU Student Research Conference* Brigham Young University, Provo	March 21, 2015
2014 *BYU Student Research Conference* Brigham Young University, Provo	March 15, 2014