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

Teaching Experience

Dartmouth College, Hanover, NH (Instructor)
Math 8 (Multivariable Calculus)   Fall 2021
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

Other Work Experience

Math Tutor   2013 - Present
BYU Putnam Team   2014 - 2016
Undergraduate Researcher   2013 - 2016
Math Circles Counselor   2013 - 2015

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

Telescopic, multiplicative, and rational extensions of summations, *with Robert Dawson*
Submitted for publication. arXiv:2105.04592

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

Expository Notes

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Unpublished.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

Manuscripts in Preparation

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

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

Odd, spoof quasiperfect factorizations, *with Jonathan Hales*

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
33rd 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
32nd 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$^{\text{st}}$ 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

Other Talks

Fast-growing series are transcendental April 21, 2021
Dartmouth Graduate Student Seminar (virtual)
Coalgebras and Hopf algebras April 15, 2021
Reading Seminar on Affine Group Schemes (virtual)
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

Referee	
Journal of Number Theory	2018 - Present
Reviewer	
zbMATH Open	2021 - Present
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

Other

Dartmouth Algebra and Number Theory Seminar Organizer	2019 - Present
Dartmouth Graduate Student Council Finance Officer	2021 - Present
○ *Budget Committee Member*	August 2021
Dartmouth Graduate Student Council Representative for Math Department	2020 - 2021
○ *Service Committee Member*	2020 - 2021
○ *Budget Committee Member*	August 2020
BYU Putnam Team Captain	2014 - 2016

Other

Achievements and Honors

3rd Place in Virginia Tech Regional Math Competition	October 2016
2nd 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

Spring 2021 *Algebraic Geometry Northeastern Series*	May 4-5, 2021
Virtual	
21st *Algebra, Geometry and Combinatorics Day*	April 10, 2021
Virtual	
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

14th *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* September 20-22, 2019
Boston College, Boston

33rd *Automorphic Forms Workshop* March 6-10, 2019
Duquesne University, Pittsburgh

Building Bridges: 4th *EU/US Summer School* +
Workshop on Automorphic Forms and Related Topics July 9-20, 2018
Alfréd Rényi Institute of Mathematics, Budapest

32nd *Automorphic Forms Workshop* March 19-22, 2018
Tufts University, Medford

Modular Forms are Everywhere May 15-26, 2017
Max Planck Institute for Mathematics, Bonn

31st *Automorphic Forms Workshop* March 6-9, 2017
East Tennessee State University, Johnson City

2017 *BYU Student Research Conference* March 4, 2017
Brigham Young University, Provo

2016 *Connecticut Summer School in Number Theory* August 8-14, 2016
University of Connecticut, Storrs

2015 *BYU Student Research Conference* March 21, 2015
Brigham Young University, Provo

2014 *BYU Student Research Conference* March 15, 2014
Brigham Young University, Provo