

Education and Appointments

Bard College	Mathematics Department Chair	2014 – 2017
	Associate Professor	2014 –
	Assistant Professor	2008 – 2014
	Visiting Assistant Professor	2006 – 2008
Colby College	Visiting Assistant Professor	2005 – 2006
University of Massachusetts, Amherst	Ph.D. in Mathematics	2005
Bates College	A.B. in Mathematics and Physics	1999

Research Interests Number Theory, Arithmetic Geometry, Representation Theory, Voting Theory

Work In Progress

1. *The group structure of ℓ -isogenous elliptic curves in towers of finite fields.*
2. *A local-global principle for 4-divisibility of elliptic curves.*
3. *Hasse-Witt invariants for trace forms of Jacobi polynomials.*
4. *On the Plesken Lie Algebra over a finite field.*

Submitted

1. *Subgroups of $GL_3(q)$ with applications to Galois representations.* Submitted 2017.

Publications (undergraduate collaborators in red)

1. *On the Jacobians of curves defined by Generalized Laguerre Polynomials.* To Appear in Experimental Mathematics.
2. (w/ S. Hsiao) *Voting with partially ordered preferences.* To appear in Mathematics and Social Justice: Perspectives and Resources for the College Classroom. G. Karaali & L. Khadavi, Ed.
3. (w/ F. Hajir) *Algebraic properties of Kaneko-Zagier lifts of supersingular polynomials.* Proceedings of the American Mathematical Society. **145**, (6), 2291-2304 (2017)
4. *Real preimages of duplication on elliptic curves.* Missouri Journal of Mathematical Sciences, **29**, (1), 19-26 (2017)
5. (w/ **R. Gajek-Leonard**) *On the Newton polygons of Kaneko-Zagier lifts of supersingular polynomials.* Research in Number Theory, **2** (1), 1-16 (2016)
6. (w/ A. Barghi) *On the solution to a generalized Fermat equation: arithmetic and combinatorics.* Journal of Combinatorics and Number Theory. **7** (2015), no. 3 157–169
7. (w/ **H. Hausman**, A. Pacelli, **S. Pegado**, **F. Wei**) *Arithmetic properties of generalized Rikuna polynomials.* Publications Mathématiques de Besançon: Algèbre et Théorie des Nombres. **1** (2014) 19–33
8. (w/ F. Hajir) *On the Galois groups of Legendre Polynomials.* Indagationes Mathematicae. **25** (2014) 534–552
9. (w/ S. Hsiao, **D. Polett**) *A Borda count procedure for partially ordered ballots.* Social Choice and Welfare. **42** (2014) no. 4 913–926
10. (w/ **A. Etropolski**, E. Sell) *On the ranks of the Jacobians of curves defined by Jacobi Polynomials.* Rocky Mountain Journal of Mathematics **44** (2014), no. 1 23-33

11. (w/ Cass, Rasmussen, Trifunofski) *Specializations of generalized Rikuna polynomials*. International Journal of Number Theory. **10** (2014), no. 3 585–600
12. (w/ F. Hajir) *Primes of prescribed congruence class in short intervals*. Integers **12** (2012) #A56.
13. *Symplectic stabilizers with applications to abelian varieties*. International Journal of Number Theory **8** (2012), no. 2, 321-334.
14. (w/ F. Hajir) *Ramification in iterated towers for rational functions*. Manuscripta Mathematica **137** (2012), no. 3-4, 273-286.
15. (appendix by Y. Zarhin) *Points of small order on three-dimensional abelian varieties*. Journal of Algebra **324** (2010), 565-577.
16. *A computational approach to the 2-torsion structure of abelian threefolds*. Mathematics of Computation **78** (2009), 1825-1836.
17. (w/ F. Hajir, E. Sell) *Algebraic properties of a family of Jacobi polynomials*. Journal de Théorie des Nombres de Bordeaux **21** (2009), no. 1, 71-82.
18. *Local-global properties of torsion points on three-dimensional abelian varieties*. Journal of Algebra **311** (2007), no. 2, 736-774.

Outreach WAMC Academic Minute, September 2015

Reviews AMS Math Reviews (52 papers, 1 book), MAA Reviews (3 books)

Journal and Grant Refereeing

Finite Fields and Applications, American Mathematical Monthly, New York Journal of Mathematics, Publicationes Mathematicae Debrecen, Contemporary Mathematics, Journal of Number Theory, IdEx Bordeaux International Post-Doctoral Program, Iranian Journal of Mathematical Sciences and Informatics, Pi Mu Epsilon

Conferences/Sessions Organized

1. *Arithmetic Dynamics and Galois Theory*, AMS Spring Sectional Meeting, Boston College (2013)
2. MAA PrEP: *Algebraic Number Theory* (w/ A. Pacelli), Williams College (2010)
3. *Algebraic Number Theory*, AMS Spring Sectional Meeting, Worcester Polytechnic Institute (2009)

Recent Invited Talks

1. Special Session, AMS Sectional Meeting, Boston (2018)
2. Number Theory Seminar, Dartmouth College (2018)
3. Special Session, AMS/MAA Joint Meetings, San Diego (2018)
4. Five College Number Theory Seminar, Amherst College (2017)
5. Philadelphia Area Number Theory Seminar, Bryn Mawr College (2017)
6. Departmental Colloquium, Williams College (2016)
7. Number Theory Seminar, CU Boulder (2015)
8. Special Session, AMS/MAA Joint Meetings, San Antonio (2015)
9. Special Session, AMS Sectional Meeting, UNC Greensboro (2014)
10. Maine/Québec Number Theory Conference, University of Maine (2013)

Recent Teaching Initiatives

Redesigned the *Mathematics and Politics* course with support from an HHMI grant in 2014.
Designed an applied PDE course with labs focusing on numerical techniques (2017).
Designed and taught *Uncertainty and Variation* in the inaugural Modern Literacy program (2015-17).
Directed a self-study of the Mathematics Department in 2016-17 resulting in an overhaul of the sophomore-level course offerings and graduation requirements.

21 Senior Projects Advised (2006 – present)

Post-Tenure Service

Mathematics Department Chair	2014 – 2017
Hiring Committee for Tenure-Track Position in Mathematics	2015 – 2016
Hiring Committee for Tenure-Track Position in Mathematics (Chair)	2014 – 2015
First Year Seminar Symposium Mentor	2014 – 2015
AAUP Executive Committee	2014
Pre-Tenure Divisional Evaluator for Bruce Robertson	2014
Fellowships and Awards Committee	2014 – 2015