

Paul Pollack

Curriculum Vitæ¹

University of Georgia

Department of Mathematics

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POSITIONS HELD

University of Illinois

J. L. Doob Research Assistant Professor/NSF Postdoctoral Fellow Fall 2008–Spring 2011

Institute for Advanced Study

Member of the School of Mathematics Fall 2009

Dartmouth College

Visiting Research Scholar Spring 2010

University of British Columbia/Simon Fraser University

Postdoctoral Fellow July 2011–April 2012

University of Georgia

Assistant Professor Fall 2012–Summer 2016

Associate Professor Fall 2016–Summer 2017; with tenure, Fall 2017–Summer 2020

Professor Fall 2020–

EDUCATION

University of Georgia

Bachelor of Science, Mathematics Spring 2003

Princeton University

Fall 2003 – Winter 2005

Dartmouth College

Master of Arts, Mathematics June 2007

Ph.D., Mathematics June 2008

Thesis: *Prime polynomials over finite fields*

HONORS AND AWARDS

Fellow of the American Mathematical Society 2025—

Inducted 2025. “The Fellows of the American Mathematical Society program recognizes members who have made outstanding contributions to the creation, exposition, advancement, communication, and utilization of mathematics.”

Lamar Dodd Creative Research Award 2024

Given by the University of Georgia Research Foundation to “recognize an outstanding body of nationally and internationally recognized scholarly or creative activities in the sciences.”

¹Last updated: January 14, 2025

- UGA Teaching Academy member** 2022—
 Inducted Fall 2022. The Teaching Academy, supported by the Office of Instruction, exists “as a forum to discuss, celebrate and promote teaching excellence.”
- Russell Award for Excellence in Undergraduate Teaching** 2022
 University-wide award recognizing excellence in undergraduate instruction by faculty members in their early academic careers.
- NSF Algebra and Number Theory Award DMS-2001581** 2020–2023
 Statistical Questions in Number Theory and Arithmetic Geometry (award amount \$168,000). Currently on a no-cost extension.
- Honorific member of the Carrera Nacional de Investigadores en Ciencia** since 2019
 The Carrera Nacional de Investigadores en Ciencia, of the Dominican Republic, is a government initiative with the goal of drawing attention to those who have dedicated their life to research in science, technology, and innovation.
- Sandy Beaver Excellence in Teaching Award** 2018
 Award given each year to honor UGA Franklin College faculty members showing “sustained commitment to high-quality instruction”.
- NSF Algebra and Number Theory Award DMS-1402268** 2014–2019
 Statistical problems in elementary, analytic, and algebraic number theory (award amount \$130,925)
- NSF Algebra and Number Theory Award DMS-1502336**
 (co-PI w/ L. Thompson, R. Rumely, and G. Yu) Summer 2015
 Conference grant for “Elementary, analytic, and algorithmic number theory: Research inspired by the mathematics of Carl Pomerance” (award amount \$19,728)
- NSA Conference Award**
 (co-PI w/ L. Thompson, R. Rumely, and G. Yu) Summer 2015
 “Carl Pomerance 70th birthday conference” (award amount \$15,788)

RECENT INVITED ADDRESSES

- 2020 AMS Fall Southeastern Sectional Meeting; special session on “Coding Theory, Cryptography, and Number Theory”** October 2020
 ‘Thoughts on the order of $a \bmod p$ ’
- Luxembourg Number Theory Seminar** October 2020
 ‘Thoughts on the order of $a \bmod p$ ’
- Kansas State Number Theory Seminar** March 2021
 ‘Multiplicative orders mod p ’
- Nancy-Metz Number Theory Seminar** April 2021
 ‘Multiplicative orders mod p ’
- Combinatorial and Additive Number Theory (CANT) 2021** May 2021
 ‘Multiplicative orders mod p ’
- Combinatorial and Additive Number Theory (CANT) 2022** May 2022
 ‘Equidistribution and weak equidistribution for some arithmetic functions’
- LSU Number Theory Seminar** October 2022
 ‘Some distribution problems concerning arithmetic functions’

2023 Joint Meetings; Budapest Semesters in Math. Special Session	January 2023
‘The frequency of partially perfect numbers’	
Math Department Colloquium, Dartmouth College	September 2023
‘Unique factorization: what not everyone knows’	
Number Theory Web Seminar	February 2024
‘Stretching, the truth about unique factorization’	
AMS-UMI meeting; special session on “The Ideal Theory and Arithmetic of Rings, Monoids, and Semigroups”	July 2024
“Elasticity of orders in quadratic number fields”	
Winter 2024 Canadian Math. Soc. Meeting; special session “Celebrating Greg Martin”	November 2024
“Counting primes with a given primitive root, uniformly”	
2025 Joint Math Meetings, special session for the Budapest Semesters in Mathematics	Jan 2025
“How nonunique is your factorization?”	

ACCEPTED PAPERS

- An explicit approach to Hypothesis H for polynomials over a finite field** 2008
The anatomy of integers. Proceedings of a conference on the anatomy of integers, Montreal, March 13th-17th, 2006. Editors: J.M. de Koninck, A. Granville and F. Luca, pp. 259–273
- On a conjecture of Beard, O’Connell and West concerning perfect polynomials** 2008
(joint with L. Gallardo and O. Rahavandrainy)
Finite Fields and their Applications **14**, 242–249
- A polynomial analogue of the twin prime conjecture** 2008
Proc. Amer. Math. Soc. **136**, 3775–3784
- Simultaneous prime specializations of polynomials over finite fields** 2008
Proc. London Math. Soc. **97**, 545–567
- Arithmetic properties of polynomial specializations over finite fields** 2009
Acta Arith. **136**, 57-79
- On the distribution of sociable numbers** (w/ M. Kobayashi and C. Pomerance) 2009
J. Number Theory **129**, 1990-2009
- A remark on sociable numbers of odd order** 2010
J. Number Theory **130**, 1732–1736
- Revisiting Gauss’s analogue of the prime number theorem for polynomials over a finite field** 2010
Finite Fields and their Applications **16**, 290-299
- Hypothesis H and an impossibility theorem of Ram Murty** 2010
Rend. Sem. Mat. Univ. Pol. Torino **68**, 183–197
- Multiperfect numbers with identical digits** (joint with F. Luca) 2011
J. Number Theory **131**, 260–284
- On polynomial rings with a Goldbach property** 2011
Amer. Math. Monthly **118**, 71–77
- On Dickson’s theorem concerning odd perfect numbers** 2011

- Amer. Math. Monthly* **118**, 161–164
13. **Long gaps between deficient numbers** 2011
Acta Arith. **146**, 33–42
 14. **On Hilbert’s solution of Waring’s problem** 2011
Cent. Eur. J. Math. **9**, 294–301
 15. **Powerful amicable numbers** 2011
Colloq. Math. **122**, 103–123
 16. **Values of the Euler and Carmichael functions which are sums of three squares** 2011
Integers **11**, article A13, 16 pages (electronic)
 17. **On some friends of the sociable numbers** 2011
Monatsh. Math. **162**, 321–327
 18. **The greatest common divisor of a number and its sum of divisors** 2011
Michigan Math. J. **60**, 199–214
 19. **Perfect numbers with identical digits** 2011
Integers **11A**. Proceedings of the Integers Conference 2009. Article 18, 11 pages (electronic)
 20. **Quasi-amicable numbers are rare** 2011
J. Integer Sequences **14**, article 11.5.2, 13 pages (electronic)
 21. **The exceptional set in the polynomial Goldbach problem** 2011
Int. J. Number Theory **7**, 579–591
 22. **The Möbius transform and the infinitude of primes** 2011
Elem. Math. **66**, 118–120
 23. **Remarks on a paper of Ballot and Luca concerning prime divisors of $a^{f(n)} - 1$** 2011
New York J. Math **17**, 553–567
 24. **On common values of $\phi(n)$ and $\sigma(m)$, I** (joint with K. Ford) 2011
Acta Math. Hungarica **133**, 251–271
 25. **Two remarks on iterates of Euler’s totient function** 2011
Arch. Math. **97**, 443–452
 26. **An arithmetic function arising from Carmichael’s conjecture** (w/ F. Luca) 2011
J. Théor. Nombres Bordeaux **23**, 697–714
 27. **The average least quadratic nonresidue modulo m and other variations on a theme of Erdős** 2012
J. Number Theory **132**, 1185–1202
 28. **On the parity of the number of multiplicative partitions and related problems** 2012
Proc. Amer. Math. Soc. **140**, 3793–3803
 29. **On perfect and near-perfect numbers** (joint with V. Shevelev) 2012
J. Number Theory **132**, 3037–3046
 30. **Prime-perfect numbers** (joint with C. Pomerance) 2012
Integers **12A**/special issue in memory of J. L. Selfridge, article A14, 19 pages
 31. **Finiteness theorems for perfect numbers and their kin** 2012
American Math. Monthly **119**, 670–681
 32. **How many primes can divide the values of a polynomial?** (joint with F. Luca) 2012

- Acta Arith.* **156**, 19–27
33. **On congruences of the form $\sigma(n) \equiv a \pmod{n}$** (with A. Anavi and C. Pomerance) 2012
Int. J. Number Theory **9**, 115–124
34. **On common values of $\phi(n)$ and $\sigma(m)$, II** (joint with K. Ford) 2012
Algebra Number Theory **6**, 1669–1696
35. **The average least character nonresidue and further variations on a theme of Erdős** (joint with G. Martin) 2013
J. London Math. Soc. **87**, 22–42
36. **On the degrees of divisors of $T^n - 1$** (joint with L. Thompson) 2013
New York J. Math **19**, 91–116
37. **Irreducible polynomials with several prescribed coefficients** 2013
Finite Fields and their Applications **22**, 70–78
38. **Practical pretenders** (joint with L. Thompson) 2013
Publ. Math. Debrecen **82**, 651–667
39. **Sets of monotonicity for Euler’s totient function** (w/ C. Pomerance and E. Treviño) 2013
Ramanujan J. **30**, 379–398
40. **On Mertens’ theorem for Beurling primes** 2013
Canad. Math. Bull. **56**, 829–843
41. **On the distribution of some integers related to perfect and amicable numbers** (joint with C. Pomerance) 2013
Colloq. Math. **30**, 169–182
42. **The smallest inert prime in a cyclic number field of prime degree** 2013
Math. Res. Lett. **20**, 163–179
43. **Paul Erdős and the rise of statistical thinking in elementary number theory** (joint with C. Pomerance) 2013
Erdős Centennial, L. Lovász, I. Z. Ruzsa, and V. T. Sós, eds., János Bolyai Math. Soc. and Springer-Verlag, Hungary, 2013, pp. 515–523
44. **Uncertainty principles connected with the Möbius inversion formula** (with C. Sanna) 2013
Bull. Aust. Math. Soc. **88**, 460–472
45. **Equidistribution mod q of abundant and deficient numbers** 2014
Uniform Distribution Theory **9**, 99–114
46. **A remark on prime divisors of partition functions** 2014
Int. J. Number Theory **10**, 125–131
47. **The error term in the count of abundant numbers** (joint with M. Kobayashi) 2014
Mathematika **60**, 43–65
48. **The smallest prime that splits completely in an abelian number field** 2014
Proc. Amer. Math. Soc. **142**, 1925–1934
49. **Square values of Euler’s function** (joint with C. Pomerance) 2014
Bull. London Math. Soc. **46**, 403–414
50. **The primes that Euclid forgot** (joint with E. Treviño) 2014
Amer. Math. Monthly **121**, 433–437

51. **Variations on a theorem of Davenport concerning abundant numbers** (w/ E. Jennings and L. Thompson) 2014
Bull. Aust. Math. Soc. **89**, 437–450
52. **Prime splitting in abelian number fields and linear combinations of Dirichlet characters** 2014
Int. J. Number Theory **10**, 885–903
53. **Averages of the number of points on elliptic curves** (w/ G. Martin and E. Smith) 2014
Algebra Number Theory **8**, 813–836
54. **Bounded gaps between primes with a given primitive root** 2014
Algebra Number Theory **8**, 1769–1786
55. **Some arithmetic properties of the sum of proper divisors and the sum of prime divisors** 2014
Illinois J. Math **58**, 125–147
56. **Euler and the partial sums of the prime harmonic series** 2015
Elem. Math. **70**, 13–20
57. **Bounded gaps between primes in number fields and function fields** (with A. Castillo, C. Hall, R. Lemke Oliver, and L. Thompson) 2015
Proc. Amer. Math. Soc. **143**, 2841–2856
58. **An easy generalization of Euler’s theorem on the series of prime reciprocals** 2015
American Math. Monthly **122**, 159–163
59. **Some normal numbers generated by arithmetic functions** (with J. Vandehey) 2015
Canad. Math. Bull. **58**, 160–173
60. **The truth about torsion in the CM case** (with P.L. Clark) 2015
C. R. Math. Acad. Sci. Paris **353**, 683–688
61. **Palindromic sums of proper divisors** 2015
Integers **15A**/Proceedings of the Erdős Centennial Conference, article A13 (electronic), 12 pages
62. **Harmonious pairs** (joint with M. Kozek, F. Luca, and C. Pomerance) 2015
Int. J. Number Theory **11**, 1633–1651
63. **Arithmetic functions at consecutive shifted primes** (with L. Thompson) 2015
Int. J. Number Theory **11**, 1477–1498
64. **The length spectra of arithmetic hyperbolic 3-manifolds and their totally geodesic surfaces** (with B. Linowitz and J. S. Meyer) 2015
New York J. Math **21**, 955–972
65. **Besicovitch, bisection, and the normality of $0.1491625\dots$** (with J. Vandehey) 2015
American Math. Monthly **122**, 757–765
66. **Remarks on fibers of the sum-of-divisors function** 2015
in *Analytic Number Theory: In Honor of Helmut Maier’s 60th Birthday*, M. Rassias and C. Pomerance, eds., Springer, 305–320
67. **On relatively prime amicable pairs** 2015
Mosc. J. Comb. Number Theory **5**, 36–51

68. **The average of the first invariant factor for reductions of CM elliptic curves mod p** (with T. Freiberg) 2015
Int. Math. Res. Notices **2015**, no. 21, 11333–11350
69. **Some problems of Erdős on the sum-of-divisors function** (joint with C. Pomerance) 2016
Trans. Amer. Math. Soc. Ser. B. **3**, 1–26
70. **A Titchmarsh divisor problem for elliptic curves** 2016
Math. Proc. Cambridge Philos. Soc. **160**, 167–189
71. **A remark on divisor weighted sums** 2016
Ramanujan J. **40**, 63–69
72. **Bounded gaps between primes with a given primitive root, II** (w/ R. C. Baker) 2016
Forum Mathematicum **28**, 675–687
73. **Digitally delicate primes** (w/ J. Hopper) 2016
J. Number Theory **168**, 247–256
74. **The representation function for sums of three squares along arithmetic progressions** 2016
Proc. Japan Acad., Ser. A Math. Sci. **92**, 96–99
75. **An elemental Erdős-Kac theorem for algebraic number fields** 2017
Proc. Amer. Math. Soc. **145**, 971–987
76. **Extremal primes for elliptic curves with complex multiplication** (w/ K. James) 2017
J. Number Theory **172**, 383–391
77. **Anatomy of torsion in the CM case** (with A. Bourdon and P.L. Clark) 2017
Math. Z. **285**, 795–820
78. **Bounds for the first several prime character nonresidues** 2017
Proc. Amer. Math. Soc. **145**, 2815–2826
79. **A simple proof of a theorem of Hajdu–Jarden–Narkiewicz** 2017
Colloq. Math. **147**, 217–220
80. **Two problems concerning irreducible elements in rings of integers of number fields** (w/ L. Troupe) 2017
Bull. Aust. Math. Soc. **96**, 44–58
81. **Counting perfect polynomials** (w/ U. Caner Cengiz and E. Treviño) 2017
Finite Fields and their Applications **47**, 242–255
82. **Clustering of linear combinations of multiplicative functions** (w/ N. Lebowitz-Lockard) 2017
J. Number Theory **180**, 660–672
83. **Subgroup avoidance for primes dividing the values of a polynomial** 2017
Rocky Mountain J. Math **47**, 2043–2050
84. **Numbers divisible by a large shifted prime and large torsion subgroups of CM elliptic curves** (w/ N. McNew and C. Pomerance) 2017
Int. Math. Res. Notices **2017**, 5525–5553

85. **Torsion subgroups of CM elliptic curves over odd degree number fields**
(w/ A. Bourdon) 2017
Int. Math. Res. Notices **2017**, 4923–4961
86. **Clusters of primes with square-free translates** (w/ R. C. Baker) 2017
Revista Mat. Iberoam. **33**, 809–829
87. **Bounded gaps between primes and the length spectra of arithmetic hyperbolic 3-orbifolds** (w/ B. Linowitz, D. B. McReynolds, and L. Thompson) 2017
C. R. Math. Acad. Sci. Paris **355**, 1121–1126
88. **The number of atoms in a primefree atomic domain**
(w/ P. L. Clark and S. Gosavi) 2017
Comm. Algebra **45**, 5431–5442
89. **The truth about torsion in the CM case, II** (w/ P. L. Clark) 2017
Quart. J. Math. **68**, 1313–1333
90. **Systoles of arithmetic hyperbolic surfaces and 3-manifolds**
(w/ B. Linowitz, D. B. McReynolds, and L. Thompson) 2017
Math. Res. Lett. **24**, 1497–1522
91. **Refinements of Lagrange’s four-square theorem** (w/ L. Goldmakher) 2018
Amer. Math. Monthly **125**, 258–263
92. **The least prime quadratic nonresidue in a prescribed residue class mod 4** 2018
J. Number Theory **187**, 403–414
93. **Thue’s lemma in $\mathbb{Z}[i]$ and Lagrange’s four-square theorem** 2018
Elem. Math. **73**, 60–65
94. **Divisor-sum fibers** (w/ C. Pomerance and L. Thompson) 2018
Mathematika **64**, 330–342
95. **Finding the four squares in Lagrange’s theorem** (w/ E. Treviño) 2018
Integers **18A**, article A15, 16 pages
96. **Pursuing polynomial bounds on torsion** (w/ P. L. Clark) 2018
Israel J. Math. **227**, 889–909
97. **A remark on the number field analogue of Waring’s constant $g(k)$** 2018
Math. Nachr. **291**, 1893–1898
98. **Waring’s problem for integral quaternions** 2018
Indag. Math. **29**, 1259–1269
99. **Counting and effective rigidity in algebra and geometry**
(joint with B. Linowitz, D. B. McReynolds, and L. Thompson) 2018
Invent. Math. **213**, 697–758
100. **Typically bounding torsion** (w/ P. L. Clark and M. Milosevic) 2018
J. Number Theory **192**, 150–167
101. **How often is Euler’s totient a perfect power?** 2019
J. Number Theory **197**, 1–12
102. **Dirichlet’s proof of the three-square theorem: an algorithmic perspective**
(w/ P. Schorn) 2019
Math. Comp. **88**, 1007–1019

103. **Small prime k th power residues for $k = 2, 3, 4$: a reciprocity laws approach** (w/ K. Benli) 2019
Proc. Amer. Math. Soc. **147**, 987–994
104. **A note on Golomb topologies** (w/ N. Lebowitz Lockard and P.L. Clark) 2019
Quaestiones Math. **42**, 73–86
105. **A note on the least prime that splits completely in a nonabelian Galois number field** (w/ Z. Ge and M. Milinovich) 2019
Math. Z. **292**, 73–86
106. **Popular subsets for Euler’s φ -function** 2019
Math. Ann. **374**, 253–271
107. **Eigenvalues of the Laplacian on domains with fractal boundary** (w/ C. Pomerance) 2019
 Horizons of Fractal Geometry and Complex Dimensions. 2016 Summer School: Fractal Geometry and Complex Dimensions. In celebration of the 60th birthday of Michel Lapidus. R.G. Niemeyer, E.P.J. Pearse, J.A. Rock, T. Samuel, eds., AMS Contemporary Mathematics, vol. 731, 2019.
108. **Symmetric primes revisited** (w/ W.D. Banks and C. Pomerance) 2019
Integers **19**, article A54, 7 pages
109. **Nonnegative multiplicative functions on sifted sets, and the square roots of -1 modulo shifted primes** 2020
Glasgow Math. J. **62**, 187–199
110. **Twists of hyperelliptic curves by integers in progressions mod p** (w/ D. Krumm) 2020
Acta Arith. **192**, 63–71
111. **Reciprocity by resultant in $k[t]$** (w/ P.L. Clark) 2020
L’Enseignement Math. **65**, 101–116
112. **On ordered factorizations into distinct parts** (w/ N. Lebowitz-Lockard) 2020
Proc. Amer. Math. Soc. **148**, 1447–1453
113. **A generalization of the Hardy-Ramanujan inequality and applications** 2020
J. Number Theory **210**, 171–182
114. **The smallest root of a polynomial congruence** 2020
Math. Res. Lett. **27**, 43–66
115. **On sums of consecutive triangular numbers** (w/ D. Subramaniam and E. Treviño) 2020
Integers **20A**. Article A15, 10 pages (electronic)
116. **Phi, primorials, and Poisson** (w/ C. Pomerance) 2020
Illinois J. Math. **64**, 319–330
117. **Multiplicative partitions of numbers with a large squarefree divisor** 2020
Ramanujan J. **53**, 595–605
118. **The maximal size of the k -fold divisor function for very large k** 2020
J. Ramanujan Math. Soc. **25**, 341–345

119. **The reciprocal sum of divisors of Mersenne numbers** (w/ Z. Engberg) 2021
Acta Arith. **197**, 421–440
120. **Finite sets containing near-primitive roots** (w/ K. Agrawal) 2021
J. Number Theory **225**, 360–373
121. **Comparing multiplicative orders mod p , as p varies** (w/ M. Just) 2021
New York J. Math. **27**, 600–614
122. **The number of non-cyclic Sylow subgroups of the multiplicative group modulo n** 2021
Canad. Math. Bull. **64**, 204–215
123. **A quick route to unique factorization in quadratic orders** (w/ N. Snyder) 2021
Amer. Math. Monthly **128**, 554–558
124. **The distribution of numbers with many factorizations** 2021
Math. Z. **299**, 2327–2339
125. **Numbers which are orders only of cyclic groups** 2022
Proc. Amer. Math. Soc. **150**, 515–524
126. **Joint distribution in residue classes of polynomial-like multiplicative functions** (w/ A. Singha Roy) 2022
Acta Arith. **202**, 89–104
127. **The least degree of a CM point on a modular curve** (w/ P.L. Clark, T. Genao, and F. Saia) 2022
J. London Math. Soc. **105**, 825–883
128. **Powerfree sums of proper divisors** (w/ A. Singha Roy) 2022
Colloq. Math **168**, 287–295
129. **Dirichlet, Sierpiński, and Benford** (w/ A. Singha Roy) 2022
J. Number Theory **239**, 352–364
130. **On the stable reduction of hyperelliptic curves** (w/ C. Gong, Y. Gu, J. Lu) 2022
Tohoku Math. J. **74**, 195–213
131. **On Benford’s law for multiplicative functions** (w/ V. Chandee, X. Li, and A. Singha Roy) 2023
Proc. Amer. Math. Soc. **151**, 4607–4619
132. **Sums of proper divisors follow the Erdős–Kac law** (w/ L. Troupe) 2023
Proc. Amer. Math. Soc. **151**, 977–988
133. **A problem in comparative order theory** (w/ S. Konyagin) 2023
Period. Math. Hung. **86**, 24–36
134. **Benford behavior and distribution in residue classes of large prime factors** (w/ A. Singha Roy) 2023
Canad. Math. Bull. **66**, 626–642
135. **On the greatest common divisor of a number and its sum of divisors, II** 2023
Number Theory in Memory of Eduard Wirsing. Helmut Maier, Jörn Steuding, Rasa Steuding, eds. Springer Cham

136. **Intermediate prime factors in specified subsets** (w/ N. McNew and A. Singha Roy) 2023
Monatshefte Math. **202**, 837–855
137. **Distribution in coprime residue classes of polynomially defined multiplicative functions** (w/ A. Singha Roy) 2023
Math. Z. **303**, no. 4, paper 93, 20 pages
138. **Two problems on the distribution of Carmichael’s lambda function** 2023
Mathematika **69**, 1195–1220
139. **Densities of integer sets represented by quadratic forms** (w/ P.L. Clark, J. Rouse, and K. Thompson) 2024
J. Number Theory **256**, 290–328
- [*] **Review of Excursions in Algebra, Number Theory, and Analysis** 2024
Math. Intelligencer **46**, 297–299
140. **Distribution mod p of Euler’s totient and the sum of proper divisors** (w/ N. Lebowitz-Lockard and A. Singha Roy) 2024
Michigan Math. J. **74**, 143–166
141. **Half-factorial real quadratic orders** 2024
Arch. Math. (Basel) **122**, 491–500
142. **$\mathbb{Z}[\sqrt{-5}]$: halfway to unique factorization** 2024
Amer. Math. Monthly **131**, 712–717
143. **Maximally elastic quadratic fields** 2025
J. Number Theory **267**, 80–100
144. **Partitioning powers into sets of equal sum** (w/ E. Treviño) 2025+
Rocky Mountain J. Math. (to appear)
145. **Two variants of a theorem of Schinzel and Wójcik on multiplicative orders** 2025+
Acta Arith. (to appear)
146. **Mean values of multiplicative functions and applications to residue-class distribution** (w/ A. Singha Roy) 2025+
Proc. Edinburgh Math. Soc. (to appear)

BOOKS

- Not always buried deep: A second course in elementary number theory** 2009
 American Mathematical Society
- A conversational introduction to algebraic number theory** 2017
 American Mathematical Society
- Steps into analytic number theory** (w/ A. Singha Roy) 2021
 Springer
- Unreal analysis: Glimpses of the p -adic realm** 2024
 Ross Mathematics Foundation

SERVICE ACTIVITIES

Editorial positions

Associate Editor for the American Mathematical Monthly (2016 –).
 Editor for the International Journal of Number Theory (2017–)
 Editor for AMS Student Mathematical Library (2022–2026)
 Editor for Integers journal (2022–)

Ross Mathematics Foundation

Board member (2018–). The Ross Mathematics Foundation oversees the Ross Mathematics Program: <https://rossprogram.org/>

Refereeing

Have refereed for Acta Arith., Adv. Math., Algebra Number Theory, Amer. Math. Monthly, Bol. Soc. Mat. Mexicana, Bull. Aust. Math. Soc., Bull. Brazilian Math. Soc., Bull. Korean Math. Soc., Canad. Math. Bull., Canad. J. Math., Exp. Math., Integers, Int. J. Number Theory, Int. Math. Res. Notices, J. Integer Sequences, J. Logical and Algebraic Methods in Programming, J. Number Theory, J. Combinatorics and Number Theory, Math. Ann., Math. Comp., Mathematika, Res. Number Theory, Statist. Probab. Lett., and the Handbook of Finite Fields.

Have refereed grant proposals for the National Security Administration. Served on National Science Foundation grant panels in 2015, 2017, 2020, and 2022.

Special session organizer

Co-organized (with L. Goldmakher, M. Milinovich, J. Kish) a special session at the 2012 AMS/MAA Joint Meetings titled “New perspectives on multiplicative number theory.” This was a special session following up on an NSF-sponsored Mathematics Research Communities workshop (“The pretentious view of analytic number theory”).

For the 2014 Joint Meetings, co-organized (with C. Pomerance) an MAA Invited Paper Session titled “The continuing influence of Paul Erdős in number theory”.

Organized the special session “Elementary methods in analytic number theory” at the Spring 2015 Southeastern AMS Sectional Meeting in Huntsville, AL (March 27–29, 2015).

Organized (with R. Lemke Oliver and F. Thorne) a special session for the 2017 AMS/MAA Joint Meetings titled “Analytic number theory and arithmetic” (January 7, 2017).

Member of conference organizing committee, Integers Conference 2023 and 2025.

Teaching in developing countries

Taught a one-week course in Manila in July, 2013 for a summer school on algebraic curves. The summer school was sponsored by CIMPA (International Centre for Pure and Applied Mathematics) and ICTP (the Abdus Salam International Centre for Theoretical Physics); both of these are organizations aiming to promote scientific education in the developing world.

In Summer 2017 and Summer 2019, taught minicourses in number theory at the Universidad Autonoma de Santo Domingo (UASD), in the Dominican Republic. Was a co-PI on two Fondocyt (Fondo Nacional de Innovación y Desarrollo Científico y Tecnológico) research grants, for graduate-level research projects with Dominican students, 2020–2022. Co-PI on an active Fondocyt grant for research with Dominican student Samuel Morales. Currently coadvising (with Geremias Polanco and Enrique Treviño) Dominican Ph.D. students Andradis Elieser Luna Martinez and Samuel Morales.

Work with junior mathematicians

Served on a Young Mathematicians' Network panel at the 2016 AMS/MAA Joint Meetings. The subject was "Finding a thesis topic and advisor." Co-panelist with Allison Henrich of Seattle University.

Since 2001, the University of Georgia has organized a high school math tournament for students in Georgia and neighboring state. I served as one of the primary contest organizers from 2013–2022 and remain involved in the design of the contest as well as the supervision of grading. In addition, in the summers of 2013, 2014, and 2016, I was a faculty mentor for the week-long UGA MathCamp organized by Angela Gibney and Danny Krashen.

Was one of 11 speakers at the 60th anniversary Ross Program reunion conference in June 2017. The Ross Program is a residential summer camp where high school students are immersed in the process of mathematical discovery for six weeks.

Co-ran the Ross Mathematics Asia Program in Huangshan City, Anhui, China, in Summer 2018 (jointly with Enrique Treviño, Lake Forest College). Taught Advanced Courses at the 2019 Ross Asia Program (Zhenjiang, Jiangsu, China) and the 2020 and 2021 Ross Programs (online). Co-taught the number theory lectures in 2022 (in-person, Ohio) and delivered the number theory lectures in 2023 (in-person, Indiana). Taught an advanced course in 2024 (Indiana)

Served as one of the "mathematicians in residence" at the Summer 2022 Budapest Semesters in Mathematics program (jointly with Enrique Treviño).

MENTORING

Postdoctoral mentor

Lola Thompson (2012–2013)
Joseph Vandehey (2013–2016)
Joshua Stucky (2022–2024)
Kai (Steve) Fan (2025—)

Thesis supervisor

Emily Jennings (M.A., 2014)
Lee Troupe (Ph.D., Spring 2016)
Noah Lebowitz-Lockard (Ph.D., Spring 2019)
Kubra Benli (Ph.D., Spring 2020)
Matthew Just (Ph.D., Summer 2021)
Komal Agrawal (Ph.D., Spring 2022)
Patrick Akande (Ph.D., Spring 2024)
Paco Adajar (Ph.D., in progress)
Akash Singha Roy (Ph.D., in progress)
Casia Siegel (Ph.D., in progress)
Rishika Agrawal (Ph.D, in progress; co-advising with Giorgis Petridis)

Undergraduate research supervisor (through UGA's Center for Undergraduate Research Opportunities)

Jackson Douglas Hopper (2015–2017); Jackson received a \$1000 CURO research assistantship in Spring 2015 and a \$3000 CURO summer fellowship in Summer 2015. Our work on “digitally delicate” primes appeared in the Journal of Number Theory (paper #73 above).

UGA TEACHING EXPERIENCE

<i>MATH 2260: Calculus II for science and engineering</i>	Fall 2012
<i>MATH 3220: Advanced problem solving</i>	Fall 2012
<i>MATH 3100: Sequences and series</i>	Spring 2013
<i>MATH 4400/6400: Elementary number theory</i>	Spring 2013
<i>MATH 3220: Advanced problem solving</i>	Fall 2013
<i>MATH 8440: Advanced topics in elementary number theory</i>	Fall 2013
<i>MATH 3100: Sequences and series</i>	Spring 2014
<i>MATH 3220: Advanced problem solving</i>	Fall 2014
<i>MATH 4150: Complex variables</i>	Fall 2014
<i>MATH 3100H: Sequences and series (Honors)</i>	Spring 2015
<i>MATH 3220: Advanced problem solving</i>	Fall 2015
<i>MATH 4000: Modern algebra and geometry I</i>	Fall 2015
<i>MATH 8850: Introduction to mathematical research (joint w/ P. L. Clark)</i>	Fall 2015
<i>MATH 3100H: Sequences and series (Honors)</i>	Spring 2016
<i>MATH 8400: Algebraic number theory</i>	Spring 2016
<i>MATH 8850: Introduction to mathematical research (joint w/ P. L. Clark)</i>	Spring 2016
<i>MATH 3220: Advanced problem solving</i>	Fall 2016
<i>MATH 4000: Modern algebra and geometry I</i>	Fall 2016
<i>MATH 3100H: Sequences and series (Honors)</i>	Spring 2017
<i>MATH 4400/6400: Elementary number theory</i>	Spring 2017
<i>MATH 3100: Sequences and series</i>	Fall 2017
<i>MATH 3220: Advanced problem solving</i>	Fall 2017
<i>MATH 8400: Algebraic number theory</i>	Fall 2017
<i>MATH 3220: Advanced problem solving</i>	Fall 2017
<i>MATH 8400: Algebraic number theory</i>	Fall 2017
<i>MATH 4000: Modern algebra and geometry I</i>	Spring 2018
<i>MATH 8440: Analytic number theory</i>	Fall 2018
<i>MATH 4000: Modern algebra and geometry I</i>	Fall 2018
<i>MATH 4000: Modern algebra and geometry I</i>	Spring 2019
<i>MATH 4400/6400: Elementary number theory</i>	Spring 2019
<i>MATH 3100: Sequences and series (×2)</i>	Spring 2020
<i>MATH 3200: Introduction to higher mathematics</i>	Spring 2020
<i>MATH 3100: Sequences and series</i>	Fall 2020
<i>MATH 3220: Advanced problem solving</i>	Spring 2021
<i>MATH 8400: Algebraic number theory</i>	Spring 2021
<i>MATH 4400/6400: Elementary Number Theory</i>	Spring 2021
<i>MATH 3220: Advanced problems solving</i>	Fall 2021
<i>MATH 3100: Sequences and series</i>	Fall 2021
<i>MATH 4000: Modern algebra and geometry I</i>	Spring 2022
<i>MATH 4400/6400: Elementary number theory</i>	Spring 2022
<i>MATH 3100: Sequences and series</i>	Fall 2022
<i>MATH 4400: Elementary Number Theory</i>	Spring 2023
<i>MATH 8440: Multiplicative Number Theory</i>	Spring 2023
<i>MATH 3100: Sequences and series</i>	Fall 2023
<i>MATH 8440: Topics in Analytic Number Theory</i>	Fall 2023
<i>MATH 3100: Sequences and series</i>	Spring 2024
<i>MATH 4000: Modern algebra and geometry I</i>	Spring 2024
<i>MATH 3100: Sequences and series</i>	Fall 2024
<i>MATH 3200: Introductiton to higher mathematics</i>	Fall 2024