Paul Pollack

Curriculum Vitæ[1]

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."

[1]Last updated: October 5, 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 mod p'

Luxembourg Number Theory Seminar October 2020

'Thoughts on the order of a mod 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?"

2025 Integers Conference May 2025
"How nonunique is your factorization?"

U. Waterloo Number Theory Seminar June 2025
"How nonunique is your factorization?"

Purdue Colloquium September 2025
"Two thousand years of summing divisors"

Purdue Number Theory Seminar October 2025
"How nonunique is your factorization?"

Butler University Colloquium October 2025
"Two thousand years of summing divisors"

ACCEPTED PAPERS

1. **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

2. **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

3. **A polynomial analogue of the twin prime conjecture** 2008
Proc. Amer. Math. Soc. **136**, 3775–3784

4. **Simultaneous prime specializations of polynomials over finite fields** 2008
Proc. London Math. Soc. **97**, 545–567

5. **Arithmetic properties of polynomial specializations over finite fields** 2009
Acta Arith. **136**, 57-79

6. **On the distribution of sociable numbers** (w/ M. Kobayashi and C. Pomerance) 2009
J. Number Theory **129**, 1990-2009

7. **A remark on sociable numbers of odd order** 2010
J. Number Theory **130**, 1732–1736

8. **Revisiting Gauss's analogue of the prime number theorem for polynomials over a finite field** 2010
   Finite Fields and their Applications **16**, 290-299
9. **Hypothesis H and an impossibility theorem of Ram Murty** 2010
   Rend. Sem. Mat. Univ. Pol. Torino **68**, 183–197
10. **Multiperfect numbers with identical digits** (joint with F. Luca) 2011
    J. Number Theory **131**, 260–284
11. **On polynomial rings with a Goldbach property** 2011
    Amer. Math. Monthly **118**, 71–77
12. **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... (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** 2018
(joint with B. Linowitz, D. B. McReynolds, and L. Thompson)
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** 2019
(w/ P. Schorn)
Math. Comp. **88**, 1007–1019

103. **Small prime kth power residues for $k = 2, 3, 4$: a reciprocity laws approach** 2019
(w/ K. Benli)
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** 2019
(w/ Z. Ge and M. Milinovich)
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** 2019
(w/ C. Pomerance)
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** 2020
(w/ D. Krumm)
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. **The distribution of intermediate prime factors** (w/ N. McNew and A. Singha Roy) 2024
Illinois J. Math. **68**, 537–576

140. **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

141. **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

142. **Half-factorial real quadratic orders** 2024
Arch. Math. (*Basel*) **122**, 491–500

143. **$\mathbb{Z}[\sqrt{-5}]$: halfway to unique factorization** 2024
Amer. Math. Monthly **131**, 712–717

144. **Maximally elastic quadratic fields** 2025
J. Number Theory **267**, 80–100

145. **Two variants of a theorem of Schinzel and Wójcik on multiplicative orders** 2025
Acta Arith. **218**, 337–345

146. **Towards a Schinzel–Wójcik theorem for number fields** 2025
European J. Math. **11**, no. 2, paper no. 26, 16 pages

147. **Partioning powers into sets of equal sum** (w/ E. Treviño) 2025+
Rocky Mountain J. Math. (to appear)

148. **Mean values of multiplicative functions and applications to residue-class distribution** (w/ A. Singha Roy) 2025+
Proc. Edinburgh Math. Soc. (to appear)

149. **Revisiting the Lind–Reichardt counterexample to Hasse's local-global principle** (w/ D.B. Leep and D.B. Shapiro) 2025+
Amer. Math. Monthly (to appear)

150. **Extremal elasticity of quadratic orders** (w/ K.(S) Fan.) 2025+
The ideal theory and arithmetic of rings, monoids, and semigroups (Palermo, 2024). Edited by S.T. Chapman. AMS Contemporary Mathematics series (to appear).

151. **Counting primes with a given primitive root, uniformly** (w/ K.(S) Fan.) 2025+
Mathematika (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

Editor for the American Mathematical Monthly (2016 –).
Editor for the International Journal of Number Theory (2017–)
Editor for AMS Student Mathematical Library (2022–)
Editor for Integers journal (2022–)
Editor for Frontiers in Combinatorics and Number Theory (2025–)

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.

I served on an internal UGA awards committee in 2024.

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 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 advanced courses in 2024 and 2025 (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)
Akash Singha Roy (Ph.D., Summer 2025)
Paco Adajar (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

MATH 2260: Calculus II for science and engineering	Fall 2012
MATH 3220: Advanced problem solving	Fall 2012
MATH 3100: Sequences and series	Spring 2013
MATH 4400/6400: Elementary number theory	Spring 2013
MATH 3220: Advanced problem solving	Fall 2013
MATH 8440: Advanced topics in elementary number theory	Fall 2013
MATH 3100: Sequences and series	Spring 2014
MATH 3220: Advanced problem solving	Fall 2014
MATH 4150: Complex variables	Fall 2014
MATH 3100H: Sequences and series (Honors)	Spring 2015
MATH 3220: Advanced problem solving	Fall 2015
MATH 4000: Modern algebra and geometry I	Fall 2015
MATH 8850: Introduction to mathematical research (joint w/ P. L. Clark)	Fall 2015
MATH 3100H: Sequences and series (Honors)	Spring 2016
MATH 8400: Algebraic number theory	Spring 2016
MATH 8850: Introduction to mathematical research (joint w/ P. L. Clark)	Spring 2016
MATH 3220: Advanced problem solving	Fall 2016
MATH 4000: Modern algebra and geometry I	Fall 2016
MATH 3100H: Sequences and series (Honors)	Spring 2017
MATH 4400/6400: Elementary number theory	Spring 2017
MATH 3100: Sequences and series	Fall 2017
MATH 3220: Advanced problem solving	Fall 2017
MATH 8400: Algebraic number theory	Fall 2017
MATH 3220: Advanced problem solving	Fall 2017
MATH 8400: Algebraic number theory	Fall 2017
MATH 4000: Modern algebra and geometry I	Spring 2018
MATH 8440: Analytic number theory	Fall 2018
MATH 4000: Modern algebra and geometry I	Fall 2018
MATH 4000: Modern algebra and geometry I	Spring 2019
MATH 4400/6400: Elementary number theory	Spring 2019
MATH 3100: Sequences and series (×2)	Spring 2020
MATH 3200: Introduction to higher mathematics	Spring 2020
MATH 3100: Sequences and series	Fall 2020
MATH 3220: Advanced problem solving	Spring 2021
MATH 8400: Algebraic number theory	Spring 2021
MATH 4400/6400: Elementary Number Theory	Spring 2021
MATH 3220: Advanced problems solving	Fall 2021
MATH 3100: Sequences and series	Fall 2021
MATH 4000: Modern algebra and geometry I	Spring 2022
MATH 4400/6400: Elementary number theory	Spring 2022
MATH 3100: Sequences and series	Fall 2022
MATH 4400: Elementary Number Theory	Spring 2023
MATH 8440: Multiplicative Number Theory	Spring 2023
MATH 3100: Sequences and series	Fall 2023
MATH 8440: Topics in Analytic Number Theory	Fall 2023
MATH 3100: Sequences and series	Spring 2024
MATH 4000: Modern algebra and geometry I	Spring 2024
MATH 3100: Introduction to Mathematical Analysis	Fall 2024
MATH 3200: Introduciton to higher mathematics	Fall 2024
MATH 4000: Modern algebra I	Spring 2025
MATH 3100/3100H: Introduction to Mathematical Analysis	Fall 2025