
CONTACT INFORMATION **MW 746** (Mathematics Tower)
231 W. 18th Ave.
Columbus, OH 43210

Email: genao.5@osu.edu
Webpage: tylergenao.com
U.S. citizen

CURRENT EMPLOYMENT **Zassenhaus Visiting Assistant Professor** *Fall 2023-*
The Ohio State University, Columbus, OH

RESEARCH INTERESTS Broadly: Number theory, arithmetic geometry
Specifically: Uniformity results in torsion groups and Galois representations of elliptic curves, modular curves

EDUCATION **Ph.D.**, Mathematics, May 2023 *2017-2023*
University of Georgia, Athens, GA
Advisor: Pete L. Clark
Dissertation: “Typical and Polynomial Bounds on Torsion of Elliptic Curves, and Torsion Upon Base Change”

B.Sc., Mathematical Sciences, 2017 *2013-2017*
Florida Atlantic University, Boca Raton, FL

PREPRINTS

15. **The possible adelic indices for elliptic curves admitting a rational cyclic isogeny**, with K. Finnerty, J. Mayle and Rakvi. [arXiv](#).
14. **Uniform bounds on the level of cyclotomic division fields of elliptic curves**, with S. Allen.[†] [arXiv](#).
13. **Counting points on some genus zero Shimura curves**, with T. Philips, F. Saia, T. Santens and J. Yin. [arXiv](#).

ACCEPTED AND/OR PUBLISHED

12. **A uniform bound on the smallest surjective prime of an elliptic curve**, with J. Mayle and J. Rouse. *Ramanujan J.* 70 (2026), art. no. 22, 1–19. [Journal](#). [arXiv](#).
11. **Uniform polynomial bounds on torsion from rational geometric isogeny classes**, with A. Bourdon. Accepted to *Math. Res. Lett.* [arXiv](#).
10. **New isogenies of elliptic curves over number fields**. *Int. J. Number Theory* 21 (2025), no. 10, 2343–2357. [Journal](#). [arXiv](#).
9. **Polynomial bounds on torsion from a fixed geometric isogeny class of elliptic curves**. *J. Théor. Nombres Bordeaux* 36 (2024), no. 2, 661–670. [Journal](#). [arXiv](#).
8. **Growth of torsion groups of elliptic curves upon base change from number fields**. *Ramanujan J.* 63 (2024), no. 2, 409–429. [Journal](#). [arXiv](#).
7. **Computational study of non-unitary partitions**, with A.P. Akande, S. Haag,[†] M.D. Hendon, N. Pulagam, R. Schneider and A.V. Sills. *J. Ramanujan Math. Soc.* 38 (2023), no. 2, 121–128. [Journal](#). [arXiv](#).

[†]Indicates undergraduate coauthor.

6. **Typically bounding torsion on elliptic curves isogenous to rational j -invariant.** *Proc. Amer. Math. Soc.* 151 (2023), no. 5, 1907–1914. [Journal](#). [arXiv](#).
5. **Typically bounding torsion on elliptic curves with rational j -invariant.** *J. Number Theory* 238 (2022), 823–841. [Journal](#). [arXiv](#).
4. **The least degree of a CM point on a modular curve**, with P.L. Clark, P. Pollack and F. Saia. *J. Lond. Math Soc. (2)* 105 (2022), no. 2, 825–883. [Journal](#). [Copy](#). [Code](#).
3. **Chevalley-Waring at the boundary**, with P.L. Clark and F. Saia. *Expo. Math* 39 (2021), no. 4, 604–623. [Journal](#). [Copy](#). [Code](#).
2. **Faltings heights of CM elliptic curves and special gamma values**, A. Barquero-Sanchez, L. Cadwallader, O. Cannon, and R. Masri. *Res. Number Theory* 3 (2017), Paper No. 13, 16 pp. [Journal](#). [Copy](#).
1. **The density of primes dividing a particular non-linear recurrence sequence**, with A. Block Gorman, H. Hwang, N. Kantor, S. Parsons and J. Rouse. *Acta Arith.* 175 (2016), no. 1, 71–100. [Journal](#). [arXiv](#).

TEACHING
EXPERIENCE

OSU := Ohio State University, UGA := University of Georgia.

- | | |
|--|--------------------|
| 15. MATH 4573: Elementary number theory
<i>Instructor of record</i> | OSU
Spring 2026 |
| 14. MATH 1151: Calculus I (two sections, 341 students total)
<i>Instructor of record</i> | OSU
Fall 2025 |
| 12. MATH 8120: The arithmetic of elliptic curves
<i>Instructor of record</i> | OSU
Spring 2025 |
| 11. MATH 6111: Abstract algebra I (two sections)
<i>Recitation instructor</i> | OSU
Fall 2024 |
| 9. MATH 4573: Elementary number theory
<i>Instructor of record</i> | OSU
Spring 2024 |
| 8. MATH 1151: Calculus I (two sections, 320 students total)
<i>Instructor of record</i> | OSU
Fall 2023 |
| 6. MATH 2250: Calculus I
<i>Instructor of record</i> | UGA
Spring 2023 |
| 5. MATH 2250: Calculus I
<i>Instructor of record</i> | UGA
Fall 2022 |
| 4. MATH 1113E: Virtual precalculus
<i>Instructor of record</i> | UGA
Summer 2022 |
| 3. MATH 1113: Precalculus (two sections)
<i>Instructor of record</i> | UGA
Spring 2021 |
| 1. MATH 1113: Precalculus
<i>Instructor of record</i> | UGA
Fall 2020 |

HONORS AND
AWARDS

- AMS-Simons Travel Grant** *July 2023 - June 2026*
- William Armor Wills Memorial Scholarship Award** *April 2023*
UGA math department research award, see [here](#).
- David Galewski Outstanding Graduate Teaching Award** *April 2023*
UGA math department teaching award, see [here](#).
- Outstanding Teaching Assistant Award** *April 2023*
UGA Center for Teaching and Learning, see [here](#).
- NSF RTG Graduate Student Fellowship** *September 2018 - August 2019*
(DMS 1344994)
- NSF Graduate Research Fellowship** *September 2017 - August 2022*
(Grant No. 1842396)

RESEARCH TALKS

1. *TBA*
CTNT 2026 Conference, Storrs, CT *June 2026*
(Connecticut Summer School in Number Theory)
2. *Small division fields of elliptic curves*
JMM 2026, Washington, DC (upcoming) *January 2026*
Special Session on “A Showcase of Research in Number Theory with Undergraduate Contributions”
(Joint Mathematics Meetings)
3. *Growth of torsion groups of elliptic curves in geometric isogeny classes*
AMS Fall Eastern Virtual Sectional Meeting* *October 2025*
Special Session on “Unveiling Connections: Number Theory Meets Algebraic Geometry”
4. *Growth of torsion groups of elliptic curves in geometric isogeny classes*
Applied Algebra Days II, Boca Raton, FL *October 2025*
5. *Polynomial bounds on torsion from geometric isogeny classes*
ICERM, Providence, RI *June 2025*
(Institute for Computational and Experimental Research in Math)
6. *Uniform polynomial bounds on torsion from rational geometric isogeny classes*
UIC Number Theory Seminar, Chicago, IL *April 2025*
7. *Uniform polynomial bounds on torsion from rational geometric isogeny classes*
UConn Algebra Seminar, Storrs, CT *February 2025*
8. *Uniform polynomial bounds on torsion from rational geometric isogeny classes*
AMS Eastern Sectional Meeting, Albany, NY *October 2024*
Special Session on “Explicit Methods in Arithmetic Geometry”
9. *Uniform polynomial bounds on torsion from rational geometric isogeny classes*
PANTS XXXVIII, Winston-Salem, NC *September 2024*
(Palmetto Number Theory Series)

*Online.

10. *New isogenies of elliptic curves over number fields*
CTNT 2024 Conference, Storrs, CT
(Connecticut Summer School in Number Theory) June 2024
11. *Uniform bounds on torsion of elliptic curves in geometric isogeny classes*
Number Theory Seminar, OSU September 2023
12. *Bounds on torsion subgroups from geometric isogeny classes of elliptic curves*
JMM 2023, Boston, MA
(Joint Mathematics Meetings) January 2023
13. *Bounds on torsion subgroups from geometric isogeny classes of elliptic curves*
PANTS XXXV, Columbia, SC
(Palmetto Number Theory Series) December 2022
14. *Bounds on torsion from isogeny classes of elliptic curves*
Number Theory Seminar, UGA September 2022
15. *Typically bounding torsion on special subfamilies of F_0 -curves*
CTNT 2022 Conference, Storrs, CT
(Connecticut Summer School in Number Theory) June 2022
16. *Typically bounding torsion on elliptic curves: $j(E) \in F$ and beyond*
Maine-Québec Number Theory Conference* October 2021
17. *Typically bounding torsion on elliptic curves: $j(E) \in F$ and beyond*
Number Theory Seminar, UGA September 2021
18. *Torsion, bounds and typically bounding torsion*
Graduate Student Seminar, UGA October 2020
19. *Faltings heights of CM elliptic curves and special gamma values*
JMM 2017, Atlanta, GA
(Joint Mathematics Meetings) January 2017
20. *Elliptic curves and their Faltings height*
Texas A&M University July 2016
21. *The density of primes dividing a particular non-linear recurrence sequence*
JMM 2016, Seattle, WA
(Joint Mathematics Meetings) January 2016
22. *Describing the density of primes dividing a point on a particular elliptic curve*
Graduate Summer Conference, UGA July 2015

EXPOSITORY
TALKS

1. *Elliptic curves: dots, horseshoes and donuts*
Radical Pi Math Club, OSU February 2024
2. *Cyclic isogenies under isogenous elliptic curves*
Graduate Summer Conference, UGA August 2021
3. *Entanglements of Galois representations of CM elliptic curves*
CRAAG II, UGA
(Classic Reading in Arithmetic/Algebraic Geometry) July 2021
4. *Serre's adelic open image theorem for non-CM elliptic curves*
SeZoom, UGA April 2021

5. *Number theory through inquiry*
SUMR Conference, UGA *July 2020*
6. *Foray into Galois representations*
Graduate Summer Conference, UGA *July 2020*
7. *Constructible numbers, division points and class field theory*
Graduate Student Seminar, UGA *April 2020*
8. *What are inseparable and transcendental extensions?*
SMaRTS Seminar, UGA *February 2020*
(**S**treet **M**ath and **R**elated **T**opics **S**eminar)
9. *Why is $e^{\pi\sqrt{163}}$ almost an integer?*
Graduate Summer Conference, UGA *July 2019*

SERVICE &
OUTREACH

1. Co-organizer of the 2024-2025 and 2025-2026 Cycle undergraduate research program at OSU. In 2024-2025, it had almost 50 undergraduate participants.
2. Cycle program mentor for a year-long undergraduate reading project on elliptic curve Galois representations, for Sam Allen and David Kruzel (2024-2025). This continued into a summer research project with Sam, which has culminated in a preprint.
3. Serving as the 2025-2026 faculty advisor for the mathematics graduate student association (MGSA) at OSU.
4. In Fall 2025, served on a panel about “math department involvement” for incoming faculty, visiting assistant professors and lecturers. Meant to highlight opportunities for outreach and involvement within the department.
5. At the 2024 Connecticut Summer School in Number Theory (CTNT), served on a panel to give 50 undergraduate and graduate student participants advice on topics related to academia, which included applying to graduate schools, choosing graduate programs, selecting a research area and picking a thesis advisor. Webpage.
6. Gave a talk February 2024 in the OSU undergraduate math club *Radical Pi*, on an introduction to elliptic curves.
7. Mentor for the Spring 2024 Cycle program at OSU, for Kabir Belgikar.
8. Mentor for the mathematics Directed Reading Program (DRP) at UGA for the Fall 2019, Spring 2020, Fall 2020, Spring 2021, Spring 2022, Summer 2022 and Spring 2023 semesters. Through UGA’s DRP, I have mentored undergraduates Ethan Boos, Summer Haag, Russell Mathison and Cole Wittbrodt.
9. Organizer of the mathematics DRP at UGA from Summer 2021 to Spring 2023.
10. Organized a talk for UGA’s 2023 math graduate visitation day.
11. Course assistant for the 2021 virtual Arizona Winter School on number theory, which had more than 200 participants (mostly undergraduates).
12. Gave a talk at the inaugural 2020 SUMR conference at UGA (**S**ummer **U**ndergraduate **M**athematics **R**esearch) titled *Number Theory Through Inquiry*.
13. Undergraduate research project assistant during Summer 2020, for a project on non-unitary partitions. Our project has since been published, see here (or on arXiv).

14. Organized a preparatory course for the UGA graduate algebra qualifying exam (2020).
15. Participated as a peer mentor for first year UGA mathematics graduate students.
16. MathSciNet reviewer.

PROGRAMMING EXPERIENCE Have written programs in Magma, Python and Sage. Some projects can be found at github.com/tgenao.

PROGRAMS I'VE ATTENDED

1. CTNT 2026 Conference
Storrs, CT
(Connecticut Summer School in Number Theory) *June 2026*
2. JMM 2026
Washington, DC
(Joint Mathematics Meetings) *January 2026*
3. 2025 Fall Eastern Virtual Sectional Meeting* *October 2025*
4. Florida Applied Algebra Days II
Boca Raton, FL *October 2025*
5. BIRS: Isogeny Graphs in Cryptography
Banff, Canada
(Banff International Research Station) *August 2025*
6. ICERM: Algebraic Points on Curves
Providence, RI
(Institute for Computational and Experimental Research in Math) *June 2025*
7. RTG Workshop on Arithmetic Statistics
Columbus, OH *June 2025*
8. MAGNTS
Columbus, OH
(Midwest Arithmetic Geometry and Number Theory Series) *March 2025*
9. AMS Eastern Sectional Meeting
Albany, NY
Special Session on "Explicit Methods in Arithmetic Geometry" *October 2024*
10. PANTS XXXVIII
Winston Salem, NC
(Palmetto Number Theory Series) *September 2024*
11. ANTS XVI at MIT
MIT, Cambridge, MA
(Algorithmic Number Theory Symposium) *July 2024*
12. The Mordell conjecture 100 years later
MIT, Cambridge, MA *July 2024*
13. CTNT 2024 Conference
Storrs, CT
(Connecticut Summer School in Number Theory) *June 2024*

*Online.

14. AWS 2024: Abelian Varieties
Tucson, AZ
(**A**rizona **W**inter **S**chool) *March 2024*
15. JMM 2024
San Fransisco, CA
(**J**oint **M**athematics **M**eetings) *January 2024*
16. MRC 2023: Explicit Computations With Stacks
Java Center, NY
(**M**ath **R**esearch **C**ommunities) *June 2023*
17. AWS 2023: Unlikely Intersections
Tucson, AZ *March 2023*
18. JMM 2023
Boston, MA
(**J**oint **M**athematics **M**eetings) *January 2023*
19. PANTS XXXV
Columbia, SC
(**P**almetto **N**umber **T**heory **S**eries) *December 2022*
20. CTNT 2022 Conference
Storrs, CT
(**C**onnecticut **S**ummer **S**chool in **N**umber **T**heory) *June 2022*
21. Maine-Québec Number Theory Conference* *October 2021*
22. PAJAMAS III* *September 2021*
(**P**almetto **J**oint **A**rithmetic, **M**odularity, and **A**nalysis **S**eries)
23. YRANT III* *August 2021*
(**Y**oung **R**esearchers in **A**lgebraic **N**umber **T**heory)
24. PCMI Summer School: Number Theory Informed by Computation* *July 2021*
(**P**ark **C**ity **M**ath **I**nstitute)
25. Around Frobenius Distributions and Related Topics II* *June 2021*
26. CMS 75th+1 Anniversary Summer Meeting* *June 2021*
(**C**anadian **M**ath **S**ociety)
27. Workshop on Rational Points and Galois Representations* *May 2021*
28. Front Range Number Theory Day* *April 2021*
29. JMM 2021* *January 2021*
(**J**oint **M**athematics **M**eetings)
30. PAJAMAS II* *December 2020*
(**P**almetto **J**oint **A**rithmetic, **M**odularity, and **A**nalysis **S**eries)
31. Madison Moduli Weekend* *September 2020*
32. PAJAMAS I* *September 2020*
(**P**almetto **J**oint **A**rithmetic, **M**odularity, and **A**nalysis **S**eries)
33. CTNT 2020 Summer School and Conference* *June 2020*
(**C**onnecticut **S**ummer **S**chool in **N**umber **T**heory)

34. AWS 2020: Nonabelian Chabauty
Tucson, AZ
(**A**rizona **W**inter **S**chool) *March 2020*

35. MAAIM
Atlanta, GA
(**M**odular **F**orms, **A**rithmetic, and **W**omen in **M**athematics) *November 2019*

36. MAGNTS
Columbus, OH
(**M**idwest **A**rithmetic **G**eometry and **N**umber **T**heory **S**eries) *October 2019*

37. AIM: LMFDB as a Microscope and a Telescope
San Jose, CA
(**A**merican **I**nstitute of **M**athematics) *September 2019*

38. CTNT 2018 Summer School and Conference
Storrs, CT
(**C**onnecticut **S**ummer **S**chool in **N**umber **T**heory) *May-June 2018*

39. JMM 2017
Atlanta, GA
(**J**oint **M**athematics **M**eetings) *January 2017*

40. CTNT 2016 Summer School and Conference
Storrs, CT
(**C**onnecticut **S**ummer **S**chool in **N**umber **T**heory) *August 2016*

41. Texas A&M REU in Mathematics
College Station, TX *May - July 2016*

42. JMM 2016
Seattle, WA
(**J**oint **M**athematics **M**eetings) *January 2016*

43. WADE INTO Research REU at Wake Forest University
Winston-Salem, NC *June - August 2015*
(**W**ake/**D**avidson **E**xperience in **N**umber **T**heory **R**esearch)