Curriculum Vitae: Tyler Genao — June 22, 2026

Contact Information

MW 746 (Mathematics Tower)
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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.

Accepted and/or Published

13. **Counting points on some genus zero Shimura curves,** with T. Philips, F. Saia, T. Santens and J. Yin. To appear in *Math. Proc. Cambridge Phil. Soc.* arXiv.
12. **Uniform polynomial bounds on torsion from rational geometric isogeny classes,** with A. Bourdon. To appear in *Math. Res. Lett.* arXiv.
11. **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.
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.

[†]Indicates undergraduate coauthor.

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.

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-Warning 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** — OSU
Instructor of record — Spring 2026

14. **MATH 1151: Calculus I** (two sections, 341 students total) — OSU
Instructor of record — Fall 2025

12. **MATH 8120: The arithmetic of elliptic curves** — OSU
Instructor of record — Spring 2025

11. **MATH 6111: Abstract algebra I** (two sections) — OSU
Recitation instructor — Fall 2024

9. **MATH 4573: Elementary number theory** — OSU
Instructor of record — Spring 2024

8. **MATH 1151: Calculus I** (two sections, 320 students total) — OSU
Instructor of record — Fall 2023

6. **MATH 2250: Calculus I** — UGA
Instructor of record — Spring 2023

5. **MATH 2250: Calculus I** — UGA
Instructor of record — Fall 2022

4. **MATH 1113E: Virtual precalculus** — UGA
Instructor of record — Summer 2022

3. **MATH 1113: Precalculus** (two sections) — UGA
Instructor of record — Spring 2021

1. **MATH 1113: Precalculus** — UGA
Instructor of record — 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. *Elliptic curves, torsion points and Galois representations*
   CTNT 2026 Conference, Storrs, CT *June 2026*
   (**C**onnecticu**t** Summer School in **N**umber **T**heory)

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"
   (**J**oint **M**athematics **M**eetings)

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*
   (**I**nstitute for **C**omputational and **E**xperimental **R**esearch in **M**ath)

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*
   (**PA**lmetto **N**umber **T**heory **S**eries)

*Online.

10. *New isogenies of elliptic curves over number fields*
    CTNT 2024 Conference, Storrs, CT *June 2024*
    (**C**onnecticu**t** Summer School in **N**umber **T**heory)

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 *January 2023*
    (**J**oint **M**athematics **M**eetings)

13. *Bounds on torsion subgroups from geometric isogeny classes of elliptic curves*
    PANTS XXXV, Columbia, SC *December 2022*
    (**PA**lmetto **N**umber **T**heory **S**eries)

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 *June 2022*
    (**C**onnecticu**t** Summer School in **N**umber **T**heory)

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 *January 2017*
    (**J**oint **M**athematics **M**eetings)

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 *January 2016*
    (**J**oint **M**athematics **M**eetings)

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, torsion points and Galois representations*
   CTNT 2026 Conference, Storrs, CT *June 2026*
   (**C**onnecticu**t** Summer School in **N**umber **T**heory)

2. *Elliptic curves: dots, horseshoes and donuts*
   Radical Pi Math Club, OSU *February 2024*

3. *Cyclic isogenies under isogenous elliptic curves*
   Graduate Summer Conference, UGA *August 2021*

4. *Entanglements of Galois representations of CM elliptic curves*
   CRAAG II, UGA *July 2021*
   (**C**lassic **R**eading in **A**rithmetic/**A**lgebraic **G**eometry)

5. *Serre's adelic open image theorem for non-CM elliptic curves*
   SeZoom, UGA *April 2021*

6. *Number theory through inquiry*
   SUMR Conference, UGA *July 2020*

7. *Foray into Galois representations*
   Graduate Summer Conference, UGA *July 2020*

8. *Constructible numbers, division points and class field theory*
   Graduate Student Seminar, UGA *April 2020*

9. *What are inseparable and transcendental extensions?*
   SMaRTS Seminar, UGA *February 2020*
   (**S**treet **M**ath **a**nd **R**elated **T**opics **S**eminar)

10. *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 *June 2026*
   (**C**onnecticu**t** Summer School in **N**umber **T**heory)
2. JMM 2026
   Washington, DC *January 2026*
   (**J**oint **M**athematics **M**eetings)
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 *August 2025*
   (**B**anff **I**nternational **R**esearch **S**tation)
6. ICERM: Algebraic Points on Curves
   Providence, RI *June 2025*
   (**I**nstitute for **C**omputational and **E**xperimental **R**esearch in **M**ath)
7. RTG Workshop on Arithmetic Statistics
   Columbus, OH *June 2025*
8. MAGNTS
   Columbus, OH *March 2025*
   (**M**idwest **A**rithmetic **G**eometry and **N**umber **T**heory **S**eries)
9. AMS Eastern Sectional Meeting
   Albany, NY *October 2024*
   Special Session on "Explicit Methods in Arithmetic Geometry"
10. PANTS XXXVIII
    Winston Salem, NC *September 2024*
    (**PA**lmetto **N**umber **T**heory **S**eries)
11. ANTS XVI at MIT
    MIT, Cambridge, MA *July 2024*
    (**A**lgorithmic **N**umber **T**heory **S**ymposium)
12. The Mordell conjecture 100 years later
    MIT, Cambridge, MA *July 2024*

*Online.

13. CTNT 2024 Conference
    Storrs, CT *June 2024*
    (**C**onnecticu**t** Summer School in **N**umber **T**heory)

14. AWS 2024: Abelian Varieties
    Tucson, AZ *March 2024*
    (**A**rizona **W**inter **S**chool)

15. JMM 2024
    San Fransisco, CA *January 2024*
    (**J**oint **M**athematics **M**eetings)

16. MRC 2023: Explicit Computations With Stacks
    Java Center, NY *June 2023*
    (**M**ath **R**esearch **C**ommunities)

17. AWS 2023: Unlikely Intersections
    Tucson, AZ *March 2023*

18. JMM 2023
    Boston, MA *January 2023*
    (**J**oint **M**athematics **M**eetings)

19. PANTS XXXV
    Columbia, SC *December 2022*
    (**PA**lmetto **N**umber **T**heory **S**eries)

20. CTNT 2022 Conference
    Storrs, CT *June 2022*
    (**C**onnecticu**t** Summer School in **N**umber **T**heory)

21. Maine-Québec Number Theory Conference* *October 2021*

22. PAJAMAS III* *September 2021*
    (**Pa**lmetto **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*
    (**Pa**lmetto **J**oint **A**rithmetic, **M**odularity, and **A**nalysis **S**eries)

31. Madison Moduli Weekend* *September 2020*

32. PAJAMAS I* *September 2020*
    (**Pa**lmetto **J**oint **A**rithmetic, **M**odularity, and **A**nalysis **S**eries)

33. CTNT 2020 Summer School and Conference* *June 2020*
(**C**onnecticu**t** Summer School in **N**umber **T**heory)

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

35. MAAIM
Atlanta, GA *November 2019*
(**M**odular Forms, **A**rithmetic, **a**nd Women **i**n **M**athematics)

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

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

38. CTNT 2018 Summer School and Conference
Storrs, CT *May-June 2018*
(**C**onnecticu**t** Summer School in **N**umber **T**heory)

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

40. CTNT 2016 Summer School and Conference
Storrs, CT *August 2016*
(**C**onnecticu**t** Summer School in **N**umber **T**heory)

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

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

43. WADE INTO Research REU at Wake Forest University
Winston-Salem, NC *June - August 2015*
(**Wa**ke/**D**avidson **E**xperience **i**n **N**umber **T**he**o**ry **Research**)