

Tyler H. Chamberlain

📍 3200 S Southern Oaks Dr, Bloomington, IN 47401 ✉ tchamberlain@college.harvard.edu ☎ 812-606-7141
 🔗 tyhchamberlain.github.io

Education

Harvard College BA in Mathematics with a Secondary in Near Eastern Languages & Civilizations	Sept. 2021 - May 2025 (expected)
<ul style="list-style-type: none"> GPA: 3.97/4.0 Coursework: Commutative Algebra, Real & Complex Analysis, Algebraic Geometry, Algebraic Topology, Complex Geometry, Representation theory, and Lie Groups & Algebras 	
Indiana University, Bloomington No Degree; OPEN Program for high schoolers	Aug. 2018 - May 2020
<ul style="list-style-type: none"> GPA: 4.0/4.0 Coursework: Linear Algebra, Abstract Algebra, Real Analysis, Topology, and Logic 	

Papers

Preprint: <i>On spectra of metric tree graphs</i> T. Chamberlain arXiv:2412.02200 🔗	Dec. 2024
In Preparation: <i>Triangularity of a plane curve singularity</i> T. Chamberlain Updates and Info 🔗	...

Conference Talks

Presenter: Indiana Undergraduate Math Research Conference title: “Spectral Simplicity in Quantum Graphs”	June 2023
Upcoming, Invited Speaker: AMS Special Session, Topics in Classical Algebraic Geometry at the AMS Sectional Meeting in Lawrence, Kansas	March 2025
Upcoming, Invited Speaker: SIAM Conference on Applied Algebraic Geometry (AG25), mini symposium for algebraic geometry in spectral theory, in Madison, Wisconsin.	July 2025

Additional Math Experiences

Senior Honors Candidate	Jan. 2024 - current
<ul style="list-style-type: none"> Faculty advisor, Joe Harris; co-advised by Prof. Anand Patel. Researching a classic enumerative question regarding polygons and plane curves. Research on triangles led to plane curve singularity invariant, <i>triangularity</i>; see Papers. 	
Harvard College REU	June 2024 – July 2024
<ul style="list-style-type: none"> Continued research into spectra of metric graphs. Confirmed a conjecture of Colin de Verdière for tree graphs; see Papers. 	
Indiana University REU	June 2023 – July 2023
<ul style="list-style-type: none"> Advised by Prof. Christopher Judge. Researched spectra of metric graphs. Introduced algebraic machinery which shows promise toward resolving a conjecture of Colin de Verdière. 	

Teaching

Lead Course Assistant

Sept. 2024 - current

- Assisted the Fall 2024 iteration of *Math 122: Algebra I* for Prof. Joe Harris.
- Duties include managing other assistants, grading homework, holding office hours.

Course Assistant

Spring 2022 - Spring 2024

- Assisted two iterations of *Math 132: Differential Topology*.
- Assisted one iteration of *Math 112: Real Analysis*.

Full Time Math Tutor

Aug. 2020 - April 2021

- Operated as a full time (40 hrs/wk) math tutor in Bloomington, Indiana for one academic year.
- Supplemented virtual education of K-12 and college students during the COVID-19 pandemic.
- Taught topics ranging from arithmetic to calculus.