

Xingyu Cheng

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(317)-965-0515

Education

University of North Carolina at Chapel Hill

2021—Present

PhD Mathematics

Advisor: Prakash Belkale

Purdue University, West Lafayette, IN

2017—2021

BS Mathematics (Honors)

Minors: German, Computer Science

Publications

2. **Linking number of monotonic cycles in random book embeddings of complete graphs** (joint with Yasmin Aguillon, Eric Burkholder, Spencer Eddins, Emma Harrell, Kenji Kozai, Elijah Leake, Pedro Morales). *J. Knot Theory Ramif.* <https://www.worldscientific.com/doi/pdf/10.1142/S0218216523500438>
1. **The Mean Sum of Squared Linking Numbers of Random Piecewise-Linear Embeddings of K_n** (joint with Yasmin Aguillon, Spencer Eddins, Pedro Morales). *Rose-Hulman Undergrad. Math. J.* <https://scholar.rose-hulman.edu/rhumj/vol124/iss2/3/>

Conferences attended

- MAAGC, Virginia Commonwealth University, 2023.
- SLMATH/MSRI Summer School Commutative Algebra and its Interaction with Algebraic Geometry, Notre Dame University, Summer 2023.
- Georgia Algebraic Geometry Symposium, University of Georgia, 2023.
- Summer 2020 Indiana REU Conference, Indiana University, 2020.
Talk given: ‘Extensions of the uniform random polygon model’ (joint talk with Pedro Morales).

Teaching

Spring 2024

Recitation lead:

- Math 233 Multivariable Calculus

Fall 2022

Course taught:

- Math 110 College Algebra

Recitations lead:

- Math 231H Calculus I Honors
- Math 110L Recitation for College Algebra

Spring 2022

Recitations lead:

- Math 233 Multivariable Calculus

Fall 2021

Recitation lead:

- Math 233 Multivariable Calculus

Service

Tea Time Coordinator

2023—2024

Directed Reading Program

From <https://math.unc.edu/undergraduate/opportunities/>: “The Directed Reading Program (DRP) pairs undergraduate students with graduate student mentors for semester-long independent study projects. It is an opportunity for motivated students to get one-on-one mentorship as they learn about a math topic of their interest but is out of the scope of the courses offered at UNC.”

- **Spring 2024:** with Yan Zhu. We are learning number theory from Ireland and Rosen.
- **Fall 2023:** with Paul Hamrick. We went through Reid’s *Undergraduate Algebraic Geometry* with a particular focus on the proof of the 27 lines on a cubic.
- **Spring 2023:** with Aryan Kokkanti. ‘Foundations of Knot Theory.’
- **Fall 2022:** with Marleigh Purgar-Mcdonald. ‘Hilbert Nullstellensatz, Affine Varieties and Ideals.’