# Zachary Gardner

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## Education

**Boston College**
Ph.D. in Mathematics                                                                                    2020-2026
Thesis: "Moduli of $\mathcal{O}$-prismatic $(\mathcal{G}, \mu)$-apertures and applications," advised by Keerthi Madapusi

**The University of Texas at Austin**
B.S. in Mathematics with Departmental Honors                                                            2016-2020
Thesis: "Abelian Varieties and the Mordell-Weil Theorem," advised by Sam Raskin

## Publications & Preprints

**Preprints**
(with K. Madapusi) *An algebraicity conjecture of Drinfeld and the moduli of $p$-divisible groups*        2024

**Forthcoming**
*Moduli of $\mathcal{O}$-prismatic $(\mathcal{G}, \mu)$-apertures and applications*
(with J. Hekking) *A note on ideals in derived geometry*
*Prismatic Rapoport-Zink spaces associated to general linear groups*

## Talks

*Prismatic Rapoport-Zink spaces associated to general linear groups*, Kyoto University        October 27, 2024
*Moduli of prismatic $(\mathcal{G}, \mu)$-apertures and applications*, The University of Tokyo        October 9, 2024
*Prismatic $(\mathcal{G}, \mu)$-apertures and $1$-bounded derived stacks*, Universität Münster        August 14, 2024
*Moduli of prismatic $(\mathcal{G}, \mu)$-apertures*, Universität Münster                              August 7, 2024

## Service

**Seminars & Conferences Organized**
Derived Arithmetic Intersection Theory (DAIT) Learning Group                        Spring-Summer 2022
*Virtual seminar on conjectural derived formulation of $*$-products and arithmetic intersection theory*
Derived Algebraic Geometry (DAG) Learning Group                                              Fall 2021
*Virtual seminar mostly following assorted notes of Adeel Khan*
UT Summer Minicourses                                                                        Summer 2020
*Recruited speakers for week-long courses, managed documents and other secretarial work*

**Other Service**
Treasurer: BC Math Graduate Student Association                                              Fall 2022–
*Secured funding for weekly graduate student seminar and prospective student visit, managed reimbursements*
Secretary: BC Math Graduate Student Association                                    Fall 2021-Spring 2022
*Organized weekly graduate student seminar and prospective student visit, managed documents*
Graduate Student Representative: NSF Project #1950222                              Fall 2021-Spring 2022
*Met with high school math teachers in the Boston area to do collaborative math exercises together and discuss
math pedagogy and their needs in the classroom*
Head Math Representative: Physics, Math, & Astronomy Board for Student Advocacy    Fall 2019-Spring 2020
*Strengthened communication and transparency between students and administration, successfully obtained new
physical shared space for PMA majors, helped formalize TA recruitment procedures*
President: UT Math Club                                                            Fall 2017-Spring 2019
*Built community with underclassmen, graduate students, faculty and administrators, formalized club structure,
created and recruited for new club officer roles (outreach coordinator and social coordinator)*
Head Counselor: Ross Mathematics Program                                                     Summer 2019
*Trained other counselors, taught courses, mentored first- and second-year students, managed documents*
Counselor: Ross Mathematics Program                                                          Summer 2017
*Mentored first- and second-year students, managed documents*

## Teaching Experience

**Boston College**

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|---|---|
| Instructor of record for *Math 1100 Calculus I* | Spring 2024 & Fall 2022 |
| Instructor of record for *Math 1004 Finite Probability and Applications* | Fall 2023 |
| Teaching assistant for *Math 1101 Calculus II* | Spring 2022 |
| Teaching assistant for *Math 2202 Multivariable Calculus* | Fall 2021 |
| Grader for *Math 3312 Algebra II* | Spring 2021 |
| Teaching assistant for *Math 1102 Calculus I (Math/Sci)* | Fall 2020 |

**UT Summer Minicourses**

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| *Abelian Varieties and the Mordell-Weil Theorem* | Summer 2020 |
| (with R. Gregoric) *Class Field Theory* | Summer 2019 |

**Ross Mathematics Program**

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| *Ross 55: From algebraic number theory to smooth manifolds* | Summer 2019 |

## Honors, Awards, & Fellowships

**Boston College**

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| Donald J. White Teaching Excellence Award | Spring 2022 |

**The University of Texas at Austin**

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| CNS Dean's Honored Graduate | Spring 2020 |
| CNS Service & Leadership Distinction | Spring 2020 |
| Barrett Fellowship | Fall 2019 |
| Carmelina Cutro Albino Memorial Endowed Presidential Scholarship | Spring 2018 |

## Conferences & Workshops Attended

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| **Summer Research Institute in Algebraic Geometry** | July 28-August 1, 2025 |
| *Colorado State University, Fort Collins, Colorado, USA* | |
| **Workshop on Shimura varieties and related moduli stacks** | October 27, 2024 |
| *Kyoto University, Kyoto, Japan* | |
| **$p$-adic cohomology and arithmetic geometry (*in honor of Nobuo Tsuzuki*)** | October 21-25, 2024 |
| *Tohoku University, Sendai, Japan* | |
| **Workshop on Shimura varieties, representation theory and related topics** | October 7-11, 2024 |
| *The University of Tokyo, Tokyo, Japan* | |
| **Young Topologists Meeting** | August 5-9, 2024 |
| *Universität Münster, Münster, Germany* | |
| **Algebraic geometry and cohomology in mixed characteristic** | May 15-19, 2023 |
| *Evanston, Illinois, USA* | |
| **Homotopy Theory with Applications to Arithmetic and Geometry** | June 27-30, 2022 |
| *Fields Institute, Toronto, Ontario, Canada* | |
| **Arizona Winter School on Topology and Arithmetic** | March 2-6, 2019 |
| *Southwest Center for Arithmetic Geometry, Tucson, Arizona, USA* | |

## Languages

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| English | Native |
| Hindi | Intermediate |
| French | Beginner |