Zachariah Zobair

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Mathematics, Duke University
Website (zachzobair.com)

Research Interests

Algebraic number theory and arithmetic geometry. Representation theory, with specific interests towards p-adic representations, automorphic representations, and the Langlands correspondence.

Education

Ph.D. in Mathematics, Duke University   Aug. 2026 –

Joint B.A/M.A. in Mathematics, Boston University   Sep. 2021 – Jan. 2026
Advisor: Prof. Alexander Bertoloni Meli   *GPA: 3.92/4.00*
Master's Thesis: On the Local Langlands Correspondence for $\mathrm{GL}_2(F)$ *When* $p \neq 2$.

Mathematical Experience

Reading Course, Boston University   Fall 2025
Tate's Thesis   *Supervisor: Prof. David Rohrlich*
Principal Text: Fourier Analysis on Number Fields by Dinakar Ramakrishnan & Robert J. Valenza

Reading Course, Boston University   Spring 2025
Local Class Field Theory   *Supervisor: Prof. Alexander Bertoloni Meli*
Principal Text: Algebraic Number Theory (edited) by J. W. S. Cassels & A. Frölich

Reading Course, Boston University   Fall 2025
Local Fields (Following Preliminary Arizona Winter School 2024)   *Supervisor: Prof. David Rohrlich*

Reading Course, Boston University   Fall 2023
Riemann Surfaces and Algebraic Curves   *Supervisor: Prof. Siu-Cheong Lau*
Principal Text: Algebraic Curves and Riemann Surfaces by Rick Miranda

PolyMathJR Undergraduate Research Program   Summer 2023
Topic: Integrating via the Method of Brackets   *Supervisor: Prof. Victor H. Moll (Tulane University)*

Talks

Local Class Field Theory via Group Cohomology
Society of Mathematics Colloquium   *Boston University, Oct. 2025*

Homology and Cohomology as Measuring Obstructions
Society of Mathematics Colloquium   *Boston University, Sep. 2025*

An Introduction to the Theory of p-Adic Numbers and Local Fields
Society of Mathematics Colloquium   *Boston University, Mar. 2025*

Classification of Principal G-Bundles over Spheres
PCMI Experimental Math Lab   *IAS Park City Math Institute, Jul. 2024*

Conferences Attended

- The Legacy of John Tate, And Beyond (Harvard University), Mar. 2025
- Park City Math Institute (*Participant in Undergraduate Summer School*) (Institute for Advanced Study), Jul. 2024

Awards

Academic Excellence in Mathematics Award   Boston University, 2025
Recognizes students with strong academic records in their classes. Given to one student in the graduating class.
Dean's List   Boston University, 2021-2024
Given to undergraduates with ≥ 3.5 GPA. Received each undergraduate semester

Other Relevant Experience

Grader, Introduction to Analysis II   Spring 2025
Grader, Linear Algebra   Spring 2025
Grader, Introduction to Differential Geometry   Fall 2024
Head of the Colloquium, Boston University Society of Mathematics   Spring 2024-Present
-Organized colloquium talks and edited the Proceedings of the Colloquium (link) resulting in the only student publication in mathematics at Boston University.