Benjamin York

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Education

University of Connecticut	2019 – Present
Ph.D. in Mathematics, Advisor: Álvaro Lozano-Robledo	*Storrs, CT*
Bowdoin College	2015 – 2019
B.A. in Mathematics	*Brunswick, ME*

Research Interests

My current research interest is the study of Galois representations attached to elliptic curves.
More broadly, I am interested in Diophantine equations and arithmetic geometry.

Conferences Invited To

AMS Eastern Sectional Meeting	Oct. 2024
Upcoming: Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	*Albany, NY*
Joint Mathematics Meetings, San Francisco	Jan. 2024
Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	*San Francisco, CA*
Joint Mathematics Meetings, Boston	Jan. 2023
On the adelic image of Galois representations attached to elliptic curves with CM	*Boston, MA*
• Joint with Álvaro Lozano-Robledo	
AMS Eastern Sectional Meeting	Oct. 2022
On the adelic image of Galois representations attached to elliptic curves with CM	*Amherst, MA*
• Joint with Álvaro Lozano-Robledo	

Conferences Attended

Sixteenth Algorithmic Number Theory Symposium (ANTS XVI)	July 2024
	Cambridge, MA
The Mordell conjecture 100 years later	July 2024
Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	*Cambridge, MA*
CTNT Number Theory Conference	June 2024
Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	*Storrs, CT*
AMS Graduate Student Conference	April 2024
Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	*Providence, RI*
LMFDB, Computation, and Number Theory Conference	July 2023
	Providence, RI
Maine-Quebec Number Theory Conference	Oct. 2023
On the adelic image of Galois representations attached to elliptic curves with CM	*Orono, ME*
Modular Curves and Galois Representations Conference	Sept. 2023
Cancelled - On the adelic image of Galois reps. attached to elliptic curves with CM	*Zagreb, Croatia*
Upstate New York Number Theory Conference	April 2023
On the adelic image of Galois representations attached to elliptic curves with CM	*Rochester, NY*

CTNT Number Theory Conference	June 2022
	Storrs, CT
Mathematics Continued Conference	Oct. 2022
An Exploration of Size and Distance	*Storrs, CT*
Maine-Quebec Number Theory Conference	Oct. 2022
	Québec City, Canada
Upstate New York Number Theory Conference	Oct. 2021
	Schenectady, NY
Maine-Quebec Number Theory Conference	Oct. 2021
	Virtual
CTNT Number Theory Conference	June 2020
	Virtual

Seminar Talks

A Family of Elliptic Curves with Rank One	March 2024
UConn Number Theory Seminar	*Storrs, CT*
Construction of Elliptic Curves with Large Rank	Feb. 2024
UConn Number Theory Seminar	*Storrs, CT*
• Joint with Asimina Hamakiotes	
A Gentle Introduction to the p-adic Numbers	Nov. 2023
UConn SIGMA Seminar	*Storrs, CT*
Elliptic Curves with a View Towards Computation	Oct. 2023
UConn Number Theory Seminar	*Storrs, CT*
An Introduction to Elliptic Curves	March 2023
UConn Math Club	*Storrs, CT*
Dimension Formulas for Modular Curves	March 2023
UConn Number Theory Seminar	*Storrs, CT*
Galois Representations Attached to Elliptic Curves with CM	Feb. 2023
Wesleyan Graduate Student Seminar - Invited Talk	*Middletown, CT*
An Introduction to the Theory of Elliptic Curves	Feb. 2023
UConn SIGMA Seminar	*Storrs, CT*
Complex Tori and Modular Curves - A Four Part Lecture	Oct. 2022
UConn Number Theory Seminar	*Storrs, CT*
Infinite Galois Theory	March 2021
UConn Number Theory Seminar	*Storrs, CT*
Finite Extensions of $\mathbb{Q}_p$	Oct. 2020
UConn Number Theory Seminar	*Storrs, CT*
Hensel's Lemma & Automorphisms of $\mathbb{Q}_p$	July 2020
UConn Number Theory Seminar	*Storrs, CT*
Orders of Imaginary Quadratic Number Fields	Oct. 2019
UConn Number Theory Seminar	*Storrs, CT*

UConn Number Theory Seminar
Fall 2019 - Present

University of Connecticut
- Weekly seminar covering select topics in number theory. Focuses on student presentation of material.

Arizona Winter School (AWS)
March 2023, 2024

University of Arizona
- Five-day-long intensive winter school covering advanced graduate topics in number theory and arithmetic geometry.

Connecticut Summer School in Number Theory (CTNT)
June 2020, 2022

University of Connecticut
- Summer school promoting number theory to advanced undergraduates and early career graduate students.

Preliminary Arizona Winter School (PAWS)
Oct. - Nov. 2022

Virtual
- Virtual program on topics related to the upcoming AWS.

Teaching Experience

University of Connecticut

MATH 1020Q Problem Solving
Instructor

Fall 2020, Spring 2021, Fall 2021

MATH 1071Q Calculus for Business and Economics
Instructor

Fall 2022

MATH 2210Q Applied Linear Algebra
Teaching Assistant

Summer 2023, Summer 2024

MATH 2110Q Multivariable Calculus
Teaching Assistant

Spring 2022, Summer 2022, Spring 2023, Fall 2023, Spring 2024

MATH 1132Q Calculus II
Teaching Assistant

Spring 2020, Summer 2021, Summer 2023

MATH 1131Q Calculus I
Teaching Assistant

Fall 2019

Bowdoin College

MATH 2603 Introduction to Analysis
Teaching Assistant

Fall 2018

Awards & Honors

Smyth Mathematics Prize
2019

Bowdoin College

$100\pi - \epsilon$ prize
2016

Bowdoin College

Specialized Skills

Programming Languages: Magma (advanced); SAGE, Python (intermediate); PARI/GP, Java (novice)

Software: LaTeX, Microsoft Excel

Other: Library based research