

Benjamin York

341 Mansfield Road,
Storrs, CT 06269

<https://benjamin-york.github.io/>
benjamin.york@uconn.edu

Education

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

Research Interests

Number theory and arithmetic geometry. Elliptic curves and Galois representations.

Research Papers

Models of CM elliptic curves with a prescribed ℓ-adic Galois image	Aug. 2024
<i>González-Jiménez, E., Lozano-Robledo, Á., York, B., arXiv:2408.04159, submitted</i>	
The image of the adelic Galois representation of an elliptic curve with CM	
<i>Lozano-Robledo, Á., York, B., in preparation</i>	
Irreducibility of the non-ordinary locus for hyperelliptic curves over finite fields	
<i>Bouchet, T., Davis, E., Groen, S., Porat, Z., York, B., in preparation</i>	

Conferences Invited To

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

Conferences Attended

Maine-Quebec Number Theory Conference	Oct. 2024
<i>Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image</i>	<i>Québec City, Canada</i>
Sixteenth Algorithmic Number Theory Symposium (ANTS XVI)	July 2024
	<i>Cambridge, MA</i>
The Mordell conjecture 100 years later	July 2024
<i>Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image</i>	<i>Cambridge, MA</i>
CTNT Number Theory Conference	June 2024
<i>Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image</i>	<i>Storrs, CT</i>

AMS Graduate Student Conference	April 2024
<i>Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image</i>	<i>Providence, RI</i>
LMFDB, Computation, and Number Theory Conference	July 2023
	<i>Providence, RI</i>
Maine-Quebec Number Theory Conference	Oct. 2023
<i>On the adelic image of Galois representations attached to elliptic curves with CM</i>	<i>Orono, ME</i>
Modular Curves and Galois Representations Conference	Sept. 2023
<i>Cancelled - On the adelic image of Galois reps. attached to elliptic curves with CM</i>	<i>Zagreb, Croatia</i>
Upstate New York Number Theory Conference	April 2023
<i>On the adelic image of Galois representations attached to elliptic curves with CM</i>	<i>Rochester, NY</i>
CTNT Number Theory Conference	June 2022
	<i>Storrs, CT</i>
Maine-Quebec Number Theory Conference	Oct. 2022
	<i>Québec City, Canada</i>
Upstate New York Number Theory Conference	Oct. 2021
	<i>Schenectady, NY</i>
Maine-Quebec Number Theory Conference	Oct. 2021
	<i>Virtual</i>
CTNT Number Theory Conference	June 2020
	<i>Virtual</i>

Seminar Talks

Models of CM Elliptic Curves with Prescribed ℓ-adic Galois Image	Oct. 2024
<i>OSU University Number Theory Seminar - Invited Talk</i>	<i>Columbus, OH</i>
The Adele and Idele Class Groups of \mathbb{Q}	Oct. 2024
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>
A Family of Elliptic Curves with Rank One	March 2024
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>
Construction of Elliptic Curves with Large Rank	Feb. 2024
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>
• Joint with Asimina Hamakiotes	
A Gentle Introduction to the p-adic Numbers	Nov. 2023
<i>UConn SIGMA Seminar</i>	<i>Storrs, CT</i>
Elliptic Curves with a View Towards Computation	Oct. 2023
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>
An Introduction to Elliptic Curves	March 2023
<i>UConn Math Club</i>	<i>Storrs, CT</i>
Dimension Formulas for Modular Curves	March 2023
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>
Galois Representations Attached to Elliptic Curves with CM	Feb. 2023
<i>Wesleyan Graduate Student Seminar - Invited Talk</i>	<i>Middletown, CT</i>
An Introduction to the Theory of Elliptic Curves	Feb. 2023
<i>UConn SIGMA Seminar</i>	<i>Storrs, CT</i>
Complex Tori and Modular Curves - A Four Part Lecture	Oct. 2022
<i>UConn Number Theory Reading Group</i>	<i>Storrs, CT</i>

Infinite Galois Theory <i>UConn Number Theory Reading Group</i>	March 2021 <i>Storrs, CT</i>
Finite Extensions of \mathbb{Q}_p <i>UConn Number Theory Reading Group</i>	Oct. 2020 <i>Storrs, CT</i>
Hensel's Lemma & Automorphisms of \mathbb{Q}_p <i>UConn Number Theory Reading Group</i>	July 2020 <i>Storrs, CT</i>
Orders of Imaginary Quadratic Number Fields <i>UConn Number Theory Reading Group</i>	Oct. 2019 <i>Storrs, CT</i>

Instructional Schools/Workshops

UConn Number Theory Reading Group <i>University of Connecticut</i>	Fall 2019 - Present
<ul style="list-style-type: none"> Weekly reading group covering select topics in number theory. Focuses on student presentation of material. 	
Modular Curves Workshop <i>MIT</i>	March 2022, 2024
<ul style="list-style-type: none"> Week long workshop to improve and expand the L-functions and Modular Forms Database (LMFDB) 	
Arizona Winter School (AWS) <i>University of Arizona</i>	March 2023, 2024
<ul style="list-style-type: none"> Five-day-long intensive winter school covering advanced graduate topics in number theory and arithmetic geometry. 	
Connecticut Summer School in Number Theory (CTNT) <i>University of Connecticut</i>	June 2020, 2022
<ul style="list-style-type: none"> Summer school promoting number theory to advanced undergraduates and early graduate students. 	
Preliminary Arizona Winter School (PAWS) <i>Virtual</i>	Oct. - Nov. 2022
<ul style="list-style-type: none"> Virtual program on topics related to the upcoming Arizona Winter School. 	

Teaching Experience

University of Connecticut

MATH 1020Q Problem Solving <i>Fall 2020, Spring 2021, Fall 2021, Fall 2024</i>	Instructor
MATH 1071Q Calculus for Business and Economics <i>Fall 2022</i>	Instructor
MATH 2210Q Applied Linear Algebra <i>Summer 2023, Summer 2024</i>	Teaching Assistant
MATH 2110Q Multivariable Calculus <i>Spring 2022, Summer 2022, Spring 2023, Fall 2023, Spring 2024</i>	Teaching Assistant
MATH 1132Q Calculus II <i>Spring 2020, Summer 2021, Summer 2023</i>	Teaching Assistant
MATH 1131Q Calculus I <i>Fall 2019</i>	Teaching Assistant

Bowdoin College

MATH 2603 Introduction to Analysis <i>Fall 2018</i>	Teaching Assistant
---	--------------------

Outreach

Directed Reading Program Mentor

Spring 2024

University of Connecticut

- Mentor to student studying introductory abstract algebra, with a focus on algebraic number theory.

Graduate Mentorship Program

Fall 2020 - Spring 2024

University of Connecticut

- Mentor to first year graduate students, helping to smooth the transition to graduate life.

Speaker at Mathematics Continued Conference

Oct. 2022

University of Connecticut

- The Mathematics Continued Conference seeks to give undergraduate students interested in math an opportunity to learn about graduate school and current research done by graduate students and faculty.

Awards & Honors

Conference Travel Fellowship (\$750)

Fall 2024

Graduate School, UConn

Summer Travel Fellowship (\$1,120)

Summer 2024

Department of Mathematics, UConn

Predoctoral Fellowship (\$7,805)

Spring 2024

Graduate School, UConn

Summer Fellowship (\$5,000)

Summer 2020

Department of Mathematics, UConn

Smyth Mathematics Prize

Spring 2019

Bowdoin College

$100\pi - \varepsilon$ prize

Spring 2016

Bowdoin College

Specialized Skills

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

Software: LaTeX, Microsoft Excel