

CONTACT INFORMATION	5752 Neville Hall Dept. of Mathematics University of Maine Orono, ME 04469 USA	<i>Phone:</i> (+1) 845 750 3244 <i>Email:</i> mjcerchia@gmail.com <i>Web:</i> https://mjcerchia.github.io/ U.S. citizen
RESEARCH INTERESTS	Broad: Number Theory, Arithmetic Geometry, Algebraic Geometry. Specific: Arithmetic of Varieties, Modular Curves, Stacks, Galois Representations.	
ACADEMIC APPOINTMENTS	University of Maine Fixed-Term Assistant Professor (2024 - present) Emory University Graduate Research Assistant (2019 - 2024)	
EDUCATION	Emory University , Atlanta, Georgia USA Ph.D., Mathematics, August 2024 Dissertation Topic: “The Canonical Ring of Moduli of Abelian Varieties” Adviser: David Zureick-Brown (Amherst) Wake Forest University , Winston-Salem, North Carolina USA M.A., Mathematics, May 2019 Thesis Topic: “Classifying the Image of the Arboreal Galois Representation” Adviser: Jeremy Rouse (Wake Forest) SUNY Geneseo , Geneseo, New York USA B.A., Mathematics and English Literature, May 2012 Budapest Semesters in Mathematics , Budapest, Hungary Study abroad, Fall 2010	
HONORS AND AWARDS	(Spring 2019) Best Graduating Student in Mathematics (Wake Forest)	
PUBLICATIONS (PEER REVIEWED JOURNAL ARTICLES)	1. Uniform bounds on the image of the arboreal Galois representations attached to non-CM elliptic curves ; with Jeremy Rouse; <i>Proceedings of the American Mathematical Society</i> 2021, no. 2, 583-589. arxiv	
PREPRINTS	2. Section rings of \mathbb{Q}-divisors on genus 1 curves ; with Jesse Franklin and Evan O’Dorney, 2023. arxiv 3. The canonical ring of the moduli space of abelian varieties for genus up to 6. (In Progress). 4. Sporadic Quartic Torsion. (In Progress). With Alexis Newton	
PUBLICATIONS (THESIS)	5. Classifying the image of the arboreal galois representation ; 2019; Michael Cerchia; Wake Forest M.A. thesis; 31 pages. link	
TEACHING (EMORY)	Emory University , Atlanta, GA <i>Graduate Teaching Assistant.</i> Instructor of Record (2 courses)	

Spring 2022 Calculus I Math 111
Fall 2021 Calculus I Math 111

Teaching Assistant (5 courses) *Wrote quizzes, graded quizzes and exams, taught weekly one hour lab section, and held office hours.*

Spring 2021 Combinatorics Math 330
Fall 2020 Linear Algebra Math 221
Fall 2020 Number Theory Math 328 (Grader)
Spring 2020 Mathematical Statistics II Math 362
Spring 2019 Mathematical Statistics I Math 361

TEACHING
(WAKE FOREST)

Wake Forest University, Winston-Salem, NC
Graduate Teaching Assistant.

Teaching Assistant (6 courses) *Led weekly three hour discussion and problem solving session, wrote quizzes, graded quizzes and exams, and held office hours.*

Spring 2019 Modern Algebra I Math 321
Fall 2018 Modern Algebra I Math 321
Summer 2018 Linear Algebra I. Math 121
Summer 2018 Calculus with Analytic Geometry II. Math 112
Spring 2018 Linear Algebra I. Math 321
Fall 2017 Multivariable Calculus Math 113

TEACHING
(OTHER)

Emory Math Circle, Atlanta, Georgia USA
Instructor. Enrichment program for advanced local middle and high school students. Designed and taught courses in number theory, combinatorics, and computer science.

Spring 2021 High School A/B Assistant
Fall 2020 High School A/B Assistant
Spring 2020 High School A Instructor
Fall 2019 High School A Instructor

Mathnasium, Brooklyn, New York USA (2016-2017)
Instructor. Tutored middle and high school students in the standard NYS curriculum.

INDUSTRY
POSITIONS

MinedXai Dayton, Ohio USA (Summer 2023)
Intern. Used techniques from topological data analysis to develop a forex forecasting model.

ORGANIZATION

(Spring 2022) Automorphic Forms Student Seminar
(Fall 2022) Modular Forms Student Seminar

CONFERENCE TALKS

(Spring 2024) **The Canonical ring of \mathcal{A}_g .** Invited talk at the University of Copenhagen Number Theory Seminar.
(Spring 2024) **The section ring of a stacky genus 1 curve.** Invited talk at the JMM Special Section: Explicit Computations with Stacks.
(Spring 2024) **The canonical ring of \mathcal{A}_g .** Contributed talk at the Joint Mathematics Meetings.
(Spring 2020) **Classifying the Image of the Arboreal Galois Representation.** Contributed talk at the JMM.
(Fall 2019) **Classifying the Image of the Arboreal Galois Representation.** PANTS (Palmetto Number Theory Series). Contributed talk

STUDENT SEMINAR
TALKS

(Spring 2022) **Formal Immersions**. Mazur Seminar. Emory University (Expository)
(Fall 2021) **Introduction to Modular Forms**. Seminar on Modular Forms. Emory University (Expository)
(Spring 2021) **Geometric Invariant Theory**. RANT. Emory University (Expository)
(Fall 2020) **Introduction to Modular Curve**. RANT. Emory University (Expository)
(Fall 2020) **Infinitude of supersingular primes for elliptic curves over \mathbb{Q}** . RANT. Emory University (Expository)
(Spring 2020) **An Introduction to Arithmetic Dynamics**. RANT. Emory University (Expository)
(Fall 2019) **The Jacobian**. Nonabelian Chabauty and Other Stuff (NACHOS). Emory University (Expository)
(Spring 2019) **Galois Representations Attached to Elliptic Curves**. Wake Forest Summer Research Seminar. Wake Forest University

SOFTWARE SKILLS Proficient in Python and Magma.

REFERENCES

David Zureick-Brown
Amherst College
david.zureick.brown@gmail.com

John Voight
Dartmouth College
jvoight@gmail.com

Brooke Ullery
Emory University
bullery@emory.edu

Juan Villeta-Garcia (Teaching)
Emory University
juan.villeta-garcia@emory.edu