

Employment

July 2023 - present **Research Assistant Professor**, Department of Mathematics and Statistics, Boston University, Boston, Massachusetts.

Education

- 2023 **PhD in Mathematics**, Dartmouth College, Hanover, New Hampshire.
Advisor: John Voight.
Thesis title: “Triangular modular curves of low genus and geometric quadratic Chabauty”.
- 2021 **M.A. in Mathematics**, Dartmouth College, Hanover, New Hampshire.
- 2019 **M.S. in Mathematics**, Colorado State University, Fort Collins, Colorado.
Advisor: Rachel Pries.
Thesis title: “Rational points of low degree on Fermat curves through the Jacobian variety”.
- 2016 **B.S. in Mathematics**, University of Los Andes, Bogotá, Colombia.

Publications

- [6] **On invariants of Artin-Schreier curves**, with Heidi Goodson, Elisa Lorenzo García, Beth Malmskog, and Renate Scheidler, arXiv:2401.08843. Submitted.
- [5] **Local heights on hyperelliptic curves and quadratic Chabauty**, with Alexander Betts, Sachi Hashimoto, and Pim Spelier, arXiv:2401.05228. Submitted.
- [4] **The classifying element for quotients of Fermat curves**, with Rachel Pries, arXiv:2312.07710. Submitted.
- [3] **A database of basic numerical invariants of Hilbert modular surfaces**, *accepted to Contemp. Math.*, with Eran Assaf, Angelica Babei, Ben Breen, Edgar Costa, Aleksander Horawa, Jean Kieffer, Avinash Kulkarni, Grant Molnar, Sam Schiavone, and John Voight, *Contemp. Math.*, vol. 796 (2024), Amer. Math. Soc., Providence, RI, 285-312.
- [2] **Geometric quadratic Chabauty and p -adic heights**, with Sachi Hashimoto and Pim Spelier, *Exp. Math. Special Issue in Honor of B. Edixhoven* (2023).
- [1] **Enumerating triangular modular curves of low genus**, with John Voight, *Res. Number Theory* 9:3 (2023).

Invited Talks

Conference Talks

- Apr 2024 **Texas Algebraic Geometry Symposium (TAGS)**, *Texas A&M University*, College Station, Texas.
- Sep 2023 **AWM Research Symposium, Special Session on Recent Advances in Curves and Abelian Varieties**, *Clark Atlanta University*, Atlanta, Georgia.

- Oct 2022 **AMS Fall Eastern Sectional Meeting, Special Session on Latinx and Hispanics in Combinatorics, Number Theory, Geometry and Topology**, University of Massachusetts Amherst, Amherst, MA.
- Aug 2022 **Fifteenth Algorithmic Number Theory Symposium (ANTS-XV)**, University of Bristol, Bristol, UK.
- Apr 2022 **Explicit Methods in Modularity**, *virtual*.
- Feb 2022 **XXIII International Symposium on Mathematical Methods Applied to Sciences**, San José, Costa Rica.

Seminar Talks

- Apr 2024 **VT Algebra Seminar**, *Virginia Tech University*, Blacksburg, Virginia.
- Apr 2024 **Dartmouth Algebra and Number Theory Seminar**, *Dartmouth College*, Hanover, New Hampshire.
- Mar 2024 **Emory Algebra and Number Theory Seminar**, *Emory University*, Atlanta, Georgia.
- Feb 2024 **Algebra Seminar**, *University of Connecticut*, Storrs, Connecticut.
- Dec 2023 **Brown Algebra/Number Theory Seminar**, *Brown University*, Providence, Rhode Island.
- Oct 2023 **Boston University Number Theory Seminar**, *Boston University*, Boston, Massachusetts.
- Oct 2023 **Algebra and Number Theory Seminar**, *Wesleyan University*, Middletown, Connecticut.
- Dec 2022 **Number Theory Seminar**, *The Ohio State University*, Columbus, Ohio.
- Nov 2022 **Algebra, Algebraic Geometry and Number Theory Seminar**, *Rice University*, Houston, Texas.
- Apr 2022 **Number Theory LAB**, *Colorado State University*, Fort Collins, Colorado.
- Dec 2021 **A Series of Trimester Programs on Triangle Groups, Belyi Uniformization, and Modularity**, Bhaskaracharya Pratishthana, Prune, India.

Lightning Talks

- Jan 2024 **Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation Annual Meeting 2024**, New York, New York.
- Jul 2023 **LMFDB, Computation, and Number Theory**, ICERM, Providence, Rhode Island.
- Jan 2023 **Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation Annual Meeting 2023**, New York, New York.

Teaching Experience

Boston University

- Spring 2024 **Graph Theory**, *CAS MA 433*.
- Fall 2023 **Linear Algebra**, *CAS MA 242*.

Dartmouth College

- Winter 2023 **Introduction to Mathematics Beyond Calculus: *the abc conjecture***, *Math 17*.
- Fall 2021 **Introduction to Calculus**, *Math 1*.

Colorado State University

Fall 2019 - **Paced Algebra to Calculus electronically (PACe)**, *Assistant Director*, Colorado State University.

Duties: managing undergraduate employees, discussions with students about academic progress and needs, and working with students through violations of the academic honesty code.

Summer 2019 **Linear Algebra I**, *Math 369*.

Spring 2019 **Calculus for Physical Scientists I**, *Math 160*.

Fall 2018 **Calculus for Physical Scientists II**, *Math 161*.

Summer 2018 **Calculus for Physical Scientists III**, *Math 261*.

Teaching Assistant

Spring 2021 **Multivariable Calculus**, *Math 13*, Dartmouth College.

Fall 2020 **Calculus of Functions of one and Several Variables**, *Math 8*, Dartmouth College.

Spring 2018 **Calculus for Physical Scientists II**, *Math 161*, Colorado State University.

Fall 2017 **Calculus for Biological Scientists I**, *Math 155*, Colorado State University.

Spring 2017 **Integral Calculus and Differential Equations**, University of Los Andes.

Spring 2016 **Linear Algebra I**, University of Los Andes.

Fall 2015 **Integral Calculus and Differential Equations**, University of Los Andes.

Mentoring

Mar 2023 **Arizona Winter School: Unlikely Intersections**, *teaching assistant*, University of Arizona, Tucson, Arizona.

Fall 2022 **Preliminary Arizona Winter School 2022: Heights and Model Theory**, *teaching assistant*, (Online).

Winter 2022 **Directed Reading Program**, Dartmouth College, Hanover, New Hampshire. Advised two mathematics undergraduate students on elliptic curves.

Winter 2021 **Directed Reading Program**, Dartmouth College, Hanover, New Hampshire. Advised one undergraduate student on introduction to algebraic geometry.

Fall 2019 - Spring 2020 **Putnam Seminar**, *coach*, Colorado State University, Fort Collins, Colorado.

Outreach

Sep 2023 **Panel discussion: *Research Collaboration Conferences and Networks for Women***, *panelist*, AWM Research Symposium: Special Session on Recent Advances in Curves and Abelian Varieties, Clark Atlanta University, Atlanta, Georgia.

Apr 2023 **Sonia Kovalevsky Day**, *co-organizer*, Dartmouth College, Hanover, New Hampshire.

Apr 2022 **Panel discussion: *Life With a Math Major***, *panelist*, Western Algebraic Geometry Symposium (WAGS), Colorado State University, Fort Collins, Colorado.

Summer 2021 **Exploring Mathematics Camp**, Dartmouth College, Hanover, New Hampshire.

Co-taught a two weeks program on knot theory and combinatorial games for high school and middle school students.

Jun 2017 **Panel discussion: Women in Mathematics**, *panelist*, XXI Colombian Congress of Mathematics, Universidad Nacional de Colombia, Bogotá, Colombia.

Academic Honors and Awards

Jan 2023 **Graduate Student Travel Grant to 2023 JMM**, American Mathematical Society.

Sep 2020 **Dartmouth Fellowship**, Dartmouth College, Hanover, New Hampshire.

Jul 2015 **Yerly's Scholarship**, University of Los Andes, Bogotá, Colombia.

Service

Jan 2024 **JMM special session: Arithmetic geometry with a view toward computation**, *co-organizer*, San Francisco, California.

Fall 2021 - **Dartmouth Algebra and Number Theory Seminar**, *co-organizer*, Dartmouth College, Hanover, New Hampshire.

Fall 2019 - **AMS chapter**, *secretary*, Colorado State University, Fort Collins, Colorado.
Spring 2020

Fall 2019 - **SPLINTER seminar**, *co-organizer*, Colorado State University, Fort Collins, Colorado.
Spring 2020

Fall 2016 **Student Representative, Mathematics Department**, University of Los Andes, Bogotá, Colombia.

Conferences Attended

Apr 2024 **Texas Algebraic Geometry Symposium (TAGS)**, Texas A&M University, College Station, Texas.

Jan 2024 **Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation Annual Meeting 2024**, New York, New York.

Jan 2024 **Joint Mathematics Meetings**, San Francisco, California.

Sep 2023 **AWM Research Symposium**, *Special Session on Recent Advances in Curves and Abelian Varieties*, Clark Atlanta University, Atlanta, Georgia.

Jul 2023 **LMFDB, Computation, and Number Theory**, ICERM, Providence, Rhode Island.

Jun 2023 **AMS Mathematics Research Communities: Explicit Computations with Stacks**, Java Center, New York.

Mar 2023 **Women in Numbers 6**, Banff International Research Station, Banff, Alberta, Canada.

Mar 2023 **Arizona Winter School 2023: Unlikely Intersections**, University of Arizona, Tucson, Arizona.

Jan 2023 **Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation Annual Meeting 2023**, New York, New York.

Jan 2023 **Joint Mathematics Meetings**, Boston, Massachusetts.

Oct 2022 **Québec–Maine Number Theory Conference**, Université Laval, Québec City, Québec.

Oct 2022 **AMS Fall Eastern Sectional Meeting**, University of Massachusetts-Amherst, Amherst, Massachusetts.

- Aug 2022 **Fifteenth Algorithmic Number Theory Symposium (ANTS XV)**, University of Bristol, UK.
- Jul 2022 **Park City Mathematics Institute Summer Session**, Institute for Advanced Study, Park City, Utah.
- Apr 2022 **Western Algebraic Geometry Symposium**, Colorado State University, Fort Collins, Colorado.
- Mar 2022 **Modular curves workshop**, MIT, Cambridge, Massachusetts.
- Feb 2022 **XXIII International Symposium on Mathematical Methods Applied to Sciences**, San José, Costa Rica, *virtual*.
- Oct 2021 **The Maine-Quebec number theory conference**, University of Maine, *virtual*.
- Sep 2020 **Quebec-Maine Number Theory Conference**, Université Laval, *virtual*.
- Apr 2020 **Front Range Number Theory Day**, *virtual*.
- Mar 2020 **Arizona Winter School 2020: Nonabelian Chabauty**, University of Arizona, Tucson, Arizona.
- Jan 2020 **Joint Mathematics Meetings**, Denver, Colorado.
- Nov 2019 **Western Algebraic Geometry Symposium**, University of Utah, Salt Lake city, Utah.
- Nov 2019 **Front Range Number Theory Day**, Colorado State University, Fort Collins, Colorado.
- Aug 2019 **Arithmetic and Algebraic Geometry**, University of Michigan, Ann Arbor, Michigan.
- May 2019 **49th John H. Barrett Memorial Lectures**, University of Tennessee, Knoxville, Tennessee.
- Aug 2018 **Arithmetic Geometry, Number Theory, and Computation**, MIT, Cambridge, Massachusetts.
- Oct 2017 **SageDays 90: Women in Sage**, Harvey Mudd College, Claremont, California.
- Jun 2017 **XXI Colombian Congress of Mathematics**, Universidad Nacional de Colombia, Bogotá, Colombia.
- Jul 2016 **V Latin American Congress of Mathematics**, Universidad del Norte, Barranquilla, Colombia.
- Jul 2015 **XX Colombian Congress of Mathematics**, Universidad Nacional de Colombia, Manizales, Colombia.

Memberships

American Mathematical Society (AMS).

Technical Skills

Fluent in: Latex, Magma, and SageMath.

Experience with: GAP, Git, and Macaulay2.

Languages

Spanish: native speaker.

English: fluent.