

# Alexander J. Barrios

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CONTACT INFORMATION	<b>Carleton College, Department of Mathematics and Statistics</b> One North College Street Northfield, MN 55057	<i>E-mail:</i> <a href="mailto:abarrios@carleton.edu">abarrios@carleton.edu</a> <i>Webpage:</i> <a href="https://apps.carleton.edu/profiles/abarrios">apps.carleton.edu/profiles/abarrios</a>
EDUCATION	<b>Purdue University, West Lafayette, IN USA</b> Ph.D. Mathematics, May 2018 M.S. Mathematics, May 2016 Advisor: <a href="#">Edray Goins</a> Ph.D. Thesis: <i>Minimal Models of Rational Elliptic Curves with non-Trivial Torsion</i>	<b>Brown University, Providence, RI USA</b> Sc.B. Mathematics, May 2011 <b>Miami Dade College, Miami, FL USA</b> A.A. Mathematics, May 2009
RESEARCH INTERESTS	Algebraic Number Theory, Class Field Theory, and Diophantine Geometry. Recent work involves the classification of minimal discriminants and local data of rational elliptic curves with non-trivial torsion and its applications to the explicit abc conjecture.	
EDUCATION EXPERIENCE	<b>Carleton College, Department of Mathematics and Statistics</b> <i>Visiting Assistant Professor of Mathematics</i>	Sept. 2019 - Present
	<b>Pomona Research in Mathematics Experience, Pomona College</b> <i>Co-Director and Project Leader</i>	May. 2019 - Present
	<b>Mathematical Sciences Research Institute - Undergraduate Program</b> <i>Research Mentor</i>	Jun. 2020 - Jul. 2020
	<b>Carleton College, Department of Mathematics and Statistics</b> <i>Scholar-in-Residence Fellow in Mathematics</i>	Sept. 2018 - Aug. 2019
	<b>Purdue University, Department of Mathematics</b> <i>Graduate Teaching Assistant</i> <i>Graduate Student Representative</i>	Aug. 2013 - May 2018 May 2014 - Apr. 2015
	<b>Purdue University, Minority Engineering Program (MEP)</b> <i>Lead Instructor</i> <i>Instructor</i> <i>Tutor</i>	May 2015 - Aug. 2018 May 2014 - Aug. 2018 Aug. 2014 - Dec. 2016
PREPRINTS AND PUBLICATIONS	<ol style="list-style-type: none"><li>(w. Alyson Deines, Maila Hallare, Piper H, Manami Roy) <i>Isogenous discriminant twins of prime degree over totally real number fields</i>, in preparation.</li><li><i>Reduced minimal models of rational elliptic curves</i>, in preparation.</li><li><i>Explicit classification of rational isogeny graphs</i>, in preparation.</li><li>(w. Manami Roy) <i>Representations attached to elliptic curves with a non-trivial odd torsion point</i>, submitted, preprint available at <a href="https://arxiv.org/abs/2106.15722">https://arxiv.org/abs/2106.15722</a></li><li><i>Lower bounds for the modified szpiro ratio</i>, submitted, preprint available at <a href="https://arxiv.org/abs/2104.10817">https://arxiv.org/abs/2104.10817</a></li><li>(w. Manami Roy) <i>Local data of rational elliptic curves with non-trivial torsion</i>, submitted, preprint available at <a href="https://arxiv.org/abs/2104.10337">https://arxiv.org/abs/2104.10337</a></li><li><i>Good elliptic curves with a specified torsion subgroup</i>, submitted, preprint available at <a href="https://arxiv.org/abs/2012.12475">https://arxiv.org/abs/2012.12475</a></li><li><i>Minimal models of rational elliptic curves with non-trivial torsion</i>, submitted, preprint available at <a href="https://arxiv.org/abs/2001.01016">https://arxiv.org/abs/2001.01016</a></li><li><i>A constructive proof of Masser's Theorem</i>, <i>Contemp. Math.</i>, Vol 759, pp. 51-61, 2020. Preprint available at <a href="https://arxiv.org/abs/1908.04938">https://arxiv.org/abs/1908.04938</a></li><li><i>Minimal models of rational elliptic curves with non-trivial torsion</i>, ProQuest LLC, Ann Arbor, MI, 2018, Ph.D. Thesis, Purdue University. MR 3828473</li></ol>	

CURRENT  
RESEARCH

1. (w. Alyson Deines, Maila Hallare, Manami Roy) *Isogenous discriminant twins over number fields*, research in progress.
2. (w. Manami Roy, Antonela Trbović) Tamagawa numbers of rational elliptic curves
3. (w. Darwin Chimarro, Manami Roy, Nandita Sahajpal, Bella Tobin, Hanneke Wiersema) *Local data of elliptic curves with prescribed isogeny graph*, research in progress.
4. *Database of good elliptic curves*, research in progress.
5. (w. Waymar Astaiza, Henry Chimal-Dzul, Stephan Garcia, Jaaziel Lopez de La Luz, Victor Moll, Yunied Puig, Diego Villamizar) *Symmetric tensor powers of graphs*, research in progress.
6. (w. Alyssa Brasse, Alvaro Cornejo, Owen Ekblad, Nevin Etter, Gustavo Flores, Marietta Geist, Kayla Harrison, Abigail Loe, Andrew Miller, Manami Roy, Summer Soller) *Minimal discriminants of rational elliptic curves with prescribed isogeny graphs*, research in progress.

EXPOSITORY  
PUBLICATIONS

1. (w. Ranthony A.C. Edmonds, Roberto Soto) *Math Alliance: Investing in Tomorrow Today*, to appear as book chapter in *Count Me In: Community and Belonging in Mathematics* by Della Dumbaugh and Deanna Haunsperger, MAA Press

GRANTS

1. *National Science Foundation DMS-2113782 (\$548,786 – Co-PI)*

TEACHING  
EXPERIENCE

**Carleton College**, Northfield, MN

MATH 321 - Real Analysis I	Instructor, 1 section	Spring 2022
MATH 210 - Calculus 3	Instructor, 1 section	Spring 2022
MATH 210 - Calculus 3	Instructor, 2 sections	Winter 2022
MATH 236 - Mathematical Structures	Instructor, 1 section	Fall 2021
MATH 236 - Mathematical Structures	Instructor, 2 sections	Spring 2021
MATH 312 - Elementary Theory of Numbers	Instructor, 1 section	Winter 2021
MATH 210 - Calculus 3	Instructor, 1 section	Winter 2021
MATH 210 - Calculus 3	Instructor, 1 section	Fall 2020
MATH 312 - Elementary Theory of Numbers	Instructor, 1 section	Spring 2020
MATH 232 - Linear Algebra	Instructor, 1 section	Winter 2020
MATH 210 - Calculus 3	Instructor, 1 section	Winter 2020
MATH 236 - Mathematical Structures	Instructor, 1 section	Fall 2019
MATH 120 - Calculus 2	Instructor, 1 section	Fall 2019
MATH 232 -Linear Algebra	Instructor, 1 section	Spring 2019
MATH 210 - Calculus 3	Instructor, 1 section	Winter 2019
MATH 120 - Calculus 2	Instructor, 1 section	Fall 2018

**Purdue University**, West Lafayette, IN

MEP MITE SAT Mathematics	Instructor, 1 section	Summer 2018
MEP ABC Calculus I	Instructor, 1 section	Summer 2018
MA303 Differential Equations & PDEs	Grader, 1 section	Summer 2018
MA16010I - Active Learning Calculus I	Teaching Assistant, 2 sections	Spring 2018
MA584 Algebraic Number Theory	Grader, 1 section	Fall 2017
MA585 Mathematical Logic	Grader, 1 section	Fall 2017
MEP MITE SAT Mathematics	Instructor, 1 section	Summer 2017
MEP ABC Calculus I	Co-Instructor, 1 section	Summer 2017
MA162 - Calculus II	Co-Instructor, 1 section	Summer 2017
MA16020I - Active Learning Calculus II	Teaching Assistant, 2 sections	Spring 2017
MEP MITE SAT Mathematics	Instructor, 1 section	Summer 2016
MA261 - Calculus III	Recitation Instructor, 3 sections	Fall 2015
MEP MITE SAT Mathematics	Instructor, 1 section	Summer 2015
MA153 - College Algebra	Instructor, 1 section	Spring 2015

MA153 - College Algebra	Instructor, 2 sections	Fall 2014
MEP MITE SAT Mathematics	Instructor, 1 section	Summer 2014
MA162 - Calculus II	Recitation Instructor, 1 section	Spring 2014
MA173 - Honors Calculus I and II	Recitation Instructor, 1 section	Fall 2013

- UNDERGRADUATE RESEARCH PROJECTS ADVISED
1. Pomona Research in Mathematics Experience Jun. 2021 - Aug. 2021  
*Students:* Alyssa Brasse (Hunter College), Nevin Etter (Washington and Lee University), Gustavo Flores (Carleton College), Andrew Miller (University of California, Santa Barbara), and Summer Soller (University of Utah)  
*Topic:* Minimal Discriminants of Rational Elliptics with Prescribed Isogeny Graphs
  2. MSRI-UP 2020 Research Project (co-advised with Edray Goins) Jun. 2020 - Jul. 2020  
*Students:* Samuel Heard (University of Oklahoma), Fabian Ramirez (Sonoma State University), Vanessa Sun (Hunter College)  
*Topic:* Automorphism and Monodromy Groups of Classical Modular Curves
  3. MSRI-UP 2020 Research Project (co-advised with Edray Goins) Jun. 2020 - Jul. 2020  
*Students:* Ra-Zakee Muhammad (Pomona College), Javier Santiago (University of Puerto Rico, Río Piedras), Eyob Tsegaye (Stanford University)  
*Topic:* Explicit Constructions of Finite Groups as Monodromy Groups
  4. MSRI-UP 2020 Research Project (co-advised with Edray Goins and Sofía Martínez) Jun. 2020 - Jul. 2020  
*Students:* Nicholas Arosemena (Morehouse College), Yaren Euceda (University of Minnesota, Twin Cities), Ashly Powell (University of the Virgin Islands)  
*Topic:* Dessin d'Enfants from Cartographic Groups
  5. Carleton College Towsley Fund for Winter Research Dec. 2019  
*Student:* Abigail Loe  
*Topic:* Database of Modified Szpiro Ratios of Rational Elliptic Curves with non-Trivial Isogeny
  6. Pomona Research in Mathematics Experience Jun. 2019 - Aug. 2019  
*Students:* Alvaro Cornejo (University of California, Santa Barbara), Owen Ekblad (University of Michigan, Dearborn), Marietta Geist (Carleton College), Kayla Harrison (Eckerd College), and Abigail Loe (Carleton College)  
*Topic:* Minimal Discriminants of Rational Elliptic Curves with a non-trivial Rational Isogeny
    - Recipients of the MAA MathFest 2019 Number Theory Undergraduate Research Presentation Award
    - AMS Blog Post: [The The MathFest Experience](#) by A. Cornejo and K. Harrison

- UNDERGRADUATE SENIOR THESIS ADVISED
1. Carleton Senior Integrative Exercise Jan. 2022 - May 2022  
*Students:* David Chae, John Groos, Chi Nguyen, Xander Roti, Sabrina Shanaa  
*Topic:* Modular Forms
  2. Carleton Senior Integrative Exercise Sept. 2020 - Mar. 2021  
*Students:* Jack Heinzl, Daniel Kleber, Matt Mendiola  
*Topic:* Class Groups of Elliptic Dedekind Domains
  3. Carleton Senior Integrative Exercise Sept. 2019 - Mar. 2020  
*Students:* Sam Chen, Marietta Geist, Alex Kiral, Brody Lynch

*Topic: Kummer's Proof of Fermat's Last Theorem for Regular Primes*

FELLOWSHIP,  
HONORS, AND  
AWARDS

1. *Invited Lecture Series for the Arizona Winter School* Jan. 2021 - Mar. 2021
2. *Lathisms Honoree* Sept. 2020
3. *MAA Project NExT Fellow* Jun. 2018 - Aug. 2019
4. *CFD Fellow* Sept. 2018 - Aug. 2019
5. *NSF Math Institute's Award for Best Presentation* Jan. 18, 2019

PROFESSIONAL  
ACTIVITIES AND  
SERVICE

1. *Member, The Honors College at Miami Dade Alumni Advisory Committee* Jan. 2021 -
2. *Panel Participant, Lunch in the Time of Covid* Mar. 17, 2021  
*Topic: Investing in the Future of Mathematics*
3. *Panel Participant, OURFA<sup>2</sup>M<sup>2</sup>* Dec. 19, 2020  
*Topic: Our Stories*
4. *Panel Participant, Field of Dreams Conference* Nov. 6, 2020  
*Topic: The Value of Undergraduate Research Experiences*
5. *Co-organizer, MAA MathFest Workshop\* Canceled due to COVID* Jul. 30, 2020  
*Topic: Navigating Academia as an Underrepresented Early Career Mathematician*
6. *Discussion Facilitator, JMM Session* Jan. 16, 2020  
*Topic: Identifying and Managing Microaggressions*
7. *Panel Participant, USTARS Conference* Apr. 27, 2019  
*Topic: Mentoring Panel*
8. *Panel Participant, TRIO at Carleton* Apr. 5, 2019  
*Topic: First Generation Faculty Panel*
9. *Presenter, Prairie Creek Community School's STEM Day* Feb. 21, 2019  
*Topic: Hilbert's Hotel and Combinations*
10. *Session Co-organizer, JMM Session* Jan. 16, 2019  
*Topic: Standards-based Grading: Tools and Tips for Successful Implementation*
11. *Member, NAM Editorial Board* May 2018 - Apr. 2019
12. *Tutor, AGEP, LSAMP, and Purdue Science Bound* Jan. 2016 - May 2018
13. *Mentor, Association for Women in Mathematics (AWM) - Purdue Chapter* Jul. 2015 - May 2018
14. *Workshop Co-organizer, Purdue Office of Graduate Diversity Initiatives* Oct. 24, 2017  
*Topic: How to Prepare for Prelims*
15. *Workshop Co-organizer, SROP* Jul. 8 and 15, 2017  
*Topic: GRE Mathematics Workshop*
16. *Panel Participant, LSAMP and SROP* Jun. 6, 2017  
*Topic: Life in Graduate School*
17. *Mentor, Purdue Graduate School eMentoring Program* Sept. 2016 - Apr. 2017
18. *Mentor, Purdue University Minority Engineering Program* Aug. 2015 - Dec. 2016
19. *Recruiter, California Forum for Diversity in Graduate Education* Nov. 5, 2016
20. *Panel Participant, Purdue Science Bound* Oct. 4, 2016  
*Topic: What is Mathematics?*
21. *Workshop Co-organizer, The Summer Research Opportunities Program (SROP)*  
*Topic: GRE Mathematics Workshop* Jul. 9 and 16, 2016
22. *Panel Participant, LSAMP* Jul. 12, 2016

*Topic:* Graduate School

23. *Recruiter*, [California Forum for Diversity in Graduate Education](#) Apr. 23, 2016
24. *Undergraduate Research Mentor*, [LSAMP](#) Sept. 2015 - Dec. 2015
25. *Graduate Student Representative*, [Purdue Department of Mathematics](#) May. 2014 - Apr. 2015
26. *Volunteer*, [Bridge to Enter Advance Mathematics](#) Jul. 15-19, 2014
27. *Panel Participant*, [USTARS Conference](#) Apr. 21, 2013

*Topic:* Mentoring Panel

TALKS GIVEN

1. **(Invited talk)** *TBD*  
Mathematics Colloquium  
Cal State East Bay, Hayward, CA March 18, 2022
2. **(Invited talk)** *TBD*  
Latinx in the Mathematical Sciences Conference  
Institute for Pure and Applied Mathematics, Los Angeles, USA March 3, 2022
3. **(Invited talk)** *An Explicit Approach to the Arithmetic of Elliptic Curves*  
AMS Special Session on A Showcase of Number Theory at Undergraduate Institutions  
Joint Mathematics Meetings, Seattle, WA January 5, 2022
4. **(Invited talk)** *Isogenous Discriminant Twins over Totally Real Number Fields*  
AMS Special Session on Rethinking Number Theory  
Joint Mathematics Meetings, Seattle, WA January 5, 2022
5. **(Invited talk)** *The abc Conjecture and Elliptic Curves*  
Lathisms Lecture Series Speaker  
Virtual talk December 10, 2021
6. **(Invited talk)** *TBD*  
Mathematics Colloquium  
Trinity College, Hartford, CT October 27, 2021
7. **(Invited talk)** *Local data of elliptic curves with prescribed isogeny graph*  
St. Olaf College Research Seminar  
St. Olaf College, Northfield, MN October 8, 2021
8. **(Invited talk)** *Local data of elliptic curves with prescribed isogeny graph*  
Algebraic Geometry and Number Theory Seminar  
Rice University, Houston, TX September 29, 2021
9. **(Invited talk)** *La data local de curvas elípticas y aplicaciones*  
Seminario de Teoría de Números de la Universidad Autónoma de Madrid y  
el Instituto de Ciencias Matemáticas, Madrid, España (charla virtual) June 22, 2021
10. **(Invited talk)** *Local data of elliptic curves and applications*  
Number Theory and Algebra Seminar  
University of Zagreb, Zagreb, Croatia (virtual talk) May 31, 2021
11. **(Invited talk)** *An Introduction to Analytic Continuation*  
Mathematics Club  
University of Oklahoma, Norman, OK (virtual talk) Apr. 29, 2021
12. **(Invited talk)** *As Easy as ABC: A Marginal Proof of Fermat's Last Theorem*  
Mathematics Colloquium  
Valparaiso University, Valparaiso, IN (virtual talk) Jan. 29, 2021
13. **(Invited Lecture Series)** *An Introduction to Modular Forms*  
Arizona Winter School  
Virtual Jan.-Mar., 2021
14. **(Invited talk)** *As Easy as ABC: A Marginal Proof of Fermat's Last Theorem*  
Mathematics & Computer Science Colloquium

- Macalester College, St. Paul, MN Feb. 3, 2020
15. *Explicit Classification of Isogeny Classes of Rational Elliptic Curves.*  
AMS Contributed Paper Session on Number Theory  
Joint Mathematics Meetings, Denver, CO Jan. 18, 2020
  16. **(Invited talk)** *Lower Bounds on the Modified Szpiro Ratio*  
Number Theory Seminar  
Simon Fraser University, Burnaby, Canada Nov. 21, 2019
  17. *Lower Bounds on the Modified Szpiro Ratio*  
Modular Forms, Arithmetic, and Women in Mathematics  
Emory University, Atlanta, GA Nov. 2, 2019
  18. **(Invited talk)** *History of Algebra: From Germain to Noether*  
Abstract Algebra Lecture  
Washington and Lee University, Lexington, VA Oct. 25, 2019
  19. **(Invited talk)** *A Friendly Introduction to the ABC and Szpiro Conjectures*  
Mathematics Colloquium  
Washington and Lee University, Lexington, VA Oct. 24, 2019
  20. **(Invited talk)** *As Easy as ABC: A Marginal Proof of Fermat's Last Theorem*  
Mathematics Colloquium  
University of St. Thomas, St. Paul, MN Oct. 10, 2019
  21. *A Historical Approach to Infinite Series*  
MAA Session on Understanding Mathematics Through its History  
MAA MathFest, Cincinnati, OH Aug. 2, 2019
  22. **(Invited talk)** *An Invitation to Modern Mathematics*  
BEAM Colloquium  
Harvey Mudd College, Claremont, CA Jun. 29, 2019
  23. *Historical Introduction to Sheaves*  
MAA North Central Spring Sectional Meeting  
Augsburg University, Minneapolis, MN Apr. 5, 2019
  24. **(Invited talk)** *Minimal Discriminants of Rational Elliptic Curves with non-Trivial Torsion*  
AMS Special Session on Arithmetic Dynamics  
University of Hawaii, Honolulu, HI Mar. 22, 2019
  25. *Lower Bounds on the Modified Szpiro Ratio*  
AMS Contributed Paper Session on Number Theory  
Joint Mathematics Meetings, Baltimore, MD Jan. 18, 2019
  26. **(Invited talk)** *Minimal Models of Rational Elliptic Curves with non-Trivial Torsion*  
NAM Haynes-Granville-Browne Session of Presentations by Recent Doctoral Recipients  
Joint Mathematics Meetings, Baltimore, MD Jan. 18, 2019
  27. **(Invited talk)** *Good Elliptic Curves with Specified Torsion Subgroup*  
AMS Special Session: Presentations by Math Alliance Scholars  
Joint Mathematics Meetings, Baltimore, MD Jan. 18, 2019
  28. *Humanizing Calculus*  
MAA Session on Humanistic Mathematics  
Joint Mathematics Meetings, Baltimore, MD Jan. 17, 2019
  29.  $1 + 2 + 3 + \dots = -\frac{1}{12}$ ? *An Introduction to Analytic Continuation*  
MAA North Central Fall Sectional Meeting  
Southwest Minnesota State University, Marshall, MN Oct. 12, 2018
  30. *Minimal Models of Rational Elliptic Curves with non-Trivial Torsion*  
Ph.D. Defense  
Purdue University, West Lafayette, IN Apr. 11, 2018
  31. *Minimal Models of Rational Elliptic Curves with non-Trivial Torsion*

- Arithmetic of Algebraic Curves  
University of Wisconsin, Madison, WI Apr. 8, 2018
32. **(Invited talk)** *Semistable Conditions on Elliptic Curves*  
Front Range Algebra, Geometry and Number Theory Seminar  
Colorado State University, Fort Collins, CO Mar. 29, 2018
33. **(Invited talk)** *A Friendly Introduction to the ABC and Szpiro Conjectures*  
Mathematics and Statistics Colloquium  
Carleton College, Northfield, MN Jan. 25, 2018
34. *Semistable Conditions on Elliptic Curves*  
Automorphic Forms and Representation Theory Seminar  
Purdue University, West Lafayette, IN Jan. 18, 2018
35. *Exceptional Elliptic Curves with Specified Torsion Subgroup*  
Graduate Research Day  
Purdue University, West Lafayette, IN Nov. 11, 2017
36. **(Invited talk)** *A Friendly Introduction to the Szpiro Conjecture*  
Mathematics and Computer Science Colloquium  
Wabash College, Crawfordsville, IN Oct. 17, 2017
37. *Exceptional Elliptic Curves with Specified Torsion Subgroup*  
MAA Indiana Sectional Meeting  
Manchester University, North Manchester, IN Oct. 7, 2017
38. *Étale Cohomology and Galois Cohomology*  
Informal Algebraic Geometry Seminar  
Purdue University, West Lafayette, IN Nov. 9, 2016
39. *Historical Motivation for Étale Morphisms*  
Informal Algebraic Geometry Seminar  
Purdue University, West Lafayette, IN Oct. 26, 2016
40. *Mackey Theory*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Oct. 6, 2016
41. *Analytic Continuation and Schemes*  
Student Colloquium  
Purdue University, West Lafayette, IN Oct. 5, 2016
42. *The Different Flavors of the Modularity Theorem*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Jul. 19, 2016
43. *Algebraic Geometry for Number Theorist*  
Secret Seminar  
Purdue University, West Lafayette, IN Apr. 14, 2016
44. *An Overview of Modern Mathematics through the Topics of the SAT*  
Purdue Science Bound  
Purdue University, West Lafayette, IN Mar. 29, 2016
45. *Dirichlet's Theorem on Primes in Arithmetic Progression*  
Student Colloquium  
Purdue University, West Lafayette, IN Jan. 27, 2016
46. *A Riemann-Roch Theorem for Number Fields and Sheaves*  
Riemann-Roch Seminar  
Purdue University, West Lafayette, IN Jul. 31, 2015
47. *Hilbert and Ring Class Fields*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Oct. 2, 2014

48. *Artin-Schreier Theory and Kummer Theory*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Sep. 12, 2013
49. *On Some Consequences of the ABC Conjecture in Arithmetic and Logic*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Mar. 1, 2013
50. *Prime Representing Function*  
Student Colloquium  
Purdue University, West Lafayette, IN Feb. 20, 2013
51. *Elasticity of Factorization in Number Fields Part II*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Oct. 19, 2012
52. *Elasticity of Factorization in Number Fields Part I*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Oct. 5, 2012
53. *Mill's Prime Representing Function*  
Number Theory Seminar  
Purdue University, West Lafayette, IN Apr. 6, 2012
54. *Exceptional ABC Triples for Frey Curves with Torsion Subgroups  $Z_2 \times Z_4$  and  $Z_2 \times Z_8$*   
Elliptic Curves and Applications  
Mathematical Sciences Research Institute, Berkeley, CA July 23, 2010
55. *Minimal Surfaces in Four Dimension*  
Summer Math Institute Final Presentation  
Cornell University, Ithaca, NY July 31, 2009
56. *The Slope of Miami*  
Lecture Series of Mathematics and Its Applications  
Miami Dade College, Miami, FL April 1, 2009
57. *Energy Minimizing Graphs in the Plane*  
Alliance Symposium  
Iowa State University, Ames, IA Jul. 28, 2008

CONFERENCES  
ATTENDED

1. *Madison Moduli Weekend*  
Virtual Sept. 26-27, 2020
2. *Joint Mathematics Meetings 2020*  
Denver, CO Jan. 15-18, 2020
3. *Latinx Mathematicians Network*  
American Institute of Mathematics, San Jose, CA Dec. 5-6, 2019
4. *Field of Dreams Conference*  
St. Louis, MO Nov. 15-17, 2019
5. *Modular Forms, Arithmetic, and Women in Mathematics*  
Emory University, Atlanta, GA Nov. 1-3, 2019
6. *MAA Fall North Central Section*  
Concordia College, Moorhead, MN Oct. 18-19, 2019
7. *MAA Mathfest 2019*  
Cincinnati, OH Jul. 29 - Aug. 4, 2019
8. *Underrepresented Students in Topology and Algebra Research Symposium*  
Iowa State University, Ames, IA Apr. 26-28, 2019
9. *MAA Spring North Central Section*  
Augsburg University, Minneapolis, MN Apr. 5-6, 2019



10. *AMS Spring Central and Western Joint Sectional Meeting #1147*  
University of Hawaii, Honolulu, HI Mar. 22-24, 2019
11. *Joint Mathematics Meetings 2019*  
Baltimore, MD Jan. 16-19, 2019
12. *Sixth Abel Conference: A Mathematical Celebration of Robert P. Langlands*  
University of Minnesota, Minneapolis, MN Nov. 14-16, 2018
13. *Blackwell-Tapia Conference*  
ICERM - Brown University, Providence, RI Nov. 9-10, 2018
14. *MAA Fall North Central Section*  
Southwest Minnesota State University Marshall, MN Oct. 12-13, 2018
15. *MAA Mathfest 2018*  
Denver, CO Aug. 1-4, 2018
16. *Mathematics is a Long Conversation: A Celebration of Barry Mazur*  
Harvard University, Cambridge, MA Jun. 4-8, 2018
17. *Arithmetic of Algebraic Curves*  
University of Wisconsin-Madison, Madison, WI Apr. 6-8, 2018
18. *Latinx in the Mathematical Sciences Conference 2018*  
UCLA, Los Angeles, CA Mar. 8-10, 2018
19. *Critical Issues in Mathematics Education 2018*  
MSRI, Berkeley, CA Feb. 21-23, 2018
20. *Joint Mathematics Meetings 2018*  
San Diego, CA Jan. 10-13, 2018
21. *Field of Dreams Conference*  
St. Louis, MO Nov. 3-5, 2017
22. *MAA Indiana Sectional Meeting*  
Manchester University, North Manchester, IN Oct. 7, 2017
23. *MAA Mathfest 2017*  
Chicago, IL Jul. 26-29, 2017
24. *Blackwell-Tapia Conference*  
NIMBioS, Knoxville, TN Oct. 28-29, 2016
25. *Kummer Classes and Anabelian Geometry*  
University of Vermont, Burlington, VT Sept. 10-11, 2016
26. *GANITA Conference in honor of V. Kumar Murty's 60th Birthday*  
The Fields Institute, Toronto, Canada Jun. 13-16, 2016
27. *Careers in Mathematical Sciences: A Workshop for Underrepresented Groups*  
Institute for Mathematics and its Applications, Minneapolis, MN Mar. 26-28, 2015
28. *Underrepresented Students in Topology and Algebra Research Symposium*  
UC Berkeley, Berkeley, CA Apr. 11-13, 2014
29. *Underrepresented Students in Topology and Algebra Research Symposium*  
Purdue University, West Lafayette, IN Apr. 19-21 2013
30. *Blackwell-Tapia Conference*  
ICERM - Brown University, Providence, RI Nov. 9-10, 2012
31. *SACNAS National Conference*  
Seattle, WA Oct. 11-14, 2012
32. *Joint Mathematics Meeting*  
New Orleans, LA Jan. 6-9, 2011
33. *SACNAS National Conference*

Anaheim, CA

Sep. 30 - Oct. 3, 2010

34. *Approaches to Group Theory, in honor of Ken Brown's 65th birthday*

Cornell University, Ithaca, NY

Oct. 9-11, 2010

35. *Joint Mathematics Meeting*

San Francisco, CA

Jan. 13-16 2010

36. *SACNAS National Conference*

Dallas, TX

Oct. 15-18, 2009

CITIZENSHIP AND LANGUAGES Born on October 29, 1988 in Miami, Florida, United States  
Native Proficiency in English and Spanish  
Reading Proficiency in French  
Software Proficiency in L<sup>A</sup>T<sub>E</sub>X, Mathematica, Python, SageMath

AFFILIATIONS American Mathematical Society (AMS)  
Association for Women in Mathematics (AWM)  
Math Alliance  
Mathematical Association of America (MAA)  
National Association of Mathematicians (NAM)  
Society for the Advancement of Chicanos and Native Americans in the Sciences (SACNAS)