Enrique Treviño
Curriculum Vitae

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Lake Forest College
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POSITIONS HELD

Lake Forest College August 2018-Present
Associate Professor of Mathematics

Universidad Autónoma de Santo Domingo January 2022-June 2022
Visiting Professor of Mathematics on a Fulbright grant

Lake Forest College August 2013-2018
Assistant Professor of Mathematics

I2M Math Laboratory at Aix-Marseille Université March 2017- May 2017
Visiting Researcher

Swarthmore College August 2011–August 2013
Visiting Assistant Professor of Mathematics

EDUCATION

Dartmouth College September 2006–June 2011
Ph. D., Mathematics June 2011
Thesis Title: Numerically explicit estimates for character sums
Thesis Advisor: Carl Pomerance, Ph. D.
Master of Arts, Mathematics June 2008

University of Texas at El Paso August 2003–May 2006
Bachelor of Science, Mathematics with a minor in Computer Science. May 2006

The Technical University of Budapest August 2004–December 2004

Southwestern University August 2002–May 2003

TEACHING EXPERIENCE

Instructor, Lake Forest College

Math 160: Math Methods and Applications (two sections)	Fall 2013
Math 230: Abstract and Discrete Mathematics	Fall 2013
Math 150: Introduction to Statistics (two sections)	Spring 2014
Math 230: Abstract and Discrete Mathematics	Spring 2014
Math 160: Math Methods and Applications	Summer 2014
FIYS 169: Recreational Mathematics	Fall 2014
Math 330: Modern Algebra I	Fall 2014
Math 150: Introduction to Statistics (two sections)	Spring 2015
Math 214: Differential Equations	Spring 2015
Math 230: Abstract and Discrete Mathematics	Spring 2015
Math 110: Calculus I	Summer 2015
Math 160: Math Methods and Applications	Summer 2015
FIYS 169: Recreational Mathematics	Fall 2015
Math 210: Multivariable Calculus	Fall 2015
Math 230: Abstract and Discrete Mathematics	Fall 2015
Math 150: Introduction to Statistics (two sections)	Spring 2016
Math 330: Modern Algebra I: Group Theory	Spring 2016
Math 411: Real Analysis II: Measure Theory	Spring 2016
Math 110: Calculus I	Summer 2016
Math 210: Multivariable Calculus	Fall 2016
Math 340: Geometry	Fall 2016
Math 499: Great Theorems in Mathematics	Fall 2016
Math 494: Tutorial on Topology	Fall 2016
CS 112: Computer Science I	Fall 2017
Math 311: Introduction to Real Analysis	Fall 2017
Math 499: Great Theorems in Mathematics	Fall 2017
CS 112: Computer Science I	Spring 2018
Math 230: Abstract and Discrete Mathematics	Spring 2018
Math 329: Number Theory	Spring 2018
Math 110: Calculus I	Summer 2018
Math 108: Calculus 1a	Fall 2018
Math 110: Calculus I	Fall 2018
Math 330: Modern Algebra I	Fall 2018
Math 499: Great Theorems in Mathematics	Fall 2018
Math 109: Calculus 1b	Spring 2019
Math 331: Modern Algebra II	Spring 2019
Math 375: Combinatorics	Spring 2019
Math 110: Calculus I	Summer 2019
Math 115: Honors Calculus I	Summer 2019
Math 108: Calculus 1a	Fall 2019
Math 230: Abstract and Discrete Mathematics	Fall 2019
Math/CS 323: Cryptography	Fall 2019
Math 109: Calculus 1b	Spring 2020
Math 231: Linear Algebra	Spring 2020
Math 330: Abstract Algebra	Spring 2020
Math 391: Tutorial on Number Theory	Spring 2020
Math 110: Calculus I	Summer 2020
Math 110: Calculus I	J-term 2021
Math 108: Calculus 1a	Fall 2021
Math 230: Abstract and Discrete Mathematics	Fall 2021
Math/CS 323: Cryptography	Fall 2021
Math 110: Calculus I	Summer 2022
Math 108: Calculus 1a	Fall 2022
Math 110: Calculus I	Fall 2022
Math 230: Abstract and Discrete Mathematics	Fall 2022
Math 340: Geometry	Fall 2022

Math 109: Calculus 1b	Spring 2023
Math 111: Calculus 2	Spring 2023
Math 499: Great Theorems in Mathematics	Spring 2023
Math 110: Calculus 1	Summer 2023
Math 108: Calculus 1a	Fall 2023
Math/CS 323: Cryptography	Fall 2023
Math 214: Differential Equations	Spring 2024
Math 330: Abstract Algebra	Spring 2024
CS 417: Algorithms and Algorithm Analysis	Spring 2024

Instructor, Universidad Autónoma de Santo Domingo

Algebraic Number Theory	Winter 2022
Analytic Number Theory II	Spring 2022
Computational Number Theory	Spring 2022

Instructor, Swarthmore College

Math 27: Linear Algebra (two sections)	Fall 2011
Math 25: Further Topics in Single Variable Calculus (two sections)	Spring 2012
Math 77: Advanced Topics in Algebra (Algebraic Number Theory)	Spring 2012
Math 28: Honors Linear Algebra	Fall 2012
Math 58: Introduction to Number Theory	Fall 2012
Math 25: Further Topics in Single Variable Calculus (two sections)	Spring 2013
Math 53: Topics in Analysis (Analytic Number Theory)	Spring 2013

Instructor, Dartmouth College

Math 20: Discrete Probability	Summer 2009
Math 2: Calculus with Algebra and Trigonometry	Winter 2009

Designed and implemented courses. Responsibilities included syllabus preparation, textbook choice, website development, planning and delivering of lectures, as well as office hours, exam creation, homework assignment, and grade assessment.

Teaching Assistant, Dartmouth College

Math 13: Calculus of Vector-Valued Functions	Winter 2008
Math 23: Integrated Mathematics and Physical Science	Fall 2007
Math 13: Calculus of Vector-Valued Functions	Winter 2007
Math 3: Introduction to Calculus	Fall 2006

Monitored three tutorial sessions weekly, assisting students with homeworks and projects. Also graded exams, and provided additional assistance as requested.

Teaching Seminar, Dartmouth College   Summer 2008

An intensive summer course in preparation for teaching, focusing on how students learn and the interaction between instructors and students. Course participants were responsible for designing and delivering two mathematics workshops for middle school students, each one week long.

Graduate Assistant to Undergraduates, Trinity University   Summer 2007

Assisted faculty members with mentoring two groups of undergraduates on research projects. One of these projects yielded a paper published in a number theory journal.

PUBLICATIONS

34. **Partitioning powers into sets of equal sum** To Appear

    joint with P. Pollack. To appear in the Rocky Mountain Journal of Mathematics.

33. **Report on the 52nd Annual USA Mathematical Olympiad** 2024

    Mathematics Magazine, Vol. 57 (2024), no. 1, pp. 67-77.

32. **Report on the 14th Annual USA Junior Mathematical Olympiad** 2024

    The College Mathematics Journal, Vol. 55 (2024), no. 1, pp. 74-82.

31. **Una introducción a la Teoría de Números Probabílistica** 2023

    Tzaloa (2023), no. 3, pp. 1-15.

30. **Many proofs that $1 + 2 + \ldots + n = \frac{n(n+1)}{2}$** 2022

    joint with T. Edgar. Published in Ganit Bikash, 75 (2022), pp. 38-61. The paper is in Assamese.

29. **Generalizing parking functions with randomness** 2022

    joint with M. Tian. Published in the Electronic Journal of Combinatorics, 29 (2022), no. 3, article P3.13, 13 pages (electronic).

28. **On the sum of k-th powers in terms of earlier sums** 2022

    joint with S. J. Miller. Published in The College Mathematics Journal, Vol. 53 (2022), no. 3, pp. 220-225.

27. **The least quadratic non-residue** 2021

    joint with K. McGown.

    Published in Mexican Mathematicians in the World: Trends and recent contributions published by Contemporary Mathematics of the AMS, pp. 205-232.

26. **On a sequence related to the factoradic representation of an integer** 2021

    joint with Maximiliano Sánchez Garza.

    Published in the Journal of Integer Sequences, Vol. 24 (2021), Article 21.8.5, 13 pages (electronic)

25. **On sets whose subsets have integer mean** 2021

    Published in Integers 21 (2021), article A79, 11 pages (electronic).

24. **On Egyptian fractions of length 3** 2021

    joint with C. Banderier, C. A. Gómez Ruiz, F. Luca, F. Pappalardi.

    Published in Revista de la Unión Matemática Argentina, Vol. 62, no. 1 (2021), pp. 257-274.

23. **An unusual recursive formula to answer a question regarding fixed points in permutations** 2021

    joint with M. Tian.

    Published in The College Mathematics Journal vol. 52 (2021), no. 3, pp. 219-220.

22. **A writing-intensive FYS course on Recreational Mathematics** 2021

Published as Chapter 30 in the book "Mathematical themes in a first-year seminar" (2021), pp. 301-306.

21. **Sums of proper powers** 2021

joint with Paul Pollack.

Published in the American Mathematical Monthly vol. 128 (2021), no. 1, p. 40.

20. **On sums of consecutive triangular numbers** 2020

joint with P. Pollack and D. Subramaniam.

Published in Integers 20A (2020), article A15, 10 pages (electronic).

19. **Expected number of dice rolls for the sum to reach n** 2020

Published in the American Mathematical Monthly vol. 127 (2020), no. 3, p. 257.

18. **On generalizing happy numbers to fractional base number systems** 2019

joint with M. Zhylinski.

Published in Involve vol. 12 (2019), no. 7, pp. 1143–1151.

17. **Probabilistic proof that $1 + 2 + \cdots + n = \frac{n(n+1)}{2}$.** 2019

Published in the American Mathematical Monthly vol. 126 (2019), no. 9, p. 840.

16. **A birthday in St. Petersburg** 2019

Published in The College Mathematics Journal vol. 50 (2019), no. 1, pp. 36–40.

15. **An Inclusion-Exclusion proof of Wilson's Theorem** 2018

Published in The College Mathematics Journal vol. 49 (2018), no. 5, pp. 367–368.

14. **Walking on rational numbers and a self-referential formula** 2018

joint with M. Fortman, K. Kupiec, and M. Rawlings.

Published in Elemente der Mathematik vol 73 (2018), no. 4, 161–169.

13. **A short proof of a sum of powers formula** 2018

Published in American Mathematical Monthly vol. 125 (2018), no. 7, pp. 659.

12. **Finding the four squares in Lagrange's Theorem** 2018

joint with P. Pollack.

Published in Integers 18A (2018), article A15, 16 pages (electronic).

11. **Counting perfect polynomials** 2017

joint with U. C. Cengiz and P. Pollack.

Published in Finite Fields and Their Applications 47C (2017) pp. 242-255.

10. **Resolving Grosswald's conjecture on GRH** 2016

joint with K. McGown and T. Trudgian.

Published in Functiones et Approximatio, Commentarii Mathematici 55.2 (2016), pp. 215-225.

9. **The Burgess inequality and the least k-th power non-residue** 2015

    Published in the International Journal of Number Theory Vol. 11, No. 5, pp. 1-26.

8. **The smoothed Pólya–Vinogradov** 2015

    joint with K. Adamczewski.

    Published in Integers, vol. 15 (2015), article A20, 11 pages (electronic).

7. **The least k-th power non-residue** 2015

    Published in the Journal of Number Theory, vol. 149 (2015), pp. 201-224.

6. **The primes that Euclid forgot** 2014

    joint with P. Pollack.

    Published in the American Mathematical Monthly, vol. 121 (2014), no. 5, pp. 433-437.

5. **Sets of monotonicity for Euler's totient function** 2013

    joint with P. Pollack and C. Pomerance.

    Published in The Ramanujan Journal, vol. 30 (2013), pp. 379-398

4. **On the maximum number of consecutive integers on which a character is constant** 2012

    Published in Moscow Journal of Combinatorics and Number Theory, vol.2 (2012), iss. 1, pp. 56-72. A corrigendum appeared in 2017, vol. 7, iss. 3.

3. **The least inert prime in a real quadratic field** 2012

    Published in Mathematics of Computation, vol. 81, no. 279, July 2012, pp. 1777-1797.

2. **Multi-dimensional Frobenius problem** 2011

    joint with J. Amos, I. Pascu, V. Ponomarenko and Y. Zhang

    Published in Involve, a Journal of Mathematics 4-2 (2011), 187–197

1. **On the counting function for the generalized Niven numbers** 2009

    joint with R. Daileda, J. Jou, R. Lemke-Oliver and E. Rossolimo

    Published in J. Théor. Nombres Bordeaux **21** (2009), no. 3, 503–515

BOOKS

Cuban Mathematical Olympiads 2017

    written by Roberto Bosch. Translated by Enrique Treviño

    Published in XYZ Press. ISBN-13: 978-0-9968745-4-0

Testimonios: Historias de Matematicxs Latinx e Hispanos 2022

    version in Spanish edited by Carolina Liskey, Enrique Treviño, Marco Martinez, Rosaura Uscanga Lomeli, translated by Carmela Ortiz Menendez. Version in English edited by Pamela E. Harris, Alicia Prieto-Langarica, Vanessa Rivera Quiñones, Luis Sordo Viera, Rosaura Uscanga and Andrés R. Vindas Meléndez.

    Published by the American Mathematical Society and the Mathematics Association of America.

INVITED TALKS

Inclusive Paths in Explicit Number Theory Summer School at UBC-Okanagan July 3, 2023

'An explicit Burgess inequality.'

L-Functions in Analytic Number Theory Collaborative Research Seminar January 18, 2023

'The least quadratic non-residue and related problems.'

BSM Special Session: Mathematical Research in Budapest for Students and Faculty Joint Math Meeting in Boston January 5, 2023

'Partitioning powers into sets of equal sum.'

Ciclo de Conferencias virtuales celebrando la 484 aniversario de UASD October 4, 2022

'El mínimo no-rediduo cuadrático y otros problemas relacionados'

AMS Special Session on Algebraic Structures in Topology, Logic, and Arithmetic I Fall Central Sectional Meeting at UTEP September 17, 2022

'Partitioning powers into sets of equal sum.'

Budapest Semesters in Mathematics Colloquium July 5, 2022

'Partitioning powers into sets of equal sum.'

EMALCA República Dominicana June 3, 2022

'Paradojas matemáticas en probabilidad.'

Seminario Coloquio GRACIA-Red Matemática April 1, 2022

'Tres proyectos de investigación con alumnos de licenciatura.'

Colloquium: Smith College October 21, 2021

'A trio of research projects with undergraduates.'

Colloquium: Hofstra University September 29, 2021

'A trio of research projects with undergraduates.'

Colloquium: Universidad Estatal a Distancia (Costa Rica) March 24, 2021

'Avances recientes sobre la distribución de los números primos.'

AMS Special Session: A Showcase of Number Theory at Undergraduate Institutions January 6, 2021

'Partitioning powers into sets of equal sum.'

Seminario Unplugged de Geometría in Universidad de Colima November 27, 2020

'Cumpleaños en San Petersburgo.'

Number Theory Down Under 7, UNSW, Sydney October 3, 2019

'On Egyptian fractions of length 3.'

Colloquium Talk at the University of Texas at El Paso February 15, 2019

'Playing with triangular numbers.'

Colloquium Talk at California State University, Chico December 13, 2018

'Playing with triangular numbers.'

4th Reunion of Mexican Mathematicians around the World at the Casa Matemática June 11, 2018

'El mínimo no-rediduo cuadrático y otros problemas relacionados'

AMS Special Session on A Showcase of Number Theory at Liberal Arts Colleges January 11, 2018

'Finding the four squares in Lagrange's formula.'

Awesome Math Summer Camp at Cornell University August 3, 2017

'Walking on numbers and a self-referential formula.'

Groupe de Travail Théorie Analytique, Probabiliste et Automatique des Suites April 27, 2017

'Smooth Polya-Vinogradov inequality.'

Séminaire Dynamique, Arithmétique, Combinatoire, Aix-Marseille Université March 28, 2017

'The least quadratic non-residue and related problems.'

AMS Special Session on Open and Accessible Problems for Undergraduate Research January 7, 2017

'Summer research projects for First Year students.'

Colloquium Talk at California State University, Chico October 17, 2016

'Summer research projects for first year students.'

Colloquium Talk at Elmhurst College April 20, 2016

'The least quadratic non-residue and related problems'

**Elementary, analytic, and algorithmic number theory:
Research inspired by the mathematics of Carl Pomerance** June 11, 2015

'Resolving Grosswald's conjecture on GRH'

Colloquium Talk at the California State University in Chico April 17, 2015

'The least quadratic non-residue and related problems'

Talk at the Instituto de Ciencias Matemáticas in Madrid, Spain July 21, 2014

'El mínimo no-residuo cuadrático y otros problemas relacionados'

ENFANT Workshop at the Hausdorff Institute in Bonn, Germany July 12, 2014

'The Burgess inequality and the least k-th power nonresidue'

Oberlin Number Theory Seminar March 10, 2014

'The primes that Euclid forgot'

Seminario Interuniversitario de Investigación en Ciencias de Matemáticas March 1, 2014

'Prime gaps: a breakthrough in number theory'

AMS Special Session on Analytic Number Theory at the Joint Meetings January 16, 2014

'The primes that Euclid forgot'

Underrepresented Students in Topology and Algebra Research Symposium April 20, 2013

'The primes that Euclid forgot'

Daniel H. Wagner Associates Inc. Talk February 19, 2013

'Squares and non-squares modulo a prime'

Lake Forest College Colloquium Talk February 12, 2013

'Squares and non-squares modulo a prime'

AMS Special Session on Arithmetic Statistics at the AMS-MAA Joint Meetings   January 10, 2013

'The Burgess inequality and the least k-th power nonresidue'

AMS Special Session on Additive and Combinatorial Number Theory   October 21, 2012

'A numerically explicit Burgess inequality and an application to quadratic non-residues'

SACNAS National Conference, Session on Problems in Number Theory   October 12, 2012

'Character sums and the least quadratic nonresidue'

Ursinus College Mobius Talk   September 21, 2012

'A twist on a geometry puzzle'

Universidad de Colima Colloquium   May 8, 2012

'El mínimo no-residuo cuadrático y otros problemas relacionados'

Automorphic Forms Seminar, Purdue University   February 23, 2012

'The least quadratic non-residue and related problems'

AMS Special Session on New Perspectives in Multiplicative Number Theory   January 5, 2012

'On the maximum number of consecutive integers on which a character is constant'

University of North Texas Millican-Colloquium   October 10, 2011

'The least quadratic non-residue and related problems'

Mathematics Research Communities:
The Pretentious View of Analytic Number Theory   June 29, 2011

'The Pólya-Vinogradov inequality '
Underrepresented Students in Topology and Algebra Research Symposium   April 2, 2011

'The least inert prime in a real quadratic field'

Swarthmore College Department of Mathematics and Statistics Colloquium   March 1st, 2011

'The least quadratic non-residue and related problems'

AMS/MAA Joint Meetings
AMS/SIAM Special Session on Mathematics of Computation   January 7, 2011

'The smoothed Pólya-Vinogradov inequality and some applications'

Palmetto Number Theory Series XIV. (U. South Carolina)
Invited plenary talk   December 4, 2010

'The least inert prime in a real quadratic field'

Trinity University REU Colloquium   June, 2008

'The probabilistic method'

University of Texas at El Paso Mathematics Department Colloquium   September 7, 2007

'Generalized Niven numbers'

Trinity University REU Colloquium   July 28, 2006

'Primes are in P'

University of Texas at El Paso Mathematics Department Colloquium   December 2, 2005

'On the generalization of the Frobenius problem'

Trinity University REU Colloquium   July 21, 2005

    'Mathematical Olympiads'

CONTRIBUTED TALKS

Lake Forest College Faculty Discussion   November 15, 2021

    'Polymath REU: A Program to Encourage Undergraduate Math Research Across the Globe.'

Illinois MAA sectional meeting   March 12, 2021

    'On sets whose subsets have integer mean.'

Lake Forest College Faculty Discussion   January 29, 2020

    'Egyptian equations and modern mathematics.'

West Coast Number Theory   December 19, 2019

    'On Egyptian fractions of length 3.'

West Coast Number Theory   December 16, 2018

    'Playing with triangular numbers.'

Illinois-Indiana-Michigan MAA Trisectional meeting   March 23, 2018

    'Counting Perfect Polynomials.'

West Coast Number Theory   December 18, 2017

    'Counting Perfect Polynomials.'

Faculty Discussion Group in Lake Forest College   October 26, 2017

    'Gerrymandering and Math'

West Coast Number Theory   December 17, 2016

    'Resolving Grosswald's conjecture assuming GRH.'

Faculty Discussion Group in Lake Forest College   September 16, 2014

    'Prime gaps: a breakthrough in number theory'

Midwest Number Theory Conference for Graduate Students and Recent PhDs, X   June 3, 2014

    'The least quadratic non-residue modulo a prime and related problems'

INTEGERS**: Erdős Centennial Conference (University of West Georgia)**   October 26, 2013

    'Bounds on graphs with high girth and high chromatic number'

MAA Sectional (Dickinson College)   April 6, 2013

    'The primes that Euclid forgot'

Temple Modular Forms & Number Theory Seminar   December 5, 2012

    'The Smoothed Pólya–Vinogradov Inequality'

Bryn Mawr/Temple Modular Forms & Number Theory Seminar   June 7, 2012

    'The least quadratic non-residue and related problems'

INTEGERS **Conference (University of West Georgia)**   October 28, 2011

    'The Smoothed Pólya–Vinogradov Inequality'

Dartmouth College Number Theory Seminar   November 18, 2010

'The least inert prime in a real quadratic field'

Québec–Maine Number Theory Conference October 3, 2010

'A smoothed version of the Pólya-Vinogradov inequality and some applications'

INTEGERS Conference (University of West Georgia) October 16, 2009

'Explicit bounds for the Burgess bound for character sums'

Maine–Québec Number Theory Conference October 4, 2009

'Explicit bounds for the Burgess bound for character sums'

Dartmouth College Number Theory Seminar November 6, 2008

'Twin Niven numbers'

Québec–Maine Number Theory Conference October 5, 2008

'On the counting function for the generalized Niven numbers'

Dartmouth College Number Theory Seminar February 28, 2008

'Brun's theorem'

Dartmouth College Number Theory Seminar October 11, 2007

'Generalized Niven numbers'

West Coast Number Theory Conference December 19, 2006

'On the generalization of the Frobenius problem'

Young Mathematicians Conference (Ohio State University) August 12, 2005

'On the generalization of the Frobenius problem'

MAA Southwestern Sectional Conference (University of Texas at El Paso) April 1, 2005

'Dirichlet's theorem: revolutionizing number theory'

WORKSHOPS

Inclusive Paths in Explicit Number Theory Summer School: a BIRS Workshop held in University of British Columbia at Okanagan July 2–13, 2023

Number Theory in the Americas: a BIRS-CMO Workshop in Oaxaca August 11–16, 2019

ENFANT-ELEFANT Workshop at the Hausdorff Institute July 11–18, 2014

Introduction to Using Randomization Methods in Introductory Statistics May 30–31, 2014

PCMI 2013: Workshop for mentors July 7–July 13, 2013

Mathematics Research Communities (MRC): Arithmetic Statistics June 24–30, 2012

MRC: The Pretentious View of Analytic Number Theory June 26–July 2, 2011

MSRI: Introductory Workshop: Arithmetic Statistics (Berkeley, CA) January 31–February 4, 2011

PCMI: Harmonic Analysis and Partial Differential Equations June 29–July 19, 2003

CONFERENCES

Mathematical Congress of the Americas 2013 August 4–August 9, 2013

The Erdős Centennial Conference in Budapest July 1–July 5, 2013

EDITORIAL POSITIONS

Associate Editor of The College Mathematics Journal	2018-Present
Associate Editor of Tzaloa (Mexican magazine aimed at Olympiad students and teachers)	2021-2022
Associate Editor of Boletín de la Sociedad Matemática Mexicana	2022-Present
Co-editor in chief of the United States Mathematical Olympiad Editorial Board	2021-2025

SERVICE

Chair of the Mathematics and Computer Science Department   2023-present

Administrative duties at Lake Forest College.

Putnam Training Sessions, Swarthmore College and Lake Forest College   2011-present

In charge of preparing students to participate in the William Lowell Putnam Mathematical Competition. I meet with students weekly in the Fall and Spring.

Referee   2012-present

I have reviewed articles for Mathematics of Computation, The American Mathematical Monthly, International Journal of Number Theory, Michigan Mathematical Journal, Journal of Number Theory, Turkish Mathematics Journal, Mathematics Magazine, Integers Electronic Journal of Combinatorial Number Theory, Journal of Integer Sequences, The College Mathematics Journal, the Rocky Mountain Journal of Mathematics, The PUMP Journal of Undergraduate Research, La Matematica, Semigroup Forum, Research in Number Theory.

Richter Scholar mentor at Lake Forest College   2014-2016, 2018-2019

Mentored 2 students in a 3-week project in "Experimental Mathematics" in 2014. Mentored one student on a 10-week research project on "Odd perfect polynomials" in 2014. In 2015, I mentored 1 student in a 4-week project on Tupper's self-referential formula and I mentored another student in a 10-week project regarding placement of students in first year-studies classes depending on their interest. In 2016, I mentored one student on Beatty sequences. In 2018, I mentored one student on triangular numbers. In 2019, I mentored a student on stable matching algorithms (Gale-Shapley) and another student on the mathematics of consociational democracy.

Member undergraduate thesis committees at Lake Forest College   2014, 2015, and 2018

I was a committee member of the undergraduate thesis committee of William Forcier's Mathematics thesis defense titled 'Fermat's Last Theorem' in 2014. I was a member of Turner Pepper's Mathematics thesis defense 'Finitely Generated Abelian Groups' in 2015. I was a member of Katherine Beall's Economics thesis defense "Defined Contribution Plans and the 2008 Financial Crisis" in 2018. I was a member of Finnian Bunta's Political Science thesis defense "The Bosnian Paradox" in 2018. I was a member of Margaret Fortman's Physics thesis defense "Parameters Influencing Electromagnetically Induced Transparency" in 2018. I was a member of Junya Li's Biology thesis defense "The Localization Mechanism of the Telomerase in Aspergillus nidulans" in 2018. I was a member of Robert Mecham's Physics thesis defense "Langevin Transducer Analysis and Acoustic Levitation" in 2018.

Research Mentor for Undergraduates at Swarthmore College   Summers of 2012 and 2013

I worked on a graph theory research project with a Swarthmore student in the summer of 2012, this project was continued by a different student in the summer of 2013. In the summer of 2013 I also worked on a computational number theory project with two students who were funded to work with me for 10 weeks.

Member of an undergraduate thesis committee at CIMAT (Guanajuato)   April 18, 2012

I was the president of the undergraduate thesis committee of Juan Ramón Camacho Cordero's thesis defense titled 'Saltos Pequeños Entre Primos' ('Small Jumps Between Primes').

Undergraduate thesis advisor   2016, 2021.

In the year 2015-2016, I advised Jacob Juillerat on his thesis on "Transcendental numbers". In 2016, I advised William Braubach on his thesis "The fundamental theorem of algebra". In Fall 2021, I advised Melanie Tian on her thesis titled "The probabilistic method".

HONORS AND AWARDS

Great teacher award at Lake Forest College (voted on by senior undergraduate students).	2023
Hunter Fund merit scholarship	2022
Fulbright grant to teach at Universidad Autónoma de Santo Domingo	Jan. 2022-June 2022
Lehmer Prize for favorite talk at the West Coast Number Theory Conference	2017
Lake Forest College Summer Research Grant	2014, 2015, ..., 2019
AMS Grant to attend the Mathematical Congress of the Americas	August 2013
Swarthmore College Research Award	2012–2013
Swarthmore College Research Award	2011–2012
Dartmouth College Graduate Fellowship	2007 – 2011
GAANN Fellowship	Sept. 2006 – Sept. 2007
Outstanding Senior Mathematics student at University of Texas at El Paso	May 2006
Top 200 (rank 128.5) at the 66th William Lowell Putnam Mathematical Competition 2005	March 2006
Poster session award at the AMS/MAA Joint Meetings	January 2006
Best undergraduate talk at MAA Southwestern Sectional Conference	April 2005
C.H. Gladman Scholarship for Mathematical Excellence, UTEP	Spring 2003 and Fall 2004
Merit Scholarship, Southwestern University	Fall 2002 and Spring 2003
Scholarship to attend the Dr. Bessie F. Lawrence International Summer Science Institute program at the Weizmann Institute of Science, Rehovot Israel	Summer 2002
First place Mexican Mathematical Olympiad	November 2001

OUTREACH

I like teaching mathematics to young students. In this section I list some of my efforts in this regard.

Mathematical Olympiad   2001-2003, 2005-present

I have coached students for mathematical olympiad competitions from several countries: Mexico 2015-2023, Canada 2017 and 2019, Dominican Republic 2022-2023, Nepal 2023. I am co-editor in chief of the United States Mathematical Olympiad editorial board. In Mexico, since 2016, I have been in charge of number theory instruction and besides coaching the team, I have been in committees writing exams, grading the exams, and other tasks. I participated as a problem coordinator in the International Mathematical Olympiad in 2005, the Ibero-American Mathematical Olympiad in 2009 and 2020, the Mexican Mathematical Olympiad from 2015 to 2018 and 2020, and the United States Mathematical Olympiad in 2021 and 2023. I was deputy leader for Mexico at the European Girls Math Olympiad (EGMO) in 2017, and 2019. I was leader of the Mexican team participating in the EGMO in 2018, the Mexican team participating in the Ibero-American Math Olympiad in 2019 and 2023, the Mexican team participating in the Cyberspace Mathematical Competition in 2020, and the Mexican team participating in the International Mathematical Olympiad in 2022.

Instructor at Ross Program Asia.   2018

I taught the "Probabilistic Method" for five weeks at the Ross Program Asia in Huangshan, China in 2018. The program is aimed at High School students interested in advanced mathematics.

Instructor at Awesome Math Summer Camp.   2015 -2017, 2019-2023.

I have taught many three-weeks classes at the Awesome Math Summer Camp. The Awesome Math Summer camp is meant for mathematically-strong middle school or high school students that want to learn mathematics through problem-solving.

Lecture at Lake Forest High School   February 9, 2017

I gave a lecture on Hilbert's infinite hotel at the request of Mark Osing, who is teaching an interdisciplinary course called 'About Time'.

Talk at MathILy.   July 24, 2013

MathILY is a summer program for talented High School students. In the program, the students are taught advanced mathematical subjects. I gave an interactive talk with the purpose of teaching some combinatorial counting techniques.

Odyssey Series, Center for Talented Youth   May 1, 2010 and May 7, 2011

Gave three lectures for talented students from grades 7 to 10. Organized by Johns Hopkins University with Dartmouth College.

Mathcounts Instructor (Rivendell Academy)   Winter 2010

Coached the Math Counts team at Rivendell Academy in Orford, NH. I went weekly from December 2009 to March 2010.

Lectures at a local middle school (Tunbridge Central School)   November 23, 2009 and March 24, 2010

Gave a couple of lectures to a group of middle school students from Tunbridge Central School. The purpose of the lectures was to encourage students to feel confidence in their math skills. I was invited by the school counselor Elliot Ketay.

Mentor for Senior Project (Stevens High School)   Spring 2007

Mentored Mike Kinshaw from Stevens High School on his senior project. I taught him Game Theory.

Montshire-Dartmouth-Rivendell Science Outreach Program   Winter 2007

Supported by the Howard Hughes Medical Institute, this program was meant to bring fun science activities to elementary school students. Along with a partner I gave five hands–on lectures on different science topics to students in fifth grade.

Abel Project   2003-2006

The Abel Project was a program where the best students of Cd. Juárez were invited to come every Saturday to the local university (in Cd. Juárez) and listen to two lectures in science. Most lectures were given by faculty. I was the main organizer of the event in 2005 and 2006 and I was an assistant organizer in 2003 and 2004. I also gave several lectures in the program.

ADDITIONAL SKILLS

Mathematical Software: LaTeX, Mathematica
Computer Skills: Java, Python.
Languages: English, Spanish.

REFERENCES

Available Upon Request.