

Luis A. Medina

Personal Information	Department of Mathematics University of Puerto Rico San Juan, PR 00925 url: http://emmy.uprrp.edu/lmedina/	Office: NCN II A-108 Email: luis.medina17@upr.edu Phone: (787) 764-0000 x 88249 Citizenship: USA
Employment	University of Puerto Rico, Río Piedras San Juan, PR	Professor July 2018 - Present
	University of Puerto Rico, Río Piedras San Juan, PR	Associate Professor July 2014 - June 2018
	University of Puerto Rico, Río Piedras San Juan, PR	Assistant Professor January 2010 - June 2014
	Rutgers University New Brunswick, NJ	Assistant Professor (Non TT) August 2008 - December 2009
Education	Tulane University Ph.D. in Mathematics	2008 Advisor: Victor H. Moll
	University of California, Los Angeles (UCLA) Visiting Graduate Student	Fall 2005
	University of Puerto Rico at Humacao B.S. in Computational Mathematics	2003 <i>magna cum laude</i>
Grants	Recursivity of Walsh-Hadamard Transformations of some Families of Boolean functions <i>Fondo Institucional para la Investigación</i> (PI) Amount: \$38,845.00	2021 - 2023
	Center for Computerized Experimental Mathematics, Combinatorics and Information Theory <i>PR Science, Technology and Research Trust</i> (PI) Amount: \$150,000.00	2019 - 2021
	Scholarship fund for excellence in Computer Science and Mathematics <i>NSF DUE-1356474</i> (Co-PI) Amount: \$630,217.00	2014 - 2019
	Computerized Pure Mathematics: Exponential Sums of Symmetric Boolean Functions <i>Fondo Institucional para la Investigación</i> (PI) Amount: \$36,130.00	2014 - 2016
Editorial Duties	Associate Editor, Journal of Algebraic Combinatorics	February 2019 - present
Honors and Awards	Latinxs and Hispanics in Mathematical Sciences (Lathisms 17) Lathisms showcases the contributions of 31 Hispanic and Latino/a mathematicians, one each day from September 15th to October 15th. Showcased on September 25, 2017.	Fall 2017
	Project NExT Fellowship A professional development program for new or recent Ph.D.s in the mathematical sciences. Color: Red'08	2008 - 2009

IBM Fellowship	Fall 2007 - Spring 2008
VIGRE Fellowship	Fall 2004 - Spring 2006
Mathematics Department Awards (Tulane)	
1. Outstanding Performance in Oral Examination.	
2. Outstanding Performance in Teaching Assistance.	
3. Outstanding Performance in Written Examinations.	
The Graduate Alliance for Education in Louisiana Fellowship	Fall 2003
National Physical Science Consortium Fellowship Sponsor by NSA	Fall 2003 - Spring 2004
NASA Puerto Rico Space Grant Consortium Fellowship	Fall 2002 - Spring 2003
CSEMS Computer Science, Engineering, and Mathematics Scholarships	Fall 2002 - Spring 2003
PRLS-AMP Puerto Rico Louis Stokes Alliance For Minority Participation Research Fellowships	Spring 2001-Spring 2002

**Published or
accepted papers**

Non-mathematical papers **The state of the Academia in Puerto Rico after hurricane María**

Author: Luis A. Medina

Notices of the American Mathematical Society (invited) 65(8) (2018) 964–965.

Mathematical papers

***P*-recursivity of some families of Boolean functions under biased Walsh transforms**

Authors: Axel O. Gómez-Flores, Luis A. Medina and Pantelimon Stanica

To appear in Rocky Mountain J. Math.

Walsh-Hadamard transforms of generalized p -ary functions and C -finite sequences

Authors: Luis A. Medina, L. Brehner Sepúlveda and César Serna-Rapello

Discrete Appl. Math. 315 (2022) 86–96.

Root-Hadamard transforms and complementary sequences

Authors: Luis A. Medina, Matthew G. Parker, Constanza S. Riera and Pantelimon Stanica

Cryptography and Communications 12 (2020) 1035–1049.

Value distribution of elementary symmetric polynomials and their perturbations over finite fields

Authors: Luis A. Medina, L. Brehner Sepúlveda and César Serna-Rapello

Finite Fields and Their Applications 63(2) (2020) 1–21.

A closed-form solution might be given by a tree. Valuations of quadratic polynomials

Authors: A. Byrnes, J. Fink, G. Lavigne, I. Nogues, S. Rajasekaran, A. Yuan, L. Almodovar, X. Guan, A. Kesarwani, L. A. Medina, E. Rowland, and V. Moll

Scientia, Series A: Math. Sciences 29 (2019) 11–28.

Closed formulas for exponential sums of symmetric polynomials over Galois fields

Authors: Francis N. Castro, Luis A. Medina and L. Brehner Sepúlveda

Journal of Algebraic Combinatorics 50(1) (2019) 73–98.

An improvement to Chevalley’s Theorem with restricted variables

Authors: Francis N. Castro, Oscar E. González and Luis A. Medina

Finite Fields and its Applications 58 (2019) 216–221.

Generalized Walsh transforms of symmetric and rotation symmetric Boolean functions are linear recurrent

Authors: Francis N. Castro, Luis A. Medina and Pantelimon Stanica
Applicable Algebra in Engineering, Communication and Computing 29(5) (2018) 433–453.

Recursions associated to trapezoid, symmetric and rotation symmetric functions over Galois fields

Authors: F. N. Castro, R. Chapman, L. A. Medina and L. B Sepúlveda
Discrete Mathematics 341(7) (2018) 1915–1931.

Hadamard matrices and the spectrum of quadratic symmetric polynomials over finite fields

Authors: Francis N. Castro and Luis A. Medina
Linear Algebra and its Applications 549 (2018) 153–175.

Exact 2-Divisibility of Exponential Sums Associated to Boolean Functions

Authors: Francis N. Castro, Luis A. Medina and Ivelisse Rubio
Cryptography and Communications, 10(4) (2018) 655–666.

New families of balanced symmetric functions and a generalization of Cusick, Li and Stănică's conjecture

Authors: R. Arce-Nazario, F. N. Castro, O. E. González, L. A. Medina, and I. Rubio
Designs, Codes and Cryptography 86 (2018) 693–701.

Diophantine equations with binomial coefficients and perturbations of symmetric Boolean functions

Authors: Francis N. Castro, Oscar E. González and Luis A. Medina
IEEE Trans. Inf. Theory, 64(2) (2018) 1347–1360.

Generalized exponential sums and the power of computers

Authors: Francis N. Castro, Oscar E. González and Luis A. Medina
Involve, 11(1) (2018) 127–142.

Periodicity in the p -adic valuation of a polynomial

Authors: Luis A. Medina, Victor H. Moll and Eric S. Rowland
The Journal of Number Theory 180 (2017) 139–153.

Modular periodicity of exponential sums of symmetric Boolean functions

Authors: Luis A. Medina and Armin Straub
Discrete Appl. Math. 217 (2017) 455–473.

On multiple and infinite log-concavity

Authors: Luis A. Medina and Armin Straub
Annals of Combinatorics 20(1) (2016) 125–138.

The integrals in Gradshteyn and Ryzhik. Part 27: More logarithmic examples

Authors: Luis A. Medina and Victor H. Moll
Scientia, Series A: Math. Sciences 26 (2015) 49–61.

p -regularity of the p -adic valuation of the Fibonacci sequence

Authors: Luis A. Medina and Eric S. Rowland
The Fibonacci Quarterly 53 (3) (2015) 265–271.

A divisibility approach to the open boundary cases of Cusick-Li-Stănică's Conjecture

Authors: Francis Castro, Oscar E. González and Luis A. Medina
Cryptography and Communications 7 (4) (2015) 379–402.

The p -adic valuation of Eulerian numbers: trees and Bernoulli numbers

Authors: Francis Castro, Oscar E. González and Luis A. Medina
Experimental Mathematics 24 (2) (2015) 183–195.

Asymptotic Behavior of Perturbations of Symmetric Functions

Authors: Francis Castro and Luis A. Medina

Annals of Combinatorics 18 (2014) 397–417.

The integrals in Gradshteyn and Ryzhik. Part 23: Combination of logarithms and rational functions

Authors: Luis A. Medina and Victor H. Moll

Scientia, Series A: Math. Sciences 23 (2012) 1–18.

Exact Divisibility of Exponential Sums and Some Consequences

Authors: Francis N. Castro, Luis A. Medina, and Raúl Figueroa

Theory and Applications of Finite Fields, AMS Contemporary Math. 579 (2012) 55–66.

Iterated primitives of logarithmic powers

Authors: Luis A. Medina, Victor H. Moll and Eric S. Rowland

International Journal of Number Theory 7(3) (2011) 623–634.

Linear Recurrences and Asymptotic Behavior of Exponential Sums of Symmetric Boolean Functions

Authors: Francis N. Castro and Luis A. Medina

Elec. J. Combinatorics, **18(2)**, 2011, #P8.

Exact Divisibility of Exponential Sums over the Binary Field via the Covering Method

Authors: Francis N. Castro, Luis A. Medina and Ivelisse Rubio

Groups, Algebras and Applications, AMS Contemporary Math. 537 (2011) 129–136.

The p -adic valuation of Stirling numbers

Authors: A. Berrizbeitia, L. Medina, A. Moll, V. Moll, and L. Noble

Journal for Algebra and Number Theory Academia 1 (2010) 1–30.

An Experimental Mathematics Perspective on the Old, and still Open, Question of When To Stop?

Authors: Luis A. Medina and Doron Zeilberger

Gems in Experimental Mathematics, AMS Contemporary Math. 517 (2010) 265–274.

A fast numerical algorithm for the integration of rational functions

Authors: Dante Manna, Luis A. Medina, Victor H. Moll, and Armin Straub

Numerische Mathematik 115 (2010) 289–307.

A Class of Logarithmic Integrals

Authors: Luis A. Medina and Victor H. Moll

The Ramanujan Journal 20 (2009) 91–126.

Asymptotic valuations of sequences satisfying first order recurrences

Authors: Tewodros Amdeberhan, Luis A. Medina, and Victor H. Moll

Proc. Amer. Math. Soc. 137 (2009) 885–890.

The integrals in Gradshteyn and Ryzhik. Part 11: The incomplete beta function

Authors: Khristo N. Boyadzhiev, Luis A. Medina, and Victor H. Moll

Scientia, Series A: Math. Sciences 18 (2009) 61–75.

The integrals in Gradshteyn and Ryzhik. Part 10: The digamma function

Authors: Luis A. Medina and Victor H. Moll

Scientia, Series A: Math. Sciences 17 (2009) 45–66.

Arithmetical properties of a sequence arising from an arctangent sum

Authors: Tewodros Amdeberhan, Luis A. Medina, and Victor H. Moll

Journal of Number Theory 128 (2008) 1808–1847.

The integrals in Gradshteyn and Ryzhik. Part 5: Some trigonometric integrals

Authors: Tewodros Amdeberhan, Luis A. Medina, and Victor H. Moll

Scientia, Series A: Math. Sciences 15 (2007) 47–60.

Books

Gems in Experimental Mathematics

Contemporary Mathematics, AMS **517** (2010)

Editors: Tewodros Amdeberhan, Luis A. Medina, and Victor H. Moll

Graduate Students

University of Puerto Rico, Río Piedras Campus

PhD Students:

1. Carlos Molina. *Current*.
2. José E. Calderón. *Current*.
3. César Serna. Dissertation: *Value distribution of elementary symmetric polynomials and their perturbations over finite fields*, June 2020.
4. Leonid B. Sepúlveda. Dissertation: *Linear recursivity of exponential sums of symmetric functions over Galois Fields*, June 2018.

Masters Students:

1. Luisiany Pomales. Thesis: *Diophantine equations with binomial coefficients and perturbations of symmetric Boolean functions*, July 2022.
2. Juana Vásquez. Thesis: *Matrices de Hadamard y Sumas Exponenciales de Polinomios Simétricos Cuadráticos Sobre Cuerpos Finitos*, December 2018.
3. Stephany Nieves. Thesis: *Pisano Periods and Exponential Sums of Symmetric Boolean Functions*, February 2018.

Undergraduate Research Efforts

Articles

Articles with undergraduate students

1. A. Gómez-Flores, L. A. Medina and P. Stanica. P -recursivity of some families of Boolean functions under biased Walsh transforms. *To appear in Rocky Mountain J. Math.*
2. A. Byrnes, J. Fink, G. Lavigne, I. Nogues, S. Rajasekaran, A. Yuan, L. Almodovar, X. Guan, A. Kesarwani, E. Rowland, and V. Moll. A closed-form solution might be given by a tree. Valuations of quadratic polynomials. *Scientia*, Series A: Math. Sciences 29 (2019) 11-28.
3. F. Castro, O. E. González and L. A. Medina. Diophantine equations with binomial coefficients and perturbations of symmetric Boolean functions. *IEEE Trans. Inf. Theory*, **64(2)**, 2018, 1347–1360.
4. R. Arce-Nazario, F. Castro, O. González, L. A. Medina, and I. Rubio. New families of balanced symmetric functions and a generalization of Cusick, Li and Stanica's conjecture. *Designs, Codes and Cryptography*, **86**, 2018, 693–701.
5. F. Castro, O. E. González and L. A. Medina. Generalized exponential sums and the power of computers. *Involve*, **11(1)**, 2018, 127–142.
6. F. Castro, O. E. González and L. A. Medina. The p -adic valuation of Eulerian numbers: trees and Bernoulli numbers. *Experimental Mathematics* **24 (2)** (2015), 183-195.
7. F. Castro, O. E. González and L. A. Medina. A divisibility approach to the open boundary cases of Cusick-Li-Stanica's conjecture. *Cryptography and Communications* **7 (4)** (2015), 379-402.
8. A. Berrizbeitia, L. A. Medina, A. C. Moll, V. H. Moll, and L. Noble. The p -adic valuation of Stirling numbers. *J. Algebra and Num. Th. Academia* **1** (2010), 1-30.

Scholars in Residence 2020-2021

Research Mentor; *Scholars in Residence*.

1. Carlos F. Santiago (August 2020 - May 2021)

Puerto Rico Louis Stokes AMP

Research Mentor; *Puerto Rico Louis Stokes AMP*

1. Axel O. Gómez (August 2019 - May 2021)

Undergraduate Research Mentor

Research mentor of undergraduate students.

1. José P. Arbelo (Summer 2022- Present)
2. Juliana Bonilla (January 2022 - May 2022)
3. Ricardo López (January 2022 - April 2022)
4. Carlos F. Santiago (Aug 2021 - Dec 2021; sponsored by PRST; now at Columbia U.)
5. Axel O. Gómez (now at The Ohio State University, Columbus)
6. Oscar E. González (now at U. Illinois, Urbana-Champaign)
7. Stefanie Klajbor-Goderich (got her Ph.D. from U. Illinois, Urbana-Champaign)

Claude Shannon Scholarship Mentor

Mentor Claude Shannon Scholarship.

1. Axel O. Gómez (August 2018 - May 2019; now at The Ohio State University, Columbus).
2. María del C. Ramos (2017 - August 2018)
3. Jasiel F. Rodríguez Acevedo (2017 - May 2018).
4. Luis Quiñones (August 2016 - May 2018).
5. Raúl Negrón (2014 - March 2018; now works at the industry).
6. Samuel Pérez (2014 - 2015; got his Ph.D from U. of Notre Dame; now at Princeton U.)
7. José Pastrana (2014 - 2015; got his Ph.D from U. of Notre Dame; now at Northwestern)
8. Carlos Buxó (2015 - 2016; now at Michigan State University [Physics]).

REU Mentor

Research leader of a student at the REU sponsored by the Rutgers Mathematics Department and DIMACS, the Center of Discrete Mathematics and Theoretical Computer Science.

MSRI - UP

PostDoc. Research sub-leader in the REU MSRI-UP.

Invited talks and presentations

Short cycle rotation Boolean functions

José E. Calderón, L. Medina (speaker), Carlos Molina
VIII Coloquio de Matemáticas Aplicadas
Universidad Militar Nueva Granada, Colombia

November 2022

Boolean functions fixed under the action of the Dihedral group

José E. Calderón (speaker), Carlos Molina (speaker) and L. Medina
VIII Coloquio de Matemáticas Aplicadas
Universidad Militar Nueva Granada, Colombia

November 2022

Short cycle rotation Boolean functions: generators and count

José E. Calderón, L. Medina (speaker), Carlos Molina
Boricuas in Applied Mathematics
SACNAS NDiSTEM Conference, San Juan, PR

October 2022

Short cycle rotation Boolean functions: generators and count

José E. Calderón, L. Medina (speaker), Carlos Molina
Special Section on Latinx and Hispanics in Combinatorics, Number Theory, Geometry and Topology
AMS Fall Eastern Sectional Meeting, University of Massachusetts-Amherst, Amherst, MA

October 2022

Boolean functions fixed under the action of the Dihedral group

José E. Calderón (speaker), Carlos Molina (speaker) and L. Medina
SIDIM 2022 (virtual; hosted by UPR-Mayagüez)

February 2022

Diophantine equations with binomial coefficients and perturbations of symmetric Boolean functions

Luisiany Pomales (speaker) and L. Medina
SIDIM 2022 (virtual; hosted by UPR-Mayagüez)

February 2022

- Walsh-Hadamard transforms of generalized p -ary functions and C -finite sequences**
Mathematical Congress of the Americas July 2021
 session: Symbolic Computation: Theory, Algorithms and Application
 Buenos Aires, Argentina (Zoom)
- Exponential sums and cyclotomic polynomials**
CIMAT April 2021
 University of Puerto Rico at Cayey, Cayey, PR
- Walsh-Hadamard transforms of generalized p -ary functions and C -finite sequences**
 SIDIM 2021 (virtual; hosted by UPR-Humacao) March 2021
- P -recursivity of Some Families of Boolean Functions Under Biased Walsh Transforms**
 Axel O. Gómez (speaker), L. Medina and P. Stanica
 SIDIM 2021 (virtual; hosted by UPR-Humacao) March 2021
- P -recursivity of Some Families of Boolean Functions Under Biased Walsh Transforms**
 Axel O. Gómez (speaker), L. Medina and P. Stanica
 54th Junior Technical Meeting (virtual; hosted by UPR-Río Piedras) December 2020
- Recursividad de sumas exponenciales asociadas a funciones Booleanas simétricas elementales y afines**
 Leonid B. Spúlveda (speaker) and L. Medina
 Seminario Altenua Online, Grupo de investigacin ALTENUA, Colombia November 2020
- Linear recursivity of Walsh transformations of symmetric Boolean functions: A survey**
CIMAT March 2020
 University of Puerto Rico at Cayey, Cayey, PR
- Recursions associated to Exponential Sums and Walsh transformations**
PRLS-Alliance for Minority Participation February 2020
 University of Puerto Rico, Río Piedras Campus, San Juan, PR
- Root-Hadamard transforms and complementary sequences**
Special Section in Experimental Mathematics November 2019
 AMS Fall Southeastern Sectional Meeting, Gainesville, FL
- Recursions associated to Walsh transformations**
Lunch talk October 2019
 University of Puerto Rico, Río Piedras Campus
- Value distribution of elementary symmetric polynomials and their perturbations over finite fields**
XXIII Coloquio Latinoamericano de Álgebra August 2019
 Mexico City, Mexico
- Funciones Booleanas fijas bajo acciones de grupos**
Mini-course June 2019
 Universidad Autónoma de Santo Domingo, Dominican Republic
- Value distribution of elementary symmetric polynomials and their perturbations over finite fields**
XV Congreso Internacional de Investigación Científica June 2019
 Santo Domingo, Dominican Republic

- Boolean functions, recursivity and coffee: a journey into the world of exponential sums**
Plenary talk, SIDIM 2019 March 2019
 University of Puerto Rico at Humacao
- Closed formulas for exponential sums of symmetric polynomials over Galois fields**
SIDIM 2018 March 2018
 University of Puerto Rico, Río Piedras Campus; presented by the graduate student L. B. Sepúlveda
- Diophantine equations with binomial coefficients and perturbations of symmetric Boolean functions**
Number Theory Seminar July 2017
 University of Illinois, Urbana-Champaign
- Linear recurrences for generalized Walsh transforms of symmetric Boolean functions**
Computer and Education Conference May 2017
 Inter American University, San Germán, Puerto Rico
- Linear recurrences for trapezoid and rotation symmetric Boolean functions**
SIDIM 2017 March 2017
 University of Puerto Rico at Ponce.
- Modular periodicity of exponential sums of symmetric Boolean functions**
SIDIM 2016 February 2016
 University of Puerto Rico at Humacao
- Exact divisibility of exponential sums associated to elementary symmetric Boolean functions**
SIDIM 2015 February 2015
 University of Puerto Rico, Mayagüez Campus; presented by the undergraduate students O. González and R. Negrón.
- The p -adic valuation of Eulerian numbers: trees and Bernoulli numbers**
UMaRch Puerto Rico 2015 February 2015
 Mayagüez, PR; presented by the undergraduate student O. González.
- The p -adic valuation of Eulerian numbers: trees and Bernoulli numbers**
AMS Fall Southeastern Sectional Meeting November 2014
 Greensboro, NC
- Open boundary cases of Cusick-Li-Stănică's conjecture**
SACNAS 2014, Special Session: On the Discrete Side of Mathematics October 2014
 Los Angeles, CA
- A divisibility approach to the open boundary cases of Cusick-Li-Stănică's conjecture**
Department of Mathematics April 2014
 UPR, Humacao
- Generalized exponential sums and holonomic sequences**
SIDIM 2014 February 2014
 Ponce, PR
- On multiple and infinite log-concavity**
REGS Program July 2013
 University of Illinois, Urbana-Champaign
- Exponential sums of symmetric Boolean functions, II**
REGS Program July 2013
 University of Illinois, Urbana-Champaign

Exponential sums of symmetric Boolean functions, I

REGS Program

July 2013

University of Illinois, Urbana-Champaign

Asymptotic behavior of the exponential sum of perturbations of symmetric polynomials

Department Colloquium

March 2013

University of Puerto Rico, Río Piedras

Asymptotic behavior of the exponential sum of perturbations of symmetric polynomials

SIDIM 2013

March 2013

San Juan, PR

Asymptotic behavior of the exponential sum of distortions of symmetric polynomials

Department Colloquium

September 2012

University of Puerto Rico, Mayagüez

Linear Recurrences and Asymptotic Behavior of Exponential Sums of Symmetric Boolean Functions

Fq10 The 10th International Conference on Finite Fields and their Applications

July 2011

Ghent, Belgium

Linear recurrences of exponential sums of symmetric boolean functions

New Influences in Mathematical Research in Puerto Rico by Young Researchers February 2011
Mini Simposia. Main Talk. SIDIM 2011. UPR-H/Palmas del Mar, Humacao.

Valuaciones p -ádicas de secuencias de números enteros

Department of Mathematics

October 2010

UPR-Humacao.

Experiments with Exponential Sums over the Binary Field

From $A = B$ to $Z = 60$: Conference in Honor of Doron Zeilberger's 60th Birthday

May 2010

DIMACS, Rutgers University

When to stop throwing the coin?

SACNAS Conference

October 2009

Dallas, TX

Case studies of Experimental Mathematics: p -adic valuations of recurrences.

Department of Mathematics

July 2009

University of Puerto Rico, Río Piedras Campus

Arithmetic properties of sequences satisfying first order recurrences

ACA 2009: Applications of Computer Algebra

June 2009

Montréal, Québec, Canada

Risch and Parallel Risch Algorithms

Experimental Mathematics Seminar

March 2009

Rutgers University

Asymptotic valuations of sequences satisfying first order recurrences

Analysis and Its Applications Seminar

November 2008

The University of Arizona

A World of Irresistible Integrals

Mathematical Careers and Ideas

November 2008

Rutgers University

Asymptotic valuations of sequences satisfying first order recurrences
Collaborative Number Theory Seminar October 2008
CUNY Graduate Center

Asymptotic valuations of sequences satisfying first order recurrences
Experimental Mathematics Seminar September 2008
Rutgers University

Arithmetic properties of sequences satisfying first order recurrences
Experimental Mathematics Day March 2008
Tulane University

Asymptotic valuations of sequences satisfying first order recurrences
Joint Mathematics Meetings January 2008
San Diego, CA

Projects **Symbolic Integration** Summer 2007
Implementation of the transcendental Risch and Parallel Risch algorithms in Mathematica.
Authors: Luis A. Medina and Sasha Pavlyk

Service to the **Graduate Program Coordinator**
University and/or UPR-Río Piedras Fall 2019-Present; Spring 2012-March 14, 2018
Department Administrative duties of the graduate program.

College of Natural Science Graduate Assembly
UPR-Río Piedras Fall 2019-Present; Spring 2012-March 14, 2018
Member. The Natural Science Graduate Assembly is the regulatory entity of all graduate programs in the College of Natural Science.

Interim Chair of the Department of Mathematics
UPR-Río Piedras March 14, 2018 - May 31, 2019
Chairperson
1. Minor Change for the Masters Program approved by the Academic Senate.

Site Administrator of Mathematica License
UPR-Río Piedras Spring 2015-Spring 2018
Site administrator of the Mathematica License of the Faculty of Natural Science of the University of Puerto Rico, Río Piedras Campus.

Graduate Program Academic Adviser
UPR-Río Piedras Spring 2012-March 14, 2018
Academic Adviser
1. The average number of PhD graduates when up to 2.2 during my tenure as Academic Adviser.

Curriculum Committee
UPR-Río Piedras Spring 2011-Fall 2013
Member.

Seminar Coordinator
UPR-Río Piedras Spring 2011
Discrete Mathematics Research Seminar.

Course Coordinator
UPR-Río Piedras Fall 2010-Fall 2011
Calculus.

Course Coordinator

Rutgers University
Calculus 1 for the Mathematical and Physical Sciences.

Spring 2009

**Professional
Activities****AMS Fall Southeastern Sectional Meeting. Special Session on Experimental Mathematics in Number Theory and Combinatorics.**

Virtual
Co-organizer

November 2021

Seminario Interuniversitario de Investigación Ciencias Matemáticas (SIDIM 2018)

San Juan, PR
Co-Organizer

March 2018

Project NExT Consultant

Mathematical Association of America
A professional development program for new or recent Ph.D.s in the mathematical sciences.

September 2017 - August 2019

Wolfram Mathematica Site License Administrator

College of Natural Sciences, UPR-Río Piedras
Responsibilities include: assignment of single user and lab licenses, approve or reject requested activation keys, etc.

May 2015 - Spring 2018

Referee

Research journals
Referee for various research journals.

Judge

Saint John's School, Condado, PR
Judge of Mathematics Competition.

March 2018-2020

Judge

Colegio Espíritu Santo, Hato Rey, PR
Judge of Mathematics Competition. Over 50 schools participated.

November 2016, 2018, 2019

AMS Special Session on Experimental Mathematics

Washington, DC
Co-Organizer

January 2009

**Teaching
Experience****As Professor**

1. Modern Algebra 2 [Graduate] (UPR-Río Piedras)
2. Modern Algebra 1 [Graduate] (UPR-Río Piedras)
3. Linear Algebra [Graduate] (UPR-Río Piedras)
4. Graduate Seminar [Graduate] (UPR-Río Piedras)
5. Theory of Numbers (UPR-Río Piedras, Rutgers University)
6. Experimental Mathematics (UPR-Río Piedras)
7. Abstract Algebra 2 (UPR-Río Piedras)
8. Abstract Algebra (UPR-Río Piedras)
9. Advanced Algebra (UPR-Río Piedras)
10. Advanced Calculus (UPR-Río Piedras, Rutgers University)
11. Linear Algebra [Undergraduate] (UPR-Río Piedras)
12. Intro. Discrete Mathematics (UPR-Río Piedras)
13. Intro. Linear Algebra (Rutgers University)
14. Inmersión Program (UPR-Río Piedras)
15. Calculus 2 (Rutgers University, Tulane University)

16. Calculus 1 (UPR-Río Piedras, Rutgers University, Tulane University)
17. Pre-Calculus 2 (UPR-Río Piedras)
18. Undergraduate Seminar 2 (UPR-Río Piedras)
19. Undergraduate Seminar 1 (UPR-Río Piedras)

As Graduate Teaching Assistant

1. Real Analysis (Tulane University)
2. Applied Math (Tulane University)
3. Statistics (Tulane University)

**Conferences,
Schools, and
Internships**

Society for Advancement of Chicanos and Native Americans in Science (SACNAS)
National Conference 2002, 2003, 2004, 2006, 2009, 2012, 2014, 2015, 2022

AMS Fall Eastern Sectional Meeting

University of Massachusetts-Amherst, Amherst, MA

October 2022

Seminario Interuniversitario de Investigación en Ciencias Matemáticas (SIDIM)

2002-2003, 2010-2022

AMS Fall Southeastern Sectional Meeting

virtual

November 2021

Mathematical Congress of the Americas

Buenos Aires, Argentina (Zoom)

July 2021

Latinx mathematicians network II

American Institute of Mathematics, San Jose, CA

December 5-6, 2019

AMS Fall Southeastern Sectional Meeting

Gainesville, FL

November 2-3, 2019

XXIII Coloquio Latinoamericano de Álgebra

Mexico City, México

August 5-9, 2019

XV Congreso Internacional de la Investigación Científica

Santo Domingo, Dominican Republic

June 5-7, 2019

Latinx mathematicians network

American Institute of Mathematics, San Jose, CA

December 6-7, 2018

ALGECOM 13

University of Notre Dame, Notre Dame, IN
Algebra, Geometry and Combinatorics Day

March 2016

USTARS 2016

Sam Houston State University, Huntsville, Texas
Underrepresented Students in Topology and Algebra Research Symposium

March 2016

Joint Mathematics Meeting (AMS)

2003, 2006, 2007, 2008, 2009, 2016

AMS Fall Southeastern Sectional Meeting

Greensboro, NC

November 8-9, 2014

Fq10 The 10th International Conference on Finite Fields and their Applications

Ghent, Belgium

July 11-15, 2011

From $A = B$ to $Z = 60$: Conference in Honor of Doron Zeilberger's 60th Birthday
DIMACS, Rutgers University May 27 - 28, 2010

MathFest
2008, 2009

ACA 2009: Applications of Computer Algebra
Montréal, Québec, Canada June 25-28, 2009

100th Statistical Mechanics Conference
Rutgers University, New Brunswick, NJ Dec 13 - Dec 18, 2008

Promoting Diversity at the Graduate Level in Mathematics: a National Forum
MSRI, Berkeley, CA Oct 15 - Oct 17, 2008
Panelist. Professional Development: "Am I Ready for Life after Graduate School?"

Experimental Mathematics Day
Tulane University, New Orleans, LA March 6 and 7, 2008

Wolfram Technology Conference
Champaign, IL October 10 -13, 2007

Wolfram Research, Inc (Internship)
Champaign, IL Summer 2007

Modern Mathematics: An Introduction to 2007-08 Programs at MSRI
Tampa, FL October 25-26, 2006

Number Theory and Random Matrix Theory School
University of Rochester, Rochester, NY May 30 - June 3, 2006

Computing the Continuous Discretely: Integer-point enumeration in polyhedra
Banff International Research Station, Canada August 6 - 20, 2005

Summer Institute in Mathematics for Undergraduate
Humacao, Puerto Rico Summer 2002

Puerto Rico Louis Stokes-Alliance For Minority Participation (PRLS AMP)
Junior Technical Meeting 2002, 2003

Computer Skills **Computer Languages**
Experience with C++ and JAVA.

Other Programming Tools
Experience with Maple. Extensive programming experience in Mathematica.

Other Job Experiences **Wolfram Research, Inc**
Champaign, IL September 2007- December 2007

Languages **Spanish, English**

Professional Memberships **American Mathematical Society (AMS)**
Member.

Mathematical Association of America (MAA)
Member.