

Luis F. Cáceres Duque

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EDUCATION

- 08/95-12/98 **Ph.D. in Mathematics**
University of Iowa
Logic and Algebra
GPA 4.0
Passed with High Distinction the Logic Comprehensive Examination.
Recipient of the GAANN (Graduate Assistant Aid in Areas of National Need) Fellowship.
- 01/89-12/91 **MS in Applied Mathematics**
University of Puerto Rico, Mayagüez Campus
Optimization and Control Theory
GPA 4.0
- 08/87-06/88 **BS in Mathematics**
Javeriana University Bogotá, Colombia

PROFESSIONAL EXPERIENCE

- 07/07-Present **Professor**
University of Puerto Rico, Mayagüez Campus

Instructed Abstract Algebra (graduate and undergraduate), Topology (graduate and undergraduate), Logic (graduate and undergraduate), Geometry (graduate and undergraduate), Mathematics Foundations, Advance Calculus, Number Theory, Differential Equations, Math Education, Linear Algebra, Graduate and Undergraduate Seminars, Problem Solving, Calculus I, II, III and Pre-Calculus I and II.
- 06/99-Present **College Board Consultant**
The College Board, San Juan PR
- 06/19-05/24 **Cambridge College Professor**
Cambridge College, San Juan PR
- 01/08-11/09 **Associate Dean for Research Affairs, Arts and Sciences College**
University of Puerto Rico, Mayagüez Campus
- 07/02-06/07 **Associate Professor**
University of Puerto Rico, Mayagüez Campus
- 02/06-01/07 **Acting Chair, Mathematics Department**
University of Puerto Rico, Mayagüez Campus
- 01/99-06/02 **Assistant Professor**
University of Puerto Rico, Mayagüez Campus
- Summer 1999 **Instructor**
University of Iowa City, Iowa

Seminar in Algebra, Logic and Real Analysis for new Ph.D. Students.

- 08/96-12/98 **Teaching Assistant**
University of Iowa City, Iowa

Instructed Calculus II, Abstract Algebra (undergraduate level) and Topology (graduate level).
- 08/96-12/98 **Paper Grader**
University of Iowa City, Iowa

Grading Logic and Topology (graduate level).
- 08/96-05/97 **Math Lab Assistant**
University of Iowa City, Iowa

Tutoring Pre-Calculus and Calculus at the Mathematics Tutorial Lab.
- 01/95-07/95 **Instructor**
University of Puerto Rico, Mayagüez Campus

Instructor in the "Saturday Academy of Mathematics Investigation, 1995," teaching high school students and teachers the uses of graphic calculators and their applications.
- 01/92-07/95 **Mathematics Instructor**
University of Puerto Rico, Mayagüez Campus

Instructed Pre-calculus, Calculus I, II and III, Differential Equations and Mathematics Foundations.
- 08/93-06/94 **Instructor**
University of Puerto Rico, Mayagüez Campus

Instructor in the "Saturday Academy of Mathematics Investigation, 1993-1994," teaching high school students and teachers the uses of graphic calculators and their applications.
- Summer 1990 **Computer Programmer**
University of Puerto Rico, Mayagüez Campus

Computer Programmer for the RIMI (Strengthening The Applied and Computational Mathematics Component NSF) project, which involved Optimal Control Problems.
- 01/89-12/91 **Teaching Assistant**
University of Puerto Rico, Mayagüez Campus

Instructed Pre-calculus and Calculus I and II.
- 06/89-08/91 **Computer Laboratory Instructor**
University of Puerto Rico, Mayagüez Campus

Instructed a basic course in computer science.
- 01/88-12/88 **Professor**
Javeriana University Bogotá, Colombia

Instructed Calculus I, II and III, and Linear Algebra.
- 01/86-12/87 **Teaching Assistant**
Javeriana University Bogotá, Colombia

PUBLICATIONS

1. Metodología de Enseñanza en Espiral en Competencias de Matemáticas with V. Reyes, book chapter, Contribuciones invitadas: XIII CIEMAC, Universidad de la Rioja, 2024.
2. Analyzing Proficiency and Growth: A Study of Mat Competitions in Elementary School Students in Puerto Rico with J. Arauz, WFNMC Journal, V 37, N1, 27-44, 2024
3. Mathematics Competitions by Teams (COMATEQ): An opportunity to compete Internationally with O. Colón, Proceedings of INTED, 2024.
4. Veinticinco años de las Olimpiadas matemáticas de Centroamérica y el Caribe with J. H. Nieto, Publicaciones UPRM, 2023.
5. Comentarios sobre la Formación del Pensamiento Geométrico con soporte Tecnológico: Logros y Desafíos with M. Falk, Espacio Matemático, Vol 4, Nr. 1, 2023.
6. Implementation of guides to strengthen previous conceptual weaknesses in students of Precalculus I of the UPRM, under the methodology Corequisite Support with J. Ortega, Espacio Matemático, Vol 3, Nr. 1, 2023.
7. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2022-2023 with Omar Colon, Alejandro Velez, Arturo Portnoy, Darwin Gutierrez, Edwin Florez, Ferney Henao, Silvia López, Julián Jimenez, Jhonnatan Ortega, Sebastián Jansasoy, Sergio Manzanarez and Juan Florez. OMPR publications, 2023.
8. Conceptual Weaknesses found in new students of precalculus I at the University of Puerto Rico, Mayaguez, Campus. with J. Ortega, Proceedings of INTED, p.p. 8482, 2023.
9. What are the problems like in the world's largest international mathematical Olympiad? with O. Colón and M. Akveld, Proceedings of INTED, p.p. 7580, 2023.
10. How do Mathematics Teachers in Puerto Rico Perceive the Mathematics Competitions? with F. Henao, Proceedings of INTED, p.p. 8481, 2023.
11. Mathematics Olympiads Curriculum for Primary School in Ibero-America with Ariana Rodríguez and Lizbeth Alvarado, Journal of the WFNMC, Vol 36, No1, pp 13-24, 2023.
12. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2021-2022 with Omar Colon, Alejandro Velez, Arturo Portnoy, Darwin Gutierrez, Edwin Florez, Ferney Henao, Silvia López, Julián Jimenez, Jhonnatan Ortega and Juan Florez. OMPR publications, 2023.
13. AKSF & Math Kangaroo. The world's largest international mathematics competition with Meike Akveld, Notices of the AMS, Vol 69, Nr. 11, pp 1956-1960, December 2022.
14. The impact of mathematics competitions on teachers and their classrooms in Puerto Rico, Switzerland and UK: A comparative study with Meike Akveld, Ferney Henao and David Crawford, ZDM, Springer, Vol 54, Nr. 5 pp. 941-959, 2022.
15. Comparison of two algorithms to solve the ideal membership problem in $\mathbb{Z}[x]$ with Silvia López, Espacio Matemático, Vol 2, Nr. 2, 2022.
16. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2020-2021 with Omar Colon, Alejandro Velez, Arturo Portnoy, Darwin Gutierrez, Ferney Henao, Silvia López, Julián Jimenez, Jhonnatan Ortega and Bayron Morales. , OMPR publications, 2022.

17. Debilidades conceptuales encontradas en estudiantes de Precálculo I en la UPRM with Jhonnatan Ortega, Espacio Matemático, Vol 2, Nr. 2, 2022.
18. Mathematical Competitions, a perspective from Puerto Rican teaching with Ferney Henao, Espacio Matemático Vol 2, Nro 1, 2021.
19. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2019-2020 with Omar Colon, Bayron Morales, Darwin Gutierrez, Alejandro Vélez, and Arturo Portnoy, OMPR publications, 2021.
20. Correspondencia de los currículos convalidados en las universidades puertorriqueñas y los alineamientos temáticos del Programa de Nivel Avanzado del College Board, College Board, 2020.
21. Math Kangaroo with Meike Akveld and Robert Geretschlager, WFNMC, Vol 33, N2, p 48-66, 2020.
22. The Math Kangaroo Competition with Meike Akveld, José Nieto and Rafael Sánchez, Espacio Matemático, Number 2, Vol 1, 2020.
23. Los Cuadriláteros Cíclicos como Herramienta en la Resolución de Problemas with Catalina Rúa, Deiby Castillo and Katherine Paz, Universidad de Nariño, 2019.
24. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2018-2019 with Omar Colon, Bayron Morales, Alejandro Vélez, and Arturo Portnoy, AFAMaC publications, 2019.
25. Congruence, Similarity and Concurrency, AFAMaC, Publications, 2018.
26. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2017-2018 with Omar Colon, Pedro Torres, Alejandro Vélez, Bayron Morales and Arturo Portnoy, AFAMaC publications, 2018.
27. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2016-2017 with Omar Colon, Pedro Torres, Alejandro Vélez, Mario Zepeda and Arturo Portnoy, AFAMaC publications, 2017.
28. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2015-2016 with Omar Colon, Pedro Torres, Alejandro Vélez, Andrés Chamorro and Arturo Portnoy, AFAMaC publications, 2017.
29. Competitions for Young Mathematicians: Combinatorial Problems in the Mathematical Olympiad of Central America and the Caribbean (chapter 5) with Rafael Sánchez and Jose Nieto, Springer, 2017.
30. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2015-2016 with Omar Colon, Pedro Torres, Andres Chamorro and Arturo Portnoy, AFAMaC publications, 2016.
31. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2014-2015 with Juan Ortiz, Omar Colon and Arturo Portnoy, AFAMaC publications, 2015.
32. Mathematics in Latin America and the Caribbean: So Much Happening, So Much To Do, Notices, AMS, October 2014.
33. Matemáticas en América Latina y el Caribe, Interciencia, November 2014, Vol 39, N 11.
34. Math Olympiads in Puerto Rico: Celebrating 15 years with Omar Colón, Juan Ortiz, Arturo Portnoy and Yuri Rojas, OMPR publications, 2014.

35. On the Infinitude of Prime Elements, with Jose Vélez-Marulanda, Revista Colombiana de Matemáticas, Vol 47, 2013 (2), p. 167-169.
36. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2012-2013 with Juan Ortiz, Yuri Rojas and Arturo Portnoy, AFAMaC publications, 2013.
37. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2011-2012 with Cesar Barreto and Arturo Portnoy, AFAMaC publications, 2012.
38. On Certain Divisibility Properties over Integral Domains with José Vélez, Journal of Mathematics Research, Vol 3, N 3, pp 28-31, 2011.
39. A professional development model: including coaching and problem based learning with Y. Rojas and R Macchiavelli, Proceedings of INTED2011, pp 3686-3688.
40. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2010-2011 with Juan Ortíz and Arturo Portnoy, AFAMaC publications, 2011.
41. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2009-2010 with Gabriel Uribe, Cesar Barreto and Arturo Portnoy, AFAMaC publications, 2011.
42. Congruence, Similarity and Concurrency, CEPA Publications, 2010.
43. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2008-2009 with Jonathan Ho and Arturo Portnoy, AFAMaC publications, 2009.
44. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2007-2008 with Jonathan Ho and Arturo Portnoy, AFAMaC publications, 2007.
45. Math Activities for the Classroom, AFAMaC publications, 2008.
46. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2006-2007 with Jonathan Ho and Arturo Portnoy, AFAMaC publications, 2007.
47. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2005-2006 with Jonathan Ho and Arturo Portnoy, AFAMaC publications, 2006.
48. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2004-2005 with José Velez, AFAMaC publications, 2005.
49. Problems and Solutions: Mathematics Olympiads in Puerto Rico: 2001-2004 with Moisés Delgado, Stanislaw Dziobiak, Gerardo Hernández and Arturo Portnoy, IFEM publications, 2005.
50. Topics in Math Olympiads, IFEM publications, 2004.
51. Some Divisibility Properties in Rings of Polynomials over a UFD, with José Velez, submitted to *Discussiones Mathematicae General Algebra and Applications*, 2004.
52. Ideal Theories for Some Commutative Rings, Bulletin of the Section of Logic, V32/1-2, 2003, pp. 9-18.
53. Application of Filtered Products and Ultraproducts in Algebra, with Walter J. Meléndez, Revista Integración, Vol. 21 (2003), 1-14
54. An Effective Procedure for Minimal Basis for Ideals in $\mathbb{Z}[x]$, *Discussiones Mathematicae General Algebra and Applications*, 23 (1), 2003, pp. 5-11.
55. A description of ideals in Noetherian Rings, with George Nelson, *Communications in Algebra*, V3, 7, 2003, pp. 3039-3060.

56. Ultraproducts and Algebraic Structures, The Bulletin of Symbolic Logic, V8, 1, abs. pp127-128, 2002.
57. Propositional Logic and Algebraic Structures, Proceedings of the ICM-2002, pp. 1.
58. Ideal Theories of the Ring of Polynomials over the Integers, Bulletin of the Section of Logic, V30/1, 2001, pp. 21-31.
59. Ultraproducts and Algebraic Structures, Collegium Logicum, Annals of the Kurt-Godel-Society, V4, 2001, pp. 67.
60. Filtered Products of Subgroups and Ideals, with Edoardo Carta, Proceedings of the National Conference on Undergraduate Research NCUR 2001.
61. Ultraproduct of Ideals in a Noetherian Ring, Proceedings of the XV SIDIM, 2001, pp. 19-25.
62. Ultraproducts of Sets and Ideal Theories of Commutative Rings. Thesis. Ph.D. University of Iowa, Iowa City, Iowa, 1998.
63. Using the TI-85 Graphic Calculator in the Teaching of Calculus. Journal of the Puertorican Association of Mathematics Professors. San Juan, Puerto Rico, 1995.
64. A brief story: Emmy Noether . Atenea Journal. Puerto Rico University, Mayagüez, Puerto Rico, 1995.
65. Solution of an Optimal Control Problem with two Controls and two State Variables . Thesis. MS. University of Puerto Rico, Mayagüez, Puerto Rico, 1991.
66. Relevant Properties of Arbitrary Rings, Abstract. Bulletin of The Sciences Faculty. Javeriana Universty Bogotá, Colombia, 1998.
67. Relevant Properties of Arbitrary Rings. Thesis. B.S. Javeriana University, Bogotá, Colombia, 1988.

PRESENTATIONS/PROFESIONAL ACTIVITIES

1. Head Coach of the Puerto Rico team for the 40 Iberoamerican Mathematics Olympiad, Temuco, Chile, 2025.
2. AKSF meeting Seoul, South Korea, 2025
3. Head Coach of the Puerto Rico team for the 66 th International Mathematics Competition, Sunshine Coast, Australia, 2025.
4. EDULERN 2025, Palma de Mallorca, Spain, 2025.
5. Meeting of the Board of the AKSF, Valencia, Spain, 2025.
6. 62 encuentro académico del comite de expertos del College Board, 2015, Mayaguez, Puerto Rico.
7. CIEMAC, Costa Rica, 2025
8. 32nd convention of the Association Kangaroo without frontiers, Santos, Brazil, 2024.
9. Head Coach of the Puerto Rico team for the XXVI Caribbean and Central-American Mathematical Olympiad, Comayagua, Honduras, 2024.
10. Head Coach of the Puerto Rico team for the 39 Iberoamerican Mathematics Olympiad, Tarija, Bolivia, 2024.

11. ICME 15, Sidney, Australia, 2024.
12. 20th International Bebras Task Workshop, Vrnjacka Banja, Serbia, 2024.
13. Meeting of the Board of the AKSF, Istambul, Turkey, 2024.
14. INTED, Valencia, 2024.
15. Joint Meetings, San Francisco, 2024.
16. XIII CIEMAC, “Metodología en espiral”, Cartago, Costa Rica, 2023
17. 31st convention of the Association Kangaroo without frontiers, Skopje, Macedonia, 2023.
18. Head Coach of the Puerto Rico team for the XXXVIII Iberoamerican Mathematics Olympiad, Rio de Janeiro, Brazil, 2023.
19. Head Coach of the Puerto Rico team for the XXV Caribbean and Central-American Mathematical Olympiad, San Salvador, El Salvador, 2023.
20. Head Coach of the Puerto Rico team for the 64 th International Mathematics Competition, Ciba, Japan, 2023.
21. 19 International Bebras Task Workshop, Egypt, 2023
22. Meeting of the Board of the AKSF, Istambul, Turkey, 2023.
23. INTED, Valencia, 2023.
24. Como acercar los estudiantes a las matemáticas, College Board, Puerto Rico (virtual, over 300 participants)
25. 30th convention of the Association Kangaroo without frontiers, Cervia, Italy, 2022.
26. Leader of the Puerto Rico team at the XXXVII Iberoamerican Mathematics Olympiad, Bogotá, Colombia, 2022.
27. SACNAS, San Juan Puerto Rico, 2022.
28. Un recorrido por algunas estrategias para la enseñanza y el aprendizaje de las matemáticas, COME 2022, Honduras (virtual over 300 participants)
29. Ventanas de Investigación y Desarrollo Académico, Cartago, Costa Rica 2022.
30. Meeting of the Board of the AKSF, Istambul, Turkey, 2022.
31. CMCK workshop, Alberta, Canada 2022
32. 29nd convention of the Association kangaroo without frontiers, Antwerpen, Belgium, 2021.
33. Observer of the Puerto Rico team for the XXXV Iberoamerican Mathematics Olympiad, Lima, Peru, 2020. (virtual)
34. Observer for the XXI Caribbean and Central-American Mathematical Olympiad, Panamá, 2020. (virtual)
35. 28nd convention of the Association kangaroo without frontiers, Zurich, Switzerland, 2020. (virtual)

36. Head Coach of the Puerto Rico team for the 61th International Mathematics Competition, San Petersburg, Russia, 2020. (virtual)
37. Solución de problemas, mini curso, II encuentro matemático del Caribe, Cartagena, Colombia, 2020 (virtual)
38. Meeting of the Board of the AKSF, Zurich, Switzerland, 2020. (virtual)
39. “Problems of the Math Kangaroo competition”, X Simposio de Matemáticas y Educación Matemática UAN, Bogotá, 2020.
40. OMPR math Summer Camp, JMM of the AMS and MAA, Denver, 2020.
41. OMPR program, with Omar Colon, JMM of the AMS and MAA, Denver, 2020.
42. Math Kangaroo: The largest international math Olympiad, with Rafael Sánchez, José Nieto and Meike Akveld, JMM of the AMS and MAA, Denver, 2020.
43. Hablemos de Matemáticas, Parity, Cali, Colombia, 2019.
44. 27nd convention of the Association kangaroo without frontiers, Chicago, USA, 2019.
45. Head Coach of the Puerto Rico team for the XXXIV Iberoamerican Mathematics Olympiad, Guanajuato, Mexico, 2019.
46. Head Coach of the Puerto Rico team for the 60th International Mathematics Competition, Bath, United Kingdom, 2019.
47. Grader for the XX Caribbean and Central-American Mathematical Olympiad, Santo Domingo, Dominican Republic, 2019.
48. Meeting of the Board of the AKSF, Bled, Slovenia, 2019.
49. “Membership problem for ideals in $\mathbb{Z}[x]$ ”, Javeriana Univesity seminar, Bogotá 2019.
50. “Kangaroo competition”, “short course: From geometry to trigonometry” IX Simposio de Matemáticas y Educación Matemática UAN, Bogotá, 2019.
51. 26nd convention of the Association kangaroo without frontiers, Vilnius, Lithuania, 2018.
52. Head Coach of the Puerto Rico team for the XXXIII Iberoamerican Mathematics Olympiad, Faro, Portugal, 2018.
53. “Solving Problems Strategies”, “Short course in geometry”, ALTENCOA8, Popayán, Colombia, 2018.
54. Head Coach of the Puerto Rico team for the 59th International Mathematics Competition, Cluj-Napoka, Romania, 2018.
55. Head Coach of the Puerto Rico team for the XX Caribbean and Central-American Mathematical Olympiad, La Habana, Cuba, 2018.
56. Meeting of the Board of the AKSF, Bled, Slovenia, 2018.
57. “Solving Problems Strategies”, Plenary talk, SIDIM. Ponce 2018

58. “Solving Problems Strategies”, “Short course in geometry”, VIII Simposio de Matemáticas y Educación Matemática UAN, Bogotá, 2018.
59. 25nd convention of the Association kangaroo without frontiers, Lucerne, Switzerland, 2017.
60. Head Coach of the Puerto Rico team for the XXXII Iberoamerican Mathematics Olympiad, Iguazu, Argentina, 2017.
61. Head Coach of the Puerto Rico team for the 58th International Mathematics Competition, Rio de Janeiro, Brazil, 2017.
62. Observer of the XIX Caribbean and Central-America Mathematical Olympiad, San Salvador, El Salvador, 2017.
63. ED Thesis Defense, Universidad Antonio Nariño, Bogotá, 2017.
64. AKSF Board Meeting, Barcelona, Spain, 2017.
65. “Mathematical Olympiad of Central America and Caribbean: 18 years of success”, International Technology, Education and Development Conference, Valencia, Spain, 2017.
66. “Combinatorial Problems in the Mathematical Olympiad of Central America and the Caribbean”, SIDIM, Ponce, 2017.
67. 36th Annual Conference on The First-Year Experience, Atlanta, 2017
68. Hablemos de Matemáticas, Problem Solving Strategies, Cali, Colombia, 2016
69. 24nd convention of the Association kangaroo without frontiers, Lviv, Ukraine, 2016
70. VII Coloquio Internacional de Educación, The mathematical Olympiad of Central America and the Caribbean: 18 years supporting math contest in the region, Popayan, Colombia, 2016
71. Head Coach of the Puerto Rico team for the XXXI Iberoamerican Mathematics Olympiad, Antofagasta, Chile, 2016
72. ICME 2016, to give two talks and to receive the Erdos Award, Hamburg, Germany, 2016
73. Head Coach of the Puerto Rico team for the 57th International Mathematics Competition, Hong Kong 2016
74. Secretary of the XVIII Caribbean and Central-America Mathematical Olympiad, Kingston, Jamaica, 2016
75. XIII Coloquio Regional de Matematicas, short course in geometry and a plenary talk, Pasto, Colombia, 2016
76. Invited by the MAA to grade the USA Mathematical Olympiad and USA Junior Mathematical Olympiad, Cambridge, 2016
77. MSP Meeting for directors, Baltimore, 2016.
78. “A Short course in Geometry” and “A short course in Mathematics Education”, Encuentro de didáctica de las matemáticas y las ciencias experimentales, San Salvador, El Salvador, 2015
79. XXX Iberoamerican Mathematics Olympiad, Mayagüez, Puerto Rico 2015
80. 23nd convention of the kangaroo without frontiers, Gothenburg, Sweden, 2015

81. Young Mathematicians Conference, Columbus, Ohio 2015
82. Head Coach of the Puerto Rico team for the 56th International Mathematics Competition, Chiang Mai, Thailand, 2015.
83. Head Coach of the Puerto Rico team for the XVII Caribbean and Central-American Mathematical Olympiad, Cuernavaca, Mexico, 2015.
84. MSP Meeting for directors, Washington, DC, 2015.
85. Catalan Kangaroo: 20 years, Barcelona, Spain, 2015
86. Introduction to Graduate Education at Northwestern University, Chicago, 2015.
87. Gateway Course Experience Conference, Charlotte, NC, 2015.
88. 22nd convention of the kangaroo without frontiers, San Juan, Puerto Rico, 2014
89. SACNAS, Los Angeles, 2014.
90. MSP Meeting for directors, Washington, DC, 2014.
91. “A Short course in Geometry”, San Pedro Sula, Honduras, 2014
92. Observer and Grader at the XXIX Iberoamerican Mathematics Olympiad, San Pedro Sula, 2014
93. “Mathematics in Latin America and Caribbean: Challenges and Opportunities”, International Congress of Mathematicians, Seoul, Korea, 2014
94. Head Coach of the Puerto Rico team for the 55th International Mathematics Competition, Cape Town, South Africa, 2014.
95. Head Coach of the Puerto Rico team for the XVI Caribbean and Central-American Mathematical Olympiad, San José, Costa Rica, 2014.
96. Faculty Open House at Notre Dame, Indiana, 2014
97. “A short geometry course”, Santo Domingo, Dominican Republic, 2014.
98. “Mathematics in Latin America and Caribbean: Challenges and Opportunities”, International Technology, Education and Development Conference, Valencia, Spain, 2014.
99. Introduction to Graduate Education at Northwestern University, Chicago, 2014.
100. AMS meeting, Baltimore, 2014.
101. 8vo CIEMAC, “Teaching Trigonometry and Math Activities for the classroom”, Cartago, Costa Rica, 2013
102. 21st convention of the kangaroo without frontiers, Edinburgh, Scotland, 2013.
103. SACNAS, San Antonio, 2013.

104. MSP Meeting for directors, Washington DC, 2013
105. Head Coach of the Puerto Rico team for the XXVIII Iberoamerican Mathematics Olympiad, Panama, 2013
106. Young Mathematicians Conference, Columbus, Ohio, 2013.
107. Mathematical Congress of the Americas, Guanajuato, Mexico, 2013.
108. “Mathematics in Latin America and Caribbean: Challenges and Opportunities”, Math Congress, Barranquilla, Colombia, 2013.
109. International Mathematical Olympiad, IMO-2013, Santa Marta, Barranquilla, Colombia 2013.
110. Head Coach of the Puerto Rico team for the XV Caribbean and Central-American Mathematical Olympiad, Managua, Nicaragua, 2013.
111. International Mathematics Olympiad, IMO-2013, organizational meeting, Santa Marta, Barranquilla, Colombia 2013
112. Faculty Open House at Notre Dame, Indiana, 2013.
113. Introduction to Graduate Education at Northwestern University, Chicago, 2013.
114. How to run a math camp. American Institute of Mathematics. Palo Alto, California, 2013
115. CIMAT, meeting for mapeo of Latinamerica and Caribbean, Guanajuato, Mexico, 2013.
116. AMS meeting, San Diego, 2013
117. 20th convention of the kangaroo without frontiers, Protaras, Cyprus, 2012.
118. SACNAS, Seattle, 2012.
119. Head Coach of The Puerto Rico team for the XXVII Iberoamerican Mathematics Olympiad, Cochabamba, Bolivia, 2012.
120. Head Coach of The Puerto Rico team for the XIV Caribbean and Central-American Mathematical Olympiad, San Salvador, El Salvador, 2012.
121. Head Coach of The Puerto Rico team for the 53th International Mathematics Competition, Mar de Plata, Argentina, 2012.
122. Young Mathematicians Conference, Columbus, Ohio, 2012.
123. Introduction to Graduate Education at Northwestern University, Chicago, 2012.
124. MSP Meeting for directors, New Orleans, 2012.
125. “Two Educational Projects: AFAMaC and OMPR”, Mathematicians in Math Education Convention, Santiago de Chile, Chile 2012.
126. 19th convention of the kangaroo without frontiers, Bled, Slovenia, 2011.

127. Head Coach of The Puerto Rico team for the XXVI Iberoamerican Mathematics Olympiad, San José, Costa Rica, 2011.
128. Head Coach of The Puerto Rico team for the XIII Caribbean and Central-American Mathematical Olympiad, Colima, Mexico, 2011.
129. Head Coach of The Puerto Rico team for the 52th International Mathematics Competition, Amsterdam, 2011.
130. Head Coach of The Puerto Rico team for the XIII Caribbean and Central-American Mathematical Olympiad, México, 2011.
131. PTMT Summer Institute, North Carolina State University, North Carolina, 2011.
132. MSP Meeting for directors, San Francisco, 2011.
133. International Technology, Education and Development Conference, Valencia, Spain, 2011.
134. 18th convention of the kangaroo without frontiers, Tbilisi, Georgia, 2010.
135. “Math Activities for the classroom”, 22nd Iberoamerican Seminar, Asunción, Paraguay, 2010.
136. Head Coach of The Puerto Rico team for the XXV Iberoamerican Mathematics Olympiad, Asunción, Paraguay, 2010.
137. “Some Aspects of Mathematics and Beauty”, International Conference in Art, Science and Technology in the XXI Century, San Juan, Puerto Rico, 2010.
138. Head Coach of The Puerto Rico team for the 51th International Mathematics Competition, Astana, Kazakhstan, 2010.
139. President of the International Jury for the XII Caribbean and Central-American Mathematical Olympiad, Puerto Rico, 2010.
140. MSP Meeting for directors, San Diego, 2010.
141. 6to CIEMAC, “Proofs in Geometry”, Cartago, Costa Rica, 2009.
142. CENTRO 2010, Barbados, 2009.
143. CENTRO 2010, St. Thomas, 2009.
144. 17th convention of the kangaroo without frontiers, Minsk, Belarus, 2009.
145. 43. Head Coach of the Puerto Rico team for the XI Caribbean and Central-American Mathematical Olympiad, Bogotá, 2009.
146. Head Coach of the Puerto Rico team for the XXIV Iberoamerican Mathematics Olympiad, Queretaro, Mexico, 2009.
147. Head Coach of the Puerto Rico team for the 50th International Mathematics Competition, Bremen, Germany, 2009.
148. Mathematical Olympiad: Planning and Designing Workshop, Jamaica, 2009.

149. MSP Meeting for directors, Chicago, 2009.
150. Workshop on Biomedical Research, Notre Dame, Indiana, 2009.
151. UWI-UPR Collaboration Project, Kingston, Jamaica, 2008.
152. Iowa Mathematical Field of Dreams Conference, Iowa, 2008.
153. 16th convention of the kangaroo without frontiers, Berlin, Germany, 2008.
154. Head Coach of The Puerto Rico team for the XXIII Iberoamerican Mathematics Olympiad, Salvador de Bahia, Brazil, 2008.
155. Head Coach of The Puerto Rico team for the 49th International Mathematics Competition, Madrid, 2008.
156. Head Coach of The Puerto Rico team for the X Caribbean and Central-American Mathematical Olympiad, Honduras, 2008.
157. NCTM conference, Utah, 2008.
158. MSP Meeting for directors, San Francisco, 2008.
159. AMS meeting, San Diego, 2008.
160. MSP Meeting for directors, Washington DC, 2007.
161. 15th convention of the kangaroo without frontiers, Graz, Austria, 2007
162. Head Coach of The Puerto Rico team for the XXII Iberoamerican Mathematics Olympiad, Coimbra, Portugal, 2007.
163. Head Coach of The Puerto Rico team for the 48th International Mathematics Competition, Vietnam, 2007.
164. Head Coach of The Puerto Rico team for the IX Caribbean and Central-American Mathematical Olympiad, Venezuela, 2007.
165. AMS meeting, New Orleans, 2007.
166. 5to CIEMAC, “Mathematical Activities in the Classroom”, Cartago, Costa Rica, 2007.
167. Primer Encuentro Iberoamericano de la Enseñanza del Cálculo y Sexto Encuentro Nacional de la Enseñanza del Cálculo, “Geometric Proofs in Calculus and Precalculus”, Bogotá, Colombia, 2007.
168. Seminar in Education, “Integrated Math and Problem solving: a short course”, Mérida, Venezuela, 2007.
169. MSP Meeting for directors, Chicago, 2006.
170. 14th convention of the kangaroo without frontiers, Barcelona, Spain, 2006.
171. Head Coach of The Puerto Rico team for the XXI Iberoamerican Mathematics Olympiad, Guayaquil, Ecuador, 2006.

172. Head Coach of The Puerto Rico team for the 47th International Mathematics Competition, Slovenia, 2006.
173. Head Coach of The Puerto Rico team for the VIII Caribbean and Central-American Mathematical Olympiad, Panama, 2006.
174. Evaluation for Professional Development of Teachers, Michigan, 2006.
175. MSP Meeting for directors, Boston 2006.
176. XXI SIDIM, *Problems in Mathematics Olympiads*, Caguas, Puerto Rico 2006
177. 4to CIEMAC, *Integrated Mathematics*, Cartago, Costa Rica 2005.
178. ICMI 15th, *How do the components and structure of a curriculum affect the content knowledge of mathematics teachers?* with A. Person, M. Alfaro, A. Portnoy , Brazil, 2005.
179. XX SIDIM, AFAMaC: *An Innovative Education Project*, Mayagüez, Puerto Rico, 2005.
180. 13th convention of the kangaroo without frontiers, Borovetz, Bulgaria, 2005.
181. Head Coach of The Puerto Rico team for the VII Caribbean and Central-American Mathematical Olympiad, San Salvador, El Salvador 2005.
182. Head Coach of The Puerto Rico team for the 46th International Mathematics Competition, Merida, Mexico, 2005.
183. First Iberoamerican Seminar with Emphasis in Solving Problems, Cartagena, Colombia, 2005. Head Coach of The Puerto Rico team for the XX Iberoamerican Mathematics Olympiad, Cartagena, Colombia, 2005.
184. XVI Iberoamerican Conference in the Teaching of Mathematics, *Integrated Math*, Castellón, Spain, 2004.
185. 9th Conference on Applications of Logic in Philosophy and Mathematics Foundations, *Divisibility Properties in Rings of Polynomials*, Karpacz, Poland, 2004.
186. XIX SIDIM. *A Model for Mathematic Olympiads in Puerto Rico*, Cayey, Puerto Rico 2004.
187. Head Coach of The Puerto Rico team for the XIX Iberoamerican Mathematics Olympiad, Castellón, Spain, 2004.
188. ICME 10, International Congress on Mathematical Education, Copenhagen, Denmark, 2004.
189. Head Coach of The Puerto Rico team for the VI Caribbean and Central-American Mathematical Olympiad, Managua, Nicaragua, 2004.
190. Scientific Committee for Puerto Rico, International Science and Engineering Fair, Portland, Oregon 2004.
191. Head Coach of The Puerto Rico team for the XVIII Iberoamerican Mathematics Olympiad, Mar del Plata, Argentina, 2003.
192. Head Coach of The Puerto Rico team for the V Caribbean and Central-American Mathematical Olympiad, San José, Costa Rica, 2003.

193. Organizer of the Camp for Olympic Students of Mathematics, Mayaguez, Puerto Rico, 2003.
194. Summer School in Algebra and Ordered Sets, *Filtered Intersections and Algebraic Structures*, Kosice, Slovak, 2003.
195. North East Conference on Mathematics *Divisibility Properties in Rigs of Polynomials*, Bucaramanga, Colombia, 2003.
196. *Integrated Mathematics*, 10 workshops for Math Teachers around Puerto Rico, 2003.
197. RELME 17 *A Model for Mathematic Olympiads in Puerto Rico*, Santiago, Chile, 2003.
198. 36th APMN Conference, *A Model for Mathematic Olympiads in Puerto Rico*, plenary talk, Humacao, Puerto Rico, 2003.
199. XVIII SIDIM. *Some Properties of Rings of Polynomials*, Ponce, Puerto Rico, 2003.
200. Evaluator in the First Annual Reverse Site Visit for the Curriculum Improvement Partnership award Program (CIPA), NASA, Dallas, 2002.
201. Head coach of the Puerto Rico team for the XVII Iberoamerican Mathematics Competition, San Salvador, El Salvador, 2002.
202. Head coach of the Puerto Rico team for the IV Caribbean and Central-American Mathematical Olympiad, Mérida, México, 2002.
203. Advisor for the graduate program of the UIS) Universidad Industrial de Santander), Bucaramanga, Colombia, 2002.
204. Building Teacher Leadership in Mathematics Institute, Cambridge, Massachusetts, 2002.
205. International Congress of Mathematicians 2002, Propositional Logic and Algebraic Structures, Beijing, China 2002.
206. National Week of Science, *Propositional Logic and Algebraic Structures*, Bucaramanga, Colombia, 2002.
207. *Modular Arithmetic*, Eugenio María de Hostos High School, Mayagüez, Puerto Rico, 2002.
208. *Ultraproducts, Logic and Ideals*, University of Silesia, Poland, 2002.
209. VI Conference on Algebra and Applications, *Ultraproducts, Logic and Ideals*, Zakopane, Poland, 2002.
210. *The Membership Problem for Ideals in $\mathbb{Z}[x]$* , University of Opole, Poland, 2002.
211. Mathematics Department Seminar, *Atomic Ideals in Commutative Rings*, Mayagüez, Puerto Rico, 2001.
212. European Summer Meeting of the ASL, *Ultraproducts and Algebraic Structures*, Vienna, Austria 2001.
213. *Games and Applications of Abstract Algebra*, Mayaguez, Puerto Rico, 2001.
214. XVI SIDIM, "*An effective Procedure for Minimal Bases of Ideals of $\mathbb{Z}[x]$* ", Humacao, Puerto Rico, 2001.
215. Peer Review Panel for NASA proposals, 2001.

216. AMS-MER Workshop on Professional Master's Degrees in Teaching Mathematics, Cincinnati, 2001.
217. Head coach of the Puerto Rico team for the XVI Iberoamerican Mathematics Competition, Montevideo, Uruguay, 2001
218. Organizer of the Camp for Olympic Students of Mathematics, Mayaguez, Puerto Rico, 2001.
219. Head coach of the Puerto Rico team for the III Caribbean and Central-American Mathematical Olympiad, Barranquilla, Colombia, 2001.
220. Advisor for the graduate program of the INTEC (Tech. Institute of Santo Domingo), Santo Domingo, Dominican Republic, 2001.
221. Joint Mathematics Meetings, New Orleans, 2001.
222. Editor of the Proceedings of the XV SIDIM, 2001.
223. *Using Applications and Technology to Teach Abstract Algebra*, Bayamón, Puerto Rico, 2000.
224. National Congress of Mathematics, "*Ultraproduct of Sets*", Sciences Institute, Bogotá, Colombia, 2000.
225. National Congress of Mathematics, "*Logic and Ideals*", Andes University, Bogotá, Colombia, 2000.
226. National Congress of Mathematics, "*Games Applications and Abstraction*", Javeriana University, Bogotá, Colombia, 2000.
227. XV SIDIM, "*Ultraproduct of Ideals*", Mayagüez, Puerto Rico, 2000.
228. International Conference on Technology in Collegiate Mathematics, ICTCM, Atlanta, 2000.
229. Mathematical Challenges of the 21st century, Los Angeles, 2000.
230. 2000 European Summer Meeting of the Association of Symbolic Logic, Paris, 2000.
231. U-Factorizations in Commutative Rings with Zero Divisors, conference , invited by the Math Department of the University of Iowa, Iowa City, 2000.
232. Member of the evaluating committee for Presidential Awards for Excellence in Mathematics and Science Teaching in Puerto Rico, 2000.
233. LUATCS'99. "*Ultraproduct of Ideals in a Noetherian Ring*", Johannesburg, Africa, 1999.
234. Mathematics Department Seminar. "*A Description of Ideals in Noetherian Rings*". Luis F. Cáceres and George Nelson (presenter). Iowa City, Iowa, 1999.
235. GTE/RUM: *Using Technology to Bridge the Gap Between High School and College in Puerto Rico*, Luis F. Cáceres, Rafael Martínez and Dan McGee (presenter). Texas, 1999.
236. *Games in Group Theory*, Luis F. Cáceres and Alfonso Heras (presenter), Mayagüez, Puerto Rico 1999.
237. American Mathematical Society, Regional Meeting. "*Ideals of Rings, Limits and Logic*". Luis F. Cáceres and George Nelson (presenter). Iowa City, Iowa 1999.
238. Mathematics Department Seminar. "*Ultraproducts and Noetherian Rings*". Mayagüez, Puerto Rico 1999.

239. Fourteenth SIDIM. (Interuniversity Mathematical Research Seminar). "*Sentential Logic and Ideals*", San Juan, Puerto Rico 1999.
240. Summer School, Logic, Universal Algebra and Theoretical Computer Science, Rand Afrikaans University, Johannesburg, 1999.
241. 1999 Regional Conference on Improving America's Schools, Tampa, Florida 1999.
242. Commutative Rings Seminar. "Valuation Rings". Iowa City, Iowa 1999.
243. Integrating Science and Math with Fun Activities: A NASA Workshop. University of Puerto Rico, Mayagüez, PR, 1999.
244. Constructive Learning workshop. University of Puerto Rico, Mayagüez, PR, 1999.
245. Logic and Mathematics Foundation Seminar. "*Sentential Logic and Ideals*". Iowa City, Iowa 1998.
246. Logic and Mathematics Foundation Seminar. "*Ultraproducts of Ideals*", Iowa City, Iowa 1998.
247. Logic and Mathematics Foundations Seminar. "*Minimal basis for Ideals of $Z[x]$* ", Iowa City, Iowa 1998.
248. Logic and Mathematics Foundations Seminar. "*Ideal Theories of $Z[x]$* ", Iowa City, Iowa 1998.
249. Logic and Mathematical Reasoning. International Meeting, Mexico City, Mexico, 1997. American Mathematical Society (AMS) Meeting, Iowa City, IA, 1996.
250. NSF Calculus Workshop: A Student Centered Approach. Ithaca, NY, 1995.
251. Seminar of Mathematica. University of Puerto Rico, Mayagüez, PR, 1995.
252. Investigation and Creative Projects Seminar. FDK Fraternity. Mayagüez, Puerto Rico, 1995.
253. Distrital Science Fair. Jury member of this fair. Mayagüez, PR, 1995.
254. 2nd Convention in Thought and Education, Mayagüez, PR, 1995.
255. Calculus Reform conference. Aimes, IA, 1995.
256. Workshop: Calculus and Pre-Calculus Teaching Reform in Puerto Rico. Guanica, Puerto Rico, 1995.
257. Annual Convention of the Puertorican Association of Mathematics Professors. "*Using the TI-85 Calculator in the Teaching of Calculus*", San Juan, PR, 1995.
258. Scientific Investigation Symposium. Jury member of this symposium. Mayagüez, Puerto Rico, 1994.
259. Calculus Reform Conference. Tampa, FL, 1994.
260. Ninth SIDIM. Humacao, PR, 1994.
261. Regional Convention of the Puertorican Association of Mathematics Professors. "*Using the TI-85 Graphic Calculator*.", Mayagüez, PR, 1994.
262. 2nd Convention of Calculus Teaching. "*Using Graphic Calculators in the Teaching of Calculus and*

263. *the USA Calculus reform.* Bogotá, Colombia, 1994.
Math Counts Workshop for High School Teachers. Mayagüez, PR, 1994.
264. Participant in the "Using Technology to Enhance the Teaching of Pre-Calculus and Calculus" project, NSF. Mayagüez, Puerto Rico, 1994, 1993.
265. Seminar of Educational Methodology. Mayagüez, Puerto Rico, 1993.
266. Eighth SIDIM. San German, Puerto Rico, 1993.
267. Seventh SIDIM. "*An Optimal Control Problem.*" Mayagüez, PR, 1992.
268. Seminar: "Use of Graphic Calculators," Mayagüez, Puerto Rico, 1992.
269. Sixth SIDIM. Bayamon, Puerto Rico, 1991.
270. FORTRAN Seminar. San Juan, Puerto Rico, 1990.
271. Fifth SIDIM. Arecibo, Puerto Rico, 1990.
272. Distrital Convention of Mathematics and Statistics. Bogotá, Colombia, 1988, 1987, 1986, 1985.
273. Seminar of The Dirac Function. Javeriana University. Bogotá, Colombia, 1988.
274. National Convention of Mathematics. Bogotá, Colombia, 1987.

RECENT GRANTS

1. Corequiste Support, UPRM chancellor funds, 2025-2026 (\$80,000) PI
2. Girls math Club in Puerto Rico, TENSOR grant, MAA, 2025, (\$6,000) PI
3. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2025, Epsilon Fund, American Mathematical Society, (\$5,000) PI
4. 2005 IMO-Math, Math Camp, (\$2500) PI
5. Math tutorial lab, "CRRSAA" 2024-2025, (\$100,000) PI
6. Corequiste Support, UPRM chancellor funds, 2024-2025 (\$80,000) PI
7. Girls math Club in Puerto Rico, TENSOR grant, MAA, 2024, (\$6,000) PI
8. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2024, Epsilon Fund, American Mathematical Society, (\$5,500) PI
9. Strengthening of math skills for new UPRM students: Math Tutorial Center "CRRSAA", Spring 2023-2024, \$50,000, PI
10. Strengthening of math skills for new UPRM students: Math Tutorial Center "CRRSAA", fall 2023-2024, \$50,000, PI

11. Strengthening of math skills for new UPRM students DREAMS and Math Tutorial Center “CRRSAA”, summer 2023 \$50,000, PI
12. Strengthening of math skills for new UPRM students: Math Tutorial Center “CRRSAA”, spring 2022- 2023 \$50,000, PI
13. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2023, Epsilon Fund, American Mathematical Society, (\$11,000) PI
14. Math Tutorial Center “CRRSAA” funds, fall 2022- 2023 \$50,000, PI
15. OMPR (Puerto Rico Math Olympiads). MAA Dolciani Mathematics Enrichment Grant, (\$5000), 2023, PI
16. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2022, Epsilon Fund, American Mathematical Society, (\$4000) PI
17. Strengthening of math skills for new UPRM students in 2022: DREAMS, Corequisite Support and Math Tutorial Center “CRRSAA”, summer 2022 \$50,000, PI
18. Strengthening of math skills for new UPRM students in 2022: Corequisite Support and Math Tutorial Center “CRRSAA, 2022 \$60,000, PI
19. Strengthening of math skills for new UPRM students in 2021: DREAMS and INFOMATE, CRRSAA funds, \$180,000, summer 2021 PI
20. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2021, Epsilon Fund, American Mathematical Society, (\$6,640) PI
21. OMPR (Puerto Rico Math Olympiads). MAA Dolciani Mathematics Enrichment Grant, (\$5000), 2021, PI
22. OMPR (Puerto Rico Math Olympiads). MAA Dolciani Mathematics Enrichment Grant, (\$5000), 2019, PI.
23. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2019, Epsilon Fund, American Mathematical Society, (\$8,000) PI
24. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2018, Epsilon Fund, American Mathematical Society, (\$8,000) PI
25. AFAMaC-Mathematics 2017-2018, Department of Education of Puerto Rico, (\$350,000) PI
26. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2017, Epsilon Fund, American Mathematical Society, (\$5,000) PI
27. AFAMaC-Mathematics 2016-2017, Department of Education of Puerto Rico, (\$308,000) PI
28. College Access Grant, Talented Students Program 2016, (\$7,200) PI
29. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2016, Epsilon Fund, American Mathematical Society, (\$5,000) PI
30. AFAMaC-Mathematics 2015-2016, Department of Education of Puerto Rico, (\$300,000) PI
31. College Access Grant, Talented Students Program 2015, (\$9,760) PI

32. XVIII Central American and Caribbean Mathematics Olympiad: Jamaica, International Mathematical Union, (\$8,000), 2016
33. Bright Starts Program, Kinesis Foundation, (\$60,000), 2015
34. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2015, Epsilon Fund, American Mathematical Society, (\$5,000) PI
35. AFAMaC-Mathematics 2014-2015, Department of Education of Puerto Rico, (\$360,000) PI
36. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2014, Epsilon Fund, American Mathematical Society, (\$5,000) PI
37. Summer Camp 2014 for Bright Start students, Kinesis Foundation, (\$35,000) PI
38. College Access Grant, Talented Students Program 2014, (\$9,760), PI
39. Math Olympiads in Puerto Rico 2014-2015, Different sources (\$50,000) PI.
40. XXII Meeting of the Association Kangarou Sans Frontieres 2014, Different sources, (\$80,000) PI
41. XXX Iberoamerican Mathematics Olympiad: Puerto Rico 2015, International Mathematical Union, IMU (\$7,000) PI
42. XXX Iberoamerican Mathematics Olympiad: Puerto Rico 2015, Carvajal Foundation (\$20,000) PI
43. XXX Iberoamerican Mathematics Olympiad: Puerto Rico 2015, Gauss Foundation (\$10,000) PI
44. XXX Iberoamerican Mathematics Olympiad: Puerto Rico 2015, Notre Dame, Northwestern and Ohio State University (\$40,000) PI
45. XXX Iberoamerican Mathematics Olympiad: Puerto Rico 2015, Different Sources (\$200,000) PI
46. AFAMaC-Mathematics 2013-2014, Department of Education of Puerto Rico, (\$360,000) PI
47. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2013, Epsilon Fund, American Mathematical Society, (\$10,000) PI
48. College Access Grant, Talented Students Program 2013, (\$9760), PI
49. Math Kangaroo 2014 (\$55,000), different sources, PI.
50. AFAMaC-Mathematics 2012-2013, Department of Education of Puerto Rico, (\$520,000) PI
51. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2012, Epsilon Fund, American Mathematical Society, (\$7,500) PI
52. College Access Grant, Talented Students Program, 2012, (\$12,200), PI
53. AFAMaC-Mathematics 2011-2012, Department of Education of Puerto Rico, (\$550,000) PI
54. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2011, Epsilon Fund, American Mathematical Society, (\$7,500) PI

55. College Access Grant, Talented Students Program, 2011, (\$15,860), PI
56. XII Centralamerican and Caribbean Math Olympiad 2010, Templeton Foundation (\$120,000) CoPI
57. XII Centralamerican and Caribbean Math Olympiad 2010, Different Sources, (\$150,000) CoPI
58. College Access Grant, Talented Students Program, 2010, (\$24,400), PI
59. AFAMaC-Mathematics 2010-2011, Department of Education of Puerto Rico, (\$590,000) PI
60. AFAMaC-Mathematics 2009-2010, Department of Education of Puerto Rico, (\$578,000) PI
61. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2010, Epsilon Fund, American Mathematical Society, (\$15,000) PI
62. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2009, Epsilon Fund, American Mathematical Society, (\$7,500) PI
63. AFAMaC-Mathematics 2008-2009, Department of Education of Puerto Rico, (\$550,000) PI
64. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2008, Epsilon Fund, American Mathematical Society, (\$7,500) PI
65. Math Competitions 2008, different sources (\$23,000) PI
66. AFAMaC: Alianza para el Fortalecimiento del Aprendizaje de las Ciencias y las Matemáticas, 2007-2008, Department of Education of Puerto Rico. (\$2,000,000) PI
67. Math Competitions 2007, different sources (\$25,000) PI
68. REU-PREMUR: Puerto Rico Experiences in Mathematics and Undergraduate Research, National Security Agency, 2007. (\$96,000) PI
69. Yauco, Maestros de excelencia, 2007. (\$96,000)PI
70. AFAMaC: Alianza para el Fortalecimiento del Aprendizaje de las Ciencias y las Matemáticas, 2006, Department of Education of Puerto Rico. (\$500,000) PI
71. Yauco, Maestros de excelencia, summer 2006. (\$130,000)PI
72. AFAMaC: Alianza para el Fortalecimiento del Aprendizaje de las Ciencias y las Matemáticas, 2005-2006, Department of Education of Puerto Rico. (\$2,400,000) PI
73. Math Competitions 2006, different sources (\$15,000) PI
74. PROTaSM (Puerto Rico Opportunities for Mathematics Talented Students) 2006, Epsilon Fund, American Mathematical Society, (\$7,000) PI
75. Math Competitions 2006, UPR (\$28,000) PI
76. HACUMA: Math Competitions in Puerto Rico 2005, Department of Education of Puerto Rico, 2005 (\$57,000)PI
77. Yauco, Maestros de excelencia, summer 2005. (\$65,000)PI

78. IFEM, Instituto Para el Fortalecimiento de la Enseñanza de las Matemáticas, Department of Education of Puerto Rico, 2005. (\$93,000) PI
79. REU-PREMUR: Puerto Rico Experiences in Mathematics and Undergraduate Research, National Security Agency, 2005. (\$75,000) PI
80. AFAMaC: Alianza para el Fortalecimiento del Aprendizaje de las Ciencias y las Matemáticas, 2004-2005, Department of Education of Puerto Rico. (\$1,974,000) PI
81. REMA: Mathematical Re-Conceptions, 2004, Department of Education of Puerto Rico. (\$530,000) CoPI
82. HACUMA: Math Competitions in Puerto Rico 2003-2004, Department of Education of Puerto Rico, Mathematics Program 2004. (\$113,000) PI
83. HACUMA: Math Competitions in Puerto Rico 2003-2004, Department of Education of Puerto Rico, 2003-2004. (\$40,000) PI
84. IFEM, Instituto Para el Fortalecimiento de la Enseñanza de las Matemáticas, Department of Education of Puerto Rico, 2003-2004. (\$112,000) PI
85. Summer Camp for Las Marías and Mayagüez students, from WIA program, summer 2003. (\$5,000) PI
86. Grant for undergraduate research, from Alliance for Minority Participation, spring and summer 2003.
87. IFEM, Instituto Para el Fortalecimiento de la Enseñanza de las Matemáticas, Department of Education of Puerto Rico, 2002. (\$92,000) PI
88. Math Competitions in Puerto Rico 2002-2003, Department of Education of Puerto Rico, 2002. (\$25,000) PI
89. Grant for the participation in the Building Teacher Leadership in Mathematics, Cambridge, 2002, granted by NSF.
90. Grant for the participation in the IV Conference on Algebra and its Applications, Zakopane, Poland, 2002, granted by the organizing committee.
91. Grant for the participation in the AMS-MER workshop on Professional Master's Degrees in Teaching Mathematics, granted by NSF, 2001.
92. Grant for the participation in the 2001 European Summer Meeting of the Association of Symbolic Logic (Vienna), granted by ASL, 2001.
93. An Effective Procedure for Minimal Bases of Ideals in $\mathbb{Z}[x]$, Research and Development Center, 2001.
94. Math Competitions in Puerto Rico 2001-2002, Department of Education of Puerto Rico, 2001.
95. Cooperative Learning for Mathematics Foundations and Advanced Calculus, Alliance for Minority Participation, 2001.
96. Grant for undergraduate research, from Alliance for Minority Participation, 2001.
97. Using Web-based technology to improve study skills, retention and success in Calculus courses, US Department of Education, CO-PI, 2000.
98. Grant for undergraduate research, from Alliance for Minority Participation, 2000.

99. Grant for the Participation in the Mathematical Challenges of the 21st century (California), granted by NSF, 2000.
100. Grant for the participation in the 2000 European Summer Meeting of the Association of Symbolic Logic (Paris), granted by NSF, 2000.
101. Grant for the project "Introduction to Algebraic Structures", granted by PR- Alliance for Minority Participation, Curriculum Innovation Center, 1999.
102. Grant for the XV SIDIM, granted by the University of Puerto Rico and private industries 1999.
103. Grant for the participation in the First Southern African Summer School and Workshop on Logic, Universal Algebra and Theoretical Computer Science, granted by "Rand Afrikaans University", Johannesburg, South Africa, 1999.

GRADUATE RESEARCH:

1. Virgilio Morales, Propositional Theories and Algebraic Structures, MS Thesis, 2002.
2. Joel Meléndez, Ultraproducts and Algebraic Structures, MS Thesis, 2003.
3. José Vélez, Properties in Rings of Polynomials, MS Thesis, July 2005.
4. Wanda Ortiz, Propositional Theories, Lattices and Boolean Algebras, MS Project, December 2006.
5. Silvia López, MS Thesis 2023
6. Jhonatan Ortega, MS Project, 2023
7. Ariana Rodriguez and Lizbeth Alvarado, MS Project 2023

UNDERGRADUATE RESEARCH

1. Cyclic Quadrilaterals (Deiby Castillo and Nathaly Paz)
Undergraduate Thesis, Nariño University, Pasto, Colombia (in progress) 2018
2. Filtered Products (Jonathan Ho Fung)
Presentations: XXV SIDIM, Mayagüez, 2005. (poster)
3. The Membership Problem for Ideals of Polynomials over the Integers $\mathbb{Z}[x]$ (Carlos Arreche), 2004. 3th Place in The International Science and Engineering Fair, Portland, 2004 Karl Menger award of the AMS
Publication: Rose-Hulman mathematics Journal, Vol 6. Issue 2, 2005.
4. Gröbner Basis and Ideals of $\mathbb{Z}[x]$ (Reyes Ortiz), 2000-2001.
Presentations: Joint Mathematics Meetings, New Orleans, 2001. (poster)
XVI SIDIM, Humacao, 2001. (poster)
6. Ultraproducts and Algebraic Structures (Edoardo Carta), 2000.

Presentations: Joint Mathematics Meetings, New Orleans, 2001. (poster)
Junior Technical Meeting, Ponce, 2001. (oral)
XVI SIDIM, Humacao, 2001. (poster)
NCUR, Lexington, 2001. (oral)

PROFESSIONAL ASSOCIATIONS

1. Member of the American Mathematical Society.
2. Member and Vice-president of the Association Kangaroo Sans Frontiers

PRIZES

Paul Erdos award, World Federation on National Mathematics Competitions, WFNMC, 2016

Award for productivity, Mathematical Sciences Department, UPRM, 2013

Award for productivity, Arts and Sciences College, UPRM, 2009