

# Mauricio Cabrera-Ríos, PhD

Professor, Department of Industrial Engineering - Graduate Program in Bioengineering  
University of Puerto Rico at Mayagüez (UPRM)

## CONTACT INFORMATION

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(787) 4243028 [mauricio.cabrera1@upr.edu](mailto:mauricio.cabrera1@upr.edu)  
<https://www.linkedin.com/in/mauricio-cabrera-r%C3%ADos-he-him-02b3476/>

## OBJECTIVES

**Academic Interests:** To contribute to the success of an Engineering Department as a **mentor, researcher, and lecturer** within the areas of Industrial Engineering, Operations Research, Manufacturing, and Biological Data Analysis.

**General Research Objective:** To devise methods and strategies of statistical characterization, mathematical modelling, and optimization and apply them to solve relevant problems in manufacturing, decision-making, and biological analysis.

**Specific Research Objectives:** Currently, I am working on (1) simulation optimization of manufacturing processes; (2) analysis of biological data; and (3) decision-making under stress. In (1) we seek methods to identify competitive design or processing settings with low number of simulation or experimental runs; in (2) we seek for data analysis strategies for large biological experiments; and in (3) we develop operations research aids for decision making during and after disasters.

## HIGHLIGHTS

**Twenty-two years experience** in Industrial and Systems Engineering: teaching at graduate and undergraduate levels; carrying out interdisciplinary research that has been competitive, productive, and consistently funded; advising students on doctoral, MS and BS theses, as well as mentoring STEM students at all levels. Diversity-oriented thanks to professional experiences in the USA (2002-3), México (2004-8) and Puerto Rico (2008-To date).

**Author of 73 refereed journal papers**, 65 refereed conference proceedings, and advisor in 2 PhD theses, 30 MS theses and 5 BS theses. Currently advising 1 PhD Student, 1 MS students, and 10 BS students.

**Fulbright Student** during graduate studies at The Ohio State University; 2008 University-wide research prize at UANL; four-times Industrial Engineering (IE) Outstanding Professor at UPRM (2011, 2012, 2013, 2022). Recognized as UPRM's most productive IE researcher in the period 2008-2013. Winner of the Operational Research Society's KD Tocher Medal 2019 for the best paper in Journal of Simulation 2017-2018.

**My students have won more than 30 research awards.** Founder in 2014 of JOUST, The Journal of Undergraduate Research Students. Current h-index: 19 (Google Scholars).

## EDUCATION

**June 2002 Ph.D. Industrial and Systems Engineering**, Concentration in Optimization Applied to Polymer Processing, The Ohio State University, Columbus, Ohio, USA

**June 1999 M.S. Industrial and Systems Engineering**, Concentration in Operations Research, The Ohio State University, Columbus, Ohio, USA

**December 1996 B.S. Industrial and Systems Engineering**, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Monterrey, MÉXICO

## EXPERIENCE IN ACADEMIA

May 2019-February 2020, **Interim Chair**, Dept. of Industrial Engineering, UPRM, Mayagüez PR

July 2016 – To date, **Professor**, UPRM, Mayagüez PR

January 2014- To Date, **Founding Editor**, JOUST: Journal of Undergraduate Research Students, Mayagüez PR

July 2013 – June 2016, **Associate Professor**, UPRM, Mayagüez, PR

July 2008 – June 2013 **Assistant Professor**, UPRM, Mayagüez PR

June 2005- May 2008, **Research Coordinator of the Graduate Program in Systems Engineering**, PISIS, FIME-UANL, San Nicolás de los Garza, N.L., México

January 2005- June 2009, **Associate Professor (Indefinite Contract)**, PISIS, FIME-UANL, San Nicolás de los Garza, NL México

October 2003 – December 2004, **Assistant Professor (Yearly Contract)**, PISIS, FIME-UANL, San Nicolás de los Garza, NL México

September 2002- September 2003, **Postdoctoral Researcher**, Polymer Processing Group, The Ohio State University, Columbus OH

September 2002- September 2003, **Lecturer**, The Ohio State University, Columbus OH

October 1999-June 2002, **Research and Teaching Assistant**, The Ohio State University, Columbus OH, (RA for the Polymer Processing Group and TA for Discrete Event Simulation at Undergraduate and Graduate Levels)

## EXPERIENCE IN INDUSTRY

November 1998-March 1999 **Industrial Engineering Analyst**, The Timken Company, Columbus OH

June 1998-September 1998 **Industrial Engineering Analyst**, The Timken Company, Columbus OH

January 1997-June 1997, **Technologist in Training**, TAMSA, Veracruz VER

August 1996- December 1996, **Industrial Engineering Co-Op**, AXA-Yazaki, Monterrey NL

June 1996- August 1996, **Industrial Engineering Intern**, Procter & Gamble, Mexico City MX

## TEACHING

### Undergraduate Level Courses

**Undergraduate Research**, UPRM (Juniors, Seniors) Each semester since 2009 – 31 times

**Design and Analysis of Experiments**, UPRM (Juniors, Seniors) – 13 times since 2009

**Applied Probability and Statistics for Engineers**, UPRM (Sophomores) – 21 times since 2008

**Applied Industrial Statistics**, UPRM (Juniors) – 9 times since 2009

**Introduction to Nonlinear Optimization and Artificial Neural Networks**, UPRM (Seniors) – 2 times since 2012

**Statistics for Bioinformatics – UPRM** (Seniors) – Once in 2013

**Introduction to Operations Research**, UANL (Juniors) – 4 times bw 2004 and 2007

**Fundamentals of Nonlinear Optimization with Applications**, OSU (Seniors) – 2 times bw 2003 and 2004

### Graduate Level Courses

**Bioengineering Seminar** – Once in 2024

**CMAT's Cellular Manufacturing and Society (Proctor at UPRM)** – Once in 2023

**Biostatistics**, PHSU (Masters, Doctoral) – 2 times bw 2018 and 2019

**Systems Characterization, Modeling, and Optimization**, UPAEP, UPA (MX) Summer course (Masters, Doctoral) – 2 times in 2017

**Network Flows and Graphs in Management Science**, UPRM, (Masters) – 2 times since 2014

**Advanced Biostatistics**, PHSU (Doctoral) – 1 time in 2017

**Contemporary Topics in Health Sciences**, PHSU (Masters) – 1 time in 2016

**Inferential Statistics**, PHSU (Masters) – 1 time in 2016

**Advanced Quality Systems**, UPRM (Masters) – 1 time in 2013

**Advanced Industrial Experimentation**, UPRM (Masters) – 1 time in 2011

**Design and Analysis of Experiments**, UPRM (Masters) – 3 times since 2008

**Operations Research Practicum**, UANL (Masters) – 5 times bw 2005 and 2008

**Network Flow Programming**, UANL (Masters) – 1 time in 2004

**Mathematical Programming: Linear**, OSU (Masters, Doctoral) – 1 time in 2002

### Graduate Students at the Ph.D. Level (Advisor)

3. **Alibeth Luna**, UPRM Graduate Program in Bioengineering, August 2021-to date, Thesis: *Characterization of Cellular Technologies, in Coadvicement with Dr. Clara E. Isaza*
2. **Deiver Suárez Gómez**, Graduated on May 2023, PhD in Bioengineering, Thesis: *Identification of gene-cellular processes pairings through optimization, in Coadvicement with Dr. Clara E. Isaza*
  - ★ **2021 Best Abstract selected after peer-review at the 10<sup>th</sup> Annual Alliance Scientific Day**, San Juan PR (Presenter: Deiver Suárez)
  - ★ **2019 Third Place in Basic Sciences**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR (Presenter: Deiver Suárez)
1. **Isis Y. Nárvaez Bandera**, Graduated in November 2022, PhD in Bioengineering, Dissertation: *Investigation of a Possible Association between Flaviviridae Infections and Parkinson's Disease through Optimization-based Meta-analysis, in Coadvicement with Dr. Clara E. Isaza*
  - ★ **2022 TriBeta Regional Convention, 3<sup>rd</sup> Place Technical Posters**, San Juan PR (Presenter: Alysa Alejandro)
  - ★ **2021 Best Abstract selected after peer-review at the 10<sup>th</sup> Annual Alliance Scientific Day**, San Juan PR (Presenter: Deiver Suárez)
  - ★ **2019 Third Place in Basic Sciences**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR (Presenter: Deiver Suárez)

### Graduate Students at the Masters of Science Level (Advisor)

31. **Jeison Vargas Ruiz**, Started on February 2024, Thesis: TBD MS Program in Mathematical Statistics, in Coadvicement with Dr. Clara E. Isaza
30. **Xavier Aguilar García**, Graduated on November 2023, MS Program in Industrial Engineering, Thesis: *Study of Breast and Colorectal Cancers in Females through BioOptimatics*, in Coadvicement with Dr. Clara E. Isaza
29. **Daniel Rocha Clavijo**, Graduated on May 2023, MS Program in Bioengineering at UPRM, Thesis: *Rapid Estimation System for Biological Integration Across Multiple Scales: Calcium signaling*, in Coadvicement with Dr. Clara E. Isaza
28. **Haider Montes Masmela**, Graduated on May 2023, MS Program in Applied Mathematics, Mathematics Department at UPRM, Thesis: *Iterative Multiple Criteria Simulation Optimization*

27. **Verónica Díaz Pacheco**, Graduated on April 2021, Advisor, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Decision-making during and after a hurricane crisis
  - ★ **2021 Third Place DHS Centers of Excellence Summit**, 2021, Washington DC, May 2021 (Presenter: Verónica Díaz Pacheco)
  - ★ **2019 Third Place in Graduate Poster Competition**, 2019 IEOM 4th North American Conference on Industrial Engineering & Operations Management, Toronto Canada, October 2019 (Presenter: Verónica Díaz-Pacheco)
26. **Amil A. Font Valentín**, Graduated on January 2019, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Genetic Commonalities between Autism Spectrum Disorder and Schizophrenia.
25. **Yazeli E. Cruz Rivera**, Graduated on May 2018, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Characterization, Modeling, and Optimization of Biosystems
  - ★ **2017 Joshua E. Neimark Travel Award**, 2017 AAAS Annual Meeting
  - ★ **2016 Discover E New Faces of Engineering: College Edition**
  - ★ **2015 2nd Place, Undergraduate Student Paper Competition**, 2015 International Conference on Operations Excellence and Service Engineering, Orlando, FL, September 2015 (Presenter: Yazeli E. Cruz Rivera)
24. **Nicole J. Ortiz**, Graduated on April 4, 2017, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Determination of Commonalities in Genetic Signatures and Signaling Pathways in Neurological Disorders: Alzheimer's Disease, Parkinson's Disease and Huntington's Disease.
  - ★ **2017 Discover E New Faces of Engineering: Professional Edition**
23. **Yaritza M. Santiago**, Graduated on December 2, 2015, MS Program in Industrial Engineering, ININ-UPRM, Thesis: The Analysis of -Omics to Understand Alzheimer's Disease
22. **Juan F. Rosas**, Graduated on November 23rd, 2015, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Biological Signaling Pathways and Potential Network Representations: Biological Discovery Through Optimization
21. **Yaileen M. Méndez-Vázquez**, Graduated on March 27, 2015, MS Program in Industrial Engineering, ININ-UPRM, Thesis: The Search for Experimental Designs for Dozens of Variables
  - ★ **2019 Operational Research Society KD Tocher Medal for the Best Paper in Journal of Simulation 2017-2018**, Awarded by the Operations Research Society in London, UK on November, 2019, Shared with coauthors and advisees: Esmeralda Niño, Yaileen Méndez-Vázquez & Dick Arias
  - ★ **2015 Female Legacy in Engineering Award for Outstanding Student in Industrial Engineering**, Mayaguez PR, 2015
  - ★ **Finalist of the 2013 INFORMS Undergraduate Operation Research Prize**, Washington DC, 2013
  - ★ **2013 INFORMS Simulation Society's Underrepresented Minorities and Women Participation Award** for Winter Simulation Conference 2013 (Presenter: Yaileen Méndez)

20. **Nitza M. García** Graduated on May 12, 2015, Coadvisor with Dr. Marcelo Suárez, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Effect of Fly-Ash and Nanosilica in Concrete's Compressive Strength at Early Age
  - ★ **2014 Second Place, Civil & Manufacturing Engineering**, 2014 NSF Emerging Researchers National Conference, Washington DC (Presenter: Giovanni Torres)
19. **Mary Carmen Acosta Cervantes**, Graduated on November 20th, 2015, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Towards Optimization by Similarity: Finding Windows of Maximal Similarity
18. **Esmeralda Niño Pérez**, Graduated on November 18th, 2015, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Iterative Multiple Criteria Simulation Optimization in Manufacturing
  - ★ **2019 Operational Research Society KD Tocher Medal for the Best Paper in Journal of Simulation 2017-2018**, Awarded by the Operational Research Society in London, UK on November, 2019, Shared with coauthors and advisees: Esmeralda Niño, Yaileen Méndez-Vázquez & Dick Arias
  - ★ **2014 Second Place in the category of Graduate Students** at 2014 Nea Science Day, Mayaguez PR, 2014
17. **Katia Iris Camacho Cáceres**, Graduated on November 26, 2014, MS Program in Industrial Engineering, ININ-UPRM, Thesis: Optimization-Driven Meta-Analysis: The Simultaneous Search for Cancer Biomarkers with Multiple Microarray Experiments.
16. **Mary Carmen Acosta Cervantes**, Graduated on June 13, 2012, Graduate Program in Systems Engineering (PISIS), FIME-UANL, In Coadvicement with Dr. Óscar L. Chacón Mondragón, Thesis: Metamodelling Studies in Simulation via Optimization
15. **Alicia Berenice Rodríguez Yáñez**, Graduated on May 3, 2012, MS Program in Industrial Engineering, ININ - UPRM, in coadvicement with Dr. José M. Castro (The Ohio State University) Thesis: Processing Windows Considering Two Conflicting Criteria: The Injection Molding Case
14. **Matilde Luz Sánchez Peña**, Graduated on December 22nd, 2010, MS Program in Industrial Engineering, ININ - UPRM, in coadvicement with Dr. Clara E. Isaza, Thesis: Identification of Potential Cancer Biomarkers through Multiple Criteria Optimization using Microarray Data
  - ★ **2008 UANL Research Prize in Exact Sciences**, UANL, San Nicolás de los Garza, NL, 2008
  - ★ **2009 Third Place, Graduate Research Posters**, 7th Industrial Engineering Research and Design Exhibition, Mayaguez, PR (Presenter)
  - ★ **2009 Best Poster in Physics and Mathematics**, Annual Biomedical Research Conference, Phoenix, AZ (Coauthor)
  - ★ **2010 Best Undergraduate Research Project** – 4th Year Lockheed Martin Scholars UPRM, Mayaguez, PR (Coauthor)
  - ★ **2010 Participation Award for UPR-MDACC Bioinformatics and Genetic Epidemiology seminar**, San Juan, PR
  - ★ **2010 Travel and Participation Award for SACNAS National Conference**, Anaheim, CA

- ★ **2011 Coauthor of the 1st place 2011 Industrial Engineering Research Fair** (1st Author: Jaileene Pérez, 2nd Author: Jorlys Alvarado)
  - ★ **2012 Coauthor of the 1st place 2012 SHS Undergraduate Paper Competition** (1st Author: Eulisa Rivera, 2nd Author: Zahira Irizarry)
13. **Yareni Patricia Lara Rodríguez**, Graduated April 16th, 2010, Graduate Program in Systems Engineering (PISIS), FIME-UANL, In Coadvicement with Dr. Óscar L. Chacón Mondragón, Thesis: Optimization Studies in Materials Science
  12. **Lyzett Uribe Mastache**, Graduated December 20th, 2008, Graduate Program in Systems Engineering (PISIS), FIME-UANL, in coadvicement with Dr. Clara E. Isaza, Thesis: Methodology for Cancer Diagnosis using Microarrays
  11. **Hugo Alexer Pérez Vicente**, Graduated December 20th, 2008, Graduate Program in Systems Engineering (PISIS), FIME-UANL, in coadvicement with Dr. Clara E. Isaza, Thesis: Cancer Diagnosis through Microarray Data
  10. **María Guadalupe Villarreal Marroquín**, Graduated December 14th, 2007, Graduate Program in Systems Engineering (PISIS), FIME-UANL, Thesis: Simulation Optimization in Manufacturing Processes and Systems (Sponsored by METALSA & the National Council of Science and Technology)
    - ★ **Best poster at the Annual Poster Session** of the Graduate Program in Systems Engineering, FIME-UANL, May 2007.
    - ★ **Best Paper Award in Computer Science** at the 5th IEEE International Congress on Technological Innovation and Development, Cuernavaca, México (2007)
    - ★ **INFORMS Simulation Society's Underrepresented Minorities and Women Participation Award** for Winter Simulation Conference 2007
    - ★ **2008 UANL Research Prize in Exact Sciences**, UANL, San Nicolás de los Garza, NL, 2008
    - ★ **1st Place on innovation in an academic/research environment of the National Mexican Prize for Inventive and Creative Women**, Iris Estrada 2008
    - ★ **2008 Annual Youth Award for the State of Nuevo Leon**, Monterrey, Nuevo León, December 2008
    - ★ **2009 Third Place, Graduate Research Posters**, 7th Industrial Engineering Research and Design Exhibition (Coauthor)
  9. **Miguel Ángel Urbano Vázquez**, Graduated December 12th, 2007, Graduate Program in Systems Engineering (PISIS), FIME-UANL, Thesis: Engineering Applications of Design of Experiments: Reliability and Process Windows (Sponsored by VISTEON-CARPLASTIC & the National Council of Science and Technology)
  8. **Mauro Jesús Maldonado Chan**, Graduated December 20th, 2006, Graduate Program in Systems Engineering (PISIS), FIME-UANL, Thesis: Vehicle Characterization in Intersections using Video and Artificial Neural Networks (Sponsored by the Department of Transportation of Monterrey & the National Council of Science and Technology)
    - ★ **1st Place in Computer Science**, Mexican National Youth Contest of Science and Technology 2007
  7. **Carlos Alberto Álvarez Herrera**, Graduated February 2nd, 2006, M.S. Systems Engineering (PISIS), FIME-UANL, Thesis: An Inventory Control-Based Approach

- to Capacity Planning in Telecommunications (Sponsored by AVANTEL & the National Council of Science and Technology)
6. **Velia García Loera**, Graduated June 14th, 2006, M.S. Systems Engineering (PISIS), FIME-UANL, Thesis: Modeling and Optimization in Injection Molding (Sponsored by VISTEON-CARPLASTIC & the National Council of Science and Technology)
  5. **Kate L. Olsavsky**, Graduated May 19th, 2006, M.S. Industrial and Systems Engineering, The Ohio State University, In coadvice with Dr. José M. Castro (The Ohio State University), Thesis: Optimization Studies in Polymer Processes
  4. **Rachmat Mulyana**, Graduated May 19th, 2006, M.S. Industrial and Systems Engineering, The Ohio State University, In coadvice with Dr. José M. Castro (The Ohio State University), Thesis: Design of Experiments and Data Envelopment Analysis-Based Optimization in Injection Molding
  3. **María Angélica Salazar Aguilar**, Graduated December 14th, 2005, Advisor, M.S. Systems Engineering (PISIS), FIME-UANL, Thesis: Artificial Neural Networks-based Forecasting in Telecommunications (Sponsored by AVANTEL & the National Council of Science and Technology)
    - ★ **2005 UANL Best Thesis in Engineering, Technology & Architecture.**
    - ★ **2nd place on invention in an academic/research environment of the National Mexican Prize for Inventive and Creative Women, Julieta Fierro 2007**
    - ★ **2007 FIME Award for Technological Innovation**
  2. **Claudia Patricia González Espinoza**, Graduated August 5th, 2005, M.S. Manufacturing Engineering, FIME-UANL, In coadvice with Dr. Patricia Zambrano (FIME) and Dr. José M. Castro (The Ohio State University), Thesis: Finite Element-Based Simulation of Multicavity Mold Deflection in Injection Molding
  1. **Michael Rabinovich**, Graduated June, 2004, M.S. Industrial and Systems Engineering, The Ohio State University, In coadvice with Dr. José M. Castro (The Ohio State University), Thesis: Sheet Molding Compound (SMC) Processing: Spiral Flow Test and Physical Properties

#### **Undergraduate Students under Thesis Option (Advisor)**

5. **Mary Carmen Acosta Cervantes**, Graduated November 6, 2009, External Advisor, B.S. Program in Industrial Engineering, Fac. de Ing. Arturo Narro Siller, U Aut. De Tamaulipas, Thesis: Time Series Forecasting for several Tamaulipas Economic Activities
4. **Matilde Luz Sánchez Peña**, Graduated August 23rd, 2007, Advisor, B.S. Program in Manufacturing Engineering, FIME, UANL, Thesis: Data Envelopment Analysis: Grouping, Sensitivity Analysis and Prediction Studies
3. **María Guadalupe Villarreal Marroquín**, Graduated May 26th, 2006, Advisor, B.S. Mathematics, Dept. of Physics and Mathematics, UANL, Thesis: Time Series Forecasting: Evaluation of Statistical Techniques and Neural Network based Technique Selection
2. **Miguel Ángel Urbano Vázquez**, Graduated October 7th, 2005, Advisor, B.S. Administrative and Systems Engineering, FIME, UANL, Thesis: Multiple Criteria Decision Making in Everyday Situations,

1. **Carlos E. Castro**, Graduated May, 2004, Co-advisor, B.S. Mechanical Engineering, The Ohio State University, In coadvisement with Dr. Blaine Lilly, The Ohio State University, Thesis: Determination of Best Balances of Multiple Performance Measures in Injection Molding

UNDERGRADUATE RESEARCH MENTEES (Registrations with credit)

Year, (Women, Men, Total Students)

	2024 (13,5 ,18)	2023 (12,8,20)	2022 (19,20,39)
2021 (40,11,51)	2020 (34,18,52)	2019 (26,24,50)	2018 (35,24,59)
2017 (22,16,38)	2016 (13,14,27)	2015 (19,5,24)	2014 (9,11,20)
2013 (14,16,30)	2012 (14,7,21)	2011 (16,9,25)	2010 (11,4,15)
2009 (2,3,5)	<b>TOTALS:</b> <b>291 Women, 202 Men, 493 Students</b>		

SCIENTIFIC PRODUCTION Books and Monographies

5. M.A. Urbano-Vázquez, A.P. Anaya Salazar, M. Cabrera-Ríos, **Resolución de Dos Casos de Calidad Industrial: Estadística y Optimización en la Manufactura**, Editorial Académica Española, 2012, ISBN: 978-3-659-04764-0

4. M.J. Maldonado-Chan, E.M. Rivera-Negrón, M. Cabrera-Ríos, **Aforo Vehicular Automático: Uso de redes neuronales artificiales clasificadoras con base en imágenes electronicas de tráfico vehicular**, Editorial Académica Española, 2012, ISBN: 78-3-659-01797-1

3. Y.P. Lara-Rodríguez, K.M. Pérez-Pérez, M. Cabrera-Ríos, **Estudios de Diseño Experimental Estadístico en Ciencia de materiales: Experiencias en Proyectos Nuevos y en Progreso**, Editorial Académica Española, 2012, ISBN: 978-3-8484-5647-5

2. M. Cabrera-Ríos, M.L. Sánchez, C.E. Isaza, **Identification of Potential Cancer Biomarkers from Microarray Data: A parameter-free novel tool for meta-analysis of microarray databases**,VDM Verlag DR Müller, 2011, ISBN-13: 978-3-639-36348-7

1. M. Cabrera-Ríos, **Multiple Criteria Optimization Studies in Reactive In-Mold Coating: Polymer processing improvement through data envelopment analysis and nonlinear optimization**,VDM Verlag DR Müller, 2009, ISBN-13: 978-3639212914

SCIENTIFIC PRODUCTION Book chapters

2. E Barojas-Payán, D Sánchez-Partida, DE Gibaja-Romero, JL Martínez-Flores, M Cabrera-Ríos, **Optimization Model to Locate Pre-positioned Warehouses and Establish Humanitarian Aid Inventory Levels**, Disaster Risk Reduction in Mexico: Methodologies, Case Studies and Prospective Views (Editors: D Sánchez-Partida, JL Martínez-Flores, SO Caballer-Morales, P Cano-Olivas ) 2021 ISBN: 978-3-030-67294

1. M Cabrera-Ríos, A Salazar-Aguilar, MG Villarreal-Marroquín, AP Anaya Salazar, **Artificial Neural Networks-based forecasting: an attractive option for Just-in-time Systems**, Springer Series on Optimization and its Applications (Editors: Y Rios-Solis, RZ Rios-Mercado), (2012) 60:3, 245-259, DOI: 10.1007/978-1-4614-1123-9\_11



SCIENTIFIC  
PRODUCTION  
Papers in JOUST (Editor,  
Refereed)

3. C Rivera, E Niño-Pérez, M Cabrera-Ríos, **The Design and Prototyping of an Interlocking Device**, The Journal of Undergraduate Research Students, (2016) 3:1, 9-12
2. LE Irizarry-Nieves, J Pérez-Morales, M Pérez-Santiago, C Padilla, M Cabrera-Ríos, CE Isaza, **Literature-based validation study on potential biomarker genes for cervical cancer by novel microarray data analysis: Cervical cancer genes validation study**, The Journal of Undergraduate Research Students, (2014) 1:1, 18-24
1. NA Blanco-Vicéns, ZE Hernández, S Urcia-Romero, OL Peralez-Pérez, M Cabrera-Ríos, **Understanding and Exploiting Compromises between Different Cobalt-Zinc Ferrite Nanoproperties**, The Journal of Undergraduate Research Students, (2014) 1:1, 27-33

SCIENTIFIC  
PRODUCTION  
Preprints

2. AE Luna-Alvear, D Suárez-Gómez, AA. Sanchez-Castro, AC Rentas-Echeverria, M Cabrera-Ríos, CE. Isaza, **Assessment of the Degree of Coincidence between Differentially Expressed Genes in Pancreatic Cancer with and without CAR T Cell treatment**, bioRxiv (2024) 2024.04.15.589636; [doi.org/10.1101/2024.04.15.589636](https://doi.org/10.1101/2024.04.15.589636)
1. M Cabrera-Ríos, Y García, N Xu, AS Cabrera-Isaza, WT Pardo-Sánchez, B Irizarry, Y Muñoz, R López, CE Isaza, M Cabrera-Ríos, **A class forecasting method for time series**, Authorea (2023) [DOI: 10.22541/au.168494224.45268929/v1](https://doi.org/10.22541/au.168494224.45268929/v1)

SCIENTIFIC  
PRODUCTION  
Papers in Refereed  
Journals

73. FP Artes-Burgos, RN Díaz-Nieves, GN Flores-Velásquez, CD Figueroa-Gutiérrez del Arroyo, IM López de Victoria-Martínez, KA González-Rivera, W Mercado-Sanabria, L Pérez-Hidalgo, E Cabrera-Isaza, K Torres-Galarza, SN Ng-Torres, LC Silva-Lannoo, MD Santaliz-Carmona, CE Isaza, M Cabrera-Ríos, **Reusing tennis balls**, Revista Internacional de Investigación e Innovación Tecnológica (2024): 86-92  
[https://www.researchgate.net/publication/377152999\\_Reusing\\_tennis\\_balls](https://www.researchgate.net/publication/377152999_Reusing_tennis_balls)
72. JL Vega-Feliciano, AP Vera-Torres, NA Rodríguez-Figueroa, ZA Reyes-Rivera, CE Isaza, M Cabrera-Ríos, **3D Scanning to Enable 3D Printing in Ergonomics Projects**, Científica (2023) 27:1
71. DF Rivera-Hernández, JA Durand-González, CE Isaza, M Cabrera-Ríos, **Augmented Reality to Guide Pedestrian Evacuation in Earthquake Events**, Ingenierías (2023) 26:94, 59-63 <https://doi.org/10.29105/ingenierias26.94-793>
70. J Mercado-Colón, N Salas-González, R Larrioux-Díaz, V Díaz-Cruz, R Fernández-Lafuente, K Cruz-Salas, W Mercado-Sanabria, V Cruz-Jiménez, L Meléndez-Santiago, J Ortiz-Marrero, P Ramírez-Cruz, P Ortiz-Roque, CE Isaza, M Cabrera-Ríos, **Pairing Simple Domestic Needs with Product's Reusability Applications**, Científica (2022) 26:2, 1-13
69. NJ Ortiz, M Méndez, G Avilés-Coss, C Román, P Narváez-Cordero, E Valdés, M Cabrera-Ríos, CE Isaza, **A Cost Model for Neurological Diseases: Parkinson's Disease, Alzheimer's Disease and Huntington's Disease in Puerto Rico**, Puerto Rico Health Sciences Journal (2023) 42:2, 146-151
68. V Díaz Pacheco, A Nieves-Jiménez, R Whalin, T Richardson, C Pomales, CE Isaza, M Cabrera Ríos, **Individual Emergency Response and Recovery: What People Worried About During and After Hurricane Maria**, Journal of Emergency Management, (2023) 21:2, 155-163 [doi.org/10.5055/jem.0747](https://doi.org/10.5055/jem.0747)

67. S Huanca, R Trespacios, Z Acevedo, D Alizo, A Nieves, CE Isaza, M Cabrera-Ríos, **Exploración Estadística de Datos Sísmicos en Puerto Rico en el Período de Diciembre 2019 hasta Enero 2021**, Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil (2022) 22:1, 7-21 [https://www.scipedia.com/public/Cabrera-Rios\\_et\\_al\\_2022a](https://www.scipedia.com/public/Cabrera-Rios_et_al_2022a)
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317. D Suárez-Gómez, SR Méndez-Cruz, K Rivera-Rodríguez, I Narváez-Bandera, M Cabrera-Ríos, CE Isaza, **Blood Gene Expression Comparison between Autism and Schizophrenia through BioOptimatics**, 2023 Interuniversity Seminar on Research in the Mathematical Sciences SIDIM XXXVIII, Mayagüez PR, February 25, 2023
316. AE Luna-Alvear, A Sánchez-Castro, AC Rentas-Echevarría, M Cabrera-Ríos, CE Isaza, **Optimization-based Analysis of Microarray Experiments involving CAR T-Cells**, 2023 Interuniversity Seminar on Research in the Mathematical Sciences SIDIM XXXVIII, Mayagüez PR, February 25, 2023
315. AS Cabrera-Isaza, CE Isaza, M Cabrera-Ríos, **Time Series Forecasting Supported by Fractal-based Classes**, 2023 Interuniversity Seminar on Research in the Mathematical Sciences SIDIM XXXVIII, Mayagüez PR, February 25, 2023
314. C Castro-Rivera, I Narváez-Bandera, D Suárez-Gómez, A Camasta-Beníquez, M Durán-Quitana, L Ortiz-Rivera, M Cabrera-Ríos, CE Isaza, **Novel BioOptimatics used to Correlate Gene Expression Changes between Hepatitis C Viral Infection and Parkinson's Disease Development**, 2023 UPRM Research Fair, Mayagüez PR, January 26,
313. SR Méndez-Cruz, D Suárez-Gómez, K Rivera-Rodríguez, I Narváez-Bandera, M Cabrera-Ríos, CE Isaza, **IGHV3-74 Gene Expression Change Linked with Several Biological Processes in the Neurodevelopmental Disorder of Autism**, 2023 UPRM Research Fair, Mayagüez PR, January 26, 2023
312. AE Luna-Alvear, A Sánchez-Castro, AC Rentas-Echevarría, M Cabrera-Ríos, CE Isaza, **Optimization-based Analysis of Microarray Experiments involving CAR T-Cells**, 2023 UPRM Research Fair, Mayagüez PR, January 26, 2023
311. SR Méndez-Cruz, D Suárez-Gómez, K Rivera-Rodríguez, I Narváez-Bandera, M Cabrera-Ríos, CE Isaza, **IGHV3-74 Gene Expression Change Linked with Several Biological Processes in the Neurodevelopmental Disorder of Autism**, 30<sup>th</sup> Puerto Rico Neuroscience Conference, Ponce PR, November 11, 2022
310. C Castro-Rivera, I Narváez-Bandera, D Suárez-Gómez, A Camasta-Beníquez, M Durán-Quitana, L Ortiz-Rivera, M Cabrera-Ríos, CE Isaza, **Novel BioOptimatics**

- used to Correlate Gene Expression Changes between Hepatitis C Viral Infection and Parkinson's Disease Development, 30<sup>th</sup> Puerto Rico Neuroscience Conference, Ponce PR, November 11, 2022
309. D Rocha, L Teran, M Cabrera-Ríos, CE Isaza, **Rapid Estimation System for Biological Integration Across Multiple Scales: Calcium signaling**, EMBRIO Institute 1st Annual Meeting 2022: Purdue University, July 21-22, 2022
308. OJ González- Nieves, WC Ramos-Vázquez, CE Isaza, M Cabrera-Ríos, **Enhancing Personal Decision Making During and After a Hurricane to Preserve Wellness**, 2022 UPRM Research Fair, Mayagüez PR, April 28, 2022
307. X Aguilar, I Nieves, I Narváez-Bandera, CE Isaza, M Cabrera-Ríos, **Study of Breast and Colorectal Cancers in Women through BioOptimatics**, 2022 UPRM Research Fair, Mayagüez PR, April 28, 2022
306. AM Alejandro, I Narváez-Bandera, D Suárez-Gómez, CE Isaza, M Cabrera-Ríos, **BioOptimatics of Viral Infections and Degenerative Diseases**, 2022 TriBeta Biological Honor Society Caribbean Regional Convention, San Juan PR, March 19-20, 2022
- ★ **3<sup>rd</sup> Place Best Technical Poster**
305. D Suárez-Gómez, K Rivera-Rodríguez, I Narváez-Bandera, CE Isaza, M Cabrera-Ríos, **Joint Analysis of Autism and Schizophrenia via BioOptimatics: First Results**, 29<sup>th</sup> Puerto Rico Neuroscience Conference, San Juan PR, 2021
304. OJ González-Nieves, WC Ramos-Vázquez, CE Isaza, M Cabrera-Ríos, **iWILL + VISER**, 40<sup>th</sup> Puerto Rico Interdisciplinary Meeting (PRISM) and 55<sup>th</sup> ACS Junior Technical Meeting (JTM), Humacao PR, 2021
303. YK García Rivera, W. Pardo, CE Isaza, M Cabrera-Rios, **Behavior of Covid 19 in the population of Puerto Rico**, 40<sup>th</sup> Puerto Rico Interdisciplinary Meeting (PRISM) and 55<sup>th</sup> ACS Junior Technical Meeting (JTM), Humacao PR, 2021
302. A Nieves-Jiménez, V Díaz-Pacheco, FY González-Román, CE Isaza, M Cabrera-Ríos, **Individual Response and Recovery: A Learning Experience from Hurricane Maria**, 2021 IISE Annual Virtual Conference & Expo, Orlando FL, 2021
301. IY Narváez-Bandera, D Suárez-Gómez, CE Isaza, M Cabrera-Ríos, **Multiple Criteria Optimization (MCO): a gene selection deterministic tool in RStudio**, 16<sup>th</sup> PHSU Virtual Scientific Conference, Ponce PR, May 22, 2021
300. D Suárez-Gómez, IY Narváez-Bandera, M Cabrera-Ríos, CE Isaza, **Joint Analysis of Autism and Schizophrenia via Biooptimatics: Preliminary Results**, 16<sup>th</sup> PHSU Annual Virtual Scientific Conference, Ponce PR, May 22, 2021
299. A Nieves-Jiménez, W Ramos-Vázquez, V Díaz-Pacheco, FY González-Román, CE Isaza, M Cabrera-Ríos, **Enhancing Personal Decision Making During and After a Hurricane to Preserve Wellness: Preliminary Results**, 16<sup>th</sup> PHSU Annual Virtual Scientific Conference, Ponce PR, May 22, 2021
298. X Aguilar García, IY Narváez-Bandera, M Cabrera-Ríos, CE Isaza, **Preliminary Results in Gene Selection for Breast Cancer and Colorectal Cancer using Biooptimatics**, 16<sup>th</sup> PHSU Annual Virtual Scientific Conference, Ponce PR, May 22, 2021
297. V Díaz-Pacheco, FY González-Román, T Richardson, R Whalin, M Cabrera-Ríos, **Individual Emergency Response and Recovery: A Learning Experience from**

**Hurricane Maria**, US Department of Excellence Summit 2021, Washington DC, May 19-20, 2021

★ **3<sup>rd</sup> Place Best Student Poster**

296. JD Negrón-Bird, V Díaz-Pacheco, FY González-Román, CE Isaza, M Cabrera Ríos, **Individual Emergency Response and Recovery: Hurricane Maria. A Public Health Perspective**. VII Scientific Meeting Public Health Program PHSU, Ponce PR, May 7, 2021
295. IY Narváez-Bandera, D Suárez-Gómez, CE Isaza, M Cabrera Ríos, **Multiple Criteria Optimization (MCO): a Gene Selection Deterministic Tool in RStudio**, 10<sup>th</sup> Annual Alliance Scientific Day, San Juan PR, May 3, 2021
294. D Suárez-Gómez, IY Narváez-Bandera, CE Isaza, M Cabrera Ríos, **Joint Analysis of Autism and Schizophrenia via Biooptimatics: Preliminary Results**, 10<sup>th</sup> Annual Alliance Scientific Day, San Juan PR, May 3, 2021
- ★ **Best Peer-Reviewed Abstract (triple-tie) of the Conference**
293. A Nieves, W Ramos, V Díaz Pacheco, CE Isaza, M Cabrera Ríos, **Enhancing Personal Decision Making During and After a Hurricane to Preserve Wellness: Preliminary Results**, 10<sup>th</sup> Annual Alliance Scientific Day, San Juan PR, May 5, 2021
292. D Rivera, J Durand, M Cabrera-Ríos, **Navigating Exit Routes using Augmented Reality**, 2021 Sigma Xi Scientific Poster Day, Mayagüez PR, May 8, 2021
291. S Díaz, J Ortiz, M Cabrera-Ríos **Training of a Neural Network through Iterative Optimization**, 2021 Sigma Xi Scientific Poster Day, Mayagüez PR May 8, 2021
290. K González, L Torres, M Cabrera-Ríos, **Optimization-based Analysis of Two Groups**, 2021 Sigma Xi Scientific Poster Day, Mayagüez PR, May 8, 2021
289. V Díaz-Pacheco, FY González-Román, T Richardson, R Whalin, M Cabrera-Ríos, **Emergency Response and Recovery: A Learning Experience from Hurricane Maria**, DHS Coastal Resilience Center of Excellence Virtual 6<sup>th</sup> Annual Meeting, Chapel Hill NC, April 21 2021
288. S Díaz, J Ortiz, M Cabrera-Ríos **Training of a Neural Network through Iterative Optimization**, 2021 Virtual Junior Technical Meeting (JTM) and the Puerto Rico Interdisciplinary Scientific Meeting (PRISM), San Juan PR, April 23-24, 2021
287. V Borrás, L Meléndez, M Cabrera-Ríos, **Can Social Networks Measure the Mood at Different Levels?**, 2021 Virtual Junior Technical Meeting (JTM) and the Puerto Rico Interdisciplinary Scientific Meeting (PRISM), San Juan PR, April 23-24, 2021
286. K González, L Torres, M Cabrera-Ríos, **Optimization-based Analysis of Two Groups**, 2021 Virtual Junior Technical Meeting (JTM) and the Puerto Rico Interdisciplinary Scientific Meeting (PRISM), San Juan PR, April 23-24, 2021
285. A Nieves, W Ramos, CE Isaza, M Cabrera-Ríos, **iWILL: A Decision-Making Application for Emergencies**, 2021 Virtual Junior Technical Meeting (JTM) and the Puerto Rico Interdisciplinary Scientific Meeting (PRISM), San Juan PR, April 23-24, 2021
284. D Suárez-Gómez, IY Narváez-Bander, CE Isaza, M Cabrera-Ríos, **Differential Expression Analysis and Functional Biological Pathways of Common Genes**

- in Autism and Schizophrenia**, Feria de Investigaciones UPRM 2021, Mayagüez PR, March 11-12, 2021
283. IY Narváez-Bandera, D Suárez-Gómez, CE Isaza, M Cabrera-Ríos, **Análisis de Datos Biológicos desde una Perspectiva de Optimización**, Feria de Investigaciones UPRM 2021, Mayagüez PR, March 11-12, 2021
282. V Díaz-Pacheco, FY González, CE Isaza, M Cabrera-Ríos, **A Decision-support Tool for Individual Decision-Making during Hurricanes**, Feria de Investigaciones UPRM 2021, Mayagüez PR, March 11-12, 2021
281. V Díaz-Pacheco, MC Acosta-Cervantes, J Mercado, M Cabrera-Ríos, **Towards Optimization by Matching of Response Surfaces: Finding Windows of Maximal Similarity**, 2020 Great Minds in STEM Conference, Virtual National Conference, Orlando FL, October 2020
280. J Cabán-Rivera, MC Correa-Burgos, MS Osorio, J Pérez-Morales, IY Narváez-Bandera, D Suárez-Gómez, I Santiago-Lloréns, P Santiago-Cardona, M Cabrera-Ríos, CE Isaza, **Evaluation of a Possible Association between Hepatitis C Virus Infection and Parkinson's Disease through Microarray and medical Records Data Analysis**, 3rd Novel Methodologies in Health Disparities Research Symposium, San Juan PR, January 30, 2020.
279. WM Pedreira-García, GM Pagán-Marrero, E López-González, A Font, AR Marrero-González, P Santiago-Cardona, M Cabrera-Ríos, CE Isaza, **Autism and Schizophrenia: Perinatal Infections and Common Genes Expression Changes**, 27<sup>th</sup> Puerto Rico Neuroscience Conference Bayamón PR, December 2019
278. MS Osorio, J Cabán-Rivera, MC Correa-Burgos, IY Narváez-Bandera, D Suárez-Gómez, P Santiago-Cardona, M Cabrera-Ríos, CE Isaza, **Possible relationship between Parkinson's Disease and Dengue Virus Infection through Changes in Genetic Expression and Examination of Medical Records**, 27<sup>th</sup> Puerto Rico Neuroscience Conference Bayamón PR, December 2019
277. MC Correa-Burgos, J Cabán-Rivera, MS Osorio, IY Narváez-Bandera, D Suárez-Gómez, P Santiago-Cardona, M Cabrera-Ríos, CE Isaza, **Possible Link between Influenza Virus and Risk of Developing Alzheimer's Disease in Puerto Rico**, 27<sup>th</sup> Puerto Rico Neuroscience Conference Bayamón PR, December 2019
276. J Cabán-Rivera, MC Correa-Burgos, MS Osorio, J Pérez-Morales, IY Narváez-Bandera, D Suárez-Gómez, I Santiago-Lloréns, P Santiago-Cardona, M Cabrera-Ríos, CE Isaza, **Evaluation of a Possible Association between Hepatitis C Virus Infection and Parkinson's Disease through Microarray and medical Records Data Analysis**, 27<sup>th</sup> Puerto Rico Neuroscience Conference, Bayamón PR, December 2019
275. IY Narváez-Bandera, D Suárez-Gómez, M Cabrera-Ríos, CE Isaza, **MCO – multiple criteria optimization-based gene selection: A deterministic tool for the analysis of genomic data**, Vienna, Austria, October 2019
274. R Fernández, V Díaz, L Durand, Z Acevedo, M Cabrera-Ríos, **Recycling PET with Containment Utility Bin Through Insertion and Tucking Operation (CUBITO)**, Añasco PR, October 2019
273. R Larrieux, D Alizo, M Cabrera-Ríos, **Multicriteria Experimental Optimization in 3D Printing Couture: First Steps**, 2019 ABRCMS, Anaheim CA, November 2019

272. J Fernández-Santiago, CE Isaza, M Cabrera-Ríos, **Selection of Differentially Expressed Genes in Dengue and Parkinson's Disease**, 2019 IISE Annual Conference, Orlando FL, May 2019
271. R Larrieux, D Alizo, M Cabrera-Ríos, **Multicriteria Experimental Optimization in 3D Printing Couture: First Steps**, 2019 IISE Annual Conference, Orlando FL, May 2019
270. V Díaz, R Fernández, L Durand, M Cabrera-Ríos, **3D Printed Self-Assemblies: 3D Shells**, 2019 IISE Annual Conference, Orlando FL, May 2019
269. R Fernández, V Díaz Z Acevedo, M Cabrera-Ríos **3D Printed Self-Assemblies:Planar Parts**, 2019 IISE Annual Conference, Orlando FL, May 2019
268. K Huang, W Nieves, CE Isaza, M Cabrera-Ríos, **Affordability of a 3D Printed Customized Mosquito Trap**, 2019 IISE Annual Conference, Orlando FL, May 2019
267. WM Pedreira-García, M Cabrera-Ríos, CE Isaza, **Autism and Schizophrenia: Selection of Common Important Genes and their Correlated Behavior**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR, May 2019
266. I. Narváez,, D Suárez-Gómez, M Cabrera-Ríos, CE Isaza, **Differentially Expressed Genes in West Nile Virus: Initial Results**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR, May 2019
265. M. Osorio-Ramos, M Cabrera-Ríos, CE Isaza, **Follow up for the project: possible relationship between Parkinson's Disease and Dengue Virus Infection's through Analysis of Gene Expression Changes**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR, May 2019
264. D Suárez-Gómez, I Narváez, M Cabrera-Ríos, CE Isaza, **An R-based Suite for the Analysis of Microarray Data: Data Consolidation and Multiple Criteria Optimization-based Gene Selection**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR, May 2019
- ★ **Third Place, Basic Sciences Poster Category**
263. J Cabán, M Cabrera-Ríos, CE Isaza, **Assessing Gene Expression Changes in Hepatitis C Virus and their Possible Link to Parkinson's Disease**, 15<sup>th</sup> Scientific Annual Scientific Conference PHSU, Ponce PR, May 2019
262. I. Narváez, D Suárez-Gómez, M Cabrera-Ríos, CE Isaza, **Differentially Expressed Genes in West Nile Virus: Initial Results**, 2019 Clinical Research Summit, San Juan PR, May 2019
261. M. Osorio, M Cabrera-Ríos, CE Isaza, **Links between Parkinson's Disease and Dengue Infection**, 2019 Clinical Research Summit, San Juan PR, May 2019
260. J Cabán , M Cabrera-Ríos, CE Isaza, **Analyzing Gene Expression Changes in Hepatitis C Virus and their Possible Link to Parkinson's Disease**, 2019 Clinical Research Summit, San Juan PR, May 2019
259. A Marrero, D Salomé, M Cabrera-Ríos CE Isaza, **Study of the Relation between Autism and Schizophrenia through Gene Expression Changes: Initial Results**, 3<sup>rd</sup> Interdisciplinary Research Symposium San Juan Bautista School of Medicine, Caguas PR, February 2019
258. MF Carrera, CE Isaza, M Cabrera-Ríos, **Uncovering Biological Commonalities between Dengue and Parkinson's Disease**, 2019 Emerging Researchers National Conference in STEM (ERN), Washington DC, February 2019

257. K Huang, W Nieves, CE Isaza, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of a 3D Printer: Towards a Real Application in Mosquito Control**, 2019 Emerging Researchers National Conference in STEM (ERN), Washington DC, February 2019
256. WM. Pedreira-García, A Font, J Pérez-Morales, D Salomé-Rivera, AR Marrero-González, RE Rodríguez-Santiago, L Morales, P Santiago, M Cabrera-Rios and CE Isaza. **Autism and Schizophrenia: Selection of common important genes and their correlated behavior**. 26th Puerto Rico Neurosciences Conference, Ponce, PR, December 2018
254. M Osorio-Ramos, JY Cabán-Rivera, J Pérez-Morales, CM Chardón, E Camacho-Hernández, P Santiago, M Cabrera-Rios, CE Isaza. **Dengue Virus Infection's gene expression changes and its possible relationship with Parkinson's Disease**. 26th Puerto Rico Neurosciences Conference, Ponce, PR, December 2018
253. D Salomé-Rivera, AR Marrero, AA Font, M Cabrera-Ríos, CE Isaza. **Identification of simultaneous gene expression changes across Herpes Simplex, Parkinson's Disease, and Alzheimer's Disease : First Result**. 26th Puerto Rico Neurosciences Conference, Ponce, PR, December 2018
252. AR Marrero-González, D Salomé, AA Font, M Cabrera-Ríos, CE Isaza. **Study the relation between Autism and Schizophrenia through gene expression changes: Initial results**. ABRCMS, Indianapolis, IN, November 14-17, November 2018.
251. J Caban, M Vasquez, J Perez, Osorio M, C Chardon, P Santiago, M Cabrera-Rios, CE Isaza. **Evaluating Potential Link Between Parkinson's Disease and Hepatitis C Virus Through Common Gene Expression Changes**. The Puerto Rico Science, Technology and Research Forward Research and Innovation Summit. November 10, San Juan PR, November 2018.
251. F Aponte, A López, JA Candelaria, CD Figueroa, C Román, CE Isaza, M Cabrera Ríos, **The 3D Hydroponic Printed Prototype**, 2019 HSI Conference, Mayagüez PR, November 2018
250. D Salomé-Rivera, A Marrero, AA Font, M Cabrera-Ríos, CE Isaza, **Identification of Differentially Expressed Genes Simultaneously across Herpes Simplex, Parkinson's Disease, and Alzheimer's Disease: First Ideas**, 2018 SACNAS Annual Meeting, San Antonio TX, October 2018, Presenter: Diamarys Salomé
249. MF Carrera, J Fernández, M Cabrera-Ríos, CE Isaza, **Uncovering Biological Commonalities between Dengue and Parkinson's Disease**, 2018 SACNAS Annual Meeting, San Antonio TX, October 2018 . Presenter: Maria Fernanda Carrera.
248. M Vasquez, M Cabrera-Rios, CE Isaza, **Hepatitis C Virus Host-Protein Interactions and Their Possible Relation to Parkinson's Disease**, American Neurological Association's (ANA) 2018 Annual Meeting Atlanta GA, October 2018 Presenter: Matthew Vasquez.
247. AA Font-Valentín, L Morales, M Cabrera-Ríos, CE Isaza, **First Results of Simultaneous Microarray Analysis of Autism Spectrum Disorder and Schizophrenia: Important Gene Expression Changes in Common**, 14th Annual Scientific Conference, PHSU, Ponce PR, May 2018

246. M Osorio, MF Carrera, M Cabrera-Ríos, CE Isaza, **Parkinson's gene expression changes and its possible relationship with dengue virus infection**, 14th Annual Scientific Conference, PHSU, Ponce PR, May 2018
245. P Ramos, Y Cruz, J Pérez-Morales, M Cabrera-Ríos, CE Isaza, **Establishing links between Herpes Simplex Virus 1 infection and Alzheimer's Disease: preparing for in-vitro studies**, 14th Annual Scientific Conference, PHSU, Ponce PR, May 2018
244. J López de Victoria, MF Carrera, J Caban, C Chardon, J Pérez-Morales, M Cabrera-Ríos, CE Isaza, **Genes associated to Leucine Rich Repeat Kinase (LRRK2) with gene expression change relatd to increased risk of Parkinson's Disease**, 14th Annual Scientific Conference, PHSU, Ponce PR, May 2018
243. P Ramos, Y Cruz, J Pérez-Morales, M Cabrera-Ríos, CE Isaza, **Establishing links between Herpes Simplex Virus 1 infection and Alzheimer's Disease: preparing for *in-vitro* studies**, 7th Annual Symposium of the RCM-UCC, Río Piedras, PR, May 2018
242. J Cabán, C Chardón, M Cabrera-Ríos, CE Isaza, **Establishing an in-vitro Parkinson's Disease model to assess possible relations with Dengue Virus infection through gene expression changes**, 7th Annual Symposium of the RCM-UCC, Río Piedras, PR, May 2018
241. MJ Grant-Tejada, A Valentín-Feliciano, M Cabrera-Ríos, CE Isaza, **Optimization-driven search for links between Diabetes type 2, Alzheimer's Disease, and Parkinson's Disease**, 7th Annual Symposium of the RCM-UCC, Río Piedras, PR, May 2018
240. C Marrero, CE Isaza, M Cabrera-Ríos, **Making Biological Sense of Important Genes in Breast Cancer and Their Coordinated Behavior: Further Results**, 2018 ACS PRISM, Gurabo PR, April 2018
239. K Huang, W Nieves, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of a 3D Printer: Towards a Real Application in Mosquito Control**, 2018 ACS PRISM, Gurabo PR, April 2018
238. MF Carrera, M Cabrera-Ríos, CE Isaza, **Uncovering the Biological Commonalities between Dengue and Parkinson's Disease**, 2018 ACS PRISM, Gurabo PR, April 2018
237. MF Carrera, M Cabrera-Ríos, CE Isaza, **Uncovering the Biological Commonalities between Dengue and Parkinson's Disease**, 2018 Tribeta Biology Honors Society Annual Meeting, Río Piedras PR, March 2018
236. C Marrero, M Cabrera-Ríos, CE Isaza, **Making Biological Sense of Important Genes in Breast Cancer and their Coordinated Behavior: Preliminary Results**, 2018 Emerging Researchers National (ERN) Conference in STEM, Washington DC, February 2018.
235. MF Carrera, M Cabrera-Ríos, CE Isaza, **Uncovering the Biological Commonalities between Dengue and Parkinson's Disease**, 2017 Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix AZ, November 2017

★ **Best Poster Award in Public Health**



234. C Marrero, M Cabrera-Ríos, CE Isaza, **Making Biological Sense of Important Genes in Breast Cancer and their Coordinated Behavior: Preliminary Results**, 2017 SWE Annual Meeting, Austin TX, October 2017  
★ **National Finalist (Top 10), 2017 Technical Poster Competition**
233. K Huang, W Nieves, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of a Manufacturing Process: the Case of a 3D Printer**, 2017 SACNAS Annual Meeting, Salt Lake City UT, October 2017
232. YE Cruz-Rivera, CE Isaza, S Mirsky, M Cabrera-Ríos, **Biosystems Characterization, Modeling & Optimization**, 2017 INFORMS Annual Meeting, Houston TX, October 2017
231. SM Villanueva, M Cabrera-Ríos, **Recycling onto Functional Domestic Artifacts: An Educational and Technical Endeavor**, 2017 IISE Annual Conference & Expo, Pittsburgh PA, May 2017
230. K Huang, W Nieves, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of an Additive Manufacturing Process**, 2017 IISE Annual Conference & Expo, Pittsburgh PA, May 2017
229. G Champaña, M Cabrera-Ríos, **Containment Utility Bin by Insertion and Tucking Operations (CUBITO): A Design Intended from Recycled Material to Support Farming Operations**, 2017 IISE Annual Conference & Expo, Pittsburgh PA, May 2017
228. MF Correa, M Cabrera-Ríos, CE Isaza, **Uncovering the Biological Commonalities between Dengue and Parkinson's Disease**, 13<sup>th</sup> Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
227. C Torres, NJ Ortiz, M Cabrera-Ríos, CE Isaza, **Gene Expression Changes between Alzheimer's and Parkinson's Diseases and their relation to Gender: A Meta-analysis**, 13<sup>th</sup> Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
226. M Osorio, NJ Ortiz, M Cabrera-Ríos, CE Isaza, **Common Gene Expression Changes Between Alzheimer's Disease, Parkinson's Disease, and Influenza: Selecting a Group of Genes for Validation in Puerto Rican Patients III**, 13<sup>th</sup> Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
225. C Quirindongo, YE Cruz-Rivera, M Cabrera-Ríos, CE Isaza, **Alzheimer's Disease and Chronic Conditions: A Systematic Review**, 13<sup>th</sup> Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
224. E Cruz-Rivera, NJ Ortiz, M Cabrera-Ríos, CE Isaza, **Common Gene Expression Changes Between Alzheimer's Disease, Parkinson's Disease, and Influenza: Selecting a Group of Genes for Validation in Puerto Rican Patients II**, 13<sup>th</sup> Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
223. MC Correa, NJ Ortiz, M Cabrera-Ríos, CE Isaza, **Common Gene Expression Changes Between Alzheimer's Disease, Parkinson's Disease, and Influenza: Selecting a Group of Genes for Validation in Puerto Rican Patients**, 13<sup>th</sup>

- Annual Scientific Conference of Ponce Health Sciences University & Ponce Research Institute, Ponce PR, May 2017
222. C Marrero-Laboy, M Cabrera-Ríos, CE Isaza, **Making Biological Sense of Important Genes in Breast Cancer and their Coordinated Behavior: Preliminary Results**, 2017 Emerging Researchers National (ERN) Conference in STEM, Washington DC, March 2017
221. K Huang, W Nieves, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of a Manufacturing Process: The Case of a 3D Printer**, 2017 QUEST, Ponce PR, March 2017
220. SM Villanueva, R López, V Vázquez, NA Jorge, M Cabrera-Ríos, **Recycling Onto Functional Domestic Artifacts: An Educational and Technical Endeavor**, 2017 ASEE Zone II Annual Meeting, San Juan PR, March 2017
219. YE Cruz-Rivera, N Cuevas-Feliciano, K Castillo, M Persans, CE Isaza, M Cabrera-Ríos, **Biosystems Characterization, Modelling and Optimization**, 2017 AAAS Annual Meeting, Boston MA, February 2017
218. PI Justiniano, M Cabrera-Ríos, CE Isaza, **Parkinson's Disease and Liver Cancer: Finding Common Changes in Gene Expression**, 2016 Annual Biomedical Research Conference for Minority Students (ABRCMS), Tampa FL, November 2016
217. NJ Ortiz, J García-Guzmán, CE Isaza, M Cabrera-Ríos, **Removing the User Bias as an Innovation in the Analysis of Microarrays**, 2016 8<sup>th</sup> Annual Conference of the ASQ Puerto Rico Section, Gurabo PR, November 2016
216. YE Cruz-Rivera, N Cuevas-Feliciano, K Castillo, M Persans, CE Isaza, M Cabrera-Ríos, **Biosystems Characterization, Modelling and Optimization**, 2016 SACNAS Annual Meeting, Long Beach CA, October 2016
215. G Champaña-Quijano, M Cabrera-Ríos, **The Making of Cubito: Containment Utility Bin by Insertion and Tucking Operations**, 2016 SACNAS Annual Meeting, Long Beach CA, October 2016
214. AA Font-Valentín, F Almonte-Caminero, M Cabrera-Ríos, CE Isaza, **Multilevel Biological Experiments of Autism Spectrum Disorder: Optimization-based Analysis**, 2016 SACNAS Annual Meeting, Long Beach CA, October 2016
213. N Cuevas-Feliciano, YE Cruz-Rivera, CE Isaza, M Cabrera-Ríos, **Biofuel Production from Algae**, 2016 SACNAS Annual Meeting, Long Beach CA, October 2016
212. MF Sayago-Capielo, KG Chávez-Rojas, M Cabrera-Ríos, **Reverse Engineering of a Self-Assembly Part**, 2016 FORWARD Research & Innovation Summit, San Juan PR, September 2016
211. G Champaña-Quijano, M Cabrera-Ríos, **The Making of Cubito: Containment Utility Bin by Insertion and Tucking Operations**, 2016 FORWARD Research & Innovation Summit, San Juan PR, September 2016
210. J Pérez-Morales, M Cabrera-Ríos, J González-Flores, P Santiago-Cardona, **Characterizing the Non-linear Dependency of the CDK5-Rb axis in non-small cell lung cancer**, 2016 AACR Engineering and Physical Sciences in Oncology, Boston MA, June 2016
209. NJ Ortiz, J García-Guzmán, CE Isaza, M Cabrera-Ríos, **Commonalities in Genetic Signatures and Signaling Pathways in Neurological Disorders:**

- Further Results**, 2016 INFORMS International Meeting, Waikiki HI, June (2016)
208. KG Chávez, J Suárez, MF Sayago, M Cabrera-Ríos **Reverse Engineering of a Self-Assembly Part**, 2016 4o. Simposio de la Academia de Investigación, Mayaguez PR, Mayo 2016
  207. A Cardona, N Cuevas-Feliciano, CE Isaza, M Cabrera-Ríos, **On Effective Biofuel Production from Algae: Initial Ideas**, 2016 PRCTRC Scientific Day, Ponce PR, April 2016
  206. PI Justiniano, CE Isaza, M Cabrera-Ríos, **Parkinson's Disease and Liver Cancer: Finding Common Changes in Control Experiments**, 2016 PRCTRC Scientific Day, Ponce PR, April 2016
  205. NJ Ortiz, J García-Guzmán, CE Isaza, M Cabrera-Ríos, **Commonalities in Genetic Signatures and Signaling Pathways in Neurological Disorders**, , 2016 PRCTRC Scientific Day, Ponce PR, April 2016
  204. A Font, CE Isaza, M Cabrera-Ríos, **Multilevel Biological Experiments of Autism Spectrum Disorder: Optimization-Based Analysis**, 2016 PRCTRC Scientific Day, Ponce PR, April 2016
  203. G Champaña, P Rodríguez-Caraballo, M Cabrera-Ríos, **Design and Manufacture of 3D Printed Self-Assembled Pieces to Create a Cistern System for Drough Problems**, 2016 Sigma Xi Poster Day, Mayaguez PR, April 2016
  202. D Arias, M Cabrera-Ríos, **Iterative Online Multiple Criteria Simulation Optimization**, 2016 Sigma Xi Poster Day, Mayaguez PR, April 2016
  201. E Cruz-Rivera, N Cuevas-Feliciano, YA Cardona, CE Isaza, M Cabrera-Ríos,, **On Effective Biofuel Production from Algae: Initial Ideas**, 2016 Sigma Xi Poster Day, Mayaguez PR, April 2016
  200. K Huang, W Nieves-Osoria, M Cabrera-Ríos, **Enhancing the Capability-to-Affordability Ratio of a Manufacturing Proess: The Case of a 3D Printer**, 2016 Sigma Xi Poster Day, Mayaguez PR, April 2016
  199. KG Chávez, J Suárez, MF Sayago, M Cabrera-Ríos, **Reverse Engineering of a Self-Assembly Part**, 2016 Sigma Xi Poster Day, Mayaguez PR, April 2016
  198. N Cuevas-Feliciano, YE Cruz-Rivera, A Cardona, CE Isaza, M Cabrera-Ríos, **On Effective Biofuel Production, and IE Point of View: Initial Idea**, 2016 XVIII Congreso de Ingeniería y Agrimensura COINAR 2016, San Juan PR, March 2016
  197. YE Cruz-Rivera, YM Santiago, VM González, CE Isaza, M Cabrera-Ríos, **Characterization of Alzheimer's Disease: An Operations Research Approach**, 2016 NSF Emerging Researchers National Conference in STEM, Washington DC, February 2016
  196. CM Ortiz-Malavé, AM Marrero-Abreu, J Rosas, M Cabrera-Ríos, CE Isaza, **Biological Insight into Lung Cancer from Mathematical Optimization Analysis**, 2015 Annual Biomedical Research Conference for Minority Students (ABRCMS), Seattle, WA, November 2015
  195. AM Marrero-Abreu, CM Ortiz-Malavé, J Rosas, M Cabrera-Ríos, CE Isaza, **Potential Correlation Paths among Important Genes in Lung Cancer**, 2015 Annual Biomedical Research Conference for Minority Students (ABRCMS), Seattle WA, November 2015

194. C Marrero, CE Isaza, M Cabrera-Ríos, **Making Biological Sense of Important Genes in Breast Cancer and Their Coordinated Behavior: Initial Results**, 2015 SACNAS National Conference, Washington, DC, October 2015
193. J García, NJ Ortiz, CE Isaza, M Cabrera-Ríos, **Optimization-based Exploration of Parkinson's Disease Microarray Experiments**, 2015 SACNAS National Conference, Washington, DC, October 2015
192. NA Isaza, K Rais-Bahrami, M Said, M Cabrera-Ríos, **Newborn's Brain and Somatic Tissue Oxygenation During Skin-to-Skin Contact in the NICU**, 20<sup>th</sup> Annual International Meeting of the Academy of Breastfeeding Medicine, Washington, DC, September 2015
191. NA Isaza, K Rais-Bahrami, M Said, M Cabrera-Ríos, **Parental Stress Before and After Skin-To-Skin Contact in the NICU**, 2015 CHND Annual Meeting, Washington, DC, September 2015
190. NA Isaza, K Rais-Bahrami, M Said, M Cabrera-Ríos, **Newborn's Brain and Somatic Tissue Oxygenation During Skin-to-Skin Contact in the NICU**, 20<sup>th</sup> Annual International Meeting of the Academy of Breastfeeding Medicine, Los Angeles, CA, October 2015
189. C Marrero, CE Isaza, M Cabrera-Ríos, **Making Biological Sense of Important Genes in Breast Cancer and their Coordinated Behavior: Preliminary Results**, 2015 BMES Annual Meeting, October 2015
188. EL Lorenzo, A Ropelewski, CE Isaza, M Cabrera-Ríos, **Towards the optimization-driven search of signaling pathways: cervix cancer**, 2015 IIE Annual Conference & Expo, Nashville TN, June 2015
187. NA Isaza, K Rais-Bahrami, M Said, M Cabrera-Ríos, **Newborn's Brain and Somatic Tissue Oxygenation During Skin-to-Skin Contact in the NICU**, 2015 Eastern Society for Pediatric Research (ESPR) Annual Meeting, Philadelphia, PA, March 2015
186. LM Pérez-Marty, KI Camacho-Cáceres, JC Acevedo-Díaz, J Irizarry, CE Isaza, M Cabrera-Ríos, **A Biological Understanding of Gene Expression of Potential Biomarkers in Lung Cancer**, 2015 NeA Science Day, Mayagüez, PR, March 2015
185. V González, N Maldonado, YE Cruz-Rivera, YM Santiago, CE Isaza, M Cabrera-Ríos, **Characterization of Alzheimer's Disease: An Operations Research Approach**, 2015 Nea Science Day, Mayagüez, PR, March 2015
184. CA Rivera-Collazo, M Cabrera-Ríos, **Multiple Criteria Optimization: Structural Design and Prototyping using 3D Printing**, 2015 JTM/PRISM, Río Piedras, PR, March 2015
183. JF Rosas, EL Lorenzo, M Ortiz, CE Isaza, M Cabrera-Ríos, **Biological Signaling Pathways and Potential Mathematical Network Representations**, 2015 AAAS Annual Meeting, San José, CA, February 2015
182. KI Camacho-Cáceres, JC Acevedo, CE Isaza, M Cabrera-Ríos, **Lung Cancer – New Information from Old Data: Preliminary Results**, 2015 AAAS Annual Meeting, San José, CA, February 2015
181. AL Maldonado-Figueroa, A Faulkner-Colón, MC Acosta-Cervantes, M Cabrera-Ríos, **Optimization by Similarity: First Ideas of a Novel Approach**, 2014 ABRCMS, San Antonio, TX, November 2014

180. H Pérez-Candelario, YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **Enabling Simheuristics through Designs for Tens of Variables: Costing Models and Online Availability**, 2014 ABRCMS, San Antonio, TX, November 2014
179. YE Cruz, Y Santiago, V González, M Cabrera-Ríos, CE Isaza, **Characterization of Alzheimer's Disease: An Operations Research Approach**, 2014 ABRCMS, San Antonio, TX, November 2014
178. B Rosas-Matos, M Cabrera-Ríos, E Niño-Pérez, **Experimental Design-Based Multiple Criteria Optimization Algorithm to Aid Manufacturing Design and Process Adjustment**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
177. K Camacho-Cáceres, M Cabrera-Ríos, CE Isaza, J Irizarry-Nieves, JC Acevedo-Díaz, V González, **Lung Cancer: New Information from Old Data**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
176. N García, OM Suárez, L Zapata, M Cabrera-Ríos, **Effect of Fly Ash and Nanosilica on Concrete Compressive Strength at Early Age**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
175. M Ortiz, L Pérez, E Lorenzo, J Rosas, CE Isaza, M Cabrera-Ríos, **A Biological Understanding of Potential Signaling Pathways Elicited Through Maximum Correlation in Lung and Cervical Cancer: Initial Results**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
174. JF Rosas-Rubio, E Lorenzo, L Pérez, M Ortiz, CE Isaza, M Cabrera-Ríos, **Meta-Analysis of Genetic Signaling Paths: First Ideas and Results**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
173. E Niño-Pérez, B RosasM Cabrera-Ríos, **Multiple Criteria Simulation Optimization: Further Refinements**, 2014 SACNAS National Conference, Los Angeles, CA, October 2014
172. NA Isaza, K Rais-Bahrami, M Said, M Cabrera-Ríos, **Parental Stress before and after Skin-to-Skin Contact in the NICU**, 2014 AAP Experience: National Conference & Exhibition, San Diego, CA, October 2014
171. MG Villarreal-Marroquín, JM Castro, M Cabrera-Ríos, **Effect of Initial Starting Points in the Performance of a Metamodel-based Multiple Criteria Optimization Method**, 2014 Latin Iberian American Conference on Operations Research (CLAIO), Monterrey, México, October 2014
170. L Benavides, Y Ríos, M Cabrera-Ríos, **Detección de Pérdidas por Fugas en Industrias del Petróleo**, 2014 Latin Iberian American Conference on Operations Research (CLAIO), Monterrey, México, October (2014)
169. H Pérez-Candelario, YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **Testing Different Strategies for Large Experimental Designs**, XSEDE14, Atlanta, GA, July 2014
168. A Varela-Agront, M Cabrera-Ríos, **Predicting the Best Tradeoff Solutions in Sports Training**, 2014 Industrial & Systems Engineering Research Conference, Montréal, Canada, May 2014
167. YE Cruz-Rivera, N Ortiz, EL Lorenzo, CE Isaza, M Cabrera-Ríos, **From Gene Expression to Correlation Networks: An Experimental Design Study in Cancer Representation**, 2014 Industrial & Systems Engineering Research Conference, Montréal, Canada, May 2014

166. H Pérez-Candelario, YM Méndez-Vázquez, K Ramírez, M Cabrera-Ríos, **Testing Different Strategies for Large Experimental Designs**, 2014 Industrial & Systems Engineering Research Conference, Montréal, Canada, May 2014
165. KI Camacho, JI Irizarry, JC Acevedo, VM González, CE Isaza, M Cabrera-Ríos, **Lung Cancer: New Information from Old Data: Preliminary Results**, 2014 13<sup>th</sup> Annual World Pharma Congress, Boston MA, May 2014
164. EL Lorenzo, M Cabrera-Ríos, A Ropelewski, CE Isaza, **Search of Genetic Signaling Pathway with the Traveling Salesman Problem**, Great Lakes Bioinformatics Conference 2014, Cincinnati, OH, May 2014
163. J Rosas, M Cabrera-Ríos, CE Isaza, **Meta-Analysis of Genetic Signaling Paths: First Ideas and Results**, Great Lakes Bioinformatics Conference 2014, Cincinnati, OH, May 2014
162. KI Camacho, JI Irizarry, JC Acevedo, VM González, CE Isaza, M Cabrera-Ríos, **Lung Cancer: New Information from Old Data: Preliminary Results**, Great Lakes Bioinformatics Conference 2014, Cincinnati, OH, May 2014
161. NM García, OM Suárez, M Cabrera-Ríos, **Effect of Fly Ash and Nanosilica on Cement Compressive Strength**, 2014 UPRM Research Symposium, Mayagüez PR, May 2014
160. H Pérez Candelario, YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **The Search for Experimental Designs with Tens of Variables**, 2014 UPRM Research Symposium, Mayagüez PR, May 2014
159. Y Santiago-Correa, M Cabrera-Ríos, JOURNAL OF UNDERGRADUATE RESEARCH STUDENTS, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
158. B Rosas, E Niño-Pérez, M Cabrera-Ríos, **Experimental Design-Based Multiple Criteria Optimization: Algorithm to Aid Manufacturing Design and Process Adjustment: Preliminary Results**, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
157. E Niño-Pérez, B Rosas, M Cabrera-Ríos, **Multiple Criteria Iterative Optimization: Further Refinements**, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
156. KI Camacho-Cáceres, CE Isaza, M Cabrera-Ríos, **Lung Cancer: New knowledge from Old Data**, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
155. YM Méndez-Vázquez, KL Ramírez Rojas, H Pérez-Candelario, M Cabrera Ríos, **Designs for tens of variables**, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
154. D Sánchez-Partida, JL Martínez-Flores and M Cabrera Ríos, **Integer Linear Programming to model a University Timetabling Considering Professors' Time Windows**, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR, April 2014
- ★ **Awarded First Place in the category of Graduate Students**
153. A Maldonado Figueroa, A Faulkner Colón, MC Acosta Cervantes, M Cabrera-Ríos, **Fitting Areas to Models: First Ideas of a Novel Approach**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
152. KI Camacho Cáceres, JI Irizarry, JC Acevedo, CE Isaza, M Cabrera-Ríos, **Lung**

- Cancer: New Information from Old Data**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
151. J Rosas, EL Lorenzo Montes de Oca, L Pérez Marty, M Ortiz Mojer, CE Isaza, M Cabrera-Ríos, **Meta-Analysis of Genetic Signaling Pathways: First Ideas and Results**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
150. E Niño Pérez, B Rosas, M Cabrera-Ríos, **Multiple Criteria Simulation Optimization: Further Refinements**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
149. J León, J Vega, M Franqui, C Rivera, M Cabrera-Ríos, **A Personal Recycling Apparatus: First Ideas**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
148. YM Méndez Vázquez, H Pérez Candelario, KL Ramírez Rojas, M Cabrera-Ríos, **The Search for Experimental Designs with Tens of Variables**, 2014 Sigma Xi Science Day, Mayagüez PR, April 2014
147. B Rosas, E Niño Pérez, M Cabrera-Ríos, **Experimental Design-based Multiple Criteria Optimization Algorithm to aid Manufacturing Design and Process Adjustment**, 2014 PRISM, Cayey PR, March 2014
146. D Sánchez Partida, JL Martínez, M Cabrera-Ríos, **Integer Linear Programming to model a University Timetabling Situation Considering Professor's Time Windows**, 2014 PRISM, Cayey PR, March 2014
145. KI Camacho Cáceres, JI Irizarry, JC Acevedo, CE Isaza, M Cabrera-Ríos, **Lung Cancer: New Information from Old Data**, 2014 PRISM, Cayey PR, March 2014
144. E Niño Pérez, B Rosas, M Cabrera-Ríos, **Multiple Criteria Simulation Optimization: Further Refinements**, 2014 PRISM, Cayey PR, March 2014
143. N Blanco, Y Cedeño, O Perales-Pérez, M Cabrera-Ríos, **Tradeoff Optimization in Nanoproperties: Bactericide Applications**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
142. N García, L Zapata, OM Suárez, M Cabrera-Ríos, G Torres, **Effect of Fly Ash and Nanosilica on Concrete's Compressive Strength**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
141. A Varela-Agront, M Cabrera-Ríos, **Predicting the Best Tradeoff Solutions in Sports Training**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
140. KL Ramírez-Rojas, M Cabrera-Ríos, **Beating the Curse of Dimensionality through Manageable Experiments**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
139. N Ortiz, YE Cruz-Rivera, EL Lorenzo, CE Isaza, M Cabrera-Ríos, **Coordinated Changes on Relative Genetic Expression of Potential Cancer Biomarkers**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
138. G Torres, N García, L Zapata, M Cabrera-Ríos, OM Suárez, **Applying Multicriteria Optimization in Fa-nS Concrete Mix at Early Age**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014
- ★ **Awarded Second Place in Posters Presentations in Civil and Manufacturing Engineering**
137. JI Irizarry-Nieves, M Cabrera-Ríos, CE Isaza, P Santiago, **Literature-based**

**Evidence for Potential Colon and Cervical Cancer Biomarkers: Optimization-guided biological discovery**, 2014 NSF Emerging Researchers National Conference in STEM, Washington, DC, February 2014

★ **Awarded Best Poster in Cancer Biology**

136. E Niño-Pérez, B Rosas M Cabrera-Ríos, **Multiple Criteria Simulation Optimization: Further Refinements**, 2014 NeA Science Day, Mayaguez PR, February 2014  
★ **Awarded Second Place in the category of Graduate Students**
135. N Blanco-Vicéns, ZE Hernández, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, **Bionanoproperties**, 2014 NeA Science Day, Mayaguez PR, February 2014
134. N Blanco-Vicéns, ZE Hernández, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, **Understanding and Exploiting Compromises Between Different Co-Zn Ferrite Nanoproperties**, 2013 ABRCMS, Nashville TN, November 2013  
★ **Awarded Best Poster in Engineering and the Sciences**
133. JI Irizarry, M Cabrera-Ríos, CE Isaza, P Santiago, **Study of Multiple Criteria Optimization on Colon and Cervical Microarray Data through Extensive Literature Search**, 2013 ABRCMS, Nashville TN, November (2013)
132. A Varela-Agront, M Cabrera-Ríos, **Predicting the Best Tradeoff Solutions in Sports Training**, 2013 ABRCMS, Nashville TN, November (2013)
131. KL Ramírez, M Cabrera-Ríos, **Beating the Curse of Dimensionality through Manageable Experiments: Preliminary Results**, 2013 ABRCMS, Nashville TN, November (2013)
130. NM García, L Zapata, OM Suárez, M Cabrera-Ríos, **Effect of Fly Ash and Nano-Silica on Concrete Compressive Strength at Early Age**, 2013 Materials Science & Technology 2013, Montréal, Canada, November (2013)
129. LA Benavides-Vázquez, YA Ríos-Solís, M Cabrera-Ríos, **Leak Detection in Oil Refinery Pipeline**, 2013 UPRM First Engineering Community Summit ECOS, Mayagüez PR, September (2013)
128. NM García, L Zapata, OM Suárez, M Cabrera-Ríos, **Effect of Fly Ash and Nano-Silica on Concrete Compressive Strength at Early Age**, 2013 UPRM First Engineering Community Summit ECOS, Mayagüez PR, September (2013)
127. EL Lorenzo-Montes de Oca, M Cabrera-Ríos, A Ropelewski, CE Isaza, **Search of Genetic Signaling Pathways with the Traveling Salesman Problem**, 2013 Summer Undergraduate Research Symposium Duquesne University, Pittsburgh PA, July (2013)
128. NM García, L Zapata, G Torres, M Suárez, M Cabrera-Ríos, **Effect of Fly Ash and Nano-Silica on Concrete Compressive Strength**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
127. JC Rivera-Nazario, M Cabrera-Ríos, **Searching the Experimental Region where a Metamodel Fits Best**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
126. K Ortiz-Muñoz, C Rivera, M Cabrera-Ríos, **Bicriteria Optimization Problem: An Artificial Neural Network Approach**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)



125. NJ Ortiz, EL Lorenzo-Montes de Oca, YE Cruz, M Cabrera-Ríos, CE Isaza, **Coordinated Changes on Relative Genetic Expression of Potential Lung Cancer Biomarkers**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
124. YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **The Search for Experimental Design with Tens of Variables: Preliminary Ideas and Results**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
123. KL Ramírez-Rojas, M Cabrera-Ríos, **Beating the Curse of Dimensionality through Manageable Experiments**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
122. MG Villarreal-Marroquín, JM Castro, M Cabrera-Ríos, **A Metamodel-Based Multicriteria Simulation Optimization Method for Injection Molding**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
121. JI Alvarado-Morales, F Reyes, AB Rodríguez-Yañez, M Cabrera-Ríos, CE Isaza, **Multiple Criteria Analysis of High-Throughput Biological Experiments**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
120. MC Acosta-Cervantes, MG Villarreal-Marroquín, OL Chacón Mondragón, JM Castro, M Cabrera-Ríos, **Metamodeling Studies on Simulation Optimization**, 2013 IIE Annual Industrial & Systems Engineering Research Conference, San Juan PR, May (2013)
119. YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **The Search for Experimental Designs with Tens of Variables**, 2013 Simposio de Investigación RUM, Mayagüez PR, May (2013)
118. NJ Ortiz, YE Cruz, EL Lorenzo, J Rodríguez, CE Isaza, M Cabrera-Ríos, **Coordinated Changes on Relative Genetic Expression of Potential Lung Cancer Biomarkers**, 2013 Simposio de Investigación RUM, Mayagüez PR, May (2013)
117. EL Lorenzo-Montes de Oca, CE Isaza, M Cabrera-Ríos, **Meta-analysis of Microarrays to Identify Potential Genetic Signaling Paths**, 2013 SACNAS COHEMIS Ciencia & Tecnología, Innovación a través de la Investigación, Mayagüez PR, April (2013)
116. YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, **The Search for Experimental Designs with Tens of Variables**, 2013 SACNAS COHEMIS Ciencia & Tecnología, Innovación a través de la Investigación, Mayagüez PR, April (2013)
115. K Ortiz-Muñiz, C Rivera-Collazo, M Cabrera-Ríos, **Prediction of the Efficient Frontier of a Bicriteria Optimization Problem: An Artificial Neural Network Approach**, XVIII Sigma Xi Student Poster Day, Mayagüez PR, Mayagüez PR, April (2013)
114. J Zierenberg, J Pizarro, B Rosas, **An Experimental Design-Based Algorithm to Find Solutions to the Multiple Criteria Optimization Problem**, XVIII Sigma Xi Student Poster Day, Mayagüez PR, Mayagüez PR, April (2013)
113. G Cruz, JE Espada, J Jiménez, M Cabrera-Ríos, **Training an Artificial Neural Network with Experimental Design Techniques**, XVIII Sigma Xi Student Poster Day, Mayagüez PR, April (2013)

112. NM García, L Zapata, OM Suárez, M Cabrera-Ríos, **Effect of Fly-Ash and Nano-Silica on Concrete Compressive Strength at Early Age**, XVIII Sigma Xi Student Poster Day, Mayagüez PR, April (2013)
111. NJ Ortiz, YE Cruz, EL Lorenzo, J Rodríguez, CE Isaza, M Cabrera-Ríos, **Coordinated Changes on Relative Genetic Expression of Potential Lung Cancer Biomarkers**, 2<sup>nd</sup> Biomedical Engineering Symposium BMES, Mayagüez PR, April (2013)
110. JI Alvarado-Morales, CE Isaza, P Santiago-Cardona, W Douglas-Cress, M Cabrera-Ríos, **Selection of Potential Bone Cancer Biomarker Genes: A Mathematical Optimization Approach**, 2<sup>nd</sup> Biomedical Engineering Symposium BMES, Mayagüez PR, April (2013)
109. B Colucci-Ríos, F Salado-Martínez, A Álvarez-Ibáñez, M Cabrera-Ríos, A Cáceres, **Analysis and evaluation of additives for characterizing warm mix asphalt in Puerto Rico**, XVIII Sigma Xi Student Poster Day, Mayagüez PR, April (2013)
108. NA Blanco-Vicéns, ZE Hernández-Márquez, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, **Conflictive Nanoproperties – Can We All get Along? Understanding and Exploiting Compromises between Different Co-Zn Ferrite Nanoproperties**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
- ★ **Awarded First Place in Poster Presentations in the Biological Sciences**
114. LE Irizarry, CE Isaza, M Cabrera-Ríos, **Validation Study on Potential Cervical Cancer Genes Identified by Novel Microarray Data Analysis**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
113. G Torres-Suárez, M Cabrera-Ríos, **Multicriteria Optimization in the Construction Field**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
112. NJ Ortiz, EL Lorenzo, CE Isaza, JA Rodríguez, **Coordinated Changes on Relative Genetic Expression of Potential Cancer Biomarkers: A Mathematical Network Approach**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
111. JI Alvarado-Morales, CE Isaza, M Cabrera-Ríos **Selection of Potential Bone Cancer Biomarker Genes: A Mathematical Optimization Approach**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
110. EL Lorenzo, NJ Ortiz, J Rodríguez, M Cabrera-Ríos **Genetic Emergent Behavior: Cervix Cancer Case**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
109. JC Rivera-Nazario, M Cabrera-Ríos, **Searching the Experimental Region where a Metamodel Fits Best**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
108. KL Ramírez Rojas, YM Méndez-Vázquez, M Cabrera-Ríos, **Beating the curse of dimensionality through manageable experiments**, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
107. L Irizarry, CE Isaza, J Pérez-Morales, M Pérez-Santiago, M Cabrera-Ríos, **Validation study on potential cervical cancer genes identified by novel microarray data analysis**, ABRCMS 2012, San José CA, November (2012)
106. JC Rivera-Nazario, M Cabrera-Ríos, **Searching the Experimental Region where**

- a **Metamodel Fits Best**, ABRCMS 2012, San José CA, November (2012)
105. CA Rivera-Collazo, M Cabrera-Ríos, **Modeling with Artificial Neural Networks in Compression Molding**, ABRCMS 2012, San José CA, November (2012)
104. G Torres-Suárez, M Cabrera-Ríos, **Multicriteria Optimization in the Construction Field**, NSF AGMUS 2012, San Juan PR, September (2012)
103. L Irizarry, CE Isaza, J Pérez-Morales, M Pérez-Santiago, M Cabrera-Ríos, **Validation study on potential cervical cancer genes identified by novel microarray data analysis**, NSF AGMUS 2012, San Juan PR, September (2012)
102. JC Rivera Nazario, **Inverse Metamodelling**, NSF AGMUS 2012, San Juan PR, September (2012)
101. JI Alvarado-Morales, M Cabrera-Ríos, **Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes: Cervix Cancer**, NSF AGMUS 2012, San Juan PR, September (2012)
100. MC Acosta Cervantes, MG Villarreal Marroquín, OL Chacón-Mondragón, JM Castro, M Cabrera-Ríos, **Metamodeling Studies in Simulation Optimization**, NSF AGMUS 2012, San Juan PR, September (2012)
99. G Torres-Suárez, M Cabrera-Ríos, **Multicriteria Optimization in the Construction Field**, NeA Science Day 2012, Mayagüez PR, September (2012)
98. EL Lorenzo, CE Isaza, M Cabrera-Ríos, **Emergent Genetic Behavior**, NeA Science Day 2012, Mayagüez PR, September (2012)
97. L Irizarry, CE Isaza, J Pérez-Morales, M Pérez-Santiago, M Cabrera-Ríos, **Validation study on potential cervical cancer genes identified by novel microarray data analysis**, NeA Science Day 2012, Mayagüez PR, September (2012)
96. MC Acosta Cervantes, MG Villarreal Marroquín, OL Chacón-Mondragón, JM Castro, M Cabrera-Ríos, **Metamodeling Studies in Simulation Optimization**, NeA Science Day 2012, Mayagüez PR, November (2012)
95. NA Arciniegas, S Carlo, M Cabrera-Ríos, **Metabolic Changes in ASD**, 2º Foro de Investigaciones sobre Autismo, Río Piedras, PR, April 2012
94. ZI Irizarry-Oliver, EM Rivera, CE Isaza, M Cabrera-Ríos, **Consistent Detection of Cancer Biomarkers with Linear Models**, 2012 Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March (2012)
93. E Lorenzo-Montes de Oca, CE Isaza, M Cabrera-Ríos, **Genetic Emergent Behavior: Cervix Cancer Case**, 2012 Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March (2012)
92. NA Blanco-Vicens, ZE Hernández-Márquez, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, **Variational Analysis of Nanoproperties – Preliminary Results**, 2012 Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March (2012)
91. J Pérez-Morales, M Pérez-Santiago, E Jaramillo, CE Isaza, M Cabrera-Ríos, **The Search for Potential Cancer Genetic Biomarkers: Meta-analysis of Microarrays**, 2012 Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March (2012)
90. M Pérez-Santiago, MG Villarreal-Marroquín, JM Castro, M Cabrera-Ríos, **Kriging Metamodels for Optimization via Simulation in Manufacturing**, 2012 Puerto Rico Interdisciplinary Scientific Meeting (PRISM), Carolina, PR, March (2012)

89. G van Amerongen, M Cabrera-Ríos, **Where does a Metamodel Fit Best?**, 2012 IIE Great Lakes Regional Conference, Columbus, OH, February (2012)  
★ **Awarded Third Place in Technical Presentations**
88. G van Amerongen, M Cabrera-Ríos, **Where does a Metamodel Fit Best?**, 2012 Industrial, Systems and Engineering Research Conference, Orlando, FL, May (2012)
87. CA Rivera, MA Salazar Aguilar, JM Castro, M Cabrera-Ríos, **Approximation of Material Behavior in Polymer Processing**, 2012 Industrial, Systems and Engineering Research Conference, Orlando, FL, May (2012)
86. KL Ramírez, M Cabrera-Ríos, **Experimental Designs with a Large Number of Variables**, 2012 Industrial, Systems and Engineering Research Conference, Orlando, FL, May (2012)
85. G Torres, M Cabrera-Ríos, **Multicriteria Optimization in the Construction Field**, 2012 Sigma Xi Student Poster Day, Mayagüez, PR, March (2012)
84. J Alvarado-Morales, J Pérez-Morales, P Díaz-Candelas, ML Sánchez-Peña, CE Isaza, M Cabrera-Ríos, **Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes: Cervix Cancer**, 2012 Sigma Xi Student Poster Day, Mayagüez, PR, March (2012)
83. F Reyes-Acevedo, AB Rodríguez-Yáñez, CE Isaza, M Cabrera-Ríos, **Multiple Criteria Analysis of High-Throughput Biological Experiments**, 2012 Sigma Xi Student Poster Day, Mayagüez, PR, March (2012)
82. Z Soto-Maldonado, M Cabrera-Ríos, **Scale Recycling of PET Bottles: Recollection, Reprocessing and Production at Home**, 2012 Sigma Xi Student Poster Day, Mayagüez, PR, March (2012)
81. K Ramírez-Rojas, M Cabrera-Ríos, **Beating the Curse of Dimensionality through Manageable Experiments: Preliminary Results**, 2012 SACNAS 180°: Transform your future, Mayagüez, PR, March (2012)
80. AB Rodríguez-Yáñez, JM Castro, M Cabrera-Ríos, **Process Windows Considering Two Conflicting Criteria: The Injection Molding Case**, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)
79. J Alvarado-Morales, J Pérez Morales, P Díaz-Candelas, ML Sánchez-Peña, CE Isaza, M Cabrera-Ríos, **Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes: Cervix Cancer**, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)
78. NA Blanco-Vicens, ZE Hernández-Márquez, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, **Variational Analysis of Nanoproperties- Preliminary Results**, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)
77. CA Rivera, MA Salazar Aguilar, JM Castro, M Cabrera-Ríos, **Approximation of Material Behavior in Polymer Processing**, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)
76. J Pérez-Morales, M Pérez, E Jaramillo, CE Isaza, M Cabrera-Ríos, **Meta-analysis: The Search for Potential Cancer Biomarkers in Common Between Multiple Microarray Experiments**, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)  
★ **Awarded Second Place in Poster Presentations in the Biological Sciences**

75. RL Miranda, JA Rodríguez, CE Isaza, M Cabrera-Ríos, **Cancer Diagnosis Scenarios Using Nonparametric Tools with Microarray Data**, 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS), St. Louis, MO, November (2011)
74. J Pérez-Morales, JA Alvarado-Morales, P Díaz-Candelas, M Sanchez-Peña, CE Isaza, M Cabrera-Ríos, **The Search for Cervix Cancer Genetic Biomarkers: A Comparison of Data Envelopment Analysis (DEA) Mathematical Models**, 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS), St. Louis, MO, November (2011)
73. EL Lorenzo, M Cabrera-Ríos, CE Isaza, **Genetic Emergent Behavior: The Cervix Cancer Case**, 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS), St. Louis, MO, November (2011)
72. ZI Irizarry-Oliver, M Cabrera-Ríos, EM Rivera-Negrón, ME Sánchez-Peña, CE Isaza, J Seguel, **Consistent Detection of Cancer Biomarkers with Linear Models**, 2011 Annual Biomedical Research Conference for Minority Students (ABRCMS), St. Louis, MO, November (2011)
71. M Perez-Santiago, M Cabrera-Rios, **Kriging Metamodels in Optimization via Simulation**, 2011 INFORMS Annual Meeting, Charlotte, NC, November (2011)
70. NA Blanco-Vicens, ZE Hernandez-Marquez, S Urcia-Romero, O Perales-Perez, M Cabrera-Ríos, **Variational Analysis of Nanoproperties - Preliminary Results**, 2011 SHPE Annual Meeting, Anaheim CA, November (2011) - Forthcoming
69. AB Rodríguez-Yáñez, JM Castro, M Cabrera-Ríos, **Process Window Considering Two Conflicting Quality Criteria: The Injection Molding Case**, 2011 SHPE Annual Meeting, Anaheim CA, November (2011)
68. S Villarreal, G Guzman, JA Jiménez, T Jin, M Cabrera-Ríos, **Designing a Reliable and Cost Effective Power System for Wafer Fab using Renewable Energy**, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
- ★ **Awarded Best Poster in Engineering and the Sciences**
67. EL Lorenzo, CE Isaza, M Cabrera-Ríos, **Genetic Emergent Behavior: the Cervix Cancer Case**, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
66. J Alvarado-Morales, J Pérez-Morales, P Díaz-Candelas, ML Sánchez Peña, CE Isaza, M Cabrera-Ríos, **Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes: Cervix Cancer**, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
65. MG Villarreal-Marroquin, M Cabrera-Ríos, JM Castro, **A Multicriteria Simulation Optimization Method: Application to Injection Molding**, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
64. AB Rodríguez Yáñez, JM Castro, M Cabrera-Ríos, **Process Windows Considering Two Conflicting Quality Criteria: The Injection Molding Case**, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
63. RL Miranda-Mendoza, JA Rodriguez, CE Isaza, M Cabrera-Ríos, **Cancer Diagnosis Scenarios Using Nonparametric Tools with Microarray Data**, 2011

- SHPE Annual Meeting, Anaheim CA, November (2011)
62. MC Acosta Cervantes, MG Villarreal Marroquin, OL Chacon Mondragon, JM Castro, M Cabrera-Rios, **Simulation Optimization through Metamodelling**, 2011 XVI Sigma Xi Poster Day, Mayaguez, PR, June 2011
61. EM Rivera, CE Isaza, M Cabrera-Ríos, **Linear Models in the Analysis of Microarray Experiments**, Industrial Engineering Research Conference 2011, Reno NV, May 2011
60. P Díaz-Candelas, J Pérez-Morales, J Alvarado-Pérez, M Sánchez Peña, CE Isaza, M Cabrera-Ríos, **Assessment of Data Envelopment Models on Gene Selection**, Industrial Engineering Research Conference 2011, Reno NV, May 2011
59. MB Villarreal-Marroquín, M Cabrera-Ríos, JM Castro, **A Multiple Criteria Optimization Method via Simulation for Polymer Processing**, Industrial Engineering Research Conference 2011, Reno NV, May 2011
58. EM Rivera, M Cabrera-Ríos, M Sánchez-Peña, CE Isaza, **Linear Models in Microarray Analysis**, 102<sup>nd</sup> AACR Annual Meeting 2011 – AACR 6<sup>th</sup> Annual Undergraduate Student Caucus and Poster Competition, Orlando FL, April 2011
57. M Sánchez-Peña, CE Isaza, M Cabrera-Ríos, **Potential colon cancer biomarkers: Multiple criteria gene selection with microarray data**, 102<sup>nd</sup> AACR Annual Meeting 2011, Orlando FL, April 2011
56. AB Rodríguez-Yáñez, M Cabrera-Ríos, **Tuning an Injection Molding Process: Multiple Variables, Performance Measures and Decision Preferences**, 31<sup>st</sup> Puerto Rico Interdisciplinary Scientific Meeting, Bayamón PR, March 2011
55. EM Rivera, CE Isaza, M Cabrera-Ríos, **Linear Models in the Analysis of Microarray Experiments**, 31<sup>st</sup> Puerto Rico Interdisciplinary Scientific Meeting, Bayamón PR, March 2011
54. P Díaz-Candelas, M Sánchez-Peña, CE Isaza, M Cabrera-Ríos, **Comparison of Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes for Colon Cancer**, 2011 Conference of the Association of Biomolecular Resource Facilities, San Antonio, TX, February 2011
53. S Villarreal, M Grier, M Cabrera-Rios, **Metamodeling-Based Approximations for Optimization**, 2010 HEENAC Great minds in STEM Conference, Orlando FL, October 2010
51. MG Villarreal, SM Rojas, E Niño-Pérez, YP Lara-Rodríguez, AB Rodríguez, M Cabrera-Ríos, **Comparison of Simulation Optimization Strategies based on Metamodels**, 2010 SHPE Annual Meeting Technical Poster Competition, Cincinnati OH, October 2010
50. Z Hernandez, S Urcia, O Perales-Perez, **Studies of Magnetic Properties of Cobalt-Zinc Ferrite doped with Gadolinium**, 2010 INFORMS Annual Meeting, Austin TX, November 2010
49. E Watts, CE Isaza, M Mendez, M Sánchez-Peña, M Cabrera-Rios, **Identification of potential cancer biomarkers through the analysis of a single microarray experiment**, 2010 HEENAC Great minds in STEM Conference, Orlando FL, October 2010
48. JA Rodriguez, L Rivero, M Sanchez-Peña, CE Isaza, M Cabrera-Rios, **Identification of potential cancer biomarkers through the analysis of a single**

- microarray experiment**, 2010 HEENAC Great minds in STEM Conference, Orlando FL, October 2010
47. K Perez, M Sanchez-Peña, CE Isaza, M Cabrera-Rios, **An Artificial Neural Network Approach for the Assessment of Potential Biomarker Genes identified through Microarray Experiments**, 2010 HEENAC Great minds in STEM Conference, Orlando FL, October 2010
46. Z Hernandez, S Urcia, O Perales-Perez, M Cabrera-Rios, **Statistical Characterization and Optimization of the Cobalt-Zinc Ferrite Doped with Gadolinium Ions.**, 2010 HEENAC Great minds in STEM Conference, Orlando FL, October 2010
45. E Rivera, M Sánchez-Peña, CE Isaza, M Cabrera-Ríos, **Linear Models in the Analysis of Microarray Experiments**, 2010 Annual Biomedical Research Conference for Minority Students, Charlotte, NC November 2010
44. MG Villarreal, R Mulyana, JM Castro, AB Rodriguez, M Cabrera-Rios, **Development of Process Window in Presence of Multiple Criteria**, 2010 SHPE Annual Meeting Student Paper Competition, Cincinnati OH, October 2010
43. PA Diaz-Candelas, M Sanchez-Pena, CE Isaza, M Cabrera-Rios, **Comparison of Data Envelopment Analysis Models to Identify Potential Cancer Biomarker Genes**, 2010 SHPE Annual Meeting Technical Poster Competition, Cincinnati OH, October 2010
42. M Sanchez-Peña, JM Castro, CE Isaza, **Cancer biomarker search through multiple criteria optimization using microarray data**, 2010 SACNAS Annual Meeting, Anaheim CA, September 2010
41. M Sanchez-Pena, N Ramirez, CE Isaza, M Cabrera-Rios, **Cancer Tissue Classification through Logistic Regression**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
40. M. Sanchez-Pena, CE Isaza, JM Castro, M Cabrera-Rios, **Biological Discovery through Microarray Analysis using Multiple Criteria Optimization**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
39. J.A. Rodriguez, M. Sanchez-Pena, C.E. Isaza, M. Cabrera-Rios, L. Rivero, **Two novel distribution-free methods for cancer diagnosis through microarray analysis**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
38. J. Garcia, M. Sanchez Pena, C.E. Isaza, M. Cabrera-Rios, **Comparative study on Data Envelopment Analysis Models for Gene Identification**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
37. B. Mendez, E. Watts, M. Sanchez-Pena, C.E. Isaza, M. Cabrera-Rios, **Finding Potential Cancer Biomarkers using a Single Microarray Experiment with Replicates**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
36. S. Urcia, Z. Hernandez, O. Perales-Perez, M. Cabrera-Rios, **Statistical Characterization and Optimization of Magnetic Properties of Cobalt-Zinc Ferrite doped with Gadolinium**, Industrial Engineering Research Conference 2010, Cancún MX, June 2010
35. M. Sanchez-Pena, CE Isaza, JM Castro, M Cabrera-Rios, **Biomarker Identification through Multiple Criteria Optimization**, XV Sigma Xi Student Poster Day, Mayaguez, PR, April 2010

34. Z. Hernandez, S. Urcia, O. Perales-Perez, M. Cabrera-Rios, **Statistical Characterization and Optimization of Magnetic Properties of Cobalt-Zinc Ferrite doped with Gadolinium**, XV Sigma Xi Student Poster Day, Mayaguez, PR, April 2010
33. J.A. Rodriguez, L. Rivero, M. Sanchez Pena, C.E. Isaza, M. Cabrera-Rios, **Two novel nonparametric methods for cancer diagnosis through microarray analysis**, XV Sigma Xi Student Poster Day, Mayaguez, PR, April 2010
32. E. Rivera, K. Mendez, M. Cabrera-Rios, **Use of classifiers in Engineering**, XV Sigma Xi Student Poster Day, Mayaguez, PR, April 2010
31. M. Sanchez-Pena, C.E. Isaza, J.M. Castro, M. Cabrera-Rios, **Biomarker Search as a Multiple Criteria Optimization Problem**, 4<sup>th</sup> NEA Science Day, Mayaguez PR, February 2010
30. Z. Hernandez, S. Urcia, O. Perales-Perez, M. Cabrera-Rios, **Statistical Characterization and Optimization of Magnetic Properties of Cobalt-Zinc Ferrite doped with Gadolinium**, 4<sup>th</sup> NEA Science Day, Mayaguez PR, February 2010
29. J.A. Rodriguez, L. Rivero, M. Sanchez Pena, C.E. Isaza, M. Cabrera-Rios, **Two novel nonparametric methods for cancer diagnosis through microarray analysis**, 4<sup>th</sup> NEA Science Day, Mayaguez PR, February 2010
28. Z. Hernandez, S. Urcia, O. Perales-Perez, M. Cabrera-Rios, **Statistical Characterization and Optimization of Magnetic Properties of Cobalt-Zinc Ferrite doped with Gadolinium**, 30<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting, Mayaguez PR, March 2010
27. M. Sanchez-Pena, C.E. Isaza, J.M. Castro, M. Cabrera-Rios, **Biomarker Search as a Multiple Criteria Optimization Problem**, 30<sup>th</sup> Puerto Rico Interdisciplinary Scientific Meeting, Mayaguez PR, March 2010
26. M. Cabrera-Ríos, **Investigación de Operaciones en un Contexto Latinoamericano: un Puente entre la Academia y la Industria**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, (2009)
25. M. Cabrera-Ríos, **Optimización No Lineal con Aplicaciones a la Manufactura**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, October 2009
24. M. Cabrera-Ríos, **Pronóstico y Planeación en Telecomunicaciones: Un Caso de Estudio**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, October 2009
23. M. Cabrera-Rios, Y.P. Lara-Rodriguez, Y. Cedeño-Mattei, H.E. Calderón-Arteaga, M.L. Sánchez-Peña O.L. Chacón, O. Perales, O. M. Suárez, **Introducing Statistic Analysis in Materials Science Projects at Different Points in Time**, INFORMS Annual Meeting 2009, San Diego CA, October 2009
22. M. Cabrera-Rios, E. Niño-Pérez, Y.P. Lara-Rodriguez, S. Rojas, M.G. Villarreal, **Metamodeling-based Optimization Studies: Simulations and Experiments**, INFORMS Annual Meeting 2009, San Diego CA, October 2009
21. M. G. Villarreal-Marroquin, J.M. Castro, and M. Cabrera-Rios, **Multiple Criteria Simulation Optimization: Initial Idea of a New Methodology**, Winter Simulation Conference 2009, PhD Colloquium, Austin TX, December 2009



20. J. García, M.L. Sánchez-Peña, C.E. Isaza, M. Cabrera-Ríos, **Comparative Study of Different Data Envelopment Analysis (DEA) Models to Detect Biomarkers Across Different Cancer Experiments**, Annual Biomedical Research Conference for Minority Students 2009, Phoenix, AZ, November 2009  
★ **Awarded Best Poster in Engineering, Physics and Mathematics**
19. Y. Lara-Rodríguez, M.L. Sánchez-Peña, Y. Cedeño-Mattei, O. Perales, M. Cabrera-Ríos, **Experimental Optimization of Nanomagnetic Properties**, 29th. Puerto Rico Interdisciplinary Scientific Meeting 2009, Río Piedras, PR, March 2009
18. M.L. Sánchez-Peña, C.E. Isaza, N.A. Medina-Borja, J.M. Castro, M. Cabrera-Ríos, **Data Envelopment Microarray Analysis**, 29th. Puerto Rico Interdisciplinary Scientific Meeting 2009, Río Piedras, PR, March 2009
17. M. Sánchez Peña, M. Cabrera-Ríos, J. M. Castro, M.G. Villarreal Marroquín, **Building Multiple Criteria Process Windows through Data Envelopment Analysis**, INFORMS Annual Meeting 2008, Washington DC, USA, October 2008
16. C.E. Isaza Brando, M. Cabrera-Ríos, H.A. Pérez Vicente, M. Sánchez Peña, L. Uribe Mastache, **Microarray Data Envelopment Analysis: Preliminary Results**, INFORMS Annual Meeting 2008, Washington DC, USA, October 2008
15. M. Cabrera-Ríos, C.E. Isaza Brando, H.A. Pérez Vicente, L. Uribe Mastache, **Using the Mann-Whitney Test in Microarray Data for Cancer Diagnosis**, INFORMS Annual Meeting 2008, Washington DC, USA, October 2008
14. M. A. Salazar Aguilar, R. Z. Ríos-Mercado y M. Cabrera-Ríos, **Un enfoque multiobjetivo a un problema de diseño territorial**, XL Congreso de la Sociedad Matemática Mexicana, UANL, San Nicolas de los Garza NL Mexico, October 2007
13. M.G. Villarreal Marroquín and M. Cabrera-Ríos, **An Adaptive Metamodeling-Based Simulation Optimization Algorithm**, Winter Simulation Conference, Washington DC, December 2007
12. M.G. Villarreal Marroquín and M. Cabrera-Ríos, **Modeling and Simulation of a Chassis Painting Operation**, INFORMS International Congress, Río Grande PR, July 2007
11. M.A. Urbano Vázquez and M. Cabrera-Ríos, **Reliability and Process Windows: Two DOE Applications**, INFORMS International Congress, Río Grande PR, July 2007
10. M. Maldonado Chan, R. Gallegos López, J.A. Sandoval Cortina, F. López Vázquez, M. Cabrera-Ríos, **Towards an Automatic Vehicle Flow Characterization System: Count and Classification**, INFORMS International Meeting, Río Grande PR, July 2007
9. M. Cabrera-Ríos and M.G. Villarreal Marroquín, **Data Clustering Applied to Multiple Criteria Optimization Through Data Envelopment Analysis**, INFORMS International Congress, Río Grande PR, July 2007
8. M. Cabrera-Ríos, **Grouping Schemes for Data Envelopment Analysis to Solve Multiple Criteria Optimization Problems**, INFORMS Annual Meeting, Pittsburgh PA, November 2006
7. M.G. Villarreal Marroquín and M. Cabrera-Ríos, **Series de tiempo: Caracterización Empírica y Selección de Técnicas de Pronóstico Basada en**

**Redes Neuronales Artificiales**, XXXIX National Congress of the Mexican Society of Mathematics, Villahermosa TAB México, October 2006

6. M.A. Salazar Aguilar and M. Cabrera-Ríos, **Pronóstico de demanda por medio de redes neuronales artificiales en la industria de telecomunicaciones**, XXXVIII National Congress of the Mexican Society of Mathematics, México City MX, October 2005
5. M. Cabrera-Ríos, C.E. Castro, and J.M. Castro, **Applications of Data Envelopment Analysis in Manufacturing**, IFORS Triennial Conference 2005, Honolulu HI, July 2005
4. C.A. Álvarez Herrera and M. Cabrera-Ríos, **Un enfoque de inventarios para la planeación de capacidad en redes de telecomunicaciones**, XV National Workshop on Optimization and Numerical Analysis, Morelia MICH, April 2005
3. M.A. Salazar Aguilar and M. Cabrera-Ríos **Pronóstico de demanda por medio de redes neuronales artificiales en la industria de telecomunicaciones**, XV National Workshop on Optimization and Numerical Analysis, Morelia MICH, April 2005
2. M. Cabrera-Ríos, K.S. Zuyev, X. Chen, J.M. Castro, and E.J. Straus, **Optimizing cycle time and injection gate location for the in-mold coating (IMC) process**, Structural Plastics 2001: 29th Annual Conference and New Product Design Competition of SPI's Structural Plastics Division, Atlanta GA, April 2001
1. M. Cabrera-Ríos, C.A. Mount-Campbell, and S.A. Irani, **An approach to the design of a manufacturing cell under economical considerations**, First Midwest Conference for New Directions in Experimental Design, Columbus OH, May 2000

SCIENTIFIC  
PRODUCTION  
Theses

2. M. Cabrera-Ríos, **Multiple criteria optimization studies in reactive in-mold coating**, Doctoral Dissertation, Dept. of Industrial, Welding and Systems Engineering, The Ohio State University, 2002
1. M. Cabrera-Ríos, **An approach to the design of a manufacturing cell under economical considerations**, MS Thesis, Dept. of Industrial, Welding and Systems Engineering, The Ohio State University, 1999

INVITED TALKS

76. M Cabrera-Ríos, **Design of Experiments**, NSF CMAT Guest Lecture, Georgia Tech, Atlanta GA, February 15, 2024 (Online)
75. M Cabrera-Ríos, **Design of Experiments**, NSF CMAT Summer Training, Atlanta GA, June 27, 2023 (Online)
74. M Cabrera-Ríos, **Design of Experiments**, NSF CMAT Summer Training, Atlanta GA, June 21, 2022 (Online)
73. M Cabrera-Ríos, **BioOptimatics: Optimization-Based Biological Data Analysis**, EMB UPRM, Mayagüez PR, March 3, 2022
72. M Cabrera Ríos, **Industrial Engineering**, IISE Bootcamp, Mayagüez PR, February 11, 2022
71. M Cabrera Ríos, **BioOptimatics**, EMBS UPRM Seminar, Mayagüez PR, February 17, 2022
70. M Cabrera Ríos, **BioOptimatics**, AEI UPRM Biotechnological Sciences Symposium, Mayagüez PR, November 11, 2021

69. M Cabrera Ríos, **Charla de Maestría y PhD de Bioingeniería**, AEBI UPRM, Mayagüez PR, October 7, 2021
68. E Niño-Pérez, Y Méndez-Vázquez, D Arias, M Cabrera-Ríos, **A Simulation-Optimization Strategy to Deal with Tens of Decision Variables and Multiple Performance Measures in Manufacturing**, 2021 10<sup>th</sup> Operational Research Society Simulation Workshop, London UK, March 21, 2021
67. M. Cabrera-Ríos, **What is Research? Experiences and Tips**, Mexico City MX, February 19, 2021
66. M. Cabrera-Ríos, **What is Research? Experiences and Tips**, Mayagüez PR, March 6, 2021
65. M. Cabrera-Ríos, **BioOptimatics: Optimization-driven Biological Data Analysis**, Mayagüez PR, January 28, 2021
64. M. Cabrera-Ríos, Tau Beta Pi Seminar, **The importance of Recycling in Manufacturing**, Mayagüez PR, October 21, 2020
63. M. Cabrera-Ríos, PHSU RCMI START CORE Seminar, **Introduction to Biostatistics**, Ponce PR, February 24, 2020
62. The Applied Optimization Group, ASEE Seminar, **3D Printing Informative Workshop**, Mayagüez PR, March 7, 2019
61. M. Cabrera-Ríos, **Ingeniería Industrial**, Universidad de Puerto Rico – Mayagüez, Mayagüez PR, October 13, 2018
60. M. Cabrera-Ríos, **Caracterización Estadística en Ingeniería**, Universidad Iberoamericana, Mexico City, February 16, 2018
59. M. Cabrera-Ríos, **Exploración Biológica Apoyada por Optimización**, Universidad Iberoamericana, Mexico City, February 16, 2018
58. M. Cabrera-Ríos, **Optimización en Manufactura, Universidad Iberoamericana**, Mexico City, February 16, 2018
57. M. Cabrera-Ríos, **Temas Selectos de Optimización No Lineal**, Universidad Iberoamericana, Mexico City, February 15, 2018
56. M. Cabrera-Ríos, **Exploración Biológica Apoyada por Optimización**, Universidad Iberoamericana, Mexico City, February 15, 2018
55. M. Cabrera-Ríos, **Optimization-Driven Biological Exploration**, PRCTRC, TRLC and UPRM MSC, PHSU and UCC Seminar at UPR Medical Sciences Campus, December 12, 2017
54. M. Cabrera-Ríos, **Systems Characterization, Modeling, and Optimization**, Industrial Engineering Seminar at Universidad Politécnica de Aguascalientes, July 20, 2017
53. M. Cabrera-Ríos, **Systems Characterization, Modeling, and Optimization**, Seminar of the BMES Student Chapter at UPRM, November 17, 2016
52. M. Cabrera-Ríos, **Systems Characterization, Modeling, and Optimization**, North Carolina A&T State University, April 27, 2016
51. M. Cabrera-Ríos, **SWE Parent's Information Panel**, SWE – WOW, That's Engineering!, March 19, 2016
50. M. Cabrera-Ríos, **Design of Experiments**, Graduate Seminar, Dept. of Chemical Engineering UPR Mayaguez, March 10, 2016
49. M. Cabrera-Ríos, **SWE Professional Development Day Panel**, UPR Mayagüez, January 30, 2016

48. M. Cabrera-Ríos, **Optimization-driven biological discovery**, University of Texas at San Antonio, April 24, 2015
47. M. Cabrera-Ríos, **Optimization-driven biological discovery**, Ponce Health Sciences University and Research Institute, April 17, 2015
46. M. Cabrera-Ríos, **Panel para padres de estudiantes de primer ingreso**, SWE – Wow, That’s Engineering!, April 11, 2015
45. M. Cabrera-Ríos, **Talk with English Writing Tutors**, UPR Mayagüez, April 9, 2015
44. M. Cabrera-Ríos, **Statistics and Optimization Workshop**, Autonomous Popular State University of Puebla (UPAEP), Puebla, México, January 19-22, 2015
43. M. Cabrera-Ríos, **High Performance Computation in Biological Undergraduate Education**, The Banbury Center at Cold Spring Harbor Laboratory, Lloyd Harbor NY, September 4, 2014
42. M. Cabrera-Ríos, **Diseño Experimental**, School of Architecture of the Pontifical Catholic University of Puerto Rico, Ponce PR, August 28, 2014
41. Y Santiago, M. Cabrera-Ríos, **JOUST: The Journal of Undergraduate Research Students**, 2<sup>nd</sup> Annual Symposium: Science & Technology, Innovation Through Research 2014, UPR Mayagüez, April 25, 2014
40. M. Cabrera-Ríos, **Characterization, Modeling and Optimization Driven by Experimental Design**, Seminar of Materials Sciences and Engineering, UPR Mayagüez, February 25, 2014
39. M. Cabrera-Ríos, **Mathematical models in Biology**, NIH RISE Seminars, UPR Humacao, January 21, 2014
38. M. Cabrera-Ríos, **Interviewing Tips**, SWE Seminars, September 19, 2013
37. M. Cabrera-Ríos, **Panel para padres de estudiantes de primer ingreso**, SWE – Wow, That’s Engineering!, April 6, 2013
36. M. Cabrera-Ríos, **Optimization-based biological discovery**, 2013 Control Your Research – EMB and IEEE CSS, March 2, 2013
35. M. Cabrera-Ríos, **Biological Discovery through Optimization**, 2012 Annual SHPE Conference, November 17, 2012
34. M. Cabrera-Ríos, **¿Por qué escoger la Academia?**, Taller SWE UPRM, September 22, 2012
33. M. Cabrera-Ríos, **Panel on Engineering Educational Opportunities**, WOW, That’s Engineering!, February 2012
32. M. Cabrera-Ríos, **Biomarker Identification**, BMES Speaker Series, UPRM, March 2012
31. M. Cabrera-Ríos, **What is Research?**, SWE Seminar Series, UPRM, November 2011
30. M. Cabrera-Ríos, **An Optimization-based approach to potential biomarker identification with microarray data**, Seminar, Rinaldi Research Group in Chemical Engineering, UPRM, April 15, 2011
29. M. Cabrera-Ríos, **Optimization in Injection Molding**, Graduate Seminar, Department of Chemical Engineering, UPRM, April 4, 2011
28. M. Cabrera-Ríos, **Graduate Studies & Research**, Panel, SHPE Student Chapter, UPRM, March 19, 2011

27. M. Cabrera-Ríos, **IE Research at U. of Puerto Rico – Mayagüez & An Optimization-based approach to potential biomarker identification with microarray data**, Graduate Seminar, Department of Integrated Systems Engineering, The Ohio State University, February 2, 2011
26. M. Cabrera-Ríos, **The different Roles of Industrial Engineers**, Seminar, IIE Student Chapter - IEGA, UPRM, December 16, 2010
25. M. Cabrera-Ríos, **Industrial Engineering Graduate Studies**, Panel, ASQ Student Chapter, UPRM, October 16, 2010
24. M. Cabrera-Ríos, **Industrial Engineering**, 14º Taller de Ingeniería, Seminar, IEEE Chapter of Women in Engineering, UPRM, November 7, 2009
23. M. Cabrera-Ríos, **Research Lines**, Orientation to new ININ graduate students, October 27, 2009
22. M. Cabrera-Ríos, **Academia de Orientación a Nueva Facultad**, Orientation to new professors at UPRM, August 10, 2009
21. M. Cabrera-Ríos, **Diseño de Experimentos**, Seminar, Department of Materials Science and Engineering, UPRM, February 20, 2009
20. M. Cabrera-Ríos, **Ingeniería Industrial**, 13º Taller de Ingeniería, Seminar, IEEE Chapter of Women in Engineering, UPRM, April 18, 2009
19. M. Cabrera-Ríos, **Maestrias y Doctorados**, Seminar, Industrial and Engineering Department, UPRM, March 17, 2009
18. M. Cabrera-Ríos, **Ingeniería Industrial**, Seminar, IEEE Chapter of Women in Engineering, UPRM, November 22, 2009
17. M. Cabrera-Ríos, **Investigación de Operaciones en un Contexto Latinoamericano: un Puente entre la Academia y la Industria**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, (2009)
16. M. Cabrera-Ríos, **Optimización No Lineal con Aplicaciones a la Manufactura**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, October 2009
15. M. Cabrera-Ríos, **Pronóstico y Planeación en Telecomunicaciones: Un Caso de Estudio**, Seminario Internacional en Sistemas Avanzados en Gestión: Organizaciones Inteligentes, Cali, Colombia, October 2009
14. M. Cabrera-Ríos, Programa STAR (IEEE WIE), **Ingeniería Industrial**, Mayagüez, PR, November 7, 2009
13. M. Cabrera-Ríos, **Multiple Criteria Optimization in Manufacturing**, Seminario, Industrial Engineering Department, University of Puerto Rico – Mayagüez, Mayagüez, PR, January 23, 2008
12. M. Cabrera-Ríos, **Aplicación de Optimización Multicriterio en la Manufactura**, Programa de Seminarios del Capítulo FIME Racing Team, FIME, UANL, San Nicolás de los Garza, Nuevo León, June 20, 2006
11. M. Cabrera-Ríos, **Aplicación de la Investigación de Operaciones a la Industria: Manufactura y Servicios**, XVI Escuela Nacional de Optimización y Análisis Numérico, Apizaco, Tlaxcala, Conferencia Plenaria, March 31, 2006
10. M. Cabrera-Ríos, **Optimización de Procesos de Manufactura: Contribuciones de la Ingeniería Industrial**, XII Simposio de Ingeniería Industrial, Tuxtla Gutiérrez, Chiapas, November 2005

RESEARCH GRANTS  
\$1,395.1 K

9. M. Cabrera-Ríos, **Optimización de Criterios Múltiples en Moldeo por Inyección**, Programa de Seminarios de la Facultad de Ciencias Físico-Matemáticas, FCFM, UANL, San Nicolás de los Garza, Nuevo León, May 2005
  8. M. Cabrera-Ríos, **Diseño de Experimentos: Variaciones Sobre Un Mismo Tema**, Ciclo de Seminarios del PISIS, FIME, UANL, San Nicolás de los Garza, Nuevo León, January 2005
  7. M. Cabrera-Ríos, **Estudio de Mezclas de Fibras Distintas en la Fabricación de Resina Poliéster Reforzada**, Programa de Seminarios 2004 del Posgrado de Materiales, San Nicolás de los Garza, Nuevo León, November 2004
  6. M. Cabrera-Ríos (junto con D.M. López y E. Alcorta) **Taller de Metodología de la Investigación (20 horas)**, FIME, UANL, San Nicolás de los Garza, Nuevo León, June 2004
  5. M. Cabrera-Ríos **Toma de decisiones en procesamiento de polímeros**, Ciclo de Seminarios del PISIS, FIME, UANL, San Nicolás de los Garza, Nuevo León , May 2004
  4. M. Cabrera-Ríos (junto con R. García Flores) **Taller de Líneas de Investigación del PISIS para colaboración entre Grupos Académicos (20 horas)**, Depto. de Ingeniería Industrial y de Sistemas, ITSON, Cd. Obregón, Sonora, March 2004
  3. M. Cabrera-Ríos, **Applications of Data Envelopment Analysis in Manufacturing**, Seminarios de trimestre de Otoño del 2003 del Departamento de Ingeniería Industrial y de Sistemas de The Ohio State University, September 24, 2003.
  2. M. Cabrera-Ríos, **Optimización de Criterios Múltiples en el Procesamiento de Polímeros**, Ciclo de Seminarios del PISIS, FIME, UANL, San Nicolás de los Garza, Nuevo León , November 2002
  1. M. Cabrera-Ríos, **Investigación de Operaciones Aplicada a la Manufactura**, Ciclo de Seminarios del PISIS, FIME, UANL, San Nicolás de los Garza, Nuevo León, November 2002
- 2022-2027 NSF ERC: Cell Manufacturing Technologies (CMaT) UPRM Subaward PI: M Torres \$200,000 US dollars
- 2021-2026 NSF BII: Emergent Mechanisms in Biology of Robustness, Integration & Organization (EMBRIO) PI: D Umulis – Purdue U., Subaward PI: M Cabrera \$300,000 US dollars
- 2021 - 2022 DHS ORISE Collaboration grant between UPRM and CRC (PI: M Cabrera) \$50,000 US dollars
- 2020 ORISE Summer Research Team (M Cabrera-Ríos, V Díaz Pacheco, F González) \$24,000 US dollars
- 2018 RCMi Pilot Project (PI CE Isaza), \$43,917 US dollars
- 2015 - 2019 USDA/NIFA BE AWARE Project (PI: K Castillo), \$200,000 US dollars
- 2011 NSF CREST Partnership Supplement: Partnerships for Computational Enhancement of UPRM Nanotechnology Center for Biomedical and Energy Driven Systems and Application (PI: Dr. M. Suárez, Co-PIs: Dr. Mauricio Cabrera-Ríos, Dr. María C. Curet), \$100,000 US dollars
- 2011 – 2016 NIH MARC Assisting Bioinformatics Efforts at Minority Schools, PI: Nicholas Hugh, Subaward PI: Jaime Seguel, Collaborator: Mauricio Cabrera-Ríos, June 2011- May 2016, \$300,000 US dollars

STUDENT RESEARCH  
SUPPORT GRANTS  
\$70.9 K

- 2009 - 2011 NSF REU, collaborator, PI: Viviana Cesani, Undergraduate Research on Manufacturing Optimization and Biological Data Analysis, \$22,400 US dollars
- 2009 - 2010 BioScience and Engineering Initiative (BioSEI) Grant, Nonparametric Microarray Statistical Analysis, January 2009-June 2010, \$80,000 US dollars
- 2009 UPRM Seed Fund Grant, Simulation Optimization, January 2009-December 2009, \$6,300 US dollars
- 2006 - 2007 PAICYT-UANL Grant, Characterization of Vehicle Flow in Intersections, June 2006- April 2007, PAICYT CA-1253-06, \$6,000 US dollars
- 2006 PROMEP Grant (Federal DOE Grant), Multiple Criteria Optimization in Injection Molding: Robust Efficient Solutions and Process Windows, PROMEP 28514, \$16,000 US dollars
- 2005 – 2006 PAICYT-UANL Grant, Multiple Criteria Optimization in Manufacturing: Data Grouping Schemes for Data Envelopment Analysis, PAICYT CA-1069-05, \$5,500 US dollars
- 2005 Industrial Project: Development of a Forecasting and Planning tool, \$26,000 US dollars
- 2005 PROMEP Grant (Federal DOE Grant), Multiple Criteria Optimization in Injection Molding: Robust Efficient Solutions and Process Windows, PROMEP 28514, \$15,000 US dollars
- 2023 PRLSAMP (L Ríos, M Maldonado) \$2,000 US dollars
- 2022 PRLSAMP (L Ríos) \$2,000 US dollars
- 2022 PRLSAMP (Y García, O Nieves), \$2,000 US dollars
- 2021 PRLSAMP (S Díaz, A Nieves, V Borrás, K González), \$4,000 US dollars
- 2020 PRLSAMP (S Díaz, A Nieves) \$2,000 US dollars
- 2019 Lockheed Martin 4<sup>th</sup> Year Scholars, Undergraduate Rsch Support (K Huang, R Fernández) \$2,000 US dollars
- 2019 PRLSAMP (K. Huang, N Díaz, MF Carrera) \$3,000 US dollars
- 2018 PRLSAMP (C Marrero, K Huang, M Ortiz, MF Carrera) \$4,000 US dollars
- 2018 PRLSAMP (C Marrero, K Huang, MF Carrera) \$3,000 US dollars
- 2018 Lockheed Martin (C Marrero, N Díaz) \$2,000 US dollars
- 2017 PRLSAMP (C Marrero, K Huang, MF Carrera) \$3,000 US dollars
- 2016 PRLSAMP (C Marrero) \$1,000 US dollars
- 2016 Lockheed Martin 4<sup>th</sup> Year Scholars, Undergraduate Research Support, January-June 2016 (K Huang) \$1,000 US dollars
- 2015 Lockheed Martin 4<sup>th</sup> Year Research Scholars, Undergraduate Research Support, January-June 2015 (C Marrero) \$1,000 US dollars
- 2014 PRLSAMP (C Rivera) \$1,000 US dollars
- 2014 Lockheed Martin 4<sup>th</sup> Year Scholars, Undergraduate Research Support, January-June 2013 (N Blanco, N Ortiz) \$ 2,000 US dollars
- 2013 Lockheed Martin 4<sup>th</sup> Year Scholars, Undergraduate Research Support, January-June 2013 \$ 9,000 US dollars
- 2012 PRLSAMP Undergraduate Research Grant (KL Ramírez) \$1,000 US dollars
- 2012 Lockheed Martin Research Scholars Program (KL Ramírez, NA Blanco-Vicéns, G Torres, Z Soto-Maldonado, CA Rivera) \$5,000 US dollars
- 2011 PRLSAMP Undergraduate Research Grants (EM Rivera, ZI Irizarry, J Pérez-Morales, N Blanco, M Pérez-Santiago, EL Lorenzo) \$ 6,000 US dollars

STUDENT CONFERENCE  
PARTICIPATION AND  
TRAVEL AWARDS  
\$100.25 K

2011 Lockheed Martin 4th Year Scholars, Undergraduate Research Support \$6,000 US dollars

2011 PRLSAMP Undergraduate Research Grant (EM Rivera) \$1,000 US dollars

2010 PRLSAMP Undergraduate Research Grant (EM Rivera) \$1,000 US dollars

2010 Lockheed Martin 4th Year Scholars, Simulation Optimization in Manufacturing Processes, Undergraduate Research Support, \$2,000 US dollars

2009 Lockheed Martin 4th Year Scholars, Simulation Optimization in Manufacturing Processes, Undergraduate Research Support,\$1,000 US dollars

2005 Industrial Project, AVANTEL, 2005, \$900 US dollars

2005 Industrial Project, VISTEON-CARPLASTIC, 2005, \$4,000 US dollars

2005 Industrial Project, Civil Engineering - UANL, 2006, \$1,100 US dollars

2005 Industrial Project, PEMEX, 2006, \$900 US dollars

2023 IISE-PRLSAMP Travel Award (M Maldonado) \$1,500 US dollars

2019 IEOM Travel and Participation Award (V Díaz Pacheco) \$2,000 US dollars

2019 ABRCMS Travel and Participation Award (R Larrieux) \$800 US dollars

2019 ERN Travel and Participation Award (K Huang, MF Carrera) \$3,000 US dollars

2018 ABRCMS Travel and Participation Award (A Marrero) \$1,350 US dollars

2018 SACNAS Travel and Participation Award (MF Carrera, D Salomé) \$2,600 US dollars

2017 ABRCMS Travel and Participation Award (MF Carrera) \$1,350 US dollars

2017 SWE Travel and Participation Awards (C Marrero) \$1,000 US dollars

2017 HACU Travel and Participation Awards (C Marrero, M Ortiz) \$2,000 US dollars

2017 SACNAS Travel and Participation Awards (C Marrero, K Huang) \$3,600 US dollars

2017 AAAS Joshua E. Neimark Travel Award (YE Cruz) \$700 US dollars

2016 SACNAS Travel and Participation Awards (G Champaña, N Cuevas, A Font, Y Cruz) \$5,400 US dollars

2016 ABRCMS Travel and Participation Awards (P Justiniano) \$1,350 US dollars

2015 ABRCMS Travel and Participation Awards (A Marrero, C Ortiz) \$3,700 US dollars

2015 SACNAS Travel and Participation Awards (C Marrero, J García) \$3,700 US dollars

2014 BioPharma Conference, Student Participation Award (K Camacho) \$1,000 US dollars

2014 XSEDE, Student Travel and Conference Award (H Pérez) \$1,000 US dollars

2014 NSF Emerging Researchers National Conference, Student Travel and Conference Awards (K Ramírez, G Torres, NJ Ortiz, N Blanco, J Irizarry, NM García, AJ Varela) \$6,400 US dollars

2013 ABRCMS Travel and Participation Grant for the 2013 ABRCMS (N Blanco, K Ramírez) \$3,000 US dollars

2013 FASEB MARC Travel and Participation Grant for the 2013 BMES Annual Meeting (YE Cruz) \$2,350 US dollars

2013 BioTalents Program, Participation Grant, September 2013 (K Ramirez) \$400 US dollars

2013 BioTalents Progam, Participation Grant (J Zierenberg, N Ortiz) \$ 800 US dollars

2013 NSF Emerging Researchers National Conference, Student Travel and Conference Awards (K Ramírez, JC Rivera, EL Lorenzo, N Blanco) \$4,000 US dollars

2012 Annual Biomedical Research Conference for Minority Students, ABRCMS Judging Program (M Cabrera-Ríos) \$800 US dollars



2012 Annual Biomedical Research Conference for Minority Students, ABRCMS Student Conference Registration and Lodging Award (JC Rivera, L Irizarry) \$ 3,000 US dollars

2012 Annual Biomedical Research Conference for Minority Students, FASEB MARC Student Travel and Conference Award (C Rivera-Collazo) \$ 2,150 US dollars

2012 MARC Summer Institute in Bioinformatics (J Alvarado-Morales) \$2,000 US dollars

2012 BioTalents Program, Participation Grants (N Blanco, F Reyes) \$ 800 US dollars

2012 SHS Healthcare Process Improvement Conference, Student Travel and Conference Award (E Rivera), Award for 1st place in the 2012 SHS Undergraduate Paper Competition \$ 1,800 US dollars

2012 NSF Emerging Researchers National Conference, Student Travel and Conference Awards (J Perez-Morales, J Alvarado-Morales, N Blanco-Vicéns, C Rivera-Collazo) \$4,000 US dollars

2011 Annual Biomedical Research Conference for Minority Students, ABRCMS Student Conference Registration and Lodging Award (J Perez-Morales) \$ 1,000 US dollars

2011 Annual Biomedical Research Conference for Minority Students, FASEB MARC Student Travel and Conference Award (ZI Irizarry, EL Lorenzo, RL Miranda) \$ 5,850 US dollars

2011 SHPE Annual Conference, Student Travel and Conference Awards (AB Rodríguez, RL Miranda, N Blanco-Vicéns, Z Hernandez) \$ 4,000 US dollars

2011 HENAAC Great Minds in STEM Conference, Student Travel and Conference Awards (AB Rodriguez, RL Miranda, N Blanco, Z Hernandez, MG Villarreal) \$ 5,000 US dollars

2010 Annual Biomedical Research Conference for Minority Students, Student Travel and Conference Award (EM Rivera) and Judge Travel Award (M Cabrera-Rios) \$2,500 US dollars

2010 HENAAC Great Minds in STEM Conference, Student Travel and Conference Awards (K Perez, Z Hernandez, L Rivero, E Watts, S Villarreal) \$5,000 US dollars

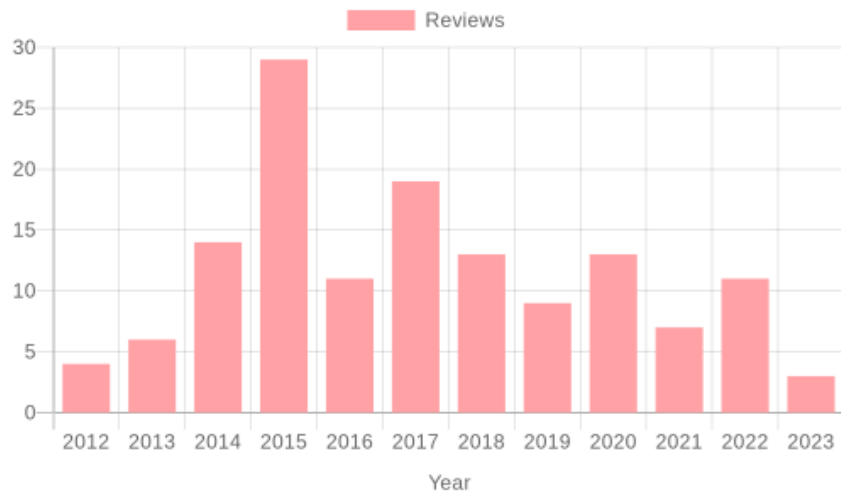
2010 SHPE Annual Conference, Student Travel and Conference Awards (P Diaz & AB Rodriguez) \$2,000 US dollars

2010 SACNAS Annual Meeting, Student Travel & Participation Award (ML Sanchez - Peña) \$1,500 US dollars

2010 MD Anderson Cancer Center, Student Internship on Biological Discovery, \$4,000 US dollars

2009 Annual Biomedical Research Conference for Minority Students, FASEB MARC Student Travel and Conference Award (J. Garcia) \$1,850 US dollars

TECHNICAL REVIEWS  
139 Reviews registered  
in Publons



### Reviewer Summary

For manuscripts reviewed from date range June 2010 - June 2023

(50) Proceedings of the Institution of Mecha...	(15) Computers & Industrial Engineering
(15) Journal of Intelligent & Fuzzy Systems	(12) International Journal of Production Res...
(8) Production and Manufacturing Research	(6) BioMedical Engineering Online
(5) Health Informatics Journal	(3) Materials Letters
(3) Polymer Composites	(2) IISE Transactions on Healthcare Systems ...
(2) PeerJ Computer Science	(2) Applied Mathematical Modelling
(2) Big Data	(2) Interfaces
(2) Proceedings of the Institution of Mechani...	(1) Current Genomics
(1) IEEE Access	(1) IEEE Transactions on Engineering Manag...
(1) Journal of Algorithms & Computational T...	(1) Materials Research
(1) Journal of Proteome Research	(1) Discrete Dynamics in Nature and Society
(1) IEEE Transactions on Intelligent Transpor...	(1) International Journal of Production Econ...
(1) International Journal of Industrial Engin...	

139 REVIEWS OF 110 MANUSCRIPTS

For manuscripts published from date range June 2010 - June 2023

### Service - Reviewer

2024 Barry Goldwater Scholarship Reviewer, February 2024  
 2024 NSF Reviewer, January 2024  
 2024 EngineerGirl Essay Contest Evaluator 2024, March 2024  
 2023 EngineerGirl Essay Contest Evaluator 2023, March 2023  
 2023 PHSU 18<sup>th</sup> Scientific Day, Judge, May 2023  
 2023 NSF Reviewer, January 2023  
 2022 NSF Reviewer, January 2022  
 2022 PHSU 17<sup>th</sup> Scientific Day, Judge, May 2022  
 2021 EngineerGirl Essay Contest Evaluator 2021, March 2021  
 2021 PHSU 16<sup>th</sup> Virtual Scientific Day, Judge, May 2021  
 2020 IISE Annual Meeting – Doctoral Colloquium Judge, November 2020

2020 ABRCMS – Judge’s Participation Award, November 2020  
2020 EngineerGirl Essay Contest Evaluator 2020, March 2020  
2019 ABRCMS – Judge’s Travel Subsidy Award Reviewer, August 2019  
2019 SACNAS Annual Meeting Abstract and Scholarship Reviewer, June 2019  
2018 ABRCMS – Judge’s Travel Subsidy Award Reviewer, September 2018  
2018 Blue Waters Fellowship Reviewer, March 2018  
2017 Elected Member of the i-SIM Council, June 2017, Period of 2017-2019  
2017 ABRCMS – Judge’s Travel Subsidy Award Reviewer, August 2017  
2017 SACNAS Annual Meeting Abstract and Scholarship Reviewer, August 2017  
2017 SACNAS Annual Meeting Abstract and Scholarship Reviewer, June 2017  
2017 Blue Waters Fellowship 2016 Reviewer, March 2017  
2017 EngineerGirl Essay Contest Evaluator 2015, March 2017  
2016 ABRCMS – Judge’s Travel Subsidy Award Reviewer, September 2016  
2016 SACNAS Annual Meeting Abstract and Scholarship Reviewer, August 2016  
2016 SACNAS Annual Meeting Abstract and Scholarship Reviewer, June 2016  
2016 Co-chair for Engineering, Physics and Mathematics, Annual Biomedical Research Conference 2016, November 2016  
2016 EngineerGirl Essay Contest Evaluator 2015, March 2016  
2015 Co-chair for Engineering, Physics and Mathematics, Annual Biomedical Research Conference 2015, November 2015  
2015 ABRCMS – Judge’s Travel Subsidy Award Reviewer, September 2015  
2015 SACNAS Annual Meeting Abstract and Scholarship Reviewer, August 2015  
2015 SACNAS Annual Meeting Abstract and Scholarship Reviewer, June 2015  
2015 EngineerGirl Essay Contest Evaluator 2015, March 2015  
2015 Blue Waters Fellowship 2015 Reviewer, March 2015  
2014 Abstracts, Travel Awards and Judge’s Travel Awards Evaluator, Annual Biomedical Research Conference 2014, October 2014  
2014 National Institute on Minority Health and Health Disparities Grantees' Conference Abstract Reviewer, August 2014  
2014 Member of the Committee for Underrepresented Minorities and Women, 2014 Winter Simulation Conference (3-year appointment), August 2014-December 2016, President of the Committee during 2015  
2014 TLAIO Operations Research Conference Scholarship Reviewer, July 2014  
2014 SACNAS Annual Meeting Abstract and Scholarship Reviewer, July 2014  
2014 SACNAS Annual Meeting Abstract and Scholarship Reviewer, May 2014  
2014 Medical Sciences Annual Conferences 2014 Poster Reviewer, April 2014  
2014 EngineerGirl Essay Contest Evaluator 2014, March 2014  
2014 Medical Sciences Annual Conferences 2014 Abstract Reviewer, January 2014  
2014 Poster Evaluator, NeA Science Day, February, 2014  
2013 Presentation Evaluator, Investigación UPRM, April, 2013  
2013 Poster Evaluator, NeA Science Day, March, 2013  
2012 Poster Evaluator, NeA Science Day, November, 2012  
2012 Proposal Writing Mentorship for Graduate Students, 2012 SHPE Annual Conference, November 2012  
2012 Poster Evaluator, Annual Biomedical Research Conference 2012, November, 2012

## Service - Committees

- 2012 Co-Chair for Engineering, Physics and Mathematics, Annual Biomedical Research Conference 2012, November 2012
- 2011 Co-Chair for Engineering, Physics and Mathematics, Annual Biomedical Research Conference 2011, November 2011
- 2011 Poster Evaluator, Annual Biomedical Research Conference 2011, November, 2011
- 2010 Poster Evaluator, Annual Biomedical Research Conference 2010, November, 2010
- 2010 Poster Evaluator, NeA Science Day, February 11, 2010
- 2010 Moderator, Puerto Rico Louis Stokes Alliance for Minority Participation, 30th Puerto Rico Interdisciplinary Science Meeting, Session: Engineering 20, March 13, 2010
- 2000 Coordinator of the Academic Exchange Program Ohio State University- UANL, Student exchange, Faculty visits, Research Collaboration and Student Coadvisement
- 2009 Moderator, Puerto Rico Louis Stokes Alliance for Minority Participation, 29th Puerto Rico Interdisciplinary Science Meeting, Session: Engineering 04, March 14, 2009
- 2009 Evaluator, Pilot test for use of Clickers in Industrial Engineering Courses, Industrial Engineering Department, April 02, 2009
- 2009 Participant in the creation of the Undergraduate Curricular Sequence in Bioinformatics, Engineering College, January-to date, 2009
- 2008 Promoter of Academic Exchange with UANL at UPRM, 2008-2009
- January 2016 – To Date UPRM Representative to the Barry Goldwater Scholarship Program
- August 2013 – To Date UPRM NIH RISE To BEST Program Mentor
- August 2015- To date UPRM Representative of The Leadership Alliance –
- September 2013- To date Cofounder and Coeditor of JOUST – Journal of Undergraduate Research Students
- October 2010 – June 2013 Member of the International Editorial Committee of Ciencia UANL,
- January 2009 – December 2009 Member of the Editorial Reviewer Board of International Journal of Information Technologies and Systems Approach
- January 2007 – December 2007 Member of the Editorial Reviewer Board for Academia Journals
- January 2008 – December 2008 Member of the Technical Editorial Board, International Journal of Operations Research and Information Systems
- January 2007 – To Date Member of the Technical Editorial Board, INGENIERIAS magazine
- 2005, 2006, 2007, 2008 Evaluator, TECNOS National Prize on Technology Development 2008, Organized by the Secretary of Economic Development, Nuevo León
- 2005 Member, Committee for the Elaboration of the Departmental Development Plan FIME 2005-2012
- August 2011 – To Date **SWE** – Society of Women Engineers
- August 2022 – March 2024 **IGEM RUM** – Synthetic Biology Competition Team

## ADVISEMENT TO STUDENT GROUPS

SCHOLARSHIPS &  
FELLOWSHIPS

December 2013- May 2014 **BMES** – BioMedical Engineering and Sciences  
May 2010 – May 2016 **BOHIQUE- MAES** – Latinos in Science and Engineering  
May -2010 – May 2012 **ASQ** – American Society for Quality

2005-2009 Mexican National System of Researchers, Awarded by the Mexican National Council of Technology for Scientific Productivity  
1997-2000 FULBRIGHT-CONACYT-García Robles Scholarship, Awarded by the Fulbright Foundation and the National Council of Science and Technology (CONACYT), administered by the Institute of International Education (IIE)  
1997-2000 The Ohio State University Fellowship, Awarded by the Graduate School at The Ohio State University

AWARDS &  
RECOGNITIONS AS A  
FACULTY/RESEARCHER

1997-2002 CONACYT Scholarship, Granted by the CONACYT  
2022 Outstanding Industrial Engineering Professor, Awarded by the College of Engineering at UPRM for Outstanding Research, Education and Service Initiatives  
2019 Operational Research Society KD Tocher Medal for the Best Paper in Journal of Simulation 2017-2018, Awarded by the Operations Research Society in London, UK on November, 2019, Shared with coauthors and advisees: Esmeralda Niño, Yaileen Méndez-Vázquez & Dick Arias  
2016 Early Promotion to Full Professor based on Extraordinary Scholarly Merit. Approved by the University Senate on November, 2015  
2014 SWE UPRM Initiation Dedicattee, Honored by the SWE UPRM Student Chapter (October 2014)  
2014 UPRM Outstanding Industrial Engineering Researcher, Awarded by the Research Dean of the College of Engineering at UPRM for being the Industrial Engineering researcher with the largest number of refereed publications and the highest H-index at UPRM in the last 5 years.  
2013 Outstanding Industrial Engineering Professor, Awarded by the College of Engineering at UPRM for Outstanding Research, Education and Service Initiatives.  
2012 Outstanding Industrial Engineering Professor, Awarded by the College of Engineering at UPRM for Outstanding Research, Education and Service Initiatives.  
2012 SWE UPRM Initiation Dedicattee, Honored by the SWE UPRM Student Chapter (October 2012)  
2011 Outstanding Industrial Engineering Professor, Awarded by the College of Engineering at UPRM for Outstanding Research, Education and Service Initiatives.  
2008 UANL Research Prize in Exact Sciences, UANL, San Nicolás de los Garza, NL, México (Coauthored with Matilde Sánchez and María G. Villarreal). Awarded by the University of Nuevo León for the Most Important Research Work in 2007: Clustering to aid the solution to Data Envelopment Analysis Problems.  
2023 Second Place in Covid19 Competition in the 2023 8<sup>th</sup> North American International Conference on Industrial Engineering and Operations Management, Houston TX (Presenter: Lemuel Rios)

AWARDS &  
RECOGNITIONS WITH  
ADVISEES

○ N Xu-Cuevas, C Rosario-Marcano, L Rios-Santiago, CE Isaza, M Cabrera-Ríos,

Time-Delayed Correlation of Two Time Series through Class-Based Forecasting: The Covid 19 Case in Puerto Rico, 2023 IEOM 8<sup>th</sup> North American Conference in Industrial Engineering and Operations Management, Houston TX, June 12-15, 2023

- 2022 Third Place in Technical Posters Competition, 2022 TriBeta Biological Honor Society Caribbean Regional Convention, San Juan PR (Presenter: Alysa Alejandro)
  - o AM Alejandro, I Narváez-Bandera, D Suárez-Gómez, CE Isaza, M Cabrera-Ríos, BioOptimatics of Viral Infections and Degenerative Diseases, 2022 TriBeta Biological Honor Society Caribbean Regional Convention, San Juan PR, March 19-20, 2022
  
- 2021 Third Place Best Student Poster, US Department of Excellence Summit 2021, Washington DC, May 19-20, 2021
  - o V Díaz-Pacheco, FY González-Román, T Richardson, R Whalin, M Cabrera-Ríos, Individual Emergency Response and Recovery: A Learning Experience from Hurricane Maria, US Department of Excellence Summit 2021, Washington DC, May 19-20, 2021
  
- 2021 Best Peer-Reviewed Abstract (triple-tie) of the Conference, 10th Annual Alliance Scientific Day, San Juan PR, May 3, 2021 (Presenter: Deiver Suárez)
  - o D Suárez-Gómez, IY Narváez-Bandera, CE Isaza, M Cabrera Ríos, Joint Analysis of Autism and Schizophrenia via Biooptimatics: Preliminary Results, 10th Annual Alliance Scientific Day, San Juan PR, May 3, 2021
  
- 2019 Third Place in Graduate Poster Competition, 2019 IEOM 4th North American Conference on Industrial Engineering & Operations Management, Toronto Canada, October 2019 (Presenter: Verónica Díaz-Pacheco)
  - o V Díaz-Pacheco, MC Acosta-Cervantes, M Cabrera-Ríos, Towards Optimization by Matching of Response Surfaces: finding Windows of Maximal Similarity, 2019 IEOM 4th North American Conference on Industrial Engineering & Operations Management, Toronto Canada, October (2019)
  
- 2019 Third Place in Basic Sciences, 15th Scientific Annual Scientific Conference PHSU, Ponce PR (Presenter: Deiver Suárez)
  - o D Suárez-Gómez, I Narváez, M Cabrera-Ríos, CE Isaza, An R-based Suite for the Analysis of Microarray Data: Data Consolidation and Multiple Criteria Optimization-based Gene Selection, 15th Annual Scientific Conference PHSU, Ponce PR, May 2019
  
- 2018 Best Poster in Public Science, Annual Biomedical Research Conference, Phoenix, AZ (Presenter: María Fernanda Carrera)
  - o MF Carrera, M Cabrera-Ríos, CE Isaza, Uncovering the Biological Commonalities between Dengue and Parkinson's Disease, 2017 Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix AZ, November 2017
  
- 2015 2nd Place, Undergraduate Student Paper Competition, 2015 International Conference on Operations Excellence and Service Engineering, Orlando, FL, September 2015 (Presenter: Yazeli E. Cruz Rivera)

- o YE Cruz-Rivera, YM Santiago, VM González, CE Isaza, M Cabrera-Ríos, Characterization of Alzheimer's disease: An Operations Research Approach, 2015 International Conference on Operations Excellence and Service Engineering, Orlando, FL, September 2015
- 2014 First Place, Graduate Poster Presentation, 2nd Annual Symposium: Science & Technology, Innovation Through Research, Mayagüez PR (Presenter: Diana Sánchez Partida)
- o D Sánchez-Partida, JL Martínez-Flores and M Cabrera Ríos, Integer Linear Programming to model a University Timetabling Considering Professors' Time Windows, 2nd Annual Symposium: Science & Technology, Innovation Through Research 2014, Mayagüez PR, April 2014
- 2014 First Place, Cancer Biology, 2014 NSF Emerging Researchers National Conference, Washington DC (Presenter: Juan I. Irizarry)
- o JI Irizarry, CE Isaza, P Santiago, M Cabrera-Ríos, Literature-based Evidence for Potential Colon and Cervical Cancer Biomarkers: Optimization-guided biological discovery, 2014 NSF Emerging Researchers National Conference, Washington DC, February 2014
- 2014 Second Place, Civil & Manufacturing Engineering, 2014 NSF Emerging Researchers National Conference, Washington DC (Presenter: Giovanni Torres)
- o G Torres, N García, L Zapata, OM Suárez, M Cabrera-Ríos, Applying Multicriteria Optimization in Fa-nS Concrete Mix at Early Age, 2014 NSF Emerging Researchers National Conference, Washington DC, February 2014
- 2014 Second Place, Graduate Research Posters, 2014 NeA Science Day, Mayaguez, PR (Presenter: Esmeralda Niño-Pérez)
- o E Niño-Pérez, B Rosas M Cabrera-Ríos, Multiple Criteria Simulation Optimization: Further Refinements, 2014 NeA Science Day, Mayaguez PR, February 2014
- 2013 INFORMS Simulation Society's Underrepresented Minorities and Women Participation Award for Winter Simulation Conference 2013 (Presenter: Yaileen Méndez)
- 2013 Finalists in the INFORMS Undergraduate Operations Research Prize (Presenters: Yaileen Méndez and Kasandra Ramírez)
- o YM Méndez-Vázquez, KL Ramírez-Rojas, M Cabrera-Ríos, The search for experimental designs with tens of variables, 2013 INFORMS Undergraduate Operations Research Prize, Minneapolis, MN, October 2013
- 2013 Best Poster in Physics and Mathematics, Annual Biomedical Research Conference, Nashville, TN (Presenter: Nicole Blanco)
- o N Blanco-Vicéns, ZE Hernández, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, Understanding and Exploiting Compromises Between Different Co-Zn Ferrite Nanoproperties, 2013 ABRCMS, Nashville TN, November 2013
- 2013 1st Place Poster Presentations in Nanosciences, 2013 NSF Emerging Researchers National Conference, Washington, DC (Presenter: Nicole Blanco-Vicéns)
- o NA Blanco-Vicéns, ZE Hernández-Márquez, S Urcia-Romero, O Perales-Pérez, M Cabrera-Ríos, Conflictive Nanoproperties – Can We All get Along?

- Understanding and Exploiting Compromises between Different Co-Zn Ferrite Nanoproperties, 2013 Emerging Researchers National Conference, Washington DC, March (2013)
- 2012 2nd place in Poster Presentations in the Biological Sciences (Cancer Biology), 2012 Emerging Researchers Conference (Presenter: Jaileene Pérez-Morales)
- o J Pérez-Morales, M Pérez, E Jaramillo, CE Isaza, M Cabrera-Ríos, Meta-analysis: The Search for Potential Cancer Biomarkers in Common Between Multiple Microarray Experiments, 2012 Emerging Researchers Conference in STEM, Atlanta, GA, February (2012)
- 2012 1st place SHS Undergraduate Paper Competition (Presenters: Eulisa Rivera, Zahira Irizarry)
- o EM Rivera, ZI Irizarry, M Sánchez-Peña, CE Isaza, J Seguel, M Cabrera-Ríos, Consistent Detection of Cancer biomarkers with Linear Models, 2012 SHS Healthcare Systems Process Improvement Conference, Las Vegas, NV, February (2012)
- 2012 3rd place in Technical Presentations IIE Great Lakes Regional Conference (Presenter: Greg van Amerongen)
- o G van Amerongen, M Cabrera-Ríos, Where does a Metamodel Fit Best?, 2012 IIE Great Lakes Regional Conference, Columbus, OH, February (2012)
- 2011 1st place Industrial Engineering Research Fair (Presenters: Jaileene Pérez, Jorlys Alvarado)
- 2011 1st place Poster in Engineering and the Sciences, 2011 HENAAC Great Minds in STEM Conference, Orlando, FL, November 2011 (Presenter: Saúl Villarreal)
- o S Villarreal, G Guzman, JA Jiménez, T Jin, M Cabrera-Ríos, Designing a Reliable and Cost Effective Power System for Wafer Fab using Renewable Energy, 2011 HENAAC Great Minds in STEM Conference, Orlando FL, November (2011)
- 2010 Best Undergraduate Research Project in Engineering – 4th Year Lockheed Martin Scholars UPRM, Mayaguez, PR (Presenter: Bianca Méndez)
- 2009 Third Place, Graduate Research Posters, 7th Industrial Engineering Research and Design Exhibition, Mayaguez, PR (Presenter: Matilde Sánchez)
- 2009 Best Poster in Physics and Mathematics, Annual Biomedical Research Conference, Phoenix, AZ (Presenter: José García)
- o J. García, M.L. Sánchez-Peña, C.E. Isaza, M. Cabrera-Ríos, Comparative Study of Different Data Envelopment Analysis (DEA) Models to Detect Biomarkers Across Different Cancer Experiments, Annual Biomedical Research Conference for Minority Students 2009, Phoenix, AZ, November 2009
- 2008 1st Place on innovation in an academic/research environment of the National Mexican Prize for Inventive and Creative Women, Iris Estrada 2008 (Presenter: María G. Villarreal)
- 2008 Annual Youth Award for the State of Nuevo Leon, Monterrey, Nuevo León, December 2008 (Presenter: María G. Villarreal)
- 2007 1st Place in Computer Science, Mexican National Youth Contest of Science and Technology 2007 (Presenter: Mauro J. Maldonado)
- 2007 Best poster at the Annual Poster Session of the Graduate Program in Systems Engineering, FIME-UANL, May 2007 (Presenter: María G. Villarreal)



## MEMBERSHIPS

- 2007 Best Paper Award in Computer Science at the 5th IEEE International Congress on Technological Innovation and Development, Cuernavaca, México 2007 (Presenter: María G. Villarreal)
- o M.G. Villarreal Marroquín and M. Cabrera-Ríos, Un método adaptativo basado en metamodelos para optimización aplicada a la simulación, 5th IEEE International Congress in Technological Innovation and Development, Cuernavaca, Morelos, México., October 10-12 , 2007
- 2007 INFORMS Simulation Society's Underrepresented Minorities and Women Participation Award for Winter Simulation Conference 2007 (Presenter: María G. Villarreal)
- 2007 2nd place on invention in an academic/research environment of the National Mexican Prize for Inventive and Creative Women, Julieta Fierro 2007 (Presenter: María A. Salazar)
- 2007 FIME Award for Technological Innovation (Presenter: María A. Salazar)
- 2005 UANL Best Thesis in Engineering, Technology & Architecture (Presenter: María A. Salazar)
- Operational Research Society (**OR Society**) – 2020 – 2021
- Society for the Advancement of Chicanos/Hispanics, and Native Americans in Science (**SACNAS**) – 2010- 2011, 2020- 2021
- American Association for Cancer Research (**AACR**) – 2010-2016
- Latinos in Science & Engineering (**MAES**) – 2011-2014
- Society for Modeling & Simulation (**SCS**) – 2009-2010
- Institute of Industrial & Systems Engineers (**IISE**, 2009- 2014)
- Institute for Operations Research and Management Science (**INFORMS**) - 1998-1999, 2004-2016
- Society of Plastics Engineers (**SPE**) - 2001-2004