

## Israel A. Almodóvar-Rivera, PhD

University of Puerto Rico at Mayagüez  
Department of Mathematical Sciences  
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### RESEARCH INTEREST

Responsible machine learning/artificial intelligence, supervised and unsupervised learning with applications in public health, image analysis, functional Magnetic Resonance Imaging, statistical computing, data science, data mining, and visualization.

### EDUCATION

Ph.D., Statistics Iowa State University, Ames, Iowa	<i>April 2017</i>
M.S., Statistics Iowa State University, Ames, Iowa	<i>April 2014</i>
M.S., Applied Mathematics University of Puerto Rico at Río Piedras	<i>April 2011</i>
B.S., Mathematics University of Puerto Rico at Río Piedras	<i>April 2008</i>

### PROFESSIONAL EXPERIENCE

**University of Puerto Rico at Mayagüez**, Department of Mathematical Sciences, Puerto Rico, USA

- Associate Professor of Statistics *July 2024-Present*
- Assistant Professor of Statistics *July 2021-June 2024*
- Investigator at PR-OUTLOOK, University of Massachusetts at Chan Medical Campus *November 2021-May 2025*

**U.S. Department of Energy's (DOE)**, Savannah River Site, (SRS) Aiken, SC

- Visiting Faculty at the Advanced Modeling and Simulation Division *May 2023-August 2023*

**University of Puerto Rico at Medical Sciences Campus**, Department of Biostatistics and Epidemiology, Puerto Rico, USA

- Biostatistician Consultant at Postdoctoral Master Program for Translational Research *October 2018-July 2021*
- Visiting Assistant Professor of Biostatistics *August 2017-July 2021*

## PUBLICATIONS

1. Semprini, J. T., Pabón-Rodríguez, F. M., Santiago-Rodríguez, E. J., & **Almodóvar-Rivera, I. A.** (2025). *Quantifying the burden of cancer in Puerto Rico's oldest residents*. *Cancer Epidemiology*, 97, 102838.
2. Bocachica-Adorno, A. L., Aponte-Ramos, A. Y., Rivera-Fuentes, P. S., Espinosa-Ponce, N. P., Arroyo-Cruz, L. V., Ling, T., Pérez-Ríos, N., Rivas-Tumanyan, S., **Almodóvar-Rivera, I. A.**, Barreto-Gamarra, C., Domenech-García, M., Rivas, F., & Martínez-Montemayor, M. M. (2025). *Ergosterol Peroxide Disrupts Triple-Negative Breast Cancer Mitochondrial Function and Inhibits Tumor Growth and Metastasis*. *International Journal of Molecular Sciences*, 26(10), 4588. <https://doi.org/10.3390/ijms26104588>
3. Pérez, C.M., López-Cepero, A., **Almodóvar-Rivera, I.**, Kiefe, C.I., Tucker, K.L., Person, S.D., Mattei, J., Rodríguez-Orengo, J. and Rosal, M.C., (2024). *Cardiovascular Health Among Young Men and Women in Puerto Rico as Assessed by the Life's Essential 8 Metrics*. *Journal of the American Heart Association*, p.e035052.
4. Rosal MC, **Almodóvar-Rivera I.**, Person SD, López-Cepero A, Kiefe CI, Tucker KL, Uribe-Jerez M, Rodríguez-Orengo J, Pérez CM. (2024) *Psychological and socio-economic correlates of cardiovascular health among young adults in Puerto Rico*. *American Journal of Preventive Cardiology*.  
<https://doi.org/10.1016/j.ajpc.2024.100875>
5. Pérez, C.M., Kiefe, C.I., Person, S.D., Tucker, K.L, Torres, P., Sandoval, E., Boneu, C., Ramírez, Z., Mattei, J., Rodríguez-Orengo, J., **Almodóvar-Rivera, I.**, Rosal, M.C. (2024). *The Puerto Rico Young Adults' Stress, Contextual, Behavioral & Cardiometabolic Risk (PROUTLOOK) Study: Design and Methods*, *American Journal of Epidemiology*, kwae163, <https://doi.org/10.1093/aje/kwae163>
6. **Almodóvar-Rivera, I. A.**, and Pericchi-Guerra, L. R. (2024). *An Objective and Robust Bayes Factor for the Hypothesis Test One Sample and Two Population Means*. *Entropy* 26, no. 1: 88. <https://doi.org/10.3390/e26010088>.
7. Sanchez Plazas, L. C., Garcia De Jesus, R., Martinez-Gonzalez, K., Amaya Ardila, C. P., & **Almodóvar Rivera, I. A** (2024). *The Psychological Impact of the COVID-19 Pandemic on Physicians in Puerto Rico: A Cross-sectional Study after the Second Wave in 2021*. *Frontiers in Psychiatry*, 14, 1329427. doi: 10.3389/fpsyt.2023.1329427
8. Martínez-Lozano, M., Fraticelli, F., Irizarry, J., **Almodóvar-Rivera, I.**, Nunn, M., Kaudmudi, J. (2023). *Impact of Hurricanes Irma and Maria on asthma, hypertension, and depression in a sample of the Puerto Rico population*. *Disaster Medicine and Public Health Preparedness*, 17, e508.
9. Ortiz-Soto, G., Babilonia-Díaz, N.S.; Lacourt-Ventura, M.Y.; Rivera-Rodríguez, D.M.; Quiñones-Rodríguez, J.I., Colón-Vargas, M.; **Almodóvar-Rivera, I.**; Ferrer-Torres, L.E.; Suárez-Arroyo, I.J.; Martínez-Montemayor, M.M. (2023). *Metadherin Regulates Inflammatory Breast Cancer Invasion and Metastasis*. *Int. J. Mol. Sci.* 2023, 24. <https://doi.org/10.3390/ijms24054694>
10. Gómez-Vargas, V., Ortiz-Ortiz, K. J., **Almodóvar-Rivera, I.**, Torres-Cintrón, C. R., Deshmukh, A. A., & Ortiz, A. P. (2022). *Screening History and Survival Among Women With Cervical Cancer in Puerto Rico*. *Journal of Lower Genital Tract Disease*, 10-1097. doi: 10.1097/LGT.0000000000000709

11. **Almodóvar-Rivera, I.A.**; Rosario-Rosado, R.V.; Nazario, C.M.; Hernández-Santiago, J.; Ramírez-Marrero, F.A.; Nunez, M.; Maharaj, R.; Adams, P.; Martinez-Brockman, J.L.; Tessier-Sherman, B.; et al (2022). *Development of the Anthropometric Grouping Index for the Eastern Caribbean Population Using the Eastern Caribbean Health Outcomes Research Network (ECHORN) Cohort Study Data*. International Journal of Environmental Research and Public Health, 19(16), 10415. doi: 10.3390/ijerph191610415
  12. Hernandez-Suarez, D. F., Azzalini, L., Moroni, F., Tinoco de Paula, J. E., Lamelas, P., Campos, C. M., Harada-Ribeiro, M., Martings-Filho, E., Damas-de los Santos, F., Padilla, L., Alcantara-Melendez, M., Abud, M., **Almodóvar-Rivera, I.**, Moura-Schmidt, M., Echavarría, M., Botelho, A.C., Del Rio, V., Quadros, A., & Santiago, R. (2021). *Outcomes of chronic total occlusion percutaneous coronary intervention in patients with prior coronary artery bypass graft surgery: Insights from the LATAM CTO registry*. Catheterization and Cardiovascular Interventions. doi: 10.1002/ccd.30041
  13. Gonzalez, A., Duconge, J., Franqui, H., Feliu, R., Roche, A., **Almodóvar-Rivera, I.** (2021). *Insight on the Genetics of Atrial Fibrillation in Puerto Rican Hispanics*. Stroke Research and Treatment. Volume 2021 1-9. doi: 10.1155/2021/8819896.
  14. **Almodóvar-Rivera, I. A.**, & Maitra, R. (2020). *Kernel-estimated nonparametric overlap-based syncytial clustering*. Journal of Machine Learning Research, 21(122), 1-54.
  15. **Almodóvar-Rivera, I.**, & Maitra, R. (2019). *FAST Adaptive Smoothing and Thresholding for Improved Activation Detection in Low-Signal fMRI*. IEEE Transactions on Medical Imaging. doi: 10.1109/TMI.2019.2915052.
- I was awarded the 2018 Student and Young Investigator Paper Competition award from the ASA Section on Medical Devices and Diagnostic for an early version of the manuscript.**
16. Veach, E., Xique, I., Johnson, J., Lyle, J., **Almodóvar, I.**, Sellers, K. F., & Jackson, M. C. (2014). *Race matters: analyzing the relationship between colorectal cancer mortality rates and various factors within respective racial groups*. Frontiers in public health, 2, 239.
  17. **Almodóvar, I.**, & Pericchi, L. (2012). *New criteria for the choice of training sample size for model selection and prediction: the cubic root rule*. Revista de la Facultad de Ciencias, 1(1), 7-22.

## CONFERENCE PROCEEDINGS

1. Perez, C. M., **Almodóvar-Rivera, I. A.**, Gonzalez-Rodriguez, L. O. I. D. A., Kiefe, C., Rodriguez, J. F., & Rosal, M. C. (2025). *1312-P: Insulin Resistance and Cardiometabolic Risk Factors in Latino Young Adults without Diabetes in Puerto Rico*. Diabetes, 74(Supplement\_1), 1312-P.
2. Mercado-Ortiz, F.J., **Almodóvar-Rivera, I.A.**, García-Ramírez, V.M., Narváez-Sánchez, K.E., Nazario-Delgado, C.M., Rosario-Rosado, R.V. (2025). *An Academic Perspective of Challenges in Doing Population-Based Research in Puerto Rico During the COVID-19 Pandemic: January 7, 2020, Earthquake*. PRHSJ, 44(1; Suppl.).
3. Carrasquillo-Dones E., Rosado-Galindo H., Reyes-Ramos A., Torres-Garcia W., Cifuentes S., Rios-Grant J., Ortiz-Soto G, Ramos-Acevedo N., Acevedo-Esquilin M., Colon-Vargas M, **Almodóvar-Rivera I**, Mora C, Martinez-Montemayor M., Domenech M.; *Abstract 4208:*

*In-vitro modeling of Sonic Hedgehog signaling identifies the extracellular matrix as a regulator of tumor invasion outcomes.* Cancer Res 15 March 2024; 84 (6\_Supplement): 4208. <https://doi.org/10.1158/1538-7445.AM2024-4208>.

4. Rosal, M.C, Lopez-Cepero, A., **Almodóvar I.**, Kiefe, C.I., Tucker, K.L., Person, S., Rodriguez-Orengo, J.F., Perez, C.M. *Abstract P315: Depressive Symptoms and Cardiovascular Health Among Young Adults in Puerto Rico.* Circulation, 147(Suppl\_1),AP315.
5. Perez, C.M., Lopez-Cepero, A., **Almodóvar-Rivera, I.**, Kiefe, C.I., Tucker, K.L., Person, S., Rodríguez-Orengo, J.F. & Rosal, M.C., (2023). *Abstract P638: Sex Differences in Cardiovascular Health Among Young Adults in Puerto Rico.* Circulation, 147(Suppl\_1), pp.AP638-AP638.
6. **Almodóvar-Rivera, I.** (2023) *Kernel-estimated nonparametric diagnostic for outlier detection in a clustering framework* at SIDIM 2023
7. Hernandez-Suarez, D., Azzalini, L., Moroni, F., Quadros, A., Lamelas, P., Campos, C., Harada, M., Martins F., Damas de los Santos, F., Tinoco, J., Alcantara, M., Padilla, L., Echavarria Pinto, M., Schmidt, M., **Almodóvar-Rivera, I.**, & Santiago, R. (2021). *TCT-466 Procedural Success and Clinical Outcomes of Chronic Total Occlusion Percutaneous Coronary Intervention in Patients With Prior Coronary Artery Bypass Graft Surgery: Insights From the LATAM CTO Registry.* Journal of the American College of Cardiology, 78(19\_Supplement\_S), B191-B192.
8. Aviles, T., Rodriguez, J. M., Carro-Ocasio, A., Del Valle, N., **Almodovar, I.**, Ramirez-Marrero, F., & Campos, M. (2020, November). Obesity and Sleep in a Cohort of Hispanic School-Age Children: A Two-Year Follow-Up. In OBESITY (Vol. 28, pp. 128-128). 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: WILEY.
9. Santos-Leon, E., & **Almodóvar-Rivera, I.** *Non-parametric clustering diagnostic for k-means clustering solutions.* Presented at SIDIM 2020.
10. Gómez-Vargas, V., **Almodóvar-Rivera, I.**, Ortiz-Ortiz, K. J., Torres-Cintrón, C. R., & Ortiz-Martínez, A. P. (2019). *Abstract C023: Cervical cancer survival analysis based on screening practices and the socioeconomic position index in Puerto Rico.* DOI: 10.1158/1538-7755.DISP19-C023.
11. Ortiz-Chevres, F., **Almodóvar-Rivera, I.**, Joshipura, K., Rodriguez-Figueroa, L., & Pérez-Cardona, C. M. (2019, November). *Assessment of the sagittal abdominal diameter as an indicator of prediabetes and insulin resistance in overweight and obese adults.* In APHA's 2019 Annual Meeting and Expo (Nov. 2-Nov. 6). American Public Health Association.
12. Hernández-Torres, E., Segarra, M., Villalobos, M., **Almodóvar-Rivera, I.**, Ramirez-Marrero, F., & Martínez, L. D. R. (2019). *Health Related Fitness Comparison between 1st Year and 4th-6th Year College Students in Puerto Rico:* 3387 Board# 75 June 1 9:30 AM-11:00 AM. Medicine & Science in Sports & Exercise, 51(6).
13. Martínez-Colón, L. D. R., Segarra, M., Villalobos, M., **Almodóvar-Rivera, I.**, Ruiz-Nieves, M., & Ramirez-Marrero, F. (2019). *Achievement of Healthy Fitness Zone by Academic Major in College Students from Puerto Rico:* 3383 Board# 71 June 1, 9:30 AM-11:00 AM. Medicine & Science in Sports & Exercise, 51(6).
14. Martínez-Rodríguez, J. A., del Rosario Martínez, L., Nevárez, C., Rivera, M., **Almodóvar, I.**, & Ramírez-Marrero, F. A. (2019). *Physical Activity, Sedentary Time, And BMI In 1st-*

*4th Grade Hispanic Children In Puerto Rico*: 904: Board# 138 May 29 2: 00 PM-3: 30 PM. *Medicine & Science in Sports & Exercise*, 51(6), 228.

15. de la Torre, M. C., Espinosa, A. D. J., Álvarez, C. D., Bernaola, P. R., González, K. M., **Almodóvar-Rivera, I.**, & Pérez-Cardona, C. M. (2018, November). *Impact of Hurricane María upon older adults in Puerto Rico: An assessment of hurricane stressors and depression and anxiety symptoms in the aftermath*. In APHA's 2018 Annual Meeting & Expo (Nov. 10-Nov. 14). American Public Health Association.

### PROFESSIONAL CERTIFICATES

1. Intercesor Profesional de Educación Especial *December 2024*.

### AWARDS AND FUNDING

1. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS) 2024 Judge Travel Award. \$1,500 *November 2024*
2. Department of Energy (DOE) Visiting Faculty Program at Savannah River National Laboratory (SRNL). \$16,000 *May-August 2023*
3. APPU: Fondos viajes congresos (Travel Award). \$ 500 *February 2020*
4. Principal Investigator, *Cross-Cultural Adaptation of the Survey on Working Conditions, Employment, and Health in the aftermath of Hurricanes Irma and Maria in Puerto Rico*. Sub-award from the NIOSH-funded Sunshine Education and Research Center at the University of South Florida. \$8,000.
5. 2019 Symposium on Data Science & Statistics- Student & Early Career Travel Award. \$ 500 *May 2019*
6. Medical Device and Diagnostic (MDD) Section's 2018 student and young investigator competition paper award. Received at the Joint Statistical Meeting (JSM) 2018 in Vancouver, BC. \$300 *August 2018*.

### SOFTWARE AUTHORED

1. **FIRSTkit**: R package for a ShinyApp to teaching introductory statistics.  
Available at <https://github.com/ialmodovar/FIRSTkit>  
Shiny App: <https://ialmodovar.shinyapps.io/ORBayesTtest/>.
2. **ORBayesTtest**: R package for the objective and robust Bayesian analysis for the one-sample and two-sample means.  
Available at <https://github.com/ialmodovar/ORBayesTtest>  
Shiny App: <https://ialmodovar.shinyapps.io/ORBayesTtest/>.
3. **ggandrews**: R package for multivariate data visualization using Andrews curves and ggplot2.  
Available at <https://github.com/ialmodovar/ggandrews>.
4. **SynClustR**: R package for syncytial clustering algorithms.  
Available at <https://github.com/ialmodovar/SynClustR>.
5. **RFASTfMRI**: R package for Fast Adaptive Smoothing and Threshold (FAST) in functional magnetic resonance imaging (fMRI).  
Available at <https://github.com/ialmodovar/RFASTfMRI>.

## SUPERVISED STUDENTS

1. (Current) Bryan Olaya, MS, Mathematical Statistics (Expected 2026).
2. (Current) Dania Rodezno, MS, Mathematical Statistics (Expected 2026).
3. (Current) Maria C. León, MS, Mathematical Statistics (Expected 2026).
4. (Current) Miriam Garcia, MS, Mathematical Statistics (Expected 2026).
5. (Current) Yeily Guzmán-Castro, Mathematical Statistics (Expected 2025). **Yeily Guzmán-Castro received the Innovation & Technology in Engineering research presentation award at Simposio de Investigación for her work titled "A semi-supervised  $k$ -means directions clustering for data in the sphere"**
6. (Current) Yeison Rodríguez, Mathematical Statistics (Expected 2025).
7. (Current) Taix Pacheco, BS, Computer Sciences (2025).
8. Michael Santiago, MS. Epidemiology. University of Puerto Rico Medical Sciences Campus.
9. Juan Florez, MS. Scientific Computing (2024). **Juan Florez received the Computer & Information Sciences, Statistics & Engineering research presentation award at SACNAS 2023 for his work titled "An Adaptive Smoothing Bayesian Approach for Activation Detection in fMRI"**
10. Fabian Segarra, BS. Industrial Biotechnology (2023). University of Puerto Rico at Mayagüez.
11. Eduar Castañeda, MS. Mathematical Statistics (2023). *An Initialization Algorithm for Clustering Problems using a Distribution-Free Method.*
12. Keyla Narváez, MS. Epidemiology (2022). University of Puerto Rico Medical Sciences Campus.
13. Fernando Mercado, MS. Epidemiology (2022). University of Puerto Rico Medical Sciences Campus.
14. Veronica García, MS. Epidemiology (2022). University of Puerto Rico Medical Sciences Campus.
15. Esteban Vizcarrondo-Garrastegi, MS, Mathematical Statistics (2021). *Association between the chemical manufacturing sector and cancer incidence in Puerto Rico using spatial regression analysis.* University of Puerto Rico at Mayagüez.
16. Marijulie Martinez Lozano, DrPH. Epidemiology (2021). *Impact of Hurricanes Irma and Maria on major chronic diseases in a Puerto Rico Sample.* Doctoral Student from the Ponce Health Sciences University.
17. Kelyvette Ortiz-Fontanez: *Mortality associated with mental health diseases in Puerto Rico: 2015-2018* MS. Demography (2020).
18. Daniela Medina-Camacho: *Sociodemographic profile of mothers in Puerto Rico according to the birth intervals: 2006- 2018* MS. Demography (2020).
19. Vanessa Gómez-Vargas: *Survival analysis of screening patients with cervical cancer in Puerto Rico.* MS. Epidemiology (2019).
20. Faviola Ortiz-Chevres: *Association of measures of abdominal obesity, prediabetes, and insulin resistance in overweight and obese adults.* MS. Epidemiology (2019).
21. Laura Zayas-Martínez: *Development of the Caribbean Anthropometric Index (CAI).* MS. Epidemiology (2019).

22. Reynaldo Pérez-Alicea: *Relationship between Substance Use and Risky Sexual Behaviors in a Population-Based Sample of Hispanic Women*, MS. Epidemiology (2017).
23. Mayrim Bernard-Vega: *Disparities in the prevalence of diabetes, comorbidities and the use of health services by type of health insurance in the pediatric population of Puerto Rico*, MS. Epidemiology (2017).

## PRESENTATIONS

1. Data science tools for image analysis. Workshop at University of Puerto Rico at Mayagüez. May 2025.
2. An Academic Perspective of Challenges in Doing Population-Based Research in Puerto Rico During the COVID-19 Pandemic: January 7, 2020, Earthquake. Mercado-Ortiz, F.J., Almodóvar-Rivera, I.A., García-Ramírez, V.M., Narváez-Sánchez, K.E., Nazario-Delgado, C.M., Rosario-Rosado, R.V. University of Puerto Rico, Medical Sciences Campus, 45th Annual Research and Education Forum, April 2025.
3. Incorporating seasonality in functional magnetic resonance imaging to assess reliability. *Department Seminar*. University of Puerto Rico at Mayagüez. April 2025
4. Incorporating seasonality in functional magnetic resonance imaging to assess reliability. Computational and Methodological Statistics 2024, King's College, London, UK. December 2024
5. Software Development for Analysis of LiDAR Pulsed Laser Measurements at the Savannah River Site, Joint Statistics Meeting, Portland, Oregon. August 2024
6. El Impacto de Star Wars en nuestras vidas, Star Wars Week at UPR, Mayagüez, Puerto Rico, April 2024
7. An Objective and Robust Bayes Factor for the Hypothesis Test: One Sample and Two Population Means. SIDIM XXXIV, Mayagüez, Puerto Rico. March 2024
8. Computational statistics, data sciences, and responsible machine learning/artificial intelligence, Collaborative Workshop at SRNL, Aiken, South Carolina. June 2023
9. Kernel Estimated Nonparametric Detection of Outlier. SIDIM XXXVIII, Mayagüez, Puerto Rico. February 2023
10. Initialization of  $k$ -means clustering algorithms using the empirical likelihood approach. Joint Mathematics Meeting 2023, Boston, USA. January 2023
11. Kernel Estimated Nonparametric Detection of Outlier. Computational and Methodological Statistics 2022, King's College, London, UK. December 2022
12. "Conducting population-based research in a community affected by earthquakes during the COVID-19 pandemic", XXIII Congreso de investigación y creación académicas, University of Puerto Rico at Ponce May 2022.
13. Kernel-estimated Nonparametric Overlap-Based Syncytial Clustering. *Invited Seminar*. University of Puerto Rico at Mayagüez. February 2021
14. FAST: Fast adaptive smoothing and thresholding for accurate activation detection in low-signal functional magnetic resonance imaging. *Invited Webinar FDA* November 2020
15. Survey on Working Conditions, Employment, and Health Methodology for validation in Puerto Rico. *Southeast Regional Research Symposium*. Birmingham, Alabama. February 2020

16. Kernel-estimated Nonparametric Overlap-Based Syncytial Clustering. *Joint Mathematics Meeting*. Denver, Colorado. *January 2020*
17. Kernel-estimated Nonparametric Overlap-Based Syncytial Clustering. *2019 Symposium on Data Science & Statistics*. Bellevue, Washington. *May 2019*
18. Invited Seminar: The Importance of Biostatistics in Clinical and Translational Research. *Research Seminar at University of Puerto Rico-Medical Sciences Campus*. San Juan, Puerto Rico. *February 2019*
19. FAST: Fast adaptive smoothing and thresholding for accurate activation detection in low-signal functional magnetic resonance imaging. *Joint Statistics Meeting 2018*. Vancouver, British Columbia, Canada. *August 2018*.
20. Some contributions to  $k$ -means clustering algorithm. *Department Seminar at Iowa State University*. Ames, Iowa. *April 2017*
21. Efficient  $k$ -means semi-supervised clustering algorithms for Big Data Problems. *Graduate Minority Assistantship Program (GMAP) Research Symposium at Iowa State University*. Ames, Iowa. *October 2015*
22. Invited Seminar: A semi-supervised  $k$ -means clustering algorithm. *SIAM-ISU Student Chapter Seminar at Iowa State University*. Ames, Iowa. *November 2013*
23. A semi-supervised  $k$ -means clustering algorithm. *40th SACNAS National Conference*. San Antonio, Texas. *October 2013*
24. The Objective and Robust Bayesian Student's  $t$  test *40th SACNAS National Conference*. San Antonio, Texas. *October 2013*
25. The Objective and Robust Bayesian Student's  $t$  test. *SIDIM-Seminario Inter-universitario de Investigación en Ciencias Matemáticas XXVI*. Humacao, Puerto Rico. *March 2011*
26. Bayesian Discrimination of the Binomial Model. *Presentation Research Experienced for Undergraduate (REU)*. Iowa City, Iowa. *July 2009*

## COURSES TAUGHT

1. **Applied Multivariate Statistical Analysis (Graduate):** Full instructor, prepared lectures and evaluations. Software used R and Python.
2. **Theory of Linear Models (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R.
3. **Theory of Statistics (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R.
4. **Applied Linear Regression (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R and Python.
5. **Introduction to Statistical Learning (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R and Python.
6. **Probability Theory (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R.
7. **Introduction to Experimental Design (Graduate Level):** Full instructor, prepared lectures and evaluations. Software used R.



8. **Introduction to Applied Statistics:** Full instructor, prepared lectures and evaluations. Software used R.
9. **Data Mining:** Full instructor, prepared lectures and evaluations. Software used R.
10. **Applied Multivariate Analysis:** Full instructor in charge of lectures and homework. Techniques for displaying and analyzing multivariate data software used R.
11. **New Topics in Biostatistics:** Co-Teaching instructor, in charge of lectures and homework. Topics in machine learning. I led sessions on topics including time series, classification, principal components, and clustering in the health sciences, specifically for epidemiology students.
12. **Computational Statistics:** Full instructor in charge of lectures, homework, and exams. Introduction to the R statistical software in the health sciences.
13. **Clinical Laboratory Statistics:** Full instructor in charge of lectures, homework, and exams. Introductory statistics class for medical technologist majors.
14. **Applied Nonparametric Statistics:** Full instructor in charge of lectures, homework, and exams. Topics covered are nonparametric methods and inference in the health sciences. Software used R.
15. **Applied Survey Sampling:** Full instructor in charge of lectures, homework, and exams. Topics include sample surveys, survey processes, and methods of designing sample surveys in the health sciences. Software used R.
16. **Introduction to Biostatistics I & II:** Full instructor in charge of lectures, homework, and exams. Topics covered include statistical concepts and their applications in health science, as well as data collection, organization, and analysis, along with elementary probability, distributions, regression, estimation, and hypothesis testing. Software used R.
17. **Introduction to Business Statistics:** Teaching graduate assistant in charge of the laboratory section. Topics: multiple regression analysis, model diagnostics, applications in the analysis of variance and time series using JMP.

### EXTRACURRICULAR ACTIVITIES

1. Reviewer for the National Science Foundation.
2. Member of the Curriculum Committee at the Department of Mathematical Sciences.
3. Computational Statistician and data scientists member for the Doctoral Program in Computing and Information Sciences and Engineering (CISE) Graduate Committee. *August 2022-Present*
4. Member of the Assessment Committee for the College of Arts and Sciences. *August 2022-Present*
5. Undergraduate Research Mentor for Puerto Rico-Louis Stokes Alliances for Minority Participation (PR-LSAMP). *August 2022-Present*
6. Statistics Committee at Department of Mathematical Sciences at the University of Puerto Rico at Mayagüez. *July 2021-Present*
7. Committee member for the 2022 ASA Statistics Computing and Statistical Graphics (SCSG) Student Paper Competition award.

8. Committee member for the 2021 ASA Statistics Computing and Statistical Graphics (SCSG) Student Paper Competition award.
9. Reviewer for the R and Puerto Rico Health Sciences Journal. *September 2020-Present*
10. Informatics Committee of the School of Public Health: President *September 2017-May 2020*
11. Asociación de Profesores Puertorriqueños Universitarios (APPU) *April 2018-2021*
12. Statistical Computing Section at American Statistical Association (ASA) *December 2016-Present*
13. Medical Devices and Diagnostics (MDD) section at American Statistical Association (ASA) *December 2016-Present*
14. American Statistical Association (ASA) *January 2012-Present.*

## SKILLS

1. Languages:
  - (a) Spanish: write fluent, read fluent, and speak fluent.
  - (b) English: write fluently, read fluently, and speak fluently.
2. Software Experience:
  - (a)  $\text{\TeX}$ ,  $\text{\LaTeX}$  : Use  $\text{\LaTeX}$  homework, projects, articles and most documents style.
  - (b) Rmarkdown and shiny, homework, projects, and packages.
  - (c) C: program for efficient computation.
  - (d) GSL: GNU Scientific Library (GSL) is a numerical library for C and C++ programmers.
  - (e) Python: used for data sciences and machine learning algorithms with efficient programming.
  - (f) R/JMP/Stata software: R is mainly used for research/teaching purposes, such as non-parametric statistics, cluster analysis, data visualization, and unsupervised learning. JMP/Stata are mainly used for teaching purposes.
  - (g) AFNI/SUMA: Software for the statistical analysis of functional neuroimaging.
  - (h) Fedora GNU/Linux