

Curriculum Vitae
Félix E. Rivera-Mariani, PhD FAAAAI

Bridging Multidisciplinary and Computational Approaches to Advance Equitable Respiratory, Immune, and Environmental Health – Through Biomarker Discovery, Inclusive Mentoring, and Science Communication.

Date: 08/14/2026

I. Personal Info:

A. Phone:

- a. Personal: [REDACTED]
- b. Work: (561)-237-7051

B. Email

- a. Personal: felixrm@friveram.com
- b. Work: friveramariani@lynn.edu

C. Address:

- a. Home:
[REDACTED]
[REDACTED]
- b. Work:
College of Arts and Sciences
Lynn University
ASAF 107
3601 N Military Trail
Boca Raton, FL 33431

I. Education

A. Institutional

- 2004 – 2010 **Doctor of Philosophy**, Microbiology and Medical Zoology
Dissertation: *Sensitization to Basidiomycetes and Airborne Fungal Particulate by Asthmatic and Allergic Rhinitis Subjects*
Department of Microbiology, School of Medicine, University of Puerto Rico – Medical Sciences Campus, San Juan, PR
- 1996 – 2001 **Bachelor of Science**, Biology with Minor in Chemistry
(Attended via Baseball Scholarship)
Southeastern Louisiana University, Hammond, LA

B. Non-Institutional

- 2024 - 2026 **Faculty Success Program**
National Center for Faculty Development and Diversity
- 2020 – 2021 **Scholar**, Leading Emerging and Diverse Scientists to Success (LEADS)
Institute for Clinical Research Education, University of Pittsburgh, Pittsburgh, PA.
NIGMS-funded (R25GM116740)
- 2019 – 2020 **Scholar**, Advanced Respiratory Research for Equity (AIRE) of the Programs to Increase Diversity Among Individuals Engaged in Health-Related Research (PRIDE), University of Arizona, Tucson, AZ. NHLBI-funded (R25HL126140)
- 2013 – 2014 **Fellowship**, Science Teaching
American Society of Microbiology, Washington, DC

2010 – 2013 **Postdoctoral Fellowship**, Environmental Health Sciences
Department of Environmental Health and Engineering, School of Public Health,
Johns Hopkins University, Baltimore, MD

C. Additional Training

2025 **Generative AI Automation Specialization** (4-courses series)
Vanderbilt University (on www.coursera.org)
AI Agents for Leaders Specialization (3-courses series)
Vanderbilt University (on www.coursera.org)
Generative AI Leadership and Strategy Specialization (3-courses series)
Vanderbilt University (on www.coursera.org)
Generative AI for Educators and Teachers Specialization (4-courses series)
Vanderbilt University (on www.coursera.org)
Generative AI Assistants Specialization (3-courses series)
Vanderbilt University (on www.coursera.org)
Prompt Engineering Specialization (3-courses series)
Vanderbilt University (on www.coursera.org)
2019 **Health Disparities: A Translational Research Approach** (Online)
University of Puerto Rico – Medical Sciences Campus
2016 – 2017 **Mastering Software Development in R** (5-courses series)
Johns Hopkins University (on www.coursera.org)
Bioinformatics Specialization (7-courses series)
University of California – San Diego (on www.coursera.org)
Genomics Data Science Specialization (8-courses series)
Johns Hopkins University (on www.coursera.org)
Executive Data Science Specialization (5-courses series)
Johns Hopkins University (on www.coursera.org)
Systems Biology and Biotechnology Specialization (6-courses series)
Icahn School of Medicine at Mount Sinai (on www.coursera.org)
Data Science Specialization (10-courses series)
Johns Hopkins University (on www.coursera.org)
2015 **Statistical Reasoning for Public Health I: Estimation, Inference, Interpretation**
Statistical Reasoning for Public Health II: Regression Models
Johns Hopkins University (on www.coursera.org)

II. Work Experience

A. Academic

2024 – Present **Associate Professor**, College of Arts and Sciences, Lynn University,
Boca Raton, FL
2026 – Present **Associate Professor (Ad-Honorem)**, Department of Microbiology and
Immunology, School of Medicine, University of Puerto Rico – Medical
Sciences Campus, San Juan, PR
2022 – 2023 **Assistant Scientist**, Division of Environmental and Public Health,
Department of Public Health Sciences, University of Miami, Miller School
of Medicine, Miami, FL

- 2018 – 2022 **Assistant Professor**, College of Biomedical Sciences, Larkin University, Miami, FL
- 2017 (Aug – Dec) **Adjunct Professor**, College of Biomedical Sciences, Larkin University, Miami, FL
- 2015 (Jan – May) **Visiting Professor**, Department of Microbiology, School of Medicine, University of Puerto Rico – Medical Sciences Campus, San Juan, PR
- 2014 **Adjunct Professor**, Keiser University, Pembroke Pines Campus, Pembroke Pines, FL
- 2014 – 2017 **Adjunct Professor**, College of Natural Sciences, Health and Wellness, Miami Dade College, Miami, FL

B. Non-Academic

- 2013 – Present **Consultant** in Immunology, Environmental Health, Exposure Science, Computational Biology, and Data Science
Felix E. Rivera-Mariani PhD LLC (FL #L21000280781, PR #467494)
Fort Lauderdale, FL
website: <https://www.friveram.com>
- 2012 – 2015 **Developmental Editor**, American Journal Experts (subsidiary of Research Square LLC), Durham, NC
- 2001 – 2004 **Microbiology Analyst**, Environmental Quality Laboratories, Bayamon, PR

C. Entrepreneurship

- 2020 – Present **Founder, Mentor, and Livestream-Digital Content Producer**
Vistazo A La Ciencia LLC, a bilingual science communication initiative (FL #L21000197342, PR #465772)
Fort Lauderdale, FL

Mission: We develop dialogues and educational content, from the perspective and needs of society, on science issues through 1) various production strategies, 2) interviews with experts, 3) collaborations with scientific organizations, and 4) mentoring and fostering the leadership of minority groups.

website: <https://www.vistazoalaciencia.com>

- 2018 – Present **Founder, Director, Mentor, Principal Investigator**
RIPLRT Institute: A Respiratory and Immunology Project and Laboratory Research Team (a scientific research and mentoring initiative)
Fort Lauderdale, FL

Mission: To advance environmental, respiratory, and immunological health through collaborative research, data-driven discovery, and inclusive mentoring. The Institute integrates exposure science, immune bioactivity, computational approaches, and translational education to develop equitable solutions and prepare the next generation of diverse scientific leaders.

website: <https://www.riplrt.com>

2026 – Present

Founder and Principal

FERMLLC Ventures

Fort Lauderdale, FL

A science, technology, consulting, and analytics portfolio of *Felix E. Rivera-Mariani PhD LLC* (FL #L21000280781, PR #467494)

Mission: FERMLLC Ventures develops AI-assisted systems, scientific and operational consulting, data analytics, workflow automation, and custom web applications for small business, research teams, public health partners, laboratories, and mission-driven organizations.

website: <https://www.fermlcventures.com>

Core Branches and Platforms:

- **FERMLLC Technologies:** Practical AI-assisted systems, workflow automations, operational dashboards, and custom-web applications for small business, research teams, laboratories, and mission-driven organizations.
- **FERMLLC Consulting:** Scientific strategy, expert review, workflow implementation, and training for research teams, health and environmental organizations, and mission-driven institutions.
- **FERMLLC Analytics:** Business, operational, and public health analytics, including reporting pipelines, decision dashboards, and operational intelligence.

III. Teaching Experience

A. Graduate Level Teaching

2024 – Present

Lynn University

Graduate Biochemistry (SCI650)

Advanced Physiology (SCI560)

Advanced Topics in Biology (SCI695)

Capstone in Biomedical Sciences (SCI690)

Journal Club (SCI500)

2017 – 2022

College of Biomedical Sciences, Larkin University

Molecular Genetics (MSB520)

Biochemistry II (MSB502)

Biochemistry I (MSB501)

Immunology (MSB513)

2015 – 2016

Dept of Microbiology, School of Medicine, University of Puerto Rico

Principles of Immunology (MICR 8540)

Invited Instructor

B. Undergraduate Level Teaching

2024 – Present

Lynn University

Undergraduate Biochemistry (SCI392)

Microbiology (SCI325)

General (Physical) Chemistry (SCI131)

Science and Society (DSL200)

2014 – 2018

Miami Dade College

General Education Biology (BSC1005)

Microbiology (MCB2010)
Microbiology Laboratory (MCB2010L)
Principles of Microbiology (MCB3023)
Microbiology Laboratory Upper Division (MCB3023L)
Principles of Biology (BSC2011)
Intro to Biochemistry (BCH3023)
Intro to Biochemistry Laboratory (BCH3023L)

2014 – 2015

Keiser University, Pembroke Pines, FL

Forensic Biology
Forensic Anatomy
General Microbiology

IV. Publications, Posters/Oral Presentations, Data Sciences Reports, and Invited Talks

**Mentored trainee (student, postdoctoral fellow, alumni research fellow, early-career scientist);*

#Corresponding author

A. Peer-Reviewed

1. Rivera-Mariani FE[#], Campbell T*, Ramsey M*, Bolaños-Rosero B.. Non-linear Generalizable Machine Learning Re-Analysis of Plasma Proteomics and Single-Cell Immune Network for Classification of COVID-19. *J Immunol*. DOI: 10.1093/jimmun/vkag141.1059.
2. Rivera-Mariani FE[#], Armina-Rodríguez A*, Campbell T*, Solomon E*. Mechanism-Aware ML Identifies a Protease-Chemokine-Galectin (PCG) Axis that Links Plasma Proteomics to Single-Cell Signaling and Enables Compact Severity Classification of COVID-19. *J Biological Chem*. DOI: 10.1016/j.jbc.2026.112618.
3. Rivera-Mariani FE[#], Borrero-Aponte A, Bolaños-Rosero B. Fungal Spores as a 1-2 Week Leading Indicator of Viral Surges: Forecasts Uplift over Seasonal Baselines. *Journal of Allergy and Clinical Immunology*. 2026. DOI: 10.1016/j.jaci.2025.12.885.
4. Rivera-Mariani FE[#], Srour H*, Vélez-Torres LN*, Bolaños-Rosero B, Godoy-Vitorino F, Maestre JP, Kinney K, and Cavallin-Calanche H. Indoor dust, immune activation, and household exposures risk after Hurricane Maria: a two-year pilot prospective cohort study in Puerto Rico. *Journal of Exposure Science and Environmental Epidemiology*. 2025.
5. Vélez-Torres LN*, Godoy-Vitorino F, Maestre JP, Kinney K, Rivera-Mariani FE, Cavallin-Calanche H, and Bolaños-Rosero B. Culture and molecular methods to identify to species-level *Aspergillus* isolates sampled from homes affected in the aftermath of Hurricane Maria in Puerto Rico. *Scientific Reports*. 2025; 15(35922).
6. Wang R, de Angel Sola D, Rivera-Mariani FE, Bolaños-Rosero B, Rosario Matos N, Wang L. Dysbiosis in Nasal Mycobiome of Infants Born in the Aftermath of Hurricane Maria. *Microorganisms*. 2025; 13(8):1784.
7. Chapman M, Chew GL, Crane J, Morawska L, Perzanowski MS, Rivera-Mariani FE. In memoriam: Euan R. Tovey, July 11, 1948, to June 8, 2024. *J Allergy Clin Immunol: Global*. 2024. 4(1). 100362.
8. Hernández-González X*, Rivera-Mariani FE, Méndez L, and Bolaños-Rosero B. Increase in the Susceptibility to Covid-19 During the Fungal Spore Season Among Residents of San Juan and Caguas, Puerto Rico. *Puerto Rico Health Sciences Journal*. 2023. 42(Suppl): 19.
9. Levetin E, Pityn PJ, Ramon GD, Pityn E, Anderson J, Bielory L, Dalan D, Codina R, Rivera-Mariani FE, Bolaños-Rosero B. Aeroallergen Monitoring by the NAB: A Review of the Past and a Look into the Future. *J Allergy Clin Immunol In Practice*. 2022. 11(5): 1394-1400.

10. Vélez-Torres L*, Bolaños-Rosero B, Godoy-Vitorino F, Rivera-Mariani FE, Maestre J, Kinney KA, Cavallin H. Culture-Based Characterization of Fungal Communities in Homes in San Juan, Puerto Rico following Hurricane Maria. *Peer J*. 2022. 10:e12370.
11. Rivera-Mariani FE[#], Almaguer M, Jesus Aira M, Bolaños-Rosero B. Comparison of Atmospheric Fungal Spore Concentrations Between Two Main Cities in the Caribbean Basin. *Puerto Rico Health Sciences Journal*. 2020. 39(3): 235-242.
12. Suárez-Martínez EB, Rivera-Mariani FE, Ocasio M, Arroyo G. Microbiome and Respiratory Diseases: A Study Using a Novel Non-invasive Saliva Sample Collection Method. *The FASEB Journal*. 2020. 34 (S1): 1-1.
13. Nawaz J, Pullen F, Rivera-Mariani FE, Rizvi SAA, Sánchez-González MA, Grogan T. Spring is Here, Now What? Know the Differences between a Cold, Flu, Coronavirus, and Allergy. *Emerging Infect Dis Diag J*. 2020. EIDDJ-10010.
14. Rivera-Mariani FE[#], Srour H*, Romenko F*, Bellinger S*, and Stateman A*. Profile of Dendritic Cells Surface Biomarkers In Nasal And Oral Mucosa Of Human Subjects Reactive to grass Pollen and House Dust Mites. *J Immunol*. 2019. 202 (1 Suppl) 55.18.
15. Srour HH*, Baguley JK*, Bellinger SV*, Stateman AJ*, Rivera-Mariani FE[#]. Comparing the Magnitude of Meteorological Variables and Air Pollutants As Contributing Factors of Atopic Dermatitis Symptoms. *J Allergy Clin Immunol*. 2019. 143(S2). AB235.
16. Stateman AJ*, Srour HH*, Baguley JK*, Bellinger SV*, Rivera-Mariani FE[#]. Comparison Between PM2.5 Mevels on East Coast and State of California in Relationship to Asthma. *J Allergy Clin Immunol*. 2019. 143(S2). AB24.
17. Bellinger SV*, Stateman AJ*, Srour HH*, Baguley JK*, Rivera-Mariani FE[#]. Evaluating Differences in Prevalence of Food Allergies Between Two Geographic Regions: Australia and US. *J Allergy Clin Immunol*. 2019. 143(S2). AB268.
18. Baguley JK*, Bellinger SV*, Srour HH*, Stateman AJ*, Rivera-Mariani FE[#]. Gender Difference in Dendritic Cell Population in Nasal and Oral Cavity Between Allergen and Non-Allergic Subjects. *J Allergy Clin Immunol*. 2019. 143(S2). AB228.
19. Rivera-Mariani FE[#], Srour HH*, Baguley JK*, Bellinger SV*, Stateman AJ*, Bolaños-Rosero B. Relationship of Serological Reactivity to Cytoplasmic Extracts from Spores of *Ganoderma applanatum* and Commercial Extracts of Indoor, Mitosporic Fungi, and Farm Animal Allergens Among Puerto Rican Subjects. *J Allergy Clin Immunol*. 2019. 143(S2). AB301
20. Gaspar PM, Schreb CA, Rivera-Mariani FE. Hydration Status of Assisted Living Memory Care Residents. *J Gerontological Nursing*. 2019. 45(4): 21-29.
21. Srour H*, Fomenko R*, Baguley J*, Bellinger S*, Jordan A*, Sutton J*, Santana M*, Marull A*, Abdalhuk M*, Rivera-Mariani FE[#]. Pilot study of publicly available data to evaluate the relationship between forest fires and emergency department visits due to asthma in the state of California [version 2; peer review: 1 approved]. *F1000Research* 2019, 7:1232
22. Rivera-Mariani FE[#], Srour HH*, Baguley JK*, Bellinger SV*, Stateman AJ*, Bolaños-Rosero B. Relationship of serological reactivity to cytoplasmic extracts from spores of *Ganoderma applanatum* and commercial extracts of indoor, mitosporic fungi, and farm animal allergens among Puerto Rican subjects. *Journal of Allergy and Clinical Immunology*. 2019. DOI 10.1016/j.jaci.2018.12917.
23. Abdalhuk M*, Jordan A*, Wagimin R*, Stamitoles C*, Bellinger S*, Baguley J*, Srour H*, Fomenko R*, Sutton J*, Santana M*, Marull A*, Rivera-Mariani FE[#]. Evaluating the Association of Race, Ethnicity, and Food Allergens in the Development of Childhood Asthma: Re-Analysis

of Publicly-Available Retrospective Cross-Sectional Cohort Data. *F1000Research*. 2018. 7:1209.

24. Rivera-Mariani FE[#] and Bolaños-Rosero B. Principal Component Analysis to Evaluate Relationships in Reactivity to Commercial Extracts and Uncharacterized Fungi among Asthmatic and Allergic Rhinitis Subjects. *J Immunol*. 2018 (1 Supp, 44.2).
25. González de Leon J*, González Méndez R., Cadilla Vázquez CL, Rivera-Mariani FE, Bolaños-Rosero, B. Serological Reactivity and Identification of Immunoglobulin E – Binding Proteins of Xerophilic Fungus *Aspergillus penicilloides* Crude Mycelial Mat Extract in Puerto Rican Atopic Subjects. *Int Arch Allergy Immunol*. 2018. 175: 147-159.
26. Vila-Herester F*, Rivera-Mariani FE, Bolanos-Rosero B. Serological Reactivity and IgE-binding Polypeptides to *Ganoderma applanatum* Cruse Spore Cytoplasmic Extract in Puerto Rico Subjects. *Int Arch Allergy Immunol*. 2017; 172:139–149.
27. Bose S, Rivera-Mariani FE, Chen R, Williams D, Aloe, Belli D, Breyse, PN, Diette G, Hansel N. Domestic Exposure to Endotoxin and Respiratory Morbidity in Former Smokers with COPD. *Indoor Air*. 2016. 26(5): 734-42.
28. Vesper S, Choi H, Perzanowski P, Acosta LM, Divjan A, Bolaños-Rosero B, Rivera-Mariani FE, Chew GL. Comparison of Mold Populations in Settled Dust and Dust Mite Allergens in Mattress Dust Samples in the Puerto Rico Health Regions. *Int J Environ Health Research*. 2016. 26(2): 198-207.
29. Hasiwa N, Daneshian M, Bruegger P, Fennrich S, Fleck S, Hochadel A, Hoffman S, Rivera-Mariani FE, Rockel C, Schindler S, Spreitzer I, Stoppelkamp S, Vysyaraju K*, Hartung T. Addendum to Evidence for the Detection of non-Endotoxin Pyrogens by the Whole Blood Monocyte Activation Test. *Altex*. 2014. 31 (4): 499.
30. Hasiwa N, Daneshian M, Bruegger P, Fennrich S, Fleck S, Hochadel A, Hoffman S, Rivera-Mariani FE, Rockel C, Schindler S, Spreitzer I, Stoppelkamp S, Vysyaraju K*, Hartung T. Addendum to Evidence for the Detection of non-Endotoxin Pyrogens by the Whole Blood Monocyte Activation Test. *Altex*. 2014. 31 (2): 226.
31. Vysyaraju K*, Rivera-Mariani FE, Negherbon S*, Hogberg H, Hartung T. Whole Blood Assay detects endotoxin and non-endotoxin pyrogens. *J Immunol*. 2023. (Suppl 1) 125.22.
32. Hasiwa N, Daneshian M, Bruegger P, Fennrich S, Fleck S, Hochadel A, Hoffman S, Rivera-Mariani FE, Rockel C, Schindler S, Spreitzer I, Stoppelkamp S, Vysyaraju K*, Hartung T. Erratum to: Evidence for the Detection of non-Endotoxin Pyrogens by the Whole Blood Monocyte Activation Test. *Altex*. 2013. 30 (3): 352.
33. Rivera-Mariani FE[#], Vysyaraju K*, Negherbon J*, Levetin E, Horner WE, Hartung T, Breyse PN. Comparison of the Interleukin-1 β -inducing Potency of Allergenic Spores from Higher Fungi (Basidiomycetes) in a Cryopreserved Human Whole Blood System. *International Archives of Allergy and Immunology*. 2013. 163 (2): 154-62.
34. Rivera-Mariani FE[#]. Cryopreserved Human Whole Blood: A Human-Based *In-Vitro* Immunotoxicological System Expanded into Environmental Health and Medical Mycology Studies. Invited Special issue of *ATLA*. 2013. 41(6): 483-90.
35. Hasiwa N, Daneshian M, Bruegger P, Fennrich S, Fleck S, Hochadel A, Hoffman S, Rivera-Mariani FE, Rockel C, Schindler S, Spreitzer I, Stoppelkamp S, Vysyaraju K, Hartung T. Evidence for the Detection of Non-Endotoxin Pyrogens (NEPS) by the Whole Blood Monocyte Activation Test. *ALTEX*, 2013. 30(2): 169-208.

36. Rivera-Mariani FE[#], Mihalic JN, Rule AM, Breysse PN. Immunodetection of Airborne (1-3)- β -D-glucan-carrying Particles with the Halogen immunoassay in Occupational Setting. *J Immunol Methods*. 2013. 388: 86-89.
37. Rivera-Mariani FE[#]. Rethinking our Postdoctoral Training. *Postdoctoral Journal*. 2012; 2 (2): 27-29.
38. Rivera-Mariani FE[#], Matsui E, Breysse PN. Performance of the Halogen Immunoassay to Assess Airborne Mouse Allergen-Containing Particles in a Laboratory Animal Facility. *Journal of Exposure Science and Environmental Epidemiology*. 2012. 24 (1): 3-8.
39. Rivera-Mariani FE[#], Vysyaraju K*, Levetin E, Hartung T, Breysse PN. Determination of the Proinflammatory Potential of Spores from Different Basidiomycetes Species with a Human Whole Blood Assay. *J Immunol*. 2012; 188: AB55.13.
40. Rivera-Mariani FE[#] and Bolaños-Rosero B. Allergenicity of Airborne Basidiospores And Ascospores: Need for Further Studies. *Aerobiologia* 2012: 28(2): 83-97.
41. Rivera-Mariani FE[#], Hartung T, Breysse PN. Evaluation of the Pro-inflammatory Activity of Basidiospores and Spore-bearing Tissue from the Mushroom *Chlorophyllum molybdites* using Human Whole Blood. *J Allergy Clin Immunol*. 2012; 129(2): AB18.
42. Rivera-Mariani FE[#], Nazario-Jiménez S, López-Malpica F, and Bolaños-Rosero B. Skin Test Reactivity of Allergic Subjects to Basidiomycetes' Crude Extracts in a Tropical Environment. *Medical Mycology*. 2011. 49(8): 887-91.
43. Rivera-Mariani FE[#], Nazario-Jiménez S, López-Malpica F, and Bolaños-Rosero B. Sensitization to Airborne Ascospores, Basidiospores, and Fungal Fragments by Allergic Rhinitis and Asthmatic Subjects in San Juan, Puerto Rico. *International Archives of Allergy and Immunology*. 2011; 155(4): 322-34.
44. Rivera-Mariani FE[#], Nazario-Jiménez S, López-Malpica F, and Bolaños-Rosero B. Prevalence of IgE Reactivities by Rhinitis and Asthmatic Patients to Airborne Particulate. *J Allergy Clin Immunol*. 2010; 125(2): AB80.
45. Quintero E, Rivera-Mariani FE, and Bolaños-Rosero B. Analysis of Environmental Factors and Their Effects on Fungal Spores and Pollen in the Atmosphere of a Tropical Urban Area (San Juan, Puerto Rico). *Aerobiologia*. 2010; 26(2): 113-124.

B. Submitted

*Mentored trainee (student, postdoctoral fellow, alumni research fellow, early-career scientist);

#Corresponding author

1. Rivera-Mariani FE[#], Srour H*, Vélez-Torres LN*, Bolaños-Rosero B, Godoy-Vitorino F, Maestre JP, Kinney K, and Cavallin-Calanche H. Pro-inflammatory profiles of Puerto Rican and South Florida residents to settled dust from water-damaged households in the aftermath of Hurricane Maria in San Juan, Puerto Rico.
2. Ellis-Gilliam A*, Chen C, Horney J, Zhang Z, Wy C, Rivera-Maria FE. Machine Learning Prediction of Post-Acute Sequelae of SARS-CoV-2 Identifies Albumin, ALT, and New-Onset Lung Disease as Top Predictors.
3. Ellis-Giliam A*, Rivera-Mariani FE, Chen C, Wu C, Zughi Z, Horney J. Neighborhood-Level Non-Medical Factors Alone Poorly Predict Proxy Post-Acute Sequelae of SARS-CoV-Phenotype: Limited Performance of Logistic Regression and XGBoost Models.

C. In-Preparation

*Mentored trainee (student, postdoctoral fellow, alumni research fellow, early-career scientist);

#Corresponding author

1. Bolaños-Rosero B, Robles-Rivera CS*, Pereira Moreira CI*, Rivera-Mariani FE. Fungal Spores and Asthma Healthcare Utilization in Two Health Regions in Puerto Rico: A Multi-Municipality and Multi-Year Analysis (2018-2021).
2. Rivera-Mariani FE[#], Robles-Rivera CS*, Pereira Moreira CI*, Bolaños-Rosero B. Ambient Fungal Spore Concentrations Predict Short-Term Surges in Influenza and COVID-19 Incidence and Mortality in Two Health Regions of Puerto Rico, 2022-2024.
3. Rivera-Mariani FE[#], Campbell T*, and Solomon E*. Inflammatory Burden, Structural Exposure, and Racial Disparities in Incident Heart Failure: Evidence from the Multi-Ethnic Study of Atherosclerosis (MESA).
4. Rivera-Mariani FE[#], Campbell T*, Solomon E*. Inflammatory Burden, Structural Exposure, and Racial Disparities in Incident Heart Failure: Evidence from the Multi-Ethnic Study of Atherosclerosis (MESA).
5. Burbank AJ, Pacheco KA, Bernstein JA, Blackwood CB, Codina R, Croston T, Ebo D, guidos G, Horner E, Jonston R, Lemons A, Levy J, Naimi D, Nayak A, Nguyen A, Padukudru, M, Pansare M, Permaul P, Rihs HP, Rivera-Mariani, FE, Skypala S, Zeiger J. Cannabis exposure and health effects in adults and children. A Work Group of the AAAAI Occupational and Respiratory Diseases and Environmental Exposures and Respiratory Health Committee.
6. Vélez-Torres LN*, Rivera-Mariani FE, Godoy-Vitorino F, Maestre JP, Kinney K, Cavallin-Calanche H, and Bolaños-Rosero B. Cytokine profiles in human whole blood exposed to spores from *Aspergillus* isolated from homes affected during Hurricane Maria in Puerto Rico.
7. Hernández-González X, Rivera-Mariani FE, Méndez L, and Bolaños-Rosero B. Peripheral Blood Levels of ACE2 and TMPRSS2 and Susceptibility to COVID-19 among Residents of Caguas and San Juan during the High Fungal Spore Season in Puerto Rico.

C. Posters and Oral Presentations

**Mentored trainee (student, postdoctoral fellow, early-career scientist); #Corresponding author*

1. Rivera-Mariani FE[#] and, Bolaños-Rosero B. Aeroallergen Exposure as Short-Term Predictor of RSV, Influenza, and COVID-19 in Two Health Regions of Puerto Rico: A Seasonal Weekly and Machine Learning Analysis. Poster Presentation. Annual conference of the American Society for Microbiology. June, 2026. Washington, DC.
2. Pereira Moreira CI*, Robles-Rivera CS*, Rivera-Mariani FE, Bolaños-Rosero B. Fungal Spores and Asthma Healthcare Utilization in the San Juan Metro Area: A Multi-Municipality Analysis (2018-2021). Poster Presentation. 2026 annual conference of the Alliance for Clinical and Translational Research. May, 2026. San Juan, PR
3. Robles-Rivera CS*, Pereira Moreira CI*, Bolaños-Rosero B, Rivera-Mariani FE[#]. Fungal Spores and Respiratory Viral Incidence in Puerto Rico: A Multi-Municipality Analysis (2022 – 2024). Poster Presentation. 2026 annual conference of the Alliance for Clinical and Translational Research. May, 2026. San Juan, PR
4. Rivera-Mariani FE[#], Borrero-Aponte AJ, Bolaños-Rosero B. Ambient Fungal Spores as Short-Term Predictors of Respiratory Virus Incidence and Mortality in Puerto Rico: Evidence from Machine Learning and Time-Series Modeling. Late-Breaking E-poster Presentation. Annual Joint Meeting of the International Society for Exposure Science and International Society for Environmental Epidemiology. August, 2025. Atlanta, GA.
5. Sperry J, Ramsey M*, Lecher A, Korte K, Vélez A, De Almeida M, Rivera-Mariani FE. *The Interaction of Music, Mood, and Physiological Biomarkers in an Adlerian-Drumming Intervention among College Students: A PCA Components Analysis*. North American Society of Adlerian Psychology 73rd Annual Conference. E-poster, presented by Jonathan Sperry, Megan Ramsey*, and Félix E. Rivera-Mariani, May 2025. Portland, Oregon.

6. Rivera-Mariani FE[#], Borrero-Aponte AJ, Bolaños-Rosero B. *Aeroallergen Exposure as Short-Term Predictor of Respiratory Viral Infections in two Health Regions (Caguas and San Juan) in Puerto Rico: A Seasonal and Machine Learning Approach*. Late-Breaking Oral Presentation. Annual Meeting of the American Society for Microbiologists: ASM Microbe 2025. June, 2025. Los Angeles, CA.
7. Drons L* and Rivera-Mariani FE[#]. Trust in Scientists, Climate Policy, and Government Skepticism: A Global Re-Analysis. Poster Presentation. Student Research Symposium. April, 2025. Lynn University, Boca Raton, FL.
8. Desroches* T and Rivera-Mariani FE[#]. Assessing the Feasibility of Investigating Cardiovascular Risk Factors: a Re-Analysis Using the Framingham Study. Poster Presentation. Student Research Symposium. April, 2025. Lynn University, Boca Raton, FL
9. Campbell T* and Rivera-Mariani FE[#]. Educational Disparities and Cardiovascular Disease Risk: Insights from the Framingham Study. Poster Presentation. Student Research Symposium. April, 2025. Lynn University, Boca Raton, FL
10. Rivera-Mariani FE[#], Hasan N, Zhao X, Ilarraza G, Noriera S, Balda A, Gallimore-Wilson G, Cruz A, Reyes A, Noriega R, Gomez EV, Samir Desai M, Steinberg T, Lee IA, Awojobi T, Pandey S, Reimon R, Lasday M, Rose B, Beaver C, Carrera O, Suarez del Rosario N, Garibaldi J, Green AJ, Shaefer-Solle N, Cabán-Martínez A. Risk factors for COVID-19 vaccine side effects among a cohort of Florida essential workers. Poster Presentation. 2023 American Publica Health Association (APHA) Annual Meeting. November, 2023. Atlanta, GA.
11. Gallimore-Wilson G, Hasan N, Zhao X, Rivera-Mariani FE, Ilarraza G, Noriera S, Balda A, Gallimore-Wilson G, Cruz A, Reyes A, Noriega R, Gomez EV, Samir Desai M, Steinberg T, Lee IA, Awojobi T, Pandey S, Reimon R, Lasday M, Rose B, Beaver C, Carrera O, Suarez del Rosario N, Garibaldi J, Green AJ, Shaefer-Solle N, Cabán-Martínez A. Prevalence of long COVID among participants of the Research on the Epidemiology of COVID-19 in Emergency Response and Healthcare Personnel (RECOVER) study, Jun 2022-March 2023. Oral Presentation. 2023 APHA annual meeting. November, 2023. Atlanta, GA.
12. Maestre J. P., Vélez Torres L. N., Cruz-Vazquez P., Bolanos-Rosero B., Rivera-Mariani, FE, Godoy-Vitorino F., Kinney K. A., and Cavallin, H. (2022). Up in the air: the impact of hyperlocal conditions on air and dust related fungal populations in the aftermath of Hurricane Maria in. *HB2021-America*. <https://www.isiaq.org/docs/HB2021America409.pdf>. Presenting Author: Maestre J.P.
13. Hernández-González X*, Rivera-Mariani FE, and Bolaños-Rosero B. Outdoor Fungal Spores and the Susceptibility to COVID-19 in Two Municipalities of Puerto Rico. Poster Presentation. American Society for Microbiology, Microbe 2022, Washington, DC.
14. Vélez-Torrez LN*, Rivera-Mariani FE, Bolaños-Rosero B. Pro-Inflammatory potential of spores of aspergillus species recovered from water-damaged and flooded homes after Hurricane Maria (2022). Poster Presentation. American Society for Microbiology, Microbe 2022, Washington, DC.
15. Rivera-Mariani FE[#], Srour HH*, Fomenko R*, Maestre JP, Kinney K, Godoy-Vitorini F, Bolaños-Rosero B, Cavallin H. Pro-inflammatory potential of indoor dust collected from households in San Juan, PR in the aftermath of Hurricane Maria. Poster Presentation. Society of Toxicology Annual Meeting & ToxExpo 2019. Baltimore, MD.
16. Rivera-Mariani FE[#], Levetin E, Hartung T, Breysse PN. Role of spores' surface area and endotoxin contamination in the proinflammatory potential of spores from allergenic basidiomycete fungi in a cryopreserved human whole blood system. Poster Presentation.

Gordon Research Seminar/Conference Immunology to Fungal Infections. January 2013. Galveston, TX.

17. Rivera-Mariani FE[#], Vysyaraju K*, Negherbon J*, Hartung T, Breyse PN, Hansel N. Assessment of the proinflammatory potential of indoor air particulate matter based on the cytokine release in a cryopreserved human whole blood system. Poster Presentation. *International Society for Exposure Science Annual Meeting*, October, 2012. Seattle, WA.
18. Rivera-Mariani FE[#], Mihalic JN, Rule AM, Breyse PN. Immunodetection of (1-3)- β -D-glucan with the Halogen Immunoassay. Poster Presentation. *American Industrial Hygiene Association Annual Meeting*, June, 2012. Indianapolis, IN. Best Poster in the Sampling and Laboratory Analysis Session.
19. Rivera-Mariani FE, Hartung T, Breyse PN. Evaluation of the cooperative proinflammatory effect between endotoxin and (1-3)- β -D-glucan with the *in-vitro* Pyrogen Test. Poster Presentation. *Society of Toxicology Annual Meeting* March, 2012, San Francisco, CA.
20. Rivera-Mariani FE, Matsui E, Breyse PN. Immunodetection of airborne particulate carrying mouse allergen. Poster Presentation. *International Society for Exposure Science Annual Meeting*, October, 2011. Baltimore, MD.
21. Rivera-Mariani FE, Nazario-Jiménez S, López-Malpica F, and Bolaños-Rosero B. Airborne ascospores and basidiospores as potential allergens for allergic respiratory diseases. Oral Presentation. *International Association for Aerobiology 9th International Congress on Aerobiology*, August, 2010. Buenos Aires, Argentina.
22. Rivera-Mariani FE, Nazario-Jiménez S, and Bolaños-Rosero B. Prevalence of IgE Reactivities to Airborne Particulate by Asthmatic Subjects. Oral Presentation. *Pan-American Aerobiology Association Annual Meeting*, July, 2009. Kansas City, MO.
23. Rivera-Mariani FE, Quintero E, and Bolaños-Rosero B. Fungal Spores in the Atmosphere of San Juan and Caguas: A Comparative Study. Oral presentation. *Pan-American Aerobiology Association Annual meeting*, June, 2007. Penn State University, Stage College, PA.
24. Quintero E, Rivera-Mariani FE, and Bolaños-Rosero B. Fungal Spore and Pollen in the Atmosphere of San Juan. Poster presentation. *Pan-American Aerobiology Association Annual Meeting*, June 2007. Penn State University, Stage College, PA.

D. Data Science Reports

1. Applying Data Science Approaches in Biological Sciences Classrooms. Project at Researchgate.com <https://www.researchgate.net/project/Applying-Data-Science-Approaches-in-Biological-Sciences-Classrooms>
2. RNA-seq Data Analysis Workflow to Evaluate Differential Gene Expression between Fetus and Adult Brains from Publicly-Available Data as a Genomic Data Science Demonstration in an Upper Microbiology Course. Technical Report at Researchgate.com <http://dx.doi.org/10.13140/RG.2.2.14868.09604>
3. Peer-Evaluations as an Intervention Tool to Identify Students' Misconceptions and Interpretation Errors in the Streak-Plate Method in an Introductory Microbiology Lab Course. 2016. Technical-Report at Researchgate.com. <http://dx.doi.org/10.13140/RG.2.1.2693.5921>
4. Shiny Web Application for Word Predictions. <https://rpubs.com/friveramariani/jhdscapstone>

E. Conferences and Invited Talks

1. *From Air to Inflammation: Computational Approaches to Environmental Exposures and Immune Risk* (Computational and Systems Biology Session). Invited Speaker. Annual Biomedical Research Conferences for Minoritized Scientists. San Antonio, TX. November, 2025.

2. *Branding With Purpose: Using Core Values to Build an Authentic STEM Identity* (Professional Development Session). Invited Speaker. Annual Biomedical Research Conferences for Minoritized Scientists. San Antonio, TX. November, 2025.
3. *Impact of Aerobiology on Asthma and Atopic Dermatitis in Puerto Rico; and Fungal Aeroallergens as Potential Predictors of Flu and COVID-19 In Puerto Rico*. Invited Speaker Puerto Rico Society for Microbiologists Annual Symposium. San Juan, PR. April 2025.
4. *Career Pathways and Opportunities in STEM Disciplines Discussions (Computational and Systems Biology Session)*. Invited Speaker. Annual Biomedical Research Conferences for Minoritized Scientists. Pittsburgh, PA. November, 2024.
5. *From Mentee to Leader: Harnessing Mentorship and Branding in Science*. Invited Speaker OneDay MicroRetreat, Puerto Rico Society for Microbiologist. San Juan, PR. October. 2024.
6. *Leveraging Diversity in Scientific Societies to Tackle Global Health Challenges*. Invited Speaker. LED-Bio Conference, American Society for Cell Biology. Washington, DC. October 2024.
7. *Breath of Change: Unveiling the Intersection of Blood, the Environment, and Respiratory Health*. Invited Speaker. STEM Seminar Series, College of Arts and Sciences, Lynn University. Boca Raton, FL. January 2024.
8. *What to expect in a mentor-mentee relationship*. Guest Lecture. Summer Research Program, Fundación Garcia Rinaldi. San Juan, PR. May 2023.
9. *Biological Data Approaches in Environmental Health Studies*. Guest Lecture. Department of Public Health Sciences, Miller School of Medicine, University of Miami. Dr. Cabán-Martínez's Lab presentation series. Miami, FL. May 2023.
10. *Microbiology at a glance: from inside and moving beyond the lab to impact communities*. Guest Lecture. Department of Microbiology, School of Medicine, University of Puerto Rico – Medical Sciences Campus. San Juan, PR. April 2023.
11. *Refining our brand through the sciences: from the bench to “Making the Data Confess.”* Guest Lecture. Ronneberg Lecture Series, Dennison University. Granville, OH. March, 2023.
12. *Hurricane Maria to social outreach: when our microbiology goes beyond the bench*. Guest Speaker. 64th Annual Conference of the Microbiology Society of Puerto Rico. San Juan, PR. June, 2022.
13. *When our immune system is ready for battle*. Guest Lecture. Community Health Coalition of Puerto Rico (COSACOPR). San Juan, PR. August, 2020.
14. *Computational and system biology to identify biomarkers in environmental health studies: from indoor pollution to the aftermath of Hurricane Maria*. Workshop Speaker. Annual Biomedical Research Conference for Minority Students Anaheim, CA. November, 2019.
15. *Exposure science through human blood: understanding pro-inflammatory exposures through human blood*. Guest Lecture. School of Civil, Architectural, and Environmental Engineering, University of Texas at Austin. Austin, TX. October, 2019.
16. *The Interphase of biomedical sciences and data analytics: which one goes first?* Guest Lecture. University of Puerto Rico - Ponce Campus. Sponsored by the University of Puerto Rico - Ponce Campus Research Initiative for Scientific Enhancement. Ponce, PR. January, 2019.
17. *Science Education Careers*. AAAS Florida Biomedical Career Symposium. Panelist. Jupiter, FL (Scripps Institute). January, 2018.

18. *Image analysis in biological sciences (from western blot to data-driven decisions)*. Workshop Speaker University of Puerto Rico – Carolina Campus. Online. June 2017.
19. *Doing Science: From Start to Finish*. Math and Sciences Specialized High School Thomas Armstrong Toro. Ponce, PR. 2016 and 2017. Workshop Speaker. Ponce, PR. January 2016 and 2017.
20. *Teaching-intensive careers*. 9th Annual NIH Career Symposium. Panelist. Bethesda, Maryland. May 2016.
21. *Immunological intervention to evaluate the human health effects of indoor and outdoor biological and non-biological airborne contaminants*. Guest Lecture Department of Microbiology, School of Medicine, University of Puerto Rico – Medical Sciences Campus. San Juan, PR. San Juan, PR. February 2015.
22. *Immunological intervention to evaluate the human health effects of indoor and outdoor biological and non-biological airborne contaminants*. Guest Lecture. Department of Biology, University of Puerto Rico – Bayamon Campus. Bayamon, PR. March 2015.
23. *A Review of fungi relevant to dentistry*. Guest Lecture. Department of Microbiology, College of Medical Sciences, Nova Southeastern University, Davie, FL. August 2013.
24. *Postdoc diversity: solution for faculty diversity*. Guest Lecture: Co-presenter with Dr. Jennifer Cohen and Dr. Cara Altimus National Postdoctoral Association 11th Annual Meeting. Charleston, SC. Charleston, SC. March 2013.
25. *Allergenicity and proinflammatory potential of uncharacterized airborne fungi*. Guest Lecture. Department of Biology of the College of Sciences and Technology, Southeastern Louisiana University. Hammond, LA. October 2012.

V. Professional

A. In Review Projects

Title: Salivary Proteomic Signatures of a Group Drumming Intervention in College Students: A Discovery-Based Approach.

Funding Agency: Olink Proteomics Awar for Reveal 2026

Role: Principal Investigator

Summary: The objective of this study is to characterize salivary proteomic profiles before and after an Adlerian-based group drumming session in college students using Olink™ Reveal high-throughput proteomics (~1,000 proteins, NGS readout). By integrating proteomic shifts with validated psychological (Quick Mood Scale, Social Interest Index) and physiological (blood pressure, heart rate) outcomes across 84 paired samples via sparse PCA, Elastic Net regression, and Multi-Omics Factor Analysis (MOFA+), we will construct a novel multimodal model of intervention response. The expected impact is the identification of personalized candidate salivary biomarkers for stress mitigation in young adults and the advancement of precision music-based interventions, while establishing whether known demographic moderators — including age, academic year, and prior music experience — are paralleled by distinct proteomic response signatures.

B. Ongoing Funded Research

Title: Microbiome variations between atopy, asthma, and treatment

Role: Principal Investigator

Funder: NIH – NHLBI (dataset via BIOLINCC, request #17560, accession #HLB02232020a)

Summary: This project conducts a secondary analysis of the NHLBI BioLINCC AsthmaNet Airway Microbiome in Asthma dataset to investigate how bronchial bacterial community composition differs among adults with atopic asthma, atopy without asthma, and non-atopic

healthy controls. The study also evaluates whether six weeks of inhaled corticosteroid treatment (fluticasone) alters airway microbiome diversity and composition, and whether baseline microbiome features are associated with asthma phenotype measures such as airway hyperresponsiveness, lung function, asthma control, and Type-2 inflammation signatures. Using multivariable statistical models and machine-learning approaches applied to 16S rRNA sequencing data, the project aims to identify microbiome-based biomarker signatures associated with asthma status and treatment response. Findings will contribute to precision medicine approaches in asthma by linking airway microbial ecology with clinical phenotype and therapeutic response.

Title: Ambient Air Pollution, Inflammation, and Immune Phenotypes in the Multi-Ethnic Study of Atherosclerosis (MESA): Cross-Sectional and Longitudinal Associations Across an 18-Year Follow-Up and Data Re-Analysis

Role: Principal Investigator

Funder: NIH – NHLBI (dataset via BIOLINCC, request #17183, accession #HLB00640825a)

Summary: This project conducts a secondary analysis of the NHLBI BioLINCC Multi-Ethnic Study of Atherosclerosis study to investigate the relationship between long-term air pollution exposures (PM_{2.5}, NO₂) and systemic immune activation markers in a large multi-ethnic U.S. cohort (MESA cohort). The project links geocoded environmental exposure data from the MESA Air Pollution Ancillary Study with inflammatory biomarkers (hs-CRP, IL-6, fibrinogen) and immune phenotyping data to examine exposure-driven inflammation across racial and ethnic groups. Using cross-sectional and longitudinal analyses, the study evaluates environmental determinants of immune activation and health disparities through regression, machine learning, and mixed-effects modeling. Results will provide insights into environmental immunology and toxicology and inform population-level risk prediction for inflammation-related disease.

Title: Generations of Genomes and Cardiovascular Risk within the Framingham Heart Study

Role: Principal Investigator

Funder: NIH – NHLBI (dataset via BIOLINCC, request #17418, accession #HLB00050025a and dbGAP phs000007.v35.p16; phs000342; phs000974)

Summary: This project conducts a secondary longitudinal analysis of the Framingham Heart Study (FHS), a landmark population-based cohort initiated in 1948 to identify factors influencing the development of atherosclerotic and hypertensive cardiovascular disease through repeated examinations and long-term follow-up. Leveraging harmonized phenotypic, genomic, and multi-omic datasets, the study integrates clinical biomarkers (e.g., total cholesterol FU575, HDL FU577, glucose FU578), physical measures (e.g., BMI FU580, blood pressure fv019/fv020), and behavioral factors (e.g., smoking fv026, alcohol fv028) collected across multiple exam cycles to model incident cardiovascular disease outcomes, including coronary heart disease, stroke, and heart failure. Using time-to-event analyses with time-dependent covariates and advanced machine-learning approaches, the project aims to characterize dynamic risk trajectories and identify multi-level biomarker signatures predictive of disease onset and progression. By linking decades-long phenotypic data with genomic and transcriptomic variation, this work advances precision cardiovascular epidemiology and contributes to improved risk stratification across generations.

Title: Endemic Outdoor Aeroallergens, Asthma, and the Incidence of Respiratory Viral Diseases in Puerto Rico

Role: Co-PI (Co-PI Dr. Benjamín-Bolaños-Rosero)

Summary: The objective of this study is to determine the role of outdoor fungal spores, which are aeroallergens endemic in the atmosphere of Puerto Rico, in the incidence of asthma and respiratory viruses in Puerto Rico. The expected impact of this project is that it will provide

insights for public health intervention and prevention for chronic and infections respiratory diseases in tropical climates.

Title: Immediate Effects of Therapeutic Group Drumming on Affective Stress and Biomarkers of Stress

Funding: RayBiotech

Amount: \$1,500

Role: Principal Investigator

Summary: While group drumming has shown promise for reducing stress and enhancing social bonds, our pilot study (n=34) suggests that age, prior music experience, and academic status may shape how college students respond to this intervention. Based on these findings, we are investigating how a short, community-focused drumming impacts mood and physiological markers of stress. This multi-level analysis will help us determine whether drumming benefits all students similarly or by specific subgroups.

Title: Integrating Dataset and Biospecimens Repositories for Biomarker Discovery and Computational Data Science Education: A Multi-Dataset Computational Analysis Approach

Funding: NHLBI and CDC (via data and biospecimens repositories)

Role: Principal Investigator

Summary: This project aims to harness multiple Center for Disease Control and Prevention (CDC) and National Institutes of Health (NIH) datasets and biospecimen repositories, notably the National Health and Nutritional Examination Survey (NHANES), the Biologic Specimen and Data Repository Information Coordination Center (BioLINCC), and the All of Us Research Hub. This project integrates Lynn University's educational frameworks by enhancing curricula (i.e., integrating datasets into dialogues and science courses) to foster computational data science competencies among students. Employing advanced computational platforms such as Python, R, MATLAB, AWS, and Google Cloud, the project aims to identify potential biomarkers and disseminate findings through scholarly publications and at local, regional, national, and international conferences. Integrating data science and computational approaches, such as bioinformatics and system biology, with biomedical research prepares a new cadre of researchers equipped to tackle complex societal health challenges.

C. Completed Funded Research

Title: Endemic Outdoor Aeroallergens and the Incidence of COVID-19 in Puerto Rico

Funding Agency: Puerto Rico Public Health Trust

PI: Benjamín Bolaños-Rosero

Amount: \$10,000

Role: Collaborator and graduate student mentor

Summary: The objective of this study is to determine the role of outdoor fungal spores, which are aeroallergens endemic in the atmosphere of Puerto Rico, in the incidence and immunological susceptibility to COVID-19 in Puerto Rico. Also, this project seeks to demonstrate the utility of an innovative blood microsample approach to determine immunological risks to emerging respiratory health pathogens, such as the SARS-CoV-2 virus. The expected impact of this project is that it will provide data on immunological risks to emerging respiratory health hazards from exposures to endemic biological aerosol.

Title: Research on the Epidemiology of SARS-CoV-2 among Essential Response Personnel (RECOVER)

Funding Agency: Center for Disease Control and Prevention

PI: Alberto Cabán-Martínez

Amount: \$3,950,000 (three-year funding)

Role: Lead-Scientist, Co-Investigator

Summary: The objectives of the RECOVER study are to 1) determine the frequency of SARS-CoV-2 virus infection and re-infection and COVID-19 illness among healthcare, first responders, and essential or frontline workers; and 2) estimate the effectiveness of COVID-19 vaccines and interventions. The anticipated impact of this project is that it will help measure the COVID-19 incidence, identify risk factors for infection and manifestation as symptomatic and asymptomatic, describe symptomatology and outcomes of infection and re-infection, medical-attendance, immune response, examine antibody correlates of protection against SARS-CoV-2 re-infection, duration of viral shedding, and assess knowledge, attitude and practices related to SARS-CoV-2 and COVID-19.

Title: Linking Microbial, SVOC and Pro-Inflammatory Exposures in Homes to Childhood Asthma Severity: A Community Filter Forensics Approach

Funding Agency: US Department of Housing and Urban Development

Project Number (and PI): HUD126513356

PI: Kerry Kinney

Amount Awarded: \$700,000

Role: Collaborator, *Sub-Award Principal Investigator (\$76,931)*

Summary: The purpose of this study was to evaluate the merits of using a Community Filter Forensics approach for assessing levels of indoor contaminants and pro-inflammatory potential in homes. In the original Filter Forensics HUD study, it was determined that heating, ventilation, and air conditioning (HVAC) filters can serve as integrated, long-term samples of particle-bound contaminants in a cohort of rural homes. Novel relationships were identified between the microbiome and 1) asthma triggers in home HVAC filter dust, and 2) the severity of asthma for children in these homes, including potentially protective exposures. In this follow-up study, the Filter Forensics approach was extended assess housing-related health hazards in a urban cohorts of households across three climate zones in Texas. The impact of this project and the Community Filter Forensic approach was that it allowed efficient collection of data to identify both potentially detrimental and protective home environmental exposures.

Title of Pilot Study: Immune and Epigenetic Signatures Related to Post-Hurricane Maria Indoor Contamination in Puerto Rico

Funding Agency: National Heart, Lung, and Blood Institute

Project Number: R25HL126140

PIs: Joe Garcia, Francisco Moreno, Sairam Parthasarathy

Amount Awarded: \$14688 (Pilot Study under a training within project R25HL126140)

Role: PI of Pilot Study as part of the Advanced Respiratory Research for Equity (AIRE) training program

Summary: The purpose of this study was to determine the immunological and epigenetic signatures that settle dust from homes with different magnitude of water damage from Hurricane Maria in Puerto Rico induced in peripheral blood leukocytes. The impact of this project was it will highlighted the immune and genetic modulating-potential from exposures to increased microbial contamination among Puerto Ricans expose the environmental hazards from Hurricane Maria, and preliminary data to design further studies on how increase indoor multi-pollutant foci affect the immune system of individuals living in areas susceptible to extreme atmospheric events.

Title: Taking a Breath after the Disaster: Homes, Molds, and Health in Puerto Rico after Hurricane Maria

Funding Agency: National Institute of Environmental Health Sciences

Project Number: R21ES029762

PI: Humberto Cavallin-Calanche

Amount Awarded: \$408, 316

Role: Collaborator, *Sub-Award Principal Investigator (\$15,500)*

Summary: The purpose of this study was to immunological and respiratory health risks that long-term water damage to houses in Puerto Rico in the aftermath of Hurricane Maria. The objectives of the study were to 1) characterize the fungal communities present inside and outside water damage and non-flooded (control) homes in Puerto Rico following hurricane Maria and determine the change in these communities during the first two years following the Hurricane; 2) evaluate the pro-inflammatory potential of indoor air samples collected from the water-damage homes and compare these levels to those in non-flooded (control) study homes and outdoor air; 3) determine the relationship between occupant respiratory health and home characteristics including flood damage as well as the indoor fungal community and pro-inflammatory potential of dust in the homes.

Title: Genetic Susceptibility to Asthma and Indoor Air Pollution in Peru

Funding Agency: National Institute of Environmental Health Sciences

Project Number: 3R01ES018845-04S1

PI: Nadia Hansel

Amount Awarded: \$410, 571

Role: Postdoctoral Collaborator (under Drs. Patrick Breyse and Thomas Hartung)

Summary: The purpose of this was to identify genetic variants associated with asthma and its associated traits (i.e., asthma severity, pulmonary function, airway inflammation) in relation to indoor air pollutant exposures in two Peruvian cities, Lima and Tumbes. The impact of this study was identifying candidate genes for asthma and associated traits relevant to both the general population as well as those contributing to disparities in asthma morbidity among individuals in Peru. Also, by identifying subgroups of the population who are particularly vulnerable to air pollution is an important objective, as the results can be used to identify people most likely to benefit from exposure avoidance.

D. Honors and Travel Awards

- **Scholar Award**, 2026, Lynn University College of Arts and Sciences.
- **AAI Laboratory Grant**, 2026, American Association of Immunologists, Immunology Annual Conference, Boston, TX.
- **Mentor**. 2026. Cohort 3, AIM-AHEAD NCATS Training Program.
- **Scholar**. 2025. GeoCAFE Research Coordination Network.
- **Elected Fellow**. 2025. American Academy of Allergy, Asthma, and Immunology.
- **Nominated to Index of Inspiring Black Scientists**. 2025.
- **Sor Isolina Ferré award for Excellent to Service to Communities in Puerto Rico**. 2024. House of Representatives of Puerto Rico
- **Minority Scientist Travel Award**. 2019. American Association of Immunologists, Immunology 2019 Annual, San Diego, CA
- **Early Career Faculty Travel Award**. 2018. American Association of Immunologists, Immunology 2018 Annual, Austin, TX
- **Carl Storm Underrepresented Minority Fellowship Travel Award**. 2013. Immunology of Fungal Infections, Gordon Conference, Galveston, TX
- **Lush Prize Young Researcher Award** (\$20,000). 2012. Ethical Consumer Association
- **New Researcher Travel Award**. 2012. International Society for Exposure Science, 22nd Annual Conference, Seattle, WA
- **Domestic Fellows-in-Training Travel Award**. 2012. American Academy of Allergy, Asthma and Immunology, 2012 Annual Meeting, Orlando, FL
- **David Leslie Swift Fund in Environmental Health Engineering** (\$2,000). 2011. Johns Hopkins University Bloomberg School of Public Health
- **Minority Access to Research Careers Travel Award**. 2011. Federation of American Societies for Experimental Biology, Virginia Beach, VA.
- **Young Aerobiologist Award** (\$1,000). 2010. International Association for Aerobiology
- **Fellows-in-Training Travel Award**. 2010. American Academy of Allergy, Asthma and Immunology, Annual Meeting, New Orleans, LA
- **Latin American Travel Award**. 2010. International Association for Aerobiology, 2010 Annual Meeting, Buenos Aires, Argentina
- **Latin American Travel Award**. 2010. Pan American Aerobiology Association, 2010 Annual Meeting, Kansas City, MO
- **Lanzoni's Student Award**. 2007. Pan American Aerobiology Association, 2007 Annual Conference, State College, PA

E. Editorial and Peer-Review Responsibilities

- Present
 - Aerobiologia:
 - **Manuscript Reviewer, 2011 – Present**
 - American Association for the Advancement of Science

- *Session Proposal Reviewer, 2018 – Present*
- American Academy of Allergy, Asthma, and Immunology
 - *Abstract Reviewer, 2020 – Present*
 - *Editor, Aerobiology Committee Quaterly Newsletter, 2025 – Present*
- Annals of Agriculture and Environmental Medicine
 - *Manuscript Reviewer, 2017 – Present*
- Annual Biomedical Research Conferenced for Minoritized Students
 - *Abstract Reviewer, 2017 – Present*
 - *Posters/Oral Presentations Judge (Computational Biology), 2017 – Present*
- BMC Pediatrics
 - *Manuscript Reviewer, 2025 - Present*
- JMIR Publications
 - *Peer-Reviewer, 2026 - Present*
- Scientific Reports
 - *Peer-Reviewer, 2025 - Present*
- Past
 - Conrad Spirit Innovation Challenge
 - *Proposal Reviewer, 2015 – 2021*
 - Johns Hopkins Postdoctoral Association
 - *Quarterly Newsletter Co-Editor, 2012 – 2013*
 - Journal of Postdoctoral Research
 - *Peer-Reviewer and Editor, 2013*
 - SACNAS National Conferences
 - *Abstract Reviewer, 2011 - 2021*
 - Sigma Xi Student Research Showcase
 - *Abstract Reviewer, 2013 – 2023*
 - Society of Toxicology
 - *Ad Hoc Reviewer, Occupational and Public Health Section, 2011 – 2012*

F. Panel Study Sections

- National Institute of Health, Artificial Intelligence/Machine Learning Consortium to Advanced Health Equity and Research Diversity (AIM-AHEAD) program, **2025 – Present**
- Mentored-to-Independence Study Section, National Blood, Heart, and Lung Institute, **2021 – Present** (Standing Member).
- Basic Needs Program, Department of Education. **2024 – Present**
- Developing Hispanic-Serving Institution Program, Department of Education, **2022 - Present.**

G. Professional and Honorary Organizations

- American Academy of Allergy, Asthma, and Immunology
 - *Elected Fellow, 2025*
 - *Active Member #103773, 2009 – Present*
 - *Aerobiology Committee, 2011 – Present*
 - *Environmental Exposures and Respiratory Health Committee, 2011 – Present*
 - *Microbial Triggers of Diseases Committee, 2019 – Present; Vice-Chair (2025 – 2027)*
- American Association of Immunologists
 - *Associate Member #00223623, 2011 – Present*
 - *Minority Affairs Committee, 2011 – 2024*
- American Association for the Advancement of Science

- *Member, 2010 – 2021*
- American Society for Microbiology
 - *Active Member #2433006, 2002 – Present*
 - *Mentor, Future Leaders Mentoring Fellowship Program, 2022 - 2023*
- American Society for Biochemistry and Molecular Biology
 - *Active Member #109040, 2024 – Present*
- American Thoracic Society
 - *Full Member #172864, 2018 – Present*
 - *Allergy, Immunology, and Inflammation Assembly, 2018 – Present*
 - *Environmental, Occupational, and Population Health Assembly, 2018 – Present*
 - *Respiratory Cell and Molecular Biology Assembly, 2018 – Present*
- American Public Health Association
 - *Full Member, #11007309, 2022 - Present*
- International Society for Exposure Science
 - *Full Member #2389, 2021 – Present*
- Society of Toxicology
 - *Active Member, 2011 – Present*
 - *Hispanic Organization of Toxicologists, 2011 – Present*
 - *Immunotoxicology Section, 2011 – Present*
 - *Computational Toxicology Section, 2024 – Present*
 - *Occupational and Public Health Section, 2024 - Present*

H. University Committees

- Larkin University
 - University Committees
 - *Capital Allocation Planning Committee, 2018 – 2020*
 - *Faculty Affairs Committee, 2018 – 2022*
 - *Inaugural Scientific Forum Organization Committee (Chair, 2018)*
 - *Research Advisory Committee (Chair, 2018 – 2020), (Member, 2018 – 2022)*
 - *Scholarships Committee, 2018 – 2022*
 - Ad-Hoc Committee
 - *Dean Search Committee - College of Biomedical Sciences (Chair, 2020)*
 - College of Biomedical Sciences Committees
 - *Pre-Professional Recommendations Committee (Chair, 2018 – 2022)*

I. Leadership (as graduate student and Postdoc)

- Johns Hopkins Postdoctoral Association
 - *Member, 2011 – 2013*
 - *Professional Development Committee, 2011 – 2013*
- National Postdoctoral Association
 - *Member, 2011 – 2014*
 - *Resources Development Committee, 2011 – 2014*
- Puerto Rico Legislature
 - *Ad Hoc Committee, Law 136 of July 27th, 2006: Regional Medical Academic Centers*
- General Student Council, University of Puerto Rico – Medical Sciences Campus
 - *President, 2005 – 2009*
 - *Academic Senate (ex-officio), 2005-2009*

V. Mentoring

Current Career Mentoring and Early-Stage Scientist Mentees		
Names	Years and Mentoring	Stage and Institution (while in career mentoring)
<i>Albersy Armina Rodríguez, PhD</i>	2026 – Present <i>Career and Research Mentor</i> 2020 - Present <i>Leadership and Science Communication Mentor</i>	University of Puerto Rico – Medical Sciences Campus; RIPLRT Institute Vistazo A La Ciencia LLC
<i>Erin Williams, PhD</i>	2026 – Present <i>Mentor in AIM-AHEAD program</i>	Research Assistant Professor Miller School of Medicine University of Miami
<i>Yee To Ng, PhD</i>	2026 – Present <i>Mentor in AIM-AHEAD program</i>	Postdoctoral Fellow University of Michigan Medical School
<i>Rebecca Mesidort</i>	2025 – Present <i>Career Mentor</i>	Lynn University RIPLRT Institute
<i>Sukeina Nasser, PharmD</i>	2023 – Present <i>Career Mentor</i>	Clinical Pharmacist Consultant
<i>Bianca Valdés-Fernández, PhD</i>	2020 – Present <i>Career Mentor</i>	Dean and Faculty Universidad del Sagrado Corazón
<i>Alexandra Colón-Rodríguez, PhD</i>	2020 – Present <i>Career Mentor</i>	Postdoctoral Program Manager Genentech
<i>Lorraine N. Vélez-Torres, PhD</i>	2023 – Present <i>Career Mentor</i> 2020 – Present <i>Science Communication</i>	Postdoctoral Fellow Virginia Commonwealth University UPR Comprehensive Cancer Center Vistazo A La Ciencia LLC

Current Graduate and Undergraduate Students			
Name	Degree Sought (during mentoring)	Project(s) Mentored	Institution (during mentoring)
<i>Adriana González Candelaria</i>	BS	2026 – Present <i>Undergraduate Research</i>	Universidad de Puerto Rico – Mayagüez Campus RIPLRT Institute
<i>Emily Weems</i>	BS	2026 – Present <i>Undergraduate Research</i>	Lynn University RIPLRT Institute
<i>Rebecca Mesidort</i>	MS	2025 – Present <i>Graduate Research</i>	Lynn University RIPLRT Institute
<i>Emily Solomon</i>	MS	2025 – Present	Lynn University

		<i>Graduate Research and MS Capstone Project</i>	<i>RIPLRT Institute</i>
<i>Emily Pintillie</i>	<i>MS</i>	<i>2025 – Present MS Thesis Committee</i>	<i>Lynn University</i>
<i>Lily Drons</i>	<i>BS</i>	<i>2025 – Present Undergraduate Research</i>	<i>Lynn University</i>
<i>Tashoy Campbell</i>	<i>MS</i>	<i>Alumni Fellow Research</i> <i>2024 – 2025 MS Capstone Project</i>	<i>RIPLRT Institute</i> <i>Lynn University</i>
<i>Amirah Ellis-Gilliam</i>	<i>PhD</i>	<i>2023 – Present PhD Thesis Committee</i>	<i>University of Delaware</i>
<i>Andrea Semidei-Rodríguez</i>	<i>MD</i>	<i>2021 – Present Science Communication</i>	<i>Vistazo A La Ciencia LLC</i>

Past Career, Early-Stage Scientist, Graduate and Undergraduate Mentees			
<i>Erin Williams, PhD</i>	<i>PhD</i>	<i>2026 (Summer) Mentor in AIM-AHEAD program</i>	<i>Research Assistant Professor Miller School of Medicine University of Miami</i>
<i>Yee To Ng, PhD</i>	<i>PhD</i>	<i>2026 (Summer) Mentor in AIM-AHEAD program</i>	<i>Postdoctoral Fellow University of Michigan Medical School</i>
<i>Armando J. Borrero Aponte</i>	<i>BS</i>	<i>2025 – Present Undergraduate Research</i>	<i>University of Puerto Rico – Rio Piedras Campus</i>
<i>Theo Desroches</i>	<i>BS</i>	<i>2025 Undergraduate Research</i>	<i>Lynn University</i>
<i>Rebeckha Theodore</i>	<i>BS</i>	<i>2024 Med School Applications</i>	<i>Lynn University</i>
<i>Pamela Thomas</i>	<i>MS</i>	<i>2023 – 2024 Financial/Operational Planning for the Center of Biostatistics</i>	<i>Ohio State University Center for Biostatistics</i>
<i>Ian Caraballo-Rivera</i>	<i>BS</i>	<i>2023 - 2024 Transition to University</i>	<i>University of Houston-Downtown</i>
<i>Adriana Caraballo-Rivera</i>	<i>BS</i>	<i>2023 - 2024 Transition from Community College to University</i>	<i>Transition from Community College to University</i>
<i>Haya Alhmly</i>	<i>PhD</i>	<i>2023 – 2024 Proposal Mentor</i>	<i>Tuft University</i>
<i>Lorraine N. Vélez-Torres</i>	<i>PhD</i>	<i>2018 – 2023 -Thesis Committee</i>	<i>Dept. of Microbiology, University of Puerto Rico Medical Sciences Campus</i>

<i>Xaymara Hernández-González</i>	<i>MS</i>	2020 – 2023 <i>-Thesis Committee</i> <i>-Biotech Career</i>	Dept. of Microbiology, University of Puerto Rico Medical Sciences Campus
<i>Ana Pérez</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Brie Perdue</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Chevine Johnson</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Christian Ramos</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Henna Patel</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Dental School Application</i>	College of Biomedical Sciences, Larkin University
<i>Karoline Alves</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Physician Assistant School</i>	College of Biomedical Sciences, Larkin University
<i>Krystal Ramsaran</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Stevanie Robinson</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Summer Paris Vanitvelt</i>	<i>MS</i>	2021 <i>-Lab Research</i> <i>-Dental School Application</i>	College of Biomedical Sciences, Larkin University
<i>Donna Oh</i>	<i>MS</i>	2019 – 2020 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Nicole Benavides</i>	<i>MS</i>	2019 – 2020 <i>-Lab Research</i> <i>-PharmD Application</i>	College of Biomedical Sciences, Larkin University
<i>Shana Zadron</i>	<i>MS</i>	2019 – 2020 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University

<i>Kylie Dagio</i>	<i>MS</i>	2019 – 2020 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Adria Guajardo</i>	<i>MS</i>	2019 – 2020 <i>-Lab Research</i> <i>-Physician Assistant Application</i>	College of Biomedical Sciences, Larkin University
<i>Bhavik Patel</i>	<i>MS</i>	2019 <i>-Lab Research</i> <i>-PharmD Application</i>	College of Biomedical Sciences, Larkin University
<i>Tanha Rahman</i>	<i>BS</i>	2019 <i>-Summer Research</i> <i>-Med School Application</i>	Nova Southeastern University :
<i>Naziba Nuha</i>	<i>BS</i>	2019 <i>-Summer Research</i> <i>-Med School Application</i>	Nova Southeastern University :
<i>Summer Pellechio</i>	<i>MS</i>	2019 <i>-Lab Research</i> <i>-Physician Assistant School</i>	College of Biomedical Sciences, Larkin University
<i>Hyatt Srouer</i>	<i>MS</i>	2018 – 2020 <i>-Lab Research</i> <i>-Physician Assistant Application</i>	College of Biomedical Sciences, Larkin University
<i>Ruslan Fomenko</i>	<i>MS</i>	2018 – 2019 <i>-Lab Research</i> <i>-Dental School Application</i>	College of Biomedical Sciences, Larkin University
<i>Shandra Bellinger</i>	<i>MS</i>	2018 – 2019 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Ariel Stateman</i>	<i>MS</i>	2018 – 2019 <i>-Lab Research</i> <i>-Scientific Research Career</i>	College of Biomedical Sciences, Larkin University
<i>Josh Baguley</i>	<i>MS</i>	2018 – 2019 <i>-Lab Research</i> <i>-Med School Application</i>	College of Biomedical Sciences, Larkin University
<i>Isabelita Martínez</i>	<i>MS</i>	2015 – 2018 <i>-MS Thesis Committee</i> <i>-Career in Biotech</i>	Dept. of Microbiology, University of Puerto Rico Medical Sciences Campus
<i>Frances Vilá-González</i>	<i>MS</i>	2014 – 2017 <i>-MS Thesis Committee</i> <i>-Career in Government</i>	Dept. of Microbiology, University of Puerto Rico Medical Sciences Campus
<i>Angélica M. Rivera</i>	<i>BS</i>	2014-2015 <i>-Lab Research</i>	Ana G. Méndez - Universidad del Este

		<i>-Medical Lab Career</i>	
<i>Jesse Negherbon</i>	<i>PhD</i>	2011 – 2013 <i>-Lab Research</i> <i>-Career in Government</i>	Johns Hopkins University Bloomberg School of Public Health
<i>Kranthi Vysyaraju</i>	<i>MS</i>	2011 – 2013 <i>-Lab Research</i> <i>-Career in Government</i>	Johns Hopkins University Bloomberg School of Public Health