

Franklin Román-Rodríguez | Curriculum Vitae

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Education

Rutgers University, New Brunswick Campus- NJ, USA.

- Ph.D in Molecular Biosciences, September 2019- present.
- Graduate Student in Biological Sciences Fellow.
- Molecular Biosciences Excellence Award Recipient.

University of Puerto Rico, School of Arts and Sciences- Mayaguez, PR.

- M.S. in Biology, January 2016- May 2019.
- BRIDGES Program to the Doctorate Degree from the University of Puerto Rico-Mayagüez Campus to Rutgers University fellow. Funded by National Institute of Health (NIH). June 2017-May 2019.

University of Puerto Rico, School of Arts and Sciences- Mayaguez, PR.

- B.S. in Industrial Microbiology.
- Magna Cum Laude.

Research Experience

Rutgers University, Department of Biochemistry and Microbiology, New Brunswick, NJ. Rotating Graduate Student, September 2019-present.

A. Dr. Max Haggblom Lab

- Designed PCR and qPCR primers specific for *Desulfobacterium spongiophilum* AA 1 strain and Deltaproteobacteria group.
- Extracted DNA from *D. spongiophilum* AA 1 and other Desulfobacteria to test the primers.

B. Dr. Jeff Boyd Lab

- Studied how Iron/Sulfur clusters in *Staphylococcus aureus* behave in the presence of other metals like Cobalt.
- Performed assays to determine the genes responsible for Cobalt resistance in *S. aureus*.
- Screened a *S. aureus* library with randomly inserted Transposons to see if the mutations had any effect on Cobalt resistance.

C. Dr. Siobain Duffy Lab

- Tested viral genomes to find the level of conservation of genes amongst the different groups.

University of Puerto Rico, Molecular Biotechnology and Bioprospecting Laboratory, Mayaguez, PR.

Graduate student, January 2016-present.

- Rhodobacter sphaeroides* bacteriophages infectivity in *Rhizobium spp.*
- Rhizobium spp.* isolation.
- Molecular and morphological analysis of *Rhodobacter sphaeroides* 7001 bacteriophages.

Rutgers University, Department of Biochemistry and Microbiology, New Brunswick, NJ.
Summer Rotation Student, June 2018-August 2018

- Tested for anaerobic aspirin degradation in Hudson River samples.
- Performed HPLC on samples to determine rate of degradation.
- Performed SIP experiment on tundra soil samples for fingerprinting.

**Columbia University, Graduate School of Arts Sciences Summer Research Program,
Department of Ecology, Evolution and Environmental Biology, New York, NY.**
Summer Research Fellow, June-August 2014.

- Studied effects of oak loss in greenhouse gas fluxes.
- Collected N₂O and CH₄ fluxes at Black Rock Forest.
- Collected soil core samples to measure soil water content.

University of Puerto Rico, Tropical Microbial and Ecology Laboratory, Mayaguez, PR
Research assistant, January-December 2013.

- Collected samples to study the microbiota on the leaves of coffee plants.
- Performed DNA extraction of collected samples.

**University of Colorado at Boulder, Department of Ecology & Evolutionary Biology,
Boulder, CO**

Summer Research Fellow, June-August 2013.

- Studied effects of fungus pathogen in bullfrog tadpoles and adults.
- Analyzed and sequenced microbiota on frog's skin.
- Tested microbes against the pathogen.
- Received the National Science Foundation Broadening Participation - Integrative Organismal Systems (NSF BP-IOS) Award. Valued at \$4,500. May 2014.

United States Fish and Wildlife Service, Cabo Rojo National Wildlife Refuge, PR
Sunia Summer Internship, June-July 2012.

- Conducted a survey among farmers.
- Worked and established with fellow interns the conservation initiative for the Río Loco/Guánica Bay Watershed.
- Collaborated on a habitat restoration project.

Publications

WOODHAMS D., ALFORD R., ANTWIS R., ARCHER H., BECKER M., BELDEN L., BELL S., BLETZ M., DASKIN J., DAVIS L., FLECHAS S., LAUER A., GONZALEZ A., HARRIS R., HOLDEN W., HUGHEY M., IBÁÑEZ R., KNIGHT R., KUENEMAN J., RABEMANANJARA F., REINERT L., ROLLINS-SMITH L., **ROMAN- RODRIGUEZ F.**, SHAW S., WALKE J., AND MCKENZIE V. Antifungal Isolates database of amphibian skin- associated bacteria and function against emerging pathogens. *Ecology*, 96(2), 2015, p. 595. Ecological Archives E096-059.

Teaching Experience

University of Puerto Rico, School of Arts and Sciences- Mayaguez, PR.

- BIOL 3052L General Biology Laboratory II. January 2016-May 2016.
- BIOL 3770L General Microbiology Laboratory. August 2016-May 2017.

Presentations

“How does the mortality of canopy-dominant oaks affect greenhouse gas fluxes?”

- Poster presented at Annual Biomedical Research Conference for Minority Students (ABRCMS). San Antonio, TX, November 2014.
- Paper presented at The Leadership Alliance National Symposium (LANS). Stamford, CT, July 2014.
- Paper presented at Columbia University’s Summer Undergraduate Research Symposium. New York, NY, July 2014.

“Bacterial cultures of tadpoles from the bullfrog *Lithobates catesbeianus*.”

- Paper presented at 4th Annual Undergraduate Research Symposium. Mayagüez, PR, May 2014.
- Poster presented at Beta Beta Beta District Convention. Aguadilla, PR, April 2014. Awarded Johnson C. Johnson Award, 2nd place for poster presentation at the Beta Beta Beta District Convention.
- Poster presented at Annual Biomedical Research Conference for Minority Students (ABRCMS). Nashville, TN, November 2013.
- Poster presented at SMART Summer Research Symposium. Boulder, CO, August 2013.
- Paper presented at The Leadership Alliance National Symposium (LANS). Stamford, CT, July 2013.

“Sunia Summer Internship 2012: Habitat Restoration Efforts through the Guánica Bay/Río Loco Watershed Partnership.”

- Report prepared for the U.S. Fish and Wildlife Service and presented at The Conservation Trust of Puerto Rico. San Juan, PR, August 2012.
- Report prepared for the U.S. Fish and Wildlife Service and presented at the Region 4 Regional Offices. Atlanta, GA, July 2012.
- Report prepared for the U.S. Fish and Wildlife Service and presented at the Cabo Rojo National Wildlife Refuge. Cabo Rojo, PR, July 2012.

Skills

- Fluent in Spanish and English (speaking, writing, reading, and translating).
- Experience with qPCR and PCR protocols.
- Comfortable with public speaking.
- Experience with MoBio DNA extraction.
- Sanger sequencing.
- DNA extraction.
- Experience with CHEMATIX.
- Experience with bacteriophage and viral related protocols.
- Skilled with gel electrophoresis.
- Experience with soil sampling methods.
- Able to synthesize information with relative ease.
- Excellent organizational skills.

Academic Affiliations

- BBB National Honor Society (Treasurer 2013-2014).
- American Society for Microbiology.
- Puerto Rican Microbiology Society.
- Seeding Labs Rutgers University Chapter.
- SACNAS Rutgers University Chapter.

Community Outreach

- Volunteered to deliver food to families displaced by earthquakes in Puerto Rico. January 2020.
- Judge at Southwestern Educational Society Science Fair (SESO). Mayagüez, Puerto Rico. February 2017.
- Participated at Eco-Exploratorium science exposition to the community. Plaza Las Américas. April 2016.
- Volunteered for a Forest Restoration event at Laguna Cartagena. Lajas, Puerto Rico. 2014.
- Volunteered for the annual Puerto Rican Bird Census at El Yunque National Rainforest. Río Grande, Puerto Rico. December 2012.
- Volunteered for cleaning and maintenance of animals at Albergue Villa Michelle. Mayagüez, Puerto Rico. January 2012.