

NATALIA ENID APONTE BORGES

enidnat@sas.upenn.edu | Earth & Environmental Science, University of Pennsylvania

EDUCATION

University of Pennsylvania (Penn)

PhD student in Earth & Environmental Science

Aug. '19 – Present

Primary advisor: Ileana Pérez-Rodríguez, Ph.D.

Current research: *The physiologies behind the metabolic versatility of chemosynthetic Epsilonproteobacteria and Aquificae.*

University of Puerto Rico, Río Piedras (UPR-RP)

BS in Integrative Biology (*cum laude*)

Aug. '15 – Jun. '19

Primary advisor: Paul Bayman, Ph.D.

Senior thesis: *Fusarium spp. as fungal pathogens of coffee berry disease in Puerto Rico.*

AWARDS

Graduate Women in Science (GWIS) Fund to Encourage Women Grant	ADD date
Environmental Equity Fellowship	Oct. '20
Benjamin Franklin Fellowship	Aug. '19
Fontaine Society Fellowship	Aug. '19
UPR-RP Dean's List	Aug. '15 – May '19
Amgen Foundation BioTalents Scholar	Aug. '18
Leadership Alliance Internship at U. of Pennsylvania	Jun. '18 – Aug. '18
PR Society of Microbiologist Semi-Annual Conference Best Presentation	Jun. '18
NIH Maximizing Access to Research Careers Fellowship	Jul. '17 – Jun. '19
Intercollegiate Athletic League Scholarship	Jul. '15 – May '17

OTHER RESEARCH EXPERIENCE

Penn Summer Undergraduate Internship Program | Penn Vet

Jun. '18 – Aug. '18

Advisor: Montserrat C. Anguera, Ph.D.

Project: What is the return of XIST RNA to the inactive X (Xi) during T-cell activation?

- Studied bulk T lymphocyte and cytotoxic T lymphocyte kinetics during antigen stimulation and activation
- Isolation and *in vitro* stimulation of T lymphocytes from mouse model, RNA FISH technique, microscopy imaging and quantification of XIST RNA signals, novel X-chromosome inactivation in lymphocytes

UPR-RP | Department of Biology

Jul. 16 – May '18

Advisor: Zomary Flores-Cruz, Ph.D.

Project: *Vibrio fischeri* mutants' exposure to external oxidative stress by reactive oxygen species (ROS).

- Studied *V. fischeri* wild type and mutant behavior in aerobic and anaerobic environments in various media with and without oxidative stress by ROS peroxide, bacterial cultures & growth curve methods

Project: Monitoring *Vibrio fischeri* oxyR mutant behavior in media with exogenous catalase.

- Studied potential transcription factors with role in oxidative stress tolerance; results suggested oxyR2 as primary OxyR transcriptional regulator during aerobic growth
- Serial dilutions, plate counts (CFUs), and growing on selective media methods

UPR-RP | Museum of Zoology

Aug. '15 – Dec. '15

Advisor: Omar Pérez-Reyes, Ph.D.

Project: Comparison of population density of *Coenobita clypeatus* in Piñones, PR.

- Studied the impact of ecological changes on *C. clypeatus* (hermit crab) population density and average size by comparing to lab specimens collected 30 years prior
- Evaluated root causes of ecosystem calamities stemming from anthropogenic impacts

TEACHING EXPERIENCE

- Penn, Oceanography Teaching Assistant** Jan. '20
Geol-130 Physical Oceanography | Jane Dmochowski, Ph.D.
Active learning strategies in an interactive classroom setting
- UPR-RP - Biology, Botany, and Microbiology Tutor** Aug. '16 – May '19
Instructed tutoring sessions, administered & graded exams
Coordinated agroecology brigades in the university garden
- Center for Urban, Community and Entrepreneurial Action Tutor** Aug. '18 – May '19
Provided afterschool English tutoring to students in local community
Demonstrated sustainable agroecology & urban gardening techniques

PUBLICATIONS AND PRESENTATIONS

Publications

Aponte Borges, Natalia & Bayman-Gupta, Paul. "*Fusarium* spp. as fungal pathogens of coffee berry disease in Puerto Rico". Senior thesis for NIH MARC fellowship; June 2019.

Oral Presentations

Aponte Borges, Natalia, de Vaulx, Charlotte, Ellison, Eric & Pérez-Rodríguez, I. The physiologies behind the metabolic versatility of chemosynthetic *Epsilonproteobacteria* and *Aquificae*. Presented at: Penn EES Monday Noon Seminar; November 2020; Philadelphia, PA.

Aponte Borges, Natalia & Anguera, Montserrat C. What is the return of XIST RNA to the inactive X (Xi) during T-cell activation? Presented at: Leadership Alliance National Symposium; July 2018; Hartford, CT.

Aponte Borges, Natalia & Flores-Cruz, Zomary. Monitoring *Vibrio fischeri* oxyR mutant behavior in media with exogenous catalase. Presented at: Puerto Rico Interdisciplinary Scientific Junior Technical Meeting; April 2018; Caguas, PR.

Poster Presentations

Aponte Borges, Natalia & Anguera, Montserrat C. What is the return of XIST RNA to the inactive X (Xi) during T-cell activation? Presented at: Annual Biomedical Research Conference for Minority Students (ABRCMS); November 2018; Indianapolis, IN.

Aponte Borges, Natalia & Anguera, Montserrat C. What is the return of XIST RNA to the inactive X (Xi) during T-cell activation? Presented at: University of Pennsylvania Summer Undergraduate Internship Symposium; August 2018; Philadelphia, PA.

Aponte Borges, Natalia & Flores-Cruz, Zomary. Monitoring *Vibrio fischeri* oxyR mutant behavior in media with exogenous catalase. Presented at: Squid-Vibrio Symbiosis Conference at Scripps Oceanography Institute; June 2018; San Diego, CA.

Aponte Borges, Natalia & Flores-Cruz, Zomary. Monitoring *Vibrio fischeri* oxyR mutant behavior in media with exogenous catalase. Presented at: Puerto Rico Society of Microbiologists Annual Conference; May 2018; Carolina, PR.

EXTRACURRICULARS

GWIS Philadelphia Chapter president	Jul. '20 – Present
Penn SACNAS	Mar. '20 – Present
XXVII Penn Geobiology Symposium co-organizer	Mar. '20
The Geology Project bilingual sci-comm	Feb. '20– Present
Patagonia Sustainability Case Competition finalist	Dec. '19 – Feb. '20
Geo-Latinas Earth & Planetary Sciences ambassador	Sep. '19 – Present
Center for Urban, Community and Entrepreneurial Action tutor	Aug. '18 – May '19
Puerto Rico Society of Microbiologists	Aug. '17 – Present
UPR Center for Renewable Energy and Sustainability volunteer	Aug. '15 – May '19

LANGUAGES

English– fluent	Spanish– native
-----------------	-----------------