

Eduardo L. Tosado-Rodríguez

PO Box 30007 San Juan, Puerto Rico 00929

Mobile: (787) 466-0521 e-mail: eduardo.tosado@upr.com

EDUCATION

University of Puerto Rico, Medical Sciences Campus

Aug 2017 – Present

- School of Medicine, Biomedical Sciences Graduate Program
 - **Ph.D. Student**; Microbiology and Medical Zoology Department (**GPA: 3.82**)

University of Puerto Rico, Mayagüez Campus

Jan 2012 – May 2016

- **M.S. Biology – Graduated (May 2016; GPA: 4.00 / 4.00)**
 - Thesis: Phylogenetic and Taxonomical Characterization of Microbial Populations Putatively Capable of Autotrophic Ammonia Oxidation from Marine, Saline and Hypersaline Environments at the Cabo Rojo Saltens, Puerto Rico
- **B.S. Industrial Microbiology – Graduated (May 2012); GPA: 3.06 / 4.00**

Aug 2007 – Dec 2011

AWARDS and HONORS

- University of Puerto Rico, Medical Sciences Campus, MBRS-Rise Program Awardee, Competitive Fellowship, 2019 – 2021
- Member of the Medical School Biomedical Sciences Program Honor Roll, Medical Sciences Campus, May 2019
- The University of Puerto Rico, Art & Sciences Deanship competitive travel award, Mayagüez, PR, 2013 and 2014
- Second Place Award for Research Presented in Poster Format at the NEA Science Day, Mayagüez, PR, February 2014
- Outstanding Research Presented in Poster Format in the International Halophiles Conference, Storrs, CT, USA, June 2013
- Howard Hughes Medical Institute (HHMI) competitive travel award, May 2013
- The Puerto Rico NASA Space Grant Scholarship/Fellowship Program, Aug 2012
- The Puerto Rico Louis Stokes Alliance for Minority Participation (PRLSAMP), August 2009

RESEARCH and/or ACADEMIC EXPERIENCE

University of Puerto Rico, Medical Sciences Campus

January 2019 – Present

Graduate Microbiology Research – Mentor: Dr. Filipa Godoy

San Juan, PR

- Microbiome data production and analyses. Establishing SOPs for metabolomics and proteomics for the study of correlations between microbiota, Human Papilloma Virus, inflammation and cervicovaginal lesions. Collaborated with the use of Next-Generation sequencing and other Omic approaches to study environmental and gut microbiomes from watersheds, sea urchins and the ruminant gastrointestinal tract. Bioinformatic analysis using computational tools such as QUIIME, Qiita, R and several databases.

University of Puerto Rico, Medical Sciences Campus

June 2018 – December 2018

Graduate Microbiology Research – Mentor: Dr. Carlos Sariol

San Juan, PR

- Analysis of the immunological response of non-human primates to primary and secondary exposures to Zika virus and Dengue Virus. Techniques such as ELISA, cell culture, cell infection, protein concentration and viral titration were used in this study.

University of Puerto Rico

2013 – 2015

Workshop Assistant – Biology Department

Mayagüez, PR

- Preparation and organization of workshop materials that includes: Written material containing the theoretical information, audio visual materials, chemical reagents, chemical solutions, and biological samples.

University of Puerto Rico **2012 – 2015**
Graduate Microbiology Research – Mentor: Dr. Rafael Montalvo **Mayagüez, PR**

- We studied environmental populations of ammonia oxidizing microorganisms (AOM) through a salinity gradient. We isolated and characterized AOM by using several techniques such as: chemotaxonomic biochemical profiling 16S rDNA phylogenetic analysis, and the construction of genomic libraries of the molecular markers *amoA* and *accC*.

University of Puerto Rico **2009 – 2011**
Undergraduate Microbiology Research – Mentor: Dr. Rafael Montalvo **Mayagüez, PR**

- We studied the microbial biodiversity of the black mangrove (*Avicennia germinans*) soil by developing an experiment design in which we used culture dependent and culture independent techniques such as environmental microbial isolation and 16S rDNA genomic libraries.

University of Puerto Rico **Summer 2009**
Undergraduate Microbiology Research – Mentor: Dr. Luis Rios **Mayagüez, PR**

- We studied biological markers for fecal pollution in fresh water by designing experiments to isolate and characterize them by using biochemical tests. Also, we followed the US Environmental Protection Agency (EPA) protocol to determine the presence of *Enterococcus spp.* in freshwater samples.

WORK EXPERIENCE

University of Sacred Heart **January 2017 – Present**
Lecturer – Natural Sciences **San Juan, PR**

- Lecturer of the course, Good Manufacturing Procedures (Biol 319) for undergraduate students of the Biotechnology program.
- Development of educational strategies by using modern teaching methods such as e-learning, team learning and assessments, while encouraging higher-order thinking in the students.

Turabo University **2016 – 2018**
Laboratory Technician & Safety Coordinator **Cayey, PR**

- Preparation and maintenance of inventory for the Infirmary, Pharmacy, and Multipurpose laboratories.
- Implementation of safety rules for educational laboratories and supervisor of the correct disposal of biomedical and hazardous waste.
- Managed materials and equipment orders, trace order statuses, and maintained the continuous supply of daily used materials.

Turabo University **August 2016 – Present**
Lecturer – Health Sciences **Cayey, PR**

- Lecturer in the courses: Biology for Health Science Students (Biol 103), Microbiology for Health Students (Biol 300) and Microbiology Laboratory for Health Students (Biol 300L).
- Preparation of class syllabus, rubrics, class schedule, assessment, and evaluation material.
- Development of courses using the e-learning platform Blackboard.

Amgen Manufacturing Limited **August 2015 – July 2017**
Quality Assurance Analyst **Juncos, PR**

- Performed and approved assays from the Wet Chemistry and Microbiology laboratories following Good Manufacturing Practices (GMP). Performed pH and conductivity assays, in addition to preparation of chemical solutions in the Wet Chemistry Laboratory. Conducted sub-visible particle test for water, drug product, drug substance and stability samples in the Microbiology Laboratory.

University of Puerto Rico **2012 – 2015**
Teacher Assistant – Biology Department **Mayagüez, PR**

- Laboratory instructor of the courses: Biological Sciences II (Cibi 3032), General Microbiology (Biol 3770), Clinical Microbiology (Biol 4375), Genetics (Biol 3300) and Virology (Biol 5755).
- Management of student groups, preparation of evaluation material and teaching different courses simultaneously. Development of new laboratory lectures that included both theory and a practical/experimental part.

Career Objectives

I am keen to develop an academic career in biomedical sciences. In my early stages at the Ph.D. student career, I have been able to combine my studies with working and other commitments. While accomplishing this, I have shown myself to be self-motivated, committed and determined in achieving my goals. I have also demonstrated leading and organizing skills, a firm sense of responsibility and my capacity to work hard under pressure. I possess excellent verbal and written communication skills in both, Spanish and English, and I can relate to a wide range of people, as proven by my work experiences as science workshop assistant, laboratory instructor, professor, and quality control analyst in a biopharmaceutical industry. I am enthusiastic to develop a PhD thesis on the etiology of HPV infections and I long to complete a PhD. degree that will allow me to apply to a Post-Doctoral position in which I can hone the skills I already have and learn new techniques that will allow me to be a more competitive scientist. This will make me a more qualified candidate for an academic position. I aim to develop an Academic career, as working as a professor I can use my science related knowledge and people skills to encourage and help young scientists to pursue careers in STEM (Science, Technology, Engineering, and Math) related fields.

PRESENTATIONS

1. **Eduardo L. Tosado-Rodríguez**, Frances Vázquez, E. Torres, and F. Godoy-Vitorino. “Use of Next – Generation Sequencing to Characterize Changes in Water Microbiota Across an Urban Watershed in San Juan Puerto Rico”. (2019) 15th Symposium on Bacterial Genetics and Ecology (BAGECO), Lisbon, Portugal
2. **Eduardo L. Tosado-Rodríguez**, Frances Vázquez, E. Torres, and F. Godoy-Vitorino. “Use of Next – Generation Sequencing to Characterize Changes in Water Microbiota Across an Urban Watershed in San Juan Puerto Rico”. (2019) Puerto Rico Society for Microbiologists – 62nd Annual Meeting, Carolina, PR
3. **Eduardo L. Tosado-Rodríguez**, Frances Vázquez, Jorge Hernández-González, Ana Márquez, E. Torres, and F. Godoy-Vitorino. “Changes in Water Microbiota Structure Along the Rio Piedras River Due to Anthropogenic Impacts”. (2019) 7th Annual LA Conference on Computational Biology & Bioinformatics, Baton Rouge, LA, USA
4. **Eduardo L. Tosado-Rodríguez**, Frances Vázquez, Jorge Hernández-González, Ana Márquez, E. Torres, and F. Godoy-Vitorino. “Unraveling the Changes in Water Microbiota Associated to Anthropogenic Impact Across an Urban Watershed in San Juan, Puerto Rico Using Next-Generation Sequencing”. (2019) Frontiers in Environmental Microbiology – 12th Symposium, Gurabo, PR
5. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “Autotrophic Lifestyle at Hypersaline Environments: abundance and diversity of the biotin dependent acetyl CoA carboxylase using culture dependent and culture independent approaches”. (2014) International Union of Microbiological Societies, Montreal, CA
6. M. Cuebas-Irizarry, **Eduardo L. Tosado-Rodríguez**, M.X. Oyola, R.T. Papke, R. Montalvo-Rodríguez. “Characterization of microbial populations responsible for nitrification at the solar salterns of Cabo Rojo, Puerto Rico”. (2014) International Union of Microbiological Societies, Montreal, CA
7. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “Autotrophic Lifestyle at Hypersaline Environments: abundance and diversity of the biotin dependent acetyl CoA carboxylase using culture dependent and culture independent approaches”. (2014) American Society for Microbiology – 114th General Meeting, Boston, MA, USA
8. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “Autotrophic Lifestyle at Hypersaline Environments: abundance and diversity of the biotin dependent acetyl CoA carboxylase using culture dependent and culture independent approaches”. (2014) 34th Puerto Rico Interdisciplinary Scientific Meeting, Cayey, PR
9. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “Autotrophic Lifestyle at Hypersaline Environments: abundance and diversity of the biotin dependent acetyl CoA carboxylase using culture dependent and culture independent approaches”. (2014) Frontiers in Environmental Microbiology – 7th Symposium, Gurabo, PR
10. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “Autotrophic Lifestyle at Hypersaline Environments: abundance and diversity of the biotin dependent acetyl CoA carboxylase using culture dependent and culture independent approaches”. (2014) North East Alliance Science Day, Mayagüez, PR
11. M. Cuebas-Irizarry, **Eduardo L. Tosado-Rodríguez**, M.X. Oyola, R.T. Papke, R. Montalvo-Rodríguez. “Characterization of microbial populations responsible for nitrification at the solar salterns of Cabo Rojo, Puerto Rico”. (2013) 7th NEA Science Day, Mayagüez, PR

12. **Eduardo L. Tosado-Rodríguez**, M. X. Oyola, J. Clavel, A. Acevedo, R. Montalvo- Rodríguez. “*Determination of Microbial Populations Responsible for Ammonia Oxidation at Saline Environments in Cabo Rojo, Puerto Rico*”. (2013) Halophiles Conference 2013, Storrs, CT, USA
13. **Eduardo L. Tosado-Rodríguez**, M. X. Oyola, J. Clavell, L. Alemán, R. Montalvo-Rodríguez. “*Characterization of Microbial Populations Responsible for Ammonia Oxidation in Saline Environments from Cabo Rojo, Puerto Rico*”. (2013) American Society for Microbiology – 113th General Meeting, Denver, CO, USA
14. Miguel X. Oyola, J. Clavell, L. Alemán, **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “*Isolation and Characterization of Ammonia Oxidizing Organisms in Marine, Saline and Hypersaline Environments*”. (2013) American Society for Microbiology – 113th General Meeting, Denver, CO, USA
15. **Eduardo L. Tosado-Rodríguez**, M. X. Oyola, J. Clavell, L. Alemán, R. Montalvo-Rodríguez. “*Characterization of Microbial Populations Responsible for Ammonia Oxidation in Saline Environments from Cabo Rojo, Puerto Rico*”. (2013) 1st Puerto Rico Society of Microbiologists Symposium “Passing the Torch of Research and Ethics to the Next Generation”, San Juan, PR
16. **Eduardo L. Tosado-Rodríguez**, M. X. Oyola, J. Clavell, L. Alemán, R. Montalvo- Rodríguez. “*Characterization of Microbial Populations Responsible for Ammonia Oxidation in Saline Environments from Cabo Rojo, Puerto Rico*”. (2013) 33th Puerto Rico Interdisciplinary Scientific Meeting, Gurabo, PR
17. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “*Characterization of Microbial Isolates Capable of Ammonia Oxidation and Autotrophic Growth of Saline Environments from Cabo Rojo, Puerto Rico*”. (2013) North East Alliance Science Day, Mayagüez, PR
18. **Eduardo L. Tosado-Rodríguez**, R. Montalvo-Rodríguez. “*Characterization of Microbial Populations Responsible for Ammonia Oxidation in Saline Environments from Cabo Rojo, Puerto Rico*”. (2012) Puerto Rico Space Grant Consortium Symposium, Mayagüez, PR

EXTRACURRICULAR ACTIVITIES

1. **Medical Sciences Campus Microbiology Chapter** **2017 – Present**
 - Vice President (2019 – 2020)
 - Treasurer (2018 – 2019)
2. **Asociación Estudiantes Graduados RCM** **2017 – Present**
3. **Puerto Rico Society of Microbiologists** **2017 – Present**
 - American Society for Microbiology - Local Branch
4. **American Society for Microbiology Member** **2013 – 2016**
5. **Current Topics in Microbiology and Biological Sciences Seminars** **2014 – 2015**
 - Presented seminars for the undergraduate student associations of the Biology Department of the University of Puerto Rico, Mayagüez (βββ National Honor Society, Industrial Microbiology Association, and Student Association of Future Professionals of Clinical Laboratories).
 - Seminar topics were: Microbial Diversity and Ammonia Oxidation in Hypersaline Environments, Microbial Staining Techniques Used in Clinical Laboratories, and Ebola: History, Epidemiology and Current Issues.
6. **High School Science Fair Mentor and Judge** **2012 – 2015**
 - Taught secondary school students to design a complete scientific project following the scientific method.
 - Evaluated high school science fair projects related to life sciences.
7. **Industrial Microbiology Student Association (SEMI)** **2008 – 2011**
 - Vice President (2009 – 2010)
 - Participated in social and professional activities to develop leadership skills.