Lilliam Casillas-Martinez lilliam.casillas@upr.edu UNIVERSITY OF PUERTO RICO-HUMACAO "I AM A FIRST GENERATION LATINA" URL:
http://www.upr.edu/humacao/biol_pp_dracasillas/

RESEARCH AREAS: *In-vitro* bacterial mineralizations, Search for bioactive agents and adaptations of wild of environmental isolates, Inclusion for Latinas into masculine fields, Equity for Latin@s in STEM fields.

EDUCATION: **PROFESSIONAL PREPARATION:** 1998 PhD Microbiology University of Connecticut, Health Center 1989 BS Industrial Microbiology University of Puerto Rico-Mayaguez

RELEVANT PROFESSIONAL POSITIONS:

- 2014-2017, Associate Dean of Research Affairs, University of Puerto Rico-Humacao.
- 2011-2013, Biology Department Senator, Academic Senate, UPR-Humacao.
- Summer 2008, Visiting Scientist, Bosak Lab, Geology, Massachusetts Institute of Technology, MA.
- 1999-Present, Professor, Biology Department, University of Puerto Rico-Humacao, PR.
- 1998-1999, Professor, Biology Department, Universidad Autonoma del Estado de Puebla, Puebla, Mexico.
- 1990-1991, Quality Control Technician, Johnson and Johnson, PR,
- 1998-1990, Laboratory Technician I, Syntex, F.P., PR,

MEMBERSHIPS: Member of the American Society for Microbiology (ASM). Member of the Society for General Microbiology. Member of the American Society for Microbiology in Puerto Rico (ASM- Puerto Rico).

LANGUAGES:
English and Spanish

RELEVANT PUBLICATIONS: **(* publications co-authored with undergraduate students):**

1. Casillas-Martinez, L. and W. Gonzalez –Espada. 2019. Cybernetic Girls can be Pinky: Strategies to recruit and retain Latinas into STEM in the context of Faculty-to-Student Empowerment. In *Culturally Responsive Strategies for Reforming STEM higher Education: Turing the TIDES on Inequity,* p. 33-51. Emerald Publishing Limited. (Mack K, K. Winter and M. Soto, Eds). DOI:10.1108/978-1-78743-405-920191003.

2. Perito B., L. Casillas and M. Marvasi. 2018. Factors Affecting Formation of Large Calcite Crystals (≥1 mm) in *Bacillus subtilis* 168 Biofilm, Geomicrobio`` logy Journal, 35:5, 385-391, DOI: 10.1080/01490451.2017.1377788

3. Sills, J. et.al. 2017. E-letter. Prejudgment Call. Science. Vol. 355, Issue 6320, pp. 22-23, DOI: 10.1126/science.355.6320.22

***4. Marvasi M., Casillas-Santiago L. and L. Casillas-Martinez. 2016.** Involvement of etfA gene during CaCO3 precipitation in *Bacillus subtilis* biofilm. *Geomicrobiol. J.* http://dx.doi.org/10.1080/01490451.2016.1248254`

5. Mack, K, Soto. M., L. Casillas-Martinez and Mac Cormark E. F. 2015. Toward Achieving Equity for Woman in Computing: The imperative of Critical Pedagogical Reform. Gender Equity in Education. Association of American Colleges and Universities. 18:8-10. https://www.aacu.org/diversitydemocracy/2015/spring/mack

***6. Marvasi M., Y. Davila and L. Casillas-Martinez. 2013.** Laboratory activity to effectively teach Introductory Geomicrobiology concepts to Non-Geology majors. *J. of Microbiol. and Biol.* Education. 14: 206-212. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3867758/

7. Marvasi M, K.L., Gallagher, L. Casillas-Martinez and P.T. Visscher. 2012. Importance of B4 medium in determining organomineralization potential of bacterial environmental isolates. Geomicrobiol. J. 29:916–924. http://www.tandfonline.com/doi/abs/10.1080/01490451.2011.636145#.VV4WCblFC70

8. Marvasi M, P.T., Visscher and L. Casillas-Martinez. 2010. Extracellular Polymeric Substances (EPS) from *Bacillus subtilis*: polysaccharides polypeptides, and genes coding for their synthesis. *FEMS Microbiology Letter*, 313:1-9.

9. Marvasi M., P.T. Visscher, B. Perito, and L. Casillas-Martinez. 2010. Physiological requirements for carbonate precipitation during biofilm development of B. subtilis etfA mutant. FEMS Microbiol. Ecol. 71:341-350. http://www.ncbi.nlm.nih.gov/pubmed/20059546

***10. Visscher P.T., C. Dupraz, O. Braissant, K.L. Gallagher, C. Glunk, L. Casillas and R.E.S. Reed. 2010.** Microbial Mats: Modern and Ancient Microorganisms in Stratified Systems, In: *Cellular Origin, Life in Extreme Habitats and Astrobiology*. J. Skeckbach and Oren A. (Eds). 14:443-468.

11. Hernandez B. and L. Casillas-Martinez. 2009. Design and Assessment of an Introductory Geomicrobiology Course for non-Geology students. J. of Geoscience Education. Vol. 57, No.1. http://dx.doi.org/10.5408/1.3544225

12. Rios-Velazquez C., L. Casillas-Martínez and P.T. Visscher. 2007. Learning Geomicrobiology as a team using microbial mats; a multidisciplinary approach. *J. of Microbiol. and Biol. Education.* **1:**28-35. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3577146/.

13. Cantrell, S., M. Molina and L. Casillas-Martinez. 2006. Halophilic fungi from the Cabo Rojo Salterns. Mycological Research. 110: 962-970. doi:10.1016/j.mycres.2006.06.005

14. Casillas-Martinez, L., et al. 2005. Interrelations among communities, physiological structure and resulting mineralogy in the hypersaline mats of the Cabo Rojo salterns. Geomicrobiol. J. 22: 269-81.2. DOI:10.1080/01490450500182672.

15. Casillas-Martinez L., A. Driks, B. Setlow and P. Setlow. 2000. Lack of a significant role for the PerR regulator in *Bacillus subtilis* spore resistance, *FEMS Microbiology Letters*, 188: 203–208. https://doi.org/10.1111/j.1574-6968.2000.tb09194.x

16. Basat N. A. Herbig, L.Casillas-Martinez and J. Helmann. 1998. Bacillus subtilis contains multiple Fur homologues: Identification of the iron uptake (Fur) and peroxide regulon (PerR) repressors. Molecular Microbiol. 29(1):189-98. DOI10.1046/j.1365-2958.1998.00921.x

17. Casillas-Martinez, L., and P. Setlow. 1997. Alkyl hydroperoxide reductase, catalase, MrgA, and superoxide dismutase are not involved in resistance of *Bacillus subtilis* spores to heat and oxidizing agents*. J. Bacteriol.* 179:7420-7425.

Synergistic Activities:

- Research advisor to more than 120 undergraduate students in Microbiology, Geomicrobiology and Metagenomics with 40% of graduates following post baccalaureate studies and more than 15 publications with undergraduate students as co-authors.

- Main leader of an outreach program that has impacted more than 1000 students and teachers from the public system with workshops, conduction of scientific fairs projects and conferences.

- Coordinator of *Semillas de Truinfo* a project from Amgen Foundation to increase the number of females following STEM careers at UPRH.

-Coordinator of the Small World Initiative for curricular enhancements of the Molecular and Cell Biology courses and laboratory at UPRH.

- PI of the *Cybernetic girls can be pinky* initiative to increase the number of females biologists entering Computational Biology via the Kaleidoscope project of the American Association of Universities and Colleges.

- Development of a *Microbial Observatory* within the Cabo Rojo salterns for biodiversity and conservational studies. Establishment of a *Research at Undergraduate Institutions (RUI) for studies in Geomicrobiology* at UPR-Humacao.

-Active member of CienciaPR.org, a cybernetic platform designed to promote science education and co-author in their book Ciencia Boricua published for local public schools.

- Collaborator in USDA-funded proposal to generate metagenomic libraries from two forests within Puerto Rico. Geomicrobiology and Metagenomic Studies (GeMS) from puertorrican soils.

- Design of a *Certificate of Techniques in Industrial Biotechnology* for the Continuous Education Division at the UPR-Humacao to train dislocated professionals in Industrial Biotechnology.

-*Ad hoc* grant reviewer for Israel Science Foundation (ISF) and the National Science Foundation (NSF). Member of the Microbial Observatories, Molecular and Cell Biology (MCB) and Frontiers in Biological Research (FIBR) Division Review Panels.

-Ad *hoc* grant reviewer for Department of Agriculture. Washington, D.C. Member of Competitive Programs and Genetic Processes & Mechanisms of Agricultural Plants Developmental Processes of Agricultural Plants Plant Biosecurity Review Panels.

Current funding:

1. Principal Investigator (P.I.). HHMI Inclusive Excellence Program. Puerto Rican Outstanding Undergraduate Diversified (PROUD) program. $1,000,000. 07/01/2018 to 07/01/2022.

Prior funding:

1. P.I. “Cybernetic girls can be pinky”. American Association Universities and Colleges. $299,000. 01/06/14 to 04/16/18.

2. P.I. RUI-Cabo Rojo Microbial Observatory. National Science Foundation. Microbial Observatories Program. $1,400,000.00, 02/01/05 to 02/01/12.

3. Co-Principal Investigator (co-P.I.) Geomicrobiology and Metagenomic studies of tropical forests. USDA-CSREES Program. $295,000. 07/01/07 to 06/31/09.

4. P.I. RUI-Microbial Observatories: Diversity of halophilic bacteria and geochemical signatures in a tropical solar saltern. National Science Foundation. Microbial Observatories Program. $608,000. 02/01/02 to 02/01/05.

5. Co-P.I. UPR-Humacao Women’s Educational Equity Act Program. U. S. Department of Education. Educational Equity Act Program. $524,850. 08/01/00 to 07/31/05.

Honors:

-2016-present: Member of the National Advisory Board of Project Kaleidoscope, American Association of Colleges and Universities. 2016-present.

-2016: American Association for the Advancement of Science. AAAS Travel Award for 2016 Ambassador Program to Latin America. Gender Summit.

-2016: Society for Toxicology Travel Award to increase minority participation.

-2011: Arturo Carrion Award for Excellence in Microbiology. American Society for Microbiology

Local Chapter in Puerto Rico.

-2012: Carski Foundation Distinguished Undergraduate Microbiology Teaching Award. American

Society for Mirobiology.

-2002-09: Member of the Microbial Observatories, Molecular and Cell Biology (MCB). Division Review Panels. National Science Foundation. Washington, D.C.

-2006-07: Member of Competitive Programs and Genetic Processes & Mechanisms of Agricultural Plants Developmental Processes of Agricultural Plants Plant Biosecurity Review Panels.