

# **Maria C. Sevillano Rivera**

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Northeastern University  
Department of Civil & Environmental Engineering  
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## **Education**

- 2016 – Present      Postgraduate Research (PhD student)  
Northeastern University, Boston, MA, USA  
Academic advisor: Ameet Pinto
- 2014 – 2015        Postgraduate Research (PhD student)  
University of Glasgow, Glasgow, Scotland, UK  
Academic advisor: Ameet Pinto  
(Transferred to Northeastern University in 2016 with Advisor)
- 2012– 2014        Master in Environmental Engineering  
Technical University of Madrid, Madrid, Spain  
Final project: LCA of a biomass power plant  
Academic advisor: Guillermo San Miguel Alfaro, PhD.
- 2007 – 2012        Civil Engineering, B.S.  
University of Puerto Rico at Mayaguez, Puerto Rico  
Academic advisor: Sangchul Hwang, PhD.

## **Teaching Experience**

- Fall 2018 CIVE 5300: Environmental Engineering Laboratory **Teaching Assistant**  
Fall 2018 CIVE 2334: Environmental Engineering 1 **Invited instructor**  
Spring 2019 CIVE 5300: Environmental Engineering Laboratory **Teaching Assistant**

## **Awards and Honors**

- 2019                2019 Fall Dissertation Completion Fellowship, Northeastern University, Boston, MA, USA
- 2018                3<sup>rd</sup> Place North East Graduate Student Water Symposium (NEGSWS) Poster Presentation, University of Massachusetts, Amherst, MA, USA
- 2017                Best Student Oral presentation, Association of Environmental Engineering and Science Professors (AEESP) 2017 Conference, Ann Arbor, MI, USA
- 2017                AECOM Travel Award Winner, Association of Environmental Engineering and Science Professors 2017 Conference, Ann Arbor, MI, USA
- 2016                Northeastern Graduate Student Government Travel Award

2015 GU68 award  
2011 Research Scholarship U.S. DoE-SR

### **Professional Society Membership**

Association of Environmental Engineering and Science Professors (AEESP)  
International Water Association (IWA)  
American Society for Microbiology (ASM)  
Tau Beta Pi Association  
American Society of Civil Engineers (ASCE)

### **RESEARCH**

#### Peer reviewed manuscripts

- J1. Lin, Y., **Sevillano-Rivera, M.**, Jiang, T., Li, G., Cotto, I., Vosloo, S., Carpenter, C.M., Larese-Casanova, P., Giese, R.W., Helbling, D.E. and Padilla, I.Y., 2020. Impact of Hurricane Maria on Drinking Water Quality in Puerto Rico. **Environmental Science & Technology**, 54(15), pp.9495-9509.
- J2. **Sevillano, M.**, Dai, Z., Calus, S., Bautista-de Los Santos, Q.M., Eren, A.M., van der Wielen, P.W., Ijaz, U.Z. and Pinto, A.J., 2020. Differential prevalence and host-association of antimicrobial resistance traits in disinfected and non-disinfected drinking water systems. **Science of the Total Environment**, 749, p.141451.
- J3. Dai, Z., **Sevillano-Rivera, M.C.**, Calus, S.T., Bautista-de Los Santos, Q.M., Eren, A.M., Van Der Wielen, P.W., Ijaz, U.Z. and Pinto, A.J., 2020. Disinfection exhibits systematic impacts on the drinking water microbiome. **Microbiome**, 8(1), pp.1-19.
- J4. Fedders, A.C., DeBellis, J.L., Bradley, I.M., **Sevillano-Rivera, M.C.**, Pinto, A.J., and Guest, J.S. (2018) "Comparable nutrient uptake across diel cycles by three distinct phototrophic communities". **Environmental Science & Technology**, 53(1), pp.390-400.
- J5. Bradley, I.M., **Sevillano-Rivera, M.C.**, Pinto, A.J. and Guest, J.S. (2018). "Impact of Solids Residence Time on Community Structure and Nutrient Dynamics of Mixed Phototrophic Wastewater Treatment Systems". **Water Research**. In press
- J6. Bautista, Q.M., Schroeder, J., **Sevillano, M.C.**, Sungthong, R., Ijaz, U., Sloan, W.T., and Pinto, A.J. (2016) "Drinking water microbial communities across disinfection strategies – a meta-analysis". **Environmental Science: Water Research and Technology**. Vol. 2, pp. 631-644.
- J7. Latorre, I., Hwang, S., **Sevillano, M.C.**, and Montalvo-Rodríguez R. (2012) "PVC biodeterioration and DEHP leaching by DEHP-degrading bacteria". **International biodeterioration & biodegradation** Vol. 69, pp.73-81.

#### Manuscripts in preparation

- J8. **Sevillano-Rivera, M.C.**, Vooslo, S., Cotto, I., Dai, Z., Jian, T., Santiago Santana, J.M., Padilla, I.Y., Rosario-Pabon, Z., Velez Vega, C, Cordero, J.F., Alshawabkeh, A., Gu, A., and Pinto, A.J. "Spatial-temporal targeted and non-targeted surveys to asses microbiological

composition of drinking water in Puerto Rico following Hurricane Maria.” Submitted, May 2021.

- J9. Vosloo, S., Huo, L. Anderson, C., Dai, Z., **Sevillano, M.**, and Pinto, A.J. “Evaluating *de novo* assembly and binning strategies for time-series drinking water metagenomes.” Anticipated submission, June 2021

#### Posters and Presentations at Conferences, Research Expositions, or Seminars (P)

##### Presentations: International Conferences

- P1. **Sevillano-Rivera, M.C.**, Dai, Z., Calus, S. T., Bautista-de los Santos, Q.M., Ijaz, U.I., Eren, A.M., and Pinto, A.J. (2019) “Enrichment of Nontuberculous Mycobacteria with intrinsic antimicrobial resistance in systems with disinfectant residual”. **Microbial Ecology and Water Engineering**. Hiroshima, Japan, 2019.
- P2. **Sevillano-Rivera, M.C.**, Dai, Z., Calus, S. T., Bautista-de los Santos, Q.M., and Pinto, A.J. (2018) “Are antibiotic resistance genes differentially abundant in chlorinated drinking water systems as compared to non-disinfected systems? **17th International Symposium on Microbial Ecology**. Leipzig, Germany. (poster)
- P3. Dai, Z., **Sevillano-Rivera, M.C.**, Calus, S. T., Bautista de los Santos, Q.M., Ijaz, U.I., and Pinto, A.J. (2018) “Drinking water: To disinfect or not to disinfect?” **17th International Symposium on Microbial Ecology**. Leipzig, Germany. (poster)
- P4. Dai, Z., **Sevillano-Rivera, M.C.**, Bautista de los Santos, Q.M., Ijaz, U.I., and Pinto, A.J. (2018) “Elucidating the long-term impact of disinfection strategies on the drinking water microbiome”. **IWA-Leading Edge Technology Conference 2018**. Nanjing, China.
- P5. Bautista, Q.M., Calus, S.T., Dai, Z., **Sevillano-Rivera, M.C.**, Sunghong, R., Ijaz, U., Sloan, W.T., and Pinto, A.J. (2016) “Understanding drinking water systems through molecular microbial ecology”. **Federation of Infection Societies and Healthcare Infection Society 10<sup>th</sup> International conference**. Edinburgh, UK, 2016.
- P6. Sunghong, R., **Sevillano-Rivera, M.C.**, and Pinto, A.J. (2016) “Cell phone fluorometer as a novel quantitative tool kit for monitoring biofilm removal efficiency”. **Antimicrobial Resistance in Microbial Biofilms and Options for Treatment**. Ghent, Belgium, 2016. (poster).
- P7. **Sevillano-Rivera, M.C.**, Knapp, C.W., Calus, S.T. and Pinto, A.J. (2016) “Does water stress increase the incidence of antibiotic resistance genes in drinking water supplies?”. **Microbial Ecology and Water Engineering**. Copenhagen, Denmark, 2016.
- P8. Dai, Z., **Sevillano-Rivera, M.C.**, Bautista, Q.M., Ijaz, U.I. and Pinto, A.J. (2016) “Elucidating the long-term impact of disinfection strategies on the drinking water microbiome”. **Microbial Ecology and Water Engineering**. Copenhagen, Denmark, 2016. (poster).
- P9. Bautista, Q.M., Dai, Z., Calus, S., **Sevillano-Rivera, M.C.**, Ijaz, U.I., Sloan, W.T., and Pinto, A.J. (2016) “Impact of source water on the structure and metagenomic profile of drinking water communities”. **Microbial Ecology and Water Engineering**. Copenhagen, Denmark, 2016.
- P10. **Sevillano-Rivera, M.C.**, Knapp, C.W., Calus, S.T., and Pinto, A.J. (2016). “Does water stress increase the incidence of antibiotic resistance genes in drinking water supplies?”. American Society of Microbiology: Microbe 2016. Boston, Massachusetts, 2016. (poster)

- P11. Ugarcina Pervovic, S. Bautista, Q.M., **Sevillano-Rivera, M.C**, Russell, J., and Pinto, A.J. (2015) “Estimating the impact of flow regime and sample volume on changes in bacterial community diversity in a low biomass aquatic environment.” **Biofilms - 7**. Lisboa, Portugal, 2016.
- P12. Ugarcina Pervovic, S. Bautista, Q.M., **Sevillano-Rivera, M.C**, Russell, J., and Pinto, A.J. (2015) “Determining the effect of sample volume and flow rates on investigations of bacterial community diversity in low biomass aquatic environments.” **FEMS Microbiology Congress**. Maastricht, Netherlands, 2015. (poster)
- P13. Calus, S.T., **Sevillano-Rivera, M.C**, Ijaz, U. and Pinto, A.J. (2015). “MinION-enabled and customer led drinking water quality monitoring for pathogen detection.” **London Calling – Oxford Nanopore Technology**. London, UK, 2015 (poster).

Presentations: National Conferences

- P14. **Sevillano-Rivera, M.C.**, Vosloo, S., Cotto, I., Dai, Z., Jin, T., Lin, Y., Alshwabkeh, A., Gu, A., and Pinto, A.J. (2019) “Assesment of Puerto Rico’s drinking water quality recovery after hurricane Irma and Maria”. **Association of Environmental Engineering and Science Professors 2019**, Phoenix, Arizona.
- P15. **Sevillano-Rivera, M.C.**, Dai, Z., Calus, S. T., Bautista-de los Santos, Q.M., Ijaz, U.Z., and Pinto, A.J. (2019) “The drinking water resistome and its host association is shaped by the presence of disinfectant residual”. **Association of Environmental Engineering and Science Professors 2019**, Phoenix, Arizona. (poster)
- P16. Dai, Z., **Sevillano-Rivera, M.C.**, Calus, S.T., Bautista-de los Santos, Q.M., Ijaz, U.Z., and Pinto, A.J. (2019) “Understanding the role of disinfectant residuals on the drinking water microbiome” **Association of Environmental Engineering and Science Professors 2019**, Phoenix, Arizona. (poster)
- P17. **Sevillano-Rivera, M.C.**, Dai, Z., Calus, S. T., Bautista-de los Santos, Q.M., and Pinto, A.J. (2018) “Are There Differentially Abundant Antibiotic Resistance Genes (ARG) Associated with Chlorinated Drinking Water Systems As Compared to Non-Disinfected Systems?” **North East Graduate Student Water Symposium**, University of Massachusetts, Amherst, Massachusetts (poster)
- P18. **Sevillano-Rivera, M.C.**, Dai, Z., Calus, S. T., Bautista-de los Santos, Q.M., and Pinto, A.J. (2018) “Are There Differentially Abundant Antibiotic Resistance Genes (ARG) Associated with Chlorinated Drinking Water Systems As Compared to Non-Disinfected Systems?” **ASM Microbe 2018**, Atlanta, Georgia (poster)
- P19. Dai, Z., **Sevillano-Rivera, M.C.**, Calus, S. T., Bautista de los Santos, Q.M., Ijaz, U.I., and Pinto, A.J. (2018) “Elucidating the Long-Term Impact of Disinfection Strategies on the Drinking Water Microbiome” **ASM Microbe 2018**, Atlanta, Georgia (poster)
- P20. Bautista de los Santos, Q.M., Dai, Z., Calus, S., **Sevillano-Rivera, M.C**, Ijaz, U.Z., Sloan, W.T., and Pinto, A.J. (2017) “A collective analyses of microbial communities in full-scale drinking water distribution system”. **Association of Environmental Engineering and Science Professors 2017**, Ann Arbor, Michigan.
- P21. **Sevillano-Rivera, M.C.**, Calus, S., Dai, Z., Bautista de los Santos, Q.M. and Pinto, A.J. (2017) “Incidence of antimicrobial resistance genes in municipal drinking water samples from the United Kingdom”. **Association of Environmental Engineering and Science Professors 2017**, Ann Arbor, Michigan. \* **Winner of best student presentation award at AEESP 2017.**

- P22. Dai, Z., **Sevillano-Rivera, M.C.**, Calus, S., Bautista de los Santos, Q.M., Ijaz, U.I., and Pinto, A.J (2017). **UNC Water Microbiology 2017**, Chapel Hill, North Carolina.
- P23. Latorre I., Vazquez N., **Sevillano-Rivera, M.C**, Hwang S., and Montalvo R. (2012) “Growth-linked Biodegradation and Thermogravimetric Stability of PVC by DEHP Degrading Bacteria Isolated from Landfill Leachate.” **32nd Puerto Rico Interdisciplinary Scientific Meeting (PRISM)**, Carolina, Puerto Rico (poster)
- P24. **Sevillano-Rivera, M.C.**, Yawata, Y., Son, K., and Stocker, R. (2011) “Aerotaxis of Marine Microbes”, **MSRP 2011**, Boston, Massachusetts (poster)
- P25. Latorre I., **Sevillano-Rivera, M.C**, Montijo L., Hwang S., and Montalvo R. (2011) “Growth-linked Biodeterioration of Plastic Materials by DEHP-Degrading Bacteria”, **XVI Sigma Xi**, University of Puerto Rico-Mayaguez, Puerto Rico (poster)
- P26. **Sevillano-Rivera, M.C**, Chiao, T.H., Pinto, A., and Raskin, L. (2010) “Characterization of Ann Arbor’s Drinking Water Treatment Plant and Distribution System” **CIC-SROP Research Conference**, Columbus, Ohio
- P27. **Sevillano-Rivera, M.C**, Rosado S., Concepcion D., Latorre I., Montijo L., and Hwang S. (2010) “Isolation and enrichment of DEHP-degraders from landfill leachate and DEHP biodegradation” **SERMACS**, New Orleans, Louisiana
- P28. **Sevillano-Rivera, M.C.**, Rosado S., Concepcion D., Latorre I., Hwang S. (2010) “Di(2-ethylhexyl) Phthalate Ester (DEHP)-Degraders Isolated from Landfill Leachate”, **34th ACS Senior Technical Meeting**, Mayaguez, Puerto Rico
- P29. Rodriguez, L.C., Concepción, D., **Sevillano-Rivera, M.C**, and Hwang S. (2010) “Point-of-Entry (POE) Cistern Water Purification Units (CPU) Development” **XV Sigma Xi**, University of Puerto Rico-Mayaguez, Puerto Rico (poster).

#### Workshop Participant (W)

- W1. Institute in Drinking Water Treatment (IDWT), Northampton, MA August 13-15, 2018
- W2. Explorations in Data Analysis for Metagenomic Advances in Microbial Ecology (EDAMAME) Kellogg Biological Station, Hickory Corners, MI August 6-12, 2017
- W3. MED-Oligotyping and Analysis and Visualization of ‘Omics (Anvi’o), NU Marine Sciences Centre, Nahant, MA October 30-31, 2017

#### **SERVICE**

##### Mentorship

##### Graduate students mentored

- Xuyang Li (2018-2019): Master Civil and Environmental Engineering Department at Northeastern University

##### Undergraduate students mentored

- Cerina Karr (2020-2020): Bachelor of Science Biology Department at Northeastern University  
 - Alyssa DuBois (2018-2019): Bachelor of Science Bioengineering Department at Northeastern University

##### Outreach

- NU Civil and Environmental Engineering Graduate Candidate Day, Panelist

- NU COE Grad Ambassadors: Pursuing your PhD Webinar, Presenter
- Margarita Muñiz Academy Career Day, Panelist
- Drinking Water Treatment Operations Workshop for high school students at NU with Dr. Laresse-Cassanova
- NEGSWS NU Coordinator
- MIT Water Night Usher and NU Coordinator

#### Peer-Reviewed Journals

- Environmental Science and Technology

#### Conference Session Organization

2019 Workshop co-organizer, Meta-omics in Environmental Engineering Research. Theory, Statistics, and Data Interpretation. **Association of Environmental Engineering and Science Professors 2019**, Phoenix, Arizona. May 14, 2019.

#### Organizations

- Northeastern University College of Engineering PhD Dean Council Member: Professional Development Committee (2018-2019)