

Marirosa Molina, Research Microbiologist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

[Mailing Address](#)

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Area of Expertise: My expertise includes: (1) Temporal and spatial assessment of microbial DNA-based tools to offer fast, reliable, and reproducible results identifying the sources of fecal contamination and presence of fecal pathogens in freshwaters and marine ecosystems; (2) Determine the fate and transport of microbial contaminants from point and non-point sources in surface waters through the application of field, laboratory, and modeling approaches; and (3) Study the response of microbial communities to land use and climate changes, including extreme events impacting agricultural and urban landscapes.

Select Publications:

Kim, K., Whelan, G., Molina, M., Purucker, S.T., Pachepsky, Y., Guber, A., Cyterski, M.J., Ravenscroft, J., and D. H. Franklin. 2016. Rainfall-induced release of microbes from manure: model development, parameter estimation, and uncertainty evaluation on small plots. *Journal of Water and Health*, *accepted for publication*

Carrillo, Y., Ball, B., and M. Molina. 2016. Stoichiometric linkages between plant litter, trophic interactions and nitrogen mineralization across the litter–soil interface. *Soil Biol and Biochem* 92:102-110.

Soller, J., Bartrand, T., Ravenscroft, J., Molina, M., Whelan, G., Schoen, M., and N. Ashbolt. 2015. Estimated Human Health Risks from Recreational Exposures to Stormwater Runoff Containing Animal Faecal Material. *Environ Modell Softw.* 72:21-32.

Molina, M., Hunter, S., Cyterski, M., Peed, L.A., Kelty, C.A., Sivaganesan, M., Mooney, T., Prieto, L., and O.C. Shanks. 2014. Factors Affecting the Presence of Human-Associated and Fecal Indicator Real-Time Quantitative PCR Genetic Markers in Urban-Impacted Recreational Beaches. *Water Research* 64: 196-208. DOI information: 10.1016/j.watres.2014.06.036

Cantrell, S.A., Molina, M., Lodge, D.J., Rivera-Figueroa, F.J., Ortiz-Hernández, M.L., Marchetti, A.A., Cyterski, M.J., and José R. Pérez-Jiménez 2014. Effects of a simulated hurricane disturbance on forest floor microbial communities. *Forest Ecol and Management* 332: 22-31.

Ryu, H, Elk M, Khan IU, Harwood VJ, Molina M, Edge TA, Domingo JS. 2014. Comparison of two poultry litter qPCR assays targeting the 16S rRNA gene of *Brevibacterium* sp. *Water Research* 48: 613-21.

View more research publications by [Marirosa Molina](#).

Education:

- Ph.D. Ecology, University of Georgia, 2001
- M.S. Microbiology, University of Georgia, 1994
- B.S. Industrial Microbiology, University of Puerto Rico, 1985

Professional Experience:

- Research Microbiologist, USEPA, ORD, NERL-ERD, Athens, GA 1990-present
- Microbiologist, MOVA Pharmaceutical, Caguas, Puerto Rico. 1990
- Laboratory Technician I, Syntex FP Inc., Humacao, Puerto Rico 1989–1990

Honors and Awards:

- 2014 STAA Award – Honorable Mention
- 2012 ORD Honor Award, Bronze Medal for Recreational Water Quality Criteria Research Team *“Recognizing outstanding research contributions of the Recreational Water Quality Criteria Research Team for providing a firm scientific basis for revised recreational water quality criteria*
- 2010 USEPA NERL Special Achievement Goal 1 Award: Support the Agency’s Mission
- 2010 USEPA NERL Special Achievement Goal 3 Award: Be a leader in the Environmental Research Community