

*Curriculum vitae*  
**ARTURO A. MASSOL-DEYA, Ph.D.**

**Status:** Professor  
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**Education:**

- Doctor of Philosophy, June 1994  
Department of Microbiology & Center for Microbial Ecology, Michigan State University, East Lansing, MI
- Bachelor of Science Magna Cum Laude, June 1990  
Biology, University of Puerto Rico, Humacao, PR

**Professional Employment:**

- University of Puerto Rico, 2002-Present (Professor)
- University of Puerto Rico, 1997-2002 (Associate Professor)
- University of Puerto Rico, 1994-1997 (Assistant Professor)
- Michigan State University, 1992-1994 (Research Assistant)
- Michigan State University, 1991-1992 (Teaching Assistant)

**Research Interests:** Biodegradation, bioremediation, phytoremediation, biodiversity, molecular microbial ecology

**Association Memberships and Activities:**

- International Society of Microbial Ecology, member since 1998
- American Society for Microbiology, member since 1989
- Executive Board, Bosque del Pueblo, member since 1997
- Caribbean Society of Biotechnology, 1995
- Taller de Arte y Cultura de Adjuntas, member since 1980

**Awards and Special Professional Duties:**

- EPA Environmental Award, 2004.
- National Science Foundation Review Panelist, 2004.
- PR Board of Higher Education, 2003-2004.
- PR Environmental Quality Board Consultant, 2003.
- National Science Foundation Review Panelist, 2002.
- Outstanding Young Investigator, Government of PR, 2002.
- Outstanding Investigator, Presidency of UPR, 2000.
- Dedication Microbiology Week. SEMI, UPR-Mayagüez. March 1997.
- MARC Doctoral Fellowship. NIH, 1990-1994.
- Agüedo Mojica. Outstanding UPR-Humacao Student, 1990.
- MARC Undergraduate Fellowship. NIH, 1988-1990.

**Research Projects:**

- Estudio de la vegetación como bioindicador (CENTINELA) de disturbios ambientales y riesgos a la salud de los residentes de la isla municipio de Vieques, Puerto Rico. Departamento de Salud de Puerto Rico. 2003-05.
- Molecular Approaches to Understanding C and N Dynamics and their Role in the Global Carbon Cycle. Department of Energy. 2003-06.
- Bacterioplankton community structure of aquaculture impacted seawaters by fluorescence in situ hybridization. Sea Grant. 2004-05.
- Coupling process and microbial community studies to understand the mechanisms controlling carbon preservation and nitrogen loss in marine sediments. Department of Energy. 2000-03.
- Bioaumentación de suelos contaminados con diesel. On-Site Environmental, 2000.
- Biorremediación del derrame de gasolina en la reserva de Punta Yeguas (Yabucoa, PR). Ponce Safety Oil Cleaners, 1999-00.
- Molecular characterization of nitrogen dynamics in coastal sediments of Pacific Northwest. Department of Energy. 1997-00.
- Microbial diversity and risk assessment of metal and petroleum contaminated tropical marine sediments. Office of Naval Research. 1998-00.
- Marine microbial diversity and risk assessment. Sea Grant. 1998-00.
- Biorremediación de suelos contaminados con diesel en ambientes anóxicos. On-Site Environmental Inc. 1998-present.
- Collaborative partnership with the Center for Mineral Technology of Rio de Janeiro. Sea Grant. March 1998.
- Desarrollo y evaluación de un formulación bacteriológica para el tratamiento in-situ de aceites y grasas. Environmental Power of PR. Summer 1998.
- Evaluación de un formulación bacteriológica para el tratamiento in-situ de aceites y grasas. Environmental Power of PR. August-December 1998.
- Treatment of landfill leachate. Water Resource Research Institute. 1997-98.
- Bioremediation of PCP Contaminated Soil by Composting. US Environmental Protection Agency. 1995-97.
- Bioremediation of BTX contaminated groundwater. Water Resource Research Institute. 1995-96.
- Structure of anaerobic microbial communities in Upflow Anaerobic Sludge Blanket. UPR 1996-97.
- Bioremediation of petroleum contaminated sands. UPR 1995-96.
- Restriction endonuclease analysis of 16S ribosomal RNA genes for a presumptive phylogenetic identification of bacterial isolates. UPR 1994-95.

**Publications:**

- A. Massol-Deyá, A., R. Muñiz, M. Colón, J. Graulau, and N. S. Tang. In press. Microbial Community Structure of Pentachlorophenol Contaminated Soils as Determined by Carbon Utilization Patterns. *Caribbean Journal of Science*, April 2005.
- Massol, A., D. Pérez, E. Pérez, M. Berrios, and E. Díaz. Submitted. Trace elements analysis in forage samples from a US Navy bombing range (Vieques, Puerto Rico). *Int. J. Environ. Res. Public Health*.

- Massol-Deyá, A. y E. Díaz. 2003. Trace elements composition in forage samples from various anthropogenically impacted areas in Puerto Rico. *Caribbean Journal of Science*. 39:215–220.
- Nieves, I., N. Rodríguez, and A. Massol. 2003. Selective Bioaugmentation of diesel-contaminated soil and groundwater. In: V.S. Magar and M.E. Kelley (Eds.), *In Situ and On-Site Bioremediation*. Battelle Press, Columbus, OH. 5 pp.
- Rodríguez, N., C. Rodríguez, E. Díaz, and A. Massol. 2003. Bioremediation of diesel-polluted soil and groundwater under denitrifying conditions. In: V.S. Magar and M.E. Kelley (Eds.), *In Situ and On-Site Bioremediation*. Battelle Press, Columbus, OH. 8 pp.
- Massol-Deyá, A. y E. Díaz. 2000. *Ciencia y Ecología: Vieques en Crisis Ambiental*. CasaPueblo Press. 59 pp.
- Massol-Deyá, A. 2000. *Biorremediación: de una realidad social a una solución ecológica*. Second Edition, CasaPueblo Press. 67 pp.
- C. Rodríguez, E. Díaz, R. Alvarez and A. Massol-Deyá. In press. Bioremediation of Diesel Contaminated Soil Under Denitrifying Conditions. *In Proceedings of the 15<sup>th</sup> Conference on Contaminated Soils and Water, 1999*.
- Gómez, I. N. S. Tang and A. Massol-Deyá. 1999. Treatment of BTX contaminated groundwater in a fluidized bed reactor. *In Proceedings of the 31<sup>st</sup> Mid-Atlantic Industrial and Hazardous Waste Conference*. 13 pp.
- Canino, G., N. S. Tang, N. Cavallaro and A. Massol-Deyá. 1998. Bioremediation of PCP contaminated soil by composting. *In Proceedings of the 14<sup>th</sup> Meeting of Contaminated Soil*. pp. 273-284.
- Massol-Deyá, A. 1997. Biodiversidad y biocatálisis: alternativas para procesos de manufactura sustentables. *International Journal of Environmentally Conscious Design and Manufacturing*. 6:45-48.
- Massol-Deyá, A., R. Weller, L. Ríos-Hernández, R. F. Hickey, and J. M. Tiedje. 1997. Succession and convergence of biofilm communities in fixed-film reactors treating benzene, toluene, and p-xylene contaminated groundwater. *Applied and Environmental Microbiology*. 63:270-276.
- Rodríguez, C., S. Crespo, N. Tang, G. García and A. Massol-Deyá. Differentiation and grouping of toluene degrading bacteria isolated from tropical soils by amplified ribosomal DNA restriction analysis (ARDRA). *In Proceedings of Forum on Environmental Remediation and Environmental Toxicology, September 1996, Lansing, Michigan*. pp. 233-234.
- Gómez, I., R. Soto, A. Massol-Deyá and N. Tang. Bioremediation of groundwater contaminated with aromatic hydrocarbons in a fluidized bed reactor. *In Proceedings of Forum on Environmental Remediation and Environmental Toxicology, September 1996, Lansing, Michigan*. pp. 235-236.
- Tang, N., J. Graulau, H. Ortiz, N. Cavallaro, R. Muñiz, and A. Massol-Deyá. Composters for Bioremediation of PCP contaminated soils. *In Proceedings of Forum on Environmental Remediation and Environmental Toxicology, September 1996, Lansing, Michigan*. pp. 302-303.
- Cavallaro, N., H. Ortiz, N. Tang, and A. Massol-Deyá. Adsorption of pentachlorophenol by three soils and its extractability. *In Proceedings of Forum on Environmental Remediation and Environmental Toxicology, September 1996, Lansing, Michigan*. pp. 269-270.

- Massol-Deyá, A., J. Whallon, R. F. Hickey, and J. M. Tiedje. 1995. Channel structures in aerobic biofilms of fixed-film reactors treating contaminated groundwater. *Applied and Environmental Microbiology*. 61:769-777.
- Tiedje, J. M., R. A. Sanford, and A. Massol. 1995. Advantages and disadvantages of consortia in bioremediation. *In Bioremediation: the Tokyo '94 Workshop'*. OECD, Paris pp 357-367.
- Tiedje, J. M., S. M. Thiem, A. Massol-Deyá, J. O. Ka, and M. R. Fries. 1995. Tracking Microbial Populations Effective in Reducing Exposure. *Environmental Health Perspectives*. 103:117-120.
- Massol-Deyá, A., R. F. Hickey, and J. M. Tiedje. 1995. Microbial biofilm communities in biological activated carbon fluidized bed reactors for treatment of groundwater contaminated with aromatic hydrocarbons. *In Proceedings of GeoEnvironmental Problems Facing the Americas Conference*. Mayagüez, PR. pp. 164-169.
- Martínez-Cruzado, J. and A. Massol-Deyá. 1995. Puerto Rico: its economic development and geo-environmental reality. *In Proceedings of GeoEnvironmental Problems Facing the Americas Conference*. Mayagüez, PR. pp. 20-23.
- Canino, G., N. Tang, R. Muñiz, A. Massol-Deyá, and N. Cavallaro. 1995. Bioremediation of Contaminated Soil by Composting. *In Research Findings on Environmental Remediation and Toxicology*. Center for Microbial Ecology, Michigan State University. pp. 122-125.
- Massol-Deyá, A., J. Whallon, R. F. Hickey, and J. M. Tiedje. 1994. Biofilm architecture: a fortuitous engineering feature. *ASM News*. 60(8):467 and cover.
- Massol-Deyá, A., J. Whallon, R. F. Hickey, and J. M. Tiedje. 1993. Microbial colonization and biofilm development in granular activated carbon fluidized bed reactors (GAC-FBR) for treatment of aromatic hydrocarbons. *In Center for Microbial Ecology Research Findings*, Michigan State University. pp. 38-40 and cover.
- Massol-Deyá, A., R. Weller, R. F. Hickey, and J. M. Tiedje. 1992. Use of nucleic acid methods to study colonization and succession in aerobic toluene treatment reactor. *In Center for Microbial Ecology Research Findings*, Michigan State University. pp. 33-35.
- Fuentes, F. and A. Massol. 1998. *Manual de Laboratorios: Ecología de Microorganismos*. Impresos RUM. 284 pp.
- Massol-Deyá, A. 1997. *Biorremediación: de una realidad social a una solución ecológica*. Impresos RUM. 54 pp.
- Diffoot, N. and A. Massol-Deyá. 1996. Basic molecular procedures: introduction to bacterial biotechnology. Workshop supplement, University of Puerto Rico, Mayagüez. 17 pp.
- Massol-Deyá, A., D. A. Odelson, R. F. Hickey, and J. M. Tiedje. 1995. Bacterial community fingerprinting of amplified 16S and 16-23S ribosomal DNA gene sequences and restriction endonuclease analysis (ARDRA). *In Molecular Microbial Ecology Manual*. A. D. L. Akkermans, J. D. van Elsas & F. J. de Bruijn, Eds. Kluwer Academic Publishers, The Netherlands.
- Lewis, W., T. Schmidt, and A. Massol-Deyá. 1995. Basic molecular biology procedures in microbial ecology. Workshop supplement, UPR-Mayagüez, Puerto Rico. Center for Microbial Ecology, Michigan State University. 40 pp.