

# Luis O'mar Serrano Figueroa, Ph. D.

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## Education:

05/2015	Doctor of Philosophy in Microbiology, Montana State University-Bozeman
02/2010	Master of Science in Pharmacy-Industrial Pharmacy, University of Puerto Rico, Medical Sciences Campus
06/2004	Bachelor of Science in Industrial Biotechnology, <i>Cum Laude</i> , University of Puerto Rico, Mayagüez Campus

## Academic Experience:

Summer 2009 – Spring 2015	<b>Graduate Research Assistant.</b> <i>A Study on Amphiphilic Siderophore Detection, Structure Elucidation and their Iron-Mediated Vesicle Self-Assembly.</i> Advisor: Drs. Abigail Richards and Anne Camper. Montana State University, Center for Biofilm Engineering and Department of Microbiology & Immunology
Spring 2013 & '14	<b>Graduate Teaching Assistant.</b> Biological Engineering Laboratory II (EBIO 443). Coordinator: Drs. Robin Gerlach, Abigail M. Richards & Brent Peyton. Montana State University, Department of Chemical and Biological Engineering
Fall 2012 & '13	<b>Graduate Teaching Assistant.</b> Introduction to Chemical/Biochemical Engineering (ECHM/EBIO 100). Course Coordinator: Dr. Abigail Richards. Montana State University, Department of Chemical and Biological Engineering
Academic Year 2011-12	<b>Graduate Teaching Assistant.</b> The Unseen Universe (BIOM 103). Course Coordinator: Professor Kari Cargill. Montana State University, Department of Microbiology
Academic Year 2008- 09	<b>Laboratory Rotations.</b> (1) Carbon sequestration and biomineralization in bacteria; (2) siderophores purification by HPLC; and (3) molecular tools in contaminated constructed wetlands and premise plumbing systems. Montana State University, Center for Biofilm Engineering
Fall 2007 – Summer 2009	<b>Graduate Research Assistant.</b> Master's thesis research entitled <i>Development and Characterization of an Ibuprofen-loaded Microparticle Delivery System.</i> Advisor: Dr. Evone S. Ghaly. Medical Sciences Campus, University of Puerto Rico
Fall 2005 – Summer 2007	<b>Graduate Teaching Assistant</b> to Dr. Evone S. Ghaly. Medical Sciences Campus, University of Puerto Rico
Fall 2002	<b>Undergraduate Research Assistant.</b> <i>L. pectinata</i> hemoglobin fermentation research. Dr. Juan Lopez's laboratory. University of Puerto Rico-Mayagüez
Spring 2002	<b>Undergraduate Research Assistant.</b> <i>Analysis of Multiple Antibiotics Resistance Patterns in Fecal Streptococci in Coastal Waters of Puerto Rico.</i> Dr. Baqar Zaidi's laboratory. University of Puerto Rico-Mayagüez

## Publications:

4. **Serrano Figueroa, L. O.**, B. Pitts, M. Uchida and A. Richards. Vesicle-Self Assembly of Amphiphilic Siderophores Produced by Bacterial Isolates from Soap Lake, WA *Canadian J Chem* (Submitted).
3. **Serrano Figueroa, L. O.**, B. Schwartz and A. Richards. Structural Characterization of Amphiphilic Siderophores Produced by a Soda Lake Isolate, *Halomonas* sp. SL01, Reveals Cysteine-, Phenylalanine- and Proline-Containing Head Groups *Extremophiles* (Submitted).
2. Richards, A. M., **L. O. Serrano Figueroa**, R. Gerlach and B. Peyton. The Production of Ferrioxamine Siderophores by a Halo-alkaliphilic Bacterium. *Canadian J Microb* (Submitted).

## Publications (continued):

1. Master's Thesis: **Serrano Figueroa, Luis O.** 2009. Development and Characterization of an Ibuprofen-loaded Microparticle Delivery System. *University of Puerto Rico-MSC, School of Pharmacy*. 149 p.

## Honors/Awards:

Summer 2011	NSF-EAPSI Fellow, Massey University New Zealand
Summer 2010	Pfizer Leadership Award, School of Pharmacy, UPR-Medical Sciences Campus,
Fall 2008 – Spring 2015	Molecular Biosciences Program Doctoral Fellowship, Montana State University
Fall 2006	Pfizer's Research Fellowship, Master of Science in Industrial Pharmacy
Summer 2003	Hazard Analysis and Critical Control Points Certificate

## Professional Affiliations:

07/2010 up to date	BioMetals Society
2009-2010	Society for the Advancement of Chicanos/Hispanic and Native Americans in Science (SACNAS)
09/2007 up to date	American Association of Pharmaceutical Scientists
05/2010 up to date	American Society for Microbiology
04/2010 up to 05/11	American Chemical Society

## Extracurricular Activities:

Spring 2015	Scholarship Reviewer, Montana Pride Foundation, Bozeman, MT
Spring 2013	Scholarship Reviewer, Montana Pride Foundation, Bozeman, MT
Fall 2012 – Spring 2013	Graduate Student Ambassador Program, The Graduate School, Montana State University
Fall 2011 – Spring 2013	Graduate Student Representative, Department of Microbiology, Montana State University
Summer 2010 – Spring 2015	Montana State University, Center for Biofilm Engineering, Operations Committee Laboratory Representative
Fall 2009 – Fall 2011	Seminar Organizing Committee, Center for Biofilm Engineering, Montana State University
09/2009	Judge: Engineering, Computer Science and Environmental Sciences Group, XX Undergraduate Research Symposium (Universidad Metropolitana, San Juan, PR)
Fall 2007 - Summer 2008	UPR-MSC, Pharmaceutical Sciences Graduate Program Evaluation Committee Member
Fall 2007 - Summer 2008	Founding Member and President of the American Association of Pharmaceutical Scientists-UPR-MSC Student Chapter
Summer 2007	Community Service: Corredor del Yagüazo Organization, Cataño, PR

## Presentations:

04/2014	Seminar: <i>A Story of Amphiphilic Siderophores, Iron and Vesicle Self-Assembly</i> (Department of Microbiology & Immunology, MSU-Bozeman)
11/2013	Seminar: <i>Characterization of Amphiphilic Siderophores and Vesicle Self-Assembly from Soap Lake, WA Halomonas sp. Isolates</i> (Center for Biofilm Engineering, MSU-Bozeman)
04/2012	Seminar: <i>Amphiphilic Siderophore from a Soda Lake Isolate: Structural Analysis and Self-Assembly</i> (Department of Microbiology, MSU-Bozeman)
03/2009	Seminar: <i>Bacterial Siderophores: Purification by HPLC</i> (Molecular Biosciences Program, MSU-Bozeman)
04/2006	Seminar: <i>Nanoparticles as New Drug Delivery Systems</i> (School of Pharmacy, UPR-MSC)

## Posters:

- 07/2012 *Characterization of New Siderophores Produced by a Soda Lake Isolate.* Authors: **L. O. Serrano Figueroa, M. S.**, B. H. Schwarz and A. M. Richards, Ph. D. (2012 Montana Biofilm Meeting, Center for Biofilm Engineering, Montana State University-Bozeman)
- 06/2012 *Characterization of New Siderophores Produced by a Soda Lake Isolate.* Authors: **L. O. Serrano Figueroa, M. S.**, B. H. Schwarz and A. M. Richards, Ph. D. (ASM National Meeting 2012)
- 05/2011 *Siderophore Production by Haloalkaliphilic Bacteria: Structural Analysis and Vesicle-Self Assembly.* Authors: **L. O. Serrano Figueroa, M.S.** and Abigail Richards, Ph. D. (ASM National Meeting 2011)
- 07/2010 *Siderophore Production of Haloalkaliphilic Bacteria Under Varied Physiologic Conditions.* Authors: **L. O. Serrano Figueroa, M. S.** and Abigail Richards, Ph. D. (BioMetals 2010, Tucson, AZ)
- 02/2010 *Extraction, Characterization and Purification of Bacterial Siderophores.* Authors: **L. O. Serrano-Figueroa** and Abigail Richards, Ph. D. (2010 Montana Biofilm Meeting, Center for Biofilm Engineering, Montana State University-Bozeman)
- 10/2009 *Extraction, Characterization and Purification of Bacterial Siderophores.* Authors: **L. O. Serrano-Figueroa** and Abigail Richards, Ph. D. (2009 SACNAS Conference, Dallas, TX)
- 04/2009 *Bacterial Siderophores: Purification by HPLC.* Authors: **L. O. Serrano-Figueroa** and Abigail Richards, Ph. D. (Student Research Celebration, MSU-Bozeman)
- 07/2008 *Development and Characterization of an Ibuprofen-loaded Nanoparticle Delivery System.* Authors: **L. O. Serrano-Figueroa** and Evone S. Ghaly, Ph. D. (Latinoamerican Federation of Chemistry Associations and the Puerto Rico Chemical Society Symposium, 2008, Puerto Rico).
- 02/2008 *Development and Characterization of an Ibuprofen-loaded Nanoparticle Delivery System.* Authors: **L. O. Serrano-Figueroa** and Evone S. Ghaly, Ph. D. (Excipient Fest 2008, Puerto Rico).

## Expertise:

- Epifluorescence/light microscopy, cryogenic sample preparation, transmission electron microscope (TEM), atomic force microscopy (AFM), dynamic light scattering (DLS), high performance liquid chromatography (HPLC), mass spectrometry, UV spectrophotometry, aseptic techniques, polymerase chain reaction, gel electrophoresis, iron metabolism, siderophore detection assays, dissolution testing, differential scanning calorimetry (DSC) and nanoparticle/microparticle formulations.
- Good Manufacturing and Documentation Practices (Fluor Daniel).
- Protocol Writing and Development Training (Fluor Daniel).