

## BIOGRAPHICAL SKETCH

**Rafael Maldonado-Hernández**

### Current Status

PhD Student  
Department of Biology, UPR-RP

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### Education

2014 – Present

PhD. Student, University Of Puerto Rico  
Rio Piedras Campus

2016 – 2016

Certification - Industrial Biotechnology

2008 – 2013

B.S. (Applied Microbiology), Natural Sciences  
College, University of Puerto Rico–Humacao  
Campus.

### Research Interest

The nicotinic acetylcholine receptor (nAChR) is a ion channel membrane protein of five transmembrane subunits. Abnormal function of the nAChR's is related with neurological disorders such as: Myasthenia Gravis, Parkinson's Disease and others neurological disorders. The understanding of 3D structure of the nAChRs is necessary to develop specific therapeutics agents to regulate its activity, and have better quality of life.

### Research Experience

2015-Present

Preparation of nAChR crystals for high-resolution studies using the detergent analog LFC16, (Mentor, Dr. José Lasalde)

2014 – 2015

Characterization of the *oxyR* genes in *Vibrio fischeri* as an important factor for oxidative stress adaptation, (Mentor, Dr. Zomary Flores)

2013 – 2014

Amphibian-microbial relationships in a Puerto Rican wetland, (Mentor, Dr. Neftalí Ríos)

2011 – 2013

Antimicrobial Screening of Plants Traditionally Used in Puerto Rican Folkloric Medicine, (Mentor, Dr. Ileana Rodríguez)

2010 – 2012

Herpetofaunal Dynamics during Secondary Succession: A 10-year Prediction Testing, (Mentor, Dr. Neftalí Ríos)

### Fellowships and Awards

2017-Present

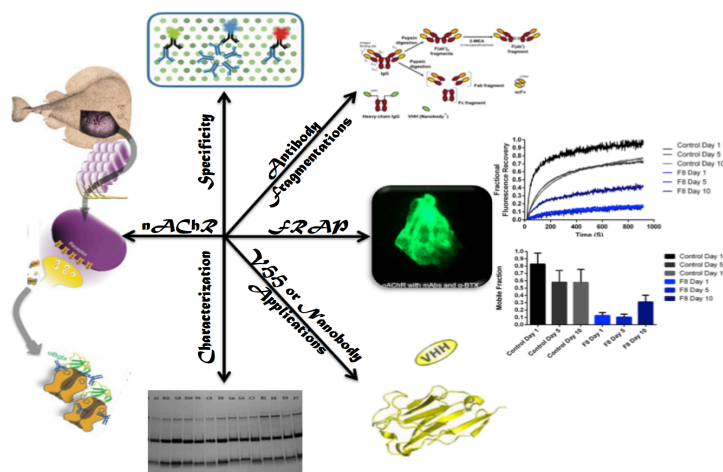
RISE Program By NIH

2014– 2016

PR-LSAMP Bridge to the Doctorate Fellow By NSF,  
Grand Number: HRD1400870, Cohort 10

2015– 2016

Honor Fellowship



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Summer– 2015	Training Program for Graduate Student, Research mode
2010 – 2013	Ronald McNair Program/UPR-Humacao
December – 2012	Santander U-Work Program, Scholarship

### Teaching Experience

2016 – 2017	Laboratory of General Microbiology for undergraduate student
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### Presentations at international Meetings

Rafael Maldonado Hernández, Orestes Quesada PhD. José Lasalde, PhD. Preparation of nAChR crystals for high resolution studies with monoclonal antibodies. 6TH-EUCHEMS-CONGRESS, Seville Spain FIBES September 11-15, 2016

Rafael Maldonado Hernández, José Lasalde, PhD. Preparation of nAChR crystals for high resolution studies using the detergent analog LFC16. Louis Stokes Alliance for Minority Participation Symposium 2016, Gaylord National Resort And Harbor, Maryland February 22-24, 2016

### Presentations at local Meetings

Rafael Maldonado Hernández, José Lasalde, PhD. Preparation of nAChR crystals for high resolution studies using the detergent analog LFC16 and implementation of monoclonal antibodies. Fifth Lilly Academy Technical Forum, Puerto Rico Convention Center May 6, 2016

Rafael Maldonado Hernández, José Lasalde, PhD. Preparation of nAChR crystals for high-resolution studies using mAbs JTM/PRISM 2016 at Pontifical Catholic University of Puerto Rico

Rafael Maldonado Hernández, Zomary Flores Cruz, PhD. Characterization of the *oxyR* genes in *Vibrio fischeri* as an important factor for oxidative stress adaptation. Research Week UPR-RP

### Other Experiences

2017	Enhancing Participation and Diversity Through Active Learning. 2017 University of Puerto Rico Rio Piedras Campus
2015– PRESENT	Advanced Photon Source for Protein Diffractions at Argonne National Laboratory, Chicago Illinois
2015	Handling of animals for research
2015	Use of the NGS MiSeq System for Microbiome data generation and advanced data analyses. April 29 to May 1 2015
2013-2014	Microbiology; Scientific Associate of Scientific Laboratories Services (SLS). Pall Life Science at Fajardo P.R.
2012	President of General Biology Association UPR-H (2012-2013).
2012	Geomicrobiology Workshop, UPR-H, 2012

### Outreach

2015	Workshop of Biotechnology for the Engaging Future Scientists: Science Workshops for Kids. Wildlife Museum of Puerto Rico September 10, 2016
2011- PRESENT	Workshop of Biotechnology and Microbiology for public school student in Puerto Rico