

Letty Leslie Ann Salas Estrada

Department of Biochemistry and Biophysics – University of Rochester Medical Center

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Education

- **University of Rochester Medical Center** **Rochester, NY**
Ph.D. in Biophysics *2015–2018 anticipated*
- **University of Rochester Medical Center** **Rochester, NY**
M.S. in Biophysics (GPA: 3.94/4) *2013–2015*
- **Universidad Autónoma de San Luis Potosí** **San Luis Potosí, México**
M.S. in Physics (Grade Average: 9.88/10) *2010–2012*
- **Universidad Autónoma de San Luis Potosí** **San Luis Potosí, México**
B.S. in Physics (Grade Average: 9.83/10) *2006–2010*

Research Experience

Graduate Research

- University of Rochester Medical Center** **Rochester, NY**
Advisor: Dr. Alan Grossfield *2014–2016*
 - **Study of the effect of protein-lipid interactions on rhodopsin structure and ligand behavior**
- Methods: *molecular dynamics simulations; scripting; linear algebra; data mining*
 - **Characterization of rhodopsin activation pathway**
- Methods: *molecular dynamics simulations; structure-based models; enhanced sampling techniques; scripting*
- Universidad Autónoma de San Luis Potosí** **San Luis Potosí, México**
Advisors: Drs. Roberto Sánchez Olea and Mónica Calera Medina *2011–2012*
 - **Study of the subcellular localization and function of the GPN-loop proteins Gpn1, Gpn2 and Gpn3**
- Methods: *cell culture; recombinant DNA technologies; immunoblotting; fluorescence spectroscopy*

Undergraduate Research

- Universidad Autónoma de San Luis Potosí** **San Luis Potosí, México**
PI: Dr. Jorge Arreola Gómez *2009–2010*
 - **Investigation of the activation mechanism and regulation of the voltage-gated chloride channel CLC-2**
- Methods: *cell culture; whole-cell patch clamp*
- Universidad Autónoma de San Luis Potosí** **San Luis Potosí, México**
PI: Dr. Jaime Ruíz García *Spring 2009*
 - **Characterization of intramolecular interactions in ssRNA sequences**
- Methods: *confocal microscopy; smFRET*

Professional Activities and Service

Teaching and Tutoring

- University of Rochester Medical Center** **Rochester, NY**
Course Director: Dr. Joseph Wedekind *Spring 2016*
 - Tutor for Methods in Structural Biology (graduate course)
- University of Rochester Medical Center** **Rochester, NY**
Course Director: Dr. Mark Dumont *Fall 2014*
 - Teaching assistant for Advanced Biochemistry (graduate course)
- University of Rochester Medical Center** **Rochester, NY**
Teen Health and Success Partnership Program *Summer 2014*

- Mathematics tutor for students preparing for their Regents Examination

Rochester International Academy

Saturday Study Program at Carlson Library

Rochester, NY

Summer 2014

- Mathematics and Physics tutor for new immigrant students in the Rochester City School District

Universidad Autónoma de San Luis Potosí

Course Director: Dr. Pedro Villaseñor González

San Luis Potosí, México

2010-2012

- Teaching assistant for Ordinary Differential Equations (undergraduate course), Spring 2012
- Teaching assistant for Physics III (undergraduate course), Spring 2011
- Teaching assistant for Ordinary Differential Equations (undergraduate course), Spring 2010

Universidad Autónoma de San Luis Potosí

Instituto de Física

San Luis Potosí, México

Spring 2012

- Mathematics and Physics tutor for high school and undergraduate students

Service.....

American Association of University Women

Tech Savvy Program

Dryden, NY

Fall 2016-Spring 2017

- Workshop presenter at the 2017 Tech Savvy fair for girls interested in STEM disciplines

University of Rochester Medical Center

Department of Biochemistry and Biophysics

Rochester, NY

Fall 2015

- Student organizer and coordinator of the 2015 Biophysics Retreat

Koman Iel

Under Jaime Schlittler Álvarez

Chiapas, México

Fall 2015

- Translator of didactic material on ecoagriculture as part of the project Escuela Campesina Multimedia

Honors, Awards and Fellowships

- Elena Gilde Grossfield Trainee Presentation Award; BSCB program, University of Rochester, 2016
- Best Biophysics Student Seminar; BSCB program, University of Rochester, 2016
- International Fellowship; AAUW, 2016
- Support Scholarship for Graduate Students in a Foreign Country; SEP and DGRI, 2015
- Leon L. Miller Graduate Fellowship; BSCB program, University of Rochester, 2013
- Literary Creation for Young Writers' Workshop Scholarship; Mexican Letters Foundation, 2012
- Support Scholarship for Graduate Students; CONACYT, 2010-2012
- Excellence Scholarship for Professional Studies; ITESM, 2006

Conference Presentations

1. **Letty Salas-Estrada**, Nicholas Leioatts, Tod D. Romo, Alan Grossfield. *Understanding the Effect of Polyunsaturated Fatty Acids on Rhodopsin Using All-Atom Molecular Dynamics Simulations*. In: **60th Annual Biophysical Society Meeting**. Los Angeles, CA, USA, Feb. 27-Mar. 2, 2016.
2. Zhen Tan, Aleksandar Spasic, **Letty Salas-Estrada**, Debapratim Dutta, Dave H. Mathews. *Benchmark of AMBER ff12SB Force Field by Comparison of Estimated Hairpin Loop Folding Stabilities to Experiments*. In: **Albany 2015: 19th Conversation**. Albany, NY, USA, Jun 9-13, 2015.
3. **Letty Salas-Estrada**, Nicholas Leioatts, Shairy A. Danial, Tod D. Romo, Alan Grossfield. *Dynamic Ligand-Protein Interactions Alter Rhodopsin's Conformational Ensemble: Simulations of Rhodopsin and Opsin*. In: **59th Annual Biophysical Society Meeting**. Baltimore, MD, USA, Feb. 7-11, 2015.
Also presented at: Biochemistry and Biophysics Admissions Poster Session, URM, 2016; Biophysics Retreat, URM, 2015; Graduate Student Society Annual Poster Session, URM, 2015; Center for Integrated Research Computing Poster Session, University of Rochester, 2015; Biochemistry Retreat, URM, 2015; Biochemistry and Biophysics Admissions Poster Session, URM, 2015.

4. Texas Khire, **Letty Salas-Estrada**, Richard Waugh, James McGrath. *Microvasculature Mimetic Device to Model Physiological Barrier Properties in Sepsis*. In: **Biomedical Engineering 24th Annual Meeting**. San Antonio, TX, USA, Oct. 22-25, 2014.

Publications

Humberto Reyes-Pardo, Angel A. Barbosa-Camacho, Ana E. Pérez-Mejía, Bárbara Lara-Chacón, **Leslie A. Salas-Estrada**, Angélica Y. Robledo-Rivera, Gabriela M. Montero-Morán, Samuel Lara-González, Mónica R. Calera, and Roberto Sánchez-Olea. A nuclear export sequence in GPN-loop GTPase 1, an essential protein for nuclear targeting of RNA polymerase II, is necessary and sufficient for nuclear export. *Biochim Biophys Acta*, 1823(10):1756–1766, Oct 2012.