

Oscar Molina

415 Veteran Avenue, Los Angeles, CA 90024

oscarjmolina.com | oscarmolina1@g.ucla.edu | 760-805-8940

EDUCATION

University of California, Los Angeles

Expected June 2020

Bachelor of Science, Biochemistry (GPA 3.53)

Biomedical Research Minor

RESEARCH EXPERIENCE

Dr. Albert J. Courey Lab

Undergraduate Researcher

January, 2018 - Present

Department of Chemistry and Biochemistry,

University of California-Los Angeles

- Designing and implementing purification strategies for purifying proteins covalently conjugated to Small Ubiquitin-related modifier (SUMO) in *Drosophila melanogaster* embryos.
- Designing proteomic workflows to identify SUMO conjugated proteins and specific modified residues using tandem mass spectrometry in *Drosophila* embryos.
- Applied site-directed mutagenesis techniques and DNA cloning and transfecting strategies to create Ras genes with the inability to interact non-covalently with SUMO in S2 cells to assess Ras signaling.

Dr. Christina Woo Lab

Visiting 10-week Summer Undergraduate Researcher

June 2019 - August 2019

Department of Chemistry and Chemical Biology,

Harvard University

- Applied chemo-enzymatic labeling and isotope targeted labeling proteomics to describe the β -linked N-acetylglucosamine (O-GlcNAc) proteome under heat stress in U2OS cells.
- Implemented nanobody technology for proximity induced interaction between SUMO-conjugating enzyme-UBC9 and O-GlcNAc Transferase (OGT) for selective SUMO conjugation of OGT in U2OS and HEK 293T cells.
- Used immunofluorescence and fluorescence microscopy to visualize localization of transfected genes in U2OS and HEK 293T cells.

POSTER PRESENTATIONS

- **Society for Advancement of Chicanos/Hispanics and Native Americans in Science**, Honolulu, Hawai'i, November 1, 2019

Title: Alteration to the O-GlcNAc proteome by the Small Ubiquitin-related Modifier

- **Princeton Molecular Biology Retreat**, Avalon, New Jersey, October 4th, 2019

Title: Alteration to the O-GlcNAc proteome by the Small Ubiquitin-related Modifier

- **Summer Undergraduate Research Programs at Harvard Poster Symposium**, Harvard University, August 15, 2019

Title: Alteration to the O-GlcNAc proteome by the Small Ubiquitin-related Modifier

- **Leadership Alliance National Symposium**, Hartford, CT, July 24-28, 2019

Title: Alteration to the O-GlcNAc proteome by the Small Ubiquitin-related Modifier

- **UCLA Research Poster Day**, UCLA, May 21, 2019

Title: SUMO-Conjugation to Protein Phosphatase 2A in the Regulation of Cell Signaling through the Ras/MAPK Pathway

- **Annual Biomedical Research Conference for Minority Students, Indianapolis, Indiana,**
November 17, 2018

Title: SUMO-Conjugation to Protein Phosphatase 2A in the Regulation of Cell Signaling through the Ras/MAPK Pathway

- **Program of Excellence in Education and Research in the Sciences (PEERS) Poster Session,**
UCLA, November 8, 2018

Title: SUMO-Conjugation to Protein Phosphatase 2A in the Regulation of Cell Signaling through the Ras/MAPK Pathway

- **UCLA Summer Program for Undergraduate Research, UCLA, August 29, 2018**

Title: SUMO-Conjugation to Protein Phosphatase 2A in the Regulation of Cell Signaling through the Ras/MAPK Pathway

PUBLICATIONS

Tak-Yu Yau, **Oscar Molina**, Albert J. Courey, SUMO in development and neurodegeneration,
Development. Under Revision.

CO-CURRICULAR ACTIVITIES

P2P Mentor, PEERS (2017 - Current) - Served as a panelist on PEERS Sophomore seminar (2018, 2019) & mentored students in considering and participating in academic research.

Undergraduate Representative on Physical Sciences diversity committee (2018 - Current) - I actively helped with revising the Physical Sciences Diversity Plan and served as a panelist for the Physical Science, Welcome to Research panel to encourage freshmen and sophomores to consider in participating in research at UCLA.

Maximizing Access to Research Careers Undergraduate Student Training in Academic Research at UCLA (May 2018 - Current) - I participate in a weekly journal club where we practice oral presentations of our research, discuss current scientific literature, and practice scientific writing.

Expression, Purification & Analysis of Proteins and Protein Complexes Assistant, Cold Spring Harbor Laboratory (April 2018) - Helped teach protein expression, protein purification, and protein analysis techniques to graduate students and post-doctorates.

AWARDS & HONORS

- Princeton Molecular Biology Scholars 2019
- Dean's Honor List: Spring 2018, Fall 2018, Winter 2019, Spring 2019
- NIH Trainee Grant: Maximizing Access to Research Careers, Undergraduate Student in Academic Research at UCLA, Spring 2018

ADDITIONAL SKILLS

Fluent in Spanish

Advance Programming in C++

Experience Programming in Qt, R, ggplot2, HTML

Familiar with Proteome Discover