

Oscar Molina

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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.

EDUCATION

University of California, Los Angeles *Expected June 2020*

Bachelor of Science, Biochemistry (GPA 3.53)

Biomedical Research Minor, Computational Specialization

POSTER PRESENTATIONS

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

- SACNAS, Honolulu, Hawai'i, November 1, 2019

- Princeton Molecular Biology Retreat, Princeton University,

October 4, 2019

- Summer Undergraduate Research Programs at Harvard Poster

Symposium, Harvard University, August 15, 2019

- Leadership Alliance National Symposium, Hartford, CT,

July 24-28, 2019

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

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

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

- PEERS Poster Session, UCLA, November 8, 2018

- UCLA SPUR 10-Week Poster Session, UCLA, August 29, 2018

CO-CURRICULAR ACTIVITIES

P2P Mentor, PEERS (2017 - Current)

- Served as a panelist on PEERS Sophomore seminar (2018, 2019) & mentored students

Undergraduate Representative on Physical Sciences diversity committee (2018 - Current)

- Served as a panelist on Physical Science, Welcome to Research event & worked with department to increase diversity & inclusivity

AWARDS & HONORS

Princeton Molecular Biology Scholars 2019

Dean's Honor List: Spring & Fall 2018, Winter & Spring 2019

NIH Trainee Grant: Maximizing Access to Research Careers, Undergraduate Student in Academic Research at UCLA, Spring 2018

ADDITIONAL SKILLS

Fluent in Spanish, Programming in C++, Qt, R, & ggplot2, Familiar with Proteome Discover