

# Olga Soto

El Paso, TX | soto.ob@gmail.com | 915.731.9953 | <http://www.linkedin.com/in/sotolga>

## EDUCATION

2015 – 2023	Ph.D. Biological Sciences Doctoral Thesis: Identification of Androgen receptor co-chaperone interactors implicated in Castration Resistant Prostate Cancer The University of Texas at El Paso (UTEP), El Paso, TX
2009 – 2014	B.S. Cellular and Molecular Biochemistry Department of Biological Sciences The University of Texas at El Paso (UTEP), El Paso, TX

## PROFESSIONAL EXPERIENCE

### ***Patent Examiner (Oct 2024-Oct 2025) United States Patent and Trademark Office (USPTO)***

- Analyzed biology patent applications to determine novelty, non-obviousness, and compliance with USPTO regulations.
- Conducted comprehensive prior art searches using USPTO databases and external resources to assess patentability.
- Prepared detailed office actions, reports, and correspondence with applicants regarding patent application outcomes.
- Collaborated with attorneys, and examiners to resolve complex technical and legal issues.

## TEACHING EXPERIENCE

### ***BI022- Human Anatomy and Physiology (2024-present) Copper Mountain College***

Instructed fully online Human Anatomy course, utilizing 3D models, virtual labs, and assessments to engage diverse learners (virtual).

- Designed and delivered an online Anatomy curriculum using Canvas.
- Provided individualized support and feedback to students, improving course completion and success rates.
- Developed multimedia resources, including videos, quizzes, and interactive assignments, to enhance student understanding of human anatomy.
- Maintained accurate records of student progress and grades while adhering to institutional policies.

***BIOL 2420- General Microbiology (Fall 2021, Fall 2024) El Paso Community College***

Guest lecturer under the mentorship of tenured professor, Dr. Jeff Sivils as part of H-AGEP teaching training practicum (in-person).

- Implemented pedagogy approaches learned during H-AGEP teaching training modules to develop course material for students of diverse backgrounds and learning abilities.
- Prepared and delivered lectures on Microbiology as per approved schedules and curriculum in a lecture and laboratory setting.
- Employed various teaching methods with audio and visual activities to address all learning styles.
- Mentored students in procedures regarding microscopy, differential staining, and aseptic technique.

***BIOL 3115- Molecular Cell Biology (2020-2023) UTEP***

In this research-driven undergraduate lab, I performed three roles: TA, Prep-TA, and virtual lab organizer (virtual and in-person).

- Adapted the in-person curriculum to a fully online laboratory during the COVID transition to virtual laboratories.
- Planned, developed, and edited instructional videos for all lectures and experiments.
- Tailored lessons to reach an audience of diverse students from different backgrounds and learning needs.
- Edited assessments and laboratory manual to supplement the online lab.
- Prepared weekly media and sterilized supplies for 150+ students.
- Trained new TAs to operate flow cytometer using Guava Luminex and capture microscope images using Zeiss Fluorescence microscope.
- Provided timely and quality access to tutoring for students upon request.

***BIOL 2402- Anatomy and Physiology II (Spring 2021) El Paso Community College***

Guest lecturer under the mentorship of Dr. Jeff Sivils as part of H-AGEP teaching training practicum (virtual).

- Planned and assessed goals and activities to reach educational objectives and performance standards.
- Created electronic presentations.
- Worked closely with teaching mentor to improve lectures and delivery throughout the semester to optimize the learning environment for all students.

***ZOOL 4181- Vertebrate Physiology (Spring 2015-Fall 2016, Fall 2019-Spring 2020) UTEP***

As a senior TA, I trained new TAs and mentored students in the use of equipment and material covered throughout the semester (in-person).

- Organized and maintained equipment for interactive experiments using ADInstruments PowerLab and PhysioEX software.
- Ensured that student's accommodations as per University's CASS guidelines were fully implemented.
- Evaluated student's assignments and classwork.
- Mentored students in proper use and positioning of electrodes and instruments vital for virtual laboratory simulations.

### ***BIOL 1108- Organismal Biology (Fall 2018) UTEP***

This freshman level course introduces incoming students to a college laboratory setting.

- Worked closely with students during their first year of university studies to introduce and reinforce the scientific method.
- Maintained organized reports of students' progress and attendance.

### ***BIOL 2113- Human Anatomy and Physiology II (Fall 2015-Spring 2016) UTEP***

I simultaneously taught this laboratory while teaching ZOOL4181.

- Organized and maintained equipment for interactive experiments using ADInstruments PowerLab and PhysioEX software.
- Maintained organized reports of students' progress and attendance.
- Evaluated student's assignments and classwork.
- Mentored students in proper use and positioning of electrodes and instruments vital for virtual laboratory simulations to measure electrical activity of the heart, muscles, and brain.

## **RESEARCH EXPERIENCE**

2018 – 2023      Graduate Research Assistant, Dr. Marc B. Cox lab, UTEP, El Paso, TX  
 Dissertation title: Proteomic analysis and functional characterization of FKBP51 and FKBP52 interactors implicated in AR-mediated Castration Resistant Prostate Cancer

- Implemented research compliance and biosafety standards as per the University's Environmental Health and Safety department.
- Designed and delivered scientific presentation for departmental seminars.
- Communicated and coordinated with vendors and University's purchasing department for placing orders to ensure smooth laboratory operations.
- Mentored graduate and undergraduate students in hands-on techniques, contributed to experimental planning, and provided feedback to colleagues.

- Responsible for all technical writing and presentations pertaining to dissertation project, including posters, presentations, manuscripts, and figure preparation.
- Designed and optimized protocols to study hormone-dependent protein interactions in Prostate Cancer.
- Maintained lab equipment.
- Generated interactome data that led to external collaborations.

2014 – 2018      Graduate Research Assistant, Dr. Charlotte M. Vines lab, UTEP, El Paso, TX  
 Studied signaling events controlled by CCR7 that promote migration of cells in breast and T-cell cancers.

- Trained incoming undergraduate students in proper use of laboratory equipment and molecular techniques.
- Assisted in relocating and installing all laboratory equipment to resume experimental productivity quickly and seamlessly.
- Implemented research compliance and biosafety standards as per the University's Environmental Health and Safety department.
- Presented research updates in meetings, contributed to experimental planning, and provided feedback and questions for colleagues.

2013 – 2014      Undergraduate Research Assistant, Dr. Hughes Ouellet laboratory  
 The University of Texas at El Paso (UTEP), El Paso, TX  
 Utilized *Mycobacterium Smegmatis* to gain insight into the roles of genes fadD17 and fadD19 in cholesterol catabolic reactions and their potential utility as therapeutic targets for *M. Tuberculosis*.

- Actively participated in multiple projects to assist the progression of data generation.
- Implemented basic microbiology techniques, cloning, and nucleic acid isolation
- Implemented research compliance and biosafety standards as per the University's Environmental Health and Safety department.

## **AWARDS RECEIVED**

May 2020-2023      Hispanic Alliance for Graduate Education and the Professoriate Fellowship (H-AGEP)

March 2021      Dodson Travel Grant

## **ADDITIONAL TRAINING**

CMC Online Teaching Certification course

- Completed training in accessibility compliance requirements
- Learned to use Canvas LMS tools for online course delivery

## H-AGEP Teaching Training

- Completed collaborative training modules on pedagogical approaches
- Attended academic and professional development workshops

## Biomedical Science Responsible Conduct of Research

### Bloodborne Pathogens

### Biohazard waste training

## PUBLICATIONS

### Publication in peer-reviewed journals

- **Soto, O.B.**, Ramirez, C.S., Koyani, R., Rodriguez-Palomares, I.A., Dirmeyer, J.R., Grajeda, B., Roy, S., and Cox, M.B. (2023) Structure and function of the TPR-domain immunophilins FKBP51 and FKBP52 in normal physiology and disease. *Journal of Cellular Biochemistry*. 1-17. doi: 10.1002/jcb.30406
- Mazaira, G.I., Zgajnar, N.R., Lotufo, C.M., Daneri-Becerra, C., Sivils, J.C., **Soto, O.B.**, Cox, M.B., and Galigniana, M.D. (2018) The Nuclear Receptor Field: A Historical Overview and Future Challenges. *Nuclear Receptor Research*. 5: Article ID 101320, 21 pages. PMC6108593

### Book Chapters

- Mazaira, G.I., Zgajnar, N.R., Lotufo, C.M., Daneri-Becerra, C., Sivils, J.C., **Soto, O.B.**, Cox, M.B., and Galigniana, M.D. (2019) Nuclear Receptors: A Historical Perspective. *Methods in Molecular Biology*. 1966: 1-5.

## STUDENT MENTORING

### Ph.D. Students

2022 – 2023	Jessica R. Dirmeyer, PhD student at University of Texas at El Paso
2016 – 2017	Gisel Flores, graduated PhD from University of Texas at El Pas
2015 – 2016	Veronica Suarez, graduated Masters from University of Texas El Paso

### Undergraduate Students

2021 – 2023	Violeta B. Amaya (RISE Scholar)
2022 – 2023	Christian S. Ramirez (RISE scholar)
2017 – 2018	Idalis Ramirez (Terry Scholar) PhD Candidate at Northwestern University
2016 – 2017	Anahi Sanchez, PhD Candidate at University of Texas El Paso

2014 – 2015	Victoria Diaz
2014 – 2015	Daniela del Campo, in Boston University School of Medicine

## CONFERENCES

2022 (4) **Soto, O.B.**, Patil, A.R., Ortiz, N., Roy, S., Cox M.B. Identification of Androgen receptor co-chaperone interactors implicated in Castration Resistant Prostate Cancer, Poster Presentation, 2022 Annual Meeting of Society for Basic Urologic Research, Orlando, FL.

Torres-Catanach, I., Santiago, I., Sivils, J., Seo, D., Jimenez, R., **Soto, O.B.**, "Un Paso Pa'lante: Putting Hispanic/ Latinx STEM Doctoral Students on the Path to Teaching at Community Colleges" Panel presentation, 2022 SACNAS, San Juan, PR

Ramirez, C.S., Amaya, V.B., **Soto, O.B.**, Cox, M.B. "Peroxiredoxins Interact with FKBP51 and FKBP52 as part of the AR Regulatory Complex in Prostate Cancer", Poster presentation, 2022 Annual Biomedical Research Conference for Minoritized Scientists, Anaheim, CA

Ramirez, C.S., **Soto, O.B.**, Cox, M.B. "Validation of FKBP51 and FKBP52 Protein Interactions Associated With Prostate Cancer Progression", Poster presentation, Summer 2022 Campus Office of Undergraduate Research Initiatives (COURI) Symposia, El Paso, TX

2021 Ivonne Santiago, Joanne M. Moyer, **Olga B. Soto**, Victor M. García, Eric Galvan, Anna Pina. H-AGEP Student Voices - Reflecting on Their Experiences. Panel discussion member at 2021 AGEP National Research Conference; June 2021; Virtual

2020 **Soto, O.B.**, Patil, A.R., Roy,S, Cox M.B. Identification of Androgen receptor co-chaperone interactors implicated in Castration Resistant Prostate Cancer (CRPCa)". Poster presentation, 29th Annual Midwest Stress Response Conference, Virtual

2015 **Soto, O.B.**, Vines C.M, Bill C.A. CCR7/CCL19 promotes upregulation of GLUT1 Glucose Transporter. Poster presented at: Autumn Immunology Conference; November 2015; Chicago IL

## SKILLS/AREAS OF RESEARCH EXPERIENCE

### Computer skills

- Proficient typist (70wpm)

- ImageJ (microscopy image analyses and signal quantification)
- Microsoft office (Word, Excel, Powerpoint)
- Beginner Python knowledge

## **Languages**

- English (native or bilingual proficiency)
- Spanish (native or bilingual proficiency)

## **Protein isolation and quantification**

- Performed Co-immunoprecipitations and purified protein pull-downs to determine protein interactions in CCR7 and Androgen Receptor protein complexes.
- Quantified protein levels by colorimetric assays and assessed protein expression by Western blotting.
- Performed protein expression and localization techniques: SDS-PAGE, Western Blot, Elisa, Immunocytochemistry.
- Optimized expression and purification of His-tagged human FKBP51 recombinant protein in E.Coli BL21 cells.

## **Cloning**

- Proficient in techniques for building and confirming constructs, such as: restriction digests, PCR amplification, ligation, colony PCR, restriction mapping, and sequencing.
- Contributed to the cloning troubleshooting of constructs containing FKBP51 and FKBP52 mutants for adjacent projects within the cox lab.

## **Cell Culture**

- Experienced in adhesion and suspension culture management as well as cryopreservation.
- Proficient in transfection using lipid-based methods.
- Establishing KO populations from cell pools by single clonal expansion.

## **Fluorescence activated cell sorting (FACS)**

- Examined expression of transmembrane protein CCR7 using fluorophore conjugated antibodies.
- Examined cell cycle via Propidium Iodide staining.

## **Bacterial work**

- Prepared and sterilized reagents and different growth mediums for E. Coli and M. Smegmatis.
- Preparation of chemically competent cells.
- Transformation via heat shock protocols and electroporation.

- Isolation and purification of plasmid from liquid cultures using kit-based protocols.

## **PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS**

2022-2023	SBUR
2021-	SACNAS
2020-	American Association for Cancer Research
2010-2015	American Society for Microbiology
2009-2014	LULAC Young Adult Council #4895 <ul style="list-style-type: none"><li>• Secretary (2012-2013)</li><li>• Vice President (2013-2014)</li></ul>

## **VOLUNTEER EXPERIENCE**

2023	COURI Summer Symposium Judge
2020	Elementary Science Fair Judge, Howard Burnham Elementary
2019	Elementary Science Fair Judge, Howard Burnham Elementary