

## Susana Restrepo

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### Curriculum Vitae

Date of Birth: April 13, 1993

Place of Birth: Medellin, Antioquia, Colombia

Citizenship: United States of America, Colombia

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### Education

08/16 - present **Pursuing a PhD in Pharmacology, University of Colorado Denver  
Anschutz Medical Campus**

- Laboratory of Jason Aoto, PhD
- Study emphasis: Role of Neurexins at the synapse

08/11 - 05/15 **Bachelor of Science, Honors (Biology), University of Florida.**

- Study emphasis: Biotechnology
- 8 consecutive semesters Dean's List (Fall 2011 through Spring 2015)
- 3.92/4.00 GPA
- Semester abroad studying medical biotechnology and drug development in Copenhagen, Denmark and Edinburgh, Scotland at Danish Institute for Study Abroad. Major focus of study in biopharmaceuticals, overview of drug discovery and developmental phases. June 2014 - July 2014

### Awards Recognitions, Certificates and Memberships

- HHMI Gilliam Fellowship 2018-2021 (\$50,000 per year)- GT11021
- Ford Fellowship Honorable Mention 2018
- HHMI Gilliam Nominee 2017
- HIRS Merit Award (\$5000) 2016--
- Kirschstein NRSA-Institutional Research Training Grant T-32 NIH grant (full tuition and stipend) 2017-2018
- Association of Women in Science (AWIS) Member 2017-2018
- Science in Industry Boot Camp Certificate 2016
- Dean's List every semester 2011-2015
- Florida Academic Scholar (FAS) award; 100% tuition coverage 2011-2015
- Certified peer-educator by Planned Parenthood 2014
- National Society of Collegiate Scholars member since 2012
- Golden Key, member since 2012
- Member of National Science Honor Society 2010-2011
- Member of National Honors Society since 2009-2010
- Award of Excellence Annual Countywide Student Art Exhibition April 2009
- Award of Merit: Young Artists' Gallery, Women's Club of Coconut Grove. February 2009
- Award of Distinction: Annual Student Show, DACRA Gallery: April 2008
- Award of Recognition: Young Artist Series, Turnberry Bank. Aventura, Florida. 2008

### Presentations and Publications

- **Brianna J. Klein, Krzysztof Krajewski, Susana Restrepo, Peter W. Lewis, Brian D. Strahl, and Tatiana G. Kutateladze. (2018). Recognition of cancer mutations in histone H3K36 by epigenetic writers and readers. *Epigenetics* (under review).**
- Restrepo S, Nelson K, Aoto J. Evolutionarily conserved site on Neurexin3a modulates balance between excitation and inhibition. Poster session presented at: Pharmacology retreat 2018; 2018 April 19, Keystone, CO.
- Women in STEM: Coping with Anxiety and Stress in Academia. WiSTEM Lunch Hour Seminar February 21, 2018, Aurora, CO.
- **Pavlos, R., Mckinnon, E. J., Ostrov, D. A., Peters, B., Buus, S., Koelle, D., Chopra, A., Schutte, R., Rive, C., Redwood, A., Restrepo, S., Bracey, A., Kaefer, T., Myers, P., Speers, E., Stacy, A., Shabanowitz, J., Jing, Y., Gaudieri, S., Hunt, D.F., Carrington, M., Haas, D.H., Mallal, S., Phillips, E.J. (2017). Shared peptide binding of HLA Class I and II alleles associate with cutaneous nevirapine hypersensitivity and identify novel risk alleles. *Scientific Reports*, (July), 1–12. <https://doi.org/10.1038/s41598-017-08876-0>**
- Induced CaMKII trafficking to excitatory synapses: Input specificity and effects of amyloid  $\beta$ . Pharmacology seminar speaker May 22, 2017, Aurora, CO.
- Characterizing the role of a disease relevant mutation in Neurexin3- $\alpha$  at the synapse. Pharmacology seminar speaker Feb 27, 2017, Aurora, CO.
- INvestiGating DNA binding activity of ING proteins. Pharmacology seminar speaker November 21, 2016, Aurora, CO.
- Neurexin3 $\alpha$ : study of function in a disease model. Poster session presented for CU Pre-Health Scholars July 10, 2017, Aurora, CO.
- Restrepo S, Bracey AW, Pavlos R, McKinnon E, Ostrov DA. Peptide Binding Characteristics of HLA Alleles Associated with Nevirapine Hypersensitivity. Poster session presented at: Florida Genetics Symposium 2015; 2015 November 19, Gainesville, FL.
- Restrepo S, McElroy D, Byatt W, Ostrov DA. Specific Binding Characteristics of HLA Alleles Associated with Nevirapine Hypersensitivity. Poster session presented at the University of Florida Undergraduate Research Assistantship Symposium; 2015 April 13, Gainesville, FL.
- Restrepo S. Understanding Regulations on Xenotransplantation. 2013. Poster session presented at the University of Florida, Computer Science Engineering, Gainesville, FL.

### **Professional Experience**

- 11/2016 - present    **Graduate Research Assistant**, University of Colorado Anschutz (AMC), Department of Pharmacology and Neuroscience. Laboratory of Jason Aoto Ph.D.  
 Characterizing the pre and postsynaptic landscape through Neurexins and other synaptic adhesion molecules.  
 Gained skills in molecular biology and cloning (Gibson and restriction enzyme/ligation), cell culture (HEK293T, neuron) and transfection, confocal microscopy, epifluorescence microscopy, electrophysiology, biochemistry, protein purification from HEK293T cells.
- 2/2017 - 5/2017    **Graduate Research Assistant**, University of Colorado Anschutz (AMC) Department of Pharmacology, Neuroscience and Molecular Biology. Laboratory of Ulli Bayer Ph.D.  
 Examined the role of disease relevant beta amyloid in the trafficking of

Calcium calmodulin dependent kinase II, and Death associated protein 1. Gained skills in biochemistry (western blot analysis, immunoprecipitation, etc.), live cell imaging, further techniques in cell culture.

- 8/2016 - 11/2016 **Graduate Research Assistant**, University of Colorado Anschutz (AMC), Department of Pharmacology, Laboratory of Tatiana Kutateladze Ph.D. Understanding molecular mechanisms of epigenetic regulation through the characterization of reader of epigenetic marks. Researched several topics, such as how readers, PHF1 Tudor and BRPF1 PWWP, bind to altered histone H3 tails, specifically cancer relevant mutated H3; characterization of a putative DNA binding domain in MLL1; engineering the H3K4me3-binding cage in the PHD finger of PHF3; and investigating DNA binding properties of ING proteins. Gained skills in cloning (Gateway and restriction enzyme/ligation), NMR 2D HSQC (600 MHz), protein purification in bacteria, affinity and size exclusion chromatography.
- 8/2014 - 7/2016 **Research Assistant**, University of Florida, Department of Pathology, Immunology, and Laboratory Medicine. Laboratory of David A Ostrov Ph.D. The laboratory works in targeted drug discovery through the use of x-ray crystallography to study specific protein-ligand interactions. My responsibilities included any wet lab work, various *in silico* computations, paper and conference preparation, and induction of new researchers.
- 1/2014 - 5/2014 **Research Assistant**, University of Florida, Interdisciplinary Center for Biotechnology Research; Microbiology and Cell Science. Laboratory of Byung-Ho Kang, PhD. Studied the self-degradation of sperm mitochondria after fertilization by formation of precipitates in *Caenorhabditis elegans* through 3D modeling of organelles using 3dmod (IMOD) based on electron tomography data.
- 1/2010 - 5/2012 **Tutor**, Private  
Taught math and reading in a private context, taught physics and biology for the National Science Honors Society, and taught a fourth grade science class as part of a Chemistry Club Outreach program.

### **Extracurricular/Volunteer Work**

- 2018 **Synaptic Plasticity Journal Club Assistant Coordinator**  
Assist in organization and execution of monthly journal clubs on the latest papers regarding synaptic plasticity.
- 07/18 **Women in STEM symposium Assistant Coordinator**  
Assist in organization and orchestrating necessary arrangements to put on the annual WiSTEM at AMC Spring Symposium cosponsored by OIO. Arrange meetings with other group coordinators to plan parts of the symposium. etc.

- 04/09/18 **Brain Awareness Day at the Museum**  
Ran brain anatomy and learning and memory booths at the Denver Nature and Science museum where people of all ages attended and got to interact and learn about brain anatomy through the use of plastified brains and memory consolidation through interactive games.
- 03/2018 **Skype a Scientist**  
Skyped a 5th grade class from California and taught them basic neuroscience for one hour.
- 10/17 - 2/18 **Bi480 Cell and Molecular Biology Final Project Mentor**  
Mentoring two Wallingford Connecticut high school seniors through Skype sessions. Helping them research, read and summarize a primary literature article assigned by me, and then create a project to explain my work to a general audience through a medium of their choosing.
- 11/07/17 **Denver Public Schools 8th Grade Career Fair**  
Ran activities at the Women in STEM booth for kids interested in the STEM fields. Activities included matching plates of bacteria and fungus to their source, and identifying different structures of a mouse brain under a microscope, as well as answering children's questions about becoming a scientist.
- 09/29/17 **CareerTrek Volunteer, Aurora Public Schools Professional Learning & Conference Center, WiSTEM career fair booth**  
Career Trek is an opportunity for our 8th graders to get a deeper understanding of career opportunities while allowing them to develop those important professional skills they will be using in just a few years from now.
- 08/17 - 05/18 **DPS Career Coach Mentor: George Washington High School (GWHS)**  
Advise and guide 11th and 12th grade students at GWHS in Denver, Colorado who are interested in pursuing a career in STEM, while gaining mentoring skills and serving the community.
- 05/17 - present **WiSTEM Secretary**  
Record and prepare minutes of each officer meeting, distribute messages from the officers to all members, compose and send any group correspondence to university administrators, faculty, alumni, campus student organizations, etc. through email. Post flyers in campus buildings to advertise for upcoming events such as CV building, and professional development workshops, keep the WiSTEM listserv up to date, compose surveys/RSVPs for events, ensure WiSTEM has a continued and growing social media presence - post photos, articles, and upcoming events/opportunities on Twitter and Facebook, book rooms for events.
- 05/17 - present **Graduate Student Treasurer: Graduate Student Council**  
Handle budget and all monetary expenses of the Graduate Student Council which holds frequent coffee and tea, breakfast, and lunch hours free of charge to all students. Have meetings with the Graduate Student Senate to bring forth

graduate students' concerns and suggestions.

- 08/16 - 07/18 **WiSTEM outreach planning committee**  
Find diverse outreach opportunities available in the community, and/or contact educators to arrange "science days" at their institutions or on campus. Inform students and postdocs about outreach opportunities through WiSTEM.
- 7/10/2017 **Student panelist and guest lecturer: CU Pre-Health Scholars Program (CUPS)**  
Introduction to Research Techniques (class code: IDP001).  
Answer high school students' questions about applying to college and how I chose my career path. Give suggestions to students about how to improve their CV's (job shadowing, volunteering opportunities, community outreach, etc.)
- 7/29/17 **Science instructor**  
Activity leader for twenty middle school girls and their parents. Took the group on a tour of several laboratories and campus core facilities. Lectured on general lab safety and personal protective equipment. Gave a lessons on the history of DNA discovery and had them build a candy model of DNA. After learning about the structure of DNA, I had them extract strawberry DNA from a bag of three strawberries. Taught them the principles of light microscopes and how to view slides on one. Had an activity to simulate the spread of disease and demonstrate how epidemiologists find "patient zero".
- 6/15/2017 **Science instructor: CU Pre-Health Scholars Program**  
Volunteered through the office of inclusion and outreach to help first generation and underrepresented high school students to explore career options in the Medical Sciences. Provided opportunities for students to familiarize themselves with the various healthcare professions represented on campus. Gave students hands-on experience by guiding them through a neural plasticity experiment. Discussed the interdisciplinary nature of research.
- 6/17/17 **Peer Mentor: CU System Pre-Collegiate Summer Olympiad**  
Volunteered through the Office of Inclusion and Outreach to bring over 500 CU system Pre-Collegiate rising seniors to our campus for academic and talent competitions. Allowed students the opportunity to network with other students from the different programs and provided information about the host campus. Cooked for BBQ lunch.
- 3/25/2017 **Women's Day of Service**  
Through WiSTEM, brought together four Girl Scout troops (ages 8-14) and directed several science activities. Discussed the spread of disease and techniques they can employ to avoid spreading disease. Instructed a telegraph building workshop where girls had to use their telegraphs to communicate with the troop next door. Empowered them to consider STEM fields as potential career options and discussed alternative STEM career paths.
- 01/17 - present **Science Instructor**  
Teach one science subject (e.g. how the lungs work) per session to often

homeless or underprivileged children (ages 5-14) in the neighborhood in collaboration with Colfax Community Network -- an after school and summer child care facility.

- 08/14 - 05/15 **Vice-president**, VOX: Voices for Planned Parenthood  
Responsibilities included event management, delegating responsibilities, coordination of donations, scheduling meetings, and providing sexual education training to other members and students on campus at the University of Florida
- 08/13 - 05/15 **Volunteer**, Women's health clinic Bread & Roses  
Activities included escorting patients to and from the clinic, as well as providing emotional support for patients in need.
- 01/13 - 05/13 **Science Teacher/Volunteer**, Elementary school in Gainesville, FL  
Created a curriculum to, once a month, teach 4th graders at Lawton M Chiles Elementary about general science topics such as Newton's laws of motion, unique properties of water, and different states of matter, etc.
- 04/12 **Volunteer**, Assisted Living of Palm Beach Gardens  
Assisted Alzheimer's and Dementia patients with daily routines. Made sure Parkinson's patients had their meals at the appropriate times. Helped facility run smoothly by doing everyday chores due to lack of nurses and staff.
- 08/10 - 05/11 **Vice-President**, Film Club
- 08/10 - 05/11 **Corresponding Secretary**, Ecology club
- 12/08 **Volunteer**, University of Miami Hospital & Clinics  
Raised funds for children on dialysis in a holiday gift-wrapping campaign.

### Languages

- Spanish
- English
- Portuguese

### References

*further contact details available upon request*

#### **Jason Aoto, Ph.D.**, Assistant Professor

- Department of Pharmacology
- Graduate School
- University of Colorado Denver Anschutz Medical Campus
- jason.aoto@ucdenver.edu

#### **David A. Ostrov, Ph.D.**, Associate Professor

- Department of Pathology, Immunology and Laboratory Medicine
- College of Medicine
- University of Florida

- dostroda@ufl.edu