
IVANA RODRÍGUEZ

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ACADEMIC BACKGROUND

NEW MEXICO STATE UNIVERSITY, LAS CRUCES, NM — B.Sci BIOLOGY

Minors: Biochemistry, human biology, psychology

Class of 2016

MAYFIELD HIGH SCHOOL, LAS CRUCES, NM — GRADUATED WITH HONORS

Class of 2011

RESEARCH EXPERIENCE

SENSORIMOTOR LAB GRADUATE RESEARCH ASSISTANT, THE UNIVERSITY OF
GEORGIA DEPARTMENT OF KINESIOLOGY

JANUARY 2017 - PRESENT

My current research is aimed at understanding the relationship between dorsal and ventral streams with regards to motor planning and execution. My lab aims to measure this by tracking patient electrophysiological data during planning and execution of simple motor tasks, as well as by comparing the differences between patients with Parkinson's Disease and neurotypical individuals.

ALLIANCE FOR MINORITY PARTICIPATION UNDERGRADUATE SCHOLAR, NEW
MEXICO STATE UNIVERSITY

AUGUST 2016 - DECEMBER 2016

I was awarded a scholarship and position in the AMP program as an undergraduate researcher. AMP Program promotes independent achievement in research, professional development through workshops and conferences, and guidance for minorities and first generation students to succeed in STEM disciplines.

BIOINFORMATICS RESEARCHER, NEW MEXICO STATE UNIVERSITY

MARCH 2016 - JANUARY 2017

My research involved RNA-SEQ data analysis of antimicrobial-associated genes and their putative functions in Burying Beetle species under differential environmental conditions. The goal of this work was to identify novel antimicrobial compounds and to demonstrate their impact upon the ecology and survival of *Nicrophorus* under stressful conditions.

DISCOVERY SCHOLARS RESEARCH ASSISTANT, NEW MEXICO STATE UNIVERSITY
JANUARY 2015-JANUARY 2016

I investigated the nature of gene redundancy in two transcription factors crucial to eye development, using molecular biology techniques such as RNAi, CRISPR, and immunofluorescent staining. The project goal was to model human aniridia by observing transcription factor expression levels throughout development of the retinal determination network (a series of eye development-related signaling pathways) in knock-down fly larvae.

UNDERGRADUATE RESEARCH ASSISTANT, BOYCE THOMPSON INSTITUTE
JUNE 2015-AUGUST 2015

As an intern in the Plant Genome Research Program, my focus was to identify conserved non-coding sequences within and among related legume genomes. My objective was to provide progress in understanding the evolutionary origins of root nodulation. I employed bioinformatic tools including: data mining, multiple sequence alignment, motif enrichment analysis; and constructed a pipeline for more efficient compilation and processing of conserved non-coding genomic data across legume species.

SOYMAP PROGRAM RESEARCH ASSISTANT, THE UNIVERSITY OF GEORGIA
JUNE 2014-AUGUST 2014

Under the guidance of my post-doctoral mentor, I assisted in a project involving the construction of a complete karyotype for *Arachis hypogaea* L. (cultivated peanut), utilizing cytogenetic techniques. Additionally, I spent time learning fundamental genetic methodologies, such as genotyping, FISH, and DNA and RNA extractions.

RESEARCH VOLUNTEER, NEW MEXICO STATE UNIVERSITY
JANUARY 2014- AUGUST 2014

In this developmental neurobiology lab, we focused on studying the physiological effects of gene expression, using the weakly electric fish *S. macrurus* to model mechanisms underlying neural regeneration. As a volunteer, I participated in weekly meetings and discussed literature.

RESEARCH ASSISTANT, NEW MEXICO STATE UNIVERSITY
AUGUST 2013 – DECEMBER 2013

I conducted research as part of independent study in the organic and organometallic lab of Dr. Herndon. The focus of the lab was exploring and synthesizing new organic compounds that may be used in clinical trials for cancer treatments.

RISE PROGRAM: MEDICINAL PLANTS OF THE SOUTHWEST WORKSHOP
MAY 2013 – JULY 2013

Selective paid summer internship in which I learned research skills fundamental for a career in science. Specifically, my partner and I Program requirements included completing independent experiments, attending regional symposia, and collaborating with my peers.

NEW MEXICO STATE UNIVERSITY: DIABETES PROJECT
AUGUST 2012 – DECEMBER 2012

Semester-long project requiring creation and testing of a hypothesis, based on questions arising from academic research. I worked extensively with a group to create a proper experiment, including analysis of self-collected data and assembling a report of our findings and the implications.

SKILLS

- ❖ Programming experience: MATLAB, Unix/Linux, shell scripting, RNA-seq & differential expression analysis, data mining, whole genome sequence alignments, genome assembly, gene/protein annotations, motif enrichment analysis, R Programming, TopHat/Cufflinks suite, Trinity de novo assembly
- ❖ Genetics and cytogenetics experience: CRISPR/RNAi, gel electrophoresis, DNA and RNA extractions, qPCR/rtPCR, nick translation, immunofluorescence and Fluorescence *in situ* Hybridization, fluorescence/SEM/confocal microscopy
- ❖ Biology and chemistry experience: rodent stereotaxic surgery, cell culturing/counting, NMR spectroscopy, HPLC, gas chromatography/mass spectrometry, organic and organometallic compound synthesis, breed crossing and husbandry (both plants and *Drosophila melanogaster*)
- ❖ Fluent in English, Spanish, French; Japanese (elementary); Italian (elementary)
- ❖ Teaching experience (2018)

EXTRACURRICULAR ACTIVITIES

- ❖ OUR DAILY BREAD COMMUNITY SERVICE: SEPTEMBER 2017 — PRESENT
Regularly volunteer in partnership with Action Ministries to provide meals and fellowship with individuals who are (at risk of being) homeless.
- ❖ HISPANIC STUDENT ASSOCIATION — PRESENT

❖ NMSU PRE-HEALTH ORGANIZATION: AUGUST 2012 – DECEMBER 2014
Volunteered actively for various events throughout the school year, including blood and bone marrow drives, Keep State Great (an environmental conservation effort), and fundraising to support the club, make financial contributions to research, and support other non-profit organizations

❖ ROTARACT CLUB OF NMSU: AUGUST 2013 - MAY 2014
Contributed to local community service projects both in group and individual settings. Periodic meetings encouraged “service above self,” whilst encouraging development of excellent leadership and professional skills.

❖ LATINOS FOR ÉXITO: AUGUST 2012 – MAY 2013
Our duties as an organization was to help create opportunities to make it possible for socioeconomically disadvantaged high school students to consider pursuit of higher education. We encouraged first-year and ENLACE program students by providing a support system and helping them to adjust to life in college, in order to increase retention rates of minority students at NMSU.

❖ ASIST TRAINING: AUGUST 2012
Received week-long intensive training to become certified in proper techniques for providing support and suicide prevention.

❖ FULL CIRCLE HEALTH CENTER JANUARY 2010 – JULY 2010
Volunteered to educate other high school and middle school students about adolescent sexual health. Researched on health issues. Created posters and presentations.

CONFERENCES AND SYMPOSIA

❖ Attended and presented research posters at the Society for the Advancement of Chicanos & Native Americans in Science (SACNAS) Conference (2014, 2015, 2016)

❖ Undergraduate Research and Creative Arts Symposium (URCAS): Poster presentation (April 2015)

❖ Poster presentation at NMSU 15th Annual BioSymposium (March 2015)

❖ Poster presentation at the Santa Fe iPlant Collaborative “Food For Thought”

meeting(February 2015)

- ❖ Poster presentation at the University of Minnesota (August 2014)
- ❖ NMSU: Attended bioethics conference for undergraduates (July 2013)
- ❖ RISE Symposium: Poster presentations for two summer projects on medicinal plants (July 2013)

AWARDS AND HONORS

- ❖ Selected as a scholar for the summer 2017 GS Lead Program at UGA (June 2017 — August 2017)
- ❖ Scholarship award in the NM Alliance for Minority Participation (AMP) (August 2016 — December 2016)
- ❖ Awarded full travel scholarship to attend and present research at the Annual SACNAS Conference (2014 — 2016)
- ❖ Awarded position and scholarship for Discovery Scholars Program at NMSU - August 2015
- ❖ Awarded 1st Place poster presentation at the “Food for Thought” Professional Development and Networking Workshop (January 2015)
- ❖ Recipient of Pell Grant (Fall 2011 – 2016)
- ❖ Awarded Regents Success Scholarship (Fall 2011 – 2016)
- ❖ Awarded Certificate of Academic Excellence upon graduation (May 2011)

PUBLICATIONS

- ❖ “RNA-Seq Analysis of the Salivary Gland Transcriptome of the Burying Beetle *Nicophorus orbicollis*”
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