Rosario Marroquín-Flores

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EDUCATION

2017 - 2022 **Doctor of Philosophy**, Biological Sciences, Illinois State University, Normal, IL
Dissertation: Thermal and hormonal effects on gene expression and development in the red-eared slider turtle
Supervisor: Dr. Rachel Bowden, Dr. Ryan Paitz

2010 - 2015 **Bachelor of Science**, Biology, University of New Mexico, Albuquerque, NM

ACADEMIC POSITIONS

2022 – Present **Post-Doctoral Research Scholar**
Texas Tech University, Department of Biology
Supervisor: Dr. Lisa Limeri

2016 – 2017 **Post-baccalaureate Research Education Program (PREP) Scholar**
University of New Mexico, Department of Biology
Supervisor: Dr. Christopher Witt

TEACHING

Graduate Teaching Assistant, Illinois State University

2021 – 2022 Biological Diversity (BSC 196)
- Laboratory Instructor (Fall: 25 students, Spring: 75 students)

Molecular & Cellular Biology (BSC 197)
- Laboratory Instructor (Fall: 25 students)

2020 – 2021 Biological Diversity (BSC 196)
- Laboratory Instructor (Spring: 50 students)

Molecular & Cellular Biology (BSC 197)
- Laboratory Instructor (Fall: 50 students)

2017 – 2018 Fundamental Concepts in Biology (BSC 101)
- Laboratory Instructor (Fall: 50 students, Spring: 50 students)
- Laboratory Prep

PUBLICATIONS

Marroquín-Flores, R.A., Paitz, R.T and Bowden, R.M., 2021. Temperature fluctuations and estrone sulfate affect gene expression via different mechanisms in a species with temperature-dependent sex determination. *Journal of Experimental Biology*c

Paitz, R.T., Breitenbach, A.T., **Marroquín-Flores, R.A.**, and Bowden, R.M., 2022. Temperature induced changes in gene expression and subsequent phenotype: lessons from sex determination. *Journal of Experimental Biology*, *225*(11), p. jeb242373.

Marroquín-Flores, R.A., Bowden, R.M. and Paitz, R.T., 2021. Brief exposure to warm temperatures reduces intron retention in Kdm6b in a species with temperature-dependent sex determination. *Biology Letters*, *17*(6), p.20210167.

Barrow, L.N., Bauernfeind, S.M., Cruz, P.A., Williamson, J.L., Wiley, D.L., Ford, J.E., Baumann, M.J., Brady, S.S., Chavez, A.N., Gadek, C.R. and Galen, S.C., Johnson, A.B., Mapel, X.M., **Marroquín-Flores, R.A.**, Martinez, T.A.,

McCullough, J.M., McLaughlin, J.E., Witt, C.C., 2021. Detecting turnover among complex communities using null models: A case study with sky-island haemosporidian parasites. *Oecologia*, *195*(2), pp.435-451.

Marroquín-Flores, R.A., Williamson, J.L., Chavez, A.N., Bauernfeind, S.M., Baumann, M.J., Gadek, C.R., Johnson, A.B., McCullough, J.M., Witt, C.C. and Barrow, L.N., 2017. Diversity, abundance, and host relationships of avian malaria and related haemosporidians in New Mexico pine forests. *PeerJ*, *5*, p.e3700.

RESEARCH EXPERIENCE

Postdoctoral Research Scholar, Texas Tech University Lubbock, TX, 2022 – Present

Exploring the role of instructor mindset on student outcomes

Mindset is a psychosocial theory that refers to the perceived malleability of intelligence. People who espouse a growth mindset view intelligence as malleable, whereas people who espouse a fixed mindset view intelligence as inherent and unchangeable. Several lines of evidence suggest that instructor mindset affects student outcomes. My postdoctoral work takes a mixed methods approach to explore mediating factors that may explain the effect of instructor mindset on student outcomes, with the goal of designing interventions to improve those outcomes.
PI: Dr. Lisa Limeri

Developing a measure of community cultural wealth

Students from minoritized identities are underrepresented in STEM fields. Efforts to address this education debt are often based on deficit thinking and support the perception that minoritized students lack the necessary skills to be successful and will improve if provided with resources. Community cultural wealth (CCW) is a framework that pushes back on this narrow view, arguing that students from minoritized identities possess several skills based in resilience, community, and culture. CCW has primarily been studied and evaluated using qualitative methods and there is currently no validated measure of CCW. We are using a QuantCrit approach to develop and collect validity evidence for a quantitative measure of CCW.
PI: Dr. Lisa Limeri

Co-PI, Pellissippi State Community College (PSCC) Knoxville, TN, 2022 – Present

Simplifying research with PubNavigator

Students enrolled in a Fundamentals of Communication course with Dr. Kay A. Ross at PSCC were asked to work in small groups to develop a structured summary of a peer-reviewed article to be published on PubNavigator. Group presentations were recorded, and homework was collected for qualitative analysis to explore the capacity for students to understand, convey, and translate information from a peer-reviewed paper. Qualitative analysis is on-going.

Responsibilities: Development of Institutional Review Board (IRB) materials, assignment and rubric design, data analysis.

PhD Candidate, Illinois State University Normal, IL, 2017 – 2022

Thermal and hormonal effects on gene expression and development in the red-eared slider turtle

My doctoral work investigated the molecular underpinnings of temperature-dependent sex determination (TSD) in the red-eared slider turtle (*Trachemys scripta*). In species with TSD, incubation temperature triggers the expression of male and female sex-determining genes. It is not clear how embryos translate thermal cues into genetic signals or how hormone signaling compliments gene expression. Fluctuating temperatures and steroid hormones were used to induce male or female development to characterize expression patterns and post-transcriptional modification in sex-determining genes.

Responsibilities: Field work, benchwork, Institutional Animal Care and Use Committee (IACUC) protocols, data analysis, and grant writing.

PI: Dr. Rachel Bowden, Dr. Ryan Paitz

Lead Researcher, Illinois State University Normal, IL, 2020 – 2021

SciComm literature on student perceptions of science

SciComm literature was integrated into freshman-level curricula to investigate student perceptions of science and science-related issues. *PubNavigator* is a science communication platform that uses lay terms to describe peer-reviewed research. Undergraduate students were asked to read three *PubNavigator* articles and discuss the articles in an online asynchronous forum. Participants were asked to respond to surveys evaluating their appreciation

for science, perception of scientists and their activities, and beliefs about evolution and climate change. Forum discussions were also collected for qualitative analysis. We found that students who read *PubNavigator* articles engaged in deep learning practices, became excited about the research, and were able to connect to the researcher.

Responsibilities: Development of IRB materials, survey development, assignment and rubric design, data analysis.

PI: Dr. Rebekka Darner

Lead Researcher, Illinois State University Normal, IL, 2019

Contributions to invertebrate abundance and diversity

Independent research conducted as part of a Rainforest Ecology course, where students design and implement a research project at La Selva Biological Research Station in Costa Rica. Species-energy theory suggests that larger areas can support high species richness, largely due to increased availability of resources. The study sought to characterize the role of resource availability on invertebrate abundance and richness in bromeliad plants using path analysis. Results suggested that bromeliad detritus indirectly affects richness by directly increasing species abundance.

Responsibilities: classifying bromeliads to morphotype, measuring physical characteristics of the plant, identifying invertebrate larvae to family, path analysis in SAS.

PI: Dr. Steve Juliano

PREP Research Scholar, University of New Mexico Albuquerque, NM, 2016 – 2017

Parasite prevalence in breeding bird populations

A study funded by the Bureau of Land Management to describe the diversity, abundance, and host associations of haemosporidian parasites (*Plasmodium, Haemosporidian,* and *Leucocytozoon*) in the breeding-bird communities of New Mexico. PCR and microscopy were used to identify infection load and identify haemosporidian parasites to haplotype. Results found 27 novel haplotypes and evidence for host associations at the avian clade and species level. Full data are reported in Marroquin-Flores et al. 2017.

Responsibilities: screening blood smears, benchwork, tissue/museum loan preparation through the UNM Division of Genomic Resources, archiving in the Museum of Southwest Biology Arctos database, and field work.

PI: Dr. Christopher Witt

Ronald E. McNair Scholar, University of New Mexico Albuquerque, NM, 2014 – 2015

Coyote foraging behavior in a metropolitan environment

An undergraduate study on the foraging patterns of coyotes along the Albuquerque bosque to see the extent to which the coyote diet was being subsidized by anthropogenic resources. Coyote diets were characterized using scat analysis over a nine-month study period at 5 sites spanning ~12km of the Albuquerque bosque. Results found that coyotes regularly consumed squirrels, gophers, birds, and house cats.

Responsibilities: formulation of data collection and data analysis protocols, sample collection and analysis by identification of animal parts and plant matter at the Museum of Southwestern Biology.

PI: Dr. Seth Newsome

Undergraduate Research Fellow, UC San Diego/Scripps Institution of Oceanography La Jolla, CA 2014

Age and body size distribution of endangered turtle bycatch

Research as an undergraduate fellow in a National Oceanic and Atmospheric Administration (NOAA)-funded study examining the distribution and survivorship of marine turtles living in artisan and industrial fishing hotspots. Skeletochronology was used to determine the age of turtles living along the Pacific coast to evaluate population level impacts of bycatch risk in the area. Results found that juvenile turtles were exposed to bycatch risk for up to 20 years.

Responsibilities: sawing, decalcifying, staining, mounting, and imaging bones, consensus reads, and SIA prep (Lyophilizing/weighing samples, lipid extraction using ASE).

PI: Dr. Carolyn Kurle

FIELD EXPERIENCE

Field Technician, Northern Arizona University Flagstaff, AZ, 2016
Surveying populations of the endangered New Mexico Meadow Jumping Mouse, *Zapus hudsonius luteus,* in the Apache Sitgreaves and Santa Fe National Forests. Field research included live trapping and track plating, with long-term primitive camping.

Field Technician, University of New Mexico Albuquerque, NM**,** 2016
Assisting two UNM labs cooperatively; the Litvak Lab as a field technician studying climate impacts at nine sites in rural New Mexico and the Witt Lab as a lab technician, assisting in research on parasite-host coevolution of haemosporidian parasites in avian hosts. Field research with the Litvak Lab included tree mortality and destructive biomass surveys, percent cover of understory, and weather monitoring. Field research with the Witt Lab included identifying birds and collecting specimens for the UNM Division of Genomic Resources.

Field Assistant, Natural Heritage New Mexico Albuquerque, NM, 2015
Surveying in northern New Mexico for *Sclerocactus cloverae*, a state endangered subspecies of cactus, for a study funded by the Bureau of Land Management aimed to estimate its population in areas highly utilized by oil and gas industry. Primitive camping and hiking required.

Intern, UNM Bosque Ecosystem Monitoring Program (BEMP) Albuquerque, NM, 2015
Work within the program included both teaching and field work under multiple ecological programs. Fieldwork included routine monthly monitoring of an Albuquerque bosque BEMP site, small mammal trapping, jack rabbit surveys, arthropod pitfall trapping, and water quality monitoring. Teaching responsibilities included coaching children in issues of conservation and hands-on training of students in leaf litter collection, ground well depth monitoring, checking arthropod traps and Sherman traps, weighing animals, measuring body, tail, foot, and ear lengths, and determining sex and reproductive status of captured animals.

Field Assistant, University of New Mexico, Department of Biology Albuquerque, NM, 2015
Assisted in a graduate dissertation study utilizing stable isotopes to identify resource shifts in small mammal populations due to changes in precipitation. Field research included trapping small mammals and collecting blood samples.

Field Assistant, Scripps Institution of Oceanography La Jolla, CA, 2014
Conducted fieldwork in San Diego Bay for various marine turtle studies taking place at NOAA, including live marine turtle capture, satellite tagging, and collecting hormone and tissue samples.

Field Assistant University of New Mexico Albuquerque, NM, 2014
Assisted in live turtle capture in rivers and ponds in Truth or Consequences, New Mexico for a native population survey. Invasive species of turtle were added to the collection at the University of New Mexico Museum of Southwest Biology.

NATIONAL CONFERENCES

1. Society for Comparative and Integrative Biology (SICB) 2022. January 3rd – 7th, 2022. Oral Presentation: "Rapid response of intron retention in Kdm6b may mediate the temperature response of testis-determining genes in the red-eared slider turtle". **Marroquin-Flores, R**, Bowden, R., Paitz, P.
2. Society Advancing Chicanos & Native Americans in Science (SACNAS) 2021, Virtual. October 25th – 29th, 2021. Poster Presentation: "Gauging the effects of SciComm literature on science appreciation and perception." **Marroquin-Flores, R.**, Darner, B.
3. Society for the Advancement of Biology Education Research (SABER) 2021, Virtual. July 9th – July 30th, 2021. Poster Presentation: "Gauging the effects of SciComm literature on science appreciation and perception." **Marroquin-Flores, R.**, Darner, B.
4. SICB 2021, Virtual. January – February 2021. Oral Presentation: "Decoupling the effects of thermal and hormonal stimuli on intron retention in a species with temperature-dependent sex determination." **Marroquin-Flores, R.**, Bowden, R., Paitz, R.

5. Experimental Biology 2020, Virtual. April 4th – 7th. Poster Presentation: "Decoding the Language: Communicating Student-Driven Research to a Lay Audience." **Marroquin-Flores, R.**, Walsh, E. *Awarded the APS Martin Frank Diversity Travel Award & Dr. Dolittle Travel Award.
6. SICB 2020, Austin, TX. January 3rd – 7th. Poster Presentation: "Thermal fluctuations produce ecologically relevant expression profiles for temperature-responsive genes." **Marroquin-Flores, R.**, Mortimer, N., Paitz, R., and Bowden, R.
7. SACNAS 2019, Honolulu, HI. October 30th – November 3rd. Poster Presentation: "Cold-Inducible RNA-binding protein may regulate gonadal development in the red-eared slider turtle." **Marroquin-Flores, R.**, Mortimer, N., Paitz, R., and Bowden, R.
8. SICB 2019, Tampa, FL. January 3rd – 8th. Poster Presentation: "Cold-Inducible RNA-binding protein may regulate gonadal development in the red-eared slider turtle." **Marroquin-Flores, R.**, Mortimer, N., Paitz, R., and Bowden, R. *Awarded the SICB Broadening Participation Travel Award
9. American Physiology Society (APS) Comparative Physiology: Complexity & Integration 2018, New Orleans, LA. October 25th-28th. Poster Presentation: "Cold-Inducible RNA-binding protein as a potential regulator of embryonic gonadogenesis in the red-eared slider turtle". **Marroquin-Flores, R.,** Mortimer, N., Paitz, R., and Bowden, R. *Awarded the APS Minority Travel Grant
10. SACNAS 2017, Salt Lake City, UT. October 19th – 21st. Oral Presentation: "Diversity, abundance, and host relationships of avian malaria and related haemosporidians in New Mexico pine forests." **Marroquin-Flores, R.,** Williamson, J., Chavez, A., Gadek, C., Johnson, A., McCullough, J., Witt, C., Barrow, L. *Awarded for an outstanding contribution and research presentation.
11. Evolution 2017, Portland, OR. June 23rd – 27th. Poster Presentation: "Avian malaria of New Mexico is exceptionally diverse and mostly unknown." **Marroquin-Flores, R.,** Williamson, J., Chavez, A., Gadek, C., Johnson, A., McCullough, J., Witt, C., Barrow, L.
12. National Human Genome Research Initiative Annual Meeting 2017, St. Louis, MO. April 12th – 14th. Poster Presentation: "Avian malaria of New Mexico is exceptionally diverse and mostly unknown." **Marroquin-Flores, R.,** Williamson, J., Chavez, A., Gadek, C., Johnson, A., McCullough, J., Witt, C., Barrow, L. *Panelist in a National Institutes of Health Mock Grant Review.
13. SACNAS 2014, Long Beach, CA. October 16th -18th. Poster Presentation: "Determining age and body size distribution of endangered North Pacific loggerhead turtles (*Caretta caretta*) and East Pacific green turtles (*Chelonia mydas*) at an East Pacific bycatch hotspot." **Marroquin-Flores, R**., Turner-Tomaszewicz, C., Seminoff, J., and Kurle, C. *Awarded the NOAA Award for an Outstanding Research Presentation.

SYMPOSIA

STEM Advocacy Institute (SAi) 1st Annual Symposium, Virtual. July 8th, 2021. Oral Presentation: "PubNavigator: Addressing barriers to science literacy". **Marroquin-Flores, R**.

SACNAS 2018, San Antonio, TX. October 11th -13th, 2018. Oral Session: "Broadening Your Horizons: A Peer Perspective on Applying to Graduate School." **Marroquin-Flores, R.,** Patritti Cram, J., Lopez, Jr., M., Rodriguez, V., and Bachurski, C.

PROFESSIONAL SOCIETIES

2019 – 2022	Society for the Advancement of Biology Education Research (SABER)
2018 – 2022	Society for Integrative and Comparative Biology (SICB)
2018 – 2022	Beta Lambda Phi Sigma Honors Society
2014 – 2022	Society for Advancing Chicanos/Hispanics and Native Americans in Science (SACNAS)

GRANTS, FELLOWSHIPS, AND AWARDS

2022	SABER Persons Excluded due to Ethnicity or Race (PEER) Travel Award	$600
2021	ISU School of Biological Sciences Jack A. Ward Service Award	$500
2021	Beta Lambda Phi Sigma Honors Society Presentation Award & Travel Grant	$100
2021	Beta Lambda Phi Sigma Honors Society Weigel Grant	$1,000
2021	Science Advocacy Institute (SAi) Junior Residency	$700
2020	ISU Dissertation Completion Grant	$2,000
2020	Beta Lambda Phi Sigma Honors Society Weigel Grant	$1,000
2020	C4 SAi Fellowship	$400

2020	Dr. Dolittle Travel Award for the APS Comparative and Evolutionary Physiology Section	$500
2020	APS Martin Frank Diversity Travel Award **Canceled due to SARS-CoV-2 **	$1,800
2019	Eleanor Ison Franklin Fellow, APS Porter Physiology Fellowship Continuation Award	$28,300
2019	Beta Lambda Phi Sigma Honors Society Weigel Grant	$600
2019	Illinois State University McHenry Fellowship	$3,000
2019	SICB Grants-in-Aid-of-Research Award	$1,000
2019	University Club Scholarship	$500
2019	Wiley Women in Research Travel Grant	$2,000
2019	Rilet Scholarship	$100
2019	SICB Broadening Participation Travel Award	$500
2018	ISU College of Arts & Sciences Graduate Travel Grant	$250
2018	APS Minority Travel Award	$1,800
2018	Rilet Scholarship	$90
2018	APS Porter Physiology Development Fellowship	$28,300
2018	Illinois State University Mockford-Thompson Summer Fellowship	$5,610
2018	Beta Lambda Phi Sigma Honors Society Weigel Grant	$300
2017	Illinois State University Foundation Fellowship	$2,500
2017	SACNAS Travel Award (Travel Lodging Registration)	$800
2017	SACNAS award for an outstanding contribution and graduate research presentation	$250
2016	SACNAS Travel Award (Travel, Lodging, Registration)	$800
2016	Post-Baccalaureate Research Education Program (PREP) Research Scholar	$27,200
2014	Scripps Undergraduate Research Fellowship	$5,000
2014	NOAA Award for an Outstanding Research Presentation (SACNAS Conference)	$500
2013	Ronald E. McNair Scholar	$2,800
2013 – 2014	Frank Allen Scholarship	$1,000
2012	Katherine Simmons Scholarship	$1,000

HONORS

2019	Eleanor Ison Franklin Fellow (APS Porter Physiology, highest ranked renewal application)
2019	Ford Foundation Predoctoral Fellowship Honorable Mention
2018	National Science Foundation Graduate Research Fellowship Honorable Mention
2018	Yale Ciencia Academy Fellow
2017	2nd Place Undergraduate Research Presentations, UNM Research Day
2013	University of New Mexico Goldwater Scholarship Nominee
2013	Associate Collegiate Press Pacemaker Award (*Scribendi* Magazine)
2010 – 2015	University of New Mexico Dean's List
2010 – 2013	University of New Mexico Honors College

PROGRAM DEVELOPMENT & MENTORSHIP

Lauro Cavazos & Ophelia Powell-Malone Mentoring "Mentor Tech" Program, *Mentor* 2022 – Present
Mentoring two TTU Mentor Tech protégés as part of a year-long mentorship program to promote the retention of undergraduate students from underrepresented backgrounds. Participation includes meeting with protégés on a bi-weekly basis to support their success and enhance the quality of their experiences at TTU.

President's STEM Mentoring Academy, *Mentor* 2022 – Present
Mentorship training for faculty actively mentoring undergraduate researchers in the Bridge Across Texas – Louis Stokes Alliance for Broadening Participation (BAT – LSAMP) program, a partnership between five universities that supports the achievement of students from minoritized identities in STEM. Participation includes mentoring one or more BAT – LSAMP students for the 2022-2023 school year and participation in 4 three-hour working sessions throughout the academic year.

PubNavigator, *Founder & Senior Editor* 2020 – Present
PubNavigator is a science communication platform that shares the findings of peer-reviewed publications using accessible language. Submissions are solicited from published authors and volunteers with and without a science background are recruited and trained as editors. All *PubNavigator* articles are written at or below a 12th grade

reading level. The mission of the project is to improve science literacy by making scientific research more accessible. The vision is to make scientists more approachable, increase science appreciation, and promote science identity. *PubNavigator* is sponsored by the SAi and is an expansion of the SACNAS *Research Spotlight.*

Funding:
2021 SAi Residency Fund Request: $700 | Award: $700

SACNAS ISU, *Founder & President* 2019 – 2022
SACNAS is an ISU Registered Student Organization with the goals of expanding access to research and professional development opportunities for students, increasing awareness of and commitment to diversity in sciences, and building a community of diverse professionals and advocates across scientific fields.

Activities:

- Professional Development: Organizing monthly professional development sessions to support graduate and undergraduate students and bringing students to the annual SACNAS National Diversity in STEM Conference (2019: 5 students, 2020: 8 students, 2021: 4 students, 2022: 8 students).
- Science Communication: Highlighting student-driven research by translating recent publications from graduate and undergraduate ISU students into the SACNAS *Research Spotlight*, a collated journal that uses language accessible to a high school graduate. Volume 1 was released in 2020.
- Budget Development & Fundraising: Organizing budget materials to present to the Student Fee Board for Program Fund and/or Opportunity Fund Allocation on an annual basis and conducting small-scale funding events. Funding supports student travel to the SACNAS Conference and Professional Development.

Funding:
2022 – 2023 ISU Program Fund Request: $11,435 | Award: $11,435
2021 – 2022 ISU Program Fund Request: $7,952 | Award: $7,789
2020 – 2021 ISU Program Fund Request: $12,449 | Award: $10,857
2020 ISU Opportunity Fund Request: $1,350 | Award: $1,350
2019 – 2020 ISU Program Fund Request: $7,785 | Award: $7,200

Beta Lambda Phi Sigma Honors Society, *Social Chair* 2018 – 2019
The Phi Sigma Honors Society is an RSO in the ISU School of Biological Sciences responsible for organizing an annual research symposium, grant opportunities, and social events. The social chair organizes events meant to develop a community for students. One such event was "Science Day", a collaboration with the Boy Scouts of America Scoutreach Cub Scouts program, which provides Scout programming to young boys from low-income communities. Phi Sigma provided interactive activities to teach the children about science: DNA extraction, glowing *C. elegans* worms, seed dispersal and ecosystem connectivity, animal specimens, and live pollinator activities.

ISU STEM Alliance, *Speaker* 2018 – 2019
STEM Alliance (formerly, the Louis Stokes Alliance for Broadening Participation) is a professional development program that supports students from underrepresented backgrounds to be successful in the pursuit of an undergraduate degree. Organized a two-part presentation in the 2018 Fall and 2019 Spring semesters to encourage undergraduates to apply for summer Research Experiences for Undergraduates (REUs). Addressed the role of the program, stipends, benefits, and helped students to craft competitive applications. Organized an additional presentation in the 2019 Spring semester on how to write a competitive personal statement for graduate programs, scholarships, and REUs. Special time was spent on crafting a diversity statement, and discomfort surrounding discussions of identity.

OUTREACH & SERVICE

2022 SAi Community Action Committee*, Chair*
2021 ISU Charles Morris STEM Social, STEM Opportunities on Campus, *Speaker*
2021 ISU Office of Student Research, Research Panel, *Panelist*
2021 ISU TA Welcome and Orientation, Diversity & Engagement, *Panelist*
2021 SAi Community Action Committee*, Committee Member*
2021 Celebrating High School Innovators (CHSI) Competition, *Judge*
2021 UNM Advancing Women in Science, Homegrown Scientist Speaker Series, *Speaker*
2021 Letters to a Pre-Scientist, middle school student in Moreno Valley, CA, *Pen pal*
2020 ISU TA Welcome and Orientation, Diversity & Engagement, *Panelist*

2019 ISU STEM Alliance, *Panelist*
2019 ISU Charles Morris STEM Social, *Panelist*
2018 Millennium Girls Conference, Bloomington, IL, *Group Leader*
2018 Skype a Scientist, 3rd grade students in Roosevelt, NY, *Speaker*
2018 Bent Elementary School, 3rd grade students, *Speaker*
2018 Skype a Scientist, 8th grade students in Coral Springs, FL, *Speaker*
2017 – 2018 Letters to a Pre-Scientist, middle school student in Northglenn, CO, *Pen pal*

PEDAGOGICAL TRAINING

Foundations of Instructional Design Teaching January 2022 – May 2022
An ISU Center for Teaching, Learning, and Technology (CTLT) training program on course design for future faculty. The course uses backwards design to go through the process of designing a course from scratch. Students leave the program with a teaching portfolio, course plan, and revised teaching philosophy.

The Inclusive STEM Teaching Project March 2022 – May 2022
A 6-week asynchronous online course offered by EdX to prepare current and future faculty to create inclusive learning environments in undergraduate STEM courses. The course is coupled with an optional synchronous learning community that meets bi-weekly. *Certificate of completion received.

Foundations of College Teaching January 2021 – December 2021
An ISU CTLT training program to prepare graduate students to teach at the faculty level. The course addresses evidence-based instructional practices to set the foundation for becoming an equity-minded instructor. Students leave the program with a teaching development plan and teaching philosophy. *Certificate of completion received.

Using Authentic Learning to Engage Students with the Research Process March 2021
A week-long asynchronous workshop provided by ISU CTLT that provides tools and strategies to motivate students to engage in the research process. The workshop first focused on learner motivation, then transitioned into strategies that can be used in the classroom to engage students in the research process.

Learning Community: Support Student Success in STEM Courses January 2021 – April 2021
The ISU CTLT provides topic-specific learning communities that meet on a monthly basis. The Support Student Success in STEM learning community focuses on research-based actions to improve student learning, discussion on changes that can be implemented in STEM courses, and simple ways to collect and analyze data for evidence of impact.

Future Professors Development Circle: "Small Teaching" January 2019 – April 2019
ISU CTLT hosts a semester-long training for graduate students interested in transitioning into faculty positions. CTLT instructors guide graduate students through a book on evidence-based instructional practices to assist in course planning, modifying existing teaching strategies, and to guide students in implementing small activities to improve undergraduate student learning. The book for the Spring 2019 semester was "Small Teaching: Everyday Lessons from the Science of Learning" by James M. Lang.

Introduction to Evidence-Based Undergraduate STEM Teaching June 2018 – July 2018
Center for the Integration of Research Teaching and Learning (CIRTL) Network provided an 8-week summer course targeting graduate and postdoctoral students interested in learning techniques to enhance undergraduate STEM education and to prepare these future faculty members to become teachers. *Certificate of completion received.

Facilitator-Educator Workshop December 19th – 20th, 2016
Training provided by the Youth Engagement Project out of the New Mexico South Valley Public Health Office and the Health Promotion Program. The training was dedicated to preparing facilitators to educate using popular education model and interactive learning. Through experiential activities, this training explored topics such as culture, identity, understanding aggression, and implementing outreach activities as part of facilitator development.

PROFESSIONAL DEVELOPMENT

Science Advocacy Institute (SAi) Junior Residency January 2021 - present
A year-long residency with SAi to support an existing outreach project, *PubNavigator*. Residents are provided with a small stipend to support program development, attend monthly meetings, and teach one virtual nanocourse relevant to the resident's program.

Getting Started in Discipline-Based Education Research (DBER) June 2022 – July 2022
A seven-week webinar series offered by the American Society for Microbiology targeting researchers transitioning into DBER. The program included interactive webinars, asynchronous assignment, and peer-learning communities, with the goal of introducing researchers to DBER theory and qualitative/quantitative methodology.

SAi C4 Fellowship September 12th – November 14th, 2020
An 8-week professional development program to support a promising outreach project, the SACNAS *Research Spotlight*. SAi provides training in program development, logic models, developing a funding structure, and walks fellows through a series of case studies on existing outreach projects. Fellows are provided with a small stipend and present a final project pitch at the end of the program.

5th Annual ComSciCon-Chicago August 24th – 25th, 2019
A two-day intensive science communication workshop to train the next generation of scientists to communicate with lay audiences. Topics included visual representations of data, jargon training and avoidance, starting a YouTube channel and Podcast, effective communication via social media outlets, career options in science communication, science advocacy and public policy, and communication as educators and to reduce science denial.

Yale Ciencia Academy for Career Development January 2018 – December 2018
Year-long graduate student professional development training program. Program includes individual development programs, workshops with established mentors in academia, training for the design and implementation of local outreach initiatives, funded travel to the 2018 American Association of the Advancement of Science Conference, Austin, TX, and an independently designed outreach project. *Certificate of completion received.

ARTICLES

Science Communication

1. Rosario Marroquin-Flores. "Improving science literacy by making research accessible with PubNavigator.", SAi Resident Stories, 4 October 2021.
2. Rosario Marroquin-Flores. "Fruit flies shed light on how immune responses are regulated." PubNavigator, 17 August 2021.
3. Rosario Marroquin-Flores. "Looking under the hood: how warm temperatures affect gene processing in turtle eggs." PubNavigator, 7 June 2021.
4. Rosario Marroquin-Flores. "Hot Chicks, Cool Dudes: How sex can be shaped by temperature." Life Lines by Dr. Dolittle, 9 April 2020.
5. Rosario Marroquin-Flores. "Fostering Diversity and Mentorship in Research." The Wiley Network, 5 August 2019.
6. Pooja Kadaba Ranganath and Rosario A. Marroquin-Flores. "Sugary Surprises from RNA." Ask A Biologist, 14 May 2019.

Journalism

1. Rosario Marroquin-Flores. "UNM scientists target tuberculosis." *The Daily Lobo*, 8 February 2013.
2. Rosario Marroquin-Flores. "Lobo Spotlight: Shaina Saint-Lot." *The Daily Lobo*, 19 February 2013.
3. Rosario Marroquin-Flores. "UNM Partners with NASA to send Trailblazer satellite into space." *The Daily Lobo*, 1 March 2013.
4. Rebecca Gonzales and Rosario Marroquin-Flores. "Options abound for Johnson Center and Student Health and Counseling building replacements." *The Daily Lobo*, 2 April 2013.
5. Rosario Marroquin-Flores. "County raises minimum wage." *The Daily Lobo*, 29 April 2013.
6. Rosario Marroquin-Flores. "What to do with SAE house?" *The Daily Lobo*, 3 June 2013.

PROFESSIONAL EXPERIENCE

Security Assistant, Personnel Security Consultants Albuquerque, NM, 2015 – 2016
Full-time employment at a security company specializing in tribal employee background investigations for persons applying for positions in federal law enforcement, healthcare, and childcare. Responsible for report writing, criminal history checks (FBI, State, County, and Tribal), and research to verify employment credibility.

Freelance Reporter, University of New Mexico, Daily Lobo Albuquerque, NM, 2013
Served as the only STEM major on staff for The Daily Lobo, the student-run newspaper on the UNM campus.

Staff Associate, University of New Mexico, *Scribendi*, Albuquerque, NM, 2012 – 2013
Scribendi magazine is an annual student-run honors publication out of the University of New Mexico. It receives submissions from over 200 universities and colleges in the Western Regional Honors Council. Responsible for submission selection, design, marketing, fundraising, and copyediting. The 2013 publication received the Associate Collegiate Press Pacemaker Award.