# Allasandra Valdez

Ph.D. Student at Cornell University
**Email**: aav44@cornell.edu

Education

**Cornell University**, *Fall 2023- Present*
Ph.D. Student in the department of Ecology and Evolutionary Biology
**Oklahoma State University**, *Summer 2021- Summer 2023*
MS. Natural Resource Ecology and Management- *August 2023*
**Juniata College**, *Fall 2018- Spring 2021*
BS. Plant Science
**Harrisburg Area Community College**, *Fall 2017-Spring 2018, Winter 2020*
Dual Enrollment

Professional Experience

**Graduate Research Assistant**, Sparks Lab at Cornell University, *Fall 2023- Present*

**Graduate Research Assistant**, Zhai Lab at Oklahoma State University, *Summer 2021-Summer 2023*
Lead investigator under the supervision of Dr. Lu Zhai. Determined the effectiveness of alternative physical removal management (PRM) techniques for invasive plant species control focusing on the invasive Johnsongrass (*Sorghum halepense*). Completed two large greenhouse projects, including design and set-up, establishment and monitoring greenhouse analyses, conducting laboratory assessments, and analyzing data. Assessments included photosynthetic rate, soil water moisture, leaf water potential at predawn and midday, above- and belowground biomass, mycorrhizal fungal conization, phospholipid and neutral lipid fatty acid analyses (PLFA/NLFA) for microbial community composition, carbon structure analysis, and soil nutrient availability.

**Teaching Assistant: Forest Measurements 1**, Oklahoma State University, *Fall 2021*
Assisted with material preparation for Topic of Forest taught by Dr. Lu Zhai, Oklahoma State University.

**Undergraduate Research Assistant**, Muth Lab at Juniata College, *Spring 2019- Spring 2021*
Performed individual research under the supervision of Dr. Norris Muth. Projects include the Huntingdon caterpillar project, The Ferguson Township Vegetation Management in Drainage Basins, and Fish Stocking Effects on Nitrogen Isotopic Ratios. As lead student investigator, I completed field research, ecological surveys, data collection and analysis, and community outreach.

**Teaching Assistant**: Freshman Biology Lab (Ecology Module), Juniata College, *Spring 2021*
Assisted with lab research for the ecology module of Freshman Biology Lab at Juniata University under the supervision of Dr. Chris Grant and Dr. Regina Lamendella. Coursework consisted of data collection and analysis of altered stream ecosystems in Huntingdon County.

**Lab Assistant**, Science in Motion, *Fall of 2018- Current*
Prepared labs for rural high schools, including establishing bacterial cultures, electrophoresis gels, agar plates, and inoculations.

Research Experience

**Drought Impacts on Efficacy of Physical Removal Management in Controlling Species Invasion**, *summer 2021 – summer 2023*

Lead investigator for greenhouse and laboratory research under the supervision of Dr. Lu Zhai with assistance from committee members Dr. Bo Zhang, Dr. Gail Wilson, and Dr. Rodney Will. Completed large greenhouse study conducted over two growing seasons: June 2021 - October 2021 and April 2022 - October 2022. Project focuses on determining if drought combined with the alternate management practice of clipping promotes removal of invasive plant species, using *Sorghum halepense* as my model species. Mentored 16 undergraduate research assistants throughout this two-year project.

**Nitrogen Isotopic Ratios in Stocked and Non-Stocked Stream,** *Spring 2020, Fall 2020, Spring 2021*
Lead undergraduate student investigator under the direct supervision of Dr. Norris Muth and Dr. Christopher Grant. Project focused on understanding the cascading effects of fish stocking on stream ecosystems. Nitrogen Isotopic Ratios ($^{14}N$) were used as a biomarker to detect stocking influence on stream ecosystems. Project consisted of field collections of plants, macroinvertebrates, fish, and testing water nitrogen concentrations.

**Huntingdon Caterpillar Project**, *Spring 2019-Fall 2020*
Worked under the direct supervision of Dr. Norris Muth. Project focused on understanding the effects of predatory/prey relationships on native versus non-native plant species. Engaged in Citizen Science programs, community outreach, and field work.

**Ferguson Township Vegetation Management in Drainage Basins**, *Summer of 2020*
Worked with Dr. Norris Muth along with representatives from Ferguson Township to research creative solutions of creating effective natural habitats for drainage basins. Engaged in community outreach and restoration efforts.

**Remote Field Course**, *Summer of 2019*
Traveled to the Colorado Plateau and attended modules in Biodiversity in Southwestern Ecosystems, Astronomy and Meteors, and Educational Resources. Learned how to adapt to new environments and performed prolonged fieldwork.

**Altered Ecosystems**, *Fall 2020*
Completed research at various locations to determine alterations to the environment as well as the impact those alterations had on the surrounding ecosystem. Preformed water quality tests, macroinvertebrate collection, plant identification, and turtle nesting collection. Overall study proved to be successful as it improved abilities to creatively think and respond with needed restoration efforts to the altered environments.

Relevant Coursework

**Restoration Ecology**, *Fall 2021*
**Statistics for Experimenters I,** *Fall 2021*
**Production Ecology**, *Spring 2022*
**Ecological Data and Hypothesis**, *Spring 2022*

Student Mentoring

**Niblack Graduate Student Mentor-** Summer 2022 – Spring 2023

Graduate student mentor for the prestigious Niblack Research Scholars Program. Mentored Niblack research scholar Rabeca Richardson. Assisted with proposal application, developed lab and field skills including microscopic assessments of mycorrhizal fungal root colonization, and assisted with data analysis and presentation.

**Freshman Research Scholar Mentor**- Fall 2022- Summer 2023

Selected as a mentor for the prestigious freshman research scholar mentorship program at Oklahoma State University. Mentored research scholar Addie Galante. Developed students writing and research techniques, field and laboratory skills including nutrient analyses and carbon structure analysis, and assisted with career advising.

**Zhang lab Undergraduate Mentorship**- Fall 2021- Summer 2023

**Mentored 16 research** students in the Zhang Lab. Developed research and professional skills, ethical research training, field safety training, and safe greenhouse operations

*Fall 2021: Megan Gillespie, Allyson Chaffin, Collin Koza, Jeronimo Lara, McKenzie Menefee, Hannah Ray, Rabeca Richardson, Sydney Markham*
*Spring 2022: Collin Koza,Emma Fike, Bailey Knighten, Mason Lough, Rabeca Richardson*
*Fall 2022: Sara Box, Addie Galante, Collin Koza, Michelle Liu, Rabeca Richardson, Brett Thomason, Jeremy Underhill*

Leadership Experience

**Graduate Faculty Representative** for NREM Graduate Student Organization
**Project Coordinator** Zhai Lab at Oklahoma State University
**Ride Group Supervisor** Hershey Park 2019-2021
**Treasurer** of Big Brothers Big Sisters at Stone Church 2019-2020
**Co-founder and Treasurer** Women in Martial Arts at Juniata 2019-2020
**Ski Race Team Coach** Jack Frost Race Team 2017-2020

Skills

**Leadership**
**Creativity**
**Teamwork**
**Critical thinking**
**Microsoft Office Suite**
**R Programming**

Laboratory Skills

**LiCor 6800**
**Microscopic Assessments for Mycorrhizal Fungal Colonization**
**Leaf Water Potential**
**Soil Water Content**
**Greenhouse Operations and Management**
**Nitrogen Isotope Preparation and Analysis**

Awards and Honors

**Cornell Fellowship**- Cornell University, Fall and Spring 2023- 2024
**Buck & C.A. Aldrich fellowship**- Oklahoma State University Department of Natural Resource Ecology and Management, Fall 2023
**Merit-Based Stipend Raise**- Zhai Lab, Oklahoma State University, Summer 2022
**Dean's List**- *Fall 2017, Spring 2018, Spring 2020, Fall 2020*
**Most improved**- Juniata College Cheerleading
**Third Degree Black Belt**- Harrisburg Institute of Tae Kwon Do
Recognized with multiple **Milton Hershey Legacy Award** for Outstanding Performance
**National Honor Society for Leadership and Success**

Presentation

Allasandra Valdez (2023, April) **Effective Mentorship Workshop.** 5th Annual Central Ecology and Evolution Conference.

Allasandra Valdez (2022, April) **Effects of Drought Enhanced Management on *Invasive Sorghum halepense*.** 4th Annual Central Ecology and Evolution Conference.

Allasandra Valdez (2021 October) **Johnsongrass and Restoration.** Guest lecture for "*Restoration Ecology*" class at Oklahoma State University

Allasandra Valdez (2021, August) (2022, February), (2022, September), **Safety and Ethical Research.** Guest lecture for Zhang Lab at Oklahoma State University

Memberships

**Graduate Student Organization**- *Fall 2021- Current*

Oklahoma State University Department of Natural Resource Ecology and Management, selected as Graduate Student Faculty Representative to act as a lesion between graduate students and NREM faculty.

**R Ladies**- Summer 2022- Current

Scholarships

Niblack Graduate Student Mentor
Calvert Ellis Scholarship
Bradley E. Hauber Community Scholarship
Juniata College Heritage Award
Central Dauphin Alumni School Sprit Scholarship
Paxtonia Elementary PTA Scholarship
Colonial Park Rotatory Club Scholarship

Training

**Software Carpentry: Programing with R**

John Blischak, Daniel Chen, Harriet Dashnow, and Denis Haine (eds):
"Software Carpentry: Programming with R." Version 2016.06, June 2016,

**Show Us Your R's**

Logan, M. (Tutorials and workshops on R and statistics. "Show Us Your R's". March 2, 2018.

Certifications

**Electrofishing Certification**
Kukkiwon Martial Arts Certification