Natalija Bogdanovic

Arizona State University (West Valley Campus)
New College of Interdisciplinary Arts and Sciences (NCIAS)
School of Mathematical and Natural Sciences (SMNS)
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[Employee Profile]

EDUCATION

Bachelor of Science in Biology   *May 2020*
Arizona State University (West Valley), Glendale, AZ

- Minor: Sociocultural anthropology
- Summa cum laude
- GPA: 4.0

Honors Diploma from Barrett, the Honors College   *May 2020*
Arizona State University (West Valley), Glendale, AZ

- Honors thesis title: "Development of Software to Control and Analyze a Tabletop Nuclear Physics System"
- Director: Dr. Ross Tucker

AWARDS and DISTINCTIONS

- **Recognition of Academic Service (ASU West Valley Staff Council)**   *August 2024*
- **Serving University Needs (SUN) Award (Arizona State University)**   *August 2021 - present*
- **Summa cum laude (Arizona State University)**   *May 2020*
- **Moeur Award   (Arizona State University)**   *May 2020*
- **Dean's List (Arizona State University)**   *December 2016 – May 2020*

EXPERIENCE

Research/Laboratory

Instructional Specialist   *August 2021 – present*
School of Mathematical and Natural Sciences, Arizona State University (West Valley)

- Prepared, refreshed, and cleared down various laboratory courses, including biology, zoology, organic chemistry, general chemistry, and forensics
- Created, updated, and designed preparatory documents and templates for assigned courses
- Provided additional support to instructors when needed, including creating/providing "Instructor Notes" documentation
- Inventoried, maintained, repaired/troubleshot, and prepared orders for laboratory materials and equipment
- Learned how to operate various laboratory instruments and equipment
- Assisted course coordinators in the development and testing of laboratory experiments
- Covered/taught laboratory courses when instructors were unable to do so
- Assisted in development/review of standard operating procedures (SOP) documentation for instruments

- Inventoried, maintained, and added new specimens to Zoology specimen collection
- Cared for/maintained various living invertebrates
- Attended/participated in regular team meetings with entire lab staff
- Provided training and guidance to new employees, as needed
- Designed, developed, and implemented a "mini spill kit" to assist in the clean up of minor chemical spills in the laboratory rooms
- Prepared/submitted hazardous waste for disposal, according to federal and university guidelines
- Applied knowledge of laboratory safety and policies to ensure a safe learning and working environment for students, staff, and faculty
- Promoted a collaborative and positive work environment by offering support and assistance to colleagues when needed

STEM Research Aide   *April 2019 – May 2020*
Dr. James Chadwick Johnson's Arthropod Behavioral Research Lab, Barrett, the Honors College, Arizona State University

- Performed daily maintenance of black widow spider population in Dr. James Chadwick Johnson's behavioral ecology lab
- Assisted with research projects conducted in the laboratory and in the field
- Provided community outreach through lab tours and live demonstrations to prospective students
- Ordered supplies, such as live crickets, live flies, and fly media
- Attended academic/research lectures hosted by Barrett, the Honors College

Teaching

STEM Peer Mentor (General Chemistry*)***   *August 2018 – December 2019*
School of Mathematical and Natural Sciences and Dr. Marianna Pinter, Arizona State University (West Valley)

- Attended Dr. Pinter's lectures once per week to help students with in-class activities/assignments
- Co-proctored exams, including finals
- Held tutoring hours outside of class weekly for students
- Performed minor course development in Canvas
- Prepared tutoring lesson plans and exam reviews

Instructional Aid (Introductory Chemistry)   *May 2018 - May 2020*
School of Mathematical and Natural Sciences and Dr. Marianna Pinter, Arizona State University (West Valley)

- Attended Dr. Pinter's lectures once per week to help students with in-class digital laboratory activities
- Co-proctored exams, including finals
- Held tutoring hours outside of class weekly for students
- Performed minor course development in Canvas
- Co-designed an online laboratory assignment
- Prepared tutoring lesson plans and exam reviews

RESEARCH PROJECTS

Honors Undergraduate Thesis

May 2018 – April 2020
- **Development of Software to Control and Analyze a Tabletop Nuclear Physics System**
    - Conducted for honors thesis
        - Learned how to use computer programming software (Python, OpenCV)
        - Learned basic quantum mechanics and nuclear physics
        - Held weekly in-person meetings with mentor to discuss, learn, and meet project goals
        - Engaged in weekly readings, reflections, summaries, write-ups, etc. about project material
        - Composed master code to control main mechanics of a cloud chamber and perform data analysis of formed electron tracks
        - Published research paper and held a public thesis defense

STEM Research Aide

April 2020 – May 2020
- **The Effect of Temperature Variation on Urban Female Black Widow Cannibalism**
    - Weighed and censused all adult females
    - Divided spiderlings into high and low temperature incubators
    - Assigned cannibalism pairs based on similar weight differences
    - Randomly placed assigned pairs in containers
    - Recorded identities of dead spiders and females that successfully cannibalized

- **Examination of Mating Success in Urban Black Widows**   *April 2020 – May 2020*
    - Assigned mating pairs
    - Supervised mating until completion
    - Noted successful mating pairs

January 2020 – March 2020
- **The Effect of Food and Temperature Variation on the Metabolic Output of Black Widow Spiders, as Measured Through CO_2 Respirometry**
    - Censused remaining spiderlings
    - Grouped spiders randomly into treatment groups
    - Created replacement spiderling groups, in case of death
    - Performed daily checks of spiderlings for deaths and molts
    - Conducted feeding and temperature treatment trials

May 2019 – January 2020
- **The Effect of Food Availability on Black Widow Spider Success at UHI Temperatures**
    - Co-led spiderling rearing, maintenance and data collection with two other lab members
    - Performed fieldwork to help collect female black widows to obtain eggs
    - Obtained egg sacs from collected females
    - Processed obtained egg sacs
    - Classified and separated eggs into individual containers
    - Placed separated eggs into randomly assigned temperature treatments
    - Performed daily checks of spiderlings for hatchings, molts, and deaths
    - Fed the spiderlings daily, once hatched
    - Weighed and determined sex of spiderlings for development checks
    - Performed daily data entry, both paper and digital

- **Sibling cannibalism in black widow spiderlings**   *June 2019 – September 2019*
    - o   Separated newly hatched spiderlings into containers for testing
    - o   Performed daily checks of spiderlings for deaths and food consumption
    - o   Fed spiderlings
    - o   Recorded data from daily checks

                                                                May 2019 – July 2019
- **Using Animal Behavior to Understand the Impact of Urbanization: Do Urban Black Widows Behave Differently from their Desert Counterparts in the Field of the Lab?**
    - o   Performed nocturnal fieldwork in various urban and desert field sites
        - ▪   Found potential female black widows to use for testing
        - ▪   Took temperature readings randomly across all field sites
        - ▪   Timed boldness, voracity, and social tolerance behaviors
        - ▪   Helped place and remove thermometers randomly placed across field sites
        - ▪   Helped record collected data (on paper)

Coursework

                                                                January 2018 – April 2018
- **A Feminist Political Ecology Perspective on the Functional and Structural Components of Community Gardening: A Case Study of the Spaces of Opportunity Community Garden in South Phoenix**
    - o   Conducted for an environmental sociology course (SOC 331)
        - ▪   Examined gender disparities and sustainability of community gardening
            - ●   Collected qualitative data by volunteering at Spaces of Opportunity, a community garden in Phoenix, bi-weekly for two months
                - o   Performed physical gardening activities, including weed-pulling, planting trees, watering plants, and preparing plots for planting
                - o   Participated in small events held at the garden, including food tasting and educational seminars held by guest volunteers for visitors
        - ▪   Performed qualitative data collection (journaling, reflections, participant observation and involvement, etc.)
        - ▪   Culminated in research paper and presentation of findings to peers in a round-table PowerPoint

                                                                January 2019 – April 2019
- **Analysis of Ethnography: Ways to Understand Generational Differences Among Immigrants**
    - o   Conducted for an individualized instruction course (ASB 499) and later extended in qualitative methods course (SBS302)
        - ▪   Held in-person meetings with advisor once every three weeks
        - ▪   Conducted weekly readings and literature research in preparation for meetings
        - ▪   Conducted in-depth discussion of findings, ideas, thoughts, etc. held during meetings
        - ▪   Conducted small-scale fieldwork
        - ▪   Completed a research poster

                                                                April 2019 – May 2019
- **The Effects of Proximity to Man-Made Roadways on Insect Diversity and Abundance**
    - o   Conducted for an ecology laboratory course (LSC 322)
        - ▪   Constructed insect pitfall traps to capture insects
        - ▪   Dug evenly-spaced/uniform holes and placed traps along man-made roadways
        - ▪   Allowed three weeks for insects to accumulate in the traps
        - ▪   Removed traps and collected the captured insects

- Individually counted and identified the captured insects
- Analyzed the insect data
- Constructed a scientific poster
- Presented poster to classmates

August 2019 – December 2019

- **Differences in Assimilation and Cultural Retention in First, 1.5, and Second-Generation Serbian-American Immigrants**
    - Conducted as part of a qualitative methods course; extension of ASB499 research
        - Devised interview questions and consent forms
        - Conducted individual and group interviews with first, 1.5, and second-generation Serbian-American immigrants
        - Completed a research paper and data collected was added to poster created for Analysis of Ethnography research

PRESENTATIONS

- Bogdanovic, N. (2020, April). "Development of Software to Control and Analyze a Tabletop Nuclear Physics System," Barrett, the Honors College thesis defense, open to public, presented via Zoom.
- Bogdanovic, N. (2020, April). "Development of Software to Control and Analyze a Tabletop Nuclear Physics System," Presented to an introductory physics class at Arizona State University via Zoom.
- Lindley, S., Bogdanovic, N., Hanna, H., & Johnson, J.C. (2020, April). "The Effect of Food Availability on Black Widow Spider Success at UHI Temperatures," Planned to co-present poster at NCUIRE Research Symposium at Arizona State University, Glendale, AZ, but event was cancelled due to COVID-19.
- Bogdanovic, N. (2020, April). "Analysis of Ethnography: Ways to Understand Generational Differences Among Immigrants," Planned to present poster at NCUIRE Research Symposium at Arizona State University, Glendale, AZ, but event was cancelled due to COVID-19.
- Lindley, S. & Bogdanovic, N. (2019, April). "The Effects of Proximity to Man-Made Roadways on Insect Diversity and Abundance," Poster presentation to ecology laboratory course peers at Arizona State University.
- Bogdanovic, N. (2018, April). "A Feminist Political Ecology Perspective on the Functional and Structural Components of Community Gardening: A Case Study of the Spaces of Opportunity Community Garden in South Phoenix," Round-table Powerpoint presentation to environmental sociology course peers at Arizona State University.

PUBLICATIONS

- Bogdanovic, N. (2020). "Development of Software to Control and Analyze a Tabletop Nuclear Physics System," *Arizona State University digital repository.* http://hdl.handle.net/2286/R.I.56437 (item:56437)