Julie J. Murphree

Assistant Teaching Professor -Animal Science & Wildlife Management
Science and Mathematics Faculty
College of Integrative Sciences and Arts
Arizona State University,-Polytechnic Campus
6073 Backus Mall Mesa, AZ 85212-6420
Phone: (480) 294-3357
Julie.Murphree@asu.edu

My broad research interests focus on the application of cognitive ethology (the study of animal minds), behavioral ecology and ecological science to interpret the effect of animal behavior on the ecological space that an organism occupies as part of its habitat. My teaching efforts focus on scientific understanding, emotional connection, and a moral call to action to determine the best course of action for the provision of animal welfare, and environmental enrichment for wildlife and captive species in a rapidly changing world.

Research Specialties

Animal Science, Animal Welfare/Animal Rights, Wild Horse management, Equine Science, Animal Behavior, Cognitive ethology, Feeding ecology and wildlife nutrition, Companion animal nutrition and welfare, Environmental ethics, History & philosophy of conservation, Natural Resource policy, Environmental enrichment in captive species, and Human/non-human relationships.

Education

PhD –Biology –(Biology and Society) School of Liberal Arts and Sciences- Arizona State University – 2022

- Concentration: Animal welfare and Environmental Ethics
- Dissertation: "The Mustang Dilemma: Facts, Values, and Decision Making in Arizona's Heber Wild Horse Territory"
- Committee chairs: Ben Minteer, Biology and Society; Michael Schoon, School of Sustainability.4.0 Cumulative GPA

MS, Applied Biological Sciences, Arizona State University, 2012

- Concentration: Animal Nutrition and Wildlife Management
- Thesis: "The evaluation of the efficacy of DNA Sequencing and Micro histological analysis in determining diet in Wild Ungulates" –Committee Chair: Dr. William H. Miller 4.0 GPA

MEd, Secondary Education in Biology with Teacher Certification, Arizona State University, 2010

- Concentration: Core concepts in Biology education: Bridging the gap between secondary and post-secondary Biology students, Inquiry based learning, Environmental and Agricultural Education
- Thesis: "Creating a model of interest: Increasing intrinsic motivation in science students" – Advisors: Dr. Barbara Huff, Dr. Mark Esch; Mary Lou Fulton College of Education -4.0 GPA

B.S. Wildlife Conservation Biology, Arizona State University, 1992Concentration: Wildlife Conservation, Population biology, Behavioral ecology, Environmental ethics & policy

- Capstone project: "Resource partitioning of two sympatric rodents in Oak woodland forests" –Advisors: Dr. Andrew Smith, Dr. W. L. Minckley
- Summa cum Laude, 3.92 GPA**; Recipient of outstanding Zoology student**: Jonathan Wade Psoras *Outstanding achievements in Academic pursuits*

Teaching and Curriculum Development

Assistant Teaching Professor- College of Integrative Sciences and Arts, Arizona State University **2022-present**

Instructor- College of Integrative Sciences and Arts, Arizona State University **2013-2022**

ABS 378: Animal Nutrition Developed and taught: Spring, 2015, 2016, 2017, 2018, 2019,2020, 2021, 2022, 2023, 2024.

- This course incorporates an in-depth exploration of the need to feed, evolutionary concepts of form and function, plant and animal interactions, comparative digestive anatomy and feeding habits of domestic and free ranging wildlife. Emphasis is placed on an understanding of foraging behaviors for wildlife and nutrient enhancement for captive species. Controversial issues in domestic and wildlife animal nutrition, the role of nutrients in disease prevention and feeding of companion animals during various life stages are also explored.
- Pre-vet and wildlife Students have multiple opportunities for hands on activities through field trips and research experience including 1)Lower Salt River Riparian Ecosystem: Assessment of habitat and foraging behavior of wild horses; 2) Phoenix Zoo kitchen: Observation of daily meal prep for exotic species and handler methods for proper delivery of nutritional enrichment; 3) Individual and group research projects: Companion animal diet analysis (e.g., kibble verses raw diets); Observation and assessment of nutritional needs of wild animals.

ABS 378: Online Animal Nutrition – Developed and taught- Spring 2022, Spring and Summer: 2023, 2024.

- Online version of my face to face animal nutrition course- provides students with a virtual experience in the exploration of diet, foraging behavior and functional anatomy of the vertebrate digestive system.

ABS 372 – Captive Animal Behavior Management- Developed and taught**-** Fall: 2018, 2019, 2020, 2021,2022, 2023, 2024.

- Through an investigation of cognitive development, sentience and communication, students analyze issues surrounding animal welfare and animal rights in wild and captive animals. Also explored, is the origin, interpretation and relationship of animal behaviors to core emotions and the misconceptions or controversial issues surrounding human interactions with both domestic and wild species. Through research projects and hands on activities, students examine the relationship between animal behavior and specific training methods as well as the use of various environmental enrichment techniques and proper habitat design in a Zoo or sanctuary setting.
- Pre-vet and wildlife students have multiple opportunities to take part in1) Assisted interventions involving animals, humans and the environment;. 2) Field trip to wild horse off range training facility in Florence, AZ to observe training methods by inmates, off range captive environments and processing of wild horses and vaccination procedures by BLM staff veterinarians; 3) Field trip to Tonto National Forest to observe sustainable off range management of de-domesticated horses and the resultant connections between biodiversity, the environment and animal welfare.

ABS 372: Online Captive Animal Behavior Management- Developed and taught- Fall 2023, summer and Fall: 2024

- Online version of my face to face Captive Animal Behavior Management course- provides students with a virtual experience in the exploration of cognitive development and interpretation of animal emotions as it applies to animal behavior and welfare in captive species .

ABS 394 Introduction to Equine Management- Developed and taught**:** Spring: 2020, 2021

- This course aims to give students an understanding of the evolutionary development and natural history of equids as well as the behavioral, nutritional, physiological and psychological concerns of both captive and wild species. In addition, the human/horse relationship is examined in order to provide a deeper understanding of the science needed to provide proper welfare and management.
- Pre-vet and wildlife Students take part in multiple field trips to BLM off range wild horse facilities, Salt River Riparian areas and horse rescue facilities in an effort to gain hands on research experience in the management of both wild and domestic horses.

ABS 274: Introduction to Wildlife Management- 2014 (Lecture and lab), 2022 (lab), 2023 (Lecture), 2024 (lab)

- This course is designed to introduce important principles governing the conservation and management of wildlife resources. Through a combination of lecture and hands-on field activities, students investigate a wide range of topics involving the application of scientific principles to real wildlife issues.

ABS 302: Ethical and Policy Issues in Biology- Developed and taught spring and fall: 2014, spring, summer, fall: 2015, 2016, 2017. 2018, 2019. 2020, 2021, 2022, 2023, 2024

- This is an icourse aimed at tackling controversial ethical issues surrounding health, medicine, technology, animal welfare, and the environment. Through a framework designed for ethical decision making, students explore and defend various viewpoints, diverse values and interpretations surrounding: the capacities that are necessary for the right to Life, the facts that assist patients in making an informed decision with regard to stem cell treatment, bioengineering and cloning, the pros and cons of genetically modified food crops on health and the environment, the misconceptions involved in the development and regulation of GMOs and nutritional supplements and the pros and cons surrounding artificial intelligence and Bio Enhancement. Students further examine differences in human and nature-oriented outlooks, debate the various views on the value of wildlife and our roles as stewards of their environment, and discuss rights versus welfare views on management of captive and wild species.

Bio480: Methods of Teaching Biology – Developed and Taught 2013, 2015, 2016

- This course develops the knowledges and skills needed to implement student-centered science instruction for a culturally diverse population. It further explores how science education experiences impact our view of what good science teaching is, multiple views on how students come to understand science, the teaching strategies research has identified as most effective and various instructional methods that can be implemented within the contexts of current high school classrooms. In addition to learning how to teach biology to a diverse group of students, this course reconstructs our knowledge of biology to make it more contextual and conceptual with the goal of achieving equity in learning and inclusiveness in the classroom.

ABS 490 - Undergraduate seminar – Fall 2013, Spring and fall: 2014, Fall: 2016, 2017, 2022, 2024

- This course exposes undergraduate students to a broad range of environmental and occupational research, practice, and policy areas in order to assist them with career exploring and planning within the Applied Biology major. The format for this class includes group discussions, short lectures, guest panelists, and strong student involvement. Students take part in active discussions, learn the elements of good presentations and share ideas and research experiences with their classmates.

Bio 100 The Living World – Developed and Taught: Spring and Fall: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021,2022

- This course acquaints non-science majors with the process of science and enables them to develop a working understanding of the major biological concepts needed to make informed, ethical decisions regarding health and the environment. Students explore biological characteristics common to all organisms and correlate this to a definition of life, evaluate how DNA controls the cell and regulates form and function, examine animal adaptations and relate this to Darwinian evolution, discuss the science of aging and how nutrients affect the human body, analyze factors that lead to disease and dissect how the "truth" regarding health and nutrition changes with time. In addition, through in class

debates and online discussion boards, students investigate and debate the technology surrounding GMOs, CRISPR technology, cloning and stem cells.

Bio 100 lab 2013, 2014,2015, 2016, 2017, 2018, 2019, 2020, 2021

– The goal of the BIO 100 lab is to provide hands-on experience with biological material and to enhance student abilities in scientific methodology and critical thinking. The activities performed by students illustrate and reinforce the concepts introduced in the lecture portion of the class.

Instructional Professional- College of Technology and Innovation, Arizona State University 2010-2013

– Bio100 lecture- summer 2010, 2011, 2012
– BIO 100- lab – summer: 2010, 2011, 2012
– Bio 181 lecture – fall 2010: portion of semester-assumed responsibility of instructor
– Bio 181 lab – 2009, 2010, 2011, 2012, 2013
– Bio 182 lab – 2009
– Bio 201 Anatomy and physiology- lab –summer: 2010, 2011

Faculty Associate- College of Technology and Innovation, Arizona State University 2009-2010

– Bio 100 lab – fall 2009, Bio 187 lab – fall 2009

Secondary Science Teacher- Cortina middle school, Queen Creek, AZ 2008-2009

– Created and implemented daily lesson plans for 190 7th and 8th graders.
– Managed research opportunities and outreach for students including field trips to ASU Algae research lab
– Directed and managed annual Science Fair

Courses Developed and taught:

– Life Sciences: Genetics, Anatomy and Physiology, Ecology and Environmental sciences
– Physical and Earth Sciences: Physics, Chemistry Astronomy, Geology

Research Experience

PhD – Dissertation Research – ASU School of Life Sciences -2016-2022

- Utilized a mixed methods/ ethnographic approach to investigate the ecological, behavioral, social and economic aspects of the management of free-roaming horses on public lands in the American West.
- Incorporated wild horse behavioral observations, habitat assessment and collaborative efforts with USFS, AZDA, BLM, NGOs and stakeholders to determine best management practices for captive and wild equids in lower Salt River Riparian areas of Tonto National Forest and Pinyon/ Juniper areas in Apache- Sitgreaves National Forest.

– Outcomes:
  – Brought clarity and a deeper sense of understanding to the wild horse management debate by highlighting trends in conservation biology including, movement away from traditional restoration to rewilding and the public's increased desire for compassionate conservation, as well as subsequent policy changes crucial for effective management of free-roaming horses.
  – Provided wild horse management recommendations to US Forest Service and Bureau of Land Management that incorporates a concern for the horse's physiological and emotional welfare through the use of fertility control, nutrition enhancement and spatio-temporal distribution.

M.S. Thesis Research- College of Letters and Sciences, Arizona State University, 2010-2012

– Conducted groundbreaking research combining DNA sequencing and microhistological analysis with controlled feeding trials in pygmy goats to provide data for Arizona statewide study on Pronghorn population management and nutrition factors affecting fawn recruitment in collaboration with Desert Botanical Gardens and Arizona Game and Fish. Funded by Bureau of Land Management.

M.Ed. Thesis Research – Mary Lou Fulton College of Education, Arizona State University, 2009-2010

– Developed a model of Interest for Instructional methods in biology- coordinated outreach efforts and tour of Algae Research lab for 7th graders promoting situational interest

– Investigated research on motivation in secondary science students and post-secondary career choices utilizing data from Science fair projects and student surveys. Advisor: Bert Meyers Cortina Middle School

Graduate Research -Department of Environmental Resources, Arizona State University, 1992-1998-

– Executed research on factors affecting accuracy of micro- histological techniques for diet analysis in ungulates
– Assisted in field work/sampling of Elk populations in north central Arizona
– Assisted in Game and Fish Bighorn sheep radio-collar/ capture and release.

B.S. Undergraduate Research –Department of Zoology, Arizona State University, 1989-1992

- Conducted field research on habitat overlap of Kangaroo rats (*Dipodomys deserti)* and White throated Woodrat *(Neotoma albigula)* Workman's Creek, AZ, - Advisor: Dr. W.L. Minckley, Emeritus professor of Zoology, school of Life Sciences, ASU
- Assisted in field research on population dynamics of American pika (*Ochonta princeps)* in Sierra Nevadas, Bodie, CA –Advisor: Dr. Andrew T. Smith, professor, School of Life Sciences, ASU
- Contributed to educational program for adaptations in desert wildlife in Desert Trails Exhibit for Phoenix Zoo concentrating on Sonoran Desert animals and their adaptations to desert environments.
- Assisted in field research for Game and Fish and assessment of Bonytail Chub (*Gila elegans*) on lower Colorado River, Arizona

Honors / Awards

- Jonathan Wade Psoras Award: : "Outstanding achievements in Academic pursuits" presented to outstanding Zoology student, 1992

- Arizona Department of Education Distinguished achievement: Arizona Educator's Proficiency Biology Exam; Scored 100% in genetics and cells portion; 2010

- Arizona Department of Education: "Highly Qualified" Instructor of Advanced Placement Biology and Anatomy and Physiology through grade 12, 2010;

- Structured English Immersion certified, 2010

Publications

- Murphree- “Pet Ambassador: Echo”- CISA Pet Ambassador publications - 2023
- Murphree, J. J. 2014 Watchable Wildlife: Chasing Butterflies. Mountain Lines: Journal of McDowell Sonoran Conservancy. Winter 2014
- Murphree, J J. 2012. *“Water: The chemical context of Life*” in The Pearson custom Library for the Biological Sciences Pearson Learning Solutions, Boston, MA.
- Murphree, Julie J. 2012 *“”The Effect of pH on our environment and health” ” in* The Pearson custom Library for the Biological Sciences Pearson Learning Solutions, Boston, MA.
- Murphree, P. J , J.J. Murphree, J. G. Murphree 1996. “The Adventures of 100% Happy Shirt: An educational tool for agricultural outreach” Murphree Press, Maricopa, AZ.

Invited Talks / Interviews

- “The use of wild horses to decrease fuel loads and mitigate fires in Arizona” Arizona Highways in press
- “Fire Insurance: Is it possible to use Wild Equids to decrease rates? “Best’s Review Magazine – January 2023
- “The Wild Horse Fire Brigade: Equids as ecosystem engineers and decreasing fuel loads in California” National Public Radio- 3/3/2022
- “Wild Horses Reign on Student Field Trip” – ASU News- November 2022
- “What to do With Pre-Vet Degree” ASU Media/Pre-vet Website – August 2022
- “Wild horses Up for Adoption”- Staton, M. Cronkite News *2/9/2020* *https://www.youtube.com/watch?v=8-1FOmdN8Uk&feature=youtu.be*
- *Don’t Fence Them Out, Horse Advocates plea– Pirehpur, K. Mesa Tribune – 2/16/2020- https://www.eastvalleytribune.com/news/don-t-fence-them-out-horse-advocates-plea/article_4a97170c-54f6-11ea-a5cc-63ba18af68ab.html*
- Murphree, J.J. *Innovations in Undergraduate Biology Teaching: Why we need a revolution.* Invited talk. Arizona State University, Mesa, AZ. November 2014
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Professional Training/Workshops

- EdPlus online training for ASU online course development- Fall 2021
- Mountain West Summer Institute –Undergraduate Education in Biology, Colorado State University – Boulder CO – Summer 2014

Graduate Student Mentoring

2024

– Daniela Soto Cabrera- M.S. – "Equitable Grazing: A Study of Wild Horse Distribution and Water Sources in Apache-Sitgreaves National Forest": (Thesis Director)
– Jay Tribble- M.S.- "Feral Felines: Ethical Dilemmas in Sanctuary Care and Trap-Neuter-Release Initiatives." (Thesis Director)

2023

– Quiarrah Map-M.S. ""Citarum River: A Case Study in Environmental Injustice" (Thesis Director) completed spring 2023
– Chyna Rendon- "Effect of Fertility control on movement patterns of Salt River Wild Horses." (Thesis Director) completed spring 2023 **(First Generation Graduate – Accepted to Vet School)**

Undergraduate Student Mentoring

2024

Honors Thesis

- Jennifer Ackermann – "Understanding and Addressing Compassion Fatigue: Strategies for Veterinary Professionals" (Thesis Director)
- Hannah McGraw: "Virology of Salt River Horses: Fecal Profiles and Comparisons with Domestic Horses" (committee member**). (Accepted to Vet School)**
- Goomy Miyazaki - Equine Infectious Diseases: Surveillance and Management in Wild Horse Herds (Thesis director in progress)
- Abby Tanner Communication Patterns of Wild Horses: Vocalizations, Body Language, and Social Significance (Thesis director – in progress)
- Alexa Turpen: "The role of Zoos in Management of Ranid species" (Co-director)
- Alexa Weise - "Stray Solutions: Establishing a Trap-Neuter-Release Strategy and Operational Manual for Feral Cat Communities" (Thesis Director)

Honors Contracts

Spring 2024 (in progress)

- Skylar Cernohous- "Exploring the Ethical Landscape: Physician-Assisted Suicide in Contemporary Society
- Ashley Jones-
    - Assessing the Effectiveness of ASGF Management Strategies for Chiricahua Leopard Frogs in Arizona
    - "Ethical Standards in AZA Accreditation: Ensuring Welfare in Zoos and Aquariums "
- Ari Mehta- "Exploring the Ethical Dimensions of De-Extinction: Environmental, Societal, and Ethical Considerations"
- Latifa Omar- "Ethical Dilemmas in Human Embryonic Stem Cell Research: Navigating Controversy and Progress"
- Sanah Parekh - "Assessing Public Perception and Policy Implications of Genetically Engineered Food: A Comprehensive Review"
- Javier Peralta "Unveiling the Truth: Animal Welfare Concerns in the Dairy Industry"
- Zachary Soe - Navigating the Ethical Landscape: Policy Considerations in Biology"
- Sophia Carin Thex- "Exploring Ethical Frontiers: CPR Technology and Genetically Engineered Humans"
- Catherine Margaret Wandachowicz – "Deciphering Prescription Diets: Optimizing Pet Health through Nutritional Intervention"

Undergraduate Independent Research

- Kai Goldsmith- "Cat Watch: Revolutionizing Feral Cat Management through Data-Driven Strategies and Community Engagement"
- Lyndie Wray – "Charting New Trails: Ethogram Development for Wild Horse Conservation and Management"

2023

Honors Thesis:

- Hayden Innes - "Horse Slaughter in the U.S.: Ethical Implications and unintended Consequences." (Thesis Director) **Accepted to Law School**
- Elisabeth Kirshner -" Importance of spaying and neutering pets: ethical implications, societal implications, and sterilization options" (Thesis Director).
- Jennifer Kobs - "Analysis of Seasonal Dietary Changes in Burrowing Owls at ASU's Polytechnic Campus and Long-Term Observational Analysis (Thesis Director- **Accepted to vet school**)
- Danyelle Perlman: "Responsibility across Cultural Disciplines and Impact on Effective Land Management between the United States and South Korea." (Thesis director in progress)
- Chloe Ward: "From Trendy to Tested: Evaluating the Science Behind Grain-Free Diets for Canines" (Thesis Director-
- **Accepted to vet school)**

Undergraduate Independent Research

- Mavery Grattan: Paws for Change: Strategies to Enhance Adoptability and Well-being in Shelter Dogs – A Comprehensive Case Study

Honors Contracts:

Spring 2023

- Jennifer Xin Ackermann – "Diet and Effective foraging strategies of feral Cats"
- Makenna Donata Costarella- "The benefits of Animal Assisted Therapy in a college Setting"
- Zia Mohammad Khan – "The Efficacy and Ethical Consequences of RNA interference in medical Treatments"
- Angelo James Mauri- " Foraging Techniques of Salt River Wild Horses"
- Hannah Christine McGraw- "Efficacy of Vaccines and Diet in canine Leptospirosis."
- Melisa Molina- "Dolphin Nutrition: The ethics and Consequences of Captivity"
- Autumn Tsosie- "A Green Oasis: The Benefits of Community Gardens"
- Chloe Grace Ward – "The role of science and Media on Perception of Companion Animal Nutrition"

Summer 2023

- Emily Byrne: "The Conundrum of Animal Testing: A Moral Inquiry into Research Practices."

Fall 2023

- Gabriela Dimas – "Evaluating Strategies for Sustainable Wild Horse and Burro Management"
- Mavery Grattan - Paws for Change: Strategies to Enhance Adoptability and Well-being in Shelter Dogs – A Comprehensive Case Study"
- Paola Junio- "Feathered Insight: Ethogram Development for Understanding Behavioral Patterns in OdySea's Macaws"
- Charli Nelson- "From Ice to Open Seas: Assessing the Climate's Dual Impact on Polar Bears and Orcas"
- Yashavsi Rai: "Human Cloning: Unraveling the Ethical Complexities."
- Abdullah Virk- "Responsible Research: Examining the Need for Stringent Oversight in Stem Cell Advancements"

2022

- Jenn Ackerman - "Abortion: Ethical Questions facing patients and Doctors"
- Angela Agee and Aaron Kinney - "Chronic Renal disease: Behavioral Indicators of a sick cat:" (Thesis Director)

- Sundus Ahmed – "The Ethical Issues surrounding Artificial Intelligence."
- Bradford Milbrandt – "The effect of nutrition on white nose syndrome in bats" – (graduate committee member)
- Megan Cahill - "Controversies Surrounding Raw food diets in Canines" (Thesis Director)
- Alyssa Crow (spring) - "Coprophagy: Insights into digestive adaptations, the gut microbiome and prevention of disease"
- Alyssa Crow (fall) - "Animal Behavior and health: Effects of the Covid 19 Pandemic"
- Shannon Gough: "Companion Animal Euthanasia: the ethics of affordable care" (Thesis Co-Director)
- Aaron Kinney - "Effect of science Fiction on cultural perceptions of Bioengineering"
- Elisabeth Kirshner -" Importance of spaying and neutering pets: ethical implications, societal implications, and sterilization options" (Thesis Director- in progress).
- Jennifer Kobs - "Analysis of Seasonal Dietary Changes in Burrowing Owls at ASU's Polytechnic Campus and Long-Term Observational Analysis (Thesis Director – in progress)
- Samantha Lagasse - "Pet Food Trends: Kibble verses Raw diets"
- Spencer Lewis - "The Ethics of Egg Donation: Physiological and psychological consequences"
- Quiarrah Mapp - "Effect of taste receptors on dietary choice in Guinea pigs"
- Chyna Rendon -"The Efficacy of Fertility management on free-roaming horses within the Salt River Riparian Area"(Thesis director)

2021

- Vivian Bueno - "Environmental Enrichment in Captive Felids: Assessing the Five Freedoms"-**First generation graduate-Admitted to Vet school-**
- Jennifer Kobs - "An Assessment of the Nutritional and Environmental Enrichment Provided by the Phoenix Zoo Pertaining to the Critically Endangered Cotton-Top Tamarin (*Saguinus oedipus*)
- Kylee Thompson - "Equine Assisted Psychotherapy for the Treatment of PTSD in U.S. Service Members" (Thesis co-chair)
- Karl Tilleman - "An Ethical Analysis: Examining mandated Vaccinations for Covid-19"
  Bi-monthly meetings, insights into research, feedback on final draft
- Clarissa Yosik - "Transhumanism: Living forever…or creating inequities?"

2020

- Sierra Hoover and Brittany Padayachee- "The Heber Wild Horses: Values and management approaches" (Thesis advisor)
- Caitlin West- Zoos- "Public opinion on ethics and welfare of captive species"
- Hannah Dickson - "The ethics of GMOS: Fear and public misconceptions"
- Brittany Padayachee- "The Therapeutic and Emotional Benefits of Horses"
- Aaron Kinney - "Controversies surrounding wild horse management"
- Angela Agee- "Proper welfare in wild horse management"
- Marcell Bandala- "The Effect of diet on bladder health: case study of a canine cystotomy"

2019

- Kelly Green – "GMOs: The gap between scientific understanding and public misconceptions"
- Sierra Hoover – "Comparison of Salt River and Heber horse Foraging behavior"
- Quiarrah Mapp – "Animal Rehabilitation: Techniques for captive and wild species"
- Katelyn Mason- "Interpreting behavior in captive species: How an understanding of animal emotions provides insight"
- Ryan Moony – "Animals Make us Human: Connecting to animal emotions through art"
- Chyna Rendon– "Foraging habits of 'undomesticated horses in an Urban setting"
- Vasishta Somayaji- "Bioethics of Nanotechnology"
- Nadia Taylor – "The Spotted Hyena: Foraging techniques and misunderstood behavior"
- Kira Videan – "The Aquatic Ape Hypothesis: finding faith in mythology"

2018

- Hornsby, Cassidy Anne- "Social Pressures and eating disorders in High school students"
- Martinson, Hannah Marie- "Treating illness and disease: *Can we tap into the mind-body connection for answers?"*
- Mathew, Ethan- "The Ethics of Gene Editing"

2017
- Euguchi, Lillian "Ethical treatment of laboratory animals for consumer products" (Thesis adviser).
- Grewal, Harneet - "The Immortal life of Henrietta Lacks: the ethics of stem cell use"
- Kasle, Lauren – "The debate on decriminalization of prostitution"
- Pass, Lindsey- "Opioid addiction: What role do doctors play?"

2013-2016
- Hicks, Ruth- "Ethics of Organ trafficking" Fall 2016.
- Jarrett, Jaqalyn – "Labeling in Pet foods: Is the monitoring process trustworthy?" spring 2015
- Locke, Regan – "Hypothyroidism: creating awareness and educating the public"- fall 2014
- Theilen, Bethany – "Evolution and Creationism: Is there room for both?"- fall 2014
- Bryan Eisen, Kristen Durfee, Matthew Arriaga, and Anthony Harden: "Adaptations in a changing world: What are the results of man's influences?" – Spring 2014
- Cooley, Haley – "GMOs, Monsanto and sustainable agriculture" – fall 2013

Professional Organizations/affiliations

- Animal Behavior Society
- Wild Horse Fire Brigade- Equine Science Advisor
- Institute for Compassionate Conservation- (Education Outreach)
- The National Wildlife Society
- National Science Teachers Association (NSTA)
- Society'for'the'Advancement'of'Biology'Education'Research'(SABER)

Community Outreach/Collaborative Efforts/Partnerships

Mirabella at ASU- 2023 present

- The collaboration between pre-veterinary students, the Angels for Devils Club, and the senior living community Mirabella stands as a mutually enriching initiative with far-reaching benefits. For pre-vet students, the interaction provides invaluable hands-on experience, exposing them to the therapeutic dynamics of human-animal connections. The visits, facilitated by the canine-assisted therapy club, not only contribute to the well-being of senior residents at Mirabella but also create a sense of community and joy. Beyond individual enrichment, this partnership exemplifies a harmonious synergy between education, therapy, and community engagement. The positive outcomes extend from improved mental and emotional states for seniors to enhanced professional development for students, showcasing the broader impact of fostering meaningful connections between animals, students, and community members. This collaborative effort serves as a beacon, illustrating the potential for integrative and holistic approaches to well-being within diverse communities.

East Valley Canine Services- 2022- present

- The growing field of Animal Assisted therapy provides the perfect opportunity to work across disciplines and is a one of a kind opportunity for our pre-vet and counseling students to hone their skills in the understanding of the benefits of emotional therapy dogs for those with anxiety, depression and other psychiatric disabilities such as PTSD, Dementia and Autism. It additionally has the potential to benefit *all students* here on the polytechnic campus for emotional needs during increased time of stress (during finals etc.) and has been scientifically shown to increase student retention rates and increase test scores.

Wild Horse Fire Brigade- 2022-present

- Current Equine science adviser for non-profit. Provide research on re-wilding efforts for free-roaming horse populations in Cascade-Siskiyou mountains in northern California.
- The 'Natural Wildfire Abatement and Forest Protection Plan', commonly called 'Wild Horse Fire Brigade' helps mitigate wildfire by restoring native wild horses as keystone herbivores into designated wilderness areas rich with forage and water where they benefit flora and fauna as they reduce and maintain grass and brush wildfire fuels, beyond conflicts with livestock and other public land uses.
- Wild Horse Fire Brigade helps saves native species American wild horses by rewilding them from government holding facilities, and/or relocating them away from areas of contention with livestock production, and humanely placing them as family units into carefully selected designated wilderness areas that are economically and ecologically appropriate.

Arizona Department of Agriculture – 2021-present

- Collaborating in efforts to provide research and field experience for pre-vet students surrounding darting methods for fertility control utilizing Porcine Zona Pallucida on wild horse populations within the Tonto National Forest and Lower Salt River in Arizona.
- Providing recommendations on invasive weed species common in alfalfa hay and concerns surrounding equid feeding, movements and habitat degradation along Salt River Riparian Area- 2017-present

U.S. Forest Service -2017-present

- Partnering with Tonto National Forest wild horse Liaison, Chris Kerin, in efforts to provide student research opportunities surrounding habitat assessment, fertility control, nutritional needs and behavioral observations of wild equids within Apache-Sitgreaves National Forests.
- Participated in collaborative working group to provide input into management plan for federally protected wild horses within the Heber wild horse territory (Black Mesa Ranger District Apache-Sitgreaves National Forest)-2017-2019

Bureau of Land Management – 2017-present

- Collaborating with John Hall, director of Florence Wild Horse training Facility in Florence, AZ in efforts to provide pre-vet students with hands on experience concerning wild horses removed from the range- including observations of vaccination procedures and training methods for future wild horse adoptions
- Assisted in Pronghorn recruitment study- Perry Mesa, AZ 2010-2012

Heber Wild Horse Territory Collaborative Working Group- Participant/observer 2017-2019

- Arizona State University's School of Sustainability (ASU) convened an extended dialogue with a diverse group of stakeholder representatives about the future of the Heber Wild Horse Territory (HWHT), on the Apache Sitgreaves National Forests (ASNFs). Members of the Working Group (WG) were selected to represent interests related to management of the HWHT – wild horse advocates, ranchers, wildlife managers, equine recreation, range science and veterinary medicine. The Forest Service, Arizona Game and Fish Department, and the Arizona Department of Agriculture, participated as observers to the WG

Salt River Wild Horse Management Group- 2017-present

- Collaborating with the Salt River Wild Horse Management Group is instrumental in educating students on the holistic management of the riparian ecosystem and the welfare of wild horses in the area. By actively participating in the group's efforts, students gain firsthand experience in understanding the intricate dynamics of a riparian ecosystem, witnessing the direct impact of wild horse behavior on water sources and vegetation. The partnership introduces students to ethical considerations in population management, such as fertility control methods like porcine zona pellucida, ensuring a balanced and sustainable wild horse population. Additionally, the group's practice of supplemental feeding during drought periods provides students with insights into the challenges faced by wild horses and the responsible interventions needed to ensure their well-being. This collaboration not only imparts practical knowledge in conservation strategies but also cultivates a sense of environmental stewardship among students, emphasizing the delicate balance required in managing ecosystems and wildlife welfare.

Arizona Game and Fish 2014-present

- Recruit students to engage in research opportunities and gain potential internships with Arizona Game and Fish. Promote the Ranid Frog project by inviting project coordinator Audrey Owens to speak to wildlife and pre-vet students.
- Assisting in efforts to manage free roaming horses in Tonto National Forest through membership/observation on Heber Wild horse collaborative working group
- Coordinated training in wildlife techniques for introductory Wildlife management students – 2014

Arizona Farm Bureau 2015-present

- The interaction with the Arizona Farm Bureau serves as an enriching extension of the animal nutrition and pre-veterinary curriculum. It equips students with a deeper understanding of the diverse challenges faced by those in agriculture, providing a broader context for their future roles as veterinarians. Through these interactions, pre-vet students not only enhance their academic knowledge but also cultivate a sense of responsibility and collaboration that will be invaluable in their future endeavors within the field of veterinary medicine. In turn, the Farm Bureau benefits from the infusion of knowledge, research acumen, and passion brought forth by the students, reinforcing the collaborative spirit that is crucial for the continued growth and resilience of the agricultural community in Arizona.

Phoenix Zoo- 2014-present

- The Phoenix Zoo holds profound importance for Arizona State University (ASU) students as a dynamic educational resource and community engagement platform. Through various educational activities, ASU students have the opportunity to immerse themselves in the world of conservation, biodiversity, and animal behavior. The Zoo serves as an outdoor classroom where students can observe and study a wide array of species, gaining practical insights into the principles of biology, ecology, and environmental science. Beyond traditional coursework, educational programs and partnerships with the Zoo offer ASU students unique hands-on experiences, internships, and research opportunities. These engagements not only enhance students' academic learning but also cultivate a sense of environmental stewardship and conservation ethics. By fostering collaboration between ASU and the Phoenix Zoo, students benefit from a holistic education that integrates theoretical knowledge with real-world applications, ultimately preparing them to be informed and proactive contributors to the fields of biology and wildlife conservation.
- Partnering with Phoenix Zoo Kitchen to set up field trips for Animal Nutrition students
- Provide research opportunities for undergraduates in Captive Animal Behavior Course- (Asian Elephants) 2021
- Assisted with Arizona Trails Exhibit and demonstrations - 1992

McDowell Sonoran Research Institute – 2014-present

- The McDowell Sonoran Research Center stands as a pivotal institution, driving scientific inquiry, conservation, and education within the delicate ecosystem of the McDowell Sonoran Preserve in the Sonoran Desert. Its importance is evident in its role as a hub for biodiversity conservation, where research initiatives contribute to preserving the native flora and fauna of the region. Serving as an ecological research center, it facilitates studies on desert ecosystems, climate change impacts, and wildlife behavior, leading to valuable scientific discoveries. Beyond research, the center plays a vital role in education and outreach, providing the community with insights into desert ecology and fostering environmental stewardship. Through collaborative efforts and partnerships, the center enhances its impact, while ongoing environmental monitoring ensures a proactive approach to land management and conservation. Ultimately, the McDowell Sonoran Research Center serves as a beacon for the sustainable preservation of this unique desert landscape, contributing to our understanding of ecological systems and inspiring a commitment to the responsible stewardship of natural environments.
- Assisted in Butterfly count and tracking of migration patterns - coordinated undergraduate student involvement

Desert Botanical Gardens: 2010-2012

- The Desert Botanical Garden stands as a vital institution with far-reaching significance in the realms of biodiversity conservation, education, and cultural preservation. Its curated collections of arid-adapted flora not only contribute to the conservation of rare and endangered plant species but also serve as a living laboratory for botanical research, fostering innovation and scientific discovery. As an educational hub, the Garden provides invaluable insights into desert ecosystems, sustainable living practices, and the cultural significance of plants, offering diverse learning opportunities for visitors and researchers alike.
- Collaborated in DNA Barcoding for use in controlled feeding trials of Pygmy goats

AZ Cotton council -1998-2000

- The Arizona Cotton Council stands as a cornerstone in Arizona's agricultural sector, serving as a dedicated advocate and representative for the state's cotton producers. Functioning as a collective voice, the council plays a pivotal role in championing the interests of cotton growers at both local and national levels, ensuring their concerns are considered in agricultural policies and trade discussions. Beyond advocacy, the council is instrumental in disseminating vital information and educational resources, keeping cotton producers abreast of industry trends, technological advancements, and best practices. By actively engaging in research collaborations, the council contributes to the ongoing innovation and sustainability of cotton production.
- illustrated children's book to promote cotton and toured local elementary schools
- Toured local elementary schools in order to promote sustainable cotton farming practices
-

Faculty Mentoring

New Clinical Professor in Veterinary Medicine – 2022-2023

- Sarah Churgin - Provided Guidance and support in course development and in class instructional duties

BIO 100/ Wildlife lab instructors 2020-2023

- undergraduate student workers and Instructional Professionals need proper guidance and support for instruction of BIO 100 labs including: clarification of core concepts in biology covered within the labs and tips for successful instructional strategies.

University and Academic Unit Service

"Angels for Devils" club Creator and Advisor – 2023- present

- The growing field of Animal Assisted therapy provides the perfect opportunity to work across disciplines and is a one of a kind opportunity for our pre-vet and psychology/counseling students to hone their skills in the understanding of the benefits of emotional therapy dogs for those with anxiety, depression and other psychiatric disabilities such as PTSD, Dementia and Autism. The use of Canine Assisted Therapy for college aged students as well as seniors in assisted living facilities, aides in improving their quality of life; benefitting them in both expected and unexpected ways. Studies show that just fifteen minutes spent bonding with an animal promotes hormonal changes within the brain. One of our goals with "Angels for Devils" would be to bring canine assisted therapy, through partnering with K9 Services in Mesa, to those in need: within the communities such as the senior Community of Mirabella and also here on campus.

"Poly Purrs" club Creator and Advisor- 2023 present

- The establishment of a Trap-Neuter-Release (TNR) club at ASU Polytechnic Campus holds significant importance for several reasons. First and foremost, it addresses the ethical treatment of feral cats, promoting a humane and effective solution to control their population. The TNR approach involves trapping feral cats, sterilizing them, and then releasing them back into their environment, preventing further breeding without resorting to euthanasia. Beyond contributing to animal welfare, the club provides a unique opportunity for students to engage in community service and actively participate in responsible environmental stewardship. By managing the feral cat population through TNR, the club plays a crucial role in maintaining the ecological balance on the campus while fostering a sense of compassion and responsibility among the student body.

Pre-vet club Advisor- Polytechnic camps 2014 -present

- On the road to veterinary school, students are looking for advice on what classes to take, where to find an internship or gain animal experience, and what it takes to build a competitive application. As a pre-vet advisor, I assist students in finding the necessary experiences critical for making a stronger applicant including: shadowing and employment at a veterinary clinic, volunteering at a shelter or farm, working at a kennel, providing community service, seeking employment in non-veterinary related employment, participating in extracurricular activities, and conducting wildlife or domestic animal research in my animal nutrition or captive animal behavior courses (or in collaboration with other faculty members). Being well-rounded in all areas of experience is the key to getting a pre-vet student recognized.
- Further services provided to pre-vet students include: advising students on application requirements, assisting them in writing their cover letters and guiding them on what to do if they struggle in science classes.

CISA Pet Ambassadors -Advisor and Animal Science Commentator- 2022 -Present

- The College of Integrative Sciences and Arts Pet Ambassador Program is a vital initiative that extends beyond conventional academic realms, recognizing the profound impact companion animals can have on the well-being and sense of community within Arizona State University. By incorporating pets into the college environment, the program not only acknowledges the documented benefits of interaction with animals, such as stress reduction, but actively leverages these positive effects to create a more inclusive and supportive campus culture. The program's emphasis on the holistic well-being of students, faculty, and staff aligns seamlessly with the integrative philosophy of the college, fostering connections and community engagement. The Pet Ambassador Program exemplifies the commitment to a comprehensive and inclusive educational experience, where the presence of pets contributes to a positive atmosphere, promoting both academic success and a strong sense of belonging.
- provide commentaries and science advice on student submissions of companion and emotional support animals.

Poly Science and Mathematics Assessment Reports – Spring 2023

- These reports typically detail the total number of students enrolled in each course, along with a breakdown of their performance, often in the form of grades or other relevant success indicators. The percentages may represent the distribution of grades, student retention rates, or successful completion rates. Ultimately, the prepared reports serve as valuable tools for educators, administrators, and curriculum developers to make informed decisions about curriculum design, instructional methods, and support services to enhance student success and learning outcomes in these biology and applied biological sciences courses.

College of Integrative Sciences and Arts – Applied Learning Experiences Workgroup – Fall 2022

- The Applied Learning Experiences Workgroup at Arizona State University (ASU) plays a crucial role in shaping an enriched educational environment. By focusing on applied and experiential learning opportunities, this workgroup enhances student engagement and prepares them for the complexities of the workforce. Through collaborative efforts across disciplines, it fosters interdisciplinary connections, encouraging students to tackle real-world challenges with innovative problem-solving approaches. The workgroup facilitates community engagement, connecting students with external partners and instilling a sense of societal responsibility. By supporting personalized learning paths, it empowers students to tailor their educational journeys, fostering autonomy and ownership. Additionally, the workgroup assesses and improves applied learning experiences, contributing to the university's commitment to continuous enhancement. Ultimately, the workgroup cultivates global competency in students, ensuring they graduate not only academically proficient but also well-equipped to make meaningful contributions to a diverse and interconnected world.

Poly Science and Mathematics Hiring Committees:

- College of Integrative Sciences and Arts: Biology Instructional Professional- Fall 2011
- College of Integrative Sciences and Arts : Biology Instructor – Fall 2023
- College of Integrative Sciences and Arts: Clinical Assistant Professor – Fall 2023

Task Force for Evaluating Guidelines for Academic Professional Duties – College of Letters and Sciences – Spring 2013

ASU Student Recruitment:

- High School Tours: two tours per semester; Developed "Skulls/Adaptation Activity Lab" specifically for high school students and hosted tours within the ABS labs. Focused on wildlife management and careers within ABS.-Spring 2011, Fall 2012, Spring 2012, Fall 2012
- Promotion of ASU wildlife program at local Chandler Elementary school: 2011, 2012.
- Promotion of Applied Biology and College of Technology and Innovation at the Graduate College rally and student career day at local high schools- F 2010, 2011.

ASU Homecoming activities:

- **Homecoming parade-** Fall 2023
  - My involvement in the Pet Ambassadors during the Homecoming parade showcased my dedication to promoting the organization and the pre-vet program at ASU in a lively and engaging manner. By bringing my Australian Shepherd, Josie, to march in the parade, I not only added a personal touch but also created a visually appealing and relatable aspect for onlookers. As I marched alongside my canine companion, interacting with students along the parade route, I actively promoted both the Pet Ambassadors organization and the pre-vet program. This interactive and approachable presence drew attention and generated interest (we had an article written up about our involvement in CISA Compass) effectively conveying the mission and enthusiasm of the organization to the broader community. My participation in the Homecoming parade not only contributed to the festive atmosphere but also played a significant role in enhancing the visibility and positive image of both Pet Ambassadors and the pre-vet program at ASU.

- **ASU Homecoming Booth**- "Separation of Plant pigments utilizing chromatography" representing College of Technology and Innovation Fall 2012.

ASU Graduation Ceremonies:

- Spring 2023**:** Graduate Convocation and Commencement; CISA Convocation
- Fall 2023: CISA Convocation

Teacher outreach:

- Developed inquiry-based lesson plans in efforts to train 4th graders in the comparison of "special senses" ("Vision and hearing) within different species; Cortina Elementary -2011.
- Developed active learning strategies aligned with Arizona State Standards in efforts to instruct 5th graders on the skeletal and muscular system; Cortina Elementary -2011.

Judging: Science Fairs and Future Farmers of America

- Judge for Cortina Science Fair: 2010, 2011, 2012, 2013; Provided technical assistance and supplies, when needed.
- Judge for the Animal Science division for Future Farmers of America- 2011, 2012

Bio-Medical- Emergency Training, Aviation and Marine Certifications and Customer related Professional Experience

Exercise Physiologist/nutritionist - Health-Waves Corporation, Tempe, AZ 1991-1993

- Administered cardiopulmonary stress tests, body fat composition, cholesterol testing, and blood pressure in a corporate environment.
- Traveled statewide to provide services to large corporations in an effort to increase awareness of health and fitness
- Highly skilled phlebotomist

Flight Attendant - America West Airlines, Tempe, AZ 1990-1992

- Certified training in CPR, emergency procedures, scuba diving and fire safety
- Cross- trained in in-flight, ramp, and operations
- Ground school –Scottsdale Aviation Center; 22 hours private pilot training