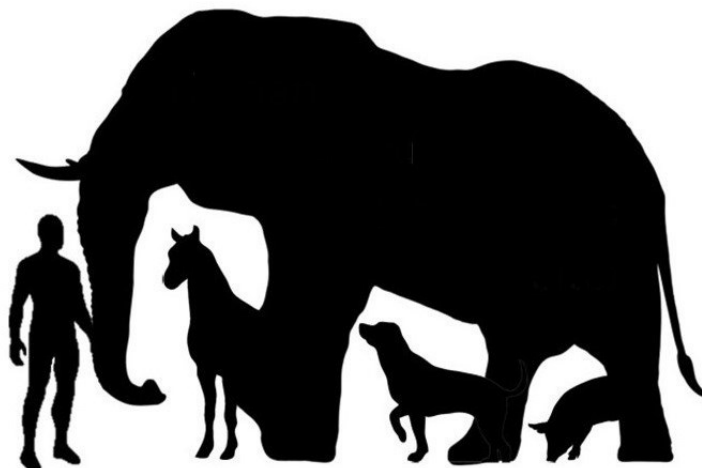


CFAES

**CENTER FOR HUMAN-ANIMAL
INTERACTIONS RESEARCH &
EDUCATION (CHAIRE)**

Inaugural Research Symposium



Ignite Presentation Listing:

All presentations fall into at least one of our four focus areas which are Welfare & Behavior, Companionship, Zooeyia, and Conservation. Click the links below to view each presentation on our YouTube Channel. View welcome video [here](#).

1. Longitudinal Welfare Approach for Cheetahs (*Acinonyx jubatus*) in Human Care- **Brittany Fischer** [click here to watch](#)
2. Effects of Oral Meloxicam and Topical Lidocaine on Pain Associated Behaviors of Piglets Undergoing Surgical Castration- **Dr. Steve Moeller** [click here to watch](#)
3. Measuring the Effect of Facility Relocation on a Population of California Sea Lions' Welfare- **Madeline Winans** [click here to watch](#)
4. Calves Walk Less When Placed with a Social Facilitator Cow at Weaning- **Kirsten Nickles** [click here to watch](#)
5. Personality and Zoo Animal Welfare: Decreased Costs and Increased Rewards- **Zach England** [click here to watch](#)
6. Development of a Statewide Educational Program to Help Ohio 4-H Youth Provide Quality Care of Horses- **Nicole Lorig** [click here to watch](#)
7. Unseen Recipients: Pets in the Lives of Family and Friend Caregivers- **Dr. Jessica Bibbo** [click here to watch](#)
8. UNLABEL ME: Effects of Breed Labeling on Perception and Adoptability of Shelter Dogs- **Yolonda Bradshaw** [click here to watch](#)
9. Factors Influencing Horse Heart Rate During Routine Hoof Care Procedures- **Dr. Kim Cole & Maria Dickerson** [click here to watch](#)
10. Mind Full or Mindful? Equine Facilitated Therapy for Women Veterans- **Isabel Ballard** [click here to watch](#)
11. Effect of Housing Systems on Long-term Cortisol Production in Horses- **Jade Werner** [click here to watch](#)
12. America's Wildlife Values: Why a Societal-level Shift in Human Values is Reshaping How We Think About and Act in Relation to Wild Animals- **Dr. Alia Dietsch** [click here to watch](#)
13. Coyote (*Canis latrans*) Response to Novel Objects in Urban and Rural Ecosystems- **Grayson Cahal** [click here to watch](#)

List of Abstracts:

Longitudinal Welfare Approach for Cheetahs (*Acinonyx jubatus*) in Human Care

Fischer, B., Flint, M., Cole, K., and George, K.A.

Department of Animal Sciences, The Ohio State University

Animal welfare science is an expanding field in zoological institutions throughout the United States and the world. In 2017 the Association of Zoos and Aquariums (AZA) established a new accreditation standard requiring all member organizations to have a formal approach to assess animal welfare. As a result, the Animal Programs Department at the Columbus Zoo and Aquarium sought partnership with the CFAES Center for Human-Animal Interactions Research & Education (CHAIRE) to develop an approach for the animals within their department using a focal species, the cheetah (*Acinonyx jubatus*). A longitudinal approach was developed to enhance the Five Domains Animal Welfare Model. Data collection extended for one-year to evaluate long-term cortisol production and behavioral observations of the cheetahs in response to changing environmental factors. Species and individual histories were acquired and combined with behavioral observations and a less-invasive measure of hair cortisol production for a holistic view of welfare. Participation in a cheetah run activity ($P < 0.01$), housing occupancy ($P = 0.01$), and period ($P < 0.01$) were found to influence all behavioral categories. Stereotypic behavior also differed within individual cheetahs throughout the study ($P < 0.01$). No difference of hair cortisol was found for the population, but further analysis resulted in differences within individual cheetahs ($P = 0.01$). This study demonstrates a foundation for welfare practices and evidence-based management decisions of species within zoological institutions and was the first to use hair sampling as a measurement of welfare in cheetahs.

Effects of Oral Meloxicam and Topical Lidocaine on Pain associated Behaviors of Piglets Undergoing Surgical Castration

Burkemper MC, Pairis-Garcia MD, Moraes LE, Park RM, Moeller SJ

Department of Animal Sciences, The Ohio State University

The objective of this study was to find a practical means of reducing pain associated with surgical castration by evaluating the effects of oral meloxicam and topical lidocaine, separately and in combination, on behavioral indicators of pain in piglets. Two hundred thirty-five piglets were surgically castrated between three and seven days of age. Immediately following castration, piglets received one of four treatments: (1) No pain mitigation (C; control; $n = 58$); (2) NSAID only (M; meloxicam; $n = 59$); (3) Topical anesthetic (L; lidocaine spray; $n = 60$); or (4) NSAID and topical anesthetic (X; meloxicam and lidocaine spray; $n = 59$). Behaviors were recorded by direct observation of individual piglets using five-minute scan samples over a five-hour period, for three days post-castration. Results of the experiment demonstrate the administration of oral meloxicam and topical lidocaine spray at the time of castration under the current methods did not mitigate pain associated with the procedure ($P = 0.09$; C: 2.1 ± 0.1 , L: 2.4 ± 0.1 , M: 2.1 ± 0.1 and X: 2.1 ± 0.1).

Measuring the Effect of Facility Relocation on a Population of California Sea Lions' Welfare

Winans, M., Cole, K., Flint, M., and George, K.A.

Department of Animal Sciences, The Ohio State University

As Columbus Zoo and Aquarium (CZA) prepares to introduce California sea lions (CSL) into their Animal Programs collection, CZA and The Ohio State University's Center for Human-Animal Interactions Research and Education (CHAIRE) have partnered to conduct a long-term behavior and welfare assessment of the focal population. The objective of this project is to assess potential changes in the animals' welfare before and after relocation to a new environment at CZA. To establish baseline welfare measures for the animals at their temporary facility, this study utilized measurement of hair cortisol concentrations (as an indicator of potential chronic stress) and behavioral observations. All individuals in the focal population demonstrated species-appropriate behavioral patterns, with pattern swimming (often considered a stereotypy for the species) observed at relatively low levels for all individuals' activity budgets ($< 7\%$). Further statistical analysis allows us to compare trends in behavioral patterns with hair cortisol concentrations for a comprehensive assessment of each individual's welfare. This study's utilization of hair as a biomarker for cortisol in CSL also provides novel information on the species. We aim to present the study's findings to-date and an overview of methodology for the upcoming phases of the project. This unique opportunity for a long-term study will contribute to the growing body of literature on marine mammal behavior and welfare in human-care.

Calves walk less when placed with a social facilitator cow at weaning

K.R. Nickles, A. Relling and A.J. Parker

Department of Animal Sciences, The Ohio State University

Common weaning practices in today's beef industry involve discontinuation of the cow-calf social and nutritional bond. When this bond is discontinued, atypical behaviors of walking and vocalizing are immediately observed in the calf that negatively affect welfare. Utilizing GPS technology, we are able to determine total distance walked, speed, total time walking, or total time not walking and the interactions with calf production. Thus, the objective of the present study was to evaluate the effects of a social facilitator on calf production during weaning and more specifically, common weaning behaviors such as walking. A total of 80 Angus x Simmental heifer calves were used. In all four replications, calves were allotted to each treatment group ($n = 10$), social facilitator or control (SF, CON) on the day of weaning. Calves in the SF group were placed on pasture at weaning with the social facilitator, and control calves were placed in a similar size pasture without a social facilitator. Each calf was also fitted with their own GPS collar that recorded on days 0, 7, and 14 relative to initiation of the study for a full 24 hours before removal. Data were analyzed as a randomized complete block design with repeated measurements (SAS 9.4). Placing calves with a social facilitator tended to decrease the distance calves walked ($P=0.08$) as well as the amount of time calves walked ($P=0.08$). Placing a social facilitator with calves at weaning, therefore, has an effect on walking distance and amount of time calves devote to walking.

Personality and Zoo Animal Welfare: Decreased Costs and Increased Rewards

England, Z., Tonra, C., Moeller, S., and George, K.A.

Department of Animal Sciences, The Ohio State University

Visitors are beginning to require zoos and aquariums to thoroughly investigate the welfare of the animals for which they care. Welfare studies frequently involve recording behavioral observations and collecting biological samples, both of which being costly and time-consuming. Our current study is evaluating relationships between "traditional" methods of welfare research, behavioral observations and fecal corticosterone measurements, with quicker and less cost-intensive methods of trainer-rated personality surveys in our sample population of the Columbus Zoo and Aquarium's ambassador African penguins. Overall, audience members will walk away with a broader knowledge of how personality surveys can impact animals in their own institutions. By exploring personality, staff may be able to make better informed decisions about what is best for an animal's welfare without having to spend excess time and resources on behavioral observations and biological sampling. Even further, personality surveys can show department managers how each employee perceives each animal and who might have a unique or problematic relationship with certain animals.

Development of a Statewide Educational Program to Help Ohio 4-H Youth Provide Quality Care for Horses

Nicole M. Lorig, Kimberly Cole, Ph.D., Kelly George, PhD, M. Susie Whittington, PhD

Department of Animal Sciences, The Ohio State University

Ohio 4-H youth enrolled in food-animal livestock projects are required to participate in a statewide educational program that reviews best management practices to assure quality care for their animals. There is currently no equivalent educational program for 4-H members enrolled in equine projects. This leads to inconsistency in programming across the state and confusion among 4-H youth and leaders. The objectives of this project were to identify educational needs of 4-H members enrolled in equine projects throughout Ohio to help them provide quality care of their animals and develop an educational program to meet those needs. A survey was distributed to 88 county 4-H educators (54 respondents) and 139 adult 4-H leaders (63 respondents) inquiring about methods used to communicate information and program requirements to 4-H members as well as identify important topics 4-H youth enrolled in equine projects. Additional surveys were distributed to 4-H parents to collect demographic information about equine participants ($n = 354$) and further identify educational topics ($n = 188$). Survey results indicated a strong interest by 4-H leaders in a statewide equine educational program and contributed to curriculum development. EquiSTEP (Equine Safety Training and Educational Program) was developed using peer-reviewed information for equine management and curriculum design. A review of EquiSTEP by 4-H advisors ($n = 156$) suggested that the program has the potential to bring success to youth members in, outside of, and after 4-H participation. Assessment data will be collected to evaluate the educational impact of this program.

Unseen Recipients: Pets in the Lives of Family and Friend Caregivers

Jessica Bibbo, PhD

Benjamin Rose Institute on Aging, Cleveland, Ohio

Older adult pet owners who require assistance from a family or friend caregiver for their own activities of daily living, most likely need assistance in performing pet care tasks and activities. However, the resources caregivers devote to pet care have been overlooked by researchers and support services. This talk will present results of the first empirical investigation into the resources caregivers ($n=49$) devoted to a care recipient's pet. Forty-nine caregivers (85.71% female; age $M=53.78$, $SD=14.26$) who did not consider themselves to be co-owners of their care recipient's (76.67% female; age $M=73.47$, $SD=10.36$) pet (64.71% dog, 35.29% cat) participated. The online survey included standardized instruments from the fields of human-animal interaction and gerontology. All caregivers did provided care for their care recipients' pets (e.g., feeding, walking, grooming). The impact of the pet on the emotional experience within the role of caregiver (e.g., caregiver burden, satisfaction, and mastery) was found to be shaped by the relationships between the care recipient and the pet, the caregiver and the pet, as well as the quality of the relationship between the caregiver and their care recipient. Pets are likely to have a significant impact on older adults and their family caregivers; and therefore, should be taken into account by professionals who work with these individuals who devote their time and energy in caring for family, friends, and neighbors.

UNLABEL ME: Effects of Breed Labeling on Perception and Adoptability of Shelter Dogs

Bradshaw Y. and George K.

Department of Animal Sciences, The Ohio State University

Annually, approximately 6.5 million companion animals enter animal shelters nation-wide—3.3 million are dogs. Upon shelter intake, dogs are evaluated to gain information regarding behavioral and health history. Part of this evaluation routinely includes breed-labeling; however, U.S. shelter canine populations predominately consist of dogs with an unknown history and breed heritage. Several studies illustrate that most dogs within shelters are mixed breeds and are mislabeled when compared to their DNA results. Additionally, breed-labels have been shown to negatively impact adopters' decisions due to the stereotypes and legislation linked to certain breeds. Breed-labeling is a tool that shelters can use for implementing care strategies and solutions, however, canines are complex individuals whose behavior is influenced by numerous factors; therefore, whether a breed-label accurately reflects a dog's genetic makeup may not be efficient for successfully matching potential adopters with a companion. The objective of this study was to examine the influence of breed-labeling on dog adoption rates, length-of-stay, and visitors' ability to identify breed in agreeance with shelter staff. A pre/post-visit survey instrument was distributed at a local shelter over three 4-week periods (P1=labels on - control, P2=no labels – treatment, P3=labels on – return to control). Additionally, dog behavioral observations during a visitor interaction were utilized to identify behaviors that may influence adopters' decisions. This study contributes to the body of scientific literature identifying minor and cost-effective changes that shelters could implement to increase shelter dog adoption success.

Factors Influencing Horse Heart Rate During Routine Hoof Care Procedures

M. Dickerson and K. Cole

Department of Animal Sciences, The Ohio State University

Although proper hoof care is essential to a horse's health, routine hoof care procedures to remove manure, soil, and other debris packed in the underside of the hoof and trim excess hoof growth may lead to acute physiological or psychological stress in the horse. A convenient, non-invasive method to indicate stress is heart rate (HR). To evaluate the influence of external factors that may influence horse HR during routine hoof care procedures, a Polar H10 HR monitor was used to record the HR of twenty-seven American Quarter Horses (12.1 ± 3.2 yrs; 9 mares, 18 males) housed at The Ohio State University Equine Facility prior to and during routine hoof care procedures (PICK/TRIM). Horses were handled by one of two people and hoof care was performed in both the horse's outdoor housing area and in the barn aisle by the same person for each procedure. Data were analyzed using PROC MIXED of SAS. Horse HR increased during both hoof care procedures compared to baseline HR ($p < 0.05$); however, there was no difference in HR between the two procedures. Horse HR was higher when hoof care procedures were performed in the barn aisle compared to the horse's outdoor housing area ($p < 0.0001$). Horse HR was also higher when the horse was handled by the female handler compared to the male handler ($p < 0.0001$). Overall, this study suggests that a horse's environment and handler may have a greater influence on horse stress than routine hoof care procedures.

Mind Full or Mindful? Equine Facilitated Therapy for Women Veterans

Aviva Vincent, PhD, LMSW/VSU; Isabel Ballard, B.A.

Mandel School of Applied Social Science, Case Western Reserve University

The purpose of the evaluation was to understand, through participant self-report, the assets and challenges of partnering with equines for female Veterans seeking to increase skills in their mindfulness practice. Surveys were administered to participants to gain insight into self-identified mindfulness pre- and post-equine intervention. All measures were anonymous with only the date included to indicate the cohort. The study included three measures post-consent: The Toronto Mindfulness Scale, the Mindfulness Scale, and the Program Evaluation. The Mindfulness Survey responses were averaged for pre- intervention, then for post- intervention. The pre- intervention survey responses ranged from 2.3 to 6.5 with a response range of 0 to 10 ($M=4.59$, $SD=1.29$). The post- intervention survey responses ranged from 6.7 to 9.2 ($M=8.2$, $SD=0.69$). A paired samples t-test found a significant difference in the scores from pre- intervention to post-intervention conditions ($t=-9.43$, $df=13$, $p<.001$). In the evaluations, participants shared that their favorite moments were (Q3): grooming and *Breathe With* (an activity to match breathing to the horse's breathing). In the question asking what the participants will take away from the program (Q9) one participant shared, "The horses have taught me a lot about myself"; a common theme across respondents. The current study demonstrates that Veterans' interactions with equines impacts the participants' mindfulness throughout their experiences at Fieldstone Farm. The Veterans established a significant increase in their mindfulness scores post-equine intervention.

Effect of Housing Systems on Long-Term Cortisol Production in Horses

J. Werner and K. Cole

Department of Animal Sciences, The Ohio State University

Horses are housed in a variety of environments depending on the needs and intended use of the horse as well as resources of the caretaker. The type of housing can directly impact the health and behavior of the horse and it has been suggested that housing horses individually can restrict the horse's natural behavior of social interactions. Cortisol is used as a physiological indicator of stress in animals and it can be measured in various matrices. Traditional samples used to measure cortisol (plasma, salivary, fecal, urine) assess short-term, acute, cortisol production, while hair cortisol can be used to assess long-term production. The objective of this study was to 1) evaluate hair cortisol concentrations in horses transitioned from outdoor group housing to individual housing in box stalls and 2) determine if hair cortisol concentrations were correlated to horse HR and behavior during novel object tests. Hair samples were collected approximately every 30d from 11 Quarter Horses (5 mares, 6 geldings; 3.59 ± 1.36 yr) over a period of 5 months and analyzed via ELISA for cortisol concentrations. Horses were fitted with a Polar H10 heart rate monitor to record their HR during novel object and sensory sensitivity tests. Transitioning horses from outdoor group housing to individual box stalls did not influence cortisol concentrations during this study suggesting that these horses can be managed in either type of housing without caretakers becoming concerned about chronic cortisol levels ($p > 0.05$). The relationship between cortisol concentrations, HR, and behavior is currently being analyzed.

America's Wildlife Values: Why a societal-level shift in human values is reshaping how we think about and act in relation to wild animals

Dr. Alia M. Dietsch

School of Environment and Natural Resources, The Ohio State University

Conservation is considered a "crisis" discipline born out of widespread biodiversity loss that requires humans to understand their impacts on others, such as wild animals, and ultimately take strides to improve our relationships with wildlife. Much of how we view and ultimately treat others is driven by our enduring, fundamental beliefs (i.e., values). This talk highlights how substantial changes in everyday life associated with urbanization and societal-level increases in wealth and education (i.e., 'modernization') has led to a shift in American values over several decades. Specifically, Americans are experiencing a shift away from domination values (focused on meeting basic human needs) and toward mutualism values (focused on the perceived needs of others, including non-human animals). The America's Wildlife Values study, a collaboration among partners, explored the distribution of wildlife values across the United States, and how values lead to challenges and opportunities for wildlife conservation. Using data collected from 43,949 respondents representing all 50 states, this talk specifically highlights the need to understand what shapes values, and the degree to which values influence how we think and act in relation to wild animals. This research demonstrates that such a value shift is consistent with the rise of conservation-relevant attitudes (e.g., restrictions on humans to protect threatened and endangered species) and behaviors (e.g., birdwatching, perceived care of wildlife). However, this societal shift of values is challenging traditional approaches of managing wildlife and reshaping relationships among human groups over how wildlife should be treated.

Coyote (*Canis latrans*) response to novel objects in urban and rural ecosystems

Grayson Cahal, Dr. Stanley Gehrt, PhD

School of Environment and Natural Resources, The Ohio State University

For many years coyotes (*Canis latrans*) have been expanding their range and appear to be highly adaptable to urban ecosystems. With coyotes living in proximity to humans, it is important to understand patterns of human-wildlife interactions and how wildlife behavior may be influenced by urbanization. Our objectives are to compare frequencies of bold-shy behavior between rural and urban sites, and to determine differences across multiple metropolitan areas. This research is part of a large collaborative study designed to evaluate the boldness behavior of coyotes across the country. Our research sites are located within urban and rural landscapes from three study areas (Chicago, IL, Cleveland and Columbus, OH). We are using noninvasive, motion-activated camera traps to record animal responses to novel objects placed in capture videos of animal behaviors. The novel object used in this study is four wooded stakes one meter tall arranged into a one meter square with paracord string connecting the four corners. All videos are being curated, and coyote videos selected for analysis. Each coyote behavior will be analyzed on an ordinal scale from neophobic to neophilic. Behaviors that are considered bold or exploratory will be assessed a neophilic ranking, while shy, anxious individuals will be assessed a neophobic ranking. Ultimately, our work will provide a better understanding of the behavior of an apex predator in urban ecosystems and assist us in managing coexistence between coyotes and people.

Thank you to all of our hard working researchers during this unprecedented time. If you have any questions you can direct them to Brittany Fischer at chaire@osu.edu and all questions will be relayed to the researchers. It is with your support that we are able to continue to provide opportunities like these for both our students and colleagues. If you would like to continue to support CHAIRE you can follow the QR code below.

