

2019 Center for Animal Welfare Science Conference Proceedings

Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges



May 15-16, 2019
Purdue University | West Lafayette, IN



United States Department of Agriculture
National Institute of Food and Agriculture

Table of Contents

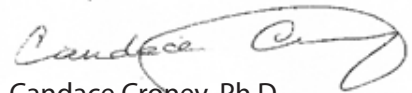
- Introduction 3
- Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges 4
- Conference Program 6
- Presentation Abstracts 8
- Poster Abstracts 14
- Conference Evaluation 27
- Conference Participants 28

Introduction

There is growing need to escalate creative problem-solving and innovation in animal welfare science to better support sustainable, socially responsible animal agriculture. Accomplishing these goals requires inclusive excellence that is constrained by the current level of diversity within the discipline. To begin addressing these issues, faculty collaborators at Purdue University, University of North Carolina at Chapel Hill, North Carolina A & T University and Tuskegee University secured a USDA-NIFA funded grant for a conference to increase access to the field of animal welfare science. The aim was to attract and potentially grow a more broadly representative pool of scholars to help meet current and emerging animal welfare science and community engagement needs.

The conference, which was held in May 2019, attracted over 100 participants, of which almost one third were students and faculty at minority serving institutions (MSIs). (See Purdue–NIFA 2019 Center for Animal Welfare Science Conference. <https://www.purdue.edu/vet/ce/NIFA2019.php>). The participating MSIs and underrepresented student and faculty attendees were reached through direct connections and professional networks. The project PIs also recruited participants from tribal colleges, land grant universities, and private institutions without established animal welfare science programs of study. Scholarships were offered to faculty and high performing students from different knowledge, experiential, socio-economic, regional, gender, racial, ethnic, and educational backgrounds to facilitate conference attendance. During the two-day conference, every participant worked in a group to collaboratively tackle one of five key challenges prioritized in the 2018 CAST Taskforce Report on Animal Welfare (<https://www.cast-science.org/publication/scientific-ethical-and-economic-aspects-of-farm-animal-welfare/>).

Groups included speakers selected for their international reputations as established animal welfare scientists, leaders of global corporations connected to animal agriculture, farmers, animal health professionals, and members of governmental and non-governmental organizations. Traditionally-represented and students new to animal welfare science engaged the topics so impressively that all received a verbal commitment of mentorship and direct contact information for each professional who attended and spoke. Discussions and collaborations have been planned with several MSIs to continue the conversations and to explore novel approaches to animal welfare science curriculum development and shared access to resources that inform related research and outreach approaches.



Candace Croney, Ph.D.
Director, Center for Animal Welfare Science



Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges

This two-day conference was funded by the United States Department of Agriculture, National Institute of Food and Agriculture (USDA-NIFA) as part of its mission to “invest in and advance agricultural research, education, and extension to solve societal challenges” and invest in “transformative science to directly support the long-term prosperity and global preeminence of U.S. agriculture.” (See mission statement, USDA-NIFA Website). The conference was composed of plenary sessions, panel discussions, working-group break-out sessions, and poster sessions, with multiple opportunities for networking. Given the scope of species coverage of USDA-NIFA, conference topics focused primarily on welfare issues related to agricultural animals. It should be noted however, that the core idea of encouraging diversity, engagement, and collaboration of varied populations in scientific research, discussion, and policy making are transferable and equally beneficial when applied to welfare concerns of other categories of animals.

Topics that were explored during work-group sessions were informed by a recent Council for Agricultural Science and Technology taskforce report on farm animal welfare, which identified multiple emerging challenges for U.S. animal agriculture (<https://www.cast-science.org/publication/scientific-ethical-and-economic-aspects-of-farm-animal-welfare/>). These include the need for improved understanding of the role of animal welfare in sustainability, antimicrobial resistance, global developments, urban agriculture and assessing animal mental states. The conference was therefore designed to explore the ways in which diverse people and perspectives could enhance the quality of science and the impact of research and engagement programs required to address these key areas of need.

Increasing diversity in the STEM fields and on animal welfare research teams specifically is critical to generate the best possible solutions to the complex research questions that face the field today. The theme of inclusive excellence was therefore woven throughout the program. For this conference, diversity was defined as individual differences, including but not limited to, background (race, culture, education, socio-economic level, prior experience), perspective (academic, industry, veterinary, governmental and non-governmental organization professional, student, consumer, producer), and beliefs (religious, ethical). Incorporated into this theme was the idea that diverse perspectives and individuals can enhance decision-making and make working groups stronger and more impactful.

PRINCIPAL INVESTIGATORS

- **Candace Croney**, PhD, Purdue University (PI)
- **Olga Bolden-Tiller**, PhD, Tuskegee University (Co-PI)
- **Kauline Cipriani**, PhD, University of North Carolina at Chapel Hill (Co-PI)
- **Radiah Minor**, PhD, North Carolina Agricultural and Technical University (Co-PI)

Symposium Organizing Committee

- **Olga Bolden-Tiller**, PhD, Tuskegee University (Co-PI)
 - **Kauline Cipriani**, PhD, University of North Carolina at Chapel Hill (Co-PI)
 - **Candace Croney**, PhD, Purdue University (PI)
 - **Radiah Minor**, PhD, North Carolina Agricultural and Technical University (Co-PI)
 - **Ruby Perry**, DVM, MS, DACVR, Tuskegee University
 - **Gopal Reddy**, DVM, MS, PhD, Tuskegee University
 - **Janice Swanson**, PhD, Michigan State University
 - **Jennifer Walker**, DVM, PhD, Danone, North America
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Experts in animal welfare science were asked to engage these themes within the context of the scientific knowledge and pedagogical approaches they utilized and others they envisioned as required to address the key areas of need identified in the CAST report. The audience included participants from land grant, private and Minority Serving Institutions of higher education as well as different sectors of the agricultural sciences and industries, and their partners in veterinary medicine.

The program was attended by 107 participants. Non-student attendees included representatives of industry, veterinary medicine, governmental and non-governmental organizations, and academic institutions. Students represented a variety of programs of study that integrated animal welfare research and policy including agriculture, animal sciences, and veterinary medicine. As noted above, conference organizers targeted students, speakers and other attendees from diverse backgrounds as part of the conference theme. Twenty-three student and faculty participants were awarded travel grants in order to assist with attendance.

In addition to information-sharing, the conference organizers believed it was important for participants to have the opportunity to participate in working break-out sessions. During these sessions they were asked to network and identify needs and collaborative partnerships aimed at building capacity to more effectively diversify and grow the discipline to develop innovative solutions. Because student and stakeholder engagement is critical to achieving these goals, these audiences were particularly encouraged to attend.

The conference aimed to introduce, elevate, and expand conversations around current and future animal welfare research challenges by creating robust dialogue between a diverse group of seasoned industry and academic experts and undergraduate and graduate students. Invaluable experiences and perspectives were shared; however, this is only a beginning. It is anticipated that important follow-up steps will occur, such as future multi-institutional research partnerships, and enrollment of some of the undergraduate participants in animal welfare programs of study leading to related careers in research, education and engagement. Most importantly, this effort was intended to inspire and encourage future conversations and activities that reflect inclusive excellence at other animal welfare meetings. This is an essential step toward changing the profession to more broadly represent, reflect, and ultimately, better serve local, national and global communities in the area of animal welfare science and its connection to sustainable, responsible food production.

Attendees were able to participate in break-out sessions, during which they had time to assess current challenges and develop collaborative partnerships and solutions aimed at building capacity to more effectively diversify and grow the discipline.



Conference Program

Agenda - Wednesday, May 15, 2019 - Courtyard by Marriott Lafayette

- 8:00 a.m. **Check-In & Morning Refreshments**
- 8:30 - 8:45 a.m. **Introduction and welcome**
Candace Croney, PhD, Director Center for Animal Welfare Science, Purdue University
- 8:45 - 9:25 a.m. **The role of diversity in achieving scientific excellence: challenges, opportunities & applications to agriculture and animal welfare science (.75 CE)**
Karen Plaut, PhD, Glenn W. Sample Dean, Purdue University College of Agriculture
Pamala Morris, PhD, Assistant Dean/Director of Multicultural Programs, Purdue University College of Agriculture
- 9:30 - 10:30 a.m. **Keynote: New themes in improving animal welfare (1 CE)**
David Fraser, PhD, Professor, University of British Columbia
- 10:30 - 10:45 a.m. **Break**
- 10:45 - 12:00 p.m. **Overview of CAST Taskforce report on advancements and outstanding challenges in animal welfare: incorporating diverse approaches to better meet changing needs (1.25 CE)**
Candace Croney, PhD, Director Center for Animal Welfare Science, Purdue University
Janice Swanson, PhD, Director of Animal Welfare and Professor, Michigan State University
Nicole Widmar, PhD, Professor, Agricultural Economics, Purdue University
- 12:00 - 1:30 p.m. **Lunch and Poster Session**
Student Mixer with Faculty and Industry Mentors
- 1:30 - 2:30 p.m. **Industry roundtable: How can industry utilize diverse perspectives and people to effectively advance animal welfare as a component of sustainability? (1 CE)**
Moderator: Sara Crawford, PhD, Assistant Vice President of Animal Welfare, National Pork Board
Judson Vasconcelos, DVM, PhD, Director, Veterinary & Consumer Affairs, Merck Animal Health
Karen Christiansen, PhD, Sr. Director, Animal Well-Being, Tyson Foods
Jennifer Walker, DVM, PhD, Director Milk Quality, Danone
- 2:30 - 4:00 p.m. **Break out groups: what can we do better together and who do we need on our teams? What roles can students play in problem-solving?**
Facilitators - Kauline Cipriani, PhD, Assistant Dean for Inclusive Excellence, UNC Gillings
Radiah Minor, PhD, Associate Professor of Animal Sciences, North Carolina A&T State Univ.
Olga Bolden-Tiller, PhD, Associate Professor of Animal Science and Department Head, Tuskegee University
Janice Swanson, PhD Michigan State University
- 4:00 - 4:45 p.m. **Communicating Science in Challenging Times (.75 CE)**
Linda Pfeiffer, PhD, Assistant Professor Agricultural Sciences Education and Communication, Purdue University
Beth Forbes, Science Communication Director, Agricultural Sciences Education and Communication, Purdue University
- 5:00 p.m. **Reception and Mixer**
Sponsored by Purdue University's Office of the Provost

Conference Program

Agenda - Thursday, May 16, 2019 - Courtyard by Marriott Lafayette

- 8:00 a.m. **Morning Refreshments**
- 8:30 - 8:40 a.m. **Introduction and summary of day 1**
Candace Croney, PhD, Director Center for Animal Welfare Science, Purdue University
- 8:45 - 9:00 a.m. **The importance of diverse voices in animal welfare: incorporating a veterinary medicine perspective (.25 CE)**
Willie Reed, DVM, PhD, Dean of the College of Veterinary Medicine, Purdue University
Ruby Perry, DVM, PhD, Dean of the College of Veterinary Medicine, Tuskegee University
- 9:00 - 10:00 a.m. **Incorporating animal welfare across the curriculum (1 CE)**
Moderator: Janice Swanson, PhD, Michigan State University
Kamilah Grant, PhD, Assistant Professor Center for Biotechnology and Department of Agriculture, Alcorn State University
Chukwuemeka (Chuck) Okere, PhD, MIBiol., CBIol., Research Associate Professor, Tuskegee University
- 10:00 - 10:15 a.m. **Break**
- 10:15 - 11:45 a.m. **Break out groups**
Facilitators: Kauline Cipriani, PhD; Radiah Minor, PhD; Olga Bolden Tiller, PhD
Janice Swanson, PhD, Michigan State University
Jennifer Walker, DVM, PhD, Director Milk Quality, Danone
- 11:45 - 12:30 p.m. **Student presentations**
Facilitators: Kauline Cipriani , PhD; Radiah Minor, PhD; Olga Bolden Tiller, PhD
- 12:30 - 1:30 p.m. **Lunch**
- 1:30 - 2:45 p.m. **Panel: Translating current animal welfare science into best practices to diverse audiences (including pain, humane euthanasia, and use of antimicrobials) (1.25 CE)**
Moderator: Jennifer Walker, DVM, PhD, Director Milk Quality, Danone
Gustavo Schuenemann, DVM, MS, PhD, Professor, Extension Veterinarian, Dairy, Department of Veterinary Preventive Medicine, The Ohio State University;
Jan Shearer, DVM, MS, Professor, Vet Diagnostic & Production Animal Medicine, Iowa State University
- 2:45 - 3:00 p.m. **Summary and closing**

Keynote Presentation Abstract

New themes in improving animal welfare

David Fraser, PhD., Professor, University of British Columbia

To date, animal welfare research has focused largely on the environments where animals are kept, with emphasis on space allowance, hygiene, environmental complexity and other features. However, bench-marking studies show that very different animal welfare outcomes are commonly found in facilities with similar environments. The differences likely reflect the “human dimension” of animal welfare – how animal welfare is influenced by the training, skill and performance of the staff, and by appropriate staffing levels. This human dimension needs to become a major theme in future animal welfare research.

The term “One Welfare”, inspired by “One Health”, is now being used to recognize that human welfare and animal welfare are closely related and that both depend on the environment. As examples, research shows that animal welfare problems arising from neglect or hoarding most often involve poor health or mental health of the owner, and that both people and animals can benefit from programs where people with challenges take part in animal rehabilitation. One Welfare leads us into new avenues for research, and to actions that will coordinate animal welfare and human welfare services.

Finally, the scope of animal welfare research needs to broaden to include the unintended effects on animals of the ever-increasing intrusion of human technology into natural systems. Activities such as crop production, urban development, transportation and communication already affect vast numbers of animals, and global effects such as climate change may affect even more. Research is needed to help us understand and mitigate these problems. Solutions will also require a coming-together of animal welfare and conservation interests.



Overview of CAST Taskforce report on advancements and outstanding challenges in animal welfare: incorporating diverse approaches to better meet changing needs

Candace Croney, PhD, Director Center for Animal Welfare Science, Purdue University

Anna Johnson, PhD, Professor, Animal Behavior and Well-Being, Iowa State University

Janice Swanson, PhD, Director of Animal Welfare and Professor, Michigan State University

Nicole Widmar, PhD, Professor, Agricultural Economics, Purdue University

In the 1997 CAST task force report on the well-being of agricultural animals, priority areas of research identified included (1) bioethics and conflict resolution, (2) responses of individual animals to the production environment, (3) stress, (4) social behavior and space requirements, (5) cognition, and (6) alternative production practices and systems. Many advancements have occurred in these areas. It is now established that animal welfare is multifaceted and involves considering not only the biology and psychology of the animals, but also people's ethical concerns. These include determining which housing and husbandry factors pose risks to animal welfare, how those risks can be managed and what levels of risk are acceptable to diverse stakeholders. A point of contention over the last two decades has been regulation of farm animal welfare. Few federal laws govern the care and welfare of farm animals in the US. Some states have codified specific housing standards for intensively raised livestock mainly laying hens, gestating sows and veal calves. And some have established state level livestock care advisory boards. In place of federal laws, trade or producer organizations have developed professional statements and guidelines informing farmers of best practices to assure the welfare of their livestock. Moreover, food retailers have developed policies and animal care standards to assure the welfare of farm animals (products) entering their supply chain. The development of a government sanctioned, evidence based standard setting process that includes diverse stakeholder input could serve both the public and the agricultural community well in providing assurance for the care and welfare of farmed animals. Economic theory asserts that competitive markets efficiently allocate resources to their most valued uses. Thus, the prices and quantities produced by a competitive market generate the highest level of aggregate human well-being in the utilitarian sense. These ideas have led economists to set competitive market outcomes as the benchmark from which to judge the suitability of policy proposals. But, one of the conundrums that arises in analyzing market outcomes for animal products is the so-called citizen vs. consumer conflict. The heterogeneous tastes and preferences of the public, distinct from those of consumers, complicate the markets for animal welfare – and associated conversations.

Industry Roundtable

How can industry utilize diverse perspectives and people to effectively advance animal welfare as a component of sustainability?

Judson Vasconcelos, DVM, PhD. Merck Animal Health

Karen Christiansen, PhD, Sr. Director, Animal Well-Being, Tyson Foods

Jennifer Walker, DVM, PhD, Director Milk Quality, Danone

Promoting and improving animal welfare is viewed by the supply chain as part of, or foundational to the sustainability of the business and the planet. Progress and improvements in the welfare of animals in production systems are made and sustained only in the context of an economically strong business. To achieve this, a holistic approach must be taken. This includes engaging in and fostering a productive dialogue with all stakeholders and being open to different perspectives. Inclusive dialogue and effective communication and transparency is essential in communicating that shared values can coexist with differences in opinion. In this way, programs and policy can be developed based on science ensuring that the welfare of the animal is protected while giving due consideration to the diverse perspectives of all stakeholders.

National Pork Board Assistant Vice President of Animal Welfare Sara Crawford moderates an industry roundtable, which included representatives from Merck Animal Health, Tyson Foods and Danone. Panelists shared insights about how industry can utilize diverse perspectives to effectively advance animal welfare as a component of sustainability.



Communicating Science in Challenging Times

Linda Pfeiffer, PhD, Assistant Professor Agricultural Sciences Education and Communication, Purdue University

Beth Forbes, Science Communication Director, Agricultural Sciences Education and Communication

A lack of science knowledge on the part of a particular audience does not fully explain the difficulty in communicating about controversial science issues — particularly those involving moral issues such as animal welfare. Research in information processing and neuroscience tell us that personal values, experiences, and social norms more strongly influence people's perceptions of scientific issues than does the scientific data alone. One-way communication models adopted by the majority of scientists over the past thirty years have proven to be unsuccessful. Effective communications strategies for engaging non-science audiences rely on two-way communication and in-depth audience analysis to better understand the filters and biases that impact how people view animal welfare issues. Also important are establishing trust, listening and addressing concerns. This session will feature foundational evidence-based science communication theory, case studies and role-playing, to help students learn and practice audience engagement and science communication skills regarding animal welfare issues.

Incorporating animal welfare across the curriculum

Anna Johnson, PhD, Professor Animal Behavior and Well-Being, Iowa State University

Undergraduate, Graduate and Professional students must be aware of and be able to communicate effectively on animal welfare to stakeholders. To achieve the goal of incorporating animal welfare into the curriculum there are both challenges and opportunities. At Iowa State University (ISU), we have tried several successful strategies. A freshman course on livestock handling, safety and welfare was added. Every five years, faculty review the undergraduate curriculum, objectives and learning outcomes. Now in the sophomore and senior species classes, basic animal welfare concepts are taught. In 2018 a service training dog course was created. From the sophomore animal behavior and welfare class, 67 students have enrolled in a senior capstone animal welfare research projects. Projects have ranged over livestock, companion and captive animals with students coming from animal science, biology and ecology respectively. A multiyear, Higher Education Grant has resulted in efforts to create an animal welfare curriculum for the four-year veterinary schools across North America. However, there are still challenges. At ISU senior exit interviews note overwhelming interest with "Animal behavior and welfare should be a required class" and "both of these topics are so important that they should be split and offered over two semesters." Challenge one, there is not enough faculty to offer more welfare laboratories or classes. Challenge two is the continual struggle to garner multi-year funding to train the next generation of welfare scientists. Challenge three is giving students the opportunities to interact with stakeholders and communicate on welfare issues through extension and outreach efforts.

Presentation Abstract

Integrating Domestic Animal Welfare & Behavior into the Animal and Veterinary Sciences (AVSC) Curriculum Utilizing a Problem-Based Learning (PBL) Approach

C. Okere¹, O. Bolden-Tiller¹ & K. Grant²

¹Department of Agricultural & Environmental Sciences, Tuskegee University, Tuskegee, AL

²Biotechnology and Department of Agriculture, School of Agriculture & Applied Sciences, Alcorn State University

Animal-welfare and behavior science is a rapidly growing interdisciplinary domain, and a critical need exists for more animal scientist involvement at every level. The Tuskegee University Animal and Veterinary Sciences (TU-AVSC) program has a historical commitment to graduating students with a strong foundation in many livestock and companion animal husbandry courses, allowing graduates an impressive breadth of application of their degree. Continuing this theme, AVSC program must educate students in the fundamentals of the science and ethics of animal welfare, address the topic throughout the professional curriculum, and increase access to additional educational opportunities for students with a particular interest in the field. Currently, the TU- AVSC program curriculum has a 4-hour course (APSC 502/BIOL 510 – Domestic Animal Behavior and Welfare) covering many aspects of fundamental processes of animal behavior and welfare. This course is severely deficient because of its inability to provide students with practical knowledge; skills and abilities in emerging animal welfare (farm and companion animals) issues that will help them make meaningful contributions to their animal science and veterinary careers. The objective of this proposal is to transform APSC 502/BIOL510 into a two parts (lectures and online welfare assessment labs) animal welfare and behavior PBL course that would expose students to current knowledge on understanding animal behavior and should help them to identify and adopt appropriate, efficient, and humane approaches to animal care and use. The new course will bridge an important gap in the TU-AVSC curriculum and will serve other 1890 Land-grant institutions as a model for course content assembly, delivery (curriculum design and material development) and the enhancing of student experiential learning opportunities.



Translating current animal welfare science into best practices to diverse audiences (including pain, humane euthanasia, and use of antimicrobials)

Dairy cattle welfare: From discovery to application

Gustavo Schueneman, DVM, MS, PhD, Professor, Extension Veterinarian, Dairy, Department of Veterinary Preventive Medicine, The Ohio State University

Jan Shearer, DVM, MS, Professor, Vet Diagnostic & Production Animal Medicine, Iowa State University

With the scrutiny of welfare practices and antimicrobial use in food animals, dairies are always under the watchful eye of consumers, legislators, and activists. Each dairy operation is an integrated system, and management decisions made in one area of the farm will affect other areas. Substantial knowledge exists to prevent many diseases or welfare conditions; however, it must be translated into on-farm applications or practices to have a meaningful impact at the animal and herd levels. How to remain competitive is the “big” question for dairy operations, which includes knowing the consumer expectations. Farm practices such as animal handling and care, performing euthanasia, or administering pain medication have been under intense scrutiny; however, it ultimately requires well trained personnel and an integrated farm team (e.g., veterinarians, nutritionists, consultants, suppliers, etc.) who can follow established protocols. Developing a system-in-place which includes proper protocols and procedures with strong emphasis on prevention and a process of continuous improvement is crucial for modern dairy herds of any sizes. An ounce of prevention is worth a pound of cure! Cultivating a positive work culture by ensuring that best dairy welfare practices are incorporated into the values and mission of dairy farms. People must work together to ultimately achieve consistency of welfare practices at the farm level. This conversation or exchange of ideas will likely result in a more economically sustainable management system that ensures the safety of our food supply with best animal welfare practices for years to come.



Poster Session Abstract

Working Equids: A Case Study Investigating if Locus of Control Effects Welfare in Central America

Brizgys, Lauren, A. MS
Purdue University

Developing countries lack the resources and technological advancements commonly used by developed countries for production and must rely on manual or animal labor to aide in the creation, collection, and distribution of products for income. In Haiti and Honduras, the leading role of a working equid is to provide transportation for families and products to and from marketplaces. It is not uncommon for one equid to carry loads three times its body weight and make up to six trips, accumulating up to fifty miles per day, to and from its home. With extreme environmental and physical constraints placed on these working equids, equid health and performance decrease significantly. With little income to feed a family, equid owners may neglect seeking medical attention or additional costs related to their working equid. Promotion of the longevity and overall health of the equid is often overlooked, as the animal is overworked, thus further damaging its welfare. Studies divulge serious welfare concerns for the estimated 112 million working equids in developing countries where the equids have minimal access to clean water, limited grazing opportunities, poor body condition scores, facial and body wounds, and psychological fear associated with human-equid interactions.

The research team sought to identify if equid owner's locus of control was a variable contributing to the physiological and psychological welfare of working equids. The locus of control theory employed in this study was developed by Julian Rotter in 1966 and represents Rotter's belief that man has the capability to determine his fate based on actions and reactions to his environment. This theory identifies that an individual can possess either an internal or external locus of control, which inevitably dictates the decisions they make in their life. An individual who possesses the quality traits of an internal locus of control is said to believe that their personal abilities, efforts, and or actions determine the outcome of their life. Rotter also identifies the characteristics of individuals who possess an external locus of control. Those with an external locus of control believe that fate, luck, chance, or other outside forces dictate the outcomes of their life. Identifying an owner's locus of control, as a potential factor affecting overall welfare of working equids in developing regions of the world, may assist future research teams in understanding the underlying causes of lower welfare scores seen in these regions.

This study took place over the span of one year, in 2017, beginning with a pilot test in Haiti on a sample of 10 Milot equid owners and their associated working equids (n=10). Information on research tools administered in Haiti allowed the research team to revise all research tools and implement the study on 65 Honduran equid owners and their associated working equids in October of 2017 (n=65). The results of this study identified a relationship between working equid behavior scores and owner locus of control, indicating that owners with external locus of controls had equids with lower behavioral scores. Additionally, a significant positive relationship was found between anterior knee lesions and owners exhibiting external locus of controls.

While no significant relationship between owner locus of control and total equid welfare score could be determined, the research poses many benefits for future studies focusing on equid welfare and owner interactions to NGO's, research teams, and medically trained personnel interested in the improvement of working equid welfare. Implementation of the locus of control survey into educational intervention strategies will provide educators and non-governmental organizations with individualized information regarding potential populations and allow those educators to tailor their material to suit each demographic in a meaningful and personally relatable way.

Poster Session Abstract

Human beliefs and animal welfare: a cross-sectional survey on rat tickling in the laboratory

Megan R. LaFollette^a, Sylvie Cloutier^b, Colleen Brady^c, Marguerite E. O’Haire^d, Brianna N. Gaskill^a

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Optimization of animal welfare is influenced by the behaviors of animal caretakers. For rats, rat tickling is a promising enrichment technique that mimics aspects of rat rough-and-tumble play. However, it may be difficult to implement. The theory of planned behavior can be used to study implementation by measuring intentions and beliefs, including behavioral attitudes (whether rat tickling is good or bad), subjective norms (whether there is social/professional pressure to provide rat tickling), and control beliefs (whether they feel in control of providing rat tickling). Therefore, the objective of this study was identify current prevalence and predictors of rat tickling. Laboratory animal personnel were recruited from widespread online promotion. A total of 794 personnel (M=40±11 years, 80% Caucasian, 80% female) completed at least 50% of an online survey and met inclusion criteria of currently working with laboratory rats in the USA or Canada. The survey included questions about demographics, enrichment practices and beliefs, attitudes towards rats, general positive behaviors, and beliefs about rat tickling. Qualitative data were coded using thematic analysis. Quantitative data were analyzed using general linear models. Laboratory personnel reported low levels of rat tickling implementation, with 89% of participants reporting using it never or rarely. Laboratory personnel report 2 key benefits (handling: 61%, welfare: 55%) and 3 key barriers (time: 59%, personnel: 22%, and research: 22%) to rat tickling using qualitative analysis. Current and planned rat tickling were positively associated with more positive beliefs (social/professional pressure $p<0.0001$, and control of providing tickling $p<0.0001$) and familiarity with tickling ($p<0.0001$). Future rat tickling was also positively associated with more positive attitudes about rat tickling ($p<0.0001$) and a desire to implement more enrichment ($p<0.01$). Current rat tickling was also positively associated with more positive general behaviors (e.g. talking to laboratory animals, $p<0.0001$). Our findings show that implementation of rat tickling is currently low. Furthermore rat tickling is positively associated with personnel beliefs, familiarity, general attitudes, and a desire for more enrichment. That is, personnel were more likely to provide rat tickling if they were more familiar with it, thought providing it was good, under their control, and subject to social/professional pressure, as well as if they wanted to provide more enrichment. There is potential to increase rat tickling and thereby improve rat welfare by increasing familiarity with the procedure through training, decreasing the time required, and changing personnel beliefs.

Purdue graduate student Megan LaFollette shares details about her rat tickling research with CAWS Symposium participants as part of the research poster session.



Early life thermal stress: Impacts on future thermal preference in piglets (3-15 kg)

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Thermal stress can result in productivity losses, morbidity, and mortality if proper management practices are not employed. A basic understanding of the relationship between animals and the thermal environment is crucial to assess the environment's impact on livestock performance. Therefore, the study objective was to evaluate whether exposure to different early life thermal stress (**ELTS**) altered the thermal preference of piglets later in life. Twelve sows and their litters were randomly exposed to one of three ELTS treatments: early life heat stress (**ELHS**; cycling 32-38°C; n=4), early life cold stress (**ELCS**; 25.4±1.1°C without heating lamp; n=4), or early life thermoneutral (**ELTN**; 25.4±1.1°C with heating lamp; n=4) conditions from 7-9 d of age. From d 10 to weaning (20±1.3 d of age) all pigs were exposed to ELTN conditions. At weaning, piglets were randomly assigned into groups of 4 of the same sex and ELTS. Thermal preference was assessed in 21 groups of pigs (n=7 groups per treatment) using one of three thermal gradient apparatuses (22–40°C) where piglets could freely choose a location or temperature. Testing began at 26±1.3 d of age to give piglets time to acclimate to solid food after weaning and one group per ELTS were tested simultaneously in each apparatus. Piglets were given 24 h to acclimate followed by a 24 h testing period. Behavior (active and inactive), posture (upright, sternal, and lateral lying), and location were documented every 20 m using instantaneous scan samples. Preferred feeding temperature was determined by the latency to empty a feeder. Data were analyzed using PROC MIXED in SAS 9.4. A cubic regression model was used to calculate the peak temperature preference of piglets based on the temperature piglets spent the most of their time. The preference range was calculated using peak temperature preference ±SE for each ELTS treatment group. ELTS exposure altered piglet thermal preference ($P < 0.01$). Early life thermoneutral piglets had a peak temperature preference of 24°C and had different temperature preferences compared to their ELCS exposed counterparts ($P < 0.01$). The temperature preference of ELTN piglets was between 23.2-25.4°C. Early life cold stressed piglets had a peak temperature preference of 26.0°C with a preference range between 24.6-27.6°C. Finally, ELHS piglets had a peak temperature preference of 25.8°C with a preference range between 24.4-27.2°C. Thermal preference between ELHS and either ELCS or ELTN reared counterparts was similar ($P = 0.10$ and 0.28 , respectively). Furthermore, piglets spent various amounts of time within different thermal locations based on behavior ($P < 0.01$) and posture ($P < 0.01$). In summary, ELTS exposure altered piglet thermal preference later in life; however, whether this preference is maintained throughout life requires further investigation.



Mixed method survey on public preferences for dairy calf housing options

Rielle Perttu, Beth Ventura, Marcia Endres

Department of Animal Science, University of Minnesota, St. Paul, MN, 55108, USA

The objective of this study was to understand preferences of dairy calf housing options among the general public, adult and youth. Participants 18 years of age or greater ($n = 1310$) and 5 – 17 years of age ($n = 463$) completed a survey at the Minnesota State Fair (St. Paul, MN, USA) in summer 2018. The survey presented 3 images of calf housing options (individual, pair, or group) and asked participants to select their preferred option. Data were analyzed using PROC GLIMMIX of SAS, and multinomial models were built with housing option as the dependent variable. Descriptive analysis showed that most adult participants (median age = 45 – 54 yr) were female (65%), completed a Bachelor's degree (42%), urban residents (82%), did not have a loved one that worked in the dairy industry (78%), did not have prior experience handling agricultural animals (81%) but had visited a farm in the past (63%). Most youth participants (median age = 11 yr) were female (61%), urban residents (59%), and did not have prior experience handling agricultural animals (63%) but had visited a farm in the past (82%). Overall, all participants were most accepting of the group housing option. For the adults, individual housing acceptance was associated with gender, residency, previous livestock experience, and knowing an individual that works in the dairy industry. Females more strongly disagreed with individual housing compared to males ($52.1 \pm 1.7\%$ vs. $37.6 \pm 2.3\%$, respectively). Additionally, rural residents were more frequently accepting of individual housing compared to urban residents ($43.0 \pm 3.1\%$ vs. $28.8 \pm 1.4\%$, respectively). Participants that knew an individual in the dairy industry were more unaccepting of individual housing compared to participants that did not ($50.3 \pm 1.6\%$ vs. $35.1 \pm 2.9\%$, respectively). Participants that did not have prior livestock experience were more accepting of individual housing compared to participants with experience ($49.2 \pm 3.2\%$ vs. $27.3 \pm 1.4\%$, respectively). These findings suggest that females, urban residents, individuals with prior livestock experience, and that know someone in the dairy industry may be less accepting of the individual housing option. Group housing was overwhelmingly preferred by youth (mean \pm SE; $81.1 \pm 3.0\%$), followed by pair ($10.4 \pm 2.5\%$) and individual housing ($8.5 \pm 1.8\%$). Housing preference was not associated with age, gender, pet ownership, or prior visits to a farm. Rural youth more frequently preferred individual housing compared to urban youth ($14.0 \pm 4.5\%$ vs. $5.0 \pm 1.3\%$, respectively). These findings suggest that youth from urban backgrounds may be less accepting of individual housing systems for dairy calves.

Preconditioning Sows with Classical Music to Reduce Aggression in Group Housing

Nicole Lorig, Dr. Kelly George, Dr. Steven Moeller

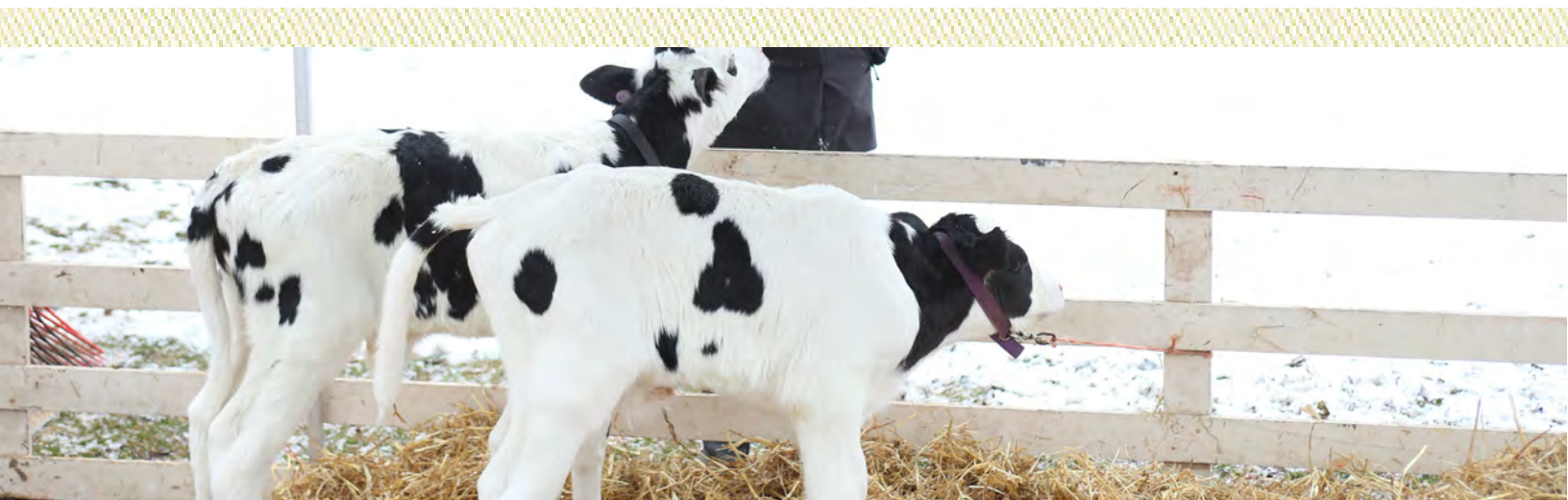
The current study examines the effect of preconditioning with music on aggressive behavior among sows placed in group housing. A group of pregnant American Landrace sows ($n=15$) at The Ohio State University Swine Facility was exposed to 5 minutes of classical music, specifically Mozart's Divertimento no. 7 for 5 days preceding placement into a group pen (music group, $n = 8$). The control group was exposed to 5 minutes of background noise for 5 days preceding placement into the same group pen (no-music group, $n = 7$). During preconditioning, each group was offered 0.5 pounds of feed. It was hypothesized that preconditioning with music would reduce aggressive behaviors (initiating, reciprocating, or avoiding). Based on statistical analysis using Microsoft Excel, there was no significant difference between music and no-music groups in aggression reduction ($p=0.054$). However, results of this study suggest that continued exploration of the use of music prior to or during transition to group housing could minimize aggression related injury. In this case, overall swine welfare can improve with music as a low-cost method of treatment, thereby benefiting the swine industry.

Poster Session Abstract

The effects of a medicinal herbal tincture on dairy calf disbudding pain and stress

Hannah Phillips and Bradley Heins, University of Minnesota, West Central Research and Outreach Center, Morris, MN

Dull It (Dr. Paul's Lab, Mazomanie, WI) is a commonly used medicinal herbal tincture used by organic dairy producers to mitigate pain and stress during medical procedures; however, no scientific evidence exists to validate its efficacy. The objective of this study was to investigate the effects of Dull It, containing organic alcohol, apple cider vinegar, white willow bark, St. John's wort, chamomile, arnica, and fennel, on dairy calf pain and stress from hot iron disbudding. The study was conducted from May to July 2016 on the University of Minnesota West Central Research and Outreach Center (Morris, MN) certified organic dairy research farm. In a randomized complete block design, Holstein and crossbred female calves were housed in groups of 10 (6 groups total) in outdoor super hutches. Nine calves (54 calves total) from a group were randomly assigned to 1 of 3 treatment groups: 1) no treatment and sham (cold hot iron) disbudded (control; $n = 18$); 2) lidocaine cornual nerve block (5 mL/bud) and hot iron disbudded ($n = 18$); or 3) oral administration of Dull It (4 mL) and hot iron disbudded ($n = 18$). Treatment groups were balanced by breed and age. The groups were disbudded on separate days when the youngest calf in the group reached 5 weeks old (ages ranged from 5 to 8 weeks) and calves were disbudded 15 min apart. Blood was collected via jugular catheters 10 min prior to and 1, 30, 90, 210, and 450 min following disbudding for blood serum cortisol analysis. For 4 groups, each calf (36 calves total) was video recorded during disbudding for frequencies of escape behaviors, including vocalizations, kicks, falls, tail wags, head avoidances, forcing ahead, and rears. Temporal behavior was also collected; calves were video recorded 1 hour before to 6 hr after disbudding. For temporal behavior, focal observations were performed on each calf every 20 min after disbudding in 5 min continuous observations. One treatment-blinded observer recorded all behaviors and temporal behavior data was aggregated into 1 hr intervals. A linear regression model was built to analyze the natural log of cortisol and negative binomial regression models were built for each behavior outcome in SAS. Time, treatment, their second order interaction, and group were fixed effects, and calf was a random effect for all models. A repeated measure of time was used for the analysis of cortisol and temporal behaviors. Baseline measures (for cortisol and temporal behaviors) and handling duration (for behavior at disbudding) were used as covariates if $P < 0.10$. Cortisol means were back transformed with 95% confidence intervals. Cortisol increased 1 and 10 min after the disbudding procedure for all treatment groups, indicating that handling alone caused stress. The Dull It group had 1.2 and 3.1 times ($P < 0.05$) greater cortisol at 30 min after disbudding compared to the lidocaine group and the sham group, respectively. The Dull It group (8.3 [6.0 – 11.6] ng/mL) and lidocaine group (5.6 [4.1 – 7.8] ng/mL) had greater ($P < 0.05$) cortisol at 90 min after disbudding compared to the sham group (3.1 [2.3 – 4.3] ng/mL). However, groups had similar cortisol 210 and 450 min after disbudding. Frequencies of escape behaviors during the disbudding procedure were similar between treatment groups. The lidocaine group exhibited 2.8 times ($P < 0.05$) greater frequency of head movements after disbudding compared to the sham group, whereas the Dull It group had a similar frequency of head movements after disbudding compared to the sham group. The lidocaine group (11.0 ± 1.4) and Dull It group (9.2 ± 1.3) exhibited a greater ($P < 0.01$) frequency of ear flicks, per 5 min observation, after disbudding compared to the sham group (4.7 ± 0.7). Durations of lying and ruminating were similar between treatment groups after disbudding. The results of this study show that Dull It may mitigate sustained pain behaviors better than lidocaine following disbudding; however, Dull It did not mitigate acute pain following hot iron disbudding as well as lidocaine.



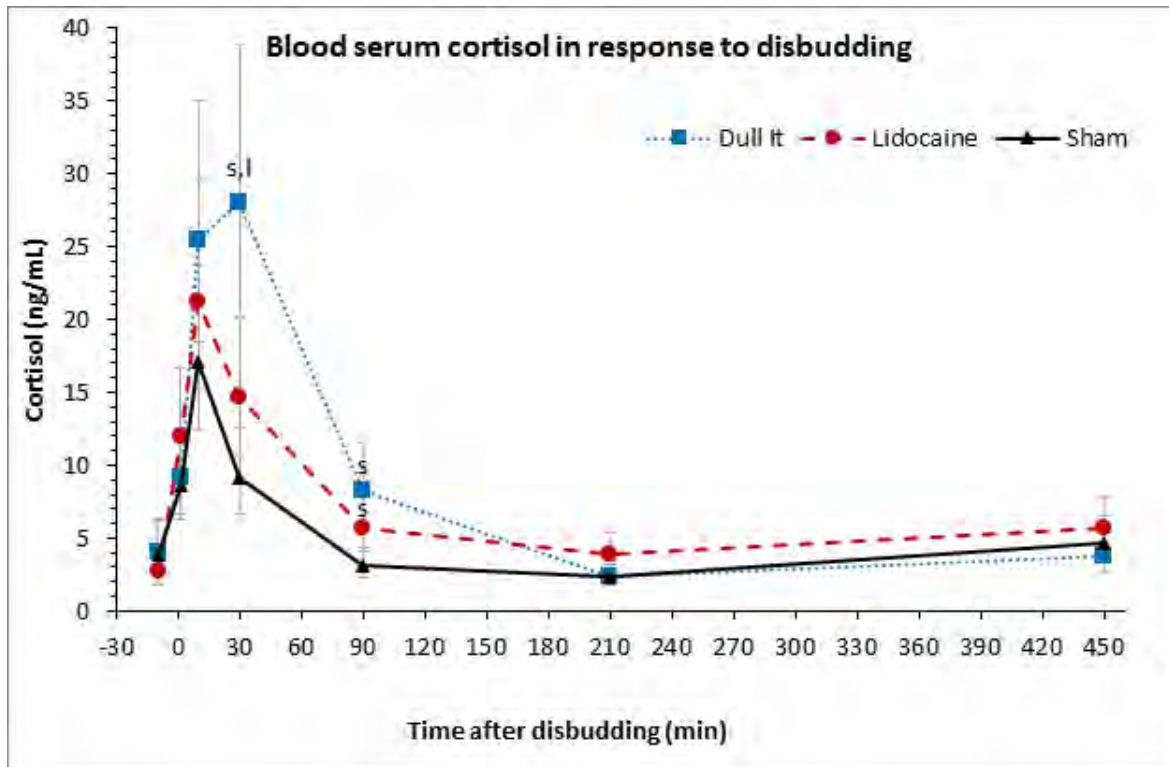
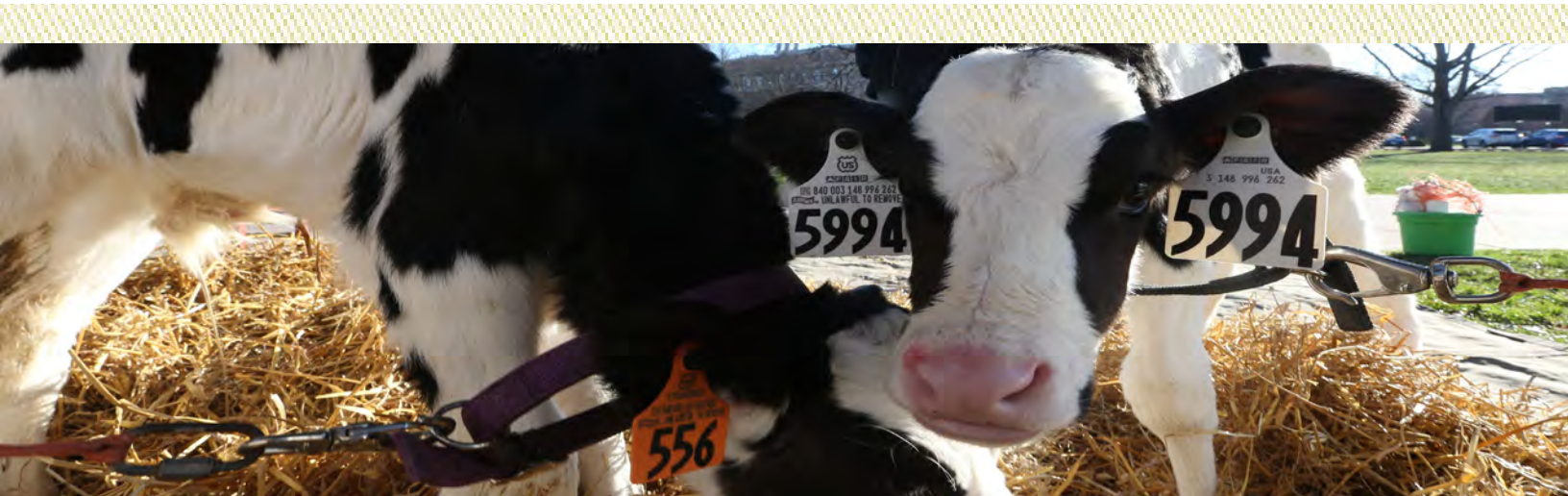


Figure 1. Back transformed means and 95% confidence intervals from natural log of cortisol.

s = treatment group differed from the sham treatment group within a time, $P < 0.05$

l = treatment group differed from the lidocaine treatment group within a time, $P < 0.05$



Interpretation and understanding of equine behavior terminology and Learning Theory in undergraduate students

Chloe Cousineau Wires¹, Brian Allen Talbert¹, Candace Celeste Croney¹, Marguerite E. O'Haire¹, Rhonda Michelle Hoffman², Colleen Michele Brady¹

¹Purdue University, West Lafayette, IN, USA

²Middle Tennessee State University, Murfreesboro, TN, USA

Misreading behavior terminology especially related to Learning Theory (LT) may cause interventions that compromise welfare in even the best-intentioned equestrians. The purpose of this study was to pilot test an instrument exploring undergraduate students' interpretation and understanding of horse behavior terminology and LT. A convenience sample of 46 senior level horse management students completed an online survey containing psychographic questions related to horse industry involvement, 16 videos of horse-human interactions including 7 with heart rate (HR) data, and 11 operant conditioning (OC) scenarios. Data were analyzed with SPSS (Ver. 25) and are reported with descriptive statistics and qualitative thematic analysis. Most students did not currently own or work with a horse (69%) and 59% have never owned a horse. Top roles reported were Student (61%), Horse Enthusiast (50%), and Owner (33%), and top niches were Recreational Riding (36%), Trail (30%), and Western Pleasure (25%). Horses were viewed by students as a companion animal/pet (100%), family member (91%), performance partner (91%), best friend (84%), investment (75%), or livestock (73%). Students defined fear, stress, and reactivity related to fight or flight, and reported physical and psychological factors to identify these behaviors. Of the 17% who correctly defined these terms, 87% did not own a horse and 75% have never owned or worked with a horse. Students related stereotypies to stress (26%) and reactivity (22%), but fewer (4%) recognized these terms as having positive and negative factors. Most (84%) correctly identified resting HR in horses, but indicated knowing HR did not change their interpretation of behaviors in the 7 videos. This suggests a lack of understanding by the students of the potential impact of fear, stress, and reactivity on HR. When asked to define LT, 53% related it to training or teaching horses and 28% included specific LT principles (e.g. habituation, shaping, sensitization, operant and classical conditioning); among them 65% did not own a horse, 56% never owned a horse, and 70% were not working with horses. Horse ownership/experience did not affect ability of undergraduate students to correctly define selected behavior or LT terminology. Students who correctly defined LT (22%) also correctly defined fear, stress, and reactivity. Of the OC principles, most students (97%) correctly identified Positive Reinforcement. Research with this instrument is ongoing across the horse industry to further evaluate interpretation and understanding of behavior terminology and LT.

Student Reports

During the CAWS symposium, working groups composed of academics, industry partners, farmers, students and others were assigned one of 5 topics that were prioritized in the CAST taskforce report as high priorities for the US to address. Student travel awardees served as the scribes for the groups, and were asked to make group presentations describing the content of the discussions. The reports below are summarized products of each working-group discussion. The goal was to bring multiple problem-solving perspectives to each of these “big” problems, and have the students particularly think about how we might more effectively address and communicate about them.



Group 1: Communicating Effectively About Balancing Animal Welfare Against Other Sustainability Considerations for Food Production (Food Security, Affordability, Quality, Safety, Environmental Impacts)

- Olivia Taylor, North Carolina A&T State University
- Madeline Winans, The Ohio State University
- Hannah Phillips, University of Minnesota

Balancing changing animal welfare standards against the financial costs to producers to implement new standards is a challenge. Participants in this group identified possible communication strategies for engaging with producers, policymakers, and the public. The group emphasized the need to include and communicate with traditional stakeholders on discussions involving identifying current and emerging welfare issues and to encourage interdisciplinary research (economists and welfare scientists). Suggestions included communicating with producers through quick, easy to understand, science-based communication such as newsletters, extension communications, and farmer networks. They identified the need to broaden audience communication, suggesting professional technical communications to government and policy-makers. They also recommended better utilizing traditional and social media, and providing animal welfare science information in new venues, such as eco-tourism publications. Additionally, they reiterated the need to continue to push for easy to read product labels for consumers. Suggested benefits of these solutions included providing producers with better animal welfare information and improved consumer support and understanding. The group emphasized that better communication leads to increased animal welfare, more support for it, and the inclusion of additional stakeholders.

Group 2: Communicating Effectively About the Use of Antimicrobials

- Jeri Warner, Tuskegee University
- Emma Bratton, The Ohio State University
- Rachel Fernandez, Florida A&M University

Antimicrobials are routinely used in agriculture. Communicating about the issues surrounding their use, however, is challenging but can improve. The participants in this group identified concerns that need to be addressed in developing communications, such as antimicrobial resistance, eliminating environmental residues, safe food, public understanding of their use in food producing animals, and preventative health measures to reduce their use. Participants identified traditional and non-traditional stakeholders and identified means of communicating with all groups. Possible solutions included communicating more effectively about technology for early disease detection and genetics, developing education and communications through extensions, youth groups (FFA), farmer groups, roundtable discussions, multi-disciplinary forums, and lobbying for improved regulations. Suggested benefits of communicating with all stakeholders included improved animal, human, and ecosystem health, public awareness on antibiotic use and why it is necessary, more consumer comfort in food safety, and better communication along the supply chain.

Group 3: Consumer Issues and Economics Surrounding Welfare

- Nicole Lorig, The Ohio State University
- DeVetta Gallop, Tuskegee University
- Drew Campbell, Virginia Tech

Participants in this group identified a negative public perception of animal treatment in agriculture as the most impactful consumer issue regarding animal welfare and identified communication strategies to help address this perception. The group thought the goal should be to increase the general public's overall knowledge of agriculture, improve the consumer's overall trust and respect for agriculture, and improve consumer confidence in food buying. Participants suggested accomplishing these goals through conferences, extension outreach, universities, news and social media, and increasing the accessibility of farm tours. They also suggested targeting the government with lobbying and providing information to congressional subcommittees to inform policy-making that is in line with consumer expectations on animal welfare and also supports farmers and agriculture. The group noted that more transparent communication about agriculture will build public trust and knowledge which will in turn cause the industries to improve welfare standards and sustain public support through purchasing.

Group 4: Communicating Effectively About Pain

- Jade Werner, The Ohio State University
- Chandler Drumgoole, North Carolina A&T State University
- Mikayla Johnson, Tuskegee University
- Rielle Perttu, University of Minnesota

Participants in this group addressed the issue of pain experienced by production animals. Educating caretakers to recognize pain in animals, how to use analgesics and anesthetics, and when to euthanize to reduce pain were discussed as areas where the animal industries have already made progress. Challenges include economics of pain reduction, not having all the tools necessary to reduce pain, and the need for additional understanding of how animals experience pain. The group felt that improved communication with non-traditional stakeholders such as the consumer/public, policymakers, economists, and some producers would be beneficial. End goals suggested were to bring more attention to animal welfare, encourage policymakers to evaluate and approve additional pain management drugs and tools, and to communicate the importance of implementing these in a way that improves animal welfare and consumer confidence in the end products they purchase.

Group 5: Communicating Effectively About How Genetics, Agricultural Engineering and Technology Impact Animal Welfare

- Camryn Smith, Alcorn State University
- Chelsea Drumgoole, North Carolina A&T
- Yolanda Bradshaw, The Ohio State University

Participants in this group addressed the issue of pain experienced by production animals. Educating caretakers to recognize pain in animals, how to use analgesics and anesthetics, and when to euthanize to reduce pain were discussed as areas where the animal industries have already made progress. Challenges include economics of pain reduction, not having all the tools necessary to reduce pain, and the need for additional understanding of how animals experience pain. The group felt that improved communication with non-traditional stakeholders such as the consumer/public, policymakers, economists, and some producers would be beneficial. End goals suggested were to bring more attention to animal welfare, encourage policymakers to evaluate and approve additional pain management drugs and tools, and to communicate the importance of implementing these in a way that improves animal welfare and consumer confidence in the end products they purchase.



Collaborators and Animal Welfare Mentors

The following professionals volunteered their services as Collaborators and Animal Welfare Mentors:

DR. SARA CRAWFORD
National Pork Board

DR. JENNIFER GRAVLEY BURTON
Veterinarian, Wellness Ecology

DR. JENNIFER WALKER
Danone

DR. TAMEKA PHILLIPS
Developmental & Reproductive Toxicology

DR. KAREN CHRISTENSEN
Tyson Foods

DR. COURTNEY HAYES
University of Illinois - Urbana-Champaign

DR. BETH VENTURA
University of Minnesota

DR. KAMILAH GRANT
Alcorn State University

DR. JANICE SWANSON
Michigan State University

Career Resources

A wide variety of career resources were compiled and published as a google doc at

https://docs.google.com/document/d/1ayrpqlgce5nm8ocdea6n0fttt_ug1tieajjvzlium/edit?usp=sharing_eil&invite=cpahzjic&ts=5cdd76a7

Conference Take Home Messages

Throughout the conference, conference organizers worked alongside the participants and developed the following take home messages that they presented in the closing session. They are:

- Animal welfare is a critical component of safe, sustainable, high quality, affordable food production
- Diverse global and national needs and jobs = growing opportunities to contribute to animal welfare science
- Many needs and challenges to be addressed in animal welfare
- Problem-solving talent; we need more animal welfare scientists and courageous change agents!
- More, better, inclusive collaborations (animal agriculture and veterinary medicine)
- **MULTI-SPECIES NEEDS**
Livestock and poultry • Companion animal • Wild animals in captivity
- **MULTI-DISCIPLINARY EXPERTISE NEEDS**
Behavior • Health (animal and human) • Nutrition • Genetics • Engineering (ag and bio) • Economics • Communications • Ethics • And many others!

Conference Evaluation

Conference organizers developed a conference evaluation form and asked participants to complete one each day. Evaluations asked for information about how the participant heard about the conference, their overall evaluation of the day's activities, whether they felt the conference was meeting their needs, and whether they would attend or recommend the next CAWS Symposium. The same evaluation form was provided to all participants without regard to their affiliation.

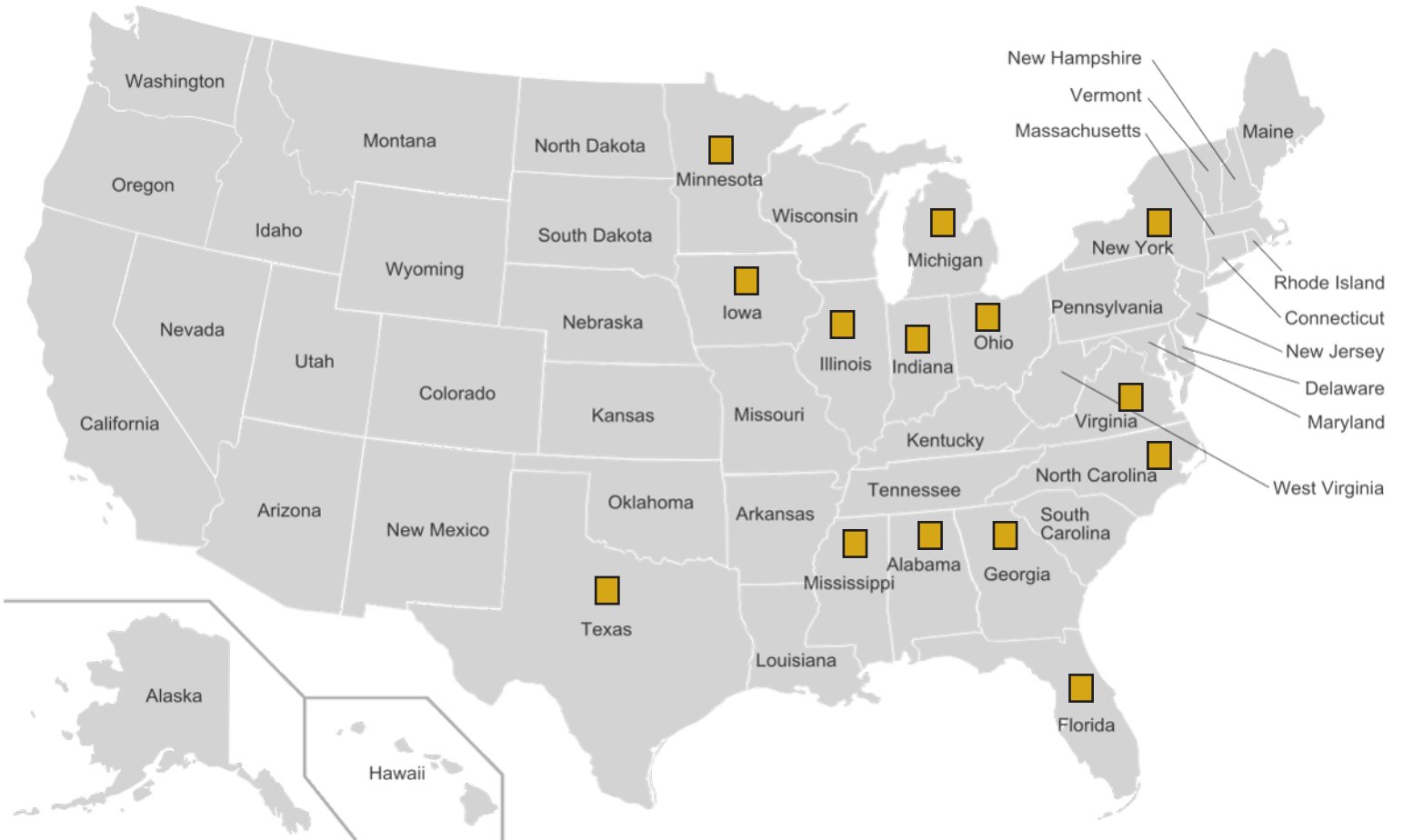
Fifty-one evaluations were completed on Day 1 and 23 on Day 2. Most of the responses indicated that they heard about the conference either through email or personal contact. A few found it on the CAWS website and a few had attended a previous CAWS conference. Overall, 88% of responses indicated that participants were satisfied or highly satisfied with the conference. Eighty-two percent indicated that the conference was meeting their needs and 92% indicated that they were likely to attend or recommend attendance to another conference.

Comments were also solicited and addressed everything from food choices to preferences for individual speakers. Below are a few that were pertinent to the content and format of the conference.

- "Would like more opportunity for discussion/questions after presentations especially with industry people."
- "Event was excellent. A lot of the presenters presented in a very interactive way"
- "Liked the mix of speakers and discussion. Liked the diversity in the room, great to have students not only present but engaged with responsibility."
- "learned a lot of vital information about animal welfare"
- "at times I felt that animal welfare info that was given was not broad enough for me and how it can be used world-wide with those that are in everyday society."
- "today was interesting, well done, and on time."
- "Spontaneous career panel was extremely helpful! Please include it next year."
- "Appreciated the time to work on presentations. Wish we had more time to go back into groups."

Participants by State

 CANADA



UNITED STATES

Number of Participants

Alabama	17
Arkansas	1
Florida	3
Georgia	2
Illinois	7
Indiana	32
Iowa	3
Michigan	1
Minnesota	3
Mississippi	5
New York	1
North Carolina	11
Ohio	10
Texas	3
Virginia	2

CANADA

Number of Participants

British Columbia	1
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Organizers and Presenters



CO-PI

Speaker

OLGA BOLDEN-TILLER, PHD

Associate Professor of Animal Science and Department Head, Tuskegee
CO-PI, Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare
Challenges Grant sponsored by USDA NIFA

Dr. Olga U. Bolden-Tiller serves as the Head of the Department of Agricultural and Environmental Sciences (DAES) as well as the Assistant Dean of Development for the College of Agriculture, Environment and Nutrition Sciences at Tuskegee University (TU). She holds a BS degree in Agricultural Sciences (Animal Sciences) from Fort Valley State University (1997) and a PhD degree in Animal Sciences (Reproductive Biology) from the University of Missouri-Columbia where she matriculated as an USDA-National Needs Fellow. Following her graduate work, Dr. Bolden-Tiller continued her training at the University of Texas-MD Anderson Cancer Center as an NIH Fellow in Reproductive Biology (2002-2005). In 2005, she joined Tuskegee University as an Assistant Professor and was later promoted to Associate Professor (2012). Prior to obtaining her current position, Dr. Bolden-Tiller served as the Coordinator for the Animal, Poultry and Veterinary Sciences Program (2006-2012) as well as the Assistant Chair for DAES (2010-2012). Since 2008, Dr. Bolden-Tiller has served as the Director for the NSF funded Integrative Biosciences Research Experiences for Undergraduates program at Tuskegee University as well as the Director for summer pre-college programs, including AgriTREK (2011-Present), AgDiscovery (2011-Present), SciTREK (2012-Present), FNR-TREK (2015-Present) and DiscoveryTREK (2013-2016).

In addition to her administrative duties described above and teaching duties, which include Introductory Animal Sciences, Reproductive Physiology, Advanced Reproductive Physiology, Lab Animal Management, and Domestic Animal Anatomy and Physiology, Dr. Bolden-Tiller maintains a small, but robust research program that entails elucidating the molecular mechanisms of testicular function in rodents and ruminants. Her research and training programs are funded by the United States Department of Agriculture, the National Science Foundation, and the state of Alabama (Alabama Agricultural Land Grant Alliance). Collectively, Dr. Bolden-Tiller has served as a research mentor for over 50 high school, graduate (MS and PhD) and undergraduate students. She is the author/co-author of numerous of refereed journal articles and conference proceedings. Dr. Bolden-Tiller is an active member of numerous professional societies, serving in leadership roles in many, including the American Society of Animal Sciences, Minorities in Agriculture, Natural Resources and Related Sciences, and the Society for the Study of Reproduction. Dr. Bolden-Tiller has received several awards, including the TU College of Agriculture, Environmental and Natural Sciences' Faculty Performance Award for Service (2008, 2017) and Teaching (2010) as well as the Russell Brown Distinguished Scientist Award (2013). Among several administrative and academic fellowships, she was among the inaugural cohort of the NSF/OURS (Opportunities for Underrepresented Scholars) Fellows (2014) as well as an alumnus of the Lead 21 Program (2014) and in 2016, she completed the 2016 Fielding/Conclave Leadership Academy held in conjunction with the STEM Women of Color Conclave. Dr. Bolden-Tiller is currently completing the Food Systems Leadership Institute.



Speaker

KAREN CHRISTENSEN, MS, PHD

Senior Director Animal Welfare, Tyson Foods

Karen Christensen serves as the Sr. Director of Animal Welfare for Tyson Foods. Prior to Tyson Foods, Karen served on the Center for Excellence in Poultry Science at the University of Arkansas focusing on welfare and broiler production practices. Previous to the University, Karen has worked in many capacities in the broiler industry focusing on the live production side. Karen earned a BS and MS from Washington State University and a PhD in poultry physiology from Mississippi State University.



CO-PI

Speaker

KAULINE CIPRIANI, PHD

Assistant Dean for Inclusive Excellence at the UNC Gillings Global School of Public Health CO-PI, Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges Grant sponsored by USDA NIFA

Dr. Kauline Cipriani is the Assistant Dean for Inclusive Excellence at the UNC Gillings Global School of Public Health and leads the development and implementation of initiatives and strategies to enhance access, diversity, cultural competence and inclusiveness within the School. Dr. Cipriani is also a Clinical Associate Professor in the Public Health Leadership Program where she lectures and facilitates conversations on cultural competence, cultural humility and inclusive leadership. Dr. Cipriani most recently served as the Assistant Dean for Diversity and Inclusion at the College of Veterinary Medicine at Purdue University, where she co-edited *Navigating Diversity and Inclusion in Veterinary Medicine*, the first book of its kind. Her background also includes coordinating academic affairs and diversity initiatives for the Office of the Provost at Purdue.



Speaker

SARA CRAWFORD, PHD

Assistant Vice President, Animal Welfare, National Pork Board

Dr. Sara Crawford is the assistant vice president of animal welfare at the National Pork Board, a position she elevated to in February 2018. Dr. Crawford joined the Pork Checkoff in 2015 and previously led the retail outreach team and sustainability programming as part of the organization's domestic marketing department.

Dr. Crawford has extensive experience in animal sciences, ranging from farm management to quality assurance programs to academia. Prior to joining the Pork Checkoff, Dr. Crawford was a beef and pork vendor specialist for the OSI Group, a provider of food products to many foodservice and retail companies. From 2012 to 2015, Dr. Crawford served as an assistant professor and then department chair of the animal sciences department at Delaware Valley University, Doylestown, Pennsylvania.

She has also led quality assurance and research programs with Mars Petcare U.S., and worked as an intern on retail initiatives and meat merchandising programs with U.S. Meat Export Federation (Tokyo), Certified Angus Beef, LLC, and, in the retail space, the Kroger Company.

Dr. Crawford has a Ph.D. in animal welfare science, her M.S. in genetics and meat science and an undergraduate degree in animal sciences, all from the Ohio State University, Columbus, Ohio. She is Pork Quality Assurance Plus (PQA Plus) and Transport Quality Assurance (TQA) certified, is a Professional Animal Auditor Certification Organization (PAACO) certified swine farm and red meat plant auditor, and a member of the American Society of Animal Sciences (ASAS), and the International Society of Applied Ethology (ISAE).

Organizers and Presenters



PI

Speaker

CANDACE CRONEY, PHD

Director, Center for Animal Welfare Science, Purdue University

Professor, Animal Behavior and Well-Being

PI, Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges Grant sponsored by USDA NIFA

Dr. Candace Croney is director of Purdue University's Center for Animal Welfare Science and professor of animal behavior and well-being in the departments of Comparative Pathobiology and Animal Sciences. She has a PhD in animal sciences from The Pennsylvania State University, USA. Following postdoctoral training at the University of Maryland, College Park, she went on to serve as Assistant Director of Conservation Education at the American Zoo and Aquarium Association and has held faculty appointments in Animal Sciences at Oregon State University and Preventive Medicine at The Ohio State University before joining Purdue University.

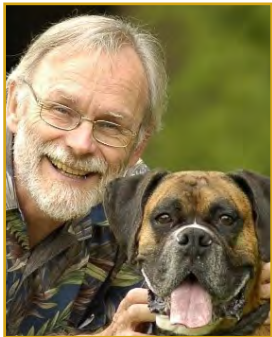


Speaker

BETH FORBES

Science Communication Director, Continuing Lecturer, Purdue University

Beth Forbes is Director of Science Communication and a Continuing Lecturer in the Department of Agricultural Sciences Education and Communication at Purdue University. In her role, she helps faculty, staff and students better communicate science information to the public. She is also an instructor in the Agricultural Communications program and is part of the leadership team for Issues 360, a transformational learning experience in the College of Agriculture that helps students learn how to engage with the public on controversial issues. Previously she was head of the Department of Agricultural Communication and has a long career in communications including media relations and strategic communications.



Keynote
Speaker

DAVID FRASER, PHD

Professor, University of British Columbia

David Fraser has maintained a strong interest in animals throughout his 48-year career of research and teaching in animal welfare and applied animal behavior. In the 1970s he did some of the first research on the welfare of pigs in intensive production systems. He then spent several years in wildlife research and established the role of highway de-icing salt in road accidents involving moose. In the 1980s and 90s he led a team of researchers dealing with the welfare of farm animals. Since 1997 he has been Professor in the Animal Welfare Program of the University of British Columbia in Vancouver. He has served as a scientific advisor to many organizations including the World Organisation for Animal Health (Paris) and the Food and Agriculture Organization of the United Nations.



CO-PI
Speaker

KAMILAH E. GRANT, PHD

Assistant Professor, Center for Biotechnology and Department of Agriculture, Alcorn State University

CO-PI, Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges Grant sponsored by USDA NIFA

Dr. Kamilah E. Grant is currently an Assistant Professor of Animal Science in Biotechnology in the Department of Agriculture at Alcorn State University. She obtained her PhD in Agricultural Life Sciences with a concentration in Genetics from Mississippi State University. She completed both her BS and MS (concentration; reproductive physiology) degrees in Animal and Poultry sciences at TU. Dr. Grant is classically trained as an animal reproductive physiologist. Her expertise and areas of research interest include elucidating fertilizing capability of mature sperm via characterization of molecular components, delineation of the potential roles of proteins, micro RNAs and other molecular components in mature spermatozoa in fertilization, the identification /characterization of molecular markers (microRNA, exosomes, proteins, etc.) of fertility. Dr. Grant teaches and mentors both undergraduate and graduate students in both the Animal Science and Biotechnology degree programs.

Dr. Grant is currently a member of The American Society of Animal Science, Minorities in Agriculture Minorities and Related Sciences, (MANRRS), and the Society for the Study of Reproduction where she serves on the Diversity Committee. Dr. Grant has also remained active with the student focused developmental programs that nurtured her into the researcher she is today.

RADIAH MINOR, PHD

Associate Professor of Animal Sciences, North Carolina A&T State University

CO-PI, Building Capacity to Ensure Innovative Solutions to Emerging Animal Welfare Challenges Grant sponsored by USDA NIFA

Radiah C. Minor, Ph.D., is an Associate Professor of Immunology in the Department of Animal Sciences at North Carolina Agricultural & Technical State University. Dr. Minor is a molecular immunologist with training in cell and molecular biology. She received a B.S. in Biology from Florida A&M University in 1996. In 2005, she earned a Ph.D. from Meharry Medical College completing a dissertation research project, aimed at understanding the role of nuclear factor kappa B/Rel family members in T helper cell differentiation, in the Department of Microbiology and Immunology at Vanderbilt University Medical Center. Before joining the College of Agriculture and Environmental Sciences at North Carolina A&T State University, Dr. Minor completed two post-doctoral fellowships. The first, in the Department of Microbiology and Immunology at Duke University Medical Center and the second in the Laboratory of Respiratory Biology at the National Institutes of Environmental Health Sciences. The long-term goal of the Minor lab or Laboratory of Animal Immune Responses (LAIR) is to find natural methods to promote positive immune responses and support overall health of animals and humans. The LAIR uses in vitro and in vivo models to investigate how dietary supplements and probiotics impact immune response and shape the gut microbiome.

Dr. Minor is passionate about teaching science and exposing students of all ages to STEM. She is an instructor of several graduate and upper - level undergraduate animal health courses and has engaged over 3000 PreK-12 students in hands-on STEM activities and experiments. In 2015 she was awarded the NC A&T University Community Engagement Award for her work with preK-12 students, and in 2018 she was awarded the Outstanding Teacher of the Year Award for the College of Agriculture and Environmental Sciences and the North Carolina A&T State University Board of Governor's Excellence in Teaching Award.



CO-PI
Speaker



PAMALA MORRIS, PHD

Assistant Dean/Director of Multicultural Programs, Purdue University College of Agriculture

Dr. Pamala V. Morris is currently an Assistant Dean/Director of the Office of Multicultural Programs and a Professor in the Department of Agricultural Sciences, Education and Communication, in the College of Agriculture at Purdue University. As a professor, her primary focus is to inform youth and adults, on an international, national and local level, about the changing faces of our global society and to increase their understanding and appreciation of cultural differences and similarities within, among, and between groups. As Dean, she provides leadership in the area of diversity and social justice for faculty, staff, and students in the college. She developed, coordinates and instructs two diversity awareness courses that students can elect to fulfill the college's Multicultural Awareness Requirement. Dr. Morris currently serves as the Project Leader for the national extension's virtual Community of Practice, "Diversity, Equity and Inclusion."

Dr. Morris, in 2002, was awarded the National Award for Diversity by the USDA for the significant impact her diligent work in diversity, international programs and service-learning has made throughout the state of Indiana. In 2015, Dr. Morris became the inaugural recipient of the Purdue University Transformations "Leadership in Diversity" Award in recognition of her accomplishment in making transformative change both within her college, and the field of social justice. She was acknowledged for her innovative and groundbreaking work in curricular development; eXtension – especially the community of practice and online resources.

Dr. Morris also received the 2018 Outstanding Educator Award presented by the North American Colleges and Teachers of Agriculture. The award was presented for her current, innovative, and effective teaching methods; her outreach and engagement related to teaching; her student-related activities for the effective recruitment and retention of Underrepresented Minority Students, both undergraduates and graduates; and her role as the primary advisor for the Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) organization. Her work, in the field of social justice, is considered a model of productivity for the University, the nation, and throughout the world.



Speaker

CHUKWUEMEKA (CHUCK) OKERE, PHD, MIBIOL., CBIOL.

Research Associate Professor, Tuskegee University

Currently Dr. Okere is a Research Associate Professor, Department of Agricultural & Environmental Sciences, Tuskegee University. Dr. Okere's area of expertise is physiology, domestic animal behavior/welfare, and genetic improvement. His research focus at the Caprine Research Unit, George Washington Carver Agricultural Experimental Station is the endocrine basis of sexual behavior in meat goats. Dr. Okere's training in animal science, animal behavior and reproductive physiology assists him in blending these disciplines into a novel field of investigation.

His other research interest is the promotion of sustainable meat goat production systems for limited-resource producers through multi-disciplinary, cutting-edge alternative production system research and technology transfer programs. This program is designed to alter quality characteristics of chevon (goat meat) while maintaining or improving progress on herd performance and productivity.

Okere received B. Agric. and M. Phil (Animal Physiology/Breeding) degrees from Universities of Nigeria and Ife, in addition to a Ph.D. degree in Physiology and Applied Animal Ethology from The University of Guelph, Guelph-Ontario, Canada. He held (2004-2008) a non-tenure track research and teaching appointment as a Senior Research Scientist and Assistant Professor at the Swine Development Centre, School of Agriculture, Research, Extension and Applied Sciences, Alcorn State University, Alcorn State, Mississippi. His previous and related position (2002-2004) was as an Assistant Professor of Animal Science at the School of Agriculture, University of the South Pacific (USP), Samoa. Prior to this, Okere served as a Technical Services Manager (1999-2002) for Genex Swine Group (now Hypor Canada), the largest independent Canadian supplier of swine genetics.



Speaker

RUBY L. PERRY, DVM, MS, DIPLOMATE-ACVR

Dean of the College of Veterinary Medicine, Tuskegee University

Dr. Perry is a graduate of Tuskegee University where she received the BS degree in Animal & Poultry Science in 1976 and the Doctor of Veterinary Medicine (DVM) degree in 1977. She further advanced her graduate career with the M.S. degree in Microbiology from Michigan State University, and the PhD in Educational Leadership from Keiser University. She completed the veterinary radiology residency at Michigan State University and is the first African American female board-certified veterinary radiologist in the American College of Veterinary Radiology (ACVR). She was on faculty at Michigan State University for 20 years and received tenure as an associate professor of veterinary radiology before returning to Tuskegee University in 2007.

Having participated in various leadership programs have afforded her opportunities to serve in a variety of leadership positions. She served as program coordinator for the American College of Veterinary Radiology, section chief of veterinary radiology in the College of Veterinary Medicine at Michigan State University, acting chair of the department of small animal medicine, surgery and radiology at Tuskegee University, interim chief of staff in the office of the president at Tuskegee University, Associate Dean for Academic Affairs at Tuskegee University, Vice-Provost of Undergraduate Education at Tuskegee University, and two-term president of the Tuskegee Veterinary Medical Alumni Association.

Dr. Perry was appointed as interim dean in May of 2014 and dean in May of 2015 in the College of Veterinary Medicine at Tuskegee University.

Organizers and Presenters



LINDA PFEIFFER, PHD

Assistant Professor, Agricultural Sciences Education and Communication, Purdue University

Dr. Pfeiffer's research program is focused on the development of models for the communication of controversial science and science risk. Research at the Pfeiffer lab focuses at the interface of message design and human information processing with the goal of designing risk messages that engage non-science audiences in the reflective processing of complex science. In the classroom she teaches both graduate and undergraduate courses including: Science Communication 58500, Controversial Science and Media in the Public Sphere 35500, and Issues 360, a co-curricular program for training students to meaningfully engage in discussions of controversial science.



KAREN PLAUT, PHD

Glenn W. Sample Dean, Purdue University College of Agriculture

As dean, Dr. Plaut is responsible for administering academic programs in the College of Agriculture, the Indiana Agricultural Experiment Station, the Purdue Cooperative Extension Service and a number of state regulatory services. In addition to her administrative role, Dr. Plaut is also Professor of Animal Sciences and has an active research program in mammary gland biology. Prior to her appointment as dean, she was Senior Associate Dean for Research and Faculty Affairs in the College of Agriculture.

Dr. Plaut received her B.S. in animal science from the University of Vermont, an M.S. in animal nutrition from Pennsylvania State University and a Ph.D. in animal science from Cornell University. Her postdoctoral studies were completed at the National Cancer Institute at NIH. Before coming to Purdue she was on faculty at the University of Vermont and Michigan State University serving as Chair of the Department of Animal Sciences at both institutions. She also spent a few years working with NASA as Lead Scientist for the International Space Station.



WILLIE M. REED, DVM, PHD

Dean, College of Veterinary Medicine, Purdue University

Dr. Willie M. Reed received the DVM degree from Tuskegee University in 1978, and the Ph.D. in Veterinary Pathology from Purdue University in 1982. After receiving his Ph.D., he remained at Purdue as an Assistant Professor of Veterinary Pathology, Chief of the Avian Diseases Diagnostic Service, Assistant Director of the Animal Disease Diagnostic Laboratory, and Associate Professor of Avian Pathology. In 1990, Dr. Reed moved to East Lansing, Michigan, and assumed the position of Professor of Veterinary Pathology, and Director of the Diagnostic Center for Population and Animal Health (DCPAH), College of Veterinary Medicine, Michigan State University. In 1997, he was appointed Chairperson of the Department of Pathobiology and Diagnostic Investigation while continuing to serve as Director of the DCPAH.

Dr. Reed returned to Purdue in January, 2007. His current position is Dean of the College of Veterinary Medicine and Professor of Veterinary Anatomic Pathology. He is a Diplomate of the American College of Veterinary Pathologists, and Charter Diplomate of the American College of Poultry Veterinarians, past president of the American Association of Avian Pathologists, past president of the American Association of Veterinary Laboratory Diagnosticians (AAVLD), and past chair of the American Veterinary Medical Association Council on Research. He has also served on the U.S. Secretary of Agriculture's Advisory Committee on Foreign Animal and Poultry Diseases, and on the U.S. Secretary of Interior's Advisory Committee on Invasive Species. He has also served on the NIH-NCRR Comparative Medicine Review Committee, the C.L. Davis Foundation for the Advancement of Veterinary Pathology Board of Directors, and on the AAVLD Accreditation Committee.

Dr. Reed is the author or co-author of six book chapters and over 200 scientific refereed articles, abstracts, and proceedings in the areas of diagnostic pathology and infectious diseases of birds and mammals. He is an internationally recognized expert in avian pathology, diagnostic medicine, and infectious diseases, and has presented over 100 invited presentations. He has served on numerous special review and advisory committees of the NIH, National Cancer Institute, the USDA, and various state and local agencies.

In 2006, for his work in helping to establish the USDA National Animal Health Laboratory Network (NAHLN), he was awarded the prestigious USDA-APHIS Administrator's Award. He recently completed two terms on the Secretary of Agriculture Committee on Animal Health.

The 2008 E. P. Pope Memorial Award was presented to Dr. Willie Reed on October 26, 2008 during the 51st Annual Meeting of the AAVLD in Greensboro, North Carolina. The Pope Award is the highest award given by the Association and is presented to an individual who has made noteworthy and significant contributions to the Association in regard to implementing and advancing the recognition of the specialty of veterinary diagnostic laboratory medicine.

Dr. Reed is past-President of the Association of American Veterinary Medical Colleges (AAVMC) and served on the American Veterinary Medical Association (AVMA) Member Services Committee.

In 2011, Dr. Reed received the Iverson Bell Diversity & Inclusion Award, Association of American Veterinary Medical Colleges (AAVMC) for his work in advancing diversity in the veterinary profession. Dr. Reed was a recipient of Purdue University's 2015 Dreamer Award. The Dreamer Award, established in 2004, is given annually to an individual or organization within the Purdue community whose contributions embody Dr. Martin Luther King Jr.'s vision of service to others and furthers the university's commitment to diversity.



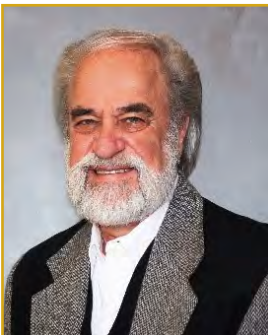
Speaker

GUSTAVO SCHUENEMANN, DVM, MS, PHD

Professor, Extension Veterinarian, Dairy, Department of Veterinary Preventive Medicine, The Ohio State University

Dr. Gustavo M. Schuenemann grew up on his family farm in Argentina and received his Veterinary degree at the Facultad de Ciencias Veterinarias, Universidad Nacional del Centro, Tandil, Buenos Aires, Argentina in 1998. Following graduation, he practiced food-animal medicine (dairy and beef cattle) for three years. Prior to joining to The Ohio State University in July 2008, he worked as a Graduate Research Assistant and completed his Master of Science and Ph.D. with a focus on reproductive physiology from the University of Tennessee in 2004 and 2008, respectively. Since July 2008, Dr. Schuenemann's appointment has been 65% Extension and 35% teaching/research.

Currently, Dr. Schuenemann is a Professor at the Department of Veterinary Preventive Medicine, The Ohio State University. His primary areas of research/teaching include (1) transition cow management with emphasis on health and comfort, (2) dairy personnel performance with emphasis on welfare practices, and (3) user-friendly tools to assist producers and professionals in the decision-making. Also, Gustavo directs three Extension programs for professionals, herd owners/managers, and dairy personnel. He has over 180 publications including research articles, scientific abstracts, proceedings, and Extension articles. Dr. Schuenemann has been invited as a speaker for several scientific conferences, workshops and short courses in USA, Argentina, Mexico, Chile, Uruguay, China, Japan, Germany, Denmark, and Canada and has given over 300 presentations at national and international levels since 2008. Also, Dr. Schuenemann has trained and advised over 45 undergrad/graduate students such as Masters, Doctoral, and Post-Doctoral (22 graduate students and 1 post-doc fellow since 2009) to 6 visiting professionals who have interacted closely with his research and Extension programming.



Speaker

JAN SHEARER, DVM, MS

Professor, Vet Diagnostic & Production Animal Medicine, Iowa State University

Dr. Shearer is Professor Emeritus of the University of Florida's College of Veterinary Medicine and currently serves as Professor and Extension Veterinarian at the Iowa State University College of Veterinary Medicine in Ames, Iowa. His primary areas of research interest are lameness and welfare issues of beef and dairy cattle. He is probably best known for establishing the Master Hoof Care Program, a training program designed to teach on-farm employees how to properly care for foot problems in cattle. This program acquired national and international attention for its impact on foot health in dairy cattle and recognized by the USDA Secretary of Agriculture in 2003 with the Honor Award for outstanding innovation in animal health.

Dr. Shearer is a Diplomate of the American College of Animal Welfare and presently serves as Chair of the Food Animal Working Group of the AVMA's Panel on Euthanasia and as a member of the Panel on Humane Slaughter and Mass Depopulation. He has been honored by the University of Florida with the Superior Accomplishment Award in 2001; The Ohio State University College of Veterinary Medicine with the Distinguished Alumnus Award in 2006; by the American Association of Bovine Practitioners with the Award of Excellence in 2006; and by the AVMA in 2011 as recipient of the AVMA Animal Welfare Award.

Organizers and Presenters



Speaker

JANICE SWANSON, MS, PHD

Professor/Director Animal Welfare Michigan State University

Dr. Janice Swanson is professor and Director of Animal Welfare jointly appointed in the Departments of Animal Science in the College of Agriculture and Natural Resources and Large Animal Clinical Sciences in the College of Veterinary Medicine at Michigan State University since 2007. She coordinates outreach, teaching and research in the area of farm animal welfare with a focus on social responsibility in the food system. Swanson received a PhD from the University of Maryland in Applied Ethology, and a MS and BS in Animal Science from the University of Connecticut. Swanson's career includes five years as a technical information specialist in the U.S.D.A. Animal Welfare Information Center and 15 years on faculty in the Department of Animal Science and Industry at Kansas State University. At Kansas State she taught courses in animal behavior and welfare, conducted outreach, directed the department's international program, and served as the interim department head.

At MSU, Swanson is a member of the Animal Behavior and Welfare Group and served as the chair of the Department of Animal Science from May 2010 through mid-January 2018. In addition to her academic responsibilities, Swanson provides expertise on farm animal care and welfare issues to government, animal production, commodity and food industry stakeholders. Swanson was co-scientific director of the Coalition for a Sustainable Egg Supply study and co-chaired the third edition of the Federation of Animal Science Societies Guide for the Care and Use of Agricultural Animals in Research and Teaching. Since 2007 she has chaired the taskforce for the Michigan Generally Accepted Agricultural and Management Practices for the Care of Farm Animals mandated under the Michigan Animal Industry Act.



Speaker

JUDSON VASCONCELOS, DVM, PHD

Head, Merck Animal Health Veterinary and Consumer Affairs team

The V&CA team supports Merck's partners in the companion animal and livestock industries, academic institutions, and veterinary related associations by identifying key partnership opportunities and sharing relevant research, tools and insights with key stakeholders while encouraging collaboration in areas such as Animal Welfare, Sustainability, Veterinarian Wellness, Consumer Trends and Innovation. The team's projects and initiatives seek to support current and future leaders and to enable more informed decisions in an ever-changing marketplace.

A native of Brazil, Dr. Vasconcelos received his Veterinary Medicine degree from the Universidade Federal de Mato Grosso do Sul in 1998. He started his career working as a beef cattle production consultant until 2002, when he moved to the Texas panhandle to start his graduate studies. He received his M.S. degree in Animal Science from West Texas A&M University in 2003 and his Ph.D. degree in Beef Cattle Nutrition and Management from Texas A&M University in 2006. After his Ph.D., Dr. Vasconcelos worked as a postdoctoral research associate at Texas Tech University before joining the University of Nebraska as an Assistant Professor of Animal Science to conduct beef cattle feedlot nutrition and management research. He is an author of more than 30 peer-reviewed publications on animal nutrition, management and productivity products. Dr. Vasconcelos has been in the Animal Health industry since 2010 and has broad knowledge of the global livestock industry with experience in many different roles in the technical, marketing, academic affairs, and corporate affairs areas of the Global Animal Health and Nutrition industry.

Organizers and Presenters



Speaker

JENNIFER WALKER, DVM, PHD, DIP. ACVPM

Danone North America Director of Milk Quality

A California native, Jennifer earned her BS Animal Science and DVM (2000) from UC Davis. Dr. Jen worked as an associate for four years in a California practice specializing in dairy herd health developing her interests in on-farm education, udder health and animal welfare. In 2010 Dr. Jen completed her PhD in Veterinary Preventive Medicine at The Ohio State University with a minor in University Education.

Dr. Jen served AABP as a member of the Animal Welfare Committee and Ethics Task Force, and as Chair of the castration and dehorning task force. Each of these experiences has given her the opportunity to appreciate the diversity in perspective of practitioners and the inertia in organizations that prevent necessary progress. Dr. Jen also served on the board of the Professional Animal Auditors Organization (PAACO) as Chair and helped lead PAACO through a change in leadership and expansion of the training program. Dr. Jen continues to serve PAACO by volunteering her time in the development and delivery of the Dairy Farm Auditor Certification.

Her most recent endeavor was completing her Master's degree in Animal Welfare Ethics, Policy and Law through the University of Edinburgh where her Master's thesis explored the drivers and barriers of the development of corporate policy on animal welfare.

Dr. Jen spent eight years leading the development of Dean Foods' animal welfare program as Director of Dairy Stewardship. Dr. Jen joined Danone North America as Director of Milk Quality in 2018 and is now responsible for managing milk quality and the development and management of Danone North America's animal welfare program.



Speaker

NICOLE WIDMAR, PHD

Professor, Agricultural Economics, Purdue University

Dr. Nicole Widmar is a Professor of Agricultural Economics and the Associate Head and Graduate Program Chair for the Department of Agricultural Economics. Dr. Widmar participates in interdisciplinary research ranging from providing support for on-farm decision making regarding technology adoption to assessing food purchasing decisions by consumers with varying tastes and preferences. Widely recognized for expertise in collecting and analyzing survey-based data, Dr. Widmar has recently begun integrating data from social media and other Web-sources into her research. Her most recent work integrates insights from large datasets - including those developed from social media spaces - into agricultural and food markets.

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