American Association of Extension Veterinarians
21st Annual Applied Animal and Public Health Research and Extension Symposium

3:00PM – 6:00PM (Central US Time) Sunday, November 2, 2025
Location: Redrock 2-3
Chairs: Drs. Tyler Jumper and Kathy Whitman

Agenda

3:00-3:05 - Introduction	**Intro to the AAEV Symposium** Carla Huston, AAEV Treasurer
3:05-3:20 – Presentation 3:20-3:25 – Q&A	**Safety and health management planning for veterinarians: Advancing Safety First Leadership through Extension Education** Kerry Rood
3:25-3:40 – Presentation 3:40-3:45 – Q&A	**Enhancing U.S. Preparedness for Detecting Exotic Arthropods of Veterinary Importance** Jenna Bjork
3:45-4:00 – Presentation 4:00-4:05 – Q&A	**Optimizing vector capture methods on beef cow-calf farms in Mississippi** Keegan Jones *Recipient of AAEV Student Travel Award*
4:05-4:20 – Presentation 4:20-4:25 – Q&A	**Evaluating the efficacy of the Butterfly iQ3TM in diagnosing lung lesion outcomes in pre-weaned dairy calves** Sabrina Cedillos *Recipient of AAEV Student Travel Award*
4:25-4:40	**Break**
4:40-4:55 – Presentation 4:55-5:00 – Q&A	**Developing and delivering education and outreach to U.S. beef producers, veterinarians, and transporters about the Secure Beef Supply Plan to further industry preparedness for Foot and Mouth Disease** Julia Herman
5:00-5:15 – Presentation 5:15-5:20 – Q&A	**Development of an All-Hazards Emergency Management Playbook for Animal Health** Ana Bertozzi
5:20-5:35 – Presentation 5:35-5:40 – Q&A	**Optimizing extension materials for mitigating the risk of the H5N1 Bird Flu virus on dairy farms through neuromarketing science** Diego Manriquez
5:40-5:55 – Presentation 5:55-6:00 – Q&A	**Enhancing Collaboration and Reducing Burnout in Rural Food Animal Veterinary Practice through Problem-Solving Training** Lauren Cline

We look forward to you joining us at the 22nd Annual AAEV Symposium in October 2026 in Madison, WI.

SAFETY AND HEALTH MANAGEMENT PLANNING FOR VETERINARIANS:
Advancing Safety-First Leadership through Extension Education

K. A. Rood, MS, DVM, MPH, DACVPM[1], J. Salter, DVM, MPH, DACVPM[2], and M. Pate, PhD[2]

[1]Utah State University College of Veterinary Medicine, Logan, UT; [2]Wasatch Animal Clinic, Heber City, UT; [3]Utah State University S.J. and Jessie E. Quinney College of Agriculture and Natural Resources, Logan, UT

Occupational injury rates in veterinary medicine remain troubling: 12% of veterinary service professionals experienced a work-related injury in 2016 and the profession averages three fatalities each year. Evidence from a 2019 peer-reviewed survey of Utah clinical veterinarians showed that 67% of practitioners who routinely performed rectal palpations reported musculoskeletal injuries, and 22% had recently contracted a zoonotic infection despite low PPE use, underscoring persistent risk gaps. Animal-handling sectors also rank among America's most hazardous industries, with 20 fatalities per 100 000 agricultural workers recorded in 2021. Building on the previously AAEV reported initiative that empowered veterinarians to model "Safety-First" leadership in rural practice, we developed and institutionally approved Safety and Health Management Planning for Veterinarians curriculum – a seven-unit, evidence-based curriculum designed to embed occupational safety into everyday clinical decision-making. Core units address: (1) establishing a safety culture; (2) transformational versus transactional safety leadership; (3) systematic hazard identification; (4) qualitative and quantitative risk assessment; (5) prevention and control strategies using the Hierarchy of Controls and Haddon Matrix; (6) employee engagement through tailgate and pre-task training; and (7) program evaluation and continuous improvement. Four applied appendices (hazard-identification worksheet, job-safety-analysis template, risk-ranking matrix, and Haddon Matrix guide) facilitate immediate field adoption. To expand reach, the curriculum is now available as a self-paced online extension course that confers 3 hours of continuing-education credit approved by the Utah Veterinary Medical Association (https://extensioncourses.usu.edu/product/safety-and-health-management-planning-for-veterinarians/). Preliminary participant feedback highlights high relevance and intention to implement new safety protocols. By equipping veterinarians with leadership, risk-assessment, and employee-engagement competencies, this program seeks to reduce injury incidence and foster a sustainable culture of safety in veterinary practice.

Enhancing U.S. Preparedness for Detecting Exotic Arthropods of Veterinary Importance

J. Bjork, DVM, MPH

Center for Food Security and Public Health (CFSPH), Iowa State University

Arthropods (e.g., ticks, mosquitoes, and mites) are important vectors of human and animal concern. More specifically, several endemic and exotic arthropods can cause diseases of livestock, poultry, and honeybees, threaten animal health and productivity, and potentially impact agricultural industries across the United States. Prompt detection and identification of arthropods is crucial for a rapid response since vectors and vector borne diseases are difficult, if not impossible, to eradicate once established. Veterinary personnel and producers are the first line of defense in detecting and diagnosing a foreign animal disease. The quicker they can recognize a threat and contact authorities for prompt and appropriate submission of specimens, the sooner a response can begin for implementing prevention and control efforts. Since identification of arthropods can be difficult, even when specimens are collected in good condition, animal health professionals should know how to recognize arthropods of concern, submit samples using proper storage and handling procedures, as well as locate appropriate laboratories (and their unique submission requirements) for arthropod identification and/or pathogen testing. Through a project funded by USDA's National Animal Disease Preparedness and Response Program (NADPRP), new online resources will improve detection of arthropods and arthropod-borne diseases and guide users on how to submit arthropod samples for accurate identification and disease diagnosis. This project has involved conducting a nation-wide survey of veterinary personnel and animal owners (n=1,016 responses) to better understand what types of resources are needed. While respondents reported high frequencies of arthropod encounters, only 26% had ever submitted an arthropod for identification and/or testing. Of the 622 respondents who had never submitted an arthropod, over half reported not doing so because they were unaware of the service or did not have any encounters with an unusual arthropod. The project's final deliverable will be available soon as a web-based resource library ("one stop shop") that compiles trustworthy resources on arthropods of veterinary importance across the United States and showcases how to collect, secure, store, and ship arthropod specimens.

Optimizing vector capture methods on beef cow-calf farms in Mississippi

K.M. Jones, W. I. Jumper, D. R. Smith

Mississippi State University College of Veterinary Medicine – Department of Pathobiology and Population Medicine

Per the 2020 USDA-ARS Animal Health National Survey, 34% of beef producers identified bovine anaplasmosis (BA) as a top 5 important animal disease. Diagnosis of subclinical BA and estimation of herd seroprevalence, which may be used to support evidence-based use of antimicrobials, relies on blood samples that may be costly and time-consuming to obtain. We aim to evaluate the utility of a proxy-testing strategy using vector species (*Dermacentor* ticks or tabanids) collected on-farm to classify BA herd seroprevalence. Optimal methods of vector collection from cattle farms in MS have not been described. The objectives of this study are to evaluate the feasibility of on-farm vector capture methods and to determine optimal timing and techniques for capture. From April-October 2024, we collected vectors from 5 beef cattle herds across Mississippi using drag cloths and H-traps. The proportion of successful captures per month, species, and trap environments were evaluated. 33 *Dermacentor variabilis* (DV) ticks and 110 tabanids were collected. Tabanids were captured at all sites with a per day trap success rate of 31.7% while DV were captured at 3/5 sites with a drag success rate of 9.4%. Tabanid captures were highest from May-September while DV captures were highest from May-August. Pearson's chi-squared test demonstrated no significant difference in tabanid capture rate among trap environments (p = 0.259). Tabanids are a favorable candidate for proxy testing, with an optimal collection period in Mississippi from late spring through summer. There is not evidence that within-pasture location of traps influences tabanid capture success.

Evaluating the efficacy of the Butterfly iQ3™ in diagnosing lung lesion outcomes in pre-weaned dairy calves

S. Cedillos, K. Aharon, S. Raabis, K. Whitman

Colorado State University CVMBS, Fort Collins, CO

Bovine Respiratory Disease (BRD) remains a major cause of morbidity and economic loss in dairy production. Point-of-care thoracic ultrasound (POCTUS) is a practical, non-invasive diagnostic tool for BRD. The Butterfly iQ3TM probe employs chip-based technology rather than crystals, offering durability, smartphone integration, and cloud-based storage. Compared to other ultrasound units, it is more affordable and portable, making it useful for veterinarians and producers. This study evaluates the efficacy of the Butterfly iQ3TM in detecting comet tails and lung consolidation in pre-weaned dairy calves. Twenty calves from a local dairy were enrolled between two and seven days of age, selected based on clinical signs, Wisconsin Calf Health Scorer results, and successful passive transfer confirmed via serum total protein. POCTUS was performed weekly until weaning. Independent and merging comet tails, as well as lung consolidations ≥1 cm, were recorded at each lung lobe. Wisconsin Calf Lung Ultrasound and Feitoza et al. (2024) scores were calculated. Comet tails were most frequently observed in the right middle lung lobe, while no lobes showed consolidation ≥1 cm. The average number of independent comet tails increased over time. The Butterfly iQ3TM was convenient in the field, though its wide footprint sometimes limited access to intercostal spaces. Screen glare and smartphone overheating were additional challenges. Findings suggest comet tails are common in pre-weaned calves and may represent a risk factor for subclinical pneumonia. POCTUS appears feasible for field diagnosis, and ongoing data collection will determine whether comet tail prevalence correlates with pneumonia at weaning. Future directions include validating the Wisconsin Calf Health Scorer for early BRD detection. Standardized use of this tool may improve communication between calf workers and veterinarians in assessing clinical signs and guiding treatment.

Developing and delivering education and outreach to U.S. beef producers, veterinarians, and transporters about the Secure Beef Supply Plan to further industry preparedness for Foot and Mouth Disease

J. Herman[1], D. Bickett-Weddle[2], M. Clowser[1], K. Simmons[3]

[1]National Cattlemen's Beef Association, Centennial, CO; [2]Preventalytics, Ames, IA; [3]National Cattlemen's Beef Association, Washington D.C.

The Secure Beef Supply (SBS) Plan for Continuity of Business provides opportunities for U.S. cattle industry stakeholders to voluntarily prepare before a foot and mouth disease (FMD) outbreak. Producer education can reach additional cattle producers, veterinarians, and transporters about the components of an SBS plan. This project was funded by the USDA National Animal Disease Preparedness and Response Program from May 2023 through November 2025 to improve educational resources for SBS. An advisory group of cattle producers and influencers from all cattle sectors conducted a gap analysis of current SBS resources. New resources were created for cattle industry stakeholders, such as handouts, videos, social media tools, and presentations, and have been distributed through train-the-trainer programs and posted on the SBS website. Some resources were created with specific sectors in mind such as cow/calf, stocker/backgrounder, feedlot, and livestock hauler/transporter. Streamlining educational information on the SBS website with industry education programs provides consistent and up-to-date information for cattle producers and veterinarians. Preventive planning and disease preparedness prior to an FMD outbreak requires collaboration from the producer to private veterinarians to state animal health officials. These resources will help all tiers of cattle caretakers in biosecurity planning and disease preparedness, seeking to mitigate as much business continuity issues during a potential FMD outbreak.

Development of an All-Hazards Emergency Management Playbook for Animal Health

A. Bertozzi[1], D. Frazen[2], K.J. Whitman[1]

[1]College of Veterinary Medicine and Biomedical Sciences, Fort Collins, CO 80523
[2]Colorado Department of Agriculture, Broomfield, CO 80021

Natural disasters affect both humans and animals, but emergency managers are often tasked with livestock care despite limited training in their unique needs. While veterinary response teams—such as the National Veterinary Response Teams (NVRT) and the AVMA Veterinary Medical Assistance Teams (VMAT)—may be deployed, their arrival is frequently delayed. This leaves on-site teams to manage livestock without direct veterinary support at the onset of a disaster. To address this gap, a practical, evidence-based playbook was developed through literature review, consultation with subject-matter experts, and analysis of past operational challenges. The playbook offers guidance for integrating livestock into disaster response operations, with emphasis on recognizing when animals require medical attention and providing tools to address basic animal health concerns. Key components include control points for safe animal handling, animal evacuation, shelter intake, biosecurity, and general animal management. The playbook is organized as a generalized emergency response timeline divided by operational periods, and offers species-specific considerations for livestock affected by fire, flood, extreme heat, and extreme cold. Quick reference sheets for each disaster type are included to enhance efficiency during an operational response. By establishing baseline understanding and documenting best management practices, this playbook supports emergency managers and first responders in safeguarding livestock health and safety during disasters. Ultimately, the playbook strengthens community resilience by bridging the gap between emergency management and veterinary expertise.

Optimizing extension materials for mitigating the risk of the H5N1 Bird Flu virus on dairy farms through neuromarketing science

D. Manriquez[1], Y-I. Lee[2], and P. Bolls[2]

[1]AgNext, Department of Animal Sciences Colorado State University. [2]Morrow College of Communication, Washington University.

This study aimed to generate actionable insights for optimizing educational materials to mitigate the risk of H5N1 on dairy farms, using neuromarketing measures of short- and long-term memory and learning. As part of the EXCITE program, bilingual resources were developed to synthesize information about the H5N1 outbreak affecting dairy farms nationwide. Educational content addressed virus characteristics, transmission pathways, prevention and control strategies, exposure levels by task, and recommended personal protective equipment (PPE) for dairy workers and extension professionals.

Materials tested included fact sheets, social media posts, and a dedicated H5N1 informational website, all available in English and Spanish. In summer 2025, 37 participants were recruited: dairy owners and workers from three Northern Colorado farms (n = 31), and dairy scientists from Colorado State University (n = 6). Of these, 24 engaged with Spanish-language content and 13 with English-language content. Participants were fitted with physiological sensors to measure eye tracking, heart rate, skin conductance, and facial electromyography in the corrugator muscle region. These metrics assessed emotional responses and engagement, linked to memory indicators. Self-reported questionnaires provided qualitative feedback.

Findings revealed that visual icons and infographics were more effective than real photographs. Text related to milk testing and the impact of H5N1 on animals generated strong emotional engagement. Layouts with clearly sectioned text boxes, concise phrasing, and column formatting improved readability and retention. Communication around PPE use was generally less effective, though the "protection pyramid" graphic was the most engaging. These insights will guide the refinement of future educational and extension materials, tailored to the cultural, linguistic, and literacy diversity of the dairy workforce. Our overarching goal is to enhance learning outcomes and improve H5N1 risk mitigation across the dairy industry.

Enhancing Collaboration and Reducing Burnout in Rural Food Animal Veterinary Practice through Problem-Solving Training

J.S. Butler, L.L. Cline, R. Biggs, B. Coleman

Oklahoma State University

The shortage of food animal veterinarians in rural U.S. communities poses a significant challenge to maintaining a healthy and secure food supply. Contributing factors include high levels of stress and burnout, which hinder retention in rural veterinary practices. In response to these challenges, the veterinary profession has recognized the importance of leadership development to prepare veterinarians for success in complex, team-based environments. This study explored the impact of collaborative problem-solving training, grounded in Kirton's Adaption-Innovation Theory (KAI), on veterinarians working in a rural food animal practice. KAI emphasizes cognitive diversity in problem-solving styles (i.e., how people approach solving problems) and offers a framework for improving team dynamics and adaptability.

Rural veterinarians from a multi-clinic practice participated in KAI training with a state Extension specialist and were interviewed individually and in a focus group at least three months after the intervention. Nine themes emerged to describe the impact of the training for participants: (1) revolutionary experience, (2) self-awareness for collaboration, (3) improved communication, (4) transformed leadership and partnership, (5) coping behavior reflection, (6) relationship dynamics, (7) stress and burnout, (8) non-technical skill development, and (9) valuing adaptiveness.

The veterinarians reported KAI training enhanced their ability to collaborate and communicate effectively, leading to reduced reliance on coping behaviors and significantly decreased stress. These improvements contributed to a more supportive workplace culture and increased job satisfaction in the practice. The practice owners observed such positive impacts from the KAI training that they expanded it across their entire team, including office management and clinic staff, reinforcing a culture of collaboration and shared leadership throughout the practice. By fostering adaptive leadership through cognitive flexibility, rural veterinary practices can better retain staff, reduce burnout, and improve team cohesion.

The findings underscore the importance of non-technical skills, particularly cognitive diversity awareness and adaptive leadership, in addressing rural veterinary workforce challenges. This work offers practical insights and a scalable model for Extension veterinarians, educators, and public health professionals seeking to improve retention and resilience in rural practices. It also highlights the need for broader integration of leadership and collaboration training in veterinary education and continuing professional development.