



## **25th Symposium of the Equine Science Society**

May 30–June 2, 2017  
Minneapolis, Minnesota

### **PROGRAM**

**UNIVERSITY OF MINNESOTA**

*Hosted by the University of Minnesota*



# Table of Contents

Officers and Board of Directors . . . . .	2
Standing Committees. . . . .	2
Presentation Information . . . . .	3
Other Information . . . . .	4
Event Schedule. . . . .	5
Maps . . . . .	8
Scientific Sessions . . . . .	10
Tuesday, May 30 . . . . .	10
Wednesday, May 31 . . . . .	10
Oral Presentations. . . . .	10
Poster Presentations . . . . .	16
Oral Presentations. . . . .	18
Other Events . . . . .	20
Thursday, June 1 . . . . .	21
Workshops . . . . .	21
Other Events . . . . .	21
Friday, June 2. . . . .	22
Poster Presentations . . . . .	22
Oral Presentations. . . . .	24
Other Events . . . . .	28
Awards . . . . .	29
Sponsors . . . . .	30

# 2015–2017 Equine Science Society

## Officers and Board of Directors

President – Lori K. Warren, *University of Florida*  
Vice President – Kenneth H. McKeever, *Rutgers University*  
Secretary/Treasurer – W. Burton Staniar, *Pennsylvania State University*  
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Director (2021) – Amy Burke, *University of Maryland*  
Director (2021) – Krishona Martinson, *University of Minnesota*  
Graduate Student Director (2017) – Tayler Hansen, *University of Florida*  
Executive Secretary – Robert J. Coleman, *University of Kentucky*

## Standing Committees

### **Program Chair**

Kenneth H. McKeever, *Rutgers University*

### **Host Committee**

Krishona Martinson (Chair), *University of Minnesota*  
Harlan Anderson, *Square Meal Feeds*  
Marcia Hathaway, *University of Minnesota*  
Roy Johnson, *Cargill*  
Jon Koeberl, *Big Gain*  
Connie Larson, *Zinpro Corporation*  
Molly McCue, *University of Minnesota*  
Rachel Mottet, *Purina*  
Randy Raub, *Alltech*  
Danielle Smarsh, *University of Wisconsin–River Falls*  
Tom Tweeten, *Minnesota Horse Council*

### **Equine Bioscience**

Carolyn Hammer (Chair), *North Dakota State University*  
Kimberly Cole, *Ohio State University*  
Mary Beth Gordon, *Purina Animal Nutrition*  
Jessica Suagee-Bedore, *Ohio State University–Wooster*  
Amanda Adams, *University of Kentucky*  
Amy Biddle, *University of Delaware*

### **Exercise Science**

Kris Hiney (Chair), *Oklahoma State University*  
Kylee Duberstein, *University of Georgia*  
Danielle Smarsh, *University of Wisconsin–River Falls*  
Sarah White, *Texas A&M University*

### **Production and Management**

Krishona Martinson (Chair), *University of Minnesota*  
Kristine Vernon, *Clemson University*  
Bridgett McIntosh, *Virginia Tech*  
Marcia Hathaway, *University of Minnesota*  
Carissa Wickens, *University of Florida*  
Emily Glunk, *Montana State University*

### **Nutrition**

Shannon Pratt-Phillips (Chair), *North Carolina State University*  
Holly Spooner, *Middle Tennessee State University*  
Patty Graham-Thiers, *Emory & Henry College*  
James Lattimer, *Kansas State University*  
Kristine Urschel, *University of Kentucky*  
Debra Powell, *Saint Mary-of-the-Woods College*

### **Genetics**

Samantha Brooks (Chair), *University of Florida*  
Rebecca Bellone, *University of California–Davis*  
Jessica Petersen, *University of Nebraska–Lincoln*  
Stephen Coleman, *Colorado State University*

### **Reproductive Physiology**

Clay Cavinder (Chair), *Mississippi State University*  
Rebecca Bott, *South Dakota State University*  
Gary Webb, *Missouri State University*  
Robert Jacobs, *Purina Animal Nutrition*

### **Teaching and Extension**

Karen Waite (Chair), *Michigan State University*  
Dean Jousan, *Mississippi State University*  
Betsy Greene, *University of Arizona*  
Colleen Brady, *Purdue University*  
Sara Tanner-Mastellar, *South Dakota State University*

### **Finance/Fund Raising**

Bob Coleman (Chair), *University of Kentucky*  
Krishona Martinson (Ex officio), *University of Minnesota*  
W. Burton Staniar (Ex officio), *Pennsylvania State University*

### **Nominating Committee**

Brian Nielsen (Chair), *Michigan State University*  
Tania Cubitt, *Performance Horse Nutrition*  
Dennis Sigler, *Texas A&M University*  
Karen Davison, *Purina Animal Nutrition*

### **Society Awards**

Don Thompson (Chair), *Louisiana State University*  
Betsy Wagner, *Auburn University*  
Ginger Rich, *Rich Equine Nutritional Consulting*  
Kathleen Anderson, *University of Nebraska–Lincoln*

### **Student Competition**

Karen Wimbush (Chair), *Ohio State University–ATI*  
C. A. Shea Porr, *Murray State University*  
Janice Holland, *Midway University*

# Presentation Information

## Oral Presentations

The scheduled time for oral presentation of each abstract is 12 minutes, followed by 3 minutes for questions, discussion, and speaker transition.

Presentations should be prepared in Microsoft PowerPoint (version 2010 or later) and be PC compatible. Presentations should be saved on a USB drive for on-site uploading to a conference computer.

Each session room will be equipped with a laptop computer (PC), LCD projector, and podium. Most rooms will also have fixed microphones. With the exception of invited speakers, the use of personal computers is not permitted in session rooms.

Two rooms are available for presenter practice: **Cardinal Perch** and **Eagle's Nest**. Rooms are equipped with an LCD projector, but you will need to provide your own laptop computer.

## On-Site Upload

Presentation upload will take place in the **Blue Heron Colony** room. Presentations can be uploaded on Tuesday, May 30, from 2:00–8:00 pm, or on Wednesday, May 31, from 7:00 am–5:00 pm.

**Presentation files must be uploaded to a conference computer at least one day prior to the scheduled presentation.** See the schedule below for upload deadlines:

Date of Scheduled Presentation:	Deadline for Presentation Upload:
Wednesday, May 31	Tuesday, May 30 by 8:00 pm
Friday, June 2	Wednesday, May 31 by 5:00 pm

Please note that presentations will not be accepted, nor can they be modified, in the session rooms. Additionally, no presentations will be loaded while the session is in progress, between presentations, or during breaks.

## Poster Presentations

Posters will be displayed in the **Riverside** room, located on the first floor. **Each poster will have an assigned board and will be sharing the board with another poster;** please look for the poster number (same as the abstract number) as noted in this program to locate your board. Push pins for attaching posters to boards will be provided.

Posters should be **displayed by 12:00 pm on Wednesday, May 31**, and remain on display for the entire meeting. Posters should be removed by 5:00 pm on Friday, June 2 (any left behind will be discarded).

At the 2017 symposium, there will be two poster sessions divided by section:

Poster Session 1: Wednesday, May 31, 1:30–3:00 pm—*Exercise Science, Nutrition, Teaching and Extension*

Poster Session 2: Friday, June 2, 9:00–10:30 am—*Equine Biosciences, Genetics, Reproductive Physiology, Production and Management*

Refer to the program listing to confirm which session your poster was assigned to. **An author must be present at the poster during the assigned session.**

# Other Information

## Wi-Fi Password

Complimentary access to the internet is available in the meeting rooms. To access the internet while in any of the meeting rooms, select the network labeled "Hilton Meetings" on your Wi-Fi enabled device. To fully activate the connection, open your web browser and enter a public webpage address. Your browser should automatically re-direct to the Hilton Meetings login page. The case-sensitive password for the Symposium is: ESS

## Announcements Board

An announcement board has been placed near the Meeting Registration Desk (2nd floor). A portion of the announcement board has been reserved for posting of official communications. The remainder of the board can be used by ESS members to post job advertisements, meeting announcements, and other communications and queries.

Several documents that will be discussed at the 2017 ESS General Business Meeting will be available on the announcement board, as well as on the Society website ([www.equinescience.org](http://www.equinescience.org)) and/or Symposium website ([www.equinescience.org/2017](http://www.equinescience.org/2017)). Voting members should review these documents before the 2017 ESS Business Meeting on June 2. The following documents will be available on the announcement board for public viewing:

1. Minutes of the 2015 General Business Meeting
2. Proposed revisions to the Equine Science Society Constitution and By-Laws
3. Biographies of Board of Director nominees

## Extra Meeting Rooms are Available

Several small rooms are available to ESS members for external meetings during the Symposium. Groups can check on room availability and reserve a room using the sign-up sheet posted to the announcement board located near the Meeting Registration Desk (2nd floor).

Rooms include: Hawk's Ridge, Mallard Point, and Owl Overlook. Hawk's Ridge and Mallard Point are set up conference-style and can accommodate approximately 20 people. Owl Overlook is set up classroom style, and can accommodate approximately 30 people. The extra meeting rooms are not equipped with screens, projectors, or computers. Room usage is free of charge; however, any costs incurred to alter room set-up must be paid by the user.

# Event Schedule

## Tuesday, May 30

2:00–5:00 pm	ESS Board of Directors Meeting . . . . .	Executive Boardroom
2:00–8:00 pm	Conference Registration Open . . . . .	Meeting Registration Desk (2nd floor)
2:00–8:00 pm	Put up posters ( <i>*must be displayed by Wed at 12:00 pm</i> ). . . . .	Riverside (1st floor)
2:00–8:00 pm	Presentation upload ( <i>*Wed or Fri presentations</i> ) . . . . .	Blue Heron Colony
2:00–8:00 pm	Presenter practice rooms available . . . . .	Cardinal Perch and Eagle’s Nest
5:00–7:00 pm	<b>Opening Reception</b> . . . . .	Minnesota Valley Foyer
7:00 pm	<b>Welcome</b> . . . . .	Minnesota Valley Ballroom
7:15–8:15 pm	<b>Invited Speaker: Equine Biosciences</b> Dr. Liara Gonzalez— <i>Alterations in Intestinal Permeability: The Role of the “Leaky Gut” in Health and Disease.</i> . . . . .	Minnesota Valley Ballroom

## Wednesday, May 31

6:30–8:00 am	Breakfast ( <i>*optional ticketed event</i> ) . . . . .	Red Fox Den
7:00 am–5:00 pm	Conference Registration Open . . . . .	Meeting Registration Desk
7:00 am–12:00 pm	Put up posters ( <i>*must be displayed by 12:00 pm</i> ). . . . .	Riverside (1st floor)
7:00 am–5:00 pm	Presentation upload ( <i>*Friday presentations due by 5:00 pm</i> ) . . . . .	Blue Heron Colony
7:00 am–8:00 pm	Presenter practice rooms available . . . . .	Cardinal Perch and Eagle’s Nest
8:00–9:45 am	Exercise Science: Graduate Student Competition . . . . .	Wood Duck Pond
8:00–9:30 am	Genetics: Graduate Student Competition . . . . .	Minnesota Valley Ballroom IV
8:00–9:45 am	Nutrition: Graduate Student Competition . . . . .	Minnesota Valley Ballroom II–III
8:00–9:45 am	Reproductive Physiology: Graduate Student Competition . . . . .	Minnesota Valley Ballroom I
8:00–9:45 am	Undergraduate Student Competition . . . . .	White Pelican Bay
9:45–10:15 am	<b>Refreshment Break.</b> . . . . .	Minnesota Valley Foyer
10:15 am–12:00 pm	Equine Biosciences: Graduate Student Competition . . . . .	Minnesota Valley Ballroom IV
10:15 am–12:00 pm	Nutrition: Graduate Student Competition . . . . .	Minnesota Valley Ballroom II–III
10:15 am–11:45 am	Production & Management: Graduate Student Competition . . . . .	Minnesota Valley Ballroom I
10:15 am–11:45 am	Teaching & Extension: Graduate Student Competition . . . . .	Wood Duck Pond
10:15 am–11:45 am	Undergraduate Student Competition . . . . .	White Pelican Bay
11:45 am–1:30 pm	<b>The Skip Hintz Nutrition Lecture and Luncheon</b> Dr. Véronique Julliard— <i>Impact of Diet on the Hindgut Microbiome</i> . . . . .	Minnesota Valley Foyer and Ballroom
1:30–3:00 pm	<b>Poster Session 1</b> . . . . . Exercise Science Nutrition Teaching & Extension	Riverside (1st floor)
3:00–4:00 pm	Equine Biosciences: Graduate Student Competition . . . . .	Minnesota Valley Ballroom IV
3:00–4:00 pm	Nutrition: Graduate Student Competition . . . . .	Minnesota Valley Ballroom II–III
3:00–4:00 pm	Production & Management: Graduate Student Competition . . . . .	Minnesota Valley Ballroom I
3:00–4:00 pm	Teaching & Extension: Graduate Student Competition . . . . .	Wood Duck Pond
3:00–4:00 pm	Undergraduate Student Competition . . . . .	White Pelican Bay
4:00–4:30 pm	<b>Refreshment Break.</b> . . . . .	Minnesota Valley Foyer
4:30–5:15 pm	Equine Biosciences: Graduate Student Competition . . . . .	Minnesota Valley Ballroom IV
4:30–5:15 pm	Production & Management: Graduate Student Competition . . . . .	Minnesota Valley Ballroom I

4:30–5:15 pm	Undergraduate Student Competition . . . . .	White Pelican Bay
7:00–9:00 pm	<b>Student Social</b> . . . . .	Nickelodeon Universe at the Mall of America

## Thursday, June 1

6:00–7:00 am	<b>Hoofda 5K Fun Run/Walk</b> . . . . .	MN Valley National Wildlife Refuge (*meet in Hotel Lobby at 6:00 am)
6:30–8:00 am	Breakfast (*optional ticketed event) . . . . .	Red Fox Den
7:00 am–5:00 pm	Presenter practice rooms available . . . . .	Cardinal Perch and Eagle’s Nest
8:00–9:50 am	<b>Workshop Session 1</b> Copyright & Creative Commons in Teaching, Extension, & Everyday Life . . . . .	Minnesota Valley Ballroom II–III
	ESS Strategic Planning . . . . .	Minnesota Valley Ballroom I
	Building Your Brand Session A ( <i>Student Professional Development</i> ) . . . . .	Minnesota Valley Ballroom IV
10:00–11:50 am	<b>Workshop Session 2</b> Program Assessment for All: Setting Goals and Assessing Learning Outcomes . . . . .	Minnesota Valley Ballroom II–III
	Partnering with Cinch Ranch Sorting National Championships to Offer Unique Ranch Sorting Kids’ Camps . . . . .	Minnesota Valley Ballroom I
	Building Your Brand Session B ( <i>Student Professional Development</i> ) . . . . .	Minnesota Valley Ballroom IV
12:00–8:00 pm	Minnesota Horse Industry Tour & Great Gopher Grill Out (*optional ticketed event—includes lunch and dinner) Buses depart 12:15 pm; begin returning to hotel at 7:00 pm. . . . .	Hotel Lobby (load buses)

## Friday, June 2

6:30–7:30 am	<b>ARPAS Exam.</b> . . . . .	Owl Overlook
6:30–8:00 am	Breakfast (*optional ticketed event) . . . . .	Red Fox Den
7:00 am–5:00 pm	Presenter practice rooms available . . . . .	Cardinal Perch and Eagle’s Nest
8:00–9:00 am	<b>Invited Speaker: Genetics</b> Dr. Cyprianna Swiderski— <i>Deciphering the Role of Bronchial Hyper-Responsiveness in Equine Pasture Asthma</i> . . . . .	Minnesota Valley Ballroom
9:00–10:30 am	<b>Poster Session 2 (and Refreshment Break)</b> . . . . .	Riverside (1st floor)
	Equine Biosciences Genetics Production & Management Reproductive Physiology	
10:30 am–12:15 pm	Exercise Science: General Session . . . . .	Wood Duck Pond
10:30 am–12:15 pm	Nutrition: General Session . . . . .	Minnesota Valley Ballroom I–II
10:30 am–12:15 pm	Teaching & Extension: General Session . . . . .	Minnesota Valley Ballroom III–IV

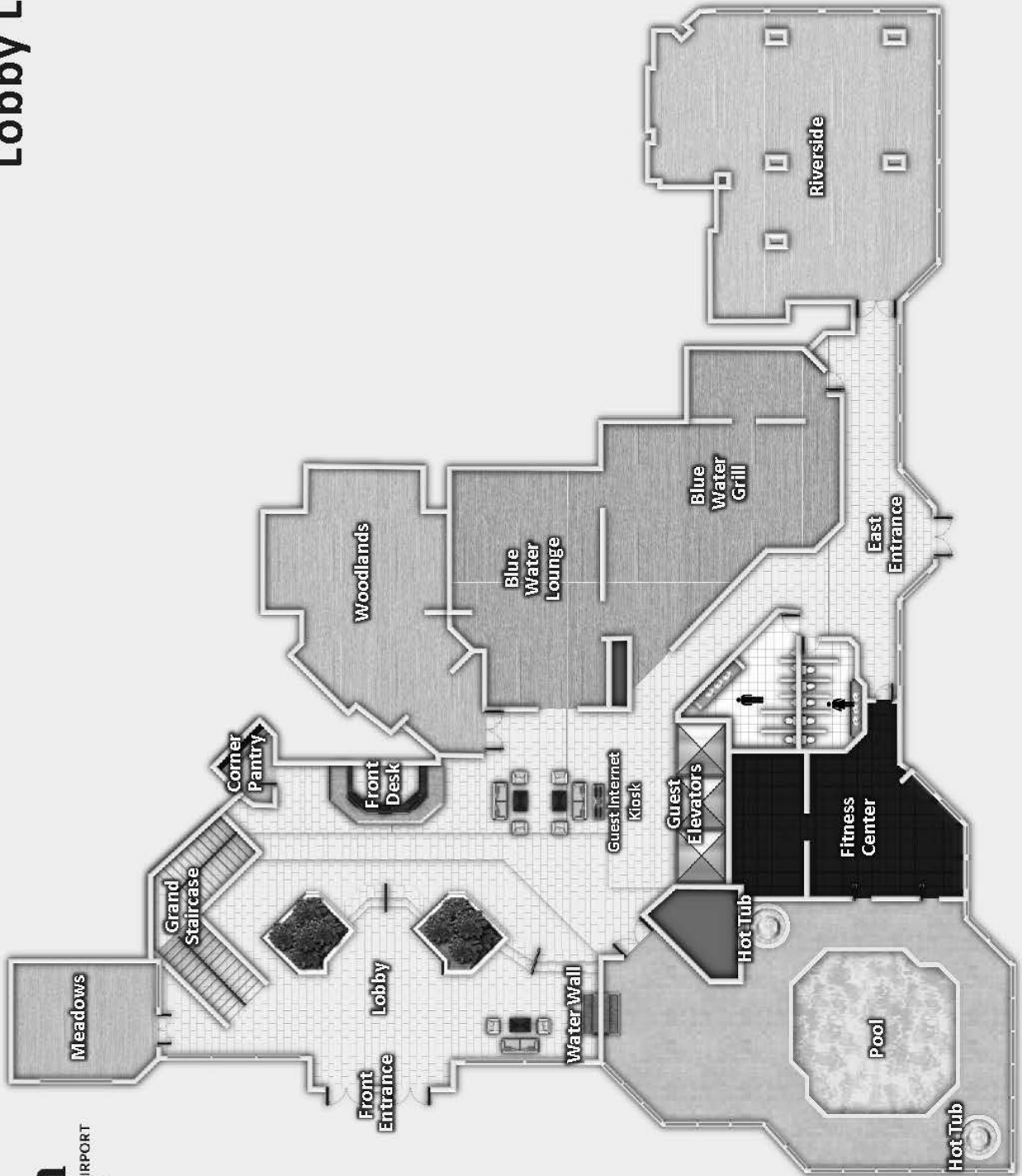


12:15–1:45 pm	<b>Invited Speaker Luncheon: Production &amp; Management</b> Dr. Elke Hartmann— <i>Dominance and Leadership: Useful Concepts in Human-Horse Interactions?</i> . . . . . Minnesota Valley Foyer and Ballroom
2:15–3:15 pm	Equine Biosciences: General Session . . . . . Wood Duck Pond
2:15–3:30 pm	Nutrition: General Session . . . . . Minnesota Valley Ballroom I–II
2:15–3:30 pm	Production & Management: General Session . . . . . Minnesota Valley Ballroom III–IV
3:30–4:00 pm	<b>Refreshment Break</b> . . . . . Minnesota Valley Foyer
4:00–4:45 pm	Equine Biosciences: General Session . . . . . Wood Duck Pond
4:00–5:00 pm	Nutrition: General Session . . . . . Minnesota Valley Ballroom I–II
4:00–5:00 pm	Production & Management: General Session . . . . . Minnesota Valley Ballroom III–IV
5:00–6:00 pm	<b>ESS General Business Meeting</b> . . . . . Minnesota Valley Ballroom I–II
6:30–9:30 pm	<b>ESS Awards Banquet</b> . . . . . Minnesota Valley Foyer and Ballroom
6:30 pm	Cocktails
7:00 pm	Dinner

# Maps

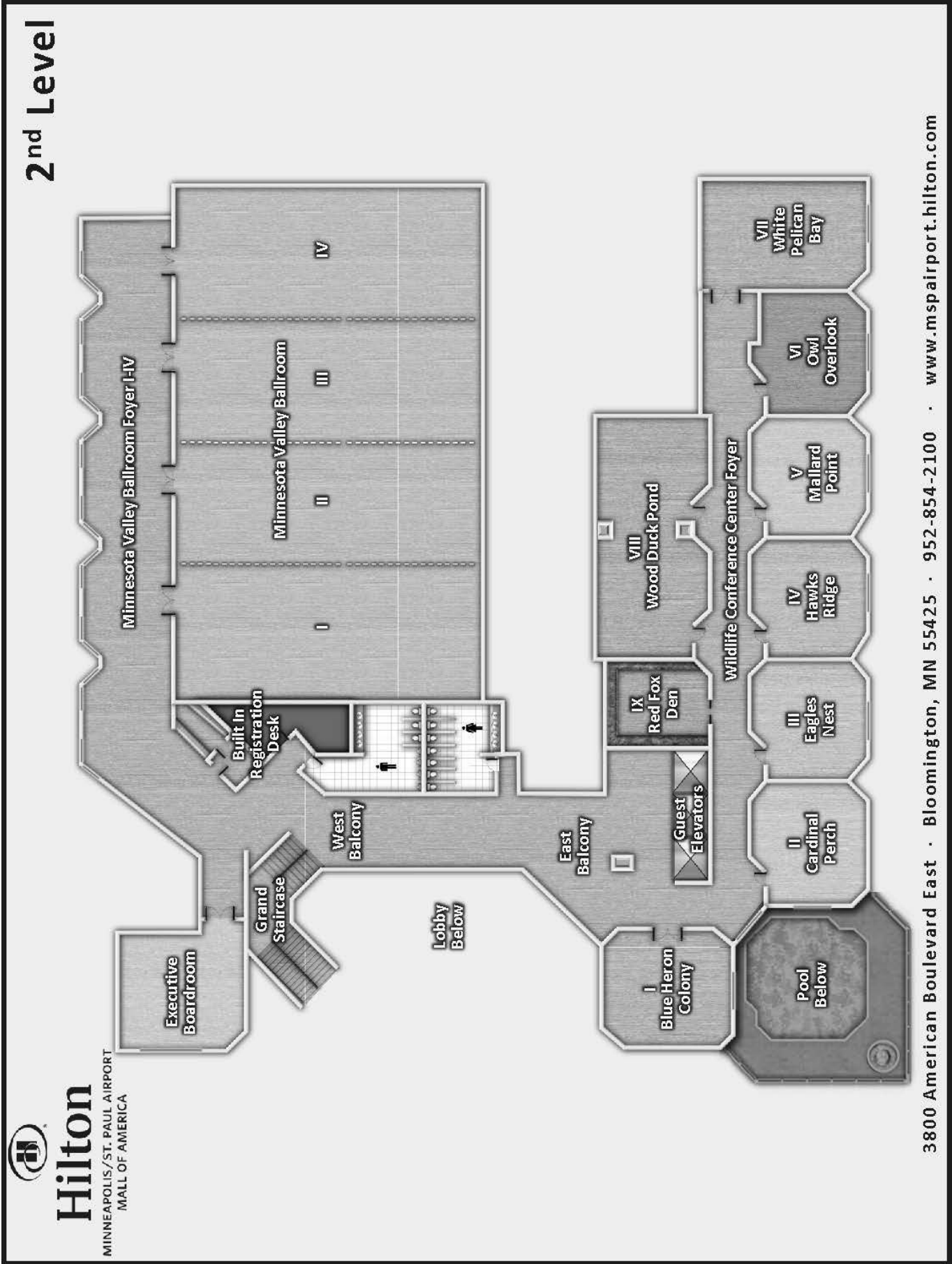
## Lobby Level

  
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# Maps



# Scientific Sessions

## Tuesday, May 30

### Opening Reception

Sponsored by Kemin Industries

5:00–7:00 pm

Location: Minnesota Valley Ballroom Foyer

### Invited Speaker–Equine Biosciences

Sponsored by Kemin Industries

Moderator: Ken McKeever, Rutgers, The State University of New Jersey

Location: Minnesota Valley Ballroom I–IV

7:00–7:15 pm

#### Welcome

Lori K. Warren, ESS President; Ken McKeever, Program Chair; and Krishona Martinson, Host Committee Chair.

Dr. Mike Schmitt, Associate Dean, *Extension Center for Agriculture, Food, and Natural Resources, University of Minnesota.*

7:15–8:15 pm

#### Alterations in Intestinal Permeability: The Role of the “Leaky Gut” in Health and Disease

Liara M. Gonzalez, DVM, PhD, DACVS, *College of Veterinary Medicine, North Carolina State University, Raleigh, NC, USA.*

## Wednesday, May 31

## ORAL PRESENTATIONS

### Exercise Science: Graduate Student Competition

Moderator: Jessica Leatherwood, Texas A & M University

Location: Wood Duck Pond

- 8:00 am 56 **Effects of rider experience level on horse kinematics and behavior.**  
R. C. Strunk\*, K. L. Vernon, W. C. Bridges, R. W. Blob, and P.A. Skewes, *Clemson University, Clemson, SC, USA.*
- 8:15 am 57 **Effect of bioactive protein supplementation on equine gait kinematics.**  
K. Fikes\*<sup>1</sup>, J. A. Coverdale<sup>1</sup>, J. M. Campbell<sup>2</sup>, J. L. Leatherwood<sup>1</sup>, T. H. Welsh<sup>1</sup>, A. N. Bradbery<sup>1</sup>, C. J. Hartz<sup>1</sup>, M.S. Goehring<sup>1</sup>, A. A. Millican<sup>1</sup>, and Tryon A. Wickersham<sup>1</sup>, <sup>1</sup>*Texas A&M University, College Station, TX, USA*, <sup>2</sup>*APC Inc, Ankeny, IA, USA.*
- 8:30 am 58 **Effect of sensor placement on acceleration data to monitor equine activity.**  
C. J. Thompson\*, L. Luck, J. Keshwani, and S. Pitla, *University of Nebraska–Lincoln, Lincoln, NE, USA.*
- 8:45 am 59 **Acute and prolonged effects of vibrating platform treatment on horses: A pilot study.**  
C. A. Nowlin\*<sup>1,2</sup>, B. D. Nielsen<sup>1</sup>, J. Mills<sup>2,4</sup>, C. I. Robison<sup>1</sup>, H. C. Schott<sup>3</sup>, and D. Peters<sup>2,4</sup>, <sup>1</sup>*Department of Animal Science, Michigan State University, East Lansing, MI, USA*, <sup>2</sup>*College of Veterinary Medicine, Michigan State University, East Lansing, MI, USA*, <sup>3</sup>*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University East Lansing, MI, USA*, <sup>4</sup>*East-West Equine Sports Medicine LLC, Lexington, KY, USA.*

- 9:00 am 60 **Effect of weight carried and time ridden on back pain in horses ridden in an equestrian program as determined by pressure algometry.**  
M. Mothershead\*, L. Sukovaty, S. Webb, G. Webb, W. Boyer, and W. McClain, *Missouri State University, Springfield, MO, US.*
- 9:15 am 61 **A scoring system to evaluate muscle tension in exercising horses: A preliminary study.**  
S. Chen\*, M. R. Hovey, A. J. Davis, and C. A. S. Porr, *Murray State University, Murray, KY, USA.*
- 9:30 am 62 **An evaluation of inflammatory and oxidative markers following intense exercise in horses: A pilot study.**  
J. MacNicol\*<sup>1</sup>, M. I. Lindinger<sup>2</sup>, and W. Pearson<sup>1</sup>, <sup>1</sup>*University of Guelph, Guelph, ON, Canada*, <sup>2</sup>*Nutraceutical Alliance, Campbellville, ON, Canada.*
- 9:45 am **Refreshment Break** (Minnesota Valley Ballroom Foyer).

**Genetics: Graduate Student Competition**  
**Moderator: Stephen Coleman, Colorado State University**  
**Location: Minnesota Valley Ballroom IV**

- 8:15 am 76 **Using the unique breeding history of Coldblooded trotters to identify genes that influence athletic performance.**  
K. J. Fegraeus\*<sup>1</sup>, B. D. Velie<sup>1</sup>, J. R. S. Meadows<sup>2</sup>, and G. Lindgren<sup>1</sup>, <sup>1</sup>*Swedish University of Agricultural Sciences, Uppsala, Sweden*, <sup>2</sup>*Uppsala University, Uppsala, Sweden.*
- 8:30 am 77 **Identification of a genetic locus associated with height and metabolic traits in Welsh ponies.**  
E. M. Norton\*, F. Avila, N. S. Schultz, J. R. Mickelson, and M. M. McCue, *University of Minnesota, St Paul, MN, USA.*
- 8:45 am 78 **Utility of inbreeding coefficient and sire as a predictor for osteochondrosis risk in Standardbred horses.**  
M. M. Baldes\*<sup>1</sup>, A. M. McCoy<sup>1</sup>, P. R. Kapraun<sup>2</sup>, and K. H. Kline<sup>1</sup>, <sup>1</sup>*University of Illinois, Urbana, IL, USA*, <sup>2</sup>*Harvard Equine Practice, Harvard, IL, USA.*
- 9:00 am 79 **Possible markers for insulin resistance in horses and ponies.**  
H. F. da Costa Santos\*<sup>1</sup>, T. M. Hess<sup>1</sup>, J. Bruemmer<sup>1</sup>, R. Splan<sup>3,2</sup>, B. McIntosh<sup>2</sup>, K. Kaufman<sup>2</sup>, and P. Graham<sup>1</sup>, <sup>1</sup>*Colorado State University, Fort Collins, CO, USA*, <sup>2</sup>*Virginia Polytechnic Institute and State University, Middleburg Agricultural Research and Extension Center, Middleburg, VA, USA*, <sup>3</sup>*Sul Ross State University, Alpine, TX, USA.*
- 9:15 am 80 **The equine pasture asthma-restricted lung transcriptome: A tool to decipher the pathophysiology of airway hyper-responsiveness in horses.**  
S. M. Mack\*<sup>1</sup>, T. A. Mansour<sup>1</sup>, A. L. Eddy<sup>2</sup>, C. A. Mochal<sup>2</sup>, A. K. Claude<sup>2</sup>, M. L. Robbins<sup>2</sup>, C. J. Wenzel<sup>2</sup>, J. A. Cooley<sup>2</sup>, M. E. Johnson<sup>2</sup>, L. R. Costa<sup>1</sup>, J. E. Bowser<sup>2</sup>, and C. E. Swiderski<sup>2</sup>, <sup>1</sup>*University of California Davis, Davis, CA, USA*, <sup>2</sup>*Mississippi State University, Mississippi State, MS, USA.*

**Nutrition: Graduate Student Competition (1)**  
**Moderator: Holly Spooner, Middle Tennessee State University**  
**Location: Minnesota Valley Ballroom II–III**

- 8:00 am 82 **Prevalence and management of obese ponies and horses in Maryland.**  
A. L. Jaqueth\*, M. E. Iwaniuk, and A. O. Burk, *The University of Maryland, College Park, MD, USA.*
- 8:15 am 83 **Relationships between level of adiposity, voluntary intake, and digestibility in horses.**  
J. L. Moore\*, S. E. Pratt-Phillips, and P. D. Siciliano, *North Carolina State University, Raleigh, NC, USA.*
- 8:30 am 84 **A comparative assessment of Standlee Premium Western Forage Timothy Hay versus locally sourced grass hay using nutrient composition, glucose and insulin response, and palatability.**  
R. L. Stewart\*<sup>1,2</sup>, R. D. Jacobs<sup>2</sup>, M. L. Jerina<sup>2</sup>, S. Duren<sup>3</sup>, and M. E. Gordon<sup>2</sup>, <sup>1</sup>*Middle Tennessee State University, Murfreesboro, TN, USA*, <sup>2</sup>*Purina Animal Nutrition, Grey Summit, MO, USA*, <sup>3</sup>*Standlee Hay Company, Kimberly, ID, USA.*
- 8:45 am 85 **Digestive characteristics of cool- and warm-season forages differing in fiber composition.**  
T. L. Hansen\*, E. L. Chizek, O. K. Zugay, and L. K. Warren, *University of Florida, Gainesville, FL, USA.*

- 9:00 am 86 **Effects of alfalfa hay cubes versus timothy hay cubes on measures of whole-body protein metabolism in mature horses.**  
S. C. Dorsch\*, T. Brewster-Barnes, A. M. Hannan, C. E. Harrell, C. M. M. Loos, and K. L. Urschel, *University of Kentucky, Lexington, KY, USA.*
- 9:15 am 87 **Effect of feed processing on equine digestion.**  
M. S. Goehring\*<sup>1</sup>, J. L. Leatherwood<sup>1</sup>, M. D. Eggleston<sup>2</sup>, A. N. Bradbery<sup>1</sup>, B. J. Carillo<sup>1</sup>, E. C. Dickson<sup>1</sup>, K. Fikes<sup>1</sup>, C. J. Hartz<sup>1</sup>, C. M. Latham<sup>1</sup>, A. A. Millican<sup>1</sup>, and Tryon A. Wickersham<sup>1</sup>, <sup>1</sup>*Texas A&M University, College Station, TX, USA,* <sup>2</sup>*Muenster Milling, Muenster, TX, USA.*
- 9:30 am 88 **Influence of feed particle size on inflammation.**  
P. Ochonski\*<sup>1</sup>, S. L. Lapinskas<sup>1</sup>, A. A. Adams<sup>2</sup>, and W. B. Staniar<sup>1</sup>, <sup>1</sup>*The Pennsylvania State University, University Park, PA, USA,* <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 9:45 am **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 10:15 am 89 **Solubilization of nonstructural carbohydrates as a function of soaking interval and water temperature in southern forages commonly fed to equids.**  
B. M. Wassel\*, E. L. Wagner, S. B. Turner, R. B. Muntifering, B. Kaltenboeck, and C. M. Holland, *Auburn University, Auburn, AL, USA.*
- 10:30 am 90 **Glucose response of horses grazing alfalfa, cool-season perennial grasses and teff across seasons.**  
M. L. DeBoer\*<sup>1</sup>, M. R. Hathaway<sup>1</sup>, K. J. Kuhle<sup>1</sup>, P. S. D. Weber<sup>2</sup>, C. C. Sheaffer<sup>1</sup>, M. S. Wells<sup>1</sup>, R. S. Mottet<sup>1</sup>, and K. L. Martinson<sup>1</sup>, <sup>1</sup>*University of Minnesota, St. Paul, MN, USA,* <sup>2</sup>*Michigan State University, East Lansing, MI, USA.*
- 10:45 am 91 **Evaluation of the effect of dietary particle size on gastric ulceration.**  
S. L. Lapinskas\*, P. Ochonski, and W. B. Staniar, *The Pennsylvania State University, University Park, PA, USA.*
- 11:00 am 92 **Feeding DigestaWell Buffer to overconditioned horses mitigates the effects of rapidly introduced nonstructural carbohydrate.**  
K. M. DeLano\*<sup>1</sup>, B. J. McIntosh<sup>1</sup>, J. K. Suagee-Bedore<sup>2</sup>, K. L. Kaufman<sup>1</sup>, S. M. Ghajar<sup>1</sup>, A. L. Wagner-Wells<sup>2</sup>, and I. Girard<sup>3</sup>, <sup>1</sup>*Virginia Tech Middleburg Agricultural and Research Extension Center, Middleburg, VA, USA,* <sup>2</sup>*The Ohio State University, Wooster, OH, USA,* <sup>3</sup>*Probiotech International, St-Hyacinthe, QC, Canada.*
- 11:15 am 93 **Assessment of oxidative stress and muscle damage in exercising horses in response to level and form of vitamin E.**  
M. M. Fagan\*<sup>1</sup>, R. Pazdro<sup>2</sup>, J. A. Call<sup>3</sup>, A. Abrams<sup>1</sup>, P. Harris<sup>4</sup>, A. D. Krotky<sup>5</sup>, and K. J. Duberstein<sup>1</sup>, <sup>1</sup>*Department of Animal and Dairy Science, University of Georgia, Athens, GA, USA,* <sup>2</sup>*College of Family and Consumer Sciences, University of Georgia, Athens, GA,* <sup>3</sup>*Department of Kinesiology, University of Georgia, Athens, GA, USA,* <sup>4</sup>*Mars Horsecare UK, Wolverton, Milton Keynes, United Kingdom, USA,* <sup>5</sup>*Mars Horsecare US, Dalton, OH, USA.*
- 11:30 am 94 **Evaluation of dietary trace mineral source on growth in weanling horses.**  
A. A. Millican\*<sup>1</sup>, J. A. Coverdale<sup>1</sup>, J. L. Leatherwood<sup>1</sup>, A. N. Bradbery<sup>1</sup>, M. S. Goehring<sup>1</sup>, K. Fikes<sup>1</sup>, E. C. Dickson<sup>1</sup>, C. Latham<sup>1</sup>, C. J. Hartz<sup>1</sup>, S. H. White<sup>1</sup>, C. K. Larson<sup>2</sup>, E. Lamprecht<sup>3</sup>, and T. A. Wickersham<sup>1</sup>, <sup>1</sup>*Texas A&M University, College Station, TX, USA,* <sup>2</sup>*Zinpro Corporation, Eden Prairie, MN, USA,* <sup>3</sup>*Cargill Animal Nutrition, Elk River, MN, USA.*
- 11:45 am 95 **Effects of endophyte-infected fescue supplementation on hormone and immune responses in old horses.**  
J. M. Hanneman\*, S. E. Elzinga, M. H. Siard, V. D. Barker, and A. A. Adams, *University of Kentucky, Lexington, KY, USA.*
- 12:00 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## Reproductive Physiology: Graduate Student Competition

Moderator: Jennifer Zoller, Texas A & M University

Location: Minnesota Valley Ballroom I

- 8:00 am 162 **Comparison of serial prostaglandin F2 $\alpha$  protocols for control of the estrous cycle in mares.**  
K. Potter\*, G. Webb, and W. Boyer, *Missouri State University, Springfield, MO, USA.*
- 8:15 am 163 **Evaluation of phytoestrogens in equine feeds and broodmare serum.**  
A. M. Adkin\*, L. K. Warren, C. Silva-Sanchez, and C. J. Mortensen, *University of Florida, Gainesville, FL, USA.*

- 8:30 am 164 **Effects of combined estradiol cypionate-sulpiride treatment and follicle ablation on vernal transition in mares: Evaluation of plasma and follicular fluid hormones.**  
E. L. Oberhaus\*<sup>1</sup>, D. L. Thompson<sup>1</sup>, C. R. Pinto<sup>2</sup>, B. A. Foster<sup>1</sup>, and N. Arana-Valencia<sup>1</sup>, <sup>1</sup>Louisiana State University Agricultural Center, Baton Rouge, LA, USA, <sup>2</sup>Louisiana State University School of Veterinary Medicine, Baton Rouge, LA, USA.
- 8:45 am 165 **The effects of vaccination against GDF-9 and BMP-15 on ovarian function in the mare.**  
K. A. Davis\*<sup>1</sup>, K. M. Klohonatz<sup>1</sup>, H. M. Twenter<sup>1</sup>, P. E. Graham<sup>1</sup>, J. E. Bruemmer<sup>1</sup>, and D. C. Eckery<sup>2</sup>, <sup>1</sup>Colorado State University, Fort Collins, CO, USA, <sup>2</sup>USDA National Wildlife Research Center, Fort Collins, CO, USA.
- 9:00 am 166 **Secretion of gonadotropins is differentially regulated by continuous infusion of native GnRH and is unaffected by exogenous estradiol in winter anovulatory mares.**  
M. M. O'Neil\*<sup>1,2</sup>, J. O. Scarpa<sup>1,2</sup>, R. C. Cardoso<sup>2</sup>, and G. L. Williams<sup>1,2</sup>, <sup>1</sup>Texas A&M AgriLife Research, Beeville, TX, USA, <sup>2</sup>Department of Animal Science, Texas A&M University, College Station, TX, USA.
- 9:15 am 167 **The role of embryo contact and focal adhesion molecules during maternal recognition of pregnancy in the mare.**  
K. Klohonatz\*, L. Nulton, A. Hess, G. Bouma, and J. Bruemmer, Colorado State University, Fort Collins, CO, USA.
- 9:30 am 168 **Changes in milk insulin concentration of Thoroughbred mares in early lactation.**  
M. B. Pyles\*<sup>1</sup>, A. L. Fowler<sup>1</sup>, V. T. Bill<sup>1</sup>, A. D. Crum<sup>1</sup>, S. H. Hayes<sup>1</sup>, M. D. Flythe<sup>2</sup>, and L. M. Lawrence<sup>1</sup>, <sup>1</sup>University of Kentucky, Lexington, KY, USA, <sup>2</sup>United States Department of Agriculture, ARS-FAPRU, Lexington, KY, USA.
- 9:45 am **Refreshment Break** (Minnesota Valley Ballroom Foyer).

**Undergraduate Student Competition (1)**  
**Moderator: Kimberly Cole, The Ohio State University**  
**Location: White Pelican Bay**

- 8:00 am 1 **The effect of whole-body vibration on equine hoof growth.**  
S. J. Lowe\*, S. V. Burk, and S. S. W. Birmingham, Otterbein University, Westerville, OH, USA.
- 8:15 am 2 **Development of an ethogram for evaluating riding horses.**  
A. Collins\*, M. Hovey, S. Chen, H. Zhao, A. Davis, and S. Porr, Murray State University, Murray, KY, USA.
- 8:30 am 3 **The effect of sericea lespedeza on strongyle fecal egg counts in mature horses.**  
M. J. Blackwell\*<sup>1</sup>, R. M. Kaplan<sup>2</sup>, K. Paras<sup>2</sup>, T. H. Terrill<sup>3</sup>, A. Abrams<sup>1</sup>, and K. J. Duberstein<sup>1</sup>, <sup>1</sup>University of Georgia, Animal and Dairy Science Department, Athens, GA, USA, <sup>2</sup>University of Georgia, College of Veterinary Medicine, Athens, GA, USA, <sup>3</sup>Fort Valley State University, Department of Agricultural Sciences, Fort Valley, GA, USA.
- 8:45 am 4 **The effects of transport stress on immune function in senior horses.**  
A. Campana-Emard\*<sup>1</sup>, V. Barker<sup>1</sup>, S. Schindler<sup>2</sup>, S. Reedy<sup>1</sup>, and A. Adams<sup>1</sup>, <sup>1</sup>University of Kentucky, Lexington, KY, USA, <sup>2</sup>Lincoln Memorial University, Harrogate, TN, USA.
- 9:00 am 5 **Effects of benzyl isothiocyanate and papain on equine cyathostome egg hatching.**  
J. A. V. Kmietsch\*, S. K. Samuels, J. S. Lehman, and S. V. Burk, Otterbein University, Westerville, OH, USA.
- 9:15 am 6 **Stalling mature idle horses has only a minor impact on skeletal health.**  
R. M. Sehl\*, B. D. Nielsen, and C. I. Robison, Michigan State University, East Lansing, MI, USA.
- 9:30 am **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 10:15 am 7 **Association of leg length-to-torso ratios and metabolic phenotypes in Welsh ponies and Morgan horses.**  
M. M. McDonald\*, E. M. Norton, N. S. Schultz, J. R. Mickelson, and M. E. McCue, College of Veterinary Medicine, University of Minnesota, St. Paul, MN, USA.
- 10:30 am 8 **A system to identify gene products that alter airway hyper-responsiveness from -omics datasets.**  
W. J. Dittmar\*, C. L. Hunter, R. J. Byrne, R. H. McDaniel, C. J. Wenzel, J. E. Bowser, and C. E. Swiderski, Mississippi State University College of Veterinary Medicine, Mississippi State, MS, USA.
- 10:45 am 9 **Time budgets of lean and obese horses kept in individual partially covered pens.**  
B. L. Gillaspie\*, J. Moore, M. K. Hollified, T. R. Hendrix, and S. Pratt-Phillips, North Carolina State University, Raleigh, NC, USA.

- 11:00 am 10 **Daily caloric expenditure as estimated by heart rate in lean and obese horses.**  
T. R. Hendrix\*, J. Moore, B. Gillaspie, M. K. Hollifield, and S. Pratt-Phillips, *North Carolina State University, Raleigh, NC, USA.*
- 11:15 am 11 **Effect of feeding teff hay on dry matter intake, digestible energy intake and resting insulin/glucose concentration in horses.**  
M. J. Askins\*, A. G. Palkovic, K. A. Leppo, G. C. Jones, and J. C. Gill, *Western Kentucky University, Bowling Green, KY, USA.*
- 11:30 am 12 **Variation in nitrate concentration of alfalfa, perennial cool-seasonal grasses, and teff grazed by horses in the Upper Midwest.**  
A. S. Reiter\*, M. L. DeBoer, K. J. Kuhle, C. C. Sheaffer, M. S. Wells, M. R. Hathaway, and K. L. Martinson, *University of Minnesota, Saint Paul, MN, United States.*
- 11:45 am **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## **Equine Biosciences: Graduate Student Competition (1)**

**Moderator: Mary Beth Gordon, Purina Animal Nutrition**

**Location: Minnesota Valley Ballroom IV**

- 10:15 am 20 **Effect of maternal overnutrition on foal glucose and insulin dynamics and pancreatic development.**  
A. N. Bradbery\*<sup>1</sup>, J. A. Coverdale<sup>1</sup>, C. J. Hartz<sup>1</sup>, A. A. Millican<sup>1</sup>, M. S. Goehring<sup>1</sup>, K. Fikes<sup>1</sup>, E. MacConnell<sup>1</sup>, C. J. Hammer<sup>2</sup>, K. A. Dunlap<sup>1</sup>, T. A. Wickersham<sup>1</sup>, and M. C. Satterfield<sup>1</sup>, <sup>1</sup>*Texas A&M University, College Station, TX, USA,* <sup>2</sup>*North Dakota State University, Fargo, ND, USA.*
- 10:30 am 21 **Effects of short-term dexamethasone treatment on glucose and insulin dynamics and insulin signaling in horses.**  
C. M. M. Loos\*, S. C. Dorsch, T. Brewster-Barnes, and K. L. Urschel, *University of Kentucky, Lexington, KY, USA.*
- 10:45 am 22 **Plasma and muscle amino acid concentrations in insulin resistant compared to normal horses in the fed and fasted state.**  
E. L. Macon\*<sup>1</sup>, P. M. Graham-Thiers<sup>2</sup>, and K. L. Bowen<sup>2</sup>, <sup>1</sup>*Middle Tennessee State University, Murfreesboro, TN, USA,* <sup>2</sup>*Emory and Henry State College, Bristol, VA, USA.*
- 11:00 am 23 **Comparison of horse body fat composition estimated by D2O dilution, rump fat thickness, and tissue dissection.**  
E. N. Ferjak\*<sup>1</sup>, C. Argo<sup>2</sup>, C. A. Cavinder<sup>1</sup>, D. D. Burnett<sup>1</sup>, and T. T. N. Dinh<sup>1</sup>, <sup>1</sup>*Mississippi State University, Starkville, MS, USA,* <sup>2</sup>*University of Liverpool, Liverpool, United Kingdom.*
- 11:15 am 24 **Relationships between total body water, ultrasonic measures of fat depots and morphometric measurements in horses.**  
A. L. Fowler\*<sup>1</sup>, M. B. Pyles<sup>1</sup>, V. T. Bill<sup>1</sup>, S. H. Hayes<sup>1</sup>, A. Crum<sup>1</sup>, J. Parsons<sup>1</sup>, L. Walling<sup>1</sup>, A. Moffett-Krotky<sup>2</sup>, P. A. Harris<sup>3</sup>, and L. M. Lawrence<sup>1</sup>, <sup>1</sup>*University of Kentucky, Lexington, KY, USA,* <sup>2</sup>*Mars Horsecare US Inc, Dalton, OH, USA,* <sup>3</sup>*Waltham Centre for Pet Nutrition, Melton Mowbray, Leicestershire, United Kingdom.*
- 11:30 am 25 **Immunological changes in horses occur early during road transportation.**  
J. M. Bobel\*, T. L. Hansen, J. W. Callahan, J. R. Abbott, and L. K. Warren, *University of Florida, Gainesville, FL, USA.*
- 11:45 am 26 **Evaluation of intradermal skin testing in five horses.**  
E. K. Moyer\*, A. J. Tucker, G. M. Juli, J. E. Bowser, C. A. Jim, and S. E. Cyprianna, *Mississippi State University, Mississippi State, MS, USA.*
- 12:00 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## **Production & Management: Graduate Student Competition (1)**

**Moderators: Carissa Wickens, University of Florida and**

**Bridgett McIntosh, Virginia Polytechnic Institute and State University**

**Location: Minnesota Valley Ballroom I**

- 10:15 am 127 **A pilot study of working equid welfare in Haiti.**  
L. A. Brizgys\* and C. M. Brady, *Purdue University, West Lafayette, IN, USA.*



- 10:30 am 128 **Differential reinforcement: An effective technique in horse training to decrease unwanted behaviors and improve horse welfare.**  
A. Telatin\*<sup>1</sup>, E. Green<sup>2</sup>, and C. Kieschnick<sup>1</sup>, <sup>1</sup>*Delaware Valley University, Doylestown, PA, USA*, <sup>2</sup>*University of Arizona, Tucson, AZ, USA*.
- 10:45 am 129 **A comparison of McMasters versus mini-FLOTAC techniques in quantifying small strongyles in equine fecal egg assessments.**  
A. D. Britt\*<sup>1</sup>, R. M. Kaplan<sup>2</sup>, K. L. Paras<sup>2</sup>, K. K. Turner<sup>1</sup>, A. W. Abrams<sup>1</sup>, and K. J. Duberstein<sup>1</sup>, <sup>1</sup>*Department of Animal and Dairy Science, University of Georgia, Athens, GA, USA*, <sup>2</sup>*College of Veterinary Medicine, University of Georgia, Athens, GA, USA*.
- 11:00 am 130 **Effectiveness of stable fly protectants for adult horses.**  
R. S. Mottet\*, R. D. Moon, M. R. Hathaway, H. L. Lochner, M. L. DeBoer, and K. L. Martinson, *University of Minnesota, St. Paul, MN, USA*.
- 11:15 am 131 **Effects of a magnetic/ceramic therapy sheet on horses with back pain.**  
M. A. Gunkelman\*<sup>1</sup>, B. J. Karren<sup>2</sup>, J. A. Altman<sup>2</sup>, and C. J. Hammer<sup>1</sup>, <sup>1</sup>*North Dakota State University, Fargo, ND, USA*, <sup>2</sup>*Arenus, Fort Collins, CO, USA*.
- 11:30 am 132 **A comparative assessment of Standlee Premium Western Forage Timothy Hay versus “standard” locally sourced hay based on consumer perspective.**  
R. L. Stewart\*<sup>1,2</sup>, R. D. Jacobs<sup>2</sup>, M. L. Jerina<sup>2</sup>, S. Duren<sup>3</sup>, and M. E. Gordon<sup>2</sup>, <sup>1</sup>*Middle Tennessee State University, Murfreesboro, TN, USA*, <sup>2</sup>*Purina Animal Nutrition, Grey Summit, MO, USA*, <sup>3</sup>*Standlee Hay Company, Kimberly, ID, USA*.
- 11:45 am **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## Teaching & Extension: Graduate Student Competition (1)

Moderator: Karen Waite, Michigan State University

Location: Wood Duck Pond

- 10:15 am 170 **Exploring horse reactivity and habituation across work types.**  
C. C. Wires\*, R. M. Hoffman, and A. M. Brzezicki, *Middle Tennessee State University, Murfreesboro, TN, USA*.
- 10:30 am 171 **An assessment of the educational needs of equine assisted activities and therapies (EAAT) centers.**  
E. M. Rankins\*<sup>1</sup>, C. Cook<sup>2</sup>, C. Kajtar<sup>3</sup>, M. Sokolof<sup>4</sup>, and C. L. Wickens<sup>1</sup>, <sup>1</sup>*University of Florida, Gainesville, FL, USA*, <sup>2</sup>*B-C Foundation Station, Reddick, FL, USA*, <sup>3</sup>*Cornell University, Ithaca, NY, USA*, <sup>4</sup>*Unbridled Therapy, Micanopy, FL, USA*.
- 10:45 am 172 **Does discipline matter? An analysis of equine welfare perceptions and beliefs in the context of horse show participation.**  
E. A. Lofgren\*<sup>1</sup>, M. A. Tucker<sup>1</sup>, B. Rice<sup>1</sup>, M. A. Voigt<sup>2</sup>, and C. M. Brady<sup>1</sup>, <sup>1</sup>*Purdue University, West Lafayette, IN, USA*, <sup>2</sup>*Iowa State University, Ames, IA, USA*.
- 11:00 am 173 **Demographic characteristics influencing perceptions of the equine welfare through the lens of the five freedoms.**  
B. M. Rice\*<sup>1</sup>, E. A. Lofgren<sup>1</sup>, M. A. Tucker<sup>1</sup>, M. A. Voigt<sup>2</sup>, and C. M. Brady<sup>1</sup>, <sup>1</sup>*Purdue University, West Lafayette, IN, USA*, <sup>2</sup>*Iowa State University, Ames, IA, USA*.
- 11:15 am 174 **Funding experiential education in a university agriculture program using alternative sources.**  
M. R. Hovey\*, M. Santiago, and C. A. S. Porr, *Murray State University, Murray, KY, USA*.
- 11:30 am 175 **Horse use in higher education university equine programs: A pilot study.**  
H. Zhao\*<sup>1</sup>, R. K. Splan<sup>2</sup>, A. J. Davis<sup>1</sup>, and C. A. S. Porr<sup>1</sup>, <sup>1</sup>*Murray State University, Murray, KY, USA*, <sup>2</sup>*Sul Ross State University, Alpine, TX, USA*.
- 11:45 am **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

**The Skip Hintz Nutrition Lecture and Luncheon**  
Sponsored by McCauley Brothers  
Moderator: Shannon Pratt-Phillips, North Carolina State University  
Location: Minnesota Valley Ballroom I–IV

- 11:45 am **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).
- 12:30–1:30 pm **The Impact of Diet on the Hindgut Microbiome**  
Véronique Julliand, DVM, PhD, *Université Bourgogne-Franche-Comté and AgroSup Dijon, Dijon, France.*

## POSTER PRESENTATIONS

1:30–3:00 pm  
Location: Riverside (1st floor)

### Exercise Science: Posters

- 69 **Effects of standing martingale use on kinematics and conflict behavior in jumping horses.**  
D. S. Lintzenich\*, H. S. Spooner, and A. M. Brzezicki, *Middle Tennessee State University.*
- 70 **Muscle metabolic effects of whole-body vibration in yearling horses.**  
C. S. Hyatt\*, D. Sigler, and M. Vogelsang, *Texas A&M University, College Station, TX, USA.*
- 71 **The effect of whole-body vibration on bone density and other parameters in the exercising horse.**  
K. Maher, H. Spooner\*, R. Hoffman, and J. Haffner, *Middle Tennessee State University, Murfreesboro, TN, USA.*
- 72 **Detection of back pain as determined by a pressure algometer in horses used in an equestrian program.**  
L. D. Sukovaty\*, M. Mothershead, S. Webb, G. Webb, and D. O'Donnell, *Missouri State University, Springfield, MO, USA.*
- 73 **Influence of velocity on stride variables of the Santa Cruz intermediate gait.**  
M. C. Nicodemus\*<sup>1</sup> and J. Beranger<sup>2</sup>, <sup>1</sup>*Mississippi State University, Mississippi State, MS, USA,* <sup>2</sup>*The Livestock Conservancy, Pittsboro, NC, USA.*
- 74 **A *Cucumis melo* extract reduces inflammation systemically and within the joint following an exercise test in horses.**  
J. MacNicol\*<sup>1</sup>, M. I. Lindinger<sup>2</sup>, and W. Pearson<sup>1</sup>, <sup>1</sup>*University of Guelph, Guelph, ON, Canada,* <sup>2</sup>*Nutraceutical Alliance, Campbellville, ON, Canada.*

### Nutrition: Posters

- 116 **Effect of maternal supplementation with a killed whole-cell yeast on passive transfer and foal mucosal immunity.**  
L. P. B. Hansen<sup>1</sup>, J. M. Bobel<sup>2</sup>, and L. K. Warren\*<sup>2</sup>, <sup>1</sup>*University of Copenhagen, Copenhagen, Denmark,* <sup>2</sup>*University of Florida, Gainesville, FL, USA.*
- 117 **Effects of Tasco supplementation on stallion semen characteristics: A pilot study.**  
S. J. Williams<sup>1</sup>, T. N. Jones\*<sup>1</sup>, B. Lambert<sup>1</sup>, and R. Harp<sup>2</sup>, <sup>1</sup>*Tarleton State University, Stephenville, TX, USA,* <sup>2</sup>*Texas A&M University-Commerce, Commerce, TX, USA.*
- 118 **Effects of hydrolyzed collagen on equine gastric ulcers scores and gastric juice pH.**  
F. Andrews<sup>1</sup>, P. Camacho-Luna<sup>1</sup>, B. Lamp\*<sup>2</sup>, and J. Olijve<sup>3</sup>, <sup>1</sup>*Louisiana State University, School of Veterinary Medicine, Baton Rouge, LA, USA,* <sup>2</sup>*Darling Ingredients International, Mukwonago, WI, USA,* <sup>3</sup>*Darling Ingredients International, Son, the Netherlands.*
- 119 **Fermentation characteristics of fruit pomace as fiber source of horse feed.**  
W.-U. Hwang\*<sup>1</sup>, G.-H. Kim<sup>1</sup>, K.-M. Niu<sup>1</sup>, J.-H. Lim<sup>1</sup>, J.-H. Woo<sup>2</sup>, H.-S. Chae<sup>2</sup>, N.-G. Park<sup>2</sup>, and S.-K. Kim<sup>1</sup>, <sup>1</sup>*Konkuk University, Seoul, South Korea,* <sup>2</sup>*National Institute of Animal Science, RDA, Jeju, South Korea.*
- 120 **Trace element concentrations in mare and foal mane hair.**  
M. Brummer-Holder\*, S. H. Hayes, and B. D. Cassill, *University of Kentucky, Lexington, KY, USA.*

- 121 **Equine satellite cells in culture serve as a model system to evaluate leucine stimulated protein synthesis in horse muscle.**  
M. L. DeBoer\*, K. L. Martinson, M. S. Wells, C. Ward, and M. R. Hathaway, *University of Minnesota, St. Paul, MN, USA.*
- 122 **The effect of hay:concentrate ratio on nitrogen balance and plasma amino acids in exercising horses.**  
P. M. Graham-Thiers\* and L. K. Bowen, *Emory & Henry College, Emory, VA, USA.*
- 123 ***In vitro* dry matter digestibility of forages incubated with DigestaWell Fiber.**  
A. L. Wagner\*<sup>1</sup>, V. Bill<sup>2</sup>, L. Lawrence<sup>2</sup>, and I. D. Girard<sup>1</sup>, <sup>1</sup>*Probiotech International, Saint-Hyacinthe, QC, Canada,* <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 124 **Quantification of dietary and fecal particle size.**  
S. L. Lapinskas\*, K. A. Swartz, P. Ochonski, and W. B. Staniar, *The Pennsylvania State University, University Park, PA, USA.*
- 125 **Equine microbiome project: Understanding differences in the horse gut microbiome related to diet.**  
J. T. Berg\*, B. Chambers, H. Siegel, and A. Biddle, *University of Delaware, Newark, DE, USA.*
- 126 **Morphometric comparisons of draft, pony, and horse breeds.**  
J. K. Suagee-Bedore\* and D. R. Linden, *The Ohio State University, Wooster, OH, USA.*

## Teaching & Extension: Posters

- 187 **An assessment of Pennsylvania equine owners and PA Equine Council effectiveness.**  
A. Swinker\*<sup>1</sup>, C. Van Auken<sup>2</sup>, G. W. Wills<sup>2</sup>, D. Kniffen<sup>1</sup>, and C. S. Mikes II<sup>1</sup>, <sup>1</sup>*Pennsylvania State University, University Park, PA, USA,* <sup>2</sup>*PA Equine Council, Harrisburg, PA, USA.*
- 188 **Results of reducing parasite resistance on equine operations using a comprehensive whole-farm approach.**  
D. Foulk\*<sup>1</sup>, E. Jedrzejewski<sup>1</sup>, H. Stofanak<sup>1</sup>, A. Swinker<sup>1</sup>, and M. K. Nielsen<sup>2</sup>, <sup>1</sup>*Pennsylvania State University, University Park, PA, USA,* <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 189 **Application of a survey instrument for assessing equine interests and background for students enrolled in a companion animal course.**  
M. C. Nicodemus\*, *Mississippi State University, Mississippi State, MS, USA.*
- 190 **Information-seeking preferences of equine owners and managers in the Upper Midwest.**  
H. K. Carroll\*, R. C. Bott-Knutson, and S. L. Mastellar, *South Dakota State University, Brookings, SD, USA.*
- 192 **Using small ruminants to improve forage availability in Michigan equine pastures.**  
T. A. Guthrie\*<sup>1</sup>, M. L. Metzger<sup>1</sup>, J. V. Marteniuk<sup>1</sup>, and E. A. Ohlgren-Miller<sup>2</sup>, <sup>1</sup>*Michigan State University, East Lansing, MI, USA,* <sup>2</sup>*Arbor Meadow Farm, Grass Lake, MI, USA.*
- 193 **Impact of horse program involvement on youth on development and life skills.**  
C. Thompson, L. Luck\*, and L. Karr, *University of Nebraska-Lincoln, Lincoln, NE, USA.*
- 194 **Companion animal and equine open house provides interactive recruiting opportunity.**  
K. P. Anderson\*, L. Luck, and L. Karr, *University of Nebraska, Lincoln, NE, USA.*
- 195 **Results of the 2016 Equine Science Society member survey.**  
K. D. Bump\*<sup>1</sup> and S. E. Pratt-Phillips<sup>2</sup>, <sup>1</sup>*Cazenovia College, Cazenovia, NY, USA,* <sup>2</sup>*North Carolina State University, Raleigh, NC, USA.*
- 196 **Perceptions of welfare regulation at stock-type horse shows: A survey.**  
A. R. Rego, H. S. Spooner\*, and A. Brzezicki, *Middle Tennessee State University, Murfreesboro, TN, USA.*
- 197 **A new approach to biosecurity education: "Barn Smarts for Biosecurity: Tips for Keeping Your Horse Safe and Healthy".**  
E. A. Greene\* and A. D. Wright, *University of Arizona, Tucson, AZ, USA.*
- 198 **Owner and veterinarian awareness of equine insulin dysregulation and available treatments.**  
N. Arana-Valencia\*<sup>1</sup>, M. W. Cater<sup>2</sup>, and N. L. Walker<sup>1</sup>, <sup>1</sup>*School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge, LA, USA,* <sup>2</sup>*Department of Agricultural and Extension Education & Evaluation, Louisiana State University Agricultural Center, Baton Rouge, LA, USA.*

**The practical equine management workshop: A hands-on workshop for horse owners in the Tennessee Valley region of Alabama.**

C. M. Holland\*<sup>1</sup>, G. L. Thompson<sup>1</sup>, G. Parks<sup>1</sup>, L. Strickland<sup>2</sup>, and K. Stanford<sup>1</sup>, <sup>1</sup>*Auburn University, Auburn, AL, United States*, <sup>2</sup>*University of Tennessee, Knoxville, TN, United States*.

## ORAL PRESENTATIONS

### Equine Biosciences: Graduate Student Competition (2)

**Moderator: Carolyn Hammer, North Dakota State University**

**Location: Minnesota Valley Ballroom IV**

- 3:00 pm 27 **Cross-sectional analysis of salivary cortisol and strongyle-type egg shedding levels in horses.**  
D. L. Keating\*, J. S. Lehman, and S. V. Burk, *Otterbein University, Westerville, OH, USA.*
- 3:15 pm 28 **Changes in peripartum mare circulating blood urea nitrogen, glucose and non-esterified fatty acids.**  
N. B. Duncan\*, M. J. Crosby, and A. M. Meyer, *University of Missouri-Columbia, Columbia, MO, USA.*
- 3:30 pm 29 **Can fecal samples be used to inform about microbial communities of the equine hindgut?**  
K. J. Reed\*<sup>1</sup>, I. G. Z. Kunz<sup>1</sup>, J. A. Scare<sup>2</sup>, M. K. Nielsen<sup>2</sup>, J. L. Metcalf<sup>1</sup>, R. J. Coleman<sup>2</sup>, and S. J. Coleman<sup>1</sup>, <sup>1</sup>*Colorado State University, Fort Collins, CO, USA*, <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 3:45 pm 30 **Determining the effects of anthelmintic drugs on the equine intestinal microbiome.**  
I. G. Z. Kunz\*<sup>1</sup>, K. J. Reed<sup>1</sup>, J. L. Metcalf<sup>1</sup>, R. J. Coleman<sup>2</sup>, and S. J. Coleman<sup>1</sup>, <sup>1</sup>*Colorado State University, Fort Collins, CO, USA*, <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 4:00 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:30 pm 31 **Horses with pasture asthma demonstrate reversible airway obstruction and airway hyper-responsiveness at methacholine doses that are diagnostic of moderate to severe human asthma.**  
C. L. Hunter\*<sup>1</sup>, L. A. Bright<sup>2</sup>, L. Costa<sup>3</sup>, J. E. Bowser<sup>1</sup>, P. S. Shaw<sup>1</sup>, M. K. Brashier<sup>1</sup>, J. A. Wilson<sup>1</sup>, and C. E. Swiderski<sup>1</sup>, <sup>1</sup>*Mississippi State College of Veterinary Medicine, Mississippi State, MS, USA*, <sup>2</sup>*University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA, USA*, <sup>3</sup>*University of California Davis School of Veterinary Medicine, Davis, CA, USA.*
- 4:45 pm 32 **Sedated versus nonsedated methacholine challenge for the diagnosis of airway hyper-responsiveness in horses.**  
A. Lack\*, J. Bowser, C. Wenzel, R. Wilson, A. Tucker, E. Moyer, and C. Swiderski, *Mississippi State College of Veterinary Medicine, Mississippi State, MS, USA.*
- 5:00 pm 33 **Intravenous magnesium sulfate as a rescue therapeutic for bronchoconstriction in equine pasture asthma.**  
C. Wenzel\*, J. Bowser, R. Wills, N. Bondi, R. Wilson, R. Cobb, and C. Swiderski, *Mississippi State University College of Veterinary Medicine, Mississippi State, MS, USA.*

### Nutrition: Graduate Student Competition (2)

**Moderator: Debra Powell, Saint Mary-of-the-Woods College**

**Location: Minnesota Valley Ballroom II-III**

- 3:00 pm 96 **Changes in *in vitro* fermentative capacity of equine feces due to alteration of forage diet.**  
S. B. Turner\*, E. L. Wagner, B. M. Wassel, R. B. Muntifering, and M. K. Mullenix, *Auburn University, Auburn, AL, USA.*
- 3:15 pm 97 **Effect of restricting time allowed for grazing on fecal microbial fermentation parameters.**  
M. A. Bowman\*, J. L. Moore, and P. D. Siciliano, *North Carolina State University, Raleigh, NC, USA.*
- 3:30 pm 98 **Effect of probiotics on antibiotic-induced changes in fecal bacteria of horses.**  
M. B. Pyles\*<sup>1</sup>, A. L. Fowler<sup>1</sup>, V. T. Bill<sup>1</sup>, A. D. Crum<sup>1</sup>, S. H. Hayes<sup>1</sup>, M. D. Flythe<sup>2</sup>, and L. M. Lawrence<sup>1</sup>, <sup>1</sup>*University of Kentucky, Lexington, KY, USA*, <sup>2</sup>*United States Department of Agriculture, ARS-FAPRU, Lexington, KY, USA.*

- 3:45 pm 99 **Effect of probiotic administration on diarrhea incidence, severity, and the fecal microbiome in neonatal foals.**  
H. Swarthout<sup>\*1</sup>, L. Baker<sup>1</sup>, J. Richeson<sup>1</sup>, J. Zhao<sup>2</sup>, and G. Veneklassen<sup>3</sup>, <sup>1</sup>West Texas A&M University, Canyon, TX, USA, <sup>2</sup>University of Arkansas, Fayetteville, AR, USA, <sup>3</sup>Timber Creek Veterinary Hospital, Canyon, TX, USA.
- 4:00 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).

## Production & Management: Graduate Student Competition (2)

**Moderator: Marcia Hathaway, University of Minnesota**

**Location: Minnesota Valley Ballroom I**

- 3:00 pm 133 **Seasonal effects of pasture nonstructural carbohydrates on the metabolic and digestive profile of grazing horses.**  
K. L. Kaufman<sup>\*</sup>, B. J. McIntosh, S. M. Ghajar, and K. M. DeLano, *Virginia Tech Middleburg Agricultural Research and Extension Center, Middleburg, VA, USA.*
- 3:15 pm 134 **Wear tolerance of turfgrasses under simulated horse traffic.**  
A. L. Jaqueth<sup>\*1</sup>, T. T. Turner<sup>1</sup>, B. J. McIntosh<sup>2</sup>, M. E. Iwaniuk<sup>1</sup>, and A. O. Burk<sup>1</sup>, <sup>1</sup>The University of Maryland, College Park, MD, USA, <sup>2</sup>Virginia Polytechnic Institute and State University, Blacksburg, VA, USA.
- 3:30 pm 135 **Nutritive quality of Coastal bermudagrass treated with plant growth-promoting rhizobacteria.**  
C. L. Fike<sup>\*</sup>, E. L. Wagner, D. W. Held, R. B. Muntifering, and C. M. Holland, *Auburn University, Auburn, AL, USA.*
- 3:45 pm 136 **A comparison of reduced lignin and conventional alfalfa varieties and their potential for use as equine forage sources.**  
A. M. Grev<sup>\*</sup>, M. S. Wells, C. C. Sheaffer, and K. L. Martinson, *University of Minnesota, St. Paul, MN, USA.*
- 4:00 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:30 pm 137 **Estimation of actual and ideal bodyweight of miniature, saddle-type, and gaited horses using morphometric measurements.**  
D. N. Catalano<sup>\*1</sup>, R.J. Coleman<sup>2</sup>, M. R. Hathaway<sup>1</sup>, A. E. Neu<sup>1</sup>, E. L. Wagner<sup>3</sup>, P. J. Tyler<sup>3</sup>, and K. L. Martinson<sup>1</sup>, <sup>1</sup>University of Minnesota, St. Paul, MN, USA, <sup>2</sup>University of Kentucky, Lexington, KY, USA, <sup>3</sup>Auburn University, Auburn, AL, USA.
- 4:45 pm 138 **Evaluating equine feeding behavior utilizing GrowSafe Systems.**  
E. C. Dickson<sup>\*</sup>, W. C. Kayser, C. M. Latham, J. L. Leatherwood, and S. H. White, *Texas A&M University, College Station, TX, USA.*
- 5:00 pm 139 **Muzzling affects horse behavior.**  
A. L. Fowler<sup>\*</sup>, J. Parsons, L. Walling, and L. M. Lawrence, *University of Kentucky, Lexington, KY, USA.*

## Teaching & Extension: Graduate Student Competition (2)

**Moderator: Carey Williams, Rutgers, The State University of New Jersey**

**Location: Wood Duck Pond**

- 3:00 pm 176 **Student math perceptions and skills in an equine nutrition class.**  
T. L. Hansen<sup>\*</sup> and L. K. Warren, *University of Florida, Gainesville, FL, USA.*
- 3:15 pm 177 **Comparison of undergraduate student learning gains and satisfaction when enrolled in animal science courses offered in person and online.**  
A. E. Neu<sup>\*</sup>, M. D. Stern, and K. L. Martinson, *University of Minnesota, St. Paul, MN, USA.*
- 3:30 pm 178 **Studying animal behavior benefits inquiry-based learning.**  
D. Arnold<sup>\*1</sup>, J. Miot<sup>2</sup>, A. Thoron<sup>1</sup>, and C. Mortensen<sup>1</sup>, <sup>1</sup>University of Florida, Gainesville, FL, USA, <sup>2</sup>Santa Fe College.
- 3:45 pm 179 **Self-efficacy of 4-H horse and pony volunteers in equine science content.**  
K. Sajdera<sup>\*</sup>, B. Rice, and C. Brady, *Purdue University, West Lafayette, IN, USA.*
- 4:00 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).

**Undergraduate Student Competition (2)**  
**Moderator: James Lattimer, Kansas State University**  
**Location: White Pelican Bay**

- 3:00 pm 13 ***Saccharomyces cerevisiae* effect on equine cribbing, aggressive, and movement behaviors.**  
E. E. Powell\*, R. A. Koler, and T. L. Bova, *University of Findlay, Findlay, OH, USA.*
- 3:15 pm 14 **A preliminary evaluation of supplemental vitamin E form on serum  $\alpha$ -tocopherol levels and oxidative stress parameters measured in response to a novel exercise challenge.**  
K. C. Lee\*<sup>1</sup>, K. J. Duberstein<sup>1</sup>, R. Pazdro<sup>2</sup>, A. Abrams<sup>1</sup>, E. E. Kane<sup>3</sup>, and R. L. Stuart<sup>4</sup>, <sup>1</sup>*Animal and Dairy Science Department, University of Georgia, Athens, GA, USA,* <sup>2</sup>*Foods and Nutrition Department, University of Georgia, Athens, GA, USA,* <sup>3</sup>*Bayer Animal Health, Seattle, WA, USA,* <sup>4</sup>*Stuart Products, Bedford, TX, USA.*
- 3:30 pm 15 **Nutrient digestion in horses fed oats following the dietary addition of feed enzymes.**  
L. J. Hilly\*, S. R. Hass, X. Li, P. Isherwood, E. A. Owens, A. J. Cawdell-Smith, and W. L. Bryden, *The University of Queensland, Gatton, Queensland, Australia.*
- 3:45 pm 16 **Relationship between daily distance traveled, voluntary intake, and body condition score in horses kept in individual pens.**  
M. K. Hollifield\*, J. Moore, T. Hendrix, B. Gillaspie, and S. Pratt-Phillips, *North Carolina State University, Raleigh, NC, USA.*
- 4:00 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:30 pm 17 **Equine feeding practices and nutrition knowledge in the Upper Midwest.**  
E. J. Rosenthal\*, R. C. Bott-Knutson, H. K. Carroll, and S. L. Mastellar, *South Dakota State University, Brookings, SD, USA.*
- 4:45 pm 18 **Effects of different chukker lengths on exercise recovery in intercollegiate polo horses.**  
S. Dale\*, C. Carver, C. Zweck-Bronner, A. M. G. Braga da Silva, L. B. Latorraca, C. E. B. Lopes, J. E. Bruemmer, and T. M. Hess, *Colorado State University, Fort Collins, CO, USA.*
- 5:00 pm 19 **Relationship of equine conformation to stride length at the trot.**  
M. V. Starnes\*, R. C. Strunk, W. C. Bridges, and K. L. Vernon, *Clemson University, Clemson, SC, USA.*

## OTHER EVENTS

### **Student Social: “Classifying the Universe”**

Sponsored by Zinpro Corporation

Chair: Tayler Hansen, University of Florida

7:00–9:00 pm

Location: Nickelodeon Universe at the Mall of America

*\*Complimentary rides to MOA available on the hotel shuttle bus*

# Thursday, June 1

## Hoofda 5K Fun Run/Walk

6:00–7:00 am

\*Meet in the hotel lobby at 6:00 am.

Race held at the Minnesota Valley National Wildlife Refuge

Sponsored by Zinpro Corporation

## WORKSHOPS

### Workshop Session 1

- 8:00–9:50 am **Copyright & Creative Commons in Teaching, Extension, & Everyday Life.**  
Leaders: Karen Waite, PhD (*Michigan State University*) and Nancy Sims, J.D., MLIS (*University of Minnesota*)  
Location: **Minnesota Valley Ballroom II–III**
- 8:00–9:50 am **ESS Strategic Planning.**  
Leaders: ESS Board of Directors.  
Location: **Minnesota Valley Ballroom I**
- 8:00–9:50 am **Building Your Brand (Student Professional Development)–Session A**  
Sponsored by: Zinpro Corporation  
Speakers: Connie Larson, PhD (*Zinpro Corporation*), Jyme Nichols, M.S. (*Bluebonnet Feeds*), George Dawson, PhD (*Zinpro Corporation*), Tanya Cubitt, PhD (*Performance Horse Nutrition, LLC*), and Kelcey Swyers, PhD (*Grassland Nutrition Consulting*)  
Location: **Minnesota Valley Ballroom IV**

### Workshop Session 2

- 10:00–11:50 am **Program Assessment for All: Setting Goals and Assessing Learning Outcomes**  
Leaders: Karen Waite, PhD (*Michigan State University*), Mary Rossano, PhD (*University of Kentucky*), Lynn Taylor, PhD (*Centenary University*), and Karin Bump, PhD (*Cazenovia College*)  
Location: **Minnesota Valley Ballroom II–III**
- 10:00–11:50 am **Partnering with Cinch Ranch Sorting National Championships to Offer Unique Ranch Sorting Kids’ Camps**  
Leaders: Dave Wolfe, President (*Cinch Ranch Sorting National Championships Co.*), and Doug Householder, PhD (*Texas A&M University*)  
Location: **Minnesota Valley Ballroom I**
- 10:00–11:50 am **Building Your Brand (Student Professional Development)–Session B**  
Sponsored by: Zinpro Corporation  
Speakers: Connie Larson, PhD (*Zinpro Corporation*), Jyme Nichols, M.S. (*Bluebonnet Feeds*), George Dawson, PhD (*Zinpro Corporation*), Tanya Cubitt, PhD (*Performance Horse Nutrition, LLC*), and Kelcey Swyers, PhD (*Grassland Nutrition Consulting*)  
Location: **Minnesota Valley Ballroom IV**

## OTHER EVENTS

### Minnesota Horse Industry Tour and “Great Gopher Grill Out”

Sponsored by the Minnesota Horse Council and Cargill

\*Ticketed Event

- 12:00 pm **Load buses in hotel lobby**  
\*Buses will depart at 12:15 pm.

- 12:15–5:30 pm **Industry Tour with lunch provided**  
 Tour stops include Canterbury Park racetrack (box lunch provided), Ames Percherons, Cedar Ridge Arabians, and the University of Minnesota Leatherdale Equine Center and experimental horse pastures.
- 5:30–8:00 pm **Great Gopher Grill Out (BBQ dinner)**  
 University of Minnesota Welcome: Tom Molitor, Department Chair, *Veterinary Population Medicine*; Bill Dayton, Head, *Department of Animal Science*; Brian Buhr, Dean, *College of Food, Agriculture and Natural Resource Sciences*.  
 \*Buses will begin returning to the hotel at 7:00 pm.

## Friday, June 2

### ARPAS EXAM

6:30–7:30 am

Location: Owl Overlook

### Invited Speaker–Genetics

Sponsored by Buckeye Nutrition

Moderator: Stephen Coleman, Colorado State University

Location: Minnesota Valley Ballroom I–IV

- 8:00–9:00 am **Deciphering the Role of Bronchial Hyper-Responsiveness in Equine Pasture Asthma**  
 Cyprianna Swiderski, PhD, DVM, Dipl. ACVIM, *College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, USA*

## POSTER PRESENTATIONS

with Refreshment Break

9:00–10:30 am

Location: Riverside (1st floor)

### Equine Biosciences: Posters

- 43 **Effects of dexamethasone treatment on insulin sensitivity, insulin, thyroxine, and triiodothyronine concentrations, and the MSH and ACTH responses to sulpiride in geldings.**  
 N. Arana-Valencia\*, D. L. Thompson, P. Rhymes, and E. L. Oberhaus, *School of Animal Sciences, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, LA, USA.*
- 44 **The effect of a natural-source mineral supplement on gastric juice pH in horses.**  
 M. E. Gordon\*<sup>1</sup>, K. R. Vineyard<sup>1</sup>, and F. M. Andrews<sup>2</sup>, <sup>1</sup>*Purina Animal Nutrition, Gray Summit, MO, USA*, <sup>2</sup>*Louisiana State University, Baton Rouge, LA, USA.*
- 45 **Effect of bromocriptine administration on the heart rate, prolactin, growth hormone, and adrenocorticotropin responses to a two-minute exercise bout in geldings.**  
 D. L. Thompson\*, N. L. Walker, C. K. Pham, E. L. Oberhaus, and N. Arana-Valencia, *LSU AgCenter, Baton Rouge, LA, USA.*
- 46 **Seasonal assessment of cabergoline suppression of prolactin in mares: unstimulated versus sulpiride and thyrotropin releasing hormone stimulated responses.**  
 E. L. Oberhaus\*, D. L. Thompson, C. K. Pham, and N. Arana-Valencia, *Louisiana State University Agricultural Center, Baton Rouge, LA, USA.*
- 47 **Optimization of molecular techniques for the identification of small strongyles.**  
 Br. M. Chambers\*, A. S. Biddle, H. G. Nelson, and J. T. Berg, *University of Delaware, Newark, DE, United States.*



- 48 **Immunoglobulin concentrations in pre- and post-foaling mammary secretions.**  
K. Koke, S. McGrath, and K. Cole\*, *The Ohio State University, Columbus, OH, USA.*
- 49 **Normal variation and changes over time in the equine intestinal microbiome.**  
E. J. Martin\*<sup>1</sup>, K. J. Reed<sup>1</sup>, I. G. Z. Kunz<sup>1</sup>, R. J. Coleman<sup>2</sup>, and S. J. Coleman<sup>1</sup>, <sup>1</sup>*Colorado State University, Fort Collins, CO, USA,* <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*
- 50 **Influence of supplementation of *Saccharomyces cerevisiae* fermentation product to horses on acquired immunity using a novel vaccine challenge.**  
C. J. Hartz\*<sup>1</sup>, J. A. Coverdale<sup>1</sup>, A. N. Bradbery<sup>1</sup>, A. A. Millican<sup>1</sup>, K. Fikes<sup>1</sup>, M. S. Goehring<sup>1</sup>, J. E. Sawyer<sup>1</sup>, T. H. Welsh<sup>1</sup>, I. Yoon<sup>2</sup>, and T. A. Wickersham<sup>1</sup>, <sup>1</sup>*Texas A&M University, College Station, TX, USA,* <sup>2</sup>*Diamond V, Cedar Rapids, IA, USA.*
- 51 **Hormonal and heart rate responses to a surprise stimulus and isolation stress in horses.**  
A. Bachman\*, D. L. Thompson, N. L. Walker, and C. V. Southerland, *Louisiana State University Agricultural Center, Baton Rouge, LA, USA.*
- 52 **Cabergoline and sulpiride effects on prolactin secretion in horses: Duration of action, magnitude of response, and mode of administration.**  
N. Arana-Valencia\*, D. L. Thompson, and C. V. Southerland, *School of Animal Sciences, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, LA, USA.*
- 53 **Precision-cut lung slicing: a tool for investigating airway hyper-responsiveness in horses.**  
L. Lopez-Soberal\*, C. J. Wenzel, R. McDaniel, H. Dodd, J. E. Bowser, and C. E. Swiderski, *Mississippi State University College of Veterinary Medicine, Mississippi State, MS, USA.*
- 54 **Method development for extraction and quantification of phytoestrogens in equine feeds and serum.**  
A. M. Adkin\*, L. K. Warren, C. Silva-Sanchez, and C. J. Mortensen, *University of Florida, Gainesville, FL, USA.*
- 55 **Taxa distribution of small strongyles across New England, the Mid-Atlantic and Pacific Western regions of the United States.**  
H. G. Nelson\*, A. Biddle, and B. Chambers, *University of Delaware, Newark, Delaware, USA.*

## Genetics: Posters

- 81 **A horse of a different color: Comparing coat color genotypes of American Quarter Horses with their registered phenotypes.**  
M. J. Lumpa\*<sup>1</sup>, R. J. Coleman<sup>2</sup>, and S. J. Coleman<sup>1</sup>, <sup>1</sup>*Colorado State University, Fort Collins, CO, USA,* <sup>2</sup>*University of Kentucky, Lexington, KY, USA.*

## Production & Management: Posters

- 148 **Phosphorus release from Florida soils amended with different equine manures.**  
L. A. Skurupey\*, M. W. Clark, G. J. Hochmuth, and L. K. Warren, *University of Florida, Gainesville, FL, USA.*
- 149 **Comparison of feed intake behavior between cool- and warm-season hays offered at restricted and ad libitum rates.**  
E. L. Chizek, T. L. Hansen, O. K. Zugay, and L. K. Warren\*, *University of Florida, Gainesville, FL, USA.*
- 150 **Hay-rake type affects ash content of alfalfa hay.**  
A. E. Neu\*<sup>1</sup>, C. C. Sheaffer<sup>2</sup>, D. J. Undersander<sup>3</sup>, M. H. Hall<sup>4</sup>, D. M. Kniffen<sup>5</sup>, M. S. Wells<sup>2</sup>, D. N. Catalano<sup>1</sup>, and K. L. Martinson<sup>1</sup>, <sup>1</sup>*Department of Animal Science, University of Minnesota, St. Paul, MN USA,* <sup>2</sup>*Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN USA,* <sup>3</sup>*University of Wisconsin, Madison, WI, USA,* <sup>4</sup>*Department of Plant Science, Pennsylvania State University, University Park, PA, USA,* <sup>5</sup>*Department of Animal Science, Pennsylvania State University, University Park, PA, USA.*
- 151 **Acclimation reduces cortisol in horses tied with overchecks.**  
K. Bennett-Wimbush\*, J. Suagee-Bedore, and M. D. Amstutz, *Ohio State University, Wooster, OH, USA.*
- 152 **Effect of bucket color on water intake in horses.**  
A. T. Davis\*, B. A. Siehr, B. C. Akam, and J. A. FitzSimmons, *Wilmington College, Wilmington, OH, USA.*

- 153 **Morphometric differences of multiple equine breed types.**  
D. N. Catalano\*<sup>1</sup>, R.J. Coleman<sup>2</sup>, M. R. Hathaway<sup>1</sup>, A. E. Neu<sup>1</sup>, E. L. Wagner<sup>3</sup>, Patricia J. Tyler<sup>3</sup>, and K. L. Martinson<sup>1</sup>,  
<sup>1</sup>University of Minnesota, St. Paul, MN, USA, <sup>2</sup>University of Kentucky, Lexington, KY, USA, <sup>3</sup>Auburn University, Auburn, AL, USA.
- 154 **Effect of bucket placement on water intake.**  
B. C. Akam\*, B. A. Siehr, A. T. Davis, and J. A. FitzSimmons, *Wilmington College, Wilmington, OH, USA.*
- 155 **Effect of weight load on stride characteristics of horses as measured at the trot.**  
K. Walter\*<sup>1</sup> and L. White<sup>2</sup>, <sup>1</sup>Truman State University, Kirksville, MO, USA, <sup>2</sup>New Mexico State University, Las Cruces, NM, USA.
- 156 **Acclimation of mature horses to novel short-term confinement and social isolation.**  
C. R. Hansen\*<sup>1</sup>, A. L. Wagner-Wells<sup>2</sup>, and R. K. Splan<sup>1</sup>, <sup>1</sup>Sul Ross State University, Alpine, TX, USA, <sup>2</sup>Probiotech International Inc, Saint-Hyacinthe, QC, Canada.
- 157 **Association of the equine digital cushion with lameness and anatomical changes of the distal limb.**  
M. A. Gunkelman\*<sup>1</sup>, J. F. Griffin<sup>2</sup>, J. M. Young<sup>1</sup>, and C. J. Hammer<sup>1</sup>, <sup>1</sup>North Dakota State University, Fargo, ND, USA, <sup>2</sup>Texas A&M University, College Station, TX, USA.
- 158 **Radiographic asymmetries in the forelimb hoof angle of yearling Thoroughbred racehorses compared to sale price and subsequent performance.**  
L. M. Zembrodt\* and S. R. Malone, *Morehead State University, Morehead, KY, USA.*
- 159 **Effect of winter blanket weight on surface temperature of horses in cold environments.**  
C. J. Hammer\* and M. A. Gunkelman, *North Dakota State University, Fargo, ND, USA.*
- 160 **Effect of body condition score on body fat composition of stock-type horses.**  
E. N. Ferjak\*, C. A. Cavinder, D. D. Burnett, and T. T. N. Dinh, *Mississippi State University, Starkville, MS, US.*

## Reproductive Physiology: Posters

- 169 **Effects of long-term liquid nitrogen storage on the post-thaw motility of cryopreserved equine semen.**  
J. R. Wylie\*, C. R. Long, N. H. Ing, and M. M. Vogelsang, *Texas A&M University, College Station, TX, USA.*

## ORAL PRESENTATIONS

### Exercise Science

**Moderator: Bridgett McIntosh, Virginia Polytechnic Institute and State University**

**Location: Wood Duck Pond**

- 10:30 am 63 **Intensity of exercise during early-season competition in three-day-event horses assessed using KER ClockIt Sport smartphone application.**  
J. D. Pagan\*<sup>1</sup>, K. O'Neill<sup>1</sup>, N. Ireland<sup>1</sup>, and M. Davies<sup>2</sup>, <sup>1</sup>Kentucky Equine Research, Versailles, KY, USA, <sup>2</sup>Clockit EQ, Ltd, Perth, WA, Australia.
- 10:45 am 64 **Intensity and distance of exercise during training in advanced three-day event horses and thoroughbred racehorses assessed using KER ClockIt smartphone application.**  
J. D. Pagan\*<sup>1</sup>, E. Mulvey<sup>1</sup>, K. O'Neill<sup>1</sup>, N. Ireland<sup>1</sup>, and M. Davies<sup>2</sup>, <sup>1</sup>Kentucky Equine Research, Versailles, Kentucky, USA, <sup>2</sup>Clockit EQ Ltd, Perth, WA, Australia.
- 11:00 am 65 **Energy expenditure of horses in field conditions during light and heavy exercise.**  
J. Zoller\*<sup>1</sup>, C. Cavinder<sup>2</sup>, D. Sigler<sup>1</sup>, L. Tedeschi<sup>1</sup>, and J. Harlin<sup>1</sup>, <sup>1</sup>Texas A&M University, College Station, TX, USA, <sup>2</sup>Mississippi State University, Starkville, MS, USA.
- 11:15 am 66 **Relation between resting heart rate and heart rate recovery in horses.**  
A. Lindner\*<sup>1</sup>, M. Esser<sup>1</sup>, R. López<sup>2</sup>, and F. Boffi<sup>2</sup>, <sup>1</sup>Arbeitsgruppe Pferde, Juelich, Germany, <sup>2</sup>Facultad de Ciencias Veterinarias, Universidad de La Plata, La Plata, Argentina.
- 11:30 am 67 **Influence of long-term furosemide use on weight loss in horses.**  
A. Pritchard\*, H. Spooner, and R. Hoffman, *Middle Tennessee State University, Murfreesboro, TN, USA.*

- 11:45 am 68 **Impacts of DigestaWell NRG supplementation on post-exercise muscle soreness.**  
Y. Shen<sup>1</sup>, S. Porr<sup>1</sup>, J. K. Suagee-Bedore<sup>2</sup>, K. B. Wimbush<sup>2</sup>, A. L. Wagner<sup>\*3</sup>, and Ivan D. Girard<sup>3</sup>, <sup>1</sup>Murray State University, Murray, KY, USA, <sup>2</sup>The Ohio State University, Wooster, OH, USA, <sup>3</sup>Probiotech International Inc, Saint Hyacinthe, Quebec, Canada.
- 12:00 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## Nutrition (1)

**Moderator: Shannon Pratt-Phillips, North Carolina State University**

**Location: Minnesota Valley Ballroom I–II**

- 10:30 am 100 **Plasma amino acid concentrations of horses grazing alfalfa, cool-season perennial grasses, and teff.**  
M. L. DeBoer\*, K. L. Martinson, K. J. Kuhle, C. C. Sheaffer, M. S. Wells, and M. R. Hathaway, *University of Minnesota, St. Paul, MN, USA.*
- 10:45 am 101 **Manure nitrogen characteristics from horses fed warm season grass hays.**  
J. M. Weir<sup>\*1</sup>, H. Li<sup>2</sup>, L. K. Warren<sup>1</sup>, E. Macon<sup>3</sup>, and C. Wickens<sup>1</sup>, <sup>1</sup>University of Florida, Gainesville, FL, USA, <sup>2</sup>University of Delaware, Newark, DE, USA, <sup>3</sup>Middle Tennessee State University, Murfreesboro, TN, USA.
- 11:00 am 102 **Feeding natural-source minerals or calcium carbonate to horses: Is there a relationship with TCO<sub>2</sub>?**  
M. E. Gordon, R. D. Jacobs\*, and M. L. Jerina, *Purina Animal Nutrition, Gray Summit, MO, USA.*
- 11:15 am 103 **Influence of dietary cobalt on nutrient digestibility and serum cobalt concentrations in horses.**  
R. A. LeCompte<sup>1</sup>, B. D. Nielsen<sup>\*1</sup>, C. I. Robison<sup>1</sup>, H. C. Schott<sup>1</sup>, T. H. Herdt<sup>1</sup>, and C. K. Larson<sup>2</sup>, <sup>1</sup>Michigan State University, East Lansing, MI, USA, <sup>2</sup>Zinpro Corporation, Eden Prairie, MN, USA.
- 11:30 am 104 **Assessment of the effect of dietary particle size on gastrointestinal permeability.**  
S. L. Lapinskas\*, K. J. Harvatine, P. Ochonski, and W. B. Staniar, *The Pennsylvania State University, University Park, PA, USA.*
- 11:45 am 105 **Digestibility of different diets after a weight gain protocol in Standardbreds, Andalusians, and mixed breed ponies.**  
S. J. Potter<sup>1</sup>, N. J. Bamford<sup>1</sup>, P. A. Harris<sup>2</sup>, and S. R. Bailey<sup>\*1</sup>, <sup>1</sup>University of Melbourne, Melbourne, Victoria, Australia, <sup>2</sup>Waltham Centre for Pet Nutrition, Waltham on the Wolds, Leicestershire, United Kingdom.
- 12:00 pm 106 **In vitro impact of two commercially available complementary feeds on gastric content buffering capacity.**  
S. Julliard<sup>1</sup>, A. Martin<sup>1</sup>, and V. Julliard<sup>\*2,3</sup>, <sup>1</sup>Lab to Field, Dijon, France, <sup>2</sup>UMR PAM A, Dijon, France, <sup>3</sup>AgroSup Dijon, Dijon, France.
- 12:15 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## Teaching & Extension

**Moderator: Colleen Brady, Purdue University**

**Location: Minnesota Valley Ballroom III–IV**

- 10:30 am 180 **Equine-assisted psychotherapy treatment in a residential childcare facility.**  
E. L. Berg<sup>\*1</sup>, M. Gooch<sup>2</sup>, L. Feldmann<sup>2</sup>, B. Knight<sup>2</sup>, and J. Verlaine<sup>2</sup>, <sup>1</sup>North Dakota State University, Fargo, ND, USA, <sup>2</sup>Home on the Range, Sentinel Butte, ND, USA.
- 10:45 am 181 **Impact of a state fair equine exhibit on public knowledge of, and interest in, horses and the horse industry.**  
K. D. Bump\*, *Cazenovia College, Cazenovia, NY, USA.*
- 11:00 am 182 **Reach versus impact: Examining the value of online learning lessons compared to webinars for educational outcomes for the equine community.**  
K. P. Anderson<sup>\*1</sup>, K. E. Pulec<sup>1</sup>, C. D. Skelly<sup>2</sup>, A. D. Wright<sup>3</sup>, and E. A. Greene<sup>3</sup>, <sup>1</sup>University of Nebraska, Lincoln, NE, USA, <sup>2</sup>Michigan State University, East Lansing, MI, USA, <sup>3</sup>University of Arizona, Tucson, AZ, USA.
- 11:15 am 183 **Are we teaching what industry wants?**  
K. M. Hiney\*, S. Robinson, M. Gadd, and S. Cooper, *Oklahoma State University, Stillwater, OK, USA.*
- 11:30 am 184 **Expectations of veterinary school costs and salary, in a group of pre-veterinary equine science students.**  
S. E. Pratt-Phillips\* and K. S. Wilhelm, *North Carolina State University, Raleigh, NC, USA.*

- 11:45 am 185 **Interspecies encounter: Documenting the benefits of incorporating fine arts into the Equine Studies curriculum.**  
L. E. Taylor\*<sup>1</sup> and J. M. Shaw<sup>2</sup>, <sup>1</sup>*Centenary University, Hackettstown, NJ, USA*, <sup>2</sup>*OnSiteNYC, New York, NY, USA*.
- 12:00 pm 186 **Assessment of learning outcomes and self-regulated learning among undergraduate equine science students in a short-duration study abroad program.**  
R. K. Splan\*<sup>1</sup>, C. M. Estep<sup>1</sup>, C. A. S. Porr<sup>2</sup>, T. W. Broyles<sup>3</sup>, and J. G. Velasco<sup>1,2,4</sup>, <sup>1</sup>*Sul Ross State University, Alpine, TX, USA*, <sup>2</sup>*Murray State University, Murray, KY, USA*, <sup>3</sup>*Tennessee State University, Nashville, TN, USA*.
- 12:15 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer).

## **Invited Speaker Luncheon—Production & Management**

**Sponsored by Tribute Equine Nutrition**

**Moderator: Carissa Wickens, University of Florida**

**Location: Minnesota Valley Ballroom I–IV**

- 12:15 pm **Buffet lunch service begins** (Minnesota Valley Ballroom Foyer)
- 12:45–1:45 pm **Dominance and Leadership: Useful Concepts in Human-Horse Interactions?**  
Elke Hartmann, PhD, *Department of Animal Environment and Health, Swedish University of Agricultural Sciences, Uppsala, Sweden*

## **Equine Biosciences**

**Moderator: Amy Biddle, University of Delaware**

**Location: Wood Duck Pond**

- 2:15 pm 34 **Comparison of processed and unprocessed digital images for the determination of radiographic bone aluminum equivalent (RBAE) values in equine bone.**  
J. D. Pagan\*, P. Kazakevicius, A. Swanhall, E. Ford, and A. Pritchard, *Kentucky Equine Research, Versailles, Kentucky, USA*.
- 2:30 pm 35 **Effects of travel on the equine cecal microbiota.**  
E. B. Venable\*<sup>1</sup>, T. W. Liu<sup>4</sup>, S. D. Bland<sup>1</sup>, H. H. Holscher<sup>3,4</sup>, and K. S. Swanson<sup>2,4</sup>, <sup>1</sup>*Department of Animal Science Food & Nutrition, Southern Illinois University, Carbondale, IL USA*, <sup>2</sup>*Department of Animal Sciences, University of Illinois, Urbana, IL USA*, <sup>3</sup>*Department of Food Science and Human Nutrition, University of Illinois, Urbana, IL USA*, <sup>4</sup>*Division of Nutritional Sciences, University of Illinois, Urbana, IL USA*.
- 2:45 pm 36 **Development and management of a cannulated horse herd.**  
E. B. Venable\*<sup>1</sup>, S. K. Reed<sup>2</sup>, R. D. Jacobs<sup>3</sup>, M. L. Jerina<sup>3</sup>, and M. E. Gordon<sup>3</sup>, <sup>1</sup>*Department of Animal Science Food & Nutrition, Southern Illinois University, Carbondale, IL USA*, <sup>2</sup>*College of Veterinary Medicine, University of Missouri-Columbia, Columbia, MO USA*, <sup>3</sup>*Purina Animal Nutrition, Gray Summit, MO USA*.
- 3:00 pm 37 **Gait and gross motor improvements in a two-year-old child with arthrogryposis after hippotherapy intervention using a Norwegian Fjord.**  
H. A. Brady\*<sup>1</sup>, C. R. James<sup>2</sup>, D. W. Dendy<sup>2</sup>, C. A. Swiacki<sup>3</sup>, T. A. Irwin<sup>1</sup>, L. D. Thompson<sup>1</sup>, T. M. Camp<sup>2</sup>, H. S. Yang<sup>2</sup>, and K. J. Cooper<sup>2</sup>, <sup>1</sup>*Texas Tech University, Lubbock, TX, USA*, <sup>2</sup>*Texas Tech Health Sciences Center, Lubbock, TX, USA*, <sup>3</sup>*Lubbock Early Childhood Intervention, Lubbock, TX, USA*.
- 3:30 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:00 pm 39 **The effect of a natural-source mineral supplement on gastric ulceration in horses.**  
M. E. Gordon\*<sup>1</sup>, M. L. Jerina<sup>1</sup>, J. K. Young<sup>1</sup>, and F. M. Andrews<sup>2</sup>, <sup>1</sup>*Purina Animal Nutrition, Gray Summit, MO, USA*, <sup>2</sup>*Louisiana State University, Baton Rouge, LA, USA*.
- 4:15 pm 40 **Repeatability of the combined glucose/insulin test in ponies of the same breed and gender, across time.**  
P. K. Morrison<sup>1</sup>, A. H. A. Dugdale<sup>2</sup>, D. H. Grove-White<sup>2</sup>, P. A. Harris\*<sup>3</sup>, C. F. Barfoot<sup>4</sup>, and C. McG. Argo<sup>1</sup>, <sup>1</sup>*University of Surrey, School of Veterinary Medicine, Manor Park Campus, Guildford, United Kingdom*, <sup>2</sup>*University of Liverpool, School of Veterinary Science, Leahurst Campus, United Kingdom*, <sup>3</sup>*Waltham Centre for Pet Nutrition, Melton Mowbray, United Kingdom*, <sup>4</sup>*Mars Horsecare UK Ltd, Milton Keynes, United Kingdom*.
- 4:30 pm 41 **Placental transfer of vitamin K in the horse.**  
T. J. Fischer\*<sup>1</sup>, M. P. Coyle<sup>1</sup>, H. L. Regtop<sup>2</sup>, A. M. Talbot<sup>2</sup>, J. R. Biffin<sup>2</sup>, A. J. Cawdell-Smith<sup>1</sup>, and W. L. Bryden<sup>1</sup>, <sup>1</sup>*The University of Queensland, Gatton, Queensland, Australia*, <sup>2</sup>*Agricare, Braemar, NSW, Australia*.

## Nutrition (2)

Moderator: Kristine Urschel, University of Kentucky

Location: Minnesota Valley Ballroom I-II

- 2:15 pm 107 **Can individual susceptibility to dietary starch be evaluated in blood?**  
P. Grimm\*<sup>1,2</sup> and V. Julliard<sup>2</sup>, <sup>1</sup>Lab To Field, Dijon, France, <sup>2</sup>UMR PAM A, Dijon, France.
- 2:30 pm 108 **Effects of grazing system and season on glucose and insulin dynamics of the grazing horse.**  
C. A. Williams\*<sup>1</sup>, L. B. Kenny<sup>1</sup>, and A. O. Burk<sup>2</sup>, <sup>1</sup>Rutgers, The State University of New Jersey, New Brunswick, NJ, USA, <sup>2</sup>University of Maryland, College Park, MD, USA.
- 2:45 pm 109 **The effect of time- and space-restricted grazing on body weight, body condition score, resting insulin concentration, and activity in grazing horses.**  
J. C. Gill\*, S. E. Pratt-Phillips, and P. D. Siciliano, North Carolina State University, Raleigh, NC, USA.
- 3:00 pm 110 **Can fecal parameters easy-to-use in the field reflect hindgut microbiota dysbiosis?**  
Pauline Grimm\*<sup>1,2</sup>, Camille Pequegnot<sup>2</sup>, and Véronique Julliard<sup>2</sup>, <sup>1</sup>Lab To Field, Dijon, France, <sup>2</sup>UMR PAM A, Dijon, France.
- 3:15 pm 111 **Owner-reported experiences of feeding turmeric to horses.**  
David Marlin\*<sup>1,2</sup>, B. Nielsen<sup>3</sup>, C. Robison<sup>3</sup>, and C. Williams<sup>4</sup>, <sup>1</sup>Oklahoma State University, Stillwater, OK USA, <sup>2</sup>David Marlin Consulting, Cambridge, UK, <sup>3</sup>Michigan State University, East Lansing, MI USA, <sup>4</sup>Rutgers University, New Brunswick, NJ USA.
- 3:30 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:00 pm 112 **Water, concentrate, and hay intake in thoroughbred racehorses.**  
JD Pagan\*, A. Hauss, A. Swanhall, E. Ford, E. Rugg, and A. Pritchard, Kentucky Equine Research, Versailles, Kentucky, USA.
- 4:15 pm 113 **Comparison of nutrient digestibility between three diets for aged and adult horses.**  
S. Elzinga<sup>1</sup>, B. D. Nielsen\*<sup>1</sup>, H. C. Schott<sup>1</sup>, J. Rapson<sup>1</sup>, C. I. Robison<sup>1</sup>, J. McCutcheon<sup>1</sup>, R. Geor<sup>1</sup>, and P. A. Miller<sup>2</sup>, <sup>1</sup>Michigan State University, East Lansing, MI, USA, <sup>2</sup>Waltham Center for Pet Nutrition, Leicestershire, United Kingdom.
- 4:30 pm 114 **Development of a mathematical model for predicting digestible energy intake to meet desired body condition parameters in exercising horses.**  
J. Zoller\*<sup>1</sup>, C. Cavinder<sup>2</sup>, D. Sigler<sup>1</sup>, L. Tedeschi<sup>1</sup>, and J. Harlin<sup>1</sup>, <sup>1</sup>Texas A&M University, College Station, TX, USA, <sup>2</sup>Mississippi State University, Starkville, MS, USA.
- 4:45 pm 115 **Estimating digestible energy requirements of three-day-event horses using KER ClockIt Sport smartphone application.**  
JD Pagan\*<sup>1</sup>, N. Ireland<sup>1</sup>, K. O'Neill<sup>1</sup>, and M. Davies<sup>2</sup>, <sup>1</sup>Kentucky Equine Research, Versailles, KY, USA, <sup>2</sup>Clockit EQ, Ltd, Perth, WA, Australia.

## Production & Management

Moderator: Krishona Martinson, University of Minnesota

Location: Minnesota Valley Ballroom III-IV

- 2:15 pm 161 **Addition of carnitine and pyruvate to commercial stallion semen extenders.**  
A. Safley and G. Webb\*, Missouri State University, Springfield, MO, USA.
- 2:30 pm 140 **Daily omeprazole administration does not appear to affect bone health in mature horses.**  
B. D. Nielsen\*<sup>1</sup>, S. M. Eckert<sup>1</sup>, C. I. Robison<sup>1</sup>, J. Mills<sup>1,2</sup>, D. Peters<sup>2</sup>, A. Pease<sup>1</sup>, and H. C. Schott<sup>1</sup>, <sup>1</sup>Michigan State University, East Lansing, MI, USA, <sup>2</sup>East-West Equine Sports Medicine LLC, Lexington, KY, USA.
- 2:45 pm 141 **Ammonia emissions from equine facilities in the Mid-Atlantic region.**  
J. M. Weir\*<sup>1</sup>, H. Li<sup>2</sup>, E. Rankins<sup>1</sup>, and C. Wickens<sup>1</sup>, <sup>1</sup>University of Florida, Gainesville, FL, USA, <sup>2</sup>University of Delaware, Newark, DE, USA.
- 3:00 pm 142 **Yield, preference, and forage nutritive value of winterhardy perennial ryegrass under equine grazing.**  
D. N. Catalano\*, C. C. Sheaffer, A. M. Grev, N.J. Ehlke, and K. L. Martinson, University of Minnesota, St. Paul, MN, USA.

- 3:15 pm 143 **The effects of continuous versus rotational grazing on horse pasture nutrient content.**  
S. M. Ghajar\*, B. J. McIntosh, K. L. Kaufman, and K. M. DeLano, *Virginia Tech Middleburg Agricultural Research and Extension Center, Middleburg, VA, USA.*
- 3:30 pm **Refreshment Break** (Minnesota Valley Ballroom Foyer).
- 4:00 pm 144 **Effects of ivermectin and moxidectin on fecal egg count and egg reappearance rate in horses.**  
C. A. S. Porr\*, V. F. Hedinger, L. R. Hamm, M. M. Ernst, B. M. Papajeski, M. L. Santiago, and A. J. Davis, *Murray State University, Murray, KY, USA.*
- 4:15 pm 145 **Effect of season on travel patterns, hoof growth, fat deposition, and muscle growth of domestic young horses.**  
Y. He, J. Nadeau\*, S. Reed, T. Hoagland, S. Bushmich, S. Aborn, A. Jones, and D. Martin, *University of Connecticut, Storrs, CT, USA.*
- 4:30 pm 146 **Drylot size influences cortisol and stress responses in horses during group turnout.**  
J. K. Suagee-Bedore\*, K. Bennett-Wimbush, and D. R. Linden, *The Ohio State University, Wooster, OH, USA.*
- 4:45 pm 147 **Determining the aversion of horses to different ammonia concentrations.**  
J. M. Weir\*<sup>1</sup>, H. Li<sup>2</sup>, C. Zhang<sup>2</sup>, D. Ferguson<sup>1</sup>, S. Dougherty<sup>1</sup>, and C. Wickens<sup>1</sup>, <sup>1</sup>*University of Florida, Gainesville, FL, USA,* <sup>2</sup>*University of Delaware, Newark, DE, USA.*

## OTHER EVENTS

### ESS Business Meeting

5:00–6:00 pm

Location: Minnesota Valley Ballroom I–II

### ESS Awards Banquet

6:30–7:00 pm

Cocktail hour (cash bar)

Location: Minnesota Valley Ballroom Foyer

7:00–9:30 pm

Dinner and Awards

Location: Minnesota Valley Ballroom I–IV

# AWARDS

## ***The Outstanding Educator Award***

This award recognizes an individual who has demonstrated excellence in the area of equine education, either to students or persons in the horse industry.

2017 Recipient: Dr. Shannon Pratt-Phillips

## ***Josie Coverdale Award for Outstanding Young Professionals***

This award recognizes an individual under the age of 40 with less than 10 years of service in academia or industry, who has made meritorious contributions to equine science, in teaching, research, public service, or industry. The award was renamed in memory of Dr. Josie Coverdale, who received this award in 2013.

2017 Recipient: Dr. Holly Spooner

## ***The American Feed Industry Association (AFIA) Award in Equine Nutrition Research***

This award is designed to stimulate research excellence in equine nutrition.

2017 Recipient: Dr. Brian Nielsen

## ***The Equine Science Society and American Society of Animal Science–Equine Science Award***

This award recognizes outstanding achievement in the areas of extension, research, teaching, or agribusiness in the equine industry.

2016 Recipient: Dr. Josie Coverdale

2017 Recipient: TBA

## ***The Distinguished Service in Equine Science Award***

This award recognizes outstanding contributions to the field of equine science. The award is the most prestigious honor which the Equine Science Society can bestow upon one of its members.

2017 Recipient: Dr. Ann Swinker

## ***Fellows of the Equine Science Society***

The Fellow Award recognizes distinguished service to the horse industry and to the Equine Science Society over an extended period of time.

2017 Recipients:

Dr. Kathleen Anderson

Dr. Betsy Greene

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