

**One World,
One Health,
One Passion for Pigs**

**48th AASV
Annual Meeting**

**February 25 - 28, 2017
Denver**



Message from the Program Chair, Dr. Alex Ramirez



Welcome back to Denver!

It is nice to be back in Denver for our 48th Annual AASV Meeting. It has been 5 years since we were here last. Time sure flies by quickly, and it is amazing how much our industry has changed in just 5 years!

Last time we were here most of us had likely never

heard of, or paid attention to, porcine epidemic diarrhea virus, porcine delta coronavirus, Seneca Valley virus (Senecavirus A), or had even heard the term transboundary disease. Our role in antimicrobial use in feed and water has also dramatically changed with the new regulations on VFDs and prescription requirements for water antibiotics. This year's program has been planned with that special theme of "One World, One Health, One Passion for Pigs."

Our theme reflects the concept that, as we have learned with so many diseases, it is not just about what is in the US, Canada or Mexico that is of concern to us but really we are one world and diseases can travel from anywhere. One Health is focused on three areas: the first is the current awareness of One Health, meaning human and animal health are interrelated (zoonoses, food safety, food security); second, all of us as swine veterinarians worldwide need to work together to help improve health and wellbeing of pigs; and thirdly, in the US all of us as veterinarians need to work together, regardless of species of interest. Finally, Passion for Pigs emphasizes that in fact as swine veterinarians we are very passionate about helping pigs.

You will notice that our program continues to offer science-based, practical knowledge. Additionally, we have reached out to bring diversity in our topics and speakers. We have purposely integrated all three concepts of disease, public health, and welfare into the different sessions rather than create separate topics - just as in practice where we deal with all of these topics at the same time rather than as separate silos.

Our preconference seminars are exciting and the challenge will be deciding which ones to attend. I have selected two very special and highly respected colleagues who truly represent the focus on science and values of our association to give the Howard Dunne and Alex Hogg Memorial Lectures.

We will hear the PED perspective of our Canadian colleagues as well as the lessons learned from the avian influenza outbreak from a poultry veterinarian; a reminder that we are truly one world and one health profession. We have also invited a professional speaker, J.J. Jones, to remind us of our role in earning trust with consumers.

Our Tuesday session is designed to challenge us. We have some great speakers who will enlighten us into thinking about taking a stance against some of the endemic diseases we currently have in the US. Is it time to continue to control or eliminate?

I would like to take time to recognize my program committee for their outstanding hard work, all of our speakers for their willingness to share their knowledge and experiences with us, and our AASV staff who truly make this annual event a success. We have a program that I hope will bring value to your practice as well as get you thinking about how we must continue to work together to support each other as colleagues worldwide, by sharing knowledge and experiences to continue to protect the health and welfare of people (one health) and the pigs we love to care for.

Once again, welcome and enjoy the conference!

Alex Ramirez, DVM
Program Chair



Program Committee

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Ron Brodersen

Jane Christopher-Hennings

George Charbonneau

C. Scanlon Daniels

Kate Dion

Phil Gauger

Tom Gillespie

Dwain Guggenbiller

Melissa Hensch

Sam Holst

Derald Holtkamp

Daniel Linhares

Aaron Lower

Monique Pairis-Garcia

Maria Pieters

Jeremy Pittman

Patrick Webb

Program & Proceedings

Mobile App

Keep track of when and where you need to be with the free AASV mobile conference app! It's loaded with the most up-to-date schedule, speaker and exhibitor information, interactive maps of the conference rooms, and links to proceedings papers. Use it to create your personal schedule and "to do" list. The app will be available for download from the iOS and Android app stores using the redeem code emailed to conference registrants February 13.

An HTML5 version will also be available for web-based devices.

Proceedings

All proceedings papers (including seminar papers) will be available for download from the AASV website prior to and during the meeting. Attendees may purchase the proceedings on USB drive for a small additional fee. There will be no printed proceedings.



For more information:
www.aasv.org/annmtg

Registration & Fees

Registration

Registration desk located in Centennial Foyer

Saturday, Feb 25	7:00 AM – 5:00 PM
Sunday, Feb 26	7:00 AM – 5:00 PM
Monday, Feb 27	7:00 AM – 5:00 PM
Tuesday, Feb 28	7:00 AM – 12:00 PM

Fees

Register online at www.aasv.org/annmtg

AASV member pre-registration	\$345
AASV member registration after February 3	\$445
Non-member veterinarians	\$475
Add'l Tech Table representatives (limit 3)	\$475

Veterinary students: Registration is free for veterinary students who are 2016-17 AASV Student Members.

Join and/or register at <http://ecom.aasv.org/annmtg>.

Graduate students: Full-time graduate students may join AASV for ½ regular dues and register for the meeting at ½ the member rate.

Non-veterinarians: Must meet eligibility criteria to attend. See www.aasv.org/annmtg/2017/reginfo.php for details.

Meeting Hotel

Hyatt Regency Denver
650 15th Street
Denver, Colorado 80202
Tel: 303-436-1234

www.aasv.org/annmtg/2017/lodging.php

Continuing Education Credit

Up to twenty (20) credit hours of veterinary continuing education are available for attendance during the regular meeting sessions on Sunday 8:00 AM through Tuesday 12:00 PM. Four (4) credit hours are available for the PRRS Risk Assessment Training and each of the pre-conference seminars on Saturday.

Officers

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Dr. George Charbonneau
98 Lorlei Drive
White Lake, ON K0A 3L0
CANADA
Tel: (519) 272-7154
gcharbonneau@southwestvets.ca

President Elect

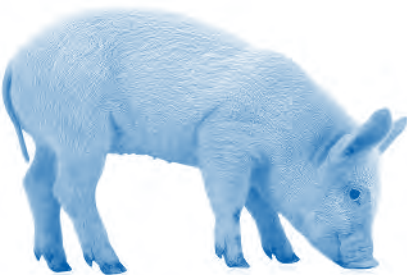
Dr. Alejandro "Alex" Ramirez
Iowa State University
2231 Lloyd Veterinary Medical Center
Ames, IA 50011
Tel: (515) 294-7463
ramireza@iastate.edu

Vice President

C. Scanlon Daniels
Circle H Headquarters LLC
3216 US Hwy 54
PO Box 1150
Dalhart, TX 79022
Tel: (806) 333-7851
scanlon@circleh.info

Past President

Dr. Ron Brodersen
Suidae Health & Production/
Whole Hog Genetics
88155 Hwy 57
Hartington, NE 68739
Tel: (402) 254-2444
ronb@wholehogai.com



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1628 Mathers Bay West
Winnipeg, MB R3N 0T7
CANADA

Student Delegate

Brent Sexton
1318 Big Bluestem Court
Ames, IA 50014
USA

Technical Tables

Location: Centennial EFGH

Monday: 9:00 AM – 5:00 PM

Tuesday: 8:00 AM – 12:00 PM

AgCreate Solutions/Pork Avenue Training
AgriLabs
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ARKO Laboratories
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Technical Tables

JBS United Animal Health
Magapor
MAI Animal Health
Maximum Ag Technologies
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National Pork Board
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Stuart Products
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Swine Medicine Education Center (SMEC)
TechMix
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Veterinary Sales & Service
Virox Animal Health
Wilson's Prairie View Farm
XFE Products
Zinpro Corporation
Zoetis

Risk Assessment Training

Web-based PRRS Risk Assessment Training for the Breeding Herd

Date: Saturday, February 25

Time: 7:30 AM – 12:30 PM

Location: Mineral A

Fee: No charge

Limit: 20 participants; AASV members only

Coordinator: Derald Holtkamp

This training will guide you through the use of the web-based PRRS Risk Assessment known as the Production Animal Disease Risk Assessment Program (PADRAP). PADRAP allows you to view benchmarking reports immediately after submitting an assessment.

Three ways veterinarians have applied the PRRS Risk Assessment:

- Evaluate current biosecurity protocols and/or develop new biosecurity protocols to avoid risk
- Communicate risks and the importance of biosecurity procedures to clients or production personnel
- Aid in the decision to initiate a project to eliminate PRRSV from a breeding herd site and identify modifiable risk factors in an effort to increase the likelihood that an elimination project will be successful long-term.

This session is open to AASV member veterinarians who have not previously used the PRRS Risk Assessment, as well as those who have previously been trained on the spreadsheet version. Please bring a laptop capable of accessing the internet via wireless connection using one of the following web browsers: Mozilla Firefox, Google Chrome or Internet Explorer.

Risk Assessment Training

- 7:30** Welcome and introductions (note the early start time)
Derald Holtkamp
- 7:45** Updates on the PRRS Outbreak Investigation Program and the development and support of an industry rapid response program for epidemiological investigations of emerging, transboundary and endemic swine diseases. Both projects incorporate risk assessments and logic built into PADRAP
Derald Holtkamp and Rita Neat
- 8:15** Overview of PRRS Risk Assessment
Dale Polson
- 8:45** “How to” tour of PADRAP
Resetting/retrieving your password, creating a new production system, setting up a site and survey, navigating through a survey, duplicating and taking multiple surveys
Chris Mowrer
- 9:45** REFRESHMENT BREAK
- 10:00** Hands-on use of the risk assessment; user interview
Dale Polson
- 12:00** Demonstration of pareto chart and the database and benchmarking tool for risk assessment data; exporting raw data: Interpreting results
Derald Holtkamp
- 12:30** Training concludes



Seminar 1

AASV's Got Talent

AASV's Got Talent

Date: Saturday, February 25

Time: 1:00 – 5:10 PM

Location: Centennial D

Fee: \$80

Seminar Chair: Jeff Harker

If you are having a hard time deciding which pre-conference seminar to attend, then this is the one for you. With a wide variety of topics and no proceedings to reference later, this is a “can’t miss” seminar. This year’s practice tip session features many topics you asked for on last year’s survey, as well as several ideas volunteered by leading practitioners. As always, these presentations will be high quality, since these practitioners are in competition for the “tipster of the year” cash award. Also, these busy vets were unburdened with completing a proceedings paper so content can be “hot off the presses”! We hope to see you at the 2017 AASV’s Got Talent seminar.

- 1:00** Clinic management of VFD’s and Rx’s
Wesley Lyons
- 1:20** Producer compliance: Checking without being a pest
Erin Nonos
- 1:40** Work/life balance: A gentleman’s perspective
Brian Payne
- 2:00** Finding the right job
Chelsea Scheidler
- 2:20** Mixing vaccines
Mike Strobel
- 2:40** Applying how adults learn to your on-farm interaction
Sarah Probst Miller
- 3:00** REFRESHMENT BREAK

Seminar 1

AASV's Got Talent

- 3:30** Preventing practice burnout: Keeping it fresh
Gavin Yager
- 3:50** Pen gestation management and expectations
Pete Schneider
- 4:10** Work/life balance: A lady's perspective
Amber Stricker
- 4:30** Piglet hydration therapy
Jake Schwartz
- 4:50** The ingenuity of farm and system staff: Turning problems into solutions
Emily McDowell
- 5:10** Seminar concludes

STUDENT TRIVIA EVENT

Veterinary students, join us on Saturday, February 25th for a fun-filled, interactive evening of Swine Veterinary Medicine Trivia! Teams will be arranged when you arrive. The competition will be held in the Mile High Pool Bar Room at Rock Bottom Brewery (1001 16th Street). Meet at the brewery at 6:30 PM or meet in the lobby of the Hyatt at 6:15 PM to walk with a group. Appetizers and beverages will be served, thanks to our sponsor Merck Animal Health.

AASV STUDENT TRIVIA EVENT



Sponsored by:
MERCK ANIMAL HEALTH
Saturday, February 25
7:00 PM
Rock Bottom Brewery

Seminar 2

Influenza Phylogenetics

Influenza Sequence Analysis and Phylogenetics

Date: Saturday, February 25

Time: 1:00 – 5:00 PM

Location: Mineral A

Fee: \$95

Limit: 20 participants

Seminar Chair: Phil Gauger

This seminar will focus specifically on influenza phylogenetics and bioinformatics using web-based tools available for public use. The seminar will be divided into two parts. The first half will provide information regarding the basic fundamentals of phylogenetic trees and sequence analysis tools. In addition, this half of the seminar will focus on sequence applications available in the Influenza Research Database (IRD) and provide updates on additional influenza bioinformatics tools.

The second half of the seminar will feature a two-hour interactive workshop that will guide the veterinarian through interpreting a diagnostic lab report that includes a diagnosis of influenza A virus respiratory disease in swine. The information from the case will be used to extract and manipulate an influenza sequence in the IRD tool with subsequent phylogenetic analysis that includes sequence alignment, homology matrix interpretation and creating dendrograms. Participants will be able to use and understand the basic features of the IRD for influenza A virus in swine and improve their ability to create and interpret phylogenetic information provided through this web-based tool.

Requirements for participant laptop: Current versions of JAVA, text editor, and web browser.

Seminar 2

Influenza Phylogenetics

- 1:00** Fundamentals of phylogenetic trees and sequence analysis tools
Tavis Anderson
- 1:45** Publicly available influenza tools and databases
1:45 Influenza Research Database (IRD)
Richard Scheuermann
- 1:55** IS_{flu} View Portal
Michael Zeller
- 2:05** Disease BioPortal
Phil Gauger
- 2:15** Antigenic cartography and Nextflu
Nicola Lewis and Amy Vincent
- 2:30** REFRESHMENT BREAK
- 3:00** Interactive IRD influenza workshop: Analyzing a diagnostic HA sequence from a case report
All speakers
- a) Interpretation of diagnostic lab reports
 - b) Extracting IAV diagnostic sequences for query
 - c) Using the IRD clade tool to identify query sequence
 - d) Building a reference sequence collection in IRD Workbench
 - BLAST search and selection
 - Clade-based search and selection
 - Metadata-driven comparative analysis tool
(compare farm 1 sequences to farm 2)
 - e) Alignments and distance matrix
 - f) Tree building and annotation
- 5:00** Seminar concludes

Seminar 3

Boar Stud Topics

Current Topics of Boar Stud Health, Management, and Technology

Date: Saturday, February 25

Time: 1:00 – 5:00 PM

Location: Centennial C

Fee: \$95

Seminar Chair: Ron Brodersen

The boar stud committee is offering the latest information addressing semen processing technology as well as health, lameness and environmental factors affecting semen quality. This seminar should be a “must see” for veterinarians with an interest in semen quality or veterinarians working with boar studs.

- 1:00** Mycotoxin – Boar stud case report
Wes Lyons
- 1:40** Sexed sorting of pig sperm: A status update
Kilby Willenburg
- 2:20** How to beat the bug: Eliminating *Serratia marcescens* contamination of semen
Hanneke Feitsma
- 3:00** REFRESHMENT BREAK
- 3:30** Effect of heat stress on semen quality; recommendations for keeping AI boars
John Parrish
- 4:00** Survey of boar stud lameness intervention strategies
Darwin Reicks
- 4:30** Roundtable Q&A
Moderated by Darwin Reicks
- 5:00** Seminar concludes

Seminar 4

Biosecurity

Biosecurity

Date: Saturday, February 25

Time: 1:00 – 5:00 PM

Location: Centennial E

Fee: \$95

Seminar Chair: Daniel Linhares

This applied seminar on biosecurity will begin with a “back to basics” section where general concepts will be reviewed, and the science behind most biosecurity “rules” will be revisited. Then we will discuss challenges and opportunities of “hot topics” being developed by the swine industry to decrease risk of pathogen introduction. The last session (“pipeline”) will cover concepts and initiatives being developed for implementation in the near future.

Back to basics:

- 1:00** Understanding how pathogens infect pig farms
Derald Holtkamp
- 1:15** Applied review on evidence-based biosecurity
Anna Romagosa

Current developments:

- 1:45** Experiences with positive air filtration
Aaron Lower
- 2:10** Experiences with positive air filtration
Pete Thomas
- 2:35** Mastering transport biosecurity: Breeding stock company perspective
Jean Paul Cano
- 3:00** REFRESHMENT BREAK
- 3:30** Mastering transport biosecurity: Commercial sow farm perspective
Joe Connor
- 4:00** What have we learned from feed mill audits?
Tim Snider

Continued on next page

Seminar 4

Biosecurity

Pipeline:

- 4:20** Biosecurity aspects and frequency of outbreaks
Gustavo de Sousa e Silva
- 4:45** Roundtable Q&A
All speakers
- 5:00** Seminar concludes



Seminar 5

OMS Training

Operation Main Street Training

Date: Saturday, February 25

Time: 1:00 – 5:15 PM

Location: Mineral B

Fee: No charge

Limit: 25; US AASV member veterinarians only

Seminar Chair: Al Eidson

Co-sponsored by AASV and the National Pork Board

Operation Main Street (OMS) training updates participants on what activists are saying about agriculture today, and will provide attendees with the needed tools and presentations to address those concerns in a science-based, proactive manner. The objective is to equip veterinarians to speak to veterinary students and professional groups including veterinary associations and dietitians. Unless otherwise indicated, presentations will be made by Al Eidson. Attendees are encouraged to bring a laptop for note-taking.

- 1:00** Welcome, overview, and introductions
- 1:15** Antibiotic update
- 2:00** A presentation for schools of veterinary medicine
Rick Tubbs
- 3:00** REFRESHMENT BREAK
- 3:15** Overview of the industry structure, trust model, and US Farmers and Ranchers Alliance (USFRA) messages
- 4:00** Issue updates and answering common questions
 - 4:00** Animal care and well-being
 - 4:30** Environment
- 4:45** Events at schools of veterinary medicine; Speaking to civic groups, dietitians, and county commissioners
- 5:15** Training evaluation; Seminar concludes

Seminar 6

ABF Pork Production

Antibiotic-free Pork Production

Date: Saturday, February 25

Time: 1:00 – 5:00 PM

Location: Centennial B

Fee: \$95

Seminar Chair: John E. Baker

Understanding consumer demands and finding new tools and technologies to manage bacterial diseases challenging the pigs in our care

The development of programs for antibiotic-free pork production is on the rise in our industry. Antibiotics play a vital role in the prevention and treatment of many bacterial agents that threaten the lives, health, and welfare of pigs. Antibiotics also improve the safety and wholesomeness of pork products provided to the American consumer.

However, increasing numbers of consumers are convinced that meat produced without the use of antibiotics is safer, more wholesome, and more socially responsible than conventionally raised meat. Although this is not supported by scientific research, the old adage that “the consumer is always right” has led to production protocols that seek to capture the added value of these consumer demands.

The removal of antibiotics as a tool is a significant loss in managing bacterial pathogens. This has left veterinarians scrambling to find new tools and technologies to manage these diseases and continue to provide for the health and welfare of the animals in their care.

This AASV pre-conference seminar has been developed to better understand consumer demands and provide new technologies to manage bacterial agents in the antibiotic-free production systems.

Seminar 6

ABF Pork Production

- 1:00** Navigating the attributes of niche pork production
Jim Magolski
- 1:20** What to consider before raising pigs without antibiotics
Brigitte Mason
- 1:40** Starting and managing an antibiotic-free flow
Mike Pierdon
- 2:10** Autogenous vaccines: Yesterday, today, and tomorrow
Randy Simonson
- 2:45** REFRESHMENT BREAK
- 3:15** Alternatives to feed medication
Joel De Rouchey
- 3:45** Optimizing water quality for healthy animal production
Susan Watkins
- 4:15** Dietary strategies to maintain enteric health in antibiotic-free pig production
Coen Smits
- 5:00** Seminar concludes



**Need to move after sitting
through lectures and dining out?**



“BODY ATTACK” EXERCISE CLASS

Sunday, February 26

6:00 – 6:30 AM

Location: Agate ABC

Hosted by DSM Nutritional Products

**Join us for a fun, high-energy,
30 minute-fitness class with moves
that cater for total beginners to total addicts.**

Ben Pratte, a LES MILLS™ instructor, will lead a BODY ATTACK class that combines athletic movements like running, lunging, and jumping with strength exercises such as push-ups and squats. Accompanied by energizing tunes, Ben will lead you through the workout – challenging your limits and leaving you with a sense of achievement. No equipment is required other than workout clothes and shoes.

***Spouses are welcome!
No fees or registration – just come!***

Praise Breakfast

Sunday, February 26

7:00 – 8:00 AM

Location: Mineral DEFG

Coordinators:

Mark Brinkman, Monte Fuhrman,
Jane Christopher-Hennings, and Monty Moss

Sponsored by Stuart Products

For many, Sunday is a day to gather with family and friends for spiritual nourishment and encouragement in faith. Bring your family and join your AASV friends for breakfast, music, and fellowship at the AASV Praise Breakfast!

Worship Coordinator Mitch Christensen will introduce the program. The opportunity to sing praises to our Lord with the AASV praise team will be followed by a God-directed message provided by AASV member Tyler Holck.

Your free-will offering, along with support from Stuart Products, will defray the cost of the breakfast. The program will conclude by 8:00 AM to allow you to attend the meeting sessions, but feel free to stay and visit.

***All AASV meeting attendees and
their family members are welcome!***



Seminar 7

Electronic Sow Feeding

ESF from A to Z

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial F

Fee: \$95

Seminar Co-Chairs: Tom Parsons and Meghann Pierdon

A variety of new sow housing and feeding systems are being implemented to address growing market demand for alternatives to the gestation stall. Electronic sow feeding (ESF) remains one of the few options, if not the only one, that offers individual animal nutrition as well as additional upside potential for innovation. Alas, it is also likely the most challenging alternative to implement. Here lies a tremendous opportunity for veterinarians to take a leading role in helping their clients through the transition to ESF and to reap the unique benefits that this technology promises. The goal of this seminar is to improve the veterinarians' understanding of the fundamentals of ESF including barn design, pig flow, and staffing/personnel requirements. Furthermore, expert opinion on the advantages and challenges of ESF will be provided from the perspective of a production manager, a nutritionist, and a genetic supplier. Case study material will be discussed as well as a roundtable question and answer session held to help ensure that veterinarians are able to provide a competitive advantage for their clients who are transitioning away from the gestation stall.

8:00 Welcome/overview
Tom Parsons

8:05 ESF primer: Advantages and disadvantages of ESF
Tom Parsons

8:30 ESF primer: Pig flow in ESF: Group size, type of group, and when groups are constituted
Meghann Pierdon

8:55 ESF primer: Examples of barn layouts
Tom Parsons

Seminar 7

Electronic Sow Feeding

- 9:20** Opportunities and challenges associated with managing sows in ESF versus gestation stalls, from the perspective of a production manager
Aaron Ott
- 9:45** REFRESHMENT BREAK
- 10:00** Opportunities and challenges associated with managing sows in ESF versus gestation stalls, from the perspective of a nutritionist
Aaron Gaines
- 10:25** Opportunities and challenges associated with managing sows in ESF versus gestation stalls, from the perspective of a genetics supplier
Juan Carlos Pinilla
- 10:50** Labor/staffing considerations for ESF
Meghann Pierdon
- 11:15** Trouble-shooting common problems in ESF barns: Case studies
Tom Parsons and Meghann Pierdon
- 11:40** Roundtable Q&A
All speakers
- 12:00** Seminar concludes



Seminar 8

Common Swine Industry Audit

The Common Swine Industry Audit: What you need to know

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial AB

Fee: \$95

Seminar Chair: Monique Pairis-Garcia

This seminar will cover what you need to know to prepare for the Common Swine Industry Audit (CSIA). It will include perspectives from packers, veterinarians, and leaders in the industry who have been involved in the development and implementation of this program.

- 8:00** CSIA update: Changes to standards
Jamee Amundson
- 8:30** Who is PAACO, and how are we training auditors for the CSIA?
Collette Schultz Kaster
- 9:00** The importance of the CSIA to the packer
Ann McDonald
- 9:30** REFRESHMENT BREAK
- 10:00** Utilizing PQA Plus® to prepare the industry
Sherrie Webb
- 10:30** Impact of the CSIA on-farm: Practitioner perspective
Amber Stricker
- 11:00** Impact of the CSIA on-farm: Auditor perspective
Matt Jones
- 11:30** Audit failures and consequences: Utilizing the CSIA to prepare your farm
Paul Ayers
- 12:00** Seminar concludes

Seminar 9

Diagnostics

Diagnostics

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial GH

Fee: \$95

Seminar Chair: Jane Christopher-Hennings

This “One World, One Health, One Passion for Pigs” diagnostics seminar will cover the basics on multiple pathogen diagnostic testing including rotavirus and *Mycoplasma*, along with emerging diseases which have foreign animal disease implications, such as Seneca Valley virus. For example, in the case of Seneca Valley virus, it will be important to obtain the perspective from a state veterinarian on how industry, veterinarians, and state animal health officials can work together on controlling these emerging and foreign animal diseases as they emerge. DNA sequencing and bioinformatics will be discussed in the context of antibiotic sensitivity testing and pathogen tracking. Finally, the ability to put information together from a case perspective in a diagnostic laboratory is dependent on optimum samples, choosing the best tests, accurate testing, and excellent communication. “Case scenarios” will be presented to get the most out of the laboratory. A panel discussion will conclude the session to answer your questions regarding any of these topics or “diagnostics” in general. We intend this session to be full of “news you can use.”

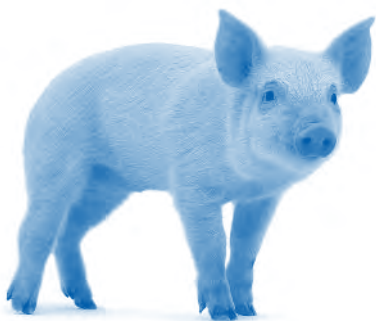
- 8:00** Emerging pathogens of swine: Implications for diagnostics and lessons learned from senecavirus A
Diego Diel
- 8:30** What to do when there is something new: Insights from a state veterinarian on how diagnostic laboratories, veterinarians, and producers can work together
Dusty Oedekoven
- 9:00** Porcine rotaviruses: What we’ve learned and what we are still missing
Doug Marthaler

Continued on next page

Seminar 9

Diagnostics

- 9:30** Genomics and bioinformatics to improve antibiotic sensitivity testing and pathogen tracking
Joy Scaria
- 10:00** REFRESHMENT BREAK
- 10:15** Current tools to approach *Mycoplasma hyopneumoniae* diagnostic cases
Maria Pieters
- 10:45** Diagnostic case scenarios
Kent Schwartz
- 11:30** Roundtable Q&A
All speakers
- 12:00** Seminar concludes



Seminar 10

Swine Medicine for Students

Swine Medicine for Students

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial E

Fee: \$95; No charge for veterinary students or 2015 or 2016 DVM graduates

Seminar Co-chairs: Angela Supple and Jeremy Pittman

This session continues the tradition of providing supplemental information and skill development for veterinary students. This year we will focus on working up real-life field cases from 3 recent graduates. Each speaker will present a case with different problems and will demonstrate the process they used to combine the skills and “-ologies” for diagnosis and case resolution. After the break, participants will use what they have learned and interact with others to work through a case. The interactive case is a popular portion of this session and is designed to allow networking and exercise the thought processes.

- 8:00** Late-term respiratory disease in replacement gilts:
Case presentation and system interventions
Deanne Day
- 8:30** A student’s approach to enteric cases
Joshua Duff
- 9:00** Diagnostic approach in a show pig operation
Daniel Hendrickson
- 9:30** REFRESHMENT BREAK
- 10:00** Interactive case
Jeremy Pittman and Angie Supple
- 12:00** Seminar concludes

STUDENT RECEPTION



Sponsored by:
MERCK ANIMAL HEALTH

Sunday, February 26
8:30 – 11:00 PM
Mineral ABC

Seminar 11

Feed/Nutrition

Feed: Commanding New Focus

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial C

Fee: \$95

Seminar Chair: Dwain Guggenbiller

Constituting the largest expense in producing pork, feed is often overlooked in the scale of importance. However, history has indicated that we must be vigilant about what unwanted disease-causing agents may be in our feed. Also, whether it be due to consumer preferences, legislative guidances, or demand fulfillment, producing pork with antibiotics used judiciously – or even without antibiotics at all – will be an evolutionary change for United States producers and the swine veterinary community. With this as a background, this seminar will look at feed biosecurity, upcoming legislation on how we keep our food safe, products that are alternatives to antibiotics, and what we know about life inside the digestive system.

Part A: Feed biosecurity

- 8:00** What are feed risks from biologics?
Scott Dee
- 8:30** Sampling methods currently in place
Joe Crenshaw
- 9:00** Food Safety Modernization Act (FSMA): How will it affect farmers and feed mills
Richard Sellers
- 9:45** REFRESHMENT BREAK

Part B: Evaluating alternatives to antibiotics and other feedstuffs

- 10:05** Functional feed ingredients and additives for gut health
Coen Smits

Seminar 11

Feed/Nutrition

- 10:45** Proposed method for evaluation of alternatives
Chris Hostetler
- 11:10** Altering the microbiome
Eric Burrough
- 11:35** Maintaining gut function
Adam Moeser
- 12:00** Seminar concludes



Research Topics

Research Topics

Date: Sunday, February 26

Time: 8:00 AM – 12:00 PM

Location: Centennial D

Session Chair: Chris Rademacher

- 8:00** Land coverage and elevation as risk factors for PRRS outbreaks
Andreia Arruda
- 8:15** Broadly neutralizing antibodies to recent, virulent type 2 PRRSV isolates
Michael Murtaugh
- 8:30** Characterization of the memory immune response to PRRSV infection
Michael Rahe
- 8:45** Proof of concept: PRRSV IgM/IgA ELISA detects infection in the face of circulating maternal IgG antibody
Marisa Rotolo
- 9:00** Spatial autocorrelation and implications for oral fluid-based PRRS surveillance
Marisa Rotolo
- 9:15** Comparative pathogenesis and characterization of contemporary 1-7-4 PRRSV isolates in weanling age piglets
Albert Van Geelen
- 9:30** Application of next-generation sequencing technology to whole genome sequencing of PRRSV under diagnostic setting
Jianqiang Zhang
- 9:45** REFRESHMENT BREAK
- 10:00** Effects of pain mitigation during piglet castration
Rachel Park

Research Topics

- 10:15** Effect of influenza prevalence at weaning on transmission, clinical signs and performance after weaning
Fabian Chamba Pardo
- 10:30** Senecavirus A: Overview of experimental studies
Alexandra Buckley
- 10:45** *Mycoplasma hyorhinis* associated with conjunctivitis in pigs
Talita Resende
- 11:00** *Mycoplasma hyorhinis* and *Mycoplasma hyosynoviae* dual colonization of dams and piglets prior to weaning
Luiza Roos
- 11:15** A commercial G2b-based porcine epidemic diarrhea virus vaccine is effective against homologous challenge but experimental G1b-based vaccines are not
Tanja Opriessnig
- 11:30** Serum and mammary secretion antibody responses in PEDV-exposed gilts following PEDV vaccination
Katie Woodard
- 11:45** Modeling the transboundary survival of foreign animal disease pathogens in contaminated feed ingredients
Scott Dee
- 12:00** Session concludes

WELCOME RECEPTION



Sponsored by:
ZOETIS

Sunday, February 26
6:30 – 8:30 PM
Centennial EFGH

Sunday Session #1

Student Seminar

Student Seminar

Date: Sunday, February 26

Time: 1:00 – 5:15 PM

Location: Centennial ABC

Session co-chairs: Maria Pieters and Andrew Bowman

Sponsored by ZOETIS

- 1:00** Evaluation of a peroxygen-based disinfectant to inactivate porcine epidemic diarrhea virus in swine feces on metal surfaces under freezing conditions
Kimberlee Baker, Iowa State University
- 1:15** Calculating and evaluating antibiotic usage in a United States swine production system
Megan Pieters, Iowa State University
- 1:30** Assessment of knowledge, compliance, and attitudes of English- and Spanish-speaking farm employees towards biosecurity practices
Michael Mardesen, Iowa State University
- 1:45** Comparison of standard and bench entry protocols for prevention of environmental contamination due to personnel entry in a commercial swine facility
Cassandra Fitzgerald, Iowa State University
- 2:00** Use of molecular characterization tools to investigate *Mycoplasma hyopneumoniae* outbreaks
Alyssa Anderson, University of Minnesota
- 2:15** Development and validation of ante-mortem urine collection techniques for gilts and sows
Megan Nickel, Iowa State University
- 2:30** An evaluation of oropharyngeal swabbing as a diagnostic technique for the detection of porcine reproductive and respiratory syndrome virus (PRRSV) in weaned pigs
Kylie Glisson, North Carolina State University

Sunday Session #1

Student Seminar

- 2:45** REFRESHMENT BREAK
Co-sponsored by GLOBALVETLINK
- 3:15** A challenge study to determine whether in-feed flavophospholipol can reduce *Salmonella* shedding and colonization in nursery pigs
Jane Newman, University of Guelph
- 3:30** Correlating sampling methods to porcine circovirus type 2 (PCV2) viremia status of sows and piglets in a sow herd with or without PCV2 revaccination during gestation
Allison Knox, University of Illinois
- 3:45** Sample comparison for detecting porcine circovirus type 2 in breeding herds
Rachel Schulte, Iowa State University
- 4:00** Evaluation of positive pressure filtration to reduce aerosol transmission of PRRSV during an experimental challenge of farm access points
Hunter Baldry, University of Minnesota
- 4:15** Evaluation of methods for determining the porcine circovirus type 2 status of sow herds
Chelsea Ruston, Iowa State University
- 4:30** Dynamics of *Mycoplasma hyopneumoniae* colonization, seroconversion and onset of clinical signs in a population of gilts under field conditions
Chris Deegan, University of Minnesota
- 4:45** Investigating porcine circovirus associated disease (PCVAD) in commercial swine herds by next generation sequencing
Zhen Yang, University of Minnesota
- 5:00** Effect of antimicrobials on non-toxigenic *E coli* oral vaccine
Olivia Myers, North Carolina State University
- 5:15** Session concludes

Sunday Session #2

Industrial Partners

Industrial Partners

Date: Sunday, February 26

Time: 1:00 – 5:15 PM

Location: Centennial D

Session chair: Reid Philips

- 1:00** Multiple case study reports of *Mycoplasma hyopneumoniae* elimination projects utilizing tylvalosin (Aivlosin WSG®)
Dan Rosener
PHARMGATE ANIMAL HEALTH
- 1:15** Feed trucks, feed orders, VFDs, and ingredient traceability from feed mills to bins using FeedTrackur™
Tom Stein
DP TECHLINK
- 1:30** Comparison of efficacy between 2 PCV2 vaccination protocols under PCV2d field exposure
Eduardo Fano
BOEHRINGER INGELHEIM VETMEDICA, INC
- 1:45** Efficacy of Ingelvac PRRS® MLV against a heterologous PRRSV 1-7-4 RFLP challenge
Reid Philips
BOEHRINGER INGELHEIM VETMEDICA, INC
- 2:00** Comparison of intestinal lesions, production performance, shedding profiles, and immunological response between Enterisol® Ileitis and Porcilis® Ileitis against a *Lawsonia intracellularis* challenge model
Jessica Seate
BOEHRINGER INGELHEIM VETMEDICA, INC
- 2:15** Biosecurity controls for the industrial manufacturing of spray-dried plasma
Joe Crenshaw
APC
- 2:30** Solution for in-barn, hand-held data collection
Tom Stein
MAXIMUM AG TECHNOLOGIES
- 2:45** The effect of feeding MCFA on performance of nursery pigs raised without antibiotics
Dan McManus
PMI NUTRITIONAL ADDITIVES

Sunday Session #2

Industrial Partners

- 3:00** REFRESHMENT BREAK
Co-sponsored by GLOBALVETLINK
- 3:15** Water in oil adjuvant selection for the formulation of one-shot safe bacterial vaccines for swine
Sophia Bingling Xu
SEPPIC
- 3:30** Diagnosing edema disease: The first step in prevention
Verena Gotter
IDT BIOLOGIKA
- 3:45** Seneca Valley virus: Porcine-derived biological risk management
Melissa Madsen
CEVA BIOMUNE
- 4:00** Specialized VaxLiant® adjuvant for DNA vaccine development using influenza A virus-swine hemagglutination (HA) gene
Timothy Miller
AGRILABS CORPORATION
- 4:15** Feed hygiene: A layered approach
Joshua Jendza
BALCHEM CORPORATION
- 4:30** Effect of combined supplementation of 25-hydroxycholecalciferol and cholecalciferol on sow and piglet Vitamin D status and progeny muscle cell parameters
Joseph Hahn
DSM NUTRITIONAL PRODUCTS
- 4:45** Effect of Tonisity Px™ administration on pre-weaning mortality and weight gain
Ava Firth
TONISITY
- 5:00** Effect of gruel and Tonisity Px™ on feed intake and weight gain at weaning
Ava Firth
TONISITY
- 5:15** Session concludes

Sunday Session #3

Industrial Partners

Industrial Partners

Date: Sunday, February 26

Time: 1:00 – 5:15 PM

Location: Centennial E

Session co-chairs: Mike Tokach and Nathan Winkelman

- 1:00** Relationship between LP5™ and litter uniformity and birth weight
Tom Rathje
DNA GENETICS
- 1:15** Reducing antibiotic use: Educational materials for swine veterinarians and producers
Mike Tokach
USDA-NIFA and Kansas State University
- 1:30** Use of an autogenous PRRSV vaccine in conjunction with MLV elicits broadly neutralizing antibodies
Paul Lawrence
NEWPORT LABORATORIES
- 1:45** An evaluation of swine nursery medication
Jon De Jong
ELANCO
- 2:00** Managing post-weaning diarrhea associated with enterotoxigenic *E coli*
Robert Evelsizer
ELANCO
- 2:15** Pursuing American Board of Veterinary Practitioner (ABVP) certification in Swine Health Management
Jeff Husa
AMERICAN BOARD OF VETERINARY PRACTITIONERS
- 2:30** Impact of piglet birthweight on post-weaning performance and system profitability
Douglas Newcom
PURETEK GENETICS
- 2:45** REFRESHMENT BREAK
Co-sponsored by GLOBALVETLINK

Sunday Session #3

Industrial Partners

- 3:15** Just how soluble are the water solubles?
David Nolan
HUVEPHARMA
- 3:30** Masked trichothecene mycotoxins in US feed and corn samples from 2014 to 2016
Erika Hendel
BIOMIN
- 3:45** Senecavirus A: A genetic supplier's perspective
Jerome Geiger
PIC
- 4:00** Impact of trained and untrained personnel on product implementation and subsequent pig health
Sarah Probst Miller
AGCREATE SOLUTIONS
- 4:15** Effect of direct-fed microbial, Calsporin® (*Bacillus subtilis* C-3102), on enteric health in nursery pigs after challenge with porcine epidemic diarrhea virus (PEDV)
Paisley Canning
QUALITY TECHNOLOGY INTERNATIONAL
- 4:30** Impact of plasma species of origin on post-weaning pig performance
Chad Pilcher
PROVIMI
- 4:45** Clinical and diagnostic progression of *Lawsonia intracellularis* in an ileitis seeder pig challenge model
Nathan Winkelman
SWINE SERVICES UNLIMITED INC
- 5:00** Development of a new PRRS ELISA with high correlation with IFA
Eric van Esch
BIOCHEK
- 5:15** Session concludes

Sunday Session #4

Industrial Partners

Industrial Partners

Date: Sunday, February 26

Time: 1:00 – 5:15 PM

Location: Centennial FGH

Session chair: Robyn Fleck

- 1:00** Study and field evaluation of an artificial intelligence system's ability to predict the good moment to breed sows: PigWatch® from Ro-Main
Jacquelin Labrecque
RO-MAIN
- 1:15** Fat-soluble vitamins: To esterify or not to esterify?
Rob Stuart
STUART PRODUCTS
- 1:30** Safe-guard® Aquasol 20% suspension, a novel method of delivering fenbendazole through swine water drinking systems
Robyn Fleck
MERCK ANIMAL HEALTH
- 1:45** Experimental PCV2d challenge of pigs vaccinated with prototype vaccines containing ORF2 from PCV2a, PCV2b or PCV2d
Erin Strait
MERCK ANIMAL HEALTH
- 2:00** Field experiences with Porcilis™ Ileitis: The newest tool for controlling *Lawsonia intracellularis*
Brad Thacker
MERCK ANIMAL HEALTH
- 2:15** ESF vs stall performance: Three head-to-head comparisons
Jeff Schoening
AUTOMATED PRODUCTION SYSTEMS
- 2:30** Comparative study of two vaccines against neonatal diarrhea on a Canadian commercial farm
Ignacio Bernal Orozco
LABORATORIOS HIPRA
- 2:45** REFRESHMENT BREAK
Co-sponsored by GLOBALVETLINK

Sunday Session #4

Industrial Partners

- 3:15** The impacts of in-feed antibiotics, a unique organic acid blend, or an in-feed acidifier on nursery pig performance
Kellie Hogan
TROUW NUTRITION
- 3:30** Field evaluation of vaccination of piglets at processing using Fosterera® PRRS
Keith Aljets
ZOETIS
- 3:45** Determining the *Mycoplasma hyopneumoniae* status in commercial breeding herds
Ethan Spronk
ZOETIS
- 4:00** Efficacy of FluSure XP® swine influenza vaccine, in pigs challenged with a cluster IV-A H3N2 swine influenza virus
Todd Wolff
ZOETIS
- 4:15** The impact of activated polyphenols on performance of weaned pigs
Dan Little
GRAZIX ANIMAL HEALTH
- 4:30** The farrow-to-finish economic impact of using OvuGel®
Dennis DiPietre
JBS UNITED ANIMAL HEALTH
- 4:45** Systematic implementation of VFDs using FeedLINK electronic VFD solution
Brad Leuwerke
GLOBALVETLINK
- 5:00** Pre-slaughter stunning of swine: A scientific viewpoint
Steve Wotton
BOCK INDUSTRIES
- 5:15** Session concludes

Poster Session Veterinary Students

Veterinary Student Posters (#1 - #33)

Location: Centennial Foyer

Sunday, February 26

12:00 – 5:00 PM

Authors present from 12:00 – 1:00 PM

Monday, February 27

9:00 AM – 5:00 PM

Sponsored by ZOETIS

Posters #1-15 have been selected for judging in the Student Poster Competition, with scholarship awards sponsored by

NEWPORT LABORATORIES

1. An interferon-inducing porcine reproductive and respiratory syndrome virus vaccine candidate elicits protection against challenge with a heterologous virulent type 2 strain in pigs
Eve Fontanella, Iowa State University
2. Determining the efficacy of pooling fecal swabs in the field versus the lab for detection of porcine epidemic diarrhea virus by PCR
Sara Hamlett, Iowa State University
3. Evaluation of autogenous vaccine efficacy in western Canadian swine herds
Lauren Redies, University of Saskatchewan
4. Trends in *Lawsonia intracellularis* polymerase chain reaction to the submissions to the University of Minnesota Veterinary Diagnostic Laboratory over a 10-year period
Donna Drebes, University of Minnesota
5. Sand as a bedding for loose-housed gestating sows fed via ESF
Jessica Applebaum, University of Pennsylvania
6. Evaluation of the sensitivity of Envirobooties™ and Swiffer™ kits for viral detection of PRRSV and PEDV in livestock trailers
Taylor Engle, Virginia-Maryland Regional CVM

Poster Session

Veterinary Students

7. Comparison of morbidity and mortality after challenge with two North American PRRS virus isolates shows marked variation in time course and prevalence of clinical disease between isolates
Laura Constance, Kansas State University
8. Detection of influenza A virus on inanimate fair surfaces
Courtney Wright, The Ohio State University
9. Evaluation of the effects of flushing feed manufacturing equipment with chemically treated rice hulls on porcine epidemic diarrhea virus (PEDV) cross contamination during feed manufacturing
Jordan Gebhardt, Kansas State University
10. Impact of sow parity on the influenza A (IAV-S) infection timing of the suckling pig in an endemic herd
Megan Bloemer, University of Illinois
11. Evaluation of a novel antibiotic-free extender utilizing short-term hypothermic storage
Rochelle Warner, Iowa State University
12. Timing differences of *Mycoplasma hyopneumoniae* colonization in growing replacement gilts with and without tulathromycin administration at weaning
Brandi Burton, University of Illinois
13. Refinement of field anesthesia protocols for joint fluid collection in healthy swine
Katie O'Brien, University of Illinois
14. Validation of snout wipes to detect influenza A virus in swine (IAV-S)
Joel Steckelberg, Iowa State University
15. Observations of sleep-related behaviors in piglets pre- and post-castration
Anna Martin, University of Pennsylvania
16. Survey of enteric disease pathogens within a swine production company
Stephanie Betbeze, Lincoln Memorial University

Continued on next page

Poster Session

Veterinary Students

17. A field trial of an injectable *Lawsonia intracellularis* vaccine on an antibiotic-free farm
Goldia Chan, University of Guelph
18. Determining the effect of agitation of chlortetracycline stock solutions on chlortetracycline concentrations at different areas of water delivery systems
T'Lee Girard, Iowa State University
19. Effect of ketoprofen (Anafen®) on platelet aggregation in piglets
Hannah Golightly, University of Guelph
20. B-cell tetramer monitoring of the memory immune response to PRRSV
Kevin Gustafson, University of Minnesota
21. Determining *Lawsonia intracellularis* antibody status in pigs during three early stages of life
Kayla Henness, University of Illinois
22. Characterizing piglet loss from PRRS outbreak
Taylor Homann, University of Minnesota
23. The sow fecal microbiome across parity and hierarchy
John Hurst, University of Pennsylvania
24. Investigating the vertical transmission of *Erysipelothrix rhusiopathiae* by real-time polymerase chain reaction (RT-PCR) and enrichment culture
Evan Koep, Iowa State University
25. Developing urine catheterization in sows for calcium and phosphorus analysis
Nicholas Lauterbach, Iowa State University
26. Testing the link between multiple influenza A infections and average daily gain in nursery aged piglets under field conditions
Andrea Patterson, University of Guelph
27. Individual differences in social behavior and affective state in group-housed gestating sows
Katherine Pruett, University of Pennsylvania

Poster Session

Veterinary Students

28. Determination of behavioral and physiological pain indicators associated with castration and tail docking in young piglets
Brent Sexton, Iowa State University
29. Soy isoflavones and porcine respiratory and reproductive syndrome viral infection in weanling pigs
Brooke Smith, University of Illinois
30. Utility of antemortem joint fluid collection for diagnostic investigations of infectious lameness
Victoria Thompson, Iowa State University
31. We can't answer that: The importance of careful interpretation of swine production data
Jonathan Tubbs, Auburn University
32. Identifying disease agents contributing to porcine respiratory disease complex (PRDC) within a large production system
Shannon Ure, University of Illinois
33. Evaluating different methods of antibody detection for porcine epidemic diarrhea virus in animals exposed at different intervals
Kathleen Wood, North Carolina State University

Poster Session Research Topics

Research Topics Posters (#34 - #47)

Location: Centennial Foyer

Sunday, February 26

12:00 – 5:00 PM

Authors present from 12:00 – 1:00 PM

Monday, February 27

9:00 AM – 5:00 PM

- 34.** Increased frequency of isolation of multi-drug resistant Salmonella I 4, [5], 12:i:- from swine with histologic lesions consistent with salmonellosis
Eric Burrough
- 35.** Influenza A virus prevalence and seasonality in midwestern US breeding herds
Fabian Chamba Pardo
- 36.** Identification of multiple viruses in swine fecal samples using next-generation sequencing technology coupled with Kraken algorithm-based bioinformatics analysis pipeline
Qi Chen
- 37.** Evaluation of pathogenesis and antibody responses of porcine deltacoronavirus in 3-week-old weaned pigs
Qi Chen
- 38.** Microbiome associations in pigs with the best and worst clinical outcomes following co-infection with porcine reproductive and respiratory syndrome virus (PRRSV) and porcine circovirus type 2 (PCV2)
Megan Niederwerder
- 39.** Evaluation of nutrient availability when using feed disinfection in nursery diets
Luis Ochoa
- 40.** Two novel subunit vaccines targeting the IAV M2e epitope administered intranasally did not protect against pH1N1 disease and lesions whereas a commercial pH1N1 flu vaccine was effective
Tanja Opriessnig

Poster Session

Research Topics

41. *Mycoplasma hyopneumoniae* detection in vivo: Investigating the diagnostic sensitivity of laryngeal swabs
Luiza Roos
42. Adaption of porcine epidemic diarrhea virus (PEDV) to Vero cells
Tetsuo Sato
43. Identification of neuropathogenic teschovirus A serotype 2 and serotype 11 and experimental reproduction of disease
Kent Schwartz
44. Identification of a divergent strain of sapelovirus associated with a severe polioencephalomyelitis outbreak in the US
Kent Schwartz
45. Piglet feed intake during the end of the lactation period impacts post-weaning diarrhea incidence and survival rate
Frederic Vangroenweghe
46. *Mycoplasma hyopneumoniae* vaccination check using quantification of IFN-gamma levels following T-lymphocyte stimulation of *M hyopneumoniae*-vaccinated piglets
Frederic Vangroenweghe
47. Evaluation of a vaccine prototype using a chimeric protein and a molecular enhancer produced by *Pichia pastoris* fermentation
Aura Villamil

Poster Session Industrial Partners

Industrial Partners Posters (#48 - #60)

Location: Centennial Foyer

Sunday, February 26

12:00 – 5:00 PM

Authors present from 12:00 – 1:00 PM

Monday, February 27

9:00 AM – 5:00 PM

- 48.** Grow-finish mortality in pigs consuming acidified water
Joshua Jendza
BALCHEM CORPORATION
- 49.** A new multiplex qPCR allows for identification of 3
Mycoplasma species common in swine
Eric van Esch
BIOCHEK
- 50.** Annual occurrence of mycotoxins in US corn harvested
from 2012 to 2015
Erika Hendel
BIOMIN
- 51.** Comparison of intestinal lesions between Enterisol®
Ileitis and Porcilis® Ileitis using a mucosal homogenate
challenge seeder pigs model
Jessica Seate
BOEHRINGER INGELHEIM VETMEDICA, INC
- 52.** Field efficacy study of RHINISENG® in Europe in a farm
with problems associated with *Bordetella*
bronchiseptica
Alba Martos
LABORATORIOS HIPRA
- 53.** Evaluation of an inactivated vaccine against porcine
epidemic diarrhea virus (PEDV)
Juan Hernandez
LAPISA ANIMAL HEALTH
- 54.** A novel approach for using PG 600®: Impact on gilt
performance and sow longevity
Derald Holtkamp
MERCK ANIMAL HEALTH

Poster Session

Industrial Partners

55. Zactran®: A novel azalide antibiotic for swine respiratory disease
Paul Dorr
MERIAL
56. Comparative study to evaluate the performance in grow-finish pigs when treated with either: Aivlosin® 17% at two time periods versus Denagard® 10 at two time periods following experimental challenge with *Lawsonia intracellularis*
Ron Kaptur
PHARMGATE ANIMAL HEALTH
57. Effect of Tonistry Px™ administration on intestinal morphology
Ava Firth
TONISITY
58. Pig Atlas: Increasing the level of detail of phenotypes to increase genetic gain in pig breeding
John Eggert
TOPIGS NORSVIN USA
59. Disinfection in freezing temperatures: An experimental approach to identify best practices for applications in the animal health industry
Lucas Pantaleon
VIROX ANIMAL HEALTH
60. Evaluation of reproductive performance after implementation of Foster® PRRS in a 9,000-sow production system using continuous quality improvement tools
Jose Angulo
ZOETIS



SPOUSE HOSPITALITY SUITE

Monday, February 27

7:00 – 9:00 AM

Location: Granite

The AASV is pleased to host the spouse hospitality suite at the Hyatt Regency Denver. Spouses of meeting attendees are invited to enjoy complimentary breakfast pastries, juice, and coffee.

*Make new acquaintances, visit with old friends,
and plan the rest of your day with other
AASV spouses and family members.*

Technical Tables

Industry partners
for professional success



Visit the Technical Tables Exhibit!

With more than 80 companies and organizations participating (see page 8), the Technical Tables Exhibit offers the perfect opportunity to learn about new products and services available to you and your clients.

EXHIBITS OPEN

Monday, February 27
9:00 AM – 5:00 PM

Tuesday, February 28
8:00 AM – 12:00 PM

LOCATION

Centennial EFGH

All refreshment breaks on Monday and Tuesday will take place in the exhibit hall. Take some time to visit with our exhibitors, and be sure to thank them for supporting the AASV Annual Meeting!

AASV Foundation Auction

Monday, February 27
Capitol Foyer and Ballroom



What better place than Denver to support the AASV Foundation? Denver's beginnings were all about gold. In 1858, a small group of prospectors from Georgia discovered gold at the base of the Rocky Mountains. The gold rush that followed brought both prospectors and speculators to the area, and "Denver City" was born. After the Civil War, the discovery of silver brought a second onslaught of fortune seekers.

With that history in mind, bring your own sacks of gold and silver to Denver and support the AASV Foundation. Please be generous investing in the future of the AASV. Our success depends on you!

Look over the auction catalog or go to aasv.org/foundation to see the items up for bid. Since everything's been donated, the full amount of your bid will support AASV Foundation programs, including swine research, scholarships, swine externship grants, annual meeting travel stipends for students, SMEC tuition grants, heritage videos, and more!

Silent Auction

New! The silent auction is going electronic! The auction items will be on display in the Capitol Foyer on Monday – but you can bid early (and often!) from your phone using the new mobile bidding app (watch www.aasv.org/foundation for details). Bidding closes Monday evening during the Awards Reception.

Live Auction

The Live Auction will be held at the conclusion of the AASV Awards Reception Monday evening.

Give generously in Denver!
aasv.org/foundation

Monday General Session

One World, One Health, One Passion

One World, One Health, One Passion for Pigs

Date: Monday, February 27

Time: 8:00 AM – 12:15 PM

Location: Centennial ABCD

Program chair: Alex Ramirez

- 8:00** **Howard Dunne Memorial Lecture**
Swine medicine in the 21st century: Immovable object meets unstoppable force
Jeff Zimmerman
- 9:00** **Alex Hogg Memorial Lecture**
One Health: Roles, responsibilities, and opportunities for swine veterinarians
Matthew Turner
- 10:00** REFRESHMENT BREAK
Co-sponsored by AGRILABS and HOG SLAT
- 10:30** Canadian perspective on porcine epidemic diarrhea
Egan Brockhoff
- 11:00** Avian influenza: Lessons learned
Jill Nezworski
- 11:30** Consumers, pigs, vets, and zoonoses: The critical role you play in earning trust with consumers
J.J. Jones
- 12:15** LUNCHEON
Sponsored by BOEHRINGER INGELHEIM VETMEDICA, INC

AASV LUNCHEON



Sponsored by:
**BOEHRINGER INGELHEIM
VETMEDICA, INC**

Monday, February 27
12:30 – 2:00 PM

Capitol Ballroom (4th level)

Monday Session #1

Swine Diseases

Swine Diseases

Date: Monday, February 27

Time: 2:00 – 5:30 PM

Location: Centennial ABC

Session chair: Kate Dion

- 2:00** Opportunistic bacterial pathogens: Battles fought in daily practice
Cameron Schmitt
- 2:30** Batch farrowing for disease control
Elise Toohill
- 2:45** Determining optimum PRRSV management strategies
Clayton Johnson
- 3:30** REFRESHMENT BREAK
Sponsored by CEVA ANIMAL HEALTH
- 4:00** Emerging genetic strategies for disease control
Matt Culbertson
- 4:30** Swine Disease Matrix, rapid response, diagnostic fee support, and other progress from the Swine Health Information Center
Paul Sundberg
- 5:00** Experiences with FMD and CSF in Korea
Wonil Kim
- 5:30** Session concludes

AASV AWARDS RECEPTION



Sponsored by:

ELANCO ANIMAL HEALTH

Monday, February 27

6:30 – 8:30 PM

Capitol Ballroom (4th level)

Monday Session #2

Antibiotics

Antibiotics

Date: Monday, February 27

Time: 2:00 – 5:30 PM

Location: Centennial D

Session chair: Sam Holst

- 2:00** Antibiotic resistance mechanisms
Randy Singer
- 2:25** Antibiotic use metrics
Peter Davies
- 2:50** Human models to reduce antibiotic use
Michael Sadowsky
- 3:15** REFRESHMENT BREAK
Sponsored by CEVA ANIMAL HEALTH
- 3:45** Feed industry experience with implemented VFD rule
Richard Sellers
- 4:05** Practitioner experience with implemented VFD rule
Paul Ruen
- 4:25** GlobalVetLINK experience with implemented VFD rule
Tyler Holck
- 4:45** On-farm inspections and VFD pilot project
Michael Murphy
- 5:05** Roundtable Q&A
All speakers
- 5:30** Session concludes

Monday Session #3

The Reproductive Herd

Managing the reproductive herd for high health and productivity

Date: Monday, February 27

Time: 2:00 – 5:30 PM

Location: Mineral B-G

Session chair: Tom Gillespie

- 2:00** Economic impact: Fitness traits in post-weaning pigs and sows in lieu of genetic improvement in litter size and leanness
John Mabry
- 2:30** Semen supplier contributions to sow herd performance
Gary Althouse
- 3:00** A pig's early challenges
Maria Pieters
- 3:30** REFRESHMENT BREAK
Sponsored by CEVA ANIMAL HEALTH
- 4:00** Considerations for batch production
Scanlon Daniels
- 4:30** Managing Danish nurseries in prolific sow herds with minimal antibiotic use
Michael Agerley
- 5:30** Session concludes



AASV FOUNDATION AUCTION

Monday, February 27
Capitol Foyer (4th level)

Silent Auction: Items on display at noon

Live Auction: Immediately following
the AASV Awards Reception

Tuesday General Session Control/Elimination

AASV's Stand: Control/Elimination

Date: Tuesday, February 28

Time: 8:00 AM – 12:00 PM

Location: Centennial ABCD

Session chair: Alex Ramirez

- 8:00** Biosecurity: The strengths and weaknesses in our industry
Butch Baker
- 9:00** Practical PED elimination and surveillance: Quebec's experiences
Julie Menard
- 9:45** REFRESHMENT BREAK
Co-sponsored by Quality Technology International
- 10:15** US swine industry structure and disease control: A "wicked" problem
Mike Lemmon
- 11:00** Voluntary regional PRRS control: Pitfalls and progress
Dave Wright
- 11:45** Discussion: What should AASV's stance be?
Moderated by Alex Ramirez
- 12:00** Session and meeting concludes



AASV BUSINESS BREAKFAST

Tuesday, February 28
7:00 – 8:00 AM

Capitol Ballroom (4th level)

Speakers

Michael Agerley	DENMARK
Keith Aljets	Parnell, IA
Gary Althouse	Kennett Square, PA
Jamee Amundson	Des Moines, IA
Alyssa Anderson	Saint Paul, MN
Tavis Anderson	Ames, IA
Jose Angulo	Holly Springs, NC
Jessica Applebaum	Holland, PA
Andreia Arruda	Columbus, OH
Paul Ayers	Carlyle, IL
Butch Baker	Ames, IA
Kimberlee Baker	Ames, IA
Hunter Baldry	Minneapolis, MN
Ignacio Bernal Orozco	SPAIN
Stephanie Betbeze	Birmingham, AL
Megan Bloemer	Bloomington, IL
Egan Brockhoff	CANADA
Alexandra Buckley	Ames, IA
Eric Burrough	Ames, IA
Brandi Burton	Savoy, IL
Paisley Canning	Ames, IA
Jean Paul Cano	Hendersonville, TN
Fabian Chamba Pardo	Saint Paul, MN
Goldia Chan	CANADA
Qi Chen	Ames, IA
Joe Connor	Carthage, IL
Laura Constance	Manhattan, KS
Joe Crenshaw	Ankeny, IA
Matt Culbertson	Gallatin, TN
Scanlon Daniels	Dalhart, TX
Peter Davies	Saint Paul, MN
Deanne Day	Bartelso, IL
Gustavo de Sousa e Silva	Ames, IA
Jon De Jong	Pipstone, MN
Scott Dee	Pipstone, MN
Chris Deegan	Saint Paul, MN
Joel DeRouchey	Manhattan, KS
Diego Diel	Brookings, SD
Dennis DiPietre	Columbia, MO
Paul Dorr	FRANCE
Donna Drebes	Saint Paul, MN
Joshua Duff	Goldsboro, NC
John Eggert	Burnsville, MN
Al Eidson	Leawood, KS

Speakers

Taylor Engle	Blacksburg, VA
Robert Evelsizer	Fairmont, MN
Eduardo Fano	Saint Joseph, MO
Hanneke Feitsma	Northfield, MN
Ava Firth	Saint Joseph, MO
Cassandra Fitzgerald	Ames, IA
Robyn Fleck	Norman, AR
Eve Fontanella	Ames, IA
Aaron Gaines	Carlyle, IL
Phil Gauger	Ames, IA
Jordan Gebhardt	Manhattan, KS
Jerome Geiger	Hendersonville, TN
T'Lee Girard	Ames, IA
Kylie Glisson	Goldsboro, NC
Hannah Golightly	CANADA
Verona Gotter	GERMANY
Kevin Gustafson	Saint Paul, MN
Joseph Hahn	Ames, IA
Sara Hamlett	Ames, IA
Erika Hendel	San Antonio, TX
Daniel Hendrickson	Farmland, IN
Kayla Henness	Rantoul, IL
Juan Hernandez	MEXICO
Kellie Hogan	Dacula, GA
Tyler Holck	Gilbert, IA
Derald Holtkamp	Ames, IA
Taylor Homann	Pipestone, MN
Chris Hostetler	Clive, IA
John Hurst	Honey Brook, PA
Jeff Husa	Sioux Center, IA
Joshua Jendza	Florham Park, NJ
Clayton Johnson	Carthage, IL
J.J. Jones	Gladstone, MO
Matt Jones	Urbandale, IA
Ron Kaptur	Ames, IA
Wonil Kim	SOUTH KOREA
Allison Knox	Champaign, IL
Evan Koep	Ames, IA
Jacquelin Labrecque	CANADA
Nicholas Lauterbach	Ames, IA
Paul Lawrence	Worthington, MN
Mike Lemmon	Albion, IN
Brad Leuwerke	Albert Lea, MN

Speakers

Nicola Lewis	UNITED KINGDOM
Dan Little	Brookings, SD
Aaron Lower	White Heath, IL
Wes Lyons	Cortland, IL
John Mabry	Ames, IA
Melissa Madsen	Lenexa, KS
Jim Magolski	New London, WI
Michael Mardesen	Elliott, IA
Douglas Marthaler	Saint Paul, MN
Anna Martin	Philadelphia, PA
Alba Martos	SPAIN
Brigitte Mason	South Williamsport, PA
Ann McDonald	Smithfield, VA
Emily McDowell	Ottumwa, IA
Dan McManus	Dakota Dunes, SD
Julie Menard	CANADA
Timothy Miller	Lincoln, NE
Adam Moeser	East Lansing, MI
Chris Mowrer	Ames, IA
Mike Murphy	Rockville, MD
Michael Murtaugh	Saint Paul, MN
Olivia Myers	Raleigh, NC
Rita Neat	Ames, IA
Douglas Newcom	West Lafayette, IN
Jane Newman	CANADA
Megan Nickel	Ames, IA
Jill Nezworski	Buffalo Lake, MN
Megan Niederwerder	Manhattan, KS
David Nolan	Sedgwick, KS
Erin Nonos	Ames, IA
Katie O'Brien	Savoy, IL
Luis Ochoa	Carthage, IL
Dustin Oedekoven	Pierre, SD
Tanja Opriessnig	Ames, IA
Aaron Ott	Middletown, PA
Lucas Pantaleon	CANADA
Rachel Park	Columbus, OH
John Parrish	Madison, WI
Thomas Parsons	Kennett Square, PA
Andrea Patterson	CANADA
Brian Payne	Sycamore, IL
Reid Philips	Saint Joseph, MO
Meghann Pierdon	Kennett Square, PA

Speakers

Mike Pierdon	Elizabethtown, PA
Maria Pieters	Saint Paul, MN
Megan Pieters	Ames, IA
Chad Pilcher	Brookville, OH
Juan Carlos Pinilla	Hendersonville, TN
Jeremy Pittman	Waverly, VA
Dale Polson	Ankeny, IA
Sarah Probst Miller	Monticello, IL
Katherine Pruet	Philadelphia, PA
Michael Rahe	Saint Paul, MN
Tom Rathje	Columbus, NE
Lauren Redies	CANADA
Darwin Reicks	Saint Peter, MN
Anna Romagosa	Barcelona, SPAIN
Luiza Roos	Saint Paul, MN
Dan Rosener	Creston, IA
Marisa Rotolo	Ames, IA
Paul Ruen	Fairmont, MN
Chelsea Ruston	Ames, IA
Michael Sadowsky	Saint Paul, MN
Tetsuo Sato	JAPAN
Joy Scaria	Brookings, SD
Chelsea Scheidler	West Des Moines, IA
Richard Scheuermann	La Jolla, CA
Cameron Schmitt	Independence, IA
Pete Schneider	Hudson, IA
Jeff Schoening	Pocahontas, IA
Rachel Schulte	Cambridge, IA
Collette Schultz Kaster	Kearney, MO
Jake Schwartz	Sleepy Eye, MN
Kent Schwartz	Ames, IA
Jessica Seate	Saint Joseph, MO
Richard Sellers	Arlington, VA
Brent Sexton	Ames, IA
Randy Simonson	Worthington, MN
Randy Singer	Saint Paul, MN
Brooke Smith	Champaign, IL
Coen Smits	THE NETHERLANDS
Tim Snider	Saint Paul, MN
Ethan Spronk	Washington, IA
Joel Steckelberg	Ames, IA
Tom Stein	Jenison, MI
Erin Strait	De Soto, KS

Speakers

Amber Stricker	Morris, MN
Mike Strobel	Northfield, MN
Rob Stuart	Bedford, TX
Paul Sundberg	Ames, IA
Angie Supple	Hopkinton, IA
Brad Thacker	Athens, GA
Pete Thomas	Boone, IA
Victoria Thompson	Ames, IA
Mike Tokach	Manhattan, KS
Elise Toohill	Lancaster, MO
Jonathan Tubbs	Auburn, AL
Rick Tubbs	Jasper, AL
Matthew Turner	Greeley, CO
Shannon Ure	Champaign, IL
Eric van Esch	THE NETHERLANDS
Albert van Geelen	Ames, IA
Frederic Vangroenweghe	BELGIUM
Aura Villamil	Chillan, CHILE
Amy Vincent	Ames, IA
Rochelle Warner	Ames, IA
Susan Watkins	Huntsville, AR
Sherrie Webb	Des Moines, IA
Kilby Willenburg	Fitchburg, WI
Nathan Winkelman	Rice, MN
Todd Wolff	Walkerton, IN
Kathleen Wood	Garner, NC
Katie Woodard	Nevada, IA
Steve Wotton	UNITED KINGDOM
Courtney Wright	Columbus, OH
Dave Wright	Buffalo, MN
Sophia Bingling Xu	Fairfield, NJ
Gavin Yager	Audubon, IA
Zhen Yang	Saint Paul, MN
Michael Zeller	Ames, IA
Jianqiang Zhang	Ames, IA
Jeff Zimmerman	Ames, IA

Saturday, February 25

7:00 AM

Registration Desk open

Location: Centennial Foyer

AASV Committee Meetings

7:30 AM

PRRS Risk Assessment Training (page 10)

Location: Mineral A

8:00 AM

ABVP Entrance Examination

Location: Quartz A

ABVP Oral Examination

Location: Quartz B

1:00 PM

SEMINARS

#1 AASV's Got Talent (page 12)

Location: Centennial D

**#2 Influenza Sequence Analysis and Phylogenetics
(page 14)**

Location: Mineral A

**#3 Current Topics of Boar Stud Health, Management,
and Technology (page 16)**

Location: Centennial C

#4 Biosecurity (page 17)

Location: Centennial E

#5 Operation Main Street Training (page 19)

Location: Mineral B

#6 Antibiotic-free Pork Production (page 20)

Location: Centennial B

5:00 PM

OPEN EVENING

There is no reception scheduled for Saturday evening.
Enjoy Denver!

7:00 PM

VETERINARY STUDENT TRIVIA EVENT (page 13)

Sponsored by: **MERCK ANIMAL HEALTH**

Location: Rock Bottom Brewery

Sunday, February 26

6:00 AM

Exercise Class (page 22)

Location: Agate

6:30 AM

AASV Student Breakfast

Location: Mineral ABC

7:00 AM

Praise Breakfast (page 23)

Sponsored by: **STUART PRODUCTS**

Location: Mineral DEFG

Registration Desk open

Location: Centennial Foyer

8:00 AM

Canadian Association of Swine Veterinarians

Location: Granite

SEMINARS

#7 ESF from A to Z (page 24)

Location: Centennial F

#8 The Common Swine Industry Audit:

What You Need to Know (page 26)

Location: Centennial AB

#9 Diagnostics (page 27)

Location: Centennial GH

#10 Swine Medicine for Students (page 29)

Location: Centennial E

#11 Feed: Commanding New Focus (page 30)

Location: Centennial C

RESEARCH TOPICS (page 32)

Location: Centennial D

Sunday, February 26

12:00 PM

POSTER SESSION OPEN

Authors in attendance: 12:00 – 1:00 PM

Location: Centennial Foyer

Veterinary Student Posters (page 42)

Sponsored by: **ZOETIS**

Research Topics Posters (page 46)

Industrial Partners Posters (page 48)

AASV FOUNDATION LUNCHEON

(Advance registration required)

Location: Mineral ABC

1:00 PM

CONCURRENT SESSIONS

#1 Student Seminar (page 34)

Sponsored by **ZOETIS**

Location: Centennial ABC

#2 Industrial Partners (page 36)

Location: Centennial D

#3 Industrial Partners (page 38)

Location: Centennial E

#4 Industrial Partners (page 40)

Location: Centennial FGH

6:30 PM – 8:30 PM

WELCOME RECEPTION

Sponsored by: **ZOETIS**

Location: Centennial EFGH

8:30 PM – 11:00 PM

STUDENT RECEPTION

Sponsored by **MERCK ANIMAL HEALTH**

Location: Mineral ABC

Monday, February 27

7:00 AM

Registration Desk open

Location: Centennial Foyer

Spouse Hospitality Suite open (page 50)

Location: Granite

8:00 AM – 12:30 PM

GENERAL SESSION: One World, One Health, One Passion for Pigs (page 52)

Location: Centennial ABCD

Howard Dunne Memorial Lecture: Dr. Jeff Zimmerman
Swine medicine in the 21st century: Immovable object
meets unstoppable force

Alex Hogg Memorial Lecture: Dr. Matthew Turner
One Health: Roles, responsibilities, and opportunities
for swine veterinarians

9:00 AM – 5:00 PM

COMMERCIAL TECHNICAL TABLES (page 8)

Location: Centennial EFGH

12:15 PM

LUNCHEON

Sponsored by **BOEHRINGER INGELHEIM VETMEDICA INC.**

Location: Capitol Ballroom (4th level)

2:00 PM – 5:30 PM

CONCURRENT SESSIONS

#1 Swine Diseases (page 53)

Location: Centennial ABC

#2 Antibiotics (page 54)

Location: Centennial D

#3 Managing the Reproductive Herd for High Health and Productivity (page 55)

Location: Mineral B-G

6:30 PM – 8:30 PM

AASV AWARDS RECEPTION

Sponsored by **ELANCO ANIMAL HEALTH**

Location: Capitol Ballroom (4th level)

AASV FOUNDATION AUCTION (page 51)

Location: Capitol Foyer (4th level)

Tuesday, February 28

7:00 AM

Registration Desk open

Location: Centennial Foyer

BREAKFAST and AASV ANNUAL BUSINESS MEETING

Location: Capitol Ballroom (4th level)

8:00 AM

GENERAL SESSION: AASV's Stand: Control/Elimination
(page 56)

Location: Centennial ABCD

8:00 AM – 12:00 PM

COMMERCIAL TECHNICAL TABLES (page 8)

Location: Centennial EFGH

12:00 PM

MEETING CONCLUDES

Thank you!

Thank you to ALL of the companies,
organizations, and members who
support the AASV in so many
ways throughout the year!

The contributions of time,
money, and resources are
vital to the AASV's efforts
to provide high quality
educational programming
at a reasonable cost to
AASV members.

Plan now to
attend the
**49TH AASV
Annual Meeting**

March 3 - 6, 2018

**Manchester Grand Hyatt
SAN DIEGO, CALIFORNIA**



**2019 Orlando March 9 - 12
AASV's 50th Anniversary!**

2020 Atlanta March 7 - 10

Thank you!

*We extend our sincere appreciation to
the following sponsors of AASV
annual meeting activities:*

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Refreshment Break Co-sponsor

BOEHRINGER INGELHEIM VETMEDICA, INC

AASV Luncheon

CEVA ANIMAL HEALTH

Refreshment Break Sponsor

ELANCO ANIMAL HEALTH

AASV Awards Reception

AASV Foundation Veterinary Student Scholarships

GLOBALVETLINK

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HOG SLAT

Refreshment Break Co-sponsor

MERCK ANIMAL HEALTH

Student Trivia Event

Student Reception

NEWPORT LABORATORIES

Veterinary Student Travel Stipends

Veterinary Student Poster Awards

QUALITY TECHNOLOGY INTERNATIONAL

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STUART PRODUCTS

Praise Breakfast

ZOETIS

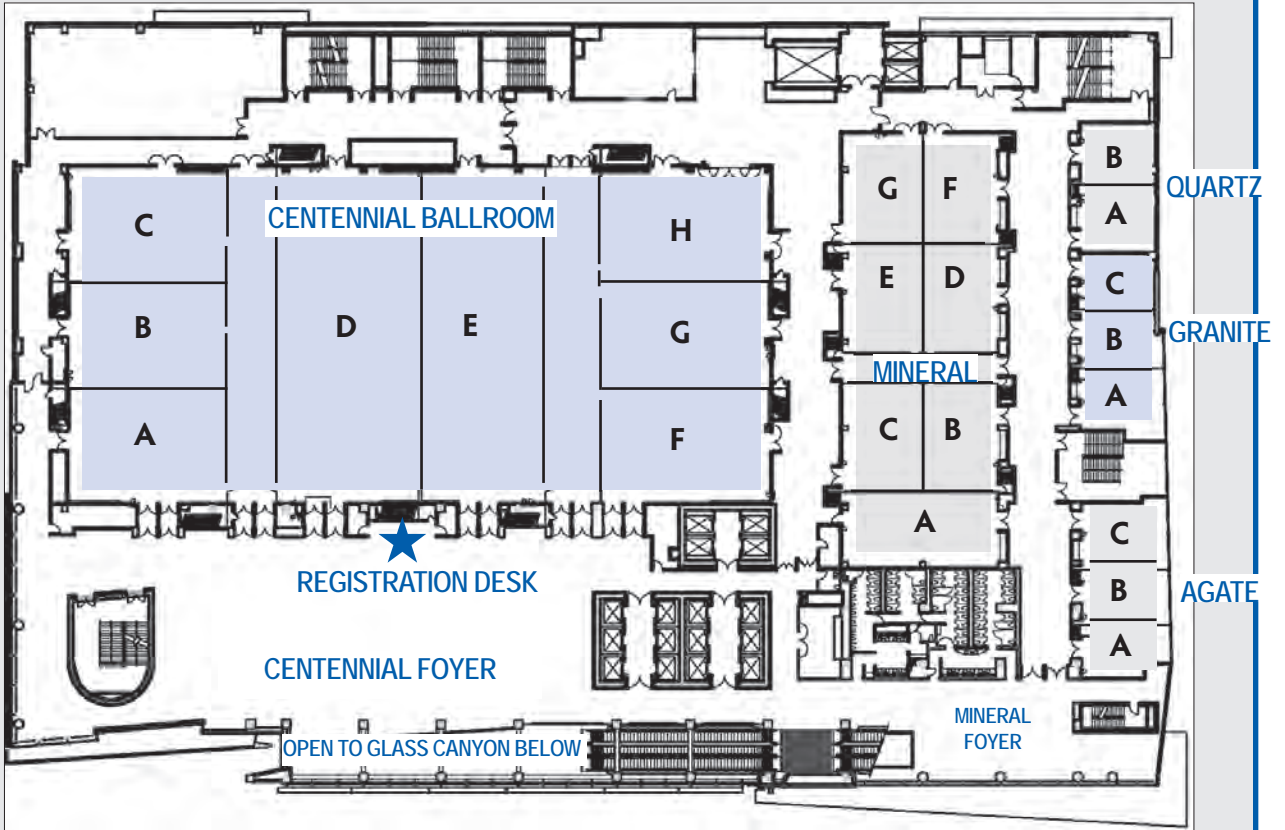
Welcome Reception

AASV Student Seminar and Student Poster Session

AASV Foundation Veterinary Student Scholarship

HYATT REGENCY DENVER

Third Level



Fourth Level

