

2013  
JAM  
JOINT ANNUAL MEETING



# Conference Information and Scientific Program

ADSA<sup>®</sup> - ASAS  
July 8–12, INDIANAPOLIS, INDIANA

[www.jtmtg.org/2013](http://www.jtmtg.org/2013)

# MOBILE MYPROGRAM

<http://m.jtmtg.org>



## Scan or browse to access:

Enjoy the more portable, mobile version of MyProgram. Instantly navigate the conference schedule using your smartphone!

- Scientific Programs
- Special Events
- News & Updates
- Maps
- Local Information

## Welcome to JAM 2013!



**James Sartin**  
ASAS President



**Ken McGuffey**  
ADSA President

On behalf of the American Dairy Science Association® and the American Society of Animal Science, we welcome you to Indianapolis and JAM 2013. This year's meeting begins on Monday, July 8, and runs through Friday, July 12. Many opportunities exist for interaction among society members, starting with the opening session on Monday, July 8, when our speaker will be Dr. Phil Nelson, food scientist and recipient of the 2007 World Food Prize given by the Norman Borlaug Foundation. The opening session will be followed by a reception for all attendees. Other special pre-meeting events include the Triennial Growth Symposium; a new workshop: Teaching and Learning in the Animal Sciences; the second National ASAS Academic Quadrathlon; and the Late-Breaking Abstracts session.

More than 2,100 abstracts and 30 symposia are scheduled that cross many species, disciplines, and societal topics of importance to food and companion animal production. Two symposia on bioethics, a new and emerging topic, will address the societal and philosophical issues that animal scientists must consider in research and production. Symposia will address topics in basic and applied nutrition for ruminants and monogastrics. Two companion animal symposia will discuss food safety and comparative nutrition in this emerging sector in JAM. Immunology and neuroendocrinology are the subjects of two symposia on reproduction. The ADSA-ASAS Northeast section and the Southern section of ADSA will each address regional issues on sustainable animal production, a topic that will also be the focus of symposia on meat production from goats and on confinement animal agriculture. The Meat Science and Muscle Biology symposia will address preharvest factors that affect meat quality and meat safety. The ADSA Dairy Foods and Production divisions continue collaboration on the ADSA Multidisciplinary and International Leadership Keynote (MILK) symposium that will be held in conjunction with the Dairy Foods symposium: Dietary influence on milk synthesis of health-promoting components in bovine and human milk. This full day will be especially attractive to human and animal science professionals in advancing our understanding of basic and practical applications of the nutrient contributions of milk. Organizers will again conduct the Mixed Models workshop on Thursday and Friday.

Attendees are encouraged to take fullest advantage of this great opportunity to share ideas across species and societies, visit with each other in person, and make new acquaintances.

We are grateful to the many people involved in making this meeting a success, starting with our sponsors. Their support is essential to the quality program that makes JAM unlike any other meeting. A list of sponsors of this year's meeting is available in this program book. Please take time to thank them during the meeting. The program committee has worked long and hard to organize an excellent program. Our thanks to the overall program committee of Geoff Dahl (chair), Jack Whittier, Tony Capuco, and Dean Hawkins for their efforts in bringing forth this outstanding scientific program. We also thank the many others who contributed to this huge undertaking, including the FASS staff and staffs of ADSA and ASAS.

Finally, thank you, the attendees, for participating in JAM 2013 and making it a grand success!

Ken McGuffey  
ADSA President

James Sartin  
ASAS President

# Table of Contents

Welcome Letter . . . . .	1
General Meeting Information . . . . .	3
Presentation Information . . . . .	4
Headquarters Hotels . . . . .	6
Transportation . . . . .	6
Indianapolis Sightseeing Options. . . . .	6
Special Events . . . . .	6
Award Donors and Appreciation Club Supporters . . . . .	12
Exhibit Schedule and Floor Plan. . . . .	13
Guide to Exhibitors . . . . .	14
Exhibit Directory . . . . .	15
Corporate Sponsorship . . . . .	24
Indianapolis, Convention Center, and Hotel Maps . . . . .	25
Meeting Sponsors. . . . .	30
Schedule of Events . . . . .	33
ADSA SAD Schedule of Events . . . . .	37
ADSA Dairy Foods Division Schedule of Events . . . . .	39
Scientific Program Table of Contents. . . . .	41
Scientific Sessions. . . . .	47
Author Index . . . . .	.203

<http://www.jtmtg.org/2013>

## Important Message

In the event that protestors interrupt the meetings, please ignore them. Their goal is to attract attention and any attention you give them will only help their cause. Convention staff have a plan in place to handle these situations, and they depend on our cooperation. If members of the media approach you for an interview, please politely decline and direct them to the convention's media room, where spokespersons will be available.

*Thank you for your cooperation.*

# General Meeting Information

## Location

The meeting will be held at the Indiana Convention Center and area hotels. The convention center is ideally located in downtown Indianapolis within walking distance of hotels, shopping, and dining.

## Schedule of Events

The 2013 ADSA-ASAS JAM will be held July 8–12 (Monday through Friday). The opening session will be held on Monday evening, July 8; scientific sessions will begin Tuesday morning, July 9, and run through noon on Friday, July 12.

## Opening Session

This year's opening session, on Monday evening, will feature a presentation by Philip E. Nelson, Scholle Endowed Chair in Food Processing and Professor Emeritus at Purdue University and 2007 World Food Prize Laureate (the "Nobel" prize in food and agriculture). Dr. Nelson's talk will be titled "*What a Difference a Day Makes...Advances in Aseptic Processing.*" After the opening session, please join us for food, drinks, and camaraderie at the reception.

## Program Format for 2013

Poster sessions . . . . .	7:30 am–9:30 am
Scientific sessions . . . . .	9:30 am–12:30 pm
Lunch break . . . . .	12:30 pm–2:00 pm
Scientific sessions . . . . .	2:00 pm–5:00 pm

Meeting rooms will be equipped for electronic presentations and preloaded sessions. A cyber café will be available for attendees to keep up to date while at the meeting, and free wi-fi is available in the food court areas of the convention center.

## Registration Hours

Registration will be located in the lobby of Hall A-B in the Indiana Convention Center. Registration hours for the 2013 Joint Meeting, including special symposia and other events, will be as follows:

Sunday, July 7 (preregistered only) . . . . .	3:00 pm–5:00 pm
Monday, July 8. . . . .	7:00 am–7:00 pm
Tuesday, July 9. . . . .	6:30 am–5:15 pm
Wednesday, July 10 . . . . .	7:00 am–5:15 pm
Thursday, July 11 . . . . .	7:00 am–5:15 pm
Friday, July 12 . . . . .	8:00 am–1:00 pm

## Important Phone Numbers

Hyatt Regency Indianapolis (ADSA HQ). . . . .	317-632-1234
Westin Indianapolis (ASAS HQ) . . . . .	317-262-8100
Sheraton Indianapolis (Student HQ) . . . . .	317-635-2000
Crowne Plaza Indianapolis . . . . .	317-631-2221
Hampton Inn Indianapolis . . . . .	317-261-1200
Omni Severin Indianapolis . . . . .	317-634-6664

## Media Check-In

Please check in at the Registration Desk in the Hall A-B Lobby of the Indiana Convention Center.

## Speaker Ready Room

The Speaker Ready Room is located in Room 126 of the Indiana Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

## Hospitality Lounge

A hospitality lounge will be located in Room 127 of the Indiana Convention Center. This lounge will offer attendees an area to relax, network, and catch up with old friends. The hospitality lounge is also a great meet-up place when departing the convention center as a group.

## Business Center

The Ricoh Business Center is located across from Room 116 on the first floor of the Indiana Convention Center. The phone number is 317-262-4496. Use of the business center is at your own expense.

# Presentation Information

## Oral and Invited Speakers

Oral sessions will begin at 9:30 am on Tuesday and Wednesday, 10:30 am on Thursday, and 8:30 am on Friday.

## Onsite Upload Information

**Onsite upload:** Onsite presentation upload will be available; files can be delivered to the Preload Room (Room 125) at the convention center (Sunday: 3:00 to 5:00 pm; Monday to Thursday: 7:00 am to 5:00 pm; Friday: 7:00 am to noon). **Presentations must be uploaded by 5:00 pm on the day before your scheduled presentation. Files will not be accepted via e-mail. No presentations will be loaded while the session is in progress or between presentations.**

## Poster Presentations

We have dedicated a two-hour block each morning to poster presentations. The “open poster” sessions will be from 7:30 to 9:30 am Tuesday, Wednesday, and Thursday in the Convention Center, Hall A-B. This year, coffee and pastries will be served in the hall from 8:00 to 9:00 am on all three days.

Each poster presentation will be available for public viewing for the entire day, with the presenting authors present during the open posters time (7:30–9:30 am). All posters must be mounted on the board 30 minutes before the beginning of the day’s session (**poster sessions begin at 7:30 am so posters must be mounted on boards by 7:00 am**) and must list the paper number and corresponding day. The exhibit hall will open at 6:30 am on Tuesday through Thursday. **Posters must be removed after 5:00 pm each day.** Any posters remaining after 5:30 pm each day will be removed by the convention center staff and discarded.

Each poster board area is **48 inches high and 96 inches wide**. Use of this space is dictated by the presenter, with the following exceptions: the top of the poster space must include the abstract number with corresponding letter of the day it is being presented, title, authors, and affiliations. The lettering for this section should be at least 1 inch high.

## Locating the Correct Poster Board

Each poster board number corresponds to the abstract number as noted in the program. For Tuesday posters a “T”; Wednesday posters a “W”; and for Thursday posters a “TH” precedes the board number.

## Camera, Video Camera, and Cell Phone Policy

Use of cameras, video cameras, and cell phones (for calls or as cameras) is prohibited during oral and poster presentations to minimize disruption and unauthorized dissemination of data. Anyone found in violation of this policy will be asked to leave the session.

## ARPAS Continuing Education Units

The 2013 JAM has been approved for up to 21 continuing education units (CEUs) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

## Continuing Education Credits for Veterinarians (RACE credits)

Many of the symposia at the 2013 Joint Annual Meeting will be approved for RACE credits. We are in the process of having specific symposia approved. Following approval, symposia approved for RACE credits will be posted online at <http://www.jtmtg.org/2013>. Information regarding RACE can be found at [www.aavsb.org](http://www.aavsb.org).

## Job Resource Center

The ADSA-ASAS Job Resource Center is located in the exhibit hall. Job announcements and CVs will be organized into the following categories for posting: Animal Behavior and Well-Being; Animal Health; Animal Breeding; Companion Animals; Extension; Food Safety; Food Science; Forages and Pastures; Genetics; Growth and Development; International Animal Agriculture; Lactation; Meat Science and Muscle Biology; Nonruminant Nutrition; Pharmacology and Toxicology; Physiology and Endocrinology; Production and Management; Ruminant Nutrition; and Teaching.

## Cyber Café

Keep in touch with work, family, and friends during JAM at the cyber café. Located in exhibit hall, the cyber café is available to all meeting attendees. The cyber café will also have a computer with a printer for limited printing during the meeting.

## Mobile MyProgram— An Easier Way to Plan Your Schedule

The MyProgram planner is now mobile! Mobile MyProgram provides JAM attendees with convenient access to the conference schedule via smartphone. With Mobile MyProgram, the JAM program is more convenient than ever. Visit [m.JtMtg.org](http://m.JtMtg.org) today!

# Headquarters Hotels

**Hyatt Regency** (ADSA Headquarters Hotel)  
One South Capitol Avenue  
Indianapolis, IN 46204

**Westin Indianapolis** (ASAS Headquarters Hotel)  
50 South Capitol Avenue  
Indianapolis, IN 46204

**Sheraton City Centre** (Student Headquarters Hotel)  
31 West Ohio Street  
Indianapolis, IN 46204

**Omni Severin**  
40 West Jackson Place  
Indianapolis, IN 46225

**Hampton Inn Downtown**  
105 South Meridian Street  
Indianapolis, IN 46225

**Crowne Plaza at Union Station**  
123 West Louisiana Street  
Indianapolis, IN 46225

## Transportation in Indianapolis

Indianapolis is within a day's drive of over half of the US population, and a LEED-certified, J.D. Power top-ranked airport welcomes those who fly in. The JAM hotels and the convention center are approximately 12 miles from Indianapolis International Airport (IND). The one-way fare for a taxi from the airport to the Indianapolis Convention Center area is approximately \$28.00. An airport shuttle service (PT MED Transport) is also available; the rate is \$30.00 round-trip. Go to [www.ptmedicaltransportation.com](http://www.ptmedicaltransportation.com) or call 317-319-0993 for more information on airport and other shuttle services.

## Indianapolis Sightseeing Options

From the Indianapolis Convention and Visitors Bureau (CVB):

"Indianapolis offers the most compact, connected and convenient meetings package in the country. But beyond the bricks and mortar is a vibrant and walkable downtown that stays activated long after the work day ends. After 5 pm, attendees find themselves in a city with hundreds of options to explore for networking and entertainment. Over 200 diverse restaurants, 80 bars and clubs, and 50 major attractions are within walking distance of downtown hotels, including a glimmering canal walk and 250 acres of urban green space with one-of-a-kind museums and a top 10 zoo.

The new \$63 million, 8-mile Indianapolis Cultural Trail connects bicyclists and pedestrians to dining, nightlife, attractions, and six eclectic cultural districts with boutique shops, art galleries, and live music. The transformed Georgia Street offers a unique outdoor event plaza and provides a pedestrian-friendly connector between the convention center and Bankers Life Fieldhouse, home of the NBA Pacers. James Beard Award-winning chefs, the world's spiciest dish, and hip and funky neighborhoods can also be found in this safe, clean, and friendly city."

Visit the CVB (<http://www.visitindy.com/>) for ideas on what to do for fun in Indianapolis!

## Special Events

### New in 2013!

Coffee and pastries will be served in the exhibit hall on Tuesday, Wednesday, and Thursday from 8:00 to 9:00 am. Please make time to talk with our exhibitors while you are enjoying complimentary coffee and pastries!

#### **ADSA Student Tour (option 1): Indianapolis Motor Speedway and Kelsay Farms Dairy Tour**

**Sunday, July 7**

**12:00 – 5:30 pm**

**Bus departs from Sheraton**

Departing from the lobby of the SAD hotel, we will travel via motor coach to nearby Whiteland, Indiana, to visit Kelsay Farms, LLC. This sixth-generation 500-cow dairy and 2200-acre crop farm also has a very successful agritourism business, hosting

nearly 10,000 visitors annually. From there, we will board the bus and travel to the Indianapolis Motor Speedway and Museum, home of the Indianapolis 500 and the Brickyard 400 for a complete Grounds Tour. The Grounds Tour includes admission to the Hall of Fame Museum and a ride around the famed 2.5-mile oval, as well as visits to the timing-and-scoring suite in the Pagoda, the Media Center, Victory Podium, Gasoline Alley garage area and the world-famous "Yard of Bricks" at the start/finish line. Tour is open undergraduate and graduate students. Ticket price includes transportation, Speedway tour ticket, and dairy tour ticket.

***ADSA Student Tour (option 2): Indianapolis Motor Speedway (Museum ticket only) and Kelsay Farms Dairy Tour  
Sunday, July 7***

***12:00 – 4:00 pm***

***Bus departs from Sheraton***

This shorter tour option includes the complete Kelsay Farm tour and an abbreviated Speedway visit that includes admission to the Raceway Museum only (and excludes the Grounds Tour and track lap). Ticket price includes transportation, Speedway Museum ticket, and dairy tour ticket.

***SAD Student Informal Mixer***

***Sunday, July 7***

***6:30 pm***

***Meet in Sheraton lobby or at Colts Grille restaurant***

Jump-start the week with good food, good music, and good friends at the Sunday student mixer at Colts Grille, Indianapolis' premier sports restaurant celebrating the hometown favorite Indianapolis Colts.

***ASAS Undergraduate Academic Quadrathlon***

***Monday and Tuesday***

***See times and locations below***

ASAS is excited to offer our 4 regional undergraduate championship teams the chance to compete for the National Academic Quadrathlon (AQ) title. The AQ has been an integral part of ASAS history and we are excited to use it as a platform to integrate more undergraduate involvement at our meetings. The lab practicum will be hosted at Purdue University in West Lafayette on Monday and then the AQ students will join us in Indianapolis to compete head-to-head in the quiz bowl on Tuesday. Quiz bowl finals will be held immediately after the ASAS awards on Tuesday night. Please come out and support our undergraduates.

Monday, July 8: Practicum and written exam (Purdue University)

Tuesday, July 9: Oral presentations, quiz bowl and quiz bowl final (Westin Indianapolis, Capitol 1, Council, Grand Ballroom)

***SAD Undergraduate Midday Mixer and Lunch***

***Monday, July 8***

***12:00 – 1:00 pm***

***Convention Center, 204***

Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends, and get to know your 2013–2014 officer candidates. Registration is limited to undergraduate students and advisors.

***SAD Dairy Quiz Bowl Final Round***

***Monday, July 8***

***5:30 – 6:00 pm***

***Convention Center, 201***

On Monday, university teams from across North America will compete in the ADSA-SAD Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2013 Dairy Quiz Bowl Winning Team.

***ADSA Graduate Student Division Business Meeting***

***Monday, July 8***

***6:00 – 6:45 pm***

***Convention Center, 204***

Meet the incoming officer team and voice your ideas and opinions about ADSA GSD activities. Enjoy conversations with your fellow graduate students and complimentary snacks.

### **Opening Session**

**Monday, July 8**

**7:00 – 8:00 pm**

#### **Convention Center, Sagamore Ballroom**

Join us as we kick off the 2013 JAM at the opening session. This year's session will feature a presentation by Philip E. Nelson, Scholle Endowed Chair in Food Processing and Professor Emeritus at Purdue University and 2007 World Food Prize Laureate (the "Nobel" prize in food and agriculture). Dr. Nelson's talk will be titled "*What a Difference a Day Makes...Advances in Aseptic Processing.*"

### **Opening Reception**

**Monday, July 8**

**8:00 – 10:00 pm**

#### **Convention Center, Sagamore Ballroom**

Wind down the evening by joining us after the opening session for food and drinks and some long-awaited socializing time with colleagues and friends.

### **ADSA-SAD Undergraduate Poster Competition**

**Tuesday, July 9**

**7:30 – 9:30 am**

#### **Convention Center, Hall A-B**

**New this year:** In addition to their oral presentations, undergraduate students will be presenting posters in the exhibit hall. One poster is allowed per school. Please plan time to visit the posters on Tuesday morning or attend the oral presentations on Tuesday afternoon. See program for complete details.

### **Spouse Event 1: Indianapolis Memorial Tour**

**Tuesday, July 9**

**11:00 am – 2:00 pm**

#### **Meet at Registration area in Convention Center**

This motor coach tour will take you all around Indianapolis for a tour of the many war memorials located in Indianapolis. The Colonel Eli Lilly Civil War Museums will be one of your stops, along with the famed Medal of Honor Memorial. Lunch is included with the tour price. Preregistration for this event is required; capacity is limited, so register early!

### **ADSA Graduate Student Division Career Insights Lunch, sponsored by Novus International Inc.**

**Tuesday, July 9**

**12:30 – 2:00 pm**

#### **Convention Center, 205**

Through informal conversations at each roundtable, graduate students will learn from table leaders (members with hiring responsibilities) and be able to ask frank questions about how to get an interview, how to win them over in an interview, and how to thrive once in the position. Stay for the entire lunch time or just as long as you can. Registration is required and the \$5 fee includes a box lunch. Thanks to Novus International Inc. for making this lunch possible through their generous sponsorship!

### **Undergraduate Lunch and Learn: Preparing for the Future, hosted by ASAS**

**Tuesday, July 9**

**12:30 – 2:00 pm**

#### **Westin Indianapolis, State Room**

This interactive discussion will focus on how to evaluate and make decisions that will enable students to effectively prepare for their future. Experts will discuss future career options and opportunities after graduation during this undergraduate event titled "*Preparing for the Future.*"

### **ASAS President's Picks Posters**

**Tuesday, July 9**

**6:00 – 9:00 pm**

#### **Westin Indianapolis, Grand Ballroom foyer**

The new President's Picks session was well received in 2012, so we are bringing it back for 2013. We will display 10 to 20 posters beginning 60 minutes before the ASAS awards. The posters will represent science that the current ASAS president finds innovative and exciting! Take a moment to walk through the posters and see what Dr. Sartin thinks is new and exciting at JAM this year.

**ASAS Awards Program****Tuesday, July 9****7:00 – 8:45 pm****Westin Indianapolis, Grand Ballroom**

All meeting participants, families, and friends are welcome to attend the ASAS Awards Program. Please join us at this special event to recognize and congratulate the 2013 ASAS award winners. The 2013 Awards Celebration follows immediately after the Awards Program.

**ASAS Awards Celebration****Tuesday, July 9****8:45 pm****Westin Indianapolis, Grand Ballroom**

Come and join ASAS after our Awards Program to celebrate and congratulate all of the 2013 ASAS award winners. ASAS and sponsors welcome you to this exciting reception. We will have food and cash bars and designated areas where you can meet with award winners and colleagues.

**ASAS Graduate Student Mixer****Tuesday, July 9****9:00 pm****Slippery Noodle**

Join your fellow graduate students from ASAS at a mixer for all to enjoy. This event will provide an opportunity to catch up with old friends and make new ones, so don't miss it. Preregistration is highly recommended.

**ADSA-SAD Student Mixer****Tuesday, July 9****7:00 pm****Sheraton City Centre, Poolside**

Celebrate a great week at ADSA! Rock the night away with good music, good food, and good friends, all poolside on a balmy summer night – it doesn't get any better than this! Ticket price includes soft drinks and dinner. Don't miss this one – it's always a highlight of the meeting!

**ASAS Undergraduate Poster Competition****Wednesday, July 10****7:30 – 9:30 am****Convention Center, Hall A-B**

In the last 5 years, ASAS undergraduate membership has increased from a few students to more than 1100. With this massive increase in student membership, ASAS has launched several new programming options for our undergraduates. In 2013, we will hold our first national undergraduate research poster competition. Please come out to support our undergraduate presenters.

**SAD Career Symposium****Wednesday, July 10****9:30 – 11:00 am****Convention Center, 203**

Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan to visit industry reps in the exhibit hall for information about internships and job opportunities.

**Spouse Event 2: Indianapolis Walking Tour****Wednesday, July 10****11:00 am – 1:30 pm****Meet at Registration area in Convention Center**

One of the largest urban state parks in the United States is just steps away from the heart of downtown! This tour tells the story of how this industrial area was transformed into the immense green space and the community of museums and attractions that we see today. We'll meet at the convention center and begin on the south lawn of the Indiana Statehouse and then stroll along the Central Canal and learn its history, visiting public art installations and war memorials along the way. Lunch is included. Preregistration for this event is required; capacity is limited so register early!

**SAD Awards Lunch**  
**Wednesday, July 10**

**11:45 am – 2:00 pm**

**Convention Center, Sagamore 5**

Plan to attend this year's SAD awards lunch. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

**ASAS Graduate Student Lunch and Learn**

**Wednesday, July 10**

**12:00 – 2:00 pm**

**Convention Center, 204**

This interactive discussion will focus on how to effectively communicate personal selling points, skills, and talents during the interview process. Written and verbal communication techniques and etiquette will be discussed during this event for graduate students titled "Selling Yourself in an Economy that Isn't Buying."

**ASAS Foundation Heritage Lunch**

**Wednesday, July 10**

**12:30 – 2:00 pm**

**Westin Indianapolis, Council**

The ASAS Foundation has chosen honorees for the third annual ASAS Foundation Heritage Lunch. The 2013 honorees are Gordon Dickerson and Weis Burroughs. Please join us at this Foundation fundraiser to honor these two pioneers of animal science.

**ADSA Graduate Student Division Dairy Tales**

**Wednesday, July 10**

**3:00 – 4:30 pm**

**Convention Center, 201**

Join us for the 2nd annual, and hugely popular, Dairy Tales! Graduate students from dairy production and dairy foods will give presentations on their fields of study. The TED-style talks (10-15 minutes) are meant for an audience of students who are not experts in the field. Topics include raw milk, tail docking, transition cow management, and milk versus milk substitutes. The event is free, but please preregister to stay informed about the program.

**ASAS JAS and Animal Frontiers Editorial Meeting and Open Forum**

**Wednesday, July 10**

**4:00 – 5:00 pm**

**Convention Center, 203**

Attendees, division editors, and associate division editors are invited to the *Journal of Animal Science* and *Animal Frontiers* Open Forum to discuss the current status of the journals and future development opportunities.

**AnimalSmart.org Birthday Party**

**Wednesday, July 10**

**5:00 – 6:00 pm**

**Convention Center, 203**

It is hard to believe that AnimalSmart.org went live only last year at the 2012 JAM. In the short time since launch, AnimalSmart.org now receives 20,000 unique users monthly and has served as the launch program for our new Junior Animal Scientist program. Join us as we celebrate AnimalSmart.org's first birthday.

**ADSA Awards Program**

**Wednesday, July 10**

**7:00 – 8:00 pm**

**Hyatt Regency Indianapolis, Regency Ballroom**

All meeting participants, families, and friends are welcome to attend the 2013 ADSA awards program. Please join us at this special event at the Hyatt Regency to recognize and congratulate the 2013 award winners.

**JAM Ice Cream Social, sponsored by ADSA**

**Wednesday, July 10**

**8:15 – 9:30 pm**

**Hyatt Regency Indianapolis, Regency Ballroom**

All meeting participants, families, friends, and award donors are invited to join us for the always-popular ice cream social.

**ADSA Graduate Student Division Mixer**

**Wednesday, July 10**

**9:00 pm – 12:00 am**

**Cadillac Ranch**

Join your fellow graduate students and others at nearby Cadillac Ranch for games, prizes, food, and free drink tickets for the first 100 who enter the door. The event is FREE but you must preregister. Attend to win door prizes and dance the night away with music from a local DJ. Sponsored by Lallemand Animal Nutrition, Arm & Hammer, and Bar Diamond.

**Global Networking Reception**

**Thursday, July 11**

**4:30 – 6:00 pm**

**Convention Center, Sagamore 4**

All meeting participants, families, and friends are welcome to attend the closing reception on Wednesday evening. Again this year, attendees will have the opportunity to indicate their home affiliation on a world map, which will be in the exhibit hall before the reception.



**Upcoming Discover<sup>SM</sup> Conferences, hosted by the American Dairy Science Association<sup>®</sup>**

**26th Discover Conference:** *Dairy Feed Efficiency*, September 23–26, 2013, Northern Illinois University Conference Center, Naperville, Illinois

**27th Discover Conference:** *Strategies for Improving US Dairy Cattle Welfare*, spring 2014 (date and location TBA)

## 2013 ADSA Award Donors

ABS Global Inc.  
ADSA Foundation  
Alltech Biotechnology Center  
American Feed Industry Association  
Cargill Animal Nutrition  
Dairy Research Institute  
DeLaval Inc.

DuPont Pioneer  
Elanco Animal Health  
Elsevier  
Hoard's Dairyman  
International Dairy Foods Association  
Lallemand Animal Nutrition  
Milk Industry Foundation

National Milk Producers Federation  
Novus International Inc.  
Nutrition Professionals Inc.  
Purina Animal Nutrition  
Schreiber Foods  
West Agro Inc.  
Zoetis

## 2013 ASAS Award Donors

ABS Global Inc.  
Agri-King  
American Feed Industry Association  
American Society of Animal Science  
American Society of Animal Science  
Foundation  
BASF  
Bouffault Award Fund

Center for Regulatory Services Inc.  
Cenzone Technology  
Cromwell Appreciation Club  
DSM Nutritional Products Inc.  
Elanco Animal Health  
Fontenot Appreciation Club  
Land O' Lakes  
Merial Ltd.

Morrison Award Fund  
Omega Protein Corp.  
Pfizer Animal Health  
Pond Appreciation Club  
The Iams Company  
Tucker Appreciation Club  
Zinpro Corp.

## Supporters of the New ASAS Foundation Appreciation Clubs

### "CDGKV" Appreciation Club

Robert Bellows  
Gary L. Bennett  
Heather Burrow  
Ronald Christenson  
Alan Emsley  
Joe Ford  
Ronnie and Jane Green  
Wanda Gregory  
Suzanne Hubbard

Michelle Mousel  
Irvin Omtvedt  
Scott Radcliffe  
Matthew Spangler  
Rebecca Splan  
Mark Thallman  
Curt Van Tassell  
Meghan Wulster-Radcliffe

### George C. Fahey Appreciation Club

Companion Animal Nutrition Group at UIUC  
International Ingredient Corporation  
Kelly Swanson

Greg Sunvold  
Scott Radcliffe  
Meghan Wulster-Radcliffe

### Barb Glenn Appreciation Club

Ellen Bergfeld  
Nancy Cox  
Harold Hafs  
Deb Hamernik  
Gretchen Hill

Janice Swanson  
Meghan Wulster-Radcliffe  
Bob Zimbelman  
"XX" in Animal Science

# Exhibit Schedule

Monday July 8	Exhibit Set-Up .....	10:00 am – 6:00 pm
Tuesday, July 9	Exhibits Open .....	8:00 am – 6:00 pm
Wednesday, July 10	Exhibits Open .....	8:00 am – 5:00 pm
Thursday, July 11	Exhibits Open .....	8:00 am – 2:00 pm
	Exhibit Dismantle.....	2:00 pm – 5:00 pm

**New this year:** Coffee and pastries will be served from 8:00 to 9:00 am on Tuesday, Wednesday, and Thursday.

## Exhibit Floor Plan

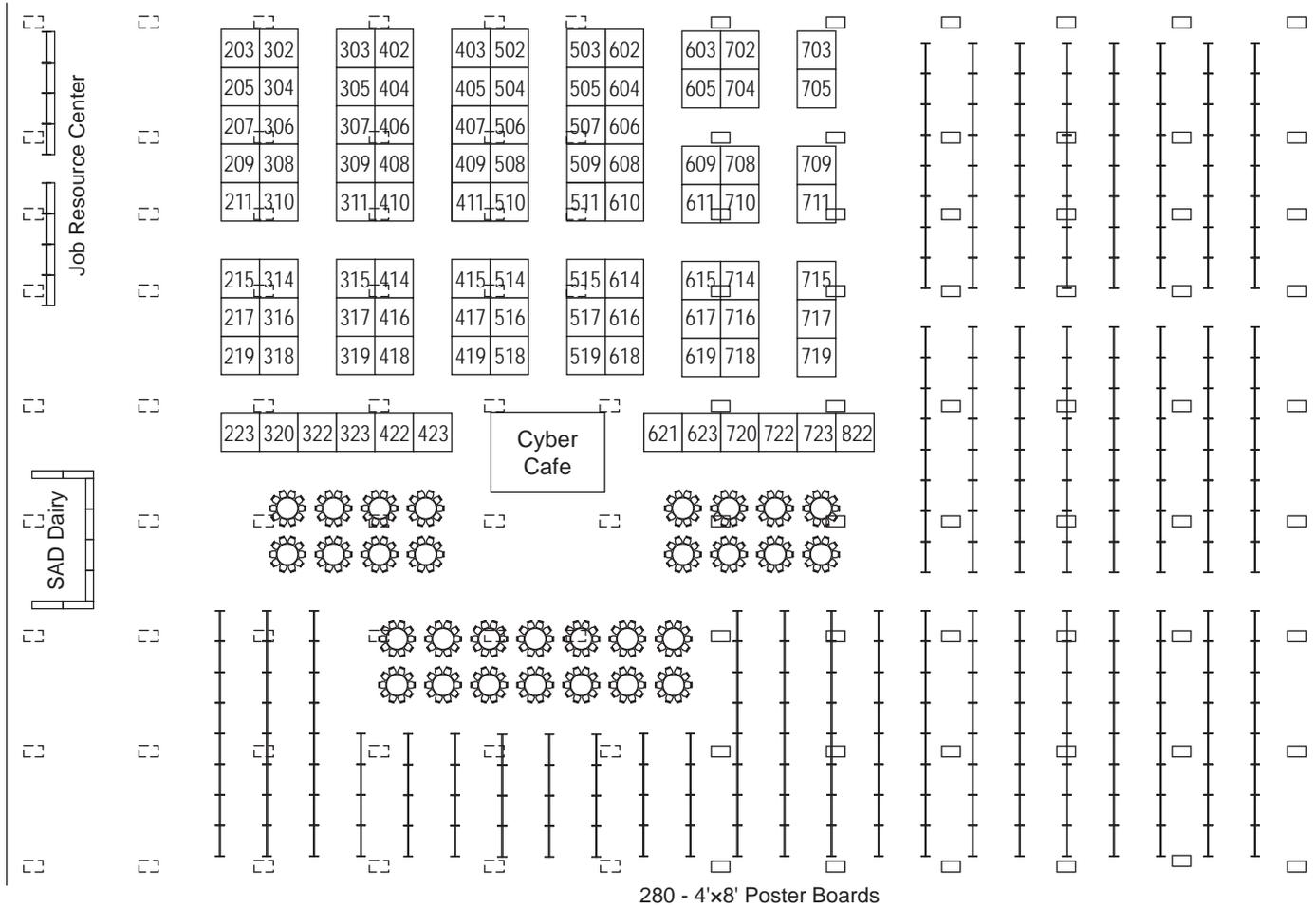


Exhibit Information

## Guide to Exhibitors/Booth Numbers

AAALAC .....	510	Elsevier .....	304
Adifo NV .....	318	Estroprotect .....	616
Adisseo .....	715,717	Evonik Degussa Corp. ....	415,417
Agis Automatisering .....	608	Federation of Animal Science Societies (FASS) .	406
Ag Processing Inc. ....	618	Feed Management Systems .....	519
Alltech .....	315,317,414,416	Feedstuffs .....	205
American Dairy Science Association (ADSA) ...	621	H.J. Baker & Bro. Inc. ....	419,518
American Registry of Professional Animal Scientists (ARPAS) .....	207	Hangzhou East Biochem Co. Ltd. ....	615,714
American Society of Animal Science (ASAS) ...	603, 605,702,704	IFFCO (Malaysia) Sdn. Bhd. ....	314
Ankom Technology .....	310	Jefo Nutrition .....	319,418
Annual Reviews .....	610	Kemin Industries .....	408,410
Arm & Hammer Animal Nutrition .....	620	Lallemand Animal Nutrition .....	505,507
ASAS Foundation Coffee Club .....	223,320	Lesaffre Feed Additives .....	517
Balchem .....	604,606	Micronutrients .....	311
Bar Diamond Inc .....	720	Multimin USA Inc. ....	515
Bayer Animal Health .....	516	National Animal Health Monitoring System (NAHMS) .....	407
Brilliant Alternatives .....	219	Novartis Animal Health US Inc. ....	716,718
Bruker Optics Inc. ....	514	Novus International .....	703,705
CABI Bookshop .....	506	Nutriad .....	308
Cambridge University Press .....	209	PetAg Inc. ....	614
Center for Veterinary Medicine (CVM) .....	509	Poultry Protein and Fat Council .....	511
Chr. Hansen .....	503,602	Probiotech International Inc. ....	709
Clemson University .....	305	Rock River Laboratories Inc. ....	723
C-Lock Inc. ....	822	Silva Team USA .....	307
Cumberland Valley Analytical Services .....	422	SmartStock LLC .....	711
Dairy Records Management .....	322,323	Soybean Meal Information Center .....	409
Dairyland Laboratories Inc. ....	306	SoyBest .....	203,302
Dalex Livestock Solutions LLC .....	508	SoyPLUS, SoyChlor (West Central) .....	619
Dascor Inc. ....	722	Tasco .....	411
Diamond V Mills .....	403,405,502,504	Unity Scientific Inc. ....	215
DSM Nutritional Products .....	423	Varied Industries Corp. ....	609,611,708,710
EAAP .....	211	York Ag Products .....	404
Elanco Animal Health .....	316	Zinpro .....	303,402
Elementar Americas Inc. ....	617	Zoetis .....	719

**A special thank you to our 2013  
Joint Annual Meeting Exhibitors!**

# Exhibit Directory

**AAALAC**  
**5283 Corporate Dr Ste 203**  
**Frederick, MD 21703-2879**  
**<http://www.aaalac.org>**  
**Booth(s): 510**

AAALAC International offers accreditation and education services for agricultural animal research programs. Earning accreditation demonstrates dedication to responsible animal care. It also assures research partners, funding sources, and the public of a commitment to quality research and good science. More than 880 institutions in 36 countries have earned AAALAC accreditation.

**Adifo NV**  
**Industrielaan 11b**  
**9990 Maldegem, Belgium**  
**<http://www.adifo.be/en>**  
**Booth(s): 318**

Adifo provides specialized software solutions and services for the international feed and food industry. Microsoft Gold certified partner, serving 600 customers in 60 countries for over 30 years. Products include BESTMIX: feed formulation and optimization software; BESTMIX ration calculation; specialized software for consultants and external service; BESTMIX LIMS: smart lab data management; BESTMIX FaaS: Formulation as a service: cloud-based formulation and ration balancing.

**Adisseo**  
**4400 N Point Pkwy Ste 275**  
**One Point Royal**  
**Alpharetta, GA 30022-2429**  
**<http://www.adisseo.biz/>**  
**Booth(s): 715, 717**

At Adisseo, we are nutritionists with a long tradition of applying our expertise to nutritional additives. We are dedicated to serving the animal production industry by helping premixers, feed manufacturers, and integrators improve their performance and to become more competitive.

**Agis Automatisering**  
**PO Box 46, 3480 DA Harmelen, the Netherlands**  
**<http://www.cowmanager.com>**  
**Booth(s): 608**

The SensOor is an innovative product developed by Agis Automatisering. It comprises a molded chip that can be clicked into the ear tag of a cow for monitoring cow welfare 24 hours a day, 7 days a week. The CowManager SensOor system contains 3 modules: fertility, health and nutrition. The CowManager software program immediately displays estrus or illness detection and nutrition per cow or group on your PC, tablet, or mobile without delay. Research conducted in cooperation with the laboratory of the Wageningen University has shown

that farmers using the SensOor chip have an estrus detection success rate of 98%. On average, the SensOor reports illness two days earlier than detection by the farmer by other means. SensOor, therefore, enables the farmer to intervene faster to prevent further damage. The SensOor offers optimal estrus detection, precise timing of insemination and a reduction in the number of inseminations, rapid detection of disease outbreaks with multipoint temperature measurement, an understanding of eating behavior and dietary change, and continuous measuring of rumination and eating behavior (97% accurate). The CowManager SensOor is not expensive to buy or maintain and it allows monitoring of rumination/eating behavior and disease in one sensor. The SensOor won the Rabobank, WTC, and SME Innovation prizes.

**Ag Processing Inc.**  
**PO Box 2047, 12700 West Dodge Road**  
**Omaha, NE 68103-2047**  
**(402) 492-3309**  
**<http://www.amino-plus.com>**  
**Booth(s): 618**

AminoPlus is the number one volume bypass protein soybean meal dairy supplement in the United States. The patented AminoPlus process utilizes soybean meal to provide high amino acid quality, rumen bypass, and intestinal digestibility without the addition of chemicals or non-soybean components.

**Alltech**  
**3031 Catnip Hill Rd**  
**Nicholasville, KY 40356-8700**  
**<http://www.alltech.com>**  
**Booth(s): 315, 317, 414, 416**

Founded by Dr. Pearse Lyons, Alltech is a global animal health and nutrition company with 32 years' experience in developing natural products that are scientifically proven to enhance animal health and performance. With 2,800 employees in 128 countries, the company has developed a strong regional presence in Europe, North America, Latin America, the Middle East, Africa, and Asia. For further information, visit [www.alltech.com](http://www.alltech.com).

**American Dairy Science Association (ADSA)**  
**1800 S Oak St, Ste 100**  
**Champaign, IL 61820-6974**  
**<http://www.adsa.org>**  
**Booth(s): 621**

Established in 1906, ADSA is an international organization of educators, scientists, industry, and government representatives who are committed to advancing the dairy industry. All are keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world's population. Together, ADSA members have discovered new methods and technologies that have revolutionized the dairy industry. Please visit [www.adsa.org](http://www.adsa.org) for more information.

**American Registry of Professional Animal Scientists (ARPAS)**

**1800 S Oak St, Ste 100  
Champaign, IL 61820-6974  
<http://www.arpas.org>  
Booth(s): 207**

ARPAS is the organization that provides certification of animal scientists through examination, continuing education, and commitment to a code of ethics. Continual improvement of individual members is catalyzed through publications (including *The Professional Animal Scientist* journal) and by providing information on educational opportunities.

**American Society of Animal Science (ASAS)  
PO Box 7410**

**Champaign, IL 61826-7410  
<http://www.asas.org>  
Booth(s): 603, 605, 702, 704**

Established in 1908, ASAS is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching, and service for the dynamic and rapidly changing livestock, companion animal, exotic animal, and food industries. Visit the ASAS booth for more information on

- *Journal of Animal Science*  
([www.journalofanimalscience.org](http://www.journalofanimalscience.org))
- *Animal Frontiers* ([animalfrontiers.org](http://animalfrontiers.org))
- AnimalSmart.org
- ASAS Foundation
- ASAS Membership
- ASAS Sections
- ASAS Public Policy

**Ankom Technology  
2052 O'Neil Rd  
Macedon, NY 14502-8953  
<http://www.ankom.com>  
Booth(s): 310**

Ankom Technology is best known for the development of filter bag technology for automating fiber and fat analysis in foods and feeds. Ankom has products supporting in vitro digestibility, in vitro gas production, and in situ digestibility. Ankom products are in use in over 90 countries around the world.

**Annual Reviews  
4136 El Camino Way  
PO Box 10139  
Palo Alto, CA 94306  
<http://www.annualreviews.org/>  
Booth(s): 610**

*Annual Reviews* journals offer insightful review articles written by experts in 40 disciplines in the biomedical, life, physical, and social sciences. Visit the Annual Reviews booth for a free copy of our newest journal, the *Annual Review of Animal Biosciences*. The inaugural volume of this journal will place a particular emphasis on biotechnology, genetics, genomics, and breeding, as well as veterinary medicine, especially veterinary pathobiology, infectious diseases and vaccine development, and conservation and zoo biology.

**Arm & Hammer Animal Nutrition  
469 N Harrison St  
Princeton, NJ 08540-3510  
<http://www.AHDairy.com>  
Booth(s): 620**

Arm & Hammer Animal Nutrition is a leading supplier of dairy feed ingredients that work to improve producer profitability. We have developed a wide range of innovative products to address the dairy nutrition challenges today's producers face. Trust Arm & Hammer Animal Nutrition for innovative, proven, and reliable nutritional solutions.

**ASAS Foundation Coffee Club  
PO Box 7410  
Champaign, IL 61826-7410  
<http://www.asas.org>  
Booth(s): 223, 320**

Join the ASAS Foundation Coffee Club—membership has its perks. Every year, we lament the lack of coffee at JAM, but the ASAS Foundation has decided to change that this year, with the ASAS Foundation Coffee Club. Join the coffee club by visiting booths 223 and 320 and receive a travel mug. Use the travel mug at the meetings and get free coffee refills in the exhibit hall—no mug, no coffee. Membership in the club costs just \$35.00 for JAM or \$50.00 for a full year of ASAS meetings (coffee will be available for club members at all sectional meetings and Innovate 2013). We will give you automatic membership in the club for one year for any ASAS Foundation donation over \$50.00. Membership in the coffee club is open to all JAM attendees, and coffee will be available to all club members whenever the exhibit hall is open.

**Balchem  
PO Box 600, 52 Sunrise Park  
New Hampton, NY 10958-0600  
<http://www.balchem.com>  
Booth(s): 604, 606**

Balchem's Animal Nutrition and Health Division brings the benefits of patented proprietary micro-encapsulation and chelated trace mineral technology to the livestock, poultry, and companion animal industries. Encapsulation and chelation technologies offer "protection nutrition" to sensitive compounds. Hence, these compounds become bioavailable when and where they offer the most benefit to the animal. Our products include ReaShure, NiaShure, AminoShure-L, NitroShure, KeyShure, VitaShure, and choline chloride.

**Bar Diamond Inc.**  
PO Box 60  
Parma, ID 83660-0060  
<http://www.bardiamond.com>  
Booth(s): 720

Bar Diamond Inc. provides the world with rumen cannulae and accessories. Our cannulae are used in cattle, goats, sheep, water buffalo, bison, deer, reindeer, llama, musk oxen, and a camel! Visit our booth and see our newest photos from around the world.

**Bayer Animal Health**  
120707 Shawnee Mission Parkway  
Shawnee Mission, KS 66216  
<http://www.animalhealth.bayer.com/>  
Booth(s): 516

At Bayer HealthCare, our aim is to discover, develop and manufacture products that will improve human and animal health worldwide. Our Animal Health Division is one of the world's leading manufacturers of veterinary products for food-supplying animals, providing drugs and insecticides you can count on. Baytril 100 (enrofloxacin) Injectable, QuickBayt products, Tempo products, CyLence Pour-On Insecticide, and Corathon and CyLence Guard insecticide ear tags with FyberTek are just a few of the food animal products offered by Bayer.

**Brilliant Alternatives**  
11907 Old Hickory Ct  
Spotsylvania, VA 22551-4692  
<http://www.brilliantalternativesinc.com/>  
Booth(s): 219

Bob Brill announces cloud-based Feed Formulation software. Like many other firsts, our cloud formulation will allow users to do much more. Universities are invited to use Brilliant's software for teaching or outreach projects. Lab Decision Maker (LDM) collects samples from NIR or your lab and gives statistical analysis from selected samples. After analysis, LDM allows an automatic update to formulation databases. Brilliant also provides support for Formulation software. After years of leadership, Brilliant continues to serve the industry.

**Bruker Optics Inc.**  
19 Fortune Dr  
Billerica, MA 01821-3923  
<http://www.brukeroptics.com/solutions>  
Booth(s): 514

Save costs while improving quality by upgrading to the next generation of NIR analyzers. From improved control of feed ingredients to more precise testing of proximates, these analyzers have also been used to monitor blending processes and optimize mill operation. Existing calibrations and data are upwardly mobile. These FT-NIR systems feature the lowest cost of ownership with a 10-year warranty on the Rock Solid Interferometer, which is permanently aligned, eliminating time-consuming instrument standardization protocols. Samples can be measured as-is in seconds without time-consuming sample preparation.

**CABI Bookshop**  
22883 Quicksilver Dr  
Sterling, VA 20166-2019  
<http://www.styluspublishing.com>  
Booth(s): 506

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. Distributed in North America by Stylus Publishing.

**Cambridge University Press**  
32 Avenue of the Americas, Bldg 1  
New York, NY 10013-2473  
<http://www.cambridge.org>  
Booth(s): 209

Cambridge University Press publishes high-quality books and journals, including *Animal: The International Journal of Animal Bioscience* on behalf of The Animal Consortium, and *Animal Health Research Reviews* in collaboration with the Conference of Research Workers in Animal Diseases. Please stop by our booth to peruse these and other publications.

**Center for Veterinary Medicine (CVM)**  
7519 Standish Place, MPN4  
Rockville, MD 20855  
<http://www.fda.gov/animalveterinary>  
Booth(s): 509

At CVM, a component of the US Food and Drug Administration, we ensure that animal drugs, food additives, animal devices, and medicated feeds are safe and effective. We ensure that food (e.g., milk, meat, and eggs) from treated animals is safe for us to eat. And, we protect public and animal health by approving safe and effective products; monitoring marketed products for safety and effectiveness; conducting research; educating the public; and enforcing the applicable sections of the Federal Food, Drug, and Cosmetic Act, the law under which we operate.

**Chr. Hansen**  
9015 W Maple St  
Milwaukee, WI 53214-4213  
<http://www.chr-hansen.com>  
Booth(s): 503, 602

Chr. Hansen Animal Health & Nutrition has been ranked as the most trusted direct-fed microbial source by dairy nutritionists. As the "world's microbial experts," Chr. Hansen has been the leading supplier of lactic acid bacteria and other ingredients since 1874. A history rich in science, research, and product quality has produced products such as Probios, Biomate, Biomax, and BioPlus.

**Clemson University Department of Animal and Veterinary Sciences**  
138 Poole Ag Bldg  
Clemson, SC 29634  
[http://www.clemson.edu/cafls/departments/animal\\_vet\\_science/index.html](http://www.clemson.edu/cafls/departments/animal_vet_science/index.html)  
Booth(s): 305

The Clemson University Creative Inquiry (CI) program provided support for undergraduate animal and veterinary science students to develop a user-friendly textbook titled "Ruminant Anatomy: A Photo Atlas." The primary focus of this CI-created atlas is to educate undergraduate animal and veterinary science students nationwide in an effort to: offset the emerging critical shortage of food animal producers; increase the safety of public food supply; and reduce emerging diseases from inadequate animal production operations. The photographs and images in this atlas provide supplemental material for schools with limited resources, or additional material to support hands on practices. The unique anatomy, physiology, microbiology and nutrition in ruminants compared to monogastrics warrant independent study of these species. *Ruminant Anatomy: A Photo Atlas* includes illustrations of body organization, the skeletal system, internal organs, radiographic imaging, musculature, histology, and hands-on practices. The postmortem animals used for imaging purposes were euthanized for other studies or they died of natural causes. No animals were sacrificed for the sole purpose of obtaining photographs.

**C-Lock Inc.**  
2951 N Plaza Dr Ste 103  
Rapid City, SD 57702-9380  
<http://c-lockinc.com/>  
Booth(s): 822

GreenFeed is a low-cost (patented) system to measure CH<sub>4</sub> and CO<sub>2</sub> emissions from ruminants remotely in a noninvasive way. CH<sub>4</sub> and CO<sub>2</sub> data collected several times daily provide valuable feedback on the performance of individual animals and can aid in maintaining animal health and in maximizing feed efficiency.

**Cumberland Valley Analytical Services**  
14515 Industry Dr  
Hagerstown, MD 21742-2410  
<http://www.foragelab.com>  
Booth(s): 422

Cumberland Valley Analytical Services is a full-service forage and feed testing laboratory specializing in chemistry analysis.

**Dairy Records Management**  
313 Chapanoke Rd, Ste 100  
Raleigh, NC 27603-3434  
<http://www.drms.org>  
Booth(s): 322, 323

Dairy Records Management Systems provides innovative dairy information products and services for producers, DHIA staff, consultants, and other dairy industry professionals. Comprehensive processed reports include Transition Cow Management, Survival Analysis and Persistency Analysis. Leading-edge software and web tools include PCDART, PocketDairy, Herd Detective, DairyMetrics, WebReports, and Reports On-Demand.

**Dairyland Laboratories Inc.**  
217 E Main St  
Arcadia, WI 54612-1319  
<http://www.dairylandlabs.com/>  
Booth(s): 306

Dairyland Laboratories Inc. is a totally independent agriculture testing laboratory providing extensive analysis of feed, forage, soil, and water.

**Dalex Livestock Solutions LLC**  
204 Industrial Blvd  
Waconia, MN 55387-1734  
<http://www.dalex.com>  
Booth(s): 508

Dalex Livestock Solutions LLC is the leading provider of ration formulation software and related livestock solutions. Dalex offers ration balancing for dairy, beef, and swine and allows for the use of multiple nutritional models. Current programs include The Consulting Nutritionist and CN.Dalex. Additional programs of value to the livestock industry are currently under development. Dalex has provided a complete solution to formulate, analyze, and monitor livestock feeding situations since 1980.

**Dascor Inc.**  
PO Box 462885  
Escondido, CA 92046-2885  
<http://www.dascor.com/ruminframe.html>  
Booth(s): 722

Dascor Inc. manufactures a series of autonomous data loggers for ruminal research measurements of temperature, pH, ORP, NH<sub>4</sub><sup>+</sup>, and pressure for use in cannulated cattle, and as boluses for use in sheep and goats.

**Diamond V Mills**  
PO Box 74570  
Cedar Rapids, IA 52407-4570  
<http://www.diamondv.com/>  
Booth(s): 403, 405, 502, 504

Diamond V, headquartered in Cedar Rapids, Iowa, is the world's leading supplier of microbial fermentation products used to optimize digestive function and nutrition key to animal and aqua health, productivity, efficiency and profitability. A commitment to innovation, technology and quality has earned Diamond V a global reputation of trust and reliability within the animal feed industry. Diamond V's brands include Diamond V Original XPC, XP, or YC, DiaMune Se, SelenoSource and DV Aqua and are research-proven and engineered to deliver results.

**DSM Nutritional Products**  
45 Waterview Blvd  
Parsippany, NJ 07054-7611  
<http://www.dsm.com>  
Booth(s): 423

DSM Nutritional Products is the leading supplier of vitamins, carotenoids, enzymes and direct fed microbials to the animal feed industry. With its extensive network of premix plants, DSM Nutritional Products is optimally poised to deliver these essential micronutrients either as straight ingredients or through ROVIMIX premix

**EAAP**  
**Via G. Tomasetti, 3A/1**  
**00161 Rome, Italy**  
**[http:// www.eaap.org](http://www.eaap.org)**  
**Booth(s): 211**

EAAP annually organizes the largest animal science meeting in Europe. This meeting is the perfect venue to create a network with qualified animal scientists. Over one thousand scientists have attended the EAAP annual meetings in the past years. EAAP produces the journal *Animal*, one of the highest ranked animal science magazines. EAAP has many other services and activities for its members: publishing scientific books, organizing specific and regional workshops and scientific meetings, coordinating international research projects, and defending positions of animal science and livestock industry at international level. EAAP is a federation of national members, with the national members being the backbone of EAAP. To increase the quantity and quality of services to the animal science community, EAAP established the individual membership structure. Everyone is invited to become members of EAAP and benefit from belonging to the EAAP community.

**Elanco Animal Health**  
**2500 Innovation Way**  
**Greenfield, IN 46140-9163**  
**[http:// www.elanco.com](http://www.elanco.com)**  
**Booth(s): 316**

Elanco is a global animal health company that helps to deliver a safe, more affordable, more abundant food supply by improving the health and performance of animals and improving food safety. Improving the health and performance of animals helps ensure a growing supply of safe, affordable, abundant food for today and in the future. Elanco pledges to develop and deliver products safe for consumers, animals and the environment.

**Elementar Americas Inc.**  
**520 Fellowship Rd Ste D408**  
**Mount Laurel, NJ 08054-3409**  
**[http:// www.chnos.com/](http://www.chnos.com/)**  
**Booth(s): 617**

Elementar makes world-class analyzers giving outstanding results in a small footprint. Easy to operate and maintain, our analyzers are ideal for determining protein/nitrogen for mills or feed. Our rapid-N-cube protein analyzer uses CO<sub>2</sub> and not Helium as a carrier gas, making it a cost-effective choice for labs.

**Elsevier**  
**1600 John F Kennedy Blvd Ste 1800**  
**Philadelphia, PA 19103-2398**  
**<http://www.elsevierhealth.com>**  
**Booth(s): 304**

Elsevier is a world-leading multiple media publisher of science, technology, and health information products and services. We are proud to publish the *Journal of Dairy Science*® (JDS), the official journal of the American Dairy Science Association®. Please visit the Elsevier booth in the exhibit hall with any questions you might have about accessing the *Journal of Dairy Science* online and to browse our other titles in animal science.

**EstroTECT**  
**PO Box 39**  
**Spring Valley, WI 54767-0039**  
**<http://www.estroTECT.com>**  
**Booth(s): 616**

AccuBreed is an advanced new wireless tool to track and monitor mounting activity in real time. With AccuBreed you can determine peak mounting activity, breed when cows are in standing heat, and use available technology to increase pregnancy rates.

**Evonik Degussa Corp.**  
**1701 Barrett Lakes Blvd NW, Ste 340**  
**Kennesaw, GA 30144-4509**  
**<http://www.aminoacidsandmore.com>**  
**Booth(s): 415, 417**

Evonik is the only company in the world to supply, from a single source, all four of the important amino acids for animal nutrition: MetAmino, BioLys, ThreAmino, and TrypAmino. Mepron, a rumen-protected DL-methionine, rounds out the company's product range as part of its "one source" strategy.

**Federation of Animal Science Societies**  
**1800 S Oak St, Ste 100**  
**Champaign, IL 61820-6974**  
**<http://www.fass.org>**  
**Booth(s): 406**

The Federation of Animal Science Societies (FASS) was formed in 1998 by three founding member societies: the American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Poultry Science Association (PSA). FASS is unique in that we support common agricultural interests and, at the same time, streamline administrative expenses while preserving the societies' traditions and values. We specialize in providing a wide array of management services to small and medium-sized, not-for-profit associations. In addition, each year, PhD scientists in animal science compete for the opportunity to represent FASS in Congress through the Congressional Science Fellowship (CSF) Program. Many of these individuals stay on the Washington scene after their fellowship year and continue to serve animal agriculture in significant ways. Be sure to stop by the FASS booth to hear about DC activities from the 2012–2013 CSF.

**Feed Management Systems**  
**6120 Earle Brown Dr, Ste 300**  
**Brooklyn Center, MN 55430-4101**  
**<http://www.feedsys.com>**  
**Booth(s): 519**

Feed Management Systems provides integrated software solutions for feed manufacturers to manage their critical formula and production data. Ensure the quality of your feed supply by automating and optimizing formulas, pricing, ordering, inventory, labeling, delivery, traceability, reporting and financials. Solutions include Feed Mill Manager, Brill Formulation, Feed Ration Balancer, and Feed Tags.

**Feedstuffs**

12400 Whitewater Dr, Ste 160  
Minnetonka, MN 55343-4158  
<http://www.feedstuffs.com/>  
Booth(s): 205

Feedstuffs is the only weekly paid news source for agribusiness. Every week, we keep our subscribers informed on the important issues affecting the business of producing food for the world.

**H.J. Baker & Bro., Inc.**

228 Saugatuck Ave, Ste 1  
Westport, CT 06880-6444  
<http://www.bakerbro.com>  
Booth(s): 419, 518

H.J. Baker offers university research proven products to increase efficiency for today's high-producing dairy cows. MetaboLys rumen by-pass, high intestinal digestibility lysine delivers a high payload of lysine directly into the small intestine. PRO-LAK specially formulated 72% rumen by-pass protein delivers the essential amino acid profile and supports maximum milk production. For more information, please visit [www.bakerbro.com](http://www.bakerbro.com).

**Hangzhou East Biochem Co. Ltd.**

1705 Guangyin Bldg, 42 Fengqi Dong Rd  
Hangzhou 310020, China  
<http://www.east-biochem.com>  
Booth(s): 615, 714

We are professional producer of microencapsulated feed additives, which has 14 years history. Based on our FAMI-QS and GMP+ certified factory in China, we provide excellent quality of microencapsulated feed additives, including CM3000 (Sodium Butyrate 30% Coated, HORIZnO (Zinc Oxide 50% Coated), IM-Chol (Rumen Protected Choline Chloride 25%), IM-Lysr (Rumen Protected Lysine Hcl 45%, IM-Metr (Rumen Protected Methionine 45%), which has good effects in poultry, pigs, dairy cows and aquatic animals.

**IFFCO (Malaysia) Sdn. Bhd.**

Port Khalid  
Shartah, United Arab Emirates  
<http://www.iffco.com>  
Booth(s): 314

Unimixx Dairy and Poultry Premixes: A full range of highest quality vitamin mineral premixes are available as per the standard formulations. All premixes are produced from highest quality raw material selected meticulously from reputed suppliers, weighed accurately and blended uniformly by highly trained and experienced personnel in extremely hygienic conditions (GMP compliant). All premixes are produced after receiving confirmed orders to ensure freshness and supplied on monthly or fortnightly basis to avoid large inventories at the farm level.

**Jefo Nutrition**

5020 Jefo Ave, Box 325  
St-Hyacinthe, QC J2S 7B6, Canada  
<http://www.jefo.com>  
Booth(s): 319, 418

Jefo is an industry leader in non-medicated, high-performance feed additives, committed to the livestock feed industry since 1982. In the last 30 years, our involvement in research has resulted in innovation: products designed for the requirements of each species with an understanding of their differences to make a difference on farms.

**Kemin Industries**

2100 Maury St  
Des Moines, IA 50317-1100  
<http://www.kemin.com>  
Booth(s): 408, 410

Kemin offers a range of feed ingredients to help you raise healthy animals that produce safe food for consumers. It is through this focus on animal nutrition and health that Kemin offers Total Nutrition, a comprehensive program providing safe, healthy and efficient solutions. Our Total Nutrition solutions can help you feed the world.

**Lallemand Animal Nutrition**

6120 W. Douglas Avenue  
Milwaukee, WI 53218-1548  
<http://www.lallemandanimalnutrition.com>  
Booth(s): 505, 507

Lallemand Animal Nutrition offers a range of solutions for the dairy industry, including Levucell SC and Levucell SB active dry yeast, Biotal forage inoculants, Alkosel organic selenium yeast, Agrimos, and other mineral-enriched yeast supplements.

**Lesaffre Feed Additives**

7475 W Main St  
Milwaukee, WI 53214-1552  
<http://www.lesaffre.com>  
Booth(s): 517

Lesaffre, the world's largest and oldest manufacturer of yeast products, features live yeast, MOS products, selenium yeast and enzymes.

**Micronutrients**  
**1550 Research Way**  
**Indianapolis, IN 46231**  
<http://www.micro.net>  
**Booth(s): 311**

Micronutrients, based in Indianapolis, is dedicated to the development, production and marketing of trace minerals for livestock and companion animals. Current development has led to the creation of a new class of trace minerals, hydroxy trace minerals. Use of the first mineral, IntelliBond C (Micronutrients TBCC – tribasic copper chloride), has grown consistently for the past 15 years and is soon to be followed by zinc and manganese. Hydroxy trace minerals have been proven in over 70 research studies to deliver improved essential nutrient stability in feeds while significantly increasing the availability of the mineral to the animal.

**Multimin USA, Inc.**  
**2809 East Harmony Rd. #190**  
**Fort Collins, CO 80528-3111**  
<http://www.multimininglobal.com>  
**Booth(s): 515**

Multimin90 is an injectable fast acting pre-treatment of the trace minerals copper, zinc, manganese, and selenium. Dairy producers use Multimin90 in replacement heifers and cows at least 4 weeks before critical times of high trace mineral demand such as AI and calving and at dry-off to optimize immunity of the cow and her calf and reproductive performance of the cow.

**National Animal Health Monitoring System (NAHMS)**  
**2150 Centre Ave Bldg B-2E7 USDA:APHIS:VS:CEAH**  
**Fort Collins, CO 80526-8116**  
<http://nahms.aphis.usda.gov>  
**Booth(s): 407**

National studies conducted by the National Animal Health Monitoring System (NAHMS) provide essential information on livestock and poultry health and management in the United States. Production types are studied at regular intervals, providing up-to-date information needed to monitor US animal health, support trade decisions, inform the public, and set policy.

**Novartis Animal Health US Inc.**  
**3200 Northline Ave, Ste 300**  
**Greensboro, NC 27408-7611**  
<http://www.livestock.novartis.com>  
**Booth(s): 716, 718**

Novartis Animal Health US Inc. is a leader in developing new and better ways to prevent and treat diseases for pets and farm animals. For farm animals, we offer therapeutic products to treat parasitic and bacterial diseases and are consistently developing new vaccines to prevent diseases in livestock and farmed fish.

**Novus International Inc.**  
**20 Research Park Dr**  
**Saint Charles, MO 63304-5633**  
<http://www.dairybalance.com>  
**Booth(s): 703, 705**

Novus is headquartered in St. Charles, Missouri, and serves customers in more than 90 countries. An industry leader in animal nutrition and health, Novus's products include Agrado Plus feed ingredient, Alimet and MFP feed supplements, Activate nutritional feed acid, Mintrex and MAAC organic trace minerals, Santoquin feed preservative, and other ingredients.

**Nutriad**  
**420 Airport Rd, Ste C**  
**Elgin, IL 60123-9329**  
<http://www.nutriad.com>  
**Booth(s): 308**

Nutriad is a global company providing smart and effective feed additive solutions. Our five product programs—Performance Enhancement, Preservation and Stabilization, Health and Well-Being, Feed and Food Safety, and Sensory Improvement—contain options developed specifically for ruminant, poultry, swine, aqua, and pet applications.

**PetAg Inc.**  
**255 Keyes Ave**  
**Hampshire, IL 60140-9449**  
<http://www.petag.com>  
**Booth(s): 614**

Bospro is an aspergillus mycelium product for ruminants that has demonstrated remarkable effects on increasing rumen function. Fermacto is an aspergillus mycelium product for monogastrics that has demonstrated in poultry increased maturity levels of the gastrointestinal tract of the immature bird. Please stop by our booth for data and samples.

**Poultry Protein and Fat Council**  
**1530 Cooledge Rd**  
**Tucker, GA 30084-7303**  
<http://www.poultryegg.org/ppfc/>  
**Booth(s): 511**

The Poultry Protein and Fat Council solicits and sponsors research that would develop new and increased utilization of poultry byproduct meal, feather meal, blood meal, and poultry fat by demonstrating their efficacy in poultry, aquaculture, livestock, and companion animal rations.

**Probiotech International Inc.**  
**6225 Choquette Street St.**  
**Hyacinthe, QC J25 8L2, Canada**  
**<http://www.probiotech.com>**  
**Booth(s): 709**

Probiotech International Inc. and Phodé Laboratories develop and provide the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology in order to promote animal health and to maximize agriculture production with the respect of our environment in mind. Products include patented rumen-protected choline for dairy cows to natural appetite enhancers, organic acidifiers, and plant extracts and sweeteners for all species.

**Rock River Laboratories Inc.**  
**PO Box 169, 710 Commerce Dr.**  
**Watertown, WI 53094-0169**  
**<http://www.rockriverlab.com>**  
**Booth(s): 723**

Rock River Laboratory Inc. provides production assistance to the agricultural community through the use of advanced analytical systems. Our team of experts specializes in feed, forage, plant tissue, soil, and water analyses for both commercial and research purposes. In addition to the wide spectrum of analyses, Rock River Laboratory Inc. is proud to offer nutrient and digestion analytical solutions and a customer relations team that is unmatched in the industry.

**Silva Team USA**  
**500 East E St, Ste 203**  
**Ontario, CA 91764**  
**<http://www.silvateam.com>**  
**Booth(s): 307**

Silvateam sells its branded products in more than 60 countries and is a world leader in the production, commercialization and sale of vegetable extracts and their derivatives. Silvateam researches, manufactures and develops products used animal feed and other industrial applications. Backed by the experience gained throughout their 150 years of history, Silvateam faces future challenges by being committed to continuous improvement and focusing on quality and innovation. This offers its customers a high quality service, accompanied by products always matching market expectations. From the beginning the company has been concerned about environmental conservation as part of its correct use of natural resources and the execution of certain sustainable development policies. Out of respect for the environment and a desire to make efficient use of resources, Silvateam is committed to energy saving processes and a better use of raw materials.

**SmartStock LLC**  
**PO Box 337**  
**Pawnee, OK 74058-0337**  
**<http://smartstock-usa.com/>**  
**Booth(s): 711**

Animal health monitoring via electronic bolus that monitors temperature remotely.

**Soybean Meal Information Center**  
**1255 SW Prairie Trail Parkway**  
**Ankeny, IA 50023-7068**  
**<http://www.soymeal.org>**  
**Booth(s): 409**

The Soybean Meal INFOcenter website is designed to be a center or primary source of key information regarding soybean meal as an important supplement protein for livestock, poultry, and specialty markets. The website provides information to feed manufacturers, professional nutritionists, feed formulators, livestock and poultry producers, and the public.

**SoyBest**  
**PO Box 157**  
**West Point, NE 68788-0157**  
**<http://www.soybest.com>**  
**Booth(s): 203, 302**

SoyBest high bypass soybean meal is bypass protein for dairy cows. Manufactured using a mechanical process, it contains no chemical solvents and is all natural. SoyBest includes fresh soy gums with lecithin and phosphatidyl-choline. Research shows that these nutrients behave like rumen-protected fat, resulting in even more bypass protein with excellent intestinal digestibility.

**SoyPLUS, SoyChlor (West Central)**  
**PO Box 68**  
**Ralston, IA 51459-0068**  
**<http://www.soyplus.com>**  
**Booth(s): 619**

SoyPLUS is the industry leader, consistently delivering dairy bypass protein, unbeatable protein quality, and intestinal digestibility. SoyPLUS contains research proven higher energy and rumen inert fat. SoyChlor has proven itself in effectively balancing DCAD in herd health. SoyChlor's key ingredient is hydrochloric acid, the most palatable source of chloride available.

**Tasco**  
**30 Brown Avenue**  
**Dartmouth, NS B3B 1X8, Canada**  
<http://www.tasco.ca>  
**Booth(s): 411**

Tasco is an all-natural, super prebiotic that enhances the health and well-being of all animals. Tasco-fed animals show improvements in digestive tract health and immune status. As an innovative, sustainable, marine-plant ingredient, Tasco is the preferred choice in feed formulations for all animals at all life stages.

**Unity Scientific Inc.**  
**117 Old State Rd**  
**Brookfield, CT 06804**  
**Booth(s): 215**

Unity Scientific is a global leader in the design and manufacturing of near infrared instrumentation that serves a wide variety of applications in the animal science industry. Unity has just introduced a new Feed Analyzer and Dairy Analyzer that offers everything required to start analyzing samples with pre-loaded calibrations.

**Varied Industries Corporation (Vi-COR)**  
**905 S Carolina Ave, PO Box 1483**  
**Mason City, IA 50401-5813**  
<http://www.vi-cor.com>  
**Booth(s): 609, 611, 708, 710**

Vi-COR headquarters, located in Mason City, Iowa, was purchased in 1999 by Mark Holt, President. The company has expanded sales and marketing efforts by launching several new products and hiring key personnel for research, international sales, domestic sales and technical service positions. Vi-COR a manufacturer of unique, all natural feed ingredients is the first in the market to develop a concentrated, a liquid, and a soluble concentrated powder yeast culture. Vi-COR provides a global on farm customer service and tech service, focusing on serving producers in dairy, beef, swine and poultry in over 60 countries.

**York Ag Products**  
**1060 Roosevelt Ave**  
**York, PA 17404**  
**Booth(s): 404**

York Ag Products Inc. is a national wholesale supplier of specialty ingredients and proprietary feed additives to the livestock and poultry industries. They have established themselves as a reliable source of scientifically engineered nutritional products and additives. These allow their customers to maintain a competitive edge in the global agriculture marketplace. Established in 1977, incorporated in 1988, York Ag Products continues to thrive in a highly competitive environment. York Ag Products is committed to using their knowledge and experience to collaborate with customers to help them succeed.

**Zinpro**  
**10400 Viking Drive Suite 240**  
**Eden Prairie, MN 55344**  
<http://www.zinpro.com>  
**Booth(s): 303, 402**

Zinpro Performance Minerals are uniquely designed and manufactured to be the highest bioavailable trace mineral products on the market.

**Zoetis**  
**235 E 42nd St**  
**New York, NY 10017-5703**  
[www.zoetis.com/](http://www.zoetis.com/)  
**Booth(s): 719**

We're Zoetis. Built on 60 years of experience as Pfizer Animal Health, and now focused solely on animal health, Zoetis discovers, develops, manufactures, and markets veterinary vaccines and medicines, with a focus on farm and companion animals. Our products serve veterinarians, livestock producers, and people who raise and care for farm and companion animals in 120 countries. FOR ANIMALS. FOR HEALTH. FOR YOU.

*Rite in the Rain*<sup>®</sup>  
**ALL-WEATHER WRITING PAPER**

get **FREE SHIPPING** at [RiteintheRain.com](http://RiteintheRain.com)  
**code: JAM813**  
 expires: 8/31/13  
On all orders OVER \$25  
 Ground freight to contiguous  
 U.S. destinations only.

*Rite in the Rain* is an All-Weather Writing Paper made to withstand rain, sweat, grime and the occasional trip through the washing machine.

products include:  
**CATTLE BREEDING, CALVING & TREATMENT BOOKS**  
**FIELD BOOKS • NOTEBOOKS • COPIER PAPER • ALL-WEATHER PENS**

**RiteintheRain.com**  
J. L. DARLING CORPORATION • TACOMA, WA • (253) 922-5000 • sales@RiteintheRain.com

MADE IN THE USA RITE GREEN Asyndical

## 2013 Corporate Sponsorship

### ASAS Corporate Sustaining Members

Ajinomoto Heartland Inc.  
Akey  
Archer Daniels Midland Co.  
Darling International Inc.  
Diamond V Mills Inc.  
Elanco Animal Health  
Global Pig Farms Inc.  
International Ingredient Corporation  
International Nutrition  
Kent Nutrition Group  
Lallemand Animal Nutrition  
Micronutrients

MIN-AD Inc.  
Nutraferma Inc.  
PCS Sales (USA) Inc.  
PIC North America  
Pioneer, A DuPont Business  
Potash Corp.  
Qualitech Inc.  
Ralco Nutrition Inc.  
Trouw Nutrition USA  
Varied Industries Corp.  
Zinpro Corp.  
Zoetis

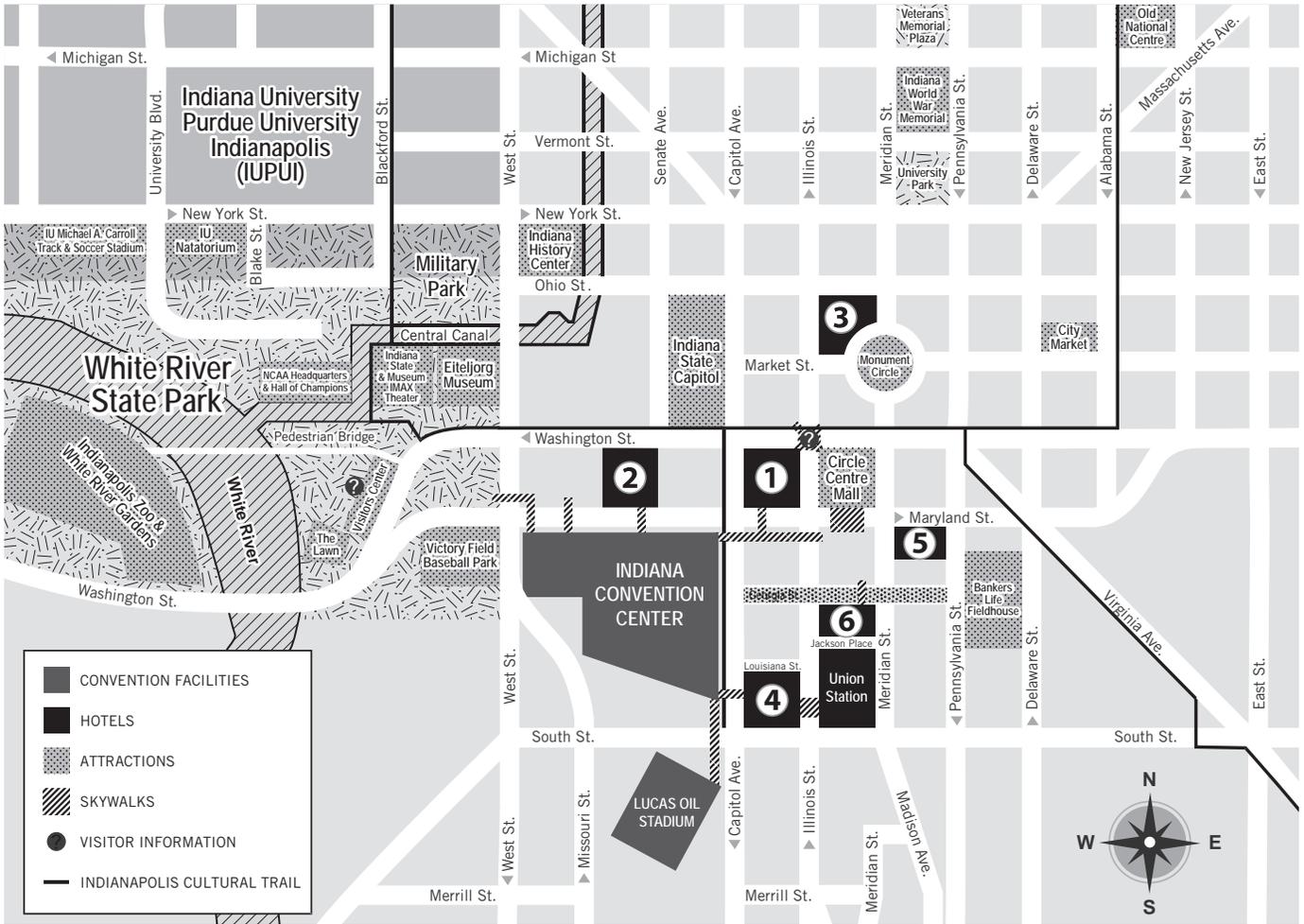
### ADSA Corporate Sustaining Members

Ag Processing Inc.  
Arm & Hammer Animal Nutrition  
Biomim  
Darling International Research  
Diamond V Mills Inc.  
DuPont Pioneer  
Grande Cheese Company  
Kent Nutrition Group  
Kraft Foods  
Lallemand Animal Nutrition  
MIN-AD Inc.

Papillon Agricultural Company  
Performance Products Inc.  
Prince Agri Products  
QualiTech Inc.  
SoyPLUS, SoyChlor (West Central)  
Varied Industries Corp.  
Westfalia Surge Inc.  
Zinpro Corp.  
Zoetis  
Zook Nutrition & Management Inc.

**Thank you for your support!**

# Downtown Indianapolis



Maps

**1. Hyatt Regency Indianapolis**  
(ADSA HQ)

**2. Westin Indianapolis**  
(ASAS HQ)

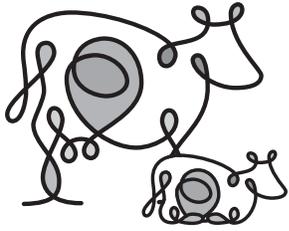
**3. Sheraton Indianapolis**  
(Student HQ)

**4. Crowne Plaza Indianapolis**

**5. Hampton Inn Indianapolis**

**6. Omni Severin Indianapolis**

# Difference through Innovation



**VICOMB™**  
B vitamins for Transition  
Riboflavin, Folic Acid and Choline

**VICOMB P+™**  
B vitamins for Lactation  
Pantothenic Acid, Folic Acid,  
Pyridoxine & Biotin

**JEFO DAIRY FAT™**  
Source of Energy  
Free fatty acids from vegetable source (palm)

**LYSINE-35™**  
Protected Lysine  
Bypass technology for optimal bioavailability

**INNOVATIVE PRODUCTS DESIGNED SPECIFICALLY FOR DAIRY COWS**



**JeFo**  
Species-specific additives

Visit us at [jefo.com](http://jefo.com) for more information or contact us at [info@jefo.com](mailto:info@jefo.com).

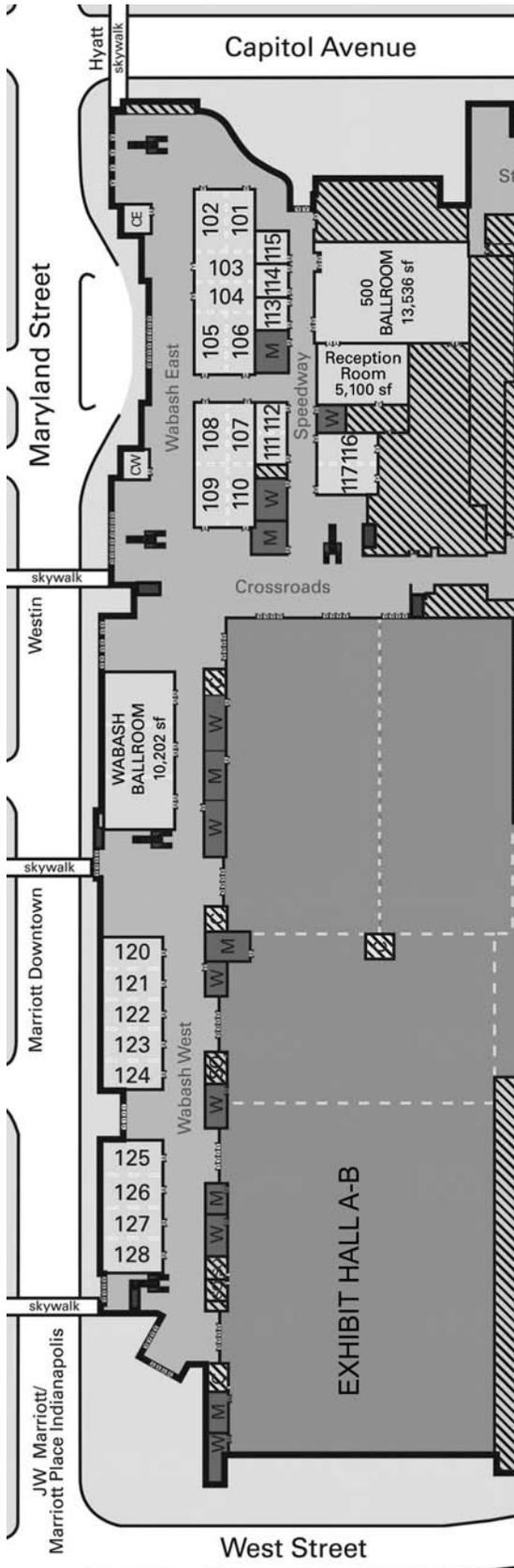
**Innovate** • 2013  
Innovations in Animal Growth and Health:  
The Next Generation of Cell Biology  
**Sept. 22 to 24, 2013** •

**Chateau Elan Winery and Resort**  
**Braselton, GA**  
[asas.org/innovate2013](http://asas.org/innovate2013)

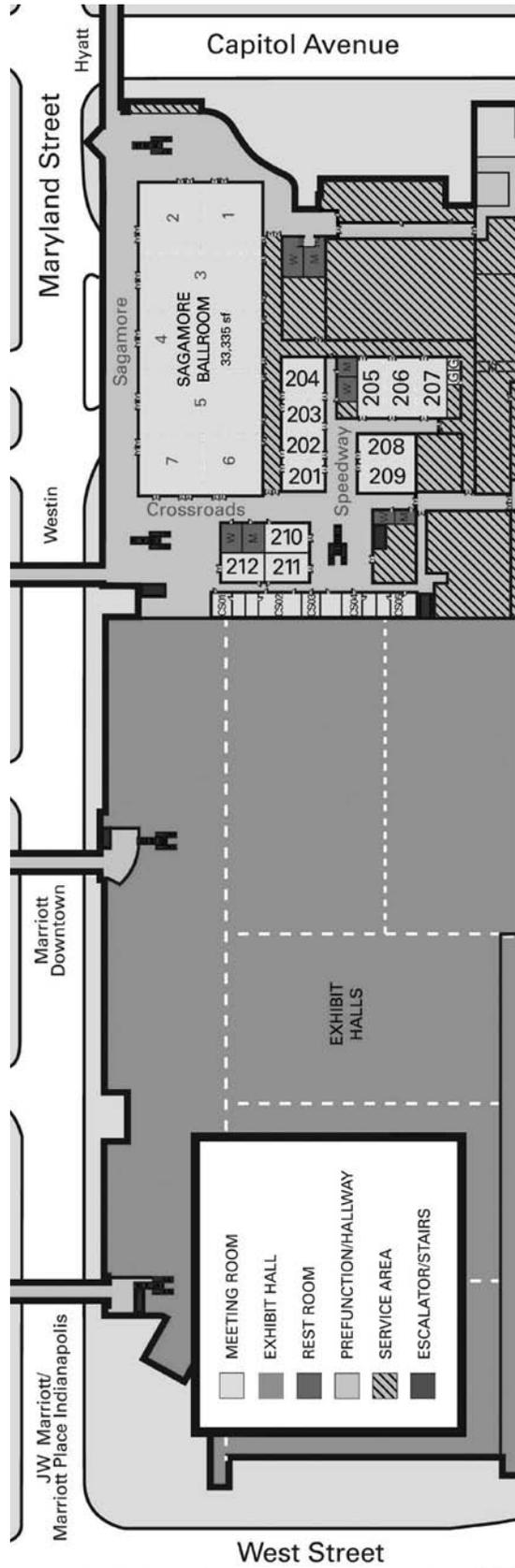
The advertisement features three circular images: a cow's head in profile, a cluster of small white particles, and a large textured sphere. The text is arranged in a clean, professional layout.

# Indianapolis Convention Center Map

## Level 1

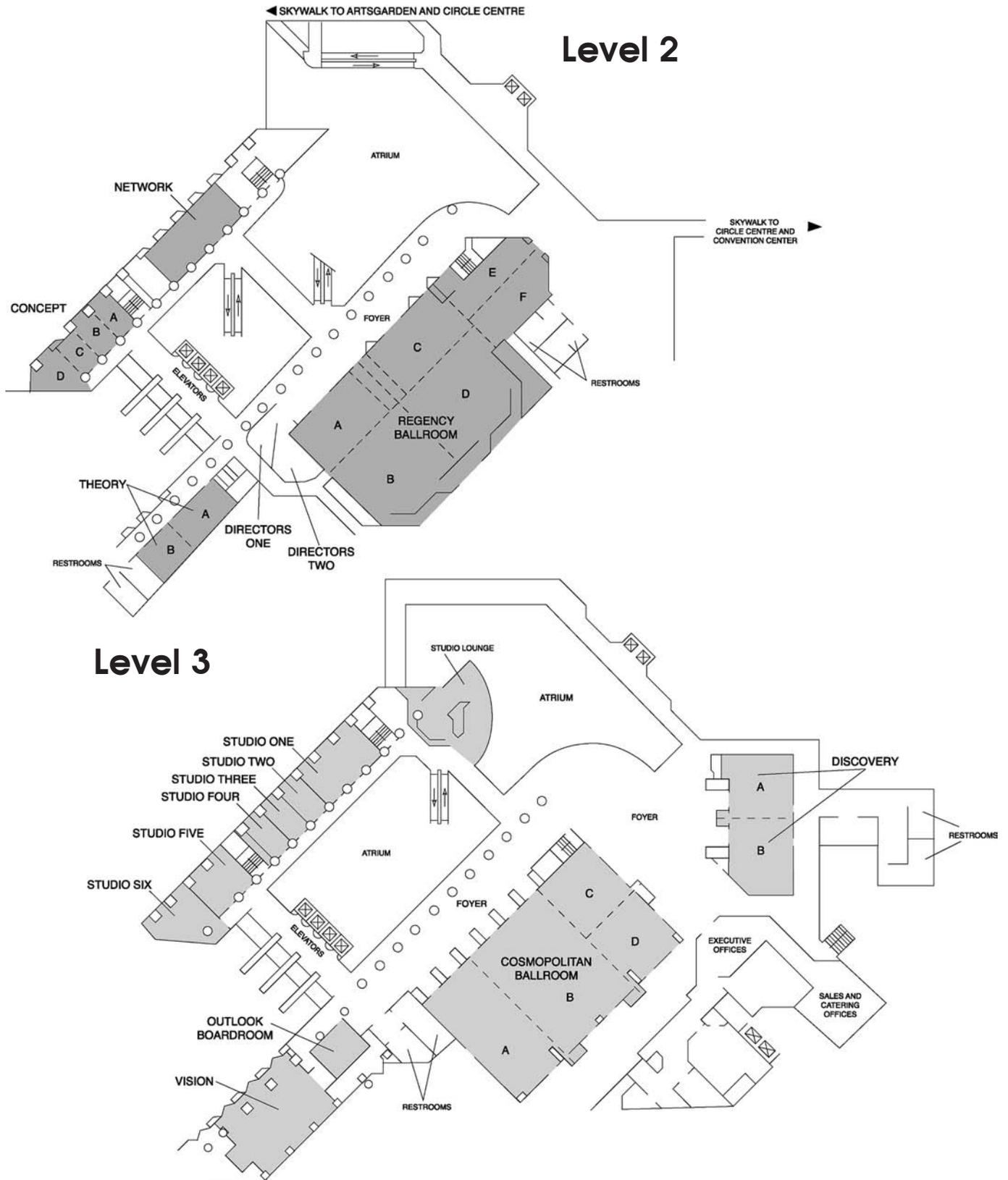


## Level 2

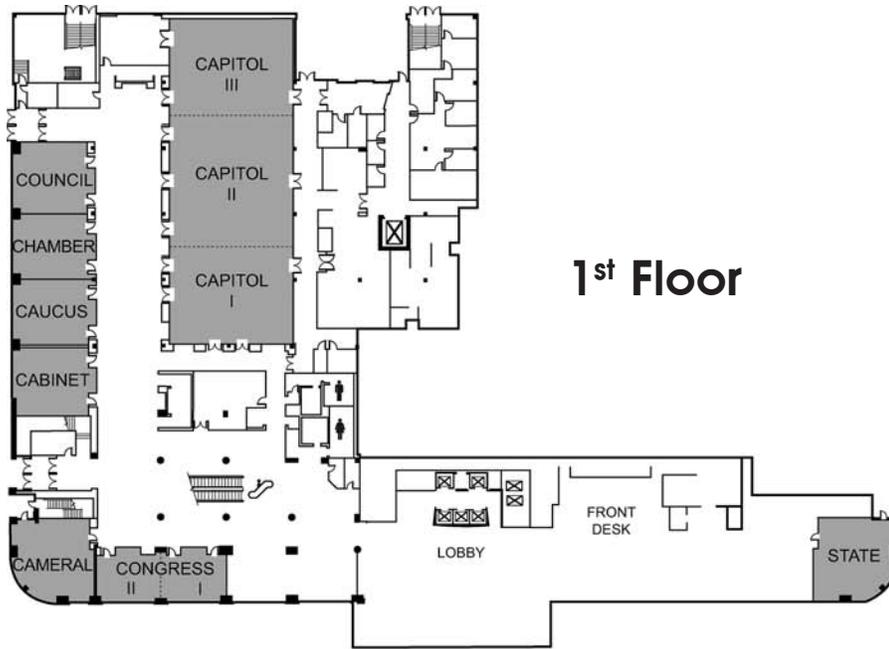


Maps

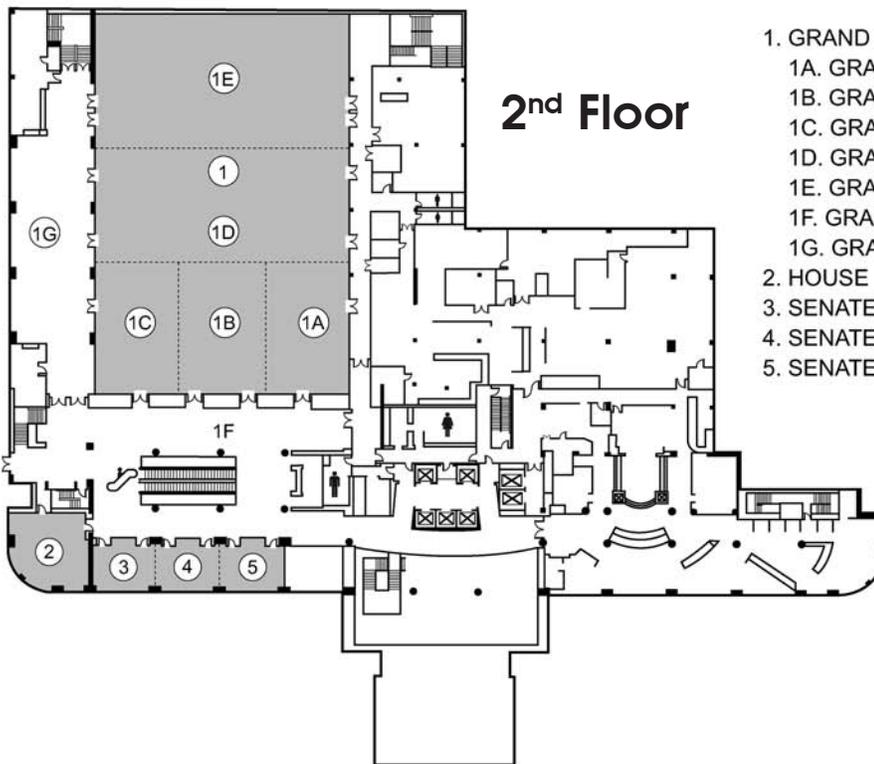
# Hyatt Regency Indianapolis (ADSA HQ Hotel)



# Westin Indianapolis (ASAS HQ Hotel)

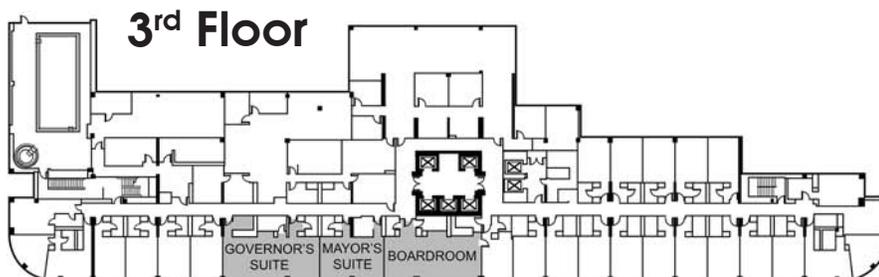


**1<sup>st</sup> Floor**



**2<sup>nd</sup> Floor**

- 1. GRAND BALLROOM
  - 1A. GRAND 1
  - 1B. GRAND 2
  - 1C. GRAND 3
  - 1D. GRAND 4
  - 1E. GRAND 5
  - 1F. GRAND FOYER 1 - 3
  - 1G. GRAND FOYER 4
- 2. HOUSE
- 3. SENATE 3
- 4. SENATE 2
- 5. SENATE 1



**3<sup>rd</sup> Floor**

# Thank you to the 2013 Joint Annual Meeting Sponsors!

---

## Platinum Level

---

Elanco Animal Health

Zoetis

---

## Gold Level

---

American Dairy Science Association  
American Society of Animal Science Foundation  
Diamond V Mills Inc.

Dairy Research Institute/Innovation Center for US Dairy  
European Association of Animal Production (EAAP)  
Micronutrients

---

## Silver Level

---

Purina Animal Nutrition

Southern SARE/Fort Valley State University

---

## Bronze Level

---

Asociación Argentina de Producción Animal (AAPA)  
Adisseo  
AGIS  
Ajinomoto Heartland  
Archer Daniels Midland  
Bayer Animal Health  
Berg+Schmidt America LLC

Cargill Inc.  
Dupont (Danisco Animal Nutrition)  
DSM Nutritional Products  
Evonik Degussa  
Novartis International Inc.  
Varied Industries Corp. (Vi-Cor)  
Vetagro

---

## Donors

---

Biomin USA  
Church and Dwight/Arm & Hammer

Prince Agri Products

---

## Contributors

---

Alltech  
JBS United  
Virtus Nutrition

## A SPECIAL THANK YOU TO OUR ADSA EVENT SPONSORS

### **ADSA Graduate Student Division**

Novus International Inc.  
Lallemand  
Church and Dwight/Arm & Hammer  
Bar Diamond

### **ADSA Multidisciplinary International Leadership Keynote (MILK) Symposium**

California Polytechnic State University SLO

## A SPECIAL THANK YOU TO OUR ASAS EVENT SPONSORS (as of May 13, 2013)

### **ASAS Awards Dinner**

ASAS Past Presidents' Club

### **ASAS Awards Celebration Sponsors**

Cornell University  
Friends of USDA  
Iowa State University  
Kansas State University  
Montana State University  
North Dakota State University  
Purdue University  
Texas A&M University  
University of California-Davis

University of Illinois  
University of Kentucky  
University of Minnesota  
University of Missouri  
University of Nebraska  
University of Vermont  
Virginia Tech  
Washington State University

### **ASAS National Academic Quadrathlon Sponsors**

Elanco Animal Health  
National Block and Bridle

Select Sires  
SLC CVB

### **ASAS General Meeting Sponsors**

Alltech  
Balchem Corp.  
Elanco Animal Health

Kemin  
UDSA-NIFA  
Zoetis



**How We Create Peace of Mind:**

HEALTH • NUTRITION • MATERIALS



### **Quality**

Our reputation for quality manufacturing has been built over decades and continues to be earned everyday. This is why quality always comes first at DSM.

### **Reliability**

We combine the expertise of global business with the insight and logistics of a local one to meet our customers' need with total consistency.

### **Traceability**

We provide assurance that materials come from dependable sustainable sources globally.

### **Sustainability**

This core value in DSM's corporate philosophy is integrated throughout all operations, as it is not only socially responsible but a key business driver.

# Schedule of Events

*Scheduling and locations are subject to change without notice.  
Please check the onsite newsletter each morning for changes.*

## Sunday, July 7

7:00 am – 8:00 am	ASAS Membership Committee Meeting .....	Westin, Cabinet
7:30 am – 5:00 pm	ADSA Board of Directors Meeting .....	Hyatt Regency, Vision
8:00 am – 9:00 am	ASAS New Board Orientation .....	Westin, Cabinet
9:30 am – 5:30 pm	ASAS Board of Directors Meeting .....	Westin, Capitol 2
12:00 pm – 4:00 pm	ADSA Student Tour option 2 .....	Meet in Sheraton lobby
12:00 pm – 5:30 pm	ADSA Student Tour option 1 .....	Meet in Sheraton lobby
3:00 pm – 5:00 pm	Registration open (preregistered, badge and material pick-up only) .....	Convention Center, Hall A-B lobby
6:00 pm	ARPAS Executive Committee Dinner Meeting .....	Location TBD
6:30 pm	ADSA-SAD Student Informal Mixer .....	Colts Grille

## Monday, July 8

All day	ASAS Undergraduate Academic Quadrathlon .....	Purdue University
7:00 am – 7:00 pm	Registration open .....	Convention Center, Hall A-B lobby
7:30 am – 10:00 am	ADSA New Board Orientation .....	Hyatt Regency, Discovery
8:00 am – 12:30 pm	ASAS Board of Directors Meeting .....	Westin, Capitol 2
8:00 am – 4:45 pm	Workshop: Teaching and Learning in the Animal Sciences .....	Convention Center, 105/106
8:00 am – 5:00 pm	ARPAS Governing Board Meeting .....	Hyatt Regency, Studio 1
8:00 am – 5:00 pm	Triennial Growth Symposium .....	Convention Center, Wabash 1
10:00 am – 11:00 am	ADSA-SAD Officers and Advisor Meeting .....	Convention Center, 202
10:00 am – 6:00 pm	Exhibit Setup .....	Convention Center, Hall A-B
11:00 am – 12:00 pm	ADSA-SAD Quiz Bowl Officials Meeting .....	Convention Center, 201
11:30 am – 12:00 pm	ADSA-SAD Quiz Bowl Seating Test .....	Convention Center, 204
12:00 pm – 1:00 pm	ADSA-SAD Student Midday Mixer and Lunch .....	Convention Center, 204
12:00 pm – 1:00 pm	ADSA JDS Editors and Journal Management Committee Lunch .....	Hyatt Regency, Discovery
12:00 pm – 5:00 pm	Hospitality Lounge open .....	Convention Center, 127
1:00 pm – 3:00 pm	2013 and 2014 Program Committee Meeting .....	Convention Center, 104
1:00 pm – 5:00 pm	ADSA Journal Management Committee Meeting .....	Hyatt Regency, Discovery
1:00 pm – 5:00 pm	ADSA-SAD Quiz Bowl Seating/Preliminary Rounds .....	Convention Center, 201/203
2:00 pm – 3:00 pm	ADSA Production Division Council Meeting .....	Convention Center, 103
2:00 pm – 3:30 pm	ADSA Foundation Board of Trustees Meeting .....	Hyatt Regency, Cosmopolitan C
3:00 pm – 4:00 pm	ADSA Production Division Nominating Committee .....	Convention Center, 103
3:00 pm – 5:00 pm	Late-Breaking Original Research Session .....	Convention Center, Wabash 3
5:00 pm – 6:00 pm	ADSA Dairy Foods Division Council Meeting .....	Convention Center, 103
5:30 pm – 6:00 pm	ADSA-SAD Quiz Bowl Final Round .....	Convention Center, 201
6:00 pm – 6:45 pm	ADSA Graduate Student Division Business Meeting .....	Convention Center, 204
7:00 pm – 8:00 pm	JAM Opening Session .....	Convention Center, Sagamore Ballroom
8:00 pm – 10:00 pm	JAM Opening Reception .....	Convention Center, Sagamore Ballroom

## Tuesday, July 9

All day	ASAS Undergraduate Academic Quadrathlon .....	Westin
6:15 am – 7:00 am	ADSA-SAD Poster Setup .....	Convention Center, Hall A-B
6:30 am – 8:00 am	ADSA Dairy Specialists/Dairy-Related Participants Breakfast .....	Hyatt Regency, Vision
6:30 am – 5:15 pm	Registration open .....	Convention Center, Hall A-B lobby

7:30 am – 9:30 am	ADSA-SAD Undergraduate Poster Presentations . . . . .	Convention Center, Hall A-B
7:30 am – 9:30 am	Poster Presentations . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	Coffee and pastries in Exhibit Hall . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	Johne’s Disease Interest Group . . . . .	Convention Center, 124
8:00 am – 9:00 am	Michigan State University Breakfast . . . . .	Convention Center, 204
8:00 am – 5:00 pm	Commercial Exhibits and ADSA-SAD Exhibits open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Job Resource Center open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Hospitality Lounge open . . . . .	Convention Center, 127
8:30 am – 9:30 am	ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports . . . . .	Convention Center, 201
8:30 am – 9:30 am	ADSA-SAD Interviews for Outstanding Student and Advisor Awards . . . . .	Convention Center, 202
8:30 am – 9:45 am	ADSA-SAD Activities Symposium . . . . .	Convention Center, 203
9:30 am – 5:00 pm	Scientific Sessions . . . . .	Convention Center
9:45 am – 10:45 am	ADSA-SAD Business Meeting . . . . .	Convention Center, 201
10:30 am – 12:30 pm	ARPAS Exam . . . . .	Convention Center, 128
11:00 am – 12:00 pm	Discover Conference Steering Committee . . . . .	Convention Center, 205
11:00 am – 2:00 pm	Spouse Event 1: Indianapolis Memorial Tour . . . . .	Convention Center, meet at Registration
11:00 am – 5:00 pm	ADSA-SAD Undergraduate Paper Presentations . . . . .	Convention Center, 201 and 203
12:30 pm – 2:00 pm	ADSA Graduate Student Division Career Insights Lunch . . . . .	Convention Center, 205
12:30 pm – 2:00 pm	ASAS Past Presidents’ Lunch . . . . .	Westin, House
12:30 pm – 2:00 pm	ADSA Past Presidents’ Lunch . . . . .	Hyatt Regency, Discovery
12:30 pm – 2:00 pm	Undergraduate Lunch and Learn: Preparing for the Future (sponsored by ASAS) . . . . .	Westin, State
12:30 pm – 2:00 pm	American College of Animal Science (ACAS) Annual Meeting . . . . .	Convention Center, 128
2:00 pm – 4:00 pm	ARPAS Exam . . . . .	Convention Center, 128
5:00 pm – 6:30 pm	Penn State Reception . . . . .	Hyatt Regency, Discovery
5:00 pm – 7:00 pm	Informal Calf Gathering . . . . .	Hyatt Regency, Cosmopolitan CD
5:30 pm – 7:00 pm	ASAS Award Winners Dinner and Photo Session . . . . .	Westin, Capitol 2
6:00 pm – 9:00 pm	ASAS President’s Picks Posters . . . . .	Westin, Grand Ballroom foyer
6:30 pm	ADSA-SAD Student Mixer . . . . .	Sheraton, poolside
7:00 pm – 8:45 pm	ASAS Awards Program . . . . .	Westin, Grand Ballroom
8:30 pm – 11:00 pm	Iowa State Alumni and Friends Reception . . . . .	Westin, State
8:30 pm – 11:00 pm	Purdue University Reception . . . . .	Westin, House
8:45 pm	ASAS Awards Celebration . . . . .	Westin, Grand Ballroom
9:00 pm	ASAS Graduate Student Mixer . . . . .	Slippery Noodle

## Wednesday, July 10

6:30 am – 8:00 am	University of Illinois Breakfast . . . . .	Westin, Capitol 1
6:30 am – 8:00 am	Kentucky Breakfast . . . . .	Westin, Cameral
6:30 am – 8:00 am	JDS Editorial Board Breakfast/Meeting . . . . .	Hyatt Regency, Theory
6:30 am – 8:00 am	ADSA Dairy Foods Division Milk Proteins and Enzyme Committee Breakfast . . . . .	Convention Center, 202
7:00 am – 5:15 pm	Registration open . . . . .	Convention Center, Hall A-B lobby
7:30 am – 9:30 am	Poster Presentations . . . . .	Convention Center, Hall A-B
7:30 am – 9:30 am	ASAS Undergraduate Poster Competition . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	Coffee and pastries in Exhibit Hall . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	ADSA Spokesperson/Media Training . . . . .	Convention Center, 207
8:00 am – 5:00 pm	Commercial Exhibits and ADSA-SAD Exhibits open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Job Resource Center open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Hospitality Lounge open . . . . .	Convention Center, 127
8:30 am – 9:30 am	ADSA-SAD Business Meeting–Election of Officers . . . . .	Convention Center, 201
9:00 am – 10:30 am	ASAS Foundation Board of Trustees Meeting . . . . .	Westin, Cabinet
9:30 am – 11:00 am	ADSA-SAD Career Symposium . . . . .	Convention Center, 203
9:30 am – 12:45 pm	ARPAS Symposium . . . . .	Convention Center, Sagamore 1

9:30 am – 5:00 pm	Scientific Sessions . . . . .	Convention Center
10:30 am – 12:00 pm	ASAS Investment Committee Meeting . . . . .	Westin, Capitol 3
11:00 am – 1:30 pm	Spouse Event 2: Indianapolis Walking Tour . . . . .	Convention Center, meet at Registration
11:30 am – 12:30 pm	ADSA Production Division Business Meeting . . . . .	Convention Center, 201
11:30 am – 12:30 pm	ADSA Dairy Foods Division Business Meeting . . . . .	Convention Center, 203
11:45 am – 2:00 pm	ADSA-SAD Awards Lunch . . . . .	Convention Center, Sagamore 5
12:00 pm – 2:00 pm	ASAS Graduate Student Lunch and Learn . . . . .	Convention Center, 204
12:30 pm – 2:00 pm	ASAS Foundation Heritage Lunch . . . . .	Westin, Council
12:30 pm – 2:00 pm	ARPAS Business Meeting . . . . .	Convention Center, 107
12:30 pm – 2:00 pm	ADSA Dairy Foods Division Program Planning Lunch . . . . .	Convention Center, 206
2:00 pm – 3:00 pm	ADSA-SAD Award and Club Photos . . . . .	Convention Center, 205
2:00 pm – 4:00 pm	ARPAS Exam . . . . .	Convention Center, 128
2:30 pm – 3:30 pm	ADSA-SAD Committee Meeting – Old and New Officers and Advisors . . . . .	Convention Center, 202
2:00 pm – 5:00 pm	SAD Exhibits: Pick up Yearbooks and Scrapbooks . . . . .	Convention Center, Hall A-B
3:00 pm – 4:30 pm	ADSA Graduate Student Division Dairy Tales . . . . .	Convention Center, 201
4:00 pm – 5:00 pm	ASAS JAS/Animal Frontiers Editorial Meeting and Open Forum . . . . .	Convention Center, 203
5:00 pm – 6:00 pm	AnimalSmart.org Birthday Party . . . . .	Convention Center, 203
5:00 pm – 6:30 pm	ADSA Award Donor Dinner . . . . .	Hyatt Regency, Cosmopolitan A
6:30 pm – 8:30 pm	Companion Animal Reception . . . . .	Westin, Capitol 1
7:00 pm – 8:00 pm	ADSA Awards Program . . . . .	Hyatt Regency, Regency Ballroom
8:15 pm – 9:30 pm	JAM Ice Cream Social, sponsored by ADSA . . . . .	Hyatt Regency, Regency Ballroom
9:00 pm – 12:00 am	ADSA Graduate Student Division Mixer . . . . .	Cadillac Ranch

## Thursday, July 11

7:00 am – 5:15 pm	Registration open . . . . .	Convention Center, Hall A-B lobby
7:30 am – 9:30 am	Poster Presentations . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	Coffee and pastries in Exhibit Hall . . . . .	Convention Center, Hall A-B
8:00 am – 9:00 am	S-PAC Interest Group . . . . .	Convention Center, 128
8:00 am – 2:00 pm	Commercial Exhibits open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Job Resource Center open . . . . .	Convention Center, Hall A-B
8:00 am – 5:00 pm	Hospitality Lounge open . . . . .	Convention Center, 127
8:00 am – 5:00 pm	Mixed Models Workshop . . . . .	Convention Center, 101/102
9:30 am – 10:30 am	ASAS Business Meeting . . . . .	Convention Center, 104
9:30 am – 10:30 am	ADSA Business Meeting . . . . .	Convention Center, 103
10:30 am – 5:00 pm	Scientific Sessions . . . . .	Convention Center
12:30 pm – 2:30 pm	ADSA Board of Directors Meeting . . . . .	Hyatt Regency, Vision
2:00 pm – 4:00 pm	ARPAS Exam . . . . .	Convention Center, 128
2:00 pm – 5:00 pm	Commercial Exhibits Dismantle . . . . .	Convention Center, Hall A-B
2:00 pm – 6:00 pm	Southern Branch ADSA Symposium and Business Meeting . . . . .	Convention Center, Wabash 3
2:00 pm – 6:00 pm	NE ASAS/ADSA Symposium, Business Meeting, Reception and Awards . . . . .	Convention Center, 107
2:30 pm – 4:30 pm	ASAS Board of Directors Meeting . . . . .	Westin, Capitol 2
4:30 pm – 6:00 pm	Global Networking Reception . . . . .	Convention Center, Sagamore 4

## Friday, July 12

8:00 am – 1:00 pm	Registration open . . . . .	Convention Center, Hall A-B lobby
8:30 am – 11:30 am	Scientific Sessions . . . . .	Convention Center
8:00 am – 12:00 pm	Mixed Models Workshop . . . . .	Convention Center, 101/102
9:00 am – 4:00 pm	Workshop: Communicating Animal Science in the Popular Media (sponsored by ASAS) . . . . .	Westin, Capitol 3

# ADSA Student Affiliate Division Program

## SAD Special Events

### Sunday, July 7

#### ***ADSA Student Tour (option 1): Indianapolis Motor Speedway and Kelsay Farms Dairy Tour***

**12:00 – 5:30 pm**

#### ***Bus departs from Sheraton***

Departing from the lobby of the SAD hotel, we will travel via motor coach to nearby Whiteland, Indiana, to visit Kelsay Farms, LLC. This sixth-generation 500-cow dairy and 2200-acre crop farm also has a very successful agritourism business, hosting nearly 10,000 visitors annually. From there, we will board the bus and travel to the Indianapolis Motor Speedway and Museum, home of the Indianapolis 500 and the Brickyard 400 for a complete Grounds Tour. The Grounds Tour includes admission to the Hall of Fame Museum and a ride around the famed 2.5-mile oval, as well as visits to the timing-and-scoring suite in the Pagoda, the Media Center, Victory Podium, Gasoline Alley garage area and the world-famous “Yard of Bricks” at the start/finish line. Tour is open undergraduate and graduate students. Ticket price includes transportation, Speedway tour ticket, and dairy tour ticket.

#### ***ADSA Student Tour (option 2): Indianapolis Motor Speedway (Museum ticket only) and Kelsay Farms Dairy Tour***

**12:00 – 4:00 pm**

#### ***Bus departs from Sheraton***

This shorter tour option includes the complete Kelsay Farm tour and an abbreviated Speedway visit that includes admission to the Raceway Museum only (and excludes the Grounds Tour and track lap). Ticket price includes transportation, Speedway Museum ticket, and dairy tour ticket.

#### ***SAD Student Informal Mixer***

**6:30 pm**

#### ***Meet in Sheraton lobby or at Colts Grille restaurant***

Jump-start the week with good food, good music, and good friends at the Sunday student mixer at Colts Grille, Indianapolis' premier sports restaurant celebrating the hometown favorite Indianapolis Colts.

### Monday, July 8

#### ***SAD Undergraduate Midday Mixer and Lunch***

**12:00 – 1:00 pm**

#### ***Convention Center, 204***

Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends, and get to know your 2013–2014 officer candidates. Registration is limited to undergraduate students and advisors.

#### ***SAD Dairy Quiz Bowl Final Round***

**5:30 – 6:00 pm**

#### ***Convention Center, 201***

On Monday, university teams from across North America will compete in the ADSA-SAD Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2013 Dairy Quiz Bowl Winning Team.

### Tuesday, July 9

#### ***ADSA-SAD Undergraduate Poster Competition***

#### ***Convention Center, Hall A-B***

**New this year:** In addition to their oral presentations, undergraduate students will be presenting posters in the exhibit hall. One poster is allowed per school. Please plan time to visit the posters on Tuesday morning or attend the oral presentations on Tuesday afternoon. See program for complete details.

**ADSA-SAD Student Mixer**

**7:00 pm**

**Sheraton City Centre, Poolside**

Celebrate a great week at ADSA! Rock the night away with good music, good food, and good friends, all poolside on a balmy summer night – it doesn't get any better than this! Ticket price includes soft drinks and dinner. Don't miss this one – it's always a highlight of the meeting!

**Wednesday, July 10**

**SAD Career Symposium**

**9:30 – 11:00 am**

**Convention Center, 203**

Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan to visit industry reps in the exhibit hall for information about internships and job opportunities.

**SAD Awards Lunch**

**11:45 am – 2:00 pm**

**Convention Center, Sagamore 5**

Plan to attend this year's SAD awards lunch. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

**SAD Schedule of Events**

Scheduling and location are subject to change without notice.

Consult the meeting website (<http://www.adsa.org/sad.asp>) for the latest program information.

**Sunday, July 7**

12:00 pm – 5:30 pm

Farms Dairy Tour

3:00 pm – 5:00 pm

6:30 pm

ADSA Student Tours (option 1 for undergraduates): Indianapolis Motor Speedway and Kelsay

Registration open

(preregistered, badge and material pick-up only) . . . . . Convention Center, Hall A-B lobby

ADSA-SAD Student Informal Mixer: . . . . . Colts Grille

**Monday, July 8**

7:00 am – 7:00 pm

10:00 am – 11:00 am

11:00 am – 12:00 pm

11:30 am – 12:00 pm

12:00 pm – 1:00 pm

1:00 pm – 5:00 pm

5:30 pm – 6:00 pm

7:00 pm – 10:00 pm

Registration open . . . . . Convention Center, Hall A-B lobby

ADSA-SAD Officers and Advisor Meeting . . . . . Convention Center, 202

ADSA-SAD Quiz Bowl Officials Meeting. . . . . Convention Center, 201

ADSA-SAD Quiz Bowl Seating Test . . . . . Convention Center, 204

ADSA-SAD Student Midday Mixer and Lunch.

NEW! Turn in yearbooks and scrapbooks . . . . . Convention Center, 204

ADSA-SAD Quiz Bowl Seating/Preliminary Rounds. . . . . Convention Center, 201/203

ADSA-SAD Quiz Bowl Final Round . . . . . Convention Center, 201

JAM Opening Session and Reception . . . . . Convention Center, Sagamore Ballroom

**Tuesday, July 9**

6:15 am – 7:00 am

7:30 am – 9:30 am

8:00 am – 5:00 pm

Hanging of SAD Posters . . . . . Convention Center, Hall A-B

ADSA-SAD Undergraduate Poster Presentations. . . . . Convention Center, Hall A-B

Commercial Exhibits open . . . . . Convention Center, Hall A-B

8:30 am – 9:30 am	ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports . . . . . Convention Center, 201
8:30 am – 9:30 am	ADSA-SAD Interviews for Outstanding Student and Advisor Awards . . . . . Convention Center, 202
8:30 am – 9:45 am	ADSA-SAD Activities Symposium . . . . . Convention Center, 203
9:30 am – 5:00 pm	Scientific Sessions . . . . . Convention Center
9:45 am – 10:45 am	ADSA-SAD Business Meeting . . . . . Convention Center, 201
11:00 am – 5:00 pm	ADSA-SAD Undergraduate Paper Presentations . . . . . Convention Center, 201 and 203
5:00 pm – 5:30 pm	Removal of SAD Posters . . . . . Convention Center, Hall A-B
7:00 pm	ADSA-SAD Student Mixer . . . . . Sheraton, poolside

## Wednesday, July 10

7:30 am – 9:30 am	Poster Presentations . . . . . Convention Center, Hall A-B
8:00 am – 5:00 pm	Commercial Exhibits open . . . . . Convention Center, Hall A-B
8:00 am – 5:00 pm	Job Resource Center open . . . . . Convention Center, Hall A-B
8:30 am – 9:30 am	ADSA-SAD Business Meeting–Election of Officers . . . . . Convention Center, 201
9:30 am – 11:00 am	ADSA-SAD Career Symposium . . . . . Convention Center, 203
11:45 am – 2:00 pm	ADSA-SAD Awards Lunch . . . . . Convention Center, Sagamore 5
2:00 pm – 3:00 pm	ADSA-SAD Award and Club Photos . . . . . Convention Center, 205
2:00 pm – 4:00 pm	ARPAS Exam . . . . . Convention Center, 128
2:30 pm – 3:30 pm	ADSA-SAD Committee Meeting – Old and New Officers and Advisors . . . . . Convention Center, 202
2:00 pm – 5:00 pm	Yearbooks and Scrapbooks should be picked up from the SAD Exhibit in the Exhibit Hall . . . . . Convention Center, Hall A-B
3:00 pm – 5:00 pm	Scientific Sessions . . . . . Convention Center
7:00 pm – 8:00 pm	ADSA Awards Program . . . . . Hyatt Regency, Regency Ballroom
8:15 pm – 9:30 pm	JAM Ice Cream Social . . . . . Hyatt Regency, Regency Ballroom

JAM 2013 thanks **Ajinomoto Heartland Inc.** for sponsoring the  
**Nonruminant Nutrition: Amino Acids and Energy** poster session  
7:30 – 9:30 am, Tuesday, July 9 in the Exhibit Hall

**AJINOMOTO**<sup>®</sup>

**AJINOMOTO HEARTLAND, INC.**

# ADSA Dairy Foods Division Schedule of Events

*All rooms are at the Convention Center, unless otherwise noted.  
Scheduling and location are subject to change without notice. Please check the onsite  
newsletter each morning for changes.*

## Monday, July 8

5:00 pm – 6:00 pm      ADSA Dairy Foods Division Council Meeting, 103

## Tuesday, July 9

7:30 am – 9:30 am      Dairy Foods Posters: General, Chemistry and Processing, Microbiology, Dairy Products, Hall A-B  
7:30 am – 9:30 am      Graduate Student Competition: ADSA Dairy Foods Division Poster Competiton, Hall A-B  
9:30 am – 12:00 pm     Graduate Student Competition: ADSA Dairy Foods Oral Competition, 103  
2:00 pm – 4:00 pm      Symposium: Milk Protein and Enzymes: Role of Enzymes in Dairy Processing, Sagamore 7  
2:00 pm – 4:15 pm      Dairy Foods: Cheese, 103  
2:00 pm – 4:50 pm      Symposium: Dairy Foods: New Approaches to Lower Sodium in Cheese and Techniques to  
Address Quality Challenges, 120/121

## Wednesday, July 10

6:30 am – 8:00 am      ADSA DF Division Milk Proteins and Enzyme    Committee Breakfast, 202  
7:30 am – 9:30 am      Dairy Foods Posters: Cheese, Chemistry and Processing, Microbiology, and  
Dairy Products II, Hall A-B  
9:30 am – 11:50 am     Symposium: Dairy Foods: Dietary Influence on Milk Synthesis of  
Health-Promoting Compounds, 122/123  
11:30 am – 12:30 pm    ADSA Dairy Foods Division Business Meeting, 203  
12:30 pm – 2:00 pm     ADSA DF Division Program Planning Lunch, 206  
2:00 pm – 4:00 pm      ADSA Multidisciplinary and International Keynote (MILK) Symposium: Colostrum Quality,  
Analytical Methods, and Processing Challenges, 101/102  
2:00 pm – 3:45 pm      Dairy Foods: Microbiology, 110  
2:00 pm – 3:45 pm      Dairy Foods: Dairy Products, Wabash 3  
3:45 pm – 5:00 pm      Dairy Foods: Processing, 110

## Thursday, July 11

10:30 am – 12:45 pm    Dairy Foods: Chemistry, 109  
2:00 pm – 5:00 pm      Dairy Foods: Dairy Chemistry, 103



# ANNUAL REVIEWS

Celebrating 80 Years of Publishing Excellence

VISIT  
BOOTH  
#610 AT  
JAM2013

New Journal—Online Now:

## Annual Review of Animal Biosciences

Volume 1 • February 2013 • <http://animal.annualreviews.org>

Co-Editors: **Harris A. Lewin**, *University of California, Davis*  
**R. Michael Roberts**, *University of Missouri*



The inaugural volume of the *Annual Review of Animal Biosciences* covers the most significant developments in the broad fields of animal and veterinary biosciences. It places a particular emphasis on biotechnology, genetics, genomics, and breeding; veterinary medicine, especially veterinary pathobiology, infectious diseases, and vaccine development; and conservation and zoo biology, particularly genomics. This journal is intended for scientists focused on domesticated and wild animal species, veterinarians, conservation biologists, and geneticists.

**COMPLIMENTARY ONLINE ACCESS AVAILABLE NOW.**

Access this and all Annual Reviews journals via your institution at [www.annualreviews.org](http://www.annualreviews.org).

TABLE OF CONTENTS FOR VOLUME 1:

- *Accelerating Improvement of Livestock with Genomic Selection*, Theo Meuwissen, Ben Hayes, Mike Goddard
- *After 65 Years, Research Is Still Fun*, William Hansel
- *Cats: A Gold Mine for Ophthalmology*, Kristina Narfström, Koren Holland Deckman, Marilyn Menotti-Raymond
- *Comparative Aspects of Mammary Gland Development and Homeostasis*, Anthony V. Capuco, Steven E. Ellis
- *Comparative Biology of  $\gamma\delta$  T Cell Function in Humans, Mice, and Domestic Animals*, Jeff Holderness, Jodi F. Hedges, Andrew Ramstead, Mark A. Jutila
- *Conservation Genomics of Threatened Animal Species*, Cynthia C. Steiner, Andrea S. Putnam, Paquita E.A. Hoeck, Oliver A. Ryder
- *Cross Talk Between Animal and Human Influenza Viruses*, Makoto Ozawa, Yoshihiro Kawaoka
- *Effects of Heat Stress on Postabsorptive Metabolism and Energetics*, Lance H. Baumgard, Robert P. Rhoads Jr.
- *Epigenetics: Setting Up Lifetime Production of Beef Cows by Managing Nutrition*, R.N. Funston, A.F. Summers
- *Evolution of B Cell Immunity*, David Parra, Fumio Takizawa, J. Oriol Sunyer
- *Genetically Engineered Pig Models for Human Diseases*, Randall S. Prather, Monique Lorson, Jason W. Ross, Jeffrey J. Whyte, Eric Walters
- *Genetics of Pigmentation in Dogs and Cats*, Christopher B. Kaelin, Gregory S. Barsh
- *In Vivo and In Vitro Environmental Effects on Mammalian Oocyte Quality*, Rebecca L. Krisher
- *Integrated Genomic Approaches to Enhance Genetic Resistance in Chickens*, Hans H. Cheng, Pete Kaiser, Susan J. Lamont
- *Making Slaughterhouses More Humane for Cattle, Pigs, and Sheep*, Temple Grandin
- *Phytase, A New Life for an "Old" Enzyme*, Xin Gen Lei, Jeremy D. Weaver, Edward Mullaney, Abul H. Ullah, Michael J. Azain
- *Porcine Circovirus Type 2 (PCV2): Pathogenesis and Interaction with the Immune System*, Xiang-Jin Meng
- *Systems Physiology in Dairy Cattle: Nutritional Genomics and Beyond*, Juan J. Looor, Massimo Bionaz, James K. Drackley
- *The Equine Endometrial Cup Reaction: A Fetomaternal Signal of Significance*, D.F. Antczak, Amanda M. de Mestre, Sandra Wilsher, W.R. Allen
- *The Evolution of Epitheliochorial Placentation*, Anthony M. Carter, Allen C. Enders
- *The Role of Productivity in Improving the Environmental Sustainability of Ruminant Production Systems*, Judith L. Capper, Dale E. Bauman

Scan this code to learn more about this journal via your mobile device.



ANNUAL REVIEWS • Guiding Scientists to Essential Research Since 1932

TEL: 800.523.8635 (US/CAN) • TEL: 650.493.4400 • FAX: 650.424.0910 • EMAIL: [service@annualreviews.org](mailto:service@annualreviews.org)



# Scientific Program Table of Contents

All session rooms shown in the scientific program are in the convention center, and all poster sessions will be held in Hall A-B. Scheduling and locations are subject to change without notice, so please check the onsite newsletter each morning for changes.

## Monday, July 8

### SYMPOSIA AND ORAL SESSIONS

Teaching/Undergraduate and Graduate Education Workshop: Teaching and Learning in the Animal Sciences—New Grounds for the 21st Century .....	1–3 .....	47
Triennial Growth Symposium: Vitamin D—Establishing the Basics to Dispel the Hype .....	4–13 .....	47

## Tuesday, July 9

### POSTER PRESENTATIONS

Ruminant Nutrition: Feed Additives, Minerals, and Vitamins I .....	T1–T39 .....	49
Ruminant Nutrition: Feeding, Ruminal Fermentation, and Efficiency of Production I .....	T40–T63 .....	51
Ruminant Nutrition: Protein, Energy, and By-Products Supplementation I .....	T64–T96 .....	53
Undergraduate Student Competition ADSA-SAD Undergraduate Poster Competition: Original Research .....	T98–T101 .....	55
Graduate Student Competition ADSA Dairy Foods Division Poster Competition .....	T102–T111 .....	55
Graduate Student Competition ADSA Production Division Poster Competition, MS .....	T113–T127 .....	56
Graduate Student Competition ADSA Production Division Poster Competition, PhD .....	T129–T139 .....	57
Animal Health: Management Strategy and Intervention Mechanisms .....	T140–T170 .....	58
Beef Species .....	T171–T178 .....	60
Breeding and Genetics: Applications and Methods in Animal Breeding—Beef .....	T179–T195 .....	60
Breeding and Genetics: Genomic Selection .....	T196–T211 .....	62
Dairy Foods: Chemistry and Processing I .....	T212–T230 .....	63
Dairy Foods: General Topics .....	T231–T238, T384 .....	64
Dairy Foods: Dairy Products I .....	T239–T249 .....	64
Forages and Pastures: Animal Responses .....	T250–T271 .....	65
Growth and Development I .....	T272–T281 .....	66
Dairy Foods: Microbiology I .....	T282–T292 .....	67
Nonruminant Nutrition: Amino Acids and Energy .....	T293–T308 .....	68
Nonruminant Nutrition: Vitamins and Minerals .....	T309–T315 .....	69
Physiology and Endocrinology I .....	T316–T352 .....	69
Production, Management and the Environment: Diet and Forage .....	T353–T364 .....	72

Teaching/Undergraduate and Graduate Education: Teaching and Learning Tools for Animal Sciences .....	T377–T383 .....	72
---	-----------------	----

## **SYMPOSIA AND ORAL SESSIONS**

Graduate Student Competition ADSA Dairy Foods Division Oral Competition .....	14–22 .....	74
Graduate Student Competition ADSA Production Division Oral Competition, PhD .....	23–31 .....	74
Ruminant Nutrition: Beef: Minerals, Vitamins, and Additives .....	32–43 .....	75
Bioethics Symposium I The Hunger Games: Should “Big Ag” Be Left Standing? .....	44–47 .....	76
Breeding and Genetics: Applications and Methods in Animal Breeding—Beef .....	48–56 .....	76
Cell Biology Symposium: The Immune System in Pregnancy .....	57–59 .....	77
George C. Fahey Companion Animal Nutrition Symposium I: Effect of Dietary Format on Nutrition, Food Management, and Food Safety .....	60–64 .....	78
Ruminant Nutrition: Dairy: General Topics .....	65–73 .....	78
Lactation Biology I .....	76–87 .....	79
Meat Science and Muscle Biology: Effects of Nutrients and Supplements on Animal Growth Performance and Meat Quality .....	88–98 .....	80
Nonruminant Nutrition: Gut Health .....	99–106 .....	81
Nonruminant Nutrition: Trace Minerals .....	107–112 .....	81
Ruminant Nutrition Symposium: Advancements in Enhancing Cell Wall Digestibility and its Contribution to Improve Ruminant Production .....	113–116 .....	82
Swine Species .....	117–124 .....	82
Teaching/Undergraduate and Graduate Education: Graduate Education in a Shifting Research Landscape .....	125–129 .....	83
Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy I .....	130–136 .....	83
Nonruminant Nutrition: Nutrition and Physiology .....	137–141 .....	84
Undergraduate Student Competition ADSA-SAD Undergraduate Competition: Dairy Foods .....	142–146 .....	84
Undergraduate Student Competition ADSA-SAD Undergraduate Competition: Dairy Production .....	147–154 .....	85
Graduate Student Competition ADSA Production Division Oral Competition, MS .....	155–166 .....	85
Beef Species .....	167–175 .....	86
Bioethics Symposium II: Is Modern Animal Agriculture Ethically Defensible? .....	176–179 .....	87
Breeding and Genetics: Applications and Methods in Animal Breeding—Pigs .....	180–191 .....	87
Dairy Foods: Cheese .....	192–197 .....	88
Companion Animals: Companion and Captive Exotic Animals .....	200–208 .....	89
Dairy Foods Symposium: New Approaches to Lower Sodium in Cheese and Techniques to Address Quality Challenges .....	209–213 .....	89
Milk Protein and Enzymes Symposium: Role of Enzymes in Dairy Processing .....	214–217 .....	90
Physiology and Endocrinology: Regulation of Estrus .....	218–228 .....	90
Physiology and Endocrinology Symposium: The Next Generation of Metabolic Endocrinology .....	229–234 .....	91

Production, Management and the Environment: Diet and Forage I.....	235–243	92
Ruminant Nutrition: General Topics .....	244–254, 812	92
Small Ruminant: Production, Management, and Cell Biology.....	816–827	93
Undergraduate Student Competition		
ADSA-SAD Undergraduate Competition: Original Research.....	255–263	94
Teaching/Undergraduate and Graduate Education: Learning Styles and Student Success .....	264–269	95
Trace Mineral Nutrition Symposium .....	270–273	95

## Wednesday, July 10

### POSTER PRESENTATIONS

Dairy Foods: Chemistry and Processing II .....	W1–W20	97
Ruminant Nutrition: Fats, Fatty Acids, Oils, and Glycerin Supplementation I.....	W21–W41	98
Ruminant Nutrition: Feed Additives, Minerals, and Vitamins II.....	W42–W79	99
Ruminant Nutrition: Feeding, Ruminant Fermentation, and Efficiency of Production II .....	W80–W106	102
Ruminant Nutrition: Protein, Energy, and By-Products Supplementation II .....	W107–W139	104
Animal Behavior and Well-Being I.....	W140–W157	106
Undergraduate Student Competition		
ASAS Undergraduate Student Poster Competition.....	W158–W181	107
Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy .....	W182–W194	109
Breeding and Genetics: Applications and Methods in Animal Breeding—Pigs, Poultry, Sheep, and Horses.....	W195–W212	109
Dairy Foods: Cheese .....	W213–W235, W449	111
Companion Animals: Comparative Animal Nutrition .....	W236–W242	112
Dairy Foods: Dairy Products II.....	W243–W253, W450	112
Forages and Pastures: Silages and Fermentation .....	W254–W276	113
Growth and Development II .....	W277–W288	115
Lactation Biology I.....	W289–W301	116
Meat Science and Muscle Biology I .....	W302–W315	116
Dairy Foods: Microbiology II.....	W316–W326	117
Nonruminant Nutrition: Feed Additives .....	W327–W343	118
Nonruminant Nutrition: Gut Health .....	W344–W351	119
Physiology and Endocrinology II.....	W352–W382	120
Production, Management and the Environment: Management and Methods.....	W383–W412	122
Small Ruminant: Nutrition and Forages.....	W417–W437	124
Swine Species: Grow-Finish Pigs.....	W438–W446	125
Swine Species: Sow Productivity .....	W447–W448	126

### SYMPOSIA AND ORAL SESSIONS

Graduate Student Competition		
ADSA Southern Section Graduate Student Competition.....	274–279	127

Animal Behavior and Well-Being I.....	280–291 .....	127
Animal Health: Disease Assessment.....	292–301 .....	128
ARPAS Symposium:		
Applied Nutrition of Ruminants—Current Status and Future Directions.....	302–306 .....	129
Breeding and Genetics: Applications and Methods in Animal Breeding—Dairy II.....	307–313 .....	129
Breeding and Genetics: Genomic Selection in Beef .....	314–322 .....	130
CDGKV Inaugural Genetics Symposium .....		131
Ruminant Nutrition: Dairy: Intake, Grazing, and Supplementation .....	331–342 .....	131
Dairy Foods Symposium: Dietary Influence on Milk Synthesis of Health-Promoting Components in Bovine and Human Milk .....	343–346 .....	132
Extension Education .....	347–354 .....	132
Forages and Pastures Symposium: Forage Systems Adaptable to Dry Conditions.....	355–358 .....	133
Meat Science and Muscle Biology Symposium: Implants, Muscle Development and Meat Quality .....	359–362 .....	133
Nonruminant Nutrition: Enzymes .....	363–369 .....	134
Physiology and Endocrinology: Nutrition and Immunology .....	370–378 .....	134
Production, Management and the Environment: Management and Methods I.....	379–388 .....	135
Teaching/Undergraduate and Graduate Education: New Approaches to Animal Sciences Curriculum .....	389–396 .....	136
Graduate Student Competition		
ADSA-ASAS Northeast Section Graduate Student Competition .....	397–400 .....	136
Nonruminant Nutrition: Feed Additives .....	401–404 .....	137
ADSA Foundation Scholar Lectures .....		137
ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium:		
Colostrum Quality, Analytical Methods and Processing Challenges .....	405–409 .....	138
Animal Behavior and Well-Being II.....	410–418 .....	138
Animal Health: Intervention and Management Strategies .....	419–429 .....	139
Ruminant Nutrition: Beef: Efficiency of Production .....	430–436 .....	140
Beef Species Symposium: Nutrient Requirements of the Beef Female in Extensive Grazing Systems: Considerations for Revising the Beef NRC.....	437–439 .....	140
Breeding and Genetics: Genomic Selection in Dairy I .....	440–447.....	141
George C. Fahey Companion Animal Nutrition Symposium II: Comparative Animal Nutrition.....	448–453 .....	142
Ruminant Nutrition: Dairy: Ruminal Fermentation and Health .....	454–465 .....	142
Ruminant Nutrition: Dairy: Starch, Amino Acids, and By-Products Supplementation.....	466–477.....	143
Dairy Foods: Dairy Products .....	478–485 .....	144
Lactation Biology II.....	486–494 .....	145
Dairy Foods: Microbiology .....	495–500, 813 .....	145
Nonruminant Nutrition Symposium: Breaking the Mold: Formulating Monogastric Diets Without Traditional Ingredients.....	501–505 .....	146
Physiology and Endocrinology: Nutritional Physiology.....	506–517.....	146
Production, Management and the Environment: Management and Methods II.....	518–528 .....	147

Small Ruminant Symposium: Sustainable Meat Goat Production .....	529–532 .....	148
Dairy Foods: Processing .....	533–537 .....	149

## Thursday, July 11

### POSTER PRESENTATIONS

Animal Health: Immune Response Patterns .....	TH1–TH36 .....	150
Ruminant Nutrition: Fats, Fatty Acids, Oils, and Glycerin Supplementation II .....	TH37–TH58 .....	152
Ruminant Nutrition: Feed Additives, Minerals and Vitamins III .....	TH59–TH96 .....	153
Ruminant Nutrition: Feeding, Ruminal Fermentation, and Efficiency of Production III .....	TH97–TH125 .....	156
Ruminant Nutrition: Protein, Energy and By-Products Supplementation III .....	TH126–TH158 .....	158
Animal Behavior and Well-Being II .....	TH159–TH177 .....	160
Breeding and Genetics: Molecular Genetics .....	TH178–TH191 .....	161
Extension Education .....	TH192–TH209 .....	162
Food Safety .....	TH210–TH229 .....	163
Forages and Pastures: General Topics .....	TH230–TH252 .....	165
Growth and Development III .....	TH253–TH265 .....	167
Horse Species .....	TH266–TH273 .....	167
International Animal Agriculture .....	TH274–TH277 .....	168
Lactation Biology II .....	TH278–TH289 .....	168
Meat Science and Muscle Biology II .....	TH290–TH303 .....	169
Nonruminant Nutrition: Enzymes .....	TH304–TH309 .....	170
Nonruminant Nutrition: Feed Ingredients .....	TH310–TH326 .....	170
Nonruminant Nutrition: Physiology .....	TH327–TH331 .....	171
Physiology and Endocrinology III .....	TH332–TH358 .....	172
Production, Management and the Environment: Surveys and Models .....	TH359–TH380 .....	174
Small Ruminant: Health, Reproduction, Growth, Management .....	TH381–TH410 .....	175
Swine Species: Weanling Pigs .....	TH411–TH420 .....	177

### SYMPOSIA AND ORAL SESSIONS

Breeding and Genetics: Genomic Selection in Dairy II .....	538–545 .....	178
Breeding and Genetics: Genomic Selection Methods I .....	546–553 .....	178
Dairy Foods: Chemistry .....	323–330 .....	179
Contemporary and Emerging Issues .....	554–559 .....	180
Graduate Student Symposium: How to Communicate Science Successfully Using Media Outlets .....	566–568 .....	180
Growth and Development I .....	569–576 .....	180
Meat Science and Muscle Biology Symposium: Pre-Harvest Factors Affecting the Prevalence of Pathogens in Livestock and Meat .....	577–578, 814–815 .....	181
Nonruminant Nutrition: Feed Ingredients I .....	579–586 .....	181
Physiology and Endocrinology: Pregnancy .....	587–593 .....	182

Production, Management and the Environment: Diet and Forage II .....	594–599 .....	183
Ruminant Nutrition Symposium:		
Burk Dehority—Swimming in the Rumen with Protozoa .....	601–604 .....	183
Mixed Models Workshop.....		183
Follow-Up to Innovate 2012: Funding Livestock Research and Outreach in the Future .....		184
ADSA Southern Section Symposium: Strategies for Managing Reproduction and Udder Health in Heat-Stressed Dairy Cows .....	605–609 .....	184
ADSA-ASAS Northeast Section Symposium: Optimal Land Use for Northeast Farms: Growing Crops and Feeding Animals.....	610–612 .....	185
Animal Behavior and Well-Being III .....	613–624 .....	185
Animal Health: Health and Immune Function.....	625–634 .....	186
Breeding and Genetics: Genomic Selection Methods II.....	635–643 .....	187
Ruminant Nutrition: Dairy: Calf Nutrition and Feed Additives.....	644–647.....	187
Ruminant Nutrition: Dairy: Fat and Fatty Acids Supplementation .....	648–659 .....	188
Dairy Foods: Dairy Chemistry .....	560–565 .....	189
Forages and Pastures: Dairy and Livestock.....	660–669 .....	189
Ruminant Nutrition: Metabolism and Modeling.....	670–679 .....	190
Growth and Development II .....	680–687.....	191
Meat Science and Muscle Biology: Muscle and Meat Biochemistry .....	688–695, 828 .....	191
Nonruminant Nutrition: Nutritional Values I .....	696–701 .....	192
Production, Management and the Environment: Surveys and Models I .....	702–710 .....	193
Reproduction Symposium:		
External Influences on Reproductive Neuroendocrinology.....	711–716 .....	193
Ruminant Nutrition: Beef: By-Products and Dietary Modifications.....	717–722 .....	194
Nonruminant Nutrition: Nutritional Values II .....	723–727.....	195

## Friday, July 12

### SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being IV .....	728–735 .....	196
Ruminant Nutrition: Beef: Dietary Effects and Additives .....	736–748 .....	196
Ruminant Nutrition: Dairy: Feed Additives, Vitamins and Minerals.....	749–758 .....	197
Food Safety .....	759–762 .....	198
Forages and Pastures: General Topics.....	765–774 .....	199
Nonruminant Nutrition: Feed Ingredients II.....	775–782 .....	199
Production, Management and the Environment Symposium:		
Confinement Animal Agriculture Sustainability .....	783–786 .....	200
Production, Management and the Environment: Surveys and Models II .....	787–792 .....	200
Ruminant Nutrition: Modification of Ruminal Fermentation .....	793–800 .....	201
Ruminant Nutrition: Diet Modifications.....	801–811 .....	202
Mixed Models Workshop.....		202
Workshop: Communicating Animal Science in the Popular Media .....		202