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### **NOTICE:**

Registration and housing forms can be found on the Midwest Meeting Website. You can register on line at: <http://www.asas.org/midwest/2005> You can print forms off the web site listed above. Information for faxing or mailing can be found on the appropriate form or you can call 217-356-9050 for a printed copy.

## REGISTRATION

Convention Center, Lobby

Monday, March 21, 9:30 a.m. – 8:00 p.m.

Tuesday, March 22, 7:00 a.m. – 4:00 p.m.

Wednesday, March 23, 9:00 a.m. – 11:00 a.m.

|                                 | Before<br>March 1 | After<br>March 1 |
|---------------------------------|-------------------|------------------|
| ADSA/ASAS Members               | \$110             | \$160            |
| Undergraduate Students          | \$10              | \$10             |
| Graduate Student Members        | \$20              | \$30             |
| Post Doctoral Fellows           | \$20              | \$30             |
| ASAS-ADSA Fellows               | \$0               | \$0              |
| Nonmembers                      | ***\$220          | \$260            |
| Graduate Student Nonmembers     | ***\$40           | \$50             |
| Post Doctoral Fellow Nonmembers | ***\$75           | \$85             |

\*\*\*These prices include membership into your choice of ASAS or ADSA.

**Cancellation Policy:** To be eligible for a 90% refund of meeting registration fees, requests must be received in writing before March 1, 2005. No refunds will be issued on ticketed events.

## IMPORTANT PHONE NUMBERS

|                                  |              |
|----------------------------------|--------------|
| Meeting Registration Desk: ..... | 515/242-2528 |
| Renaissance Savery Hotel: .....  | 515/244-2151 |
| Holiday Inn Downtown: .....      | 515/283-0151 |
| Hotel Fort Des Moines: .....     | 515/243-1161 |
| Embassy Suites: .....            | 515/244-1700 |
| Marriott: .....                  | 515/245-5500 |

Registration and housing forms can be  
found on the web.  
[www.asas.org/midwest/2005](http://www.asas.org/midwest/2005)

# **Appreciation Club Symposia**

## **David H. Baker Symposium**

### **Nonruminant Nutrition I**

Sponsored by the David H. Baker Appreciation Club  
Chair: Doug Webel, United Feeds Inc., Sheridan, IN  
Monday, 1:00 p.m. - 4:30 p.m.  
Room: 204AB

## **Billy N. Day Symposium**

### **Physiology I**

Gamete and Embryo Technologies for Pork Production  
Sponsored by the Billy N. Day Appreciation Club  
Chair: Duane L. Davis, Kansas State University, Manhattan  
Tuesday, 8:00 a.m. - 12:00 noon  
Room: 136

## **Social Events**

### **Reception**

Monday, March 21  
6:00 p.m. - 8:00 p.m.  
Exhibit Hall, Room 206

## **Academic Quadrathlon - Quiz Bowl**

### **Competition**

Monday, March 21  
8:00 p.m.  
Room 204FG

### **Reception**

Tuesday, March 22  
6:00 p.m. - 8:00 p.m.  
Exhibit Hall, Room 206

### **REMINDER**

All Food Functions in Room 206  
Monday Night Reception  
Tuesday Night Reception  
Wednesday Morning Awards Breakfast

***Looking for a new job?  
Is your company hiring?***

**The 2005 Placement Center could be the answer!**

If you are interested in advertising open positions in your company or department, or if you're looking for a position in the animal industry or academia, we encourage you to bring position descriptions and résumés to the Placement Center at the 2005 Midwestern Sectional ASAS/ADSA Annual Meeting.

The Placement Center will be located in the Exhibit Hall, Room 206 at the Convention Center. Sign-up sheets for making "connections" and instructions for use of the Placement Center will be posted.

***How to Participate***

**Students, graduates and experienced professionals** are encouraged to post résumés at the Placement Center. Professionals from hundreds of companies, universities, and governmental agencies are represented each year at the Midwest Meeting.

**Employers** from industry academia and government are encouraged to post position announcements.

***What To Bring***

**Employers** are asked to bring 25 to 50 copies of all position announcements.

**Prospective employees** are requested to bring 25 to 50 copies of their (two-page) résumés.

Job descriptions and résumés can be posted at the Placement Center beginning at 12:00 p.m. on Monday, March 21, 2005.

***The Placement Center —  
New opportunities are waiting!***

# SCHEDULE OF EVENTS

## Monday, March 21 A.M.

8:00 a.m. ASAS/ADSA MW Board of Directors, Renaissance Savery Hotel.

## Monday, March 21 P.M.

1:00 p.m. **Nonruminant I**, David H. Baker Symposium, Room 204AB.  
1:30 p.m. **Undergraduate Student Competitive Research Papers**, Room 205IJ.  
2:00 p.m. **Graduate Student Competitive Research Papers - M.S. Division**, Room 204FG.  
**Extension - Swine I**, Sow Longevity, Room 138.  
2:00 p.m. **ARPAS Exams**, Convention Complex Board Room.  
4:30 p.m. **Poster presentations**, Convention Complex Exhibit Hall, Room 206  
5:00 p.m. **Career Fair**, Convention Complex Exhibit Hall  
6:00 p.m. **Opening Reception**, Convention Complex Exhibit Hall.  
8:00 p.m. **Academic Quadrathlon Quiz Bowl Finals**, 204FG.

## Tuesday, March 22 A.M.

6:45 a.m. **Program Chairs Breakfast**, Renaissance Savery Hotel.  
8:00 a.m. **Breeding and Genetics I**, Applied Animal Breeding and Genetics, Room 144.  
**Graduate Student Competitive Research Papers - Ph.D. Division**, Room 205IJ.  
**Extension - Beef I**, Feeding Beef Cattle for High Quality Markets, Room 138.  
**Extension - Dairy I**, Avoiding Untimely Cow Losses, Room 146.  
**Nonruminant Nutrition II**, Proteins and Amino Acids, Room 204AB.  
**Physiology I**, Billy N. Day Symposium: Gamete and Embryo Technologies for Pork Production, Room 136.  
**Physiology II**, Growth Physiology: Muscle Development, Room 134.  
**Ruminant Nutrition I**, Supplementation and Nutrition of Forage-Fed Cattle, Room 140.  
9:00 a.m. **ARPAS Exams**, Convention Complex Board Room.  
10:00 a.m. **Ruminant Nutrition II**, Nutrition of Feedlot Cattle, Room 140.  
10:15 a.m. **Extension - Swine II**, Swine Management, Room 142.  
10:45 a.m. **Extension - Dairy II**, Management Programs, Room 146.  
11:30 a.m. **Box Lunch** – Convention Complex, Exhibit Hall.

A box lunch will be served in the Exhibit Hall for those individuals who ordered and paid for it on the registration form. (Ticket will be with badge). There will be a limited number of box lunches available for purchase in the Exhibit Hall for those individuals who did not order a lunch in advance. The box lunches for sale will be on a first-come basis.

## Tuesday, March 22 P.M.

1:00 p.m. **Animal Behavior, Housing and Well-Being I**, Room 138.  
**Breeding and Genetics II; Growth, Development, Muscle Biology, and Meat Science I**, Application of Biotechnology in Animal Production, Room 140.  
**Nonruminant Nutrition III; Odor and Nutrient Management I**, Impact and Implications of Low Nutrient Excretion Diets in the Pork Industry, Room 204AB.  
**Nonruminant Nutrition IV**, Nutrition of Weanling Pigs, Room 205IJ.  
**Physiology III**, Reproductive Physiology, Room 134.  
**Ruminant Nutrition III; Extension - Beef II; Extension - Dairy III**, Effective Use of Ethanol Co-Products in Ruminant Diets, Room 204FG.  
**Teaching I**, Helping Students Learn Outside the Classroom, Room 136.  
2:00 p.m. **ARPAS Exams**, Convention Complex Board Room.

- 2:45 p.m. **Teaching II**, Teaching and Career Development, Room 136.  
 4:30 p.m. **Poster presentations**, Convention Complex Exhibit Hall, Room 206  
 5:00 p.m. **Career Fair**, Convention Complex Exhibit Hall  
 6:00 p.m. **Reception**, Convention Complex Exhibit Hall, Room 206

### **Wednesday, March 23 A.M.**

- 6:45 a.m. **ASAS/ADSA Breakfast, Awards Program and Business Meeting**, Courtesy of Cargill Animal Health, Land O'Lakes Feed, Purina Feed LLC, Milk Products, Inc., and VetLife. Convention Complex Exhibit Hall.  
 9:00 a.m. **Breeding and Genetics III**, Molecular and Quantitative Genetics, Room 144.  
**Extension - Dairy IV**, University Updates, Room 146.  
**Growth, Development, Muscle Biology, and Meat Science II**, Pork and Beef Quality, Room 138.  
**Nonruminant Nutrition V**, Additives and Gut Modifiers, Room 204AB.  
**Nonruminant Nutrition VI**, Energy and Fiber, Room 205IJ.  
**Nonruminant Nutrition VII**, Breeding Herd Nutrition, Room 140.  
**Odor and Nutrient Management II**, Room 136.  
**Ruminant Nutrition IV**, Co-Products and Nontraditional Feeds, Room 134.  
**Ruminant Nutrition V**, Nutrition of Dairy Cattle, Room 142.  
 12:00 p.m. **ADSA/ASAS MW Board of Directors Meeting**, Renaissance Savery Hotel.

### **Poster Schedule**

All posters will be on display in the Convention Complex, Exhibit Hall, Room 206 from Monday, 1:00 p.m. until Wednesday, Noon. See each session to find out when authors are to be present.

#### **Animal Behavior, Housing and Well-Being II**

All authors present on Tuesday, March 21 from 4:30 to 6:00

#### **Extension - Beef III**

All authors present on Monday, March 21 from 4:30 – 6:00

#### **Nonruminant Nutrition VIII**

All authors present on Monday, March 21 from 4:30 – 6:00

#### **Ruminant Nutrition VI**

All authors present on Monday, March 21 from 4:30 – 6:00

#### **Breeding and Genetics IV**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Extension - Dairy V**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Growth and Development, Muscle Biology and Meat Science III**

All authors present on Tuesday, March 22 from 4:30-6:00

#### **Nonruminant Nutrition IX**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Odor and Nutrient Management III**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Ruminant Nutrition VII**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Extension - Swine III**

All authors present on Tuesday, March 22 from 4:30 – 6:00

#### **Teaching III**

All authors present on Tuesday, March 22 from 4:30 – 6:00



# A SPECIAL THANK YOU

From the Midwestern Section of the American Society of Animal Science and the Midwest Branch of the American Dairy Science Association for support of the 2005 meeting to the following companies:

## **Outstanding Young Scientist Awards**

Extension - Land O'Lakes, Purina Feed, LLC  
Research - DSM Nutritional Products, Inc.  
Teaching - ADM Alliance Nutrition, Inc.

## **National Pork Board Swine Innovation (Abstract) Awards**

Research - National Pork Board  
Research - National Pork Board  
Education - National Pork Board

## **Innovation in Dairy Research Award**

Land O'Lakes, Purina Feed, LLC

## **Agribusiness Award**

ExSeed Genetics

## **Student Competition Paper Awards**

Graduate M.S. - DeKalb Feeds, Inc.  
Graduate Ph.D. - Akey  
Undergraduate - Boehringer Ingelheim Vetmedica, Inc.

## **Academic Quadrathlon**

Intervet, Inc.  
Iowa State University

## **Breakfast (Wednesday)**

Cargill Animal Nutrition  
Land O'Lakes, Purina Feed, LLC  
Milk Products, Inc.  
VetLife

## **Cyber Café & Placement Center**

Cargill Animal Nutrition  
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## **Abstract Book**

Diamond V Mills, Inc.  
Fort Dodge Animal Health

## **Program Sponsor**

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## **Poster Sponsor**

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## **Career Fair**

ABS Global  
Elanco Animal Health  
Land O'Lakes Purina Feed, LLC

**Refreshment Breaks**

Pioneer Hi-Bred International

**David H. Baker Symposium**

David H. Baker Appreciation Club

**Billy N. Day Symposium**

Billy N. Day Appreciation Club

**Symposium: Feeding Beef Cattle for High Quality Markets**

Certified Angus Beef, NCR-87, and NCR-206

**Ruminant Nutrition, Extension-Beef, Extension-Dairy**

**Symposium: Effective Use of Ethanol Co-Products**

**in Ruminant Diets**

Dakota Gold Research Association, Iowa Corn Promotion Board, and NC-1020

**Nonruminant Nutrition, Odor and Nutrient Management**

**Symposium: Impact and Implications of Low Nutrient Excretion**

**Diets in the Pork Industry**

National Pork Board

The Kent Group

**Nonruminant Nutrition Session**

Alltech

Hubbard Feeds, Inc.

**Ruminant Nutrition Session**

Alltech

**Swine Session**

Ajinomoto Heartland, Inc.

National Pork Board

Omega Nutrition

Pig Improvement Company, Inc.

**General Meeting**

Agri-Nutrition Services

American Angus Association

Babcock Genetics, Inc.

BASF Corporation Animal Nutrition

DSM Nutritional Products, Inc.

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Hormel Foods Corporation

ILC Resources

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Saf Agri

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## **Silver Level**

ADM Alliance Nutrition, Inc.  
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Feedstuffs Newspaper  
Fort Dodge Animal Health  
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Intervet, Inc.  
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Iowa State University  
Kemin Americas, Inc.  
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United Feeds, Inc.  
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Zinpro

## **Bronze Level**

ABS Global  
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Babcock Genetics, Inc.  
BASF Corporation Animal Nutrition  
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ExSeed Genetics  
Hormel Foods Corporation  
ILC Resources  
International Ingredient Corporation  
Milk Products, Inc.  
Omega Nutrition  
Pig Improvement Company, Inc.  
Ralco-Mix Products

## **PREPARATION GUIDELINES FOR ORAL PRESENTATIONS — LCD**

### **NOTE:**

**Program and session chairs must load power point slides via discs in advance.**

### **If You Checked LCD Presentation:**

1. Your session chair will ask you to submit your Microsoft PowerPoint presentation electronically in advance of the meeting so he has sufficient time to load the laptop computer.
2. If your session chair does not require pre-meeting submission, then you must bring your Microsoft PowerPoint (version 97) presentation on a 3.5" diskette that is labeled with: your name, day and time of session, abstract number, time of presentation, title of file, version of software and your location and phone number during the Midwest meeting.
3. This properly labeled disc must be brought to the PowerPoint presentation room by:
  - Monday, March 21 by 11:00 a.m. for Monday afternoon presentations.**
  - Monday, March 21 by 4:00 p.m. for Tuesday morning presentations.**
  - Tuesday, March 22 by 8:00 a.m. for Tuesday afternoon presentations.**
  - Tuesday, March 22 by 12:00 noon for Wednesday morning presentations.**
4. Your program and session chair will be loading **all PowerPoint presentations in advance**. Personal laptops will NOT be permitted for use during sessions; a computer and LCD projector will be provided in each room.

## **POSTER SESSIONS**

All posters will be in the Convention Complex, Exhibit Hall, Room 206 from Monday 1:00 p.m. until Wednesday, Noon. See each session to find out when authors are to be present.

### **POSTERS PRESENTED**

Monday, March 21 - 4:30 - 6:00 PM  
Tuesday, March 22 - 4:30 - 6:00 PM

# SCIENTIFIC SESSIONS

Monday, March 21, 2005

## Afternoon Sessions

### David H. Baker Amino Acid Symposium Nonruminant Nutrition I

Sponsored by: David H. Baker Appreciation Club

Room: 204AB

1:00–4:30

Chair: Doug Webel, United Feeds Inc., Sheridan, IN

- 1:00 122 (Invited) Implications of intestinal microbiota on protein nutrition. A. G. Van Kessel\* and B. P. Willing, University of Saskatchewan.
- 1:40 123 (Invited) Approaches to estimation of nutrient requirements using broken-line regression analysis. K. Robbins\*<sup>1</sup>, A. Saxton<sup>1</sup>, and L. Southern<sup>2</sup>, <sup>1</sup>University of Tennessee, <sup>2</sup>Louisiana State University.
- 2:15 124 Free muscle amino acid concentration in growing pigs fed diets containing crystalline amino acids as partial replacement for protein-bound amino acids. F. Guay, J. B. Moore, and N. L. Trottier\*, Michigan State University.
- 2:30 Break
- 2:50 (Invited) S-Methylmethionine: An update. D. H. Baker, University of Illinois.
- 3:05 125 (Invited) Trials and tribulations utilizing supplemental amino acids in poultry and swine Diets. B. J. Kerr, USDA-ARS-SOMMRU.
- 3:45 126 Effect of increasing dietary crude protein concentration on growth performance and serum insulin-like growth factor-I concentration in growing-finishing barrows and gilts. R. Fischer\* and P. Miller, University of Nebraska.
- 4:00 127 Ideal amino acid formulation in gestation diets to improve gestation and subsequent lactation performance of sows. F. Ji<sup>1</sup>, G. Wu<sup>2,1</sup>, M. F. Miller<sup>1</sup>, and S. W. Kim\*<sup>1</sup>, <sup>1</sup>Texas Tech University, <sup>2</sup>Texas A&M University.
- 4:15 Discussion

### Undergraduate Student Competitive Research Papers

Sponsored by: Boehringer Ingelheim Vetmedica, Inc.

Room 205IJ

1:30–4:15

Chair: Paul Walker, Illinois State University, Normal

- 1:30 278 Comparison of muscle mass and muscle cell characteristics at different stages of growth in lines of mice divergently selected for heat loss. L. Johnson\*, J. Scheffler, T. Jones, D. Beermann, S. Jones, and M. Nielsen, University of Nebraska.
- 1:45 279 The interaction of dietary CLA and fat source on triglyceride turnover in adipose tissue of mice. T. J. Hadenfeldt\*, K. M. Hargrave, and J. L. Miner, University of Nebraska.
- 2:00 280 Epithelial cells and immune signaling: Effect of pathogenic and non-pathogenic bacteria on polarized chemokine secretion from pig jejunal epithelial cells. J. Allen\*, K. Skjolaas-Wilson, and J. Minton, Kansas State University.

- 2:15 281 Effect of phosphorus intake on bone mineral status of feedlot cattle. J. Holmes\*, G. Erickson, T. Klopfenstein, and B. Geisert, University of Nebraska.
- 2:30 282 Effect of age on antioxidant activity in muscle and identification of iron regulatory proteins in liver of cattle. A. M. Meyer\*, G. M. Hill, J. E. Link, and M. J. Rincker, Michigan State University.
- 2:45 Break
- 3:00 283 Effect of pasteurization of colostrum on serum immunoglobulin concentrations and health of bull calves. K. Shuster\*, L. Davis, L. Chapin, J. Liesman, M. VandeHaar, and M. Weber Nielsen, Michigan State University.
- 3:15 284 Effect of weaning age and commingling on behavior of pigs in a wean-to-finish facility. S. C. Sears\*, M. E. Davis, J. K. Apple, C. V. Maxwell, and Z. B. Johnson, University of Arkansas.
- 3:30 285 Lactose and specialty protein sources influence flow ability of starter diets. E. E. Carney\*, C. N. Groesbeck, R. D. Goodband, M. D. Tokach, S. S. Dritz, and J. L. Nelsens, Kansas State University.
- 3:45 286 Inhibition of methanogenesis in free living vs. protozoa-associated ruminal methanogens. K. Behlke\*<sup>1</sup>, E. Behlke<sup>1</sup>, P. Robinson<sup>1</sup>, J. Takacs<sup>1</sup>, R. Dumitru<sup>1</sup>, S. Ragsdale<sup>1</sup>, P. Newsome<sup>2</sup>, and J. Miner<sup>1</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>PharmAgra Labs, Inc.
- 4:00 287 Economics of early and traditional weaning on cow performance and bull and steer calf performance. M. Bartlett\*, E. Koch, M. Dikeman, J. Brethour, T. Marston, and J. Unruh, Kansas State University.

### **Graduate Student Competitive Research Papers**

#### **M.S. Division**

Sponsored by: DeKalb Feeds, Inc.

Room: 204FG

2:00–4:30

Chair: Sam Baidoo, University of Minnesota, Waseca

- 2:00 89 Effects of dried distillers grains on heifer consumption of low or high quality forage. S. Morris\*, T. Klopfenstein, and D. Adams, University of Nebraska-Lincoln.
- 2:15 90 Effect of melengestrol acetate (MGA) as an alternative to induce molting on egg quality. J. M. Koch\*<sup>1</sup>, J. S. Moritz<sup>1</sup>, D. C. Lay Jr.<sup>2</sup>, and M. E. Wilson<sup>1</sup>, <sup>1</sup>West Virginia University, <sup>2</sup>USDA-ARS LBRU.
- 2:30 91 Impact of feeding distillers grains on beef tenderness and sensory traits. D. L. Roeber, R. K. Gill\*, and A. DiCostanzo, University of Minnesota.
- 2:45 92 Developmental potential of porcine nuclear transfer embryos using non-differentiated donor cells. K. Lee\*<sup>1</sup>, W. L. Fodor<sup>2</sup>, and Z. Machaty<sup>1</sup>, <sup>1</sup>Purdue University, <sup>2</sup>University of Connecticut.
- 3:00 93 The relationship between mitochondrial function and feed efficiency in cross-bred Angus steers. W. H. Kolath\*, M. S. Kerley, and J. W. Golden, University of Missouri.
- 3:15 Break
- 3:30 94 Endocrine and follicular dynamics in beef heifers divergently selected for peripheral IGF-I concentrations. D. Dauch\*, K. Fike, M. Mussard, G. Bridges, C. Gasser, D. Grum, M. Davis, and M. Day, Ohio State University.
- 3:45 95 **NATIONAL PORK BOARD RESEARCH AWARD** - Effects of a high fiber diet and frequent feeding on the behavior, reproductive performance, and nutrient balance of gestating sows. J. Holt\*, L. Johnston, S. Baidoo, and G. Shurson, University of Minnesota.

- 4:00 96 Highly fermentable sugars and slow-release urea in diets fed to lactating dairy cows. G. Golombeski\*, K. Kalscheur, A. Hippen, and D. Schingoethe, South Dakota State University.
- 4:15 97 Effect of corn hybrid and processing method on digestibility. M. Luebbe\*<sup>1</sup>, G. Erickson<sup>1</sup>, T. Klopfenstein<sup>1</sup>, and W. Fithian<sup>2</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>J. C. Robinson Seed Co.

**Extension-Swine I  
Symposium: Sow Longevity**

Room: 138

2:00–4:30

Chair: Steve Moeller, Ohio State University, Columbus

- 2:00 81 Review of factors influencing sow longevity. K. Stalder\*, T. Serenius, M. Knauer, B. Mote, T. Baas, and J. Mabry, Iowa State University.
- 2:25 Impacts of improved gilt development and segregated parity management on sow longevity: Research to reality. G. Foxcroft, University of Alberta.
- 2:50 Sow Mortality and Health Aspects of Longevity. D. Reeves, University of Georgia.
- 3:15 82 Sow longevity: Culling decisions based on economics or welfare? A. Johnson, National Pork Board.
- 3:40 83 Genetics of sow longevity. T. Serenius\* and K. J. Stalder, Iowa State University.
- 4:05 Roundtable discussion and identification of research priorities for the future.

**Tuesday, March 22, 2005  
Morning Sessions**

**Breeding and Genetics I  
Applied Animal Breeding and Genetics**

Room: 144

8:00–11:30

Chair: Ken Stalder, Iowa State University, Ames

- 8:00 16 Growth and carcass traits in crossbred cattle from Hereford, Angus, Norwegian Red, Swedish Red and White, Friesian, and Wagyu maternal grandsires. E. Casas\* and L. V. Cundiff, USDA-ARS, U.S. Meat Animal Research Center.
- 8:15 17 Selection for an index of placental efficiency and litter size in swine. H. Mesa, T. J. Safranski, K. M. Cammack, and W. R. Lamberson\*, University of Missouri.
- 8:30 18 Heritability estimate for bilateral ovulation in heifers. G. D. Snowder\*, R. A. Cushman, M. F. Allan, R. M. Thallman, and S. E. Echterkamp, USDA-ARS, U.S. Meat Animal Research Center.
- 8:45 19 Realized difference among daughters of Holstein sires for milk yield and composition after four generations of selection for high and average fat plus protein yield. P. J. Berger\*, M. H. Healey, and A. E. Freeman, Iowa State University.

|       |    |   |
|-------|----|---|
| 9:00  | 20 | Selection for intramuscular fat in Duroc swine. C. Schwab* <sup>1</sup> , T. Baas <sup>1</sup> , K. Stalder <sup>1</sup> , and D. Newcom <sup>2</sup> , <sup>1</sup> Iowa State University, <sup>2</sup> Genetic Improvement Services.  |
| 9:15  | 21 | Adjustment of age of dam effects for yearling gain data in Angus field records. A. Hassen* and D. E. Wilson, Iowa State University.   |
| 9:30  | 22 | Reproduction and maternal performance of F1 cross females sired by Hereford, Angus, Norwegian Red-Swedish Red and White, Friesian and Wagyu sires. L. V. Cundiff, USDA, ARS, U.S. Meat Animal Research Center.  |
| 9:45  | 23 | Indirect estimation of genetic trends for carcass traits in beef cattle. J. D. Stroh* <sup>1</sup> , M.L.M. Vuorisalmi <sup>1</sup> , L. V. Cundiff <sup>2</sup> , and L. D. Van Vleck <sup>2</sup> , <sup>1</sup> University of Nebraska, <sup>2</sup> ARS, USDA, U.S. Meat Animal Research Center.                                    |
| 10:00 |    | Break   |
| 10:15 | 24 | Three designs for estimating variances due to competition genetic effects. L. D. Van Vleck, ARS, USDA, U. S. Meat Animal Research Center.   |
| 10:30 | 25 | Estimates of genetic parameters for yield traits and SCS for cows treated or not treated with Bovine somatotropin. A. Al-Seaf* <sup>1</sup> , K. J. Hanford <sup>1</sup> , J. F. Keown <sup>1</sup> , and L. D. Van Vleck <sup>2</sup> , <sup>1</sup> University of Nebraska, <sup>2</sup> ARS, USDA, U.S. Meat Animal Research Center. |
| 10:45 | 26 | Biological efficiency in beef cattle: A comparison of weight of cow maintained to adjusted 205-day calf weaning weight. S. Anderson* and J. Cassidy, North Carolina State University.   |
| 11:00 | 27 | Genetic parameters for growth of young dual purpose Simmental bulls using random regression. M Kaps* <sup>1</sup> and W Lamberson <sup>2</sup> , <sup>1</sup> University of Zagreb, <sup>2</sup> University of Missouri.  |
| 11:15 | 28 | Prenatal mortality throughout gestation in lines of pigs selected for either ovulation rate or uterine capacity. B. A. Freking*, K. A. Leymaster, R. K. Christenson, and J. L. Vallet, USDA-ARS, U.S. Meat Animal Research Center.  |

## **Graduate Student Competitive Research Papers**

### **Ph.D. Division**

Sponsored by: Akey

Room: 205IJ

9:00–11:30

Chair: Sam Baidoo, University of Minnesota, Waseca

|       |     |  |
|-------|-----|--|
| 9:00  | 98  | Apparent and true ileal amino acid and energy digestibility and weaning pig performance of five sources of distillers dried grains with solubles. N. D. Fastinger* and D. C. Mahan, Ohio State University.   |
| 9:15  | 99  | Evaluation of various sources of corn distillers dried grains plus solubles (DDGS) for lactating dairy cattle. D. H. Kleinschmit*, D. J. Schingoethe, K. F. Kalscheur, and A. R. Hippen, South Dakota State University.  |
| 9:30  | 100 | Effects of orally administered 25-hydroxyvitamin D <sub>3</sub> and vitamin E on calcium and vitamin D metabolites in plasma and on vitamin D metabolites in beef <i>longissimus dorsi</i> muscle. K. M. Carnagey*, A. E. Wertz, T. J. Knight, R. L. Horst, E. J. Huff-Lonergan, A. H. Trenkle, and D.C. Beitz, Iowa State University. |
| 9:45  | 101 | Influence of finisher facilities on growth performance. D. B. Edwards*, M. E. Doumit, C. W. Ernst, and R. O. Bates, Michigan State University.   |
| 10:00 |     | Break  |
| 10:15 | 102 | Inflammatory cytokines differentially modulate the adiponectin receptors 1   |



- and 2 in pig subcutaneous adipocytes. S. Jacobi\* and M. Spurlock, Purdue University.
- 10:30 103 Effect of level of wet distillers grains on feedlot performance of finishing cattle and energy value relative to corn. K. Vander Pol\*, G. Erickson, T. Klopfenstein, and M. Greenquist, University of Nebraska.
- 10:45 104 Effects of feeding polyclonal antibody preparations against *Streptococcus bovis* and *Fusobacterium necrophorum* on target bacteria and rumen fermentation patterns of steers fed high-grain diets. N. DiLorenzo\*, G. I. Crawford, F. Diez-Gonzalez, and A. DiCostanzo, University of Minnesota.
- 11:00 105 Evaluation of the threonine to valine requirement ratio for lactating sows.. K. Soltwedel\*<sup>1</sup>, V. Perez<sup>1</sup>, D. Fernandez<sup>2</sup>, J. Cuaron<sup>3</sup>, and J. Pettigrew<sup>1</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>Universidad Nacional Autonoma de Mexico, <sup>3</sup>Instituto Nacional de Investigaciones Forestales Agricolas y Pecuarias.
- 11:15 106 Effect of conjugated linoleic acid and/or a specific  $\Delta 6$ -desaturase inhibitor on body composition of mice. K. M. Hargrave\*<sup>1</sup>, M. J. Azain<sup>2</sup>, M. G. Obukowicz<sup>3</sup>, and J. L. Miner<sup>1</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>University of Georgia, <sup>3</sup>Pfizer Global Research and Development.

### Extension-Beef I

#### Symposium: Feeding Beef Cattle for High Quality Markets

Sponsored by: Certified Angus Beef, NCR-87, and NCR-206

Room: 138

8:00–noon

Chair: Greg Lardy, North Dakota State University, Fargo

- 8:00 Welcome, G. Lardy, North Dakota State University
- 8:05 58 (Invited) Early weaning and feedlot strategies to produce quality beef. L. Berger, University of Illinois.
- 8:40 59 (Invited) Managing the Health Status of Early Weaned Calves. S. Loerch\* and F. Fluharty, Ohio State University.
- 9:15 Break
- 9:30 60 (Invited) Creep feeding calves to produce quality beef. D. B. Faulkner, University of Illinois.
- 10:05 61 (Invited) Applying weaning management strategies in beef production systems. D. C. Adams\* and L. A. Stalker, University of Nebraska.
- 10:45 62 Economic effect of post-weaning disease on feedlot gain and carcass traits.. W. D. Busby<sup>1</sup>, P. Beedle<sup>1</sup>, D. Strohhahn<sup>1</sup>, J. F. Stika\*<sup>2</sup>, and L. R. Corah<sup>2</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Certified Angus Beef LLC.
- 11:00 63 Effect of disposition on feedlot gain and quality grade. W. D. Busby\*<sup>1</sup>, P. Beedle<sup>1</sup>, D. Strohhahn<sup>1</sup>, L. R. Corah<sup>2</sup>, and J. F. Stika<sup>2</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Certified Angus Beef LLC.
- 11:15 Panel Discussion

### Extension-Dairy I

#### Symposium: Avoiding Untimely Cow Losses

Room: 146

8:00–10:30

Chair: Alvaro Garcia, South Dakota State University, Brookings

- 8:00 70 Increasing cow stayability in dairy herds. K. Weigel, University of Wisconsin.
- 8:35 71 Nutritional Impacts on Culling. M. Hutjens, University of Illinois.

- 9:10 72 Managing Cows to Minimize Culling. J. D. Olson, Pfizer Animal Health.  
 9:45 73 Timing of the Culling Event. R. Cady\*<sup>1</sup>, S. Godden<sup>2</sup>, and S. Stewart<sup>2</sup>,  
<sup>1</sup>Monsanto, <sup>2</sup>University of Minnesota.

**Extension-Dairy II  
 Management Programs**

Room 146  
 10:45–12:00

Chair: Paul Fricke, University of Wisconsin, Madison

- 10:45 74 Trends in dairy heifer supply and culling rates in the US. M. Schutz, Purdue University.  
 11:00 75 Silo-King<sup>®</sup> enhances the storage life and digestibility of wet distillers grains. D. Spangler, S. Gravert, G. Ayangbile, and D. Casper\*, Agri-King, Inc.  
 11:15 76 Efficacy of on-farm pasteurized waste milk systems on dairy and custom calf rearing operations. M. A. Jorgensen\*<sup>1</sup>, P. C. Hoffman<sup>1</sup>, and A. J. Nytes<sup>2</sup>,  
<sup>1</sup>University of Wisconsin, <sup>2</sup>Vita Plus Corp.  
 11:30 77 Using Ovsynch as a model to test the relationship between time of AI and time of ovulation in lactating dairy cows. R. Pursley, Michigan State University.  
 11:45 78 Response of heat stressed lactating dairy cattle fed dried seaweed meal. B. Cvetkovic\*, M. Brouk, and J. Shirley, Kansas State University.

**Nonruminant Nutrition II  
 Proteins and Amino Acids**

Sponsored by: Hubbard Feeds, Inc.

Room: 204AB  
 8:00–12:00

Chair: Terry Meyer, Hubbard Feeds, Inc., Mankato, M,  
 and Dan Nelson, Land O'Lakes, Inc., St. Paul, MN

- 8:00 143 Effect of dietary crude protein versus crystalline amino acids on growth performance and serum insulin-like growth factor-I concentration in growing-finishing gilts. R. Fischer\* and P. Miller, University of Nebraska.  
 8:15 144 Evaluation of high synthetic lysine diets for 30-52 kg growing gilts reared under commercial conditions. A. M. Gaines\*<sup>1</sup>, B. W. Ratliff<sup>1</sup>, P. Srichana<sup>1</sup>, G. L. Allee<sup>1</sup>, J. L. Ustry<sup>2</sup>, G. F. Yi<sup>3</sup>, C. D. Knight<sup>3</sup>, and K. R. Perryman<sup>3</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Ajinimoto Heartland, LLC, <sup>3</sup>Novus International, Inc.  
 8:30 145 Efficacy of liquid DL-methionine hydroxy analog free acid and DL-methionine as methionine sources for pigs. B. G. Kim<sup>1</sup>, M. D. Lindemann\*<sup>1</sup>, G. L. Cromwell<sup>1</sup>, and M. Rademacher<sup>2</sup>, <sup>1</sup>University of Kentucky, <sup>2</sup>Degussa AG.  
 8:45 146 The optimal true ileal digestible (TID) lysine and total sulfur amino acid (TSAA) requirement for finishing pigs fed Paylean<sup>®</sup>. N. Z. Frantz\*, M. D. Tokach, R. D. Goodband, S. S. Dritz, J. M. DeRouchey, J. L. Nelssen, and C. L. Jones, Kansas State University.  
 9:00 147 Evaluation of the true ileal digestible (TID) total sulfur amino acid (TSAA) to lysine ratio for finishing pigs weighing 33 to 60 kg.. K. R. Lawrence\*, C. N. Groesbeck, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. M. DeRouchey, J. L. Nelssen, and C. R. Neill, Kansas State University.

- 9:15 148 True ileal digestible (TID) isoleucine:lysine ratio of late-finishing barrows fed corn-blood cell or corn-amino acid diets. S.X. Fu\*<sup>1</sup>, D.C. Kendall<sup>1</sup>, R. W. Fent<sup>1</sup>, G. L. Allee<sup>1</sup>, and J. L. Usry<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Ajinomoto Heartland LLC.
- 9:30 149 Effects of protein source on true ileal digestible (TID) isoleucine: lysine ratio in late-finishing barrows. S. X. Fu\*<sup>1</sup>, R. W. Fent<sup>1</sup>, P. Srichana<sup>1</sup>, G. L. Allee<sup>1</sup>, and J.L. Usry<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Ajinomoto Heartland LLC.
- 9:45 150 Evaluation of the true ileal digestible (TID) tryptophan requirement for late nursery pigs fed high L-lysine HCl diets. R. W. Fent\*, A. M. Gaines, S.X. Fu, B. W. Ratliff, P. Srichana, and G. L. Allee, University of Missouri.
- 10:00 Break
- 10:15 151 Body weight has no effect on the threonine requirement in growing pigs. J. van Milgen\*<sup>1</sup>, J. Noblet<sup>1</sup>, and L. Le Bellego<sup>2</sup>, <sup>1</sup>INRA - UMR VP, <sup>2</sup>Ajinomoto Eurolysine SAS.
- 10:30 152 The optimal true ileal digestible (TID) lysine and threonine requirement for finishing pigs from 36 to 60 and 77 to 105 kg. N. Z. Frantz\*<sup>1</sup>, M. D. Tokach<sup>1</sup>, S. S. Dritz<sup>1</sup>, J. L. Usry<sup>2</sup>, R. D. Goodband<sup>1</sup>, J. M. DeRouchey<sup>1</sup>, J. L. Nelssen<sup>1</sup>, and C. L. Jones<sup>1</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>Ajinomoto-Heartland LLC.
- 10:45 153 True digestibility of amino acids in raw and heat-treated soy products: comparison of values obtained with cannulated pigs, cecectomized roosters, and an *in vitro* IDEA™ assay. C. Schasteen<sup>1</sup>, J. Wu\*<sup>1</sup>, G. Yi<sup>1</sup>, C. Knight<sup>1</sup>, C. Parsons<sup>2</sup>, J. Li<sup>3</sup>, and D. Li<sup>3</sup>, <sup>1</sup>Novus International, Inc., <sup>2</sup>University of Illinois, <sup>3</sup>Ministry of Agriculture Feed Industry Center.
- 11:00 154 Effects of increasing meat and bone meal on finishing pig growth performance. R. O. Gottlob\*, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, S. S. Dritz, J. L. Nelssen, C. W. Hastad, K. R. Lawrence, and C. N. Groesbeck, Kansas State University.
- 11:15 155 Portal appearance of amino acids in growing pigs fed diets containing crystalline amino acids as partial replacement for protein-bound amino acids. R. Tabet\*<sup>1</sup>, B. J. Kerr<sup>2</sup>, J. T. Yen<sup>3</sup>, J. B. Moore<sup>1</sup>, and N. L. Trotter<sup>1</sup>, <sup>1</sup>Michigan State University, Department of Animal Science, <sup>2</sup>USDA National Swine Research Information Center, <sup>3</sup>USDA Meat Animal Research Center.
- 11:30 156 Enzyme-based protein digestibility (IDEA™) assay accurately predicts poultry *in vivo* Lysine digestibility for Distiller's Dried Grain and Solubles (DDGS). C. Schasteen\*<sup>1</sup>, J. Wu<sup>1</sup>, and C. Parsons<sup>2</sup>, <sup>1</sup>Novus International, Inc., <sup>2</sup>University of Illinois.
- 11:45 157 Effectiveness of *in vitro* procedures to estimate CP and amino acid digestibility coefficients in dried distillers grain with solubles by growing pigs. C. Pedersen\*, A. Pahn, and H. H. Stein, South Dakota State University.

### Billy N. Day Symposium

#### Physiology I: Gamete and Embryo Technologies for Pork Production

Sponsored by: Billy N. Day Appreciation Club

Room: 136

8:00–12:00

Chair: Duane L. Davis, Kansas State University, Manhattan

- 8:00 Symposium Introduction, D. L. Davis, Kansas State University.
- 8:15 219 **(Invited)** The status of swine *in vitro* embryo production. H. Funahashi, Okayama University.
- 9:00 220 **(Invited)** Outlook for the preselection of sex in pigs. J. M. Vazquez\*, I. Parrilla, J. Roca, and E.A. Martinez, University of Murcia.

- 9:45 Discussion Session  
 10:00 Break  
 10:15 221 **(Invited)** Germ cell transplantation in the pig: Status and possibilities. I. Dobrinski, University of Pennsylvania.  
 11:00 222 **(Invited)** Status of cloning in swine. I. Polejaeva, ViaGen, Inc.  
 11:45 Discussion Session

## **Physiology II**

### **Growth Physiology: Muscle Development**

Room: 134

8:00–11:00

Chair: Robert Cushman, ARS-USDA, US Meat Animal Research Center,  
Clay Center, NE

- 8:00 223 **(Invited)** Satellite cell proliferation and differentiation. M. Doumit\*, N. Mesires, J. Scheffler, and E. Helman, Michigan State University.  
 8:45 224 **(Invited)** Gene expression during skeletal muscle growth and development. J. Reecy\* and D. Moody, Iowa State University.  
 9:30 225 **(Invited)** Manipulation of postnatal muscle mass by embryonic intervention. J. Killefer, University of Illinois.  
 10:15 226 **(Invited)** Production of IGF-I and its effects on muscle development. A. L. Grant, Purdue University.

## **Ruminant Nutrition I**

### **Supplementation and Nutrition of Forage-Fed Cattle**

Room: 140

8:00–9:45

Chair: Aimee Wertz, South Dakota State University, Brookings

- 8:00 242 Potential of Alimet® supplementation to improve growth and reproduction of beef heifers fed a forage diet. E. Venable\*<sup>1</sup>, M. Kerley<sup>1</sup>, B. Miller<sup>2</sup>, and M. Vazquez-Añon<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Novus International.  
 8:15 243 Effect of stocking rate and corn gluten feed supplementation on bred second-calf heifers grazing stockpiled tall fescue-red clover pastures during winter. R. Driskill, J. R. Russell, D. R. Strohhahn, D. G. Morrical. R. Driskill\*, J. R. Russell, D. R. Strohhahn, and D. G. Morrical, Iowa State University.  
 8:30 244 Supplementation of grazing Holstein steers with dried distiller's grains in combination with monensin. J. Lehmkuhler\*, A. Crooks, and D. Undersander, University of Wisconsin.  
 8:45 245 Effects of whole soybean supplementation and cow age on hay intake and digestion during late gestation. J. P. Banta\* and D. L. Lalman, Oklahoma State University.  
 9:00 246 Metabolite fluxes across splanchnic tissues in response to varying dietary protein in mature ewes consuming low quality forage. S. L. Archibeque\*, H. C. Freetly, and C. L. Ferrell, USDA-ARS; U.S. Meat Animal Research Center.  
 9:15 247 Moderately altering weight gain patterns of second parity cows through nutrition changes the time that feed resources are offered without any differences in production. H. C. Freetly\*, C. L. Ferrell, and T. G. Jenkins, USDA-ARS; U.S. Meat Animal Research Center.  
 9:30 248 Supplemental phosphorus removal for grazing Holstein steers. A. M. Brokman\*, J. W. Lehmkuhler, and D. J. Undersander, University of Wisconsin.

**Ruminant Nutrition II**  
**Nutrition of Feedlot Cattle**

Sponsored by: Alltech

Room: 140

10:00–12:00

Chair: Jeff Lehmkuhler, University of Wisconsin, Madison

- 10:00 249 Effect of Optaflexx on finishing steer performance, USDA Yield Grade, and USDA Quality Grade. E. R. Loe\*<sup>1</sup>, J. S. Drouillard<sup>1</sup>, T. J. Klopfenstein<sup>2</sup>, G.E. Erickson<sup>2</sup>, and B.D. Dicke<sup>3</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>University of Nebraska, <sup>3</sup>Cattlemen's Nutritional Services.
- 10:15 250 Relationship of feeding behavior to feed efficiency in crossbred Angus steers fed a no roughage diet. J. W. Golden\*, W. H. Kolath, and M. S. Kerley, University of Missouri.
- 10:30 93 The relationship between mitochondrial function and feed efficiency in crossbred Angus steers. W. H. Kolath\*, M. S. Kerley, and J. W. Golden, University of Missouri.
- 10:45 251 Degradable intake protein in finishing diets containing dried distillers grains. K. Vander Pol\*, G. Erickson, and T. Klopfenstein, University of Nebraska.
- 11:00 252 Effects of supply of excess amino acids on methionine utilization by growing steers. M. S. Awawdeh\*, E. C. Titgemeyer, G. F. Schroeder, and D. P. Gnad, Kansas State University.
- 11:15 253 Effect of intake restriction on diet digestion, ruminal fermentation, and passage rate by beef steers. J. H. Clark\*, K. C. Olson, T. B. Schmidt, D. O. Alkire, G. K. Rentfrow, C. C. Carr, D. L. McNamara, and E. K. Burger, University of Missouri.
- 11:30 254 Effects of intake restriction on energy balance and retention of N and P by beef steers. T. B. Schmidt\*, K. C. Olson, M. L. Linville, J. H. Clark, C. A. Stahl, D. L. McNamara, G. K. Rentfrow, and E. P. Berg, University of Missouri.
- 11:45 255 Effects of concentrate level of diet and pen configuration on performance and prevalence of *Escherichia coli* O157 in finishing goats. J. T. Fox\*, M. E. Corrigan, J. S. Drouillard, E. R. Loe, B. D. Depenbusch, and T. G. Nagaraja, Kansas State University.

**Extension-Swine II**  
**Swine Management**

Sponsored by: Omega Nutrition

Room: 142

10:15–11:00

Chair: Joel DeRouchey, Kansas State University, Manhattan

- 10:15 84 **NATIONAL PORK BOARD EDUCATION AWARD** - Needs assessment identifying educational opportunities in the show pig industry: A survey of packers. J. A. Sterle\* and C. T. Boleman, Texas A&M University.
- 10:30 85 Effect of piglet birth weight and weaning weight on nursery off-test weight. A. L. Smith\*, T. V. Serenius, K. J. Stalder, T. J. Baas, and J. W. Mabry, Iowa State University.
- 10:45 86 Implementation of recommendations made to livestock producers from a third-party site assessment. R. Mikesell\* and K. Kephart, Penn State University.

## Afternoon Sessions

### Animal Behavior, Housing, and Well-Being I

Room: 138

1:00–5:00

Chair: Jeanne Burton, Michigan State University, East Lansing

- 1:00 7 (Invited) Ovine phenotypic responses to endotoxin-induced acute inflammatory stress during fetal and adult development. N. Karrow\*, E. Courtney, H. Drake, and L. Kabaroff, University of Guelph.
- 1:45 8 (Invited) Brain measures and animal welfare. A. J. Zanella, Michigan State University.
- 2:30 9 Relative changes in gene expression in the frontal cortex and hippocampus of pigs (*Sus scrofa*) weaned at different ages. R. Poletto\*, J. P. Steibel, J. M. Siegford, and A. J. Zanella, Michigan State University.
- 2:45 10 Social factors affecting injuries, eating order, and lying patterns of sows in electronic sow feeders. M. L. Strawford\*<sup>1,2</sup>, Y. Z. Li<sup>1</sup>, and H. W. Gonyou<sup>1,2</sup>, <sup>1</sup>Prairie Swine Centre Inc., <sup>2</sup>University of Saskatchewan.
- 3:00 Break
- 3:15 11 Effect of body size and stall width on behavior of gestating sows. Y. Z. Li\* and H. W. Gonyou, Prairie Swine Centre Inc.
- 3:30 12 The effects of crowding on the performance of grower and finisher pigs on full and partial slat floors. H. W. Gonyou\*, T. A. Done, and Y. Z. Li, Prairie Swine Centre Inc.
- 3:45 13 The effects of housing grow-finish pigs at two different group sizes and space allocations. B. R. Street\*<sup>1,2</sup> and H. W. Gonyou<sup>1,2</sup>, <sup>1</sup>Prairie Swine Centre Inc., <sup>2</sup>University of Saskatchewan.
- 4:00 14 Impact of repeated out-of-feed events on growing pig performance. M. Brumm\* and S Colgan, University of Nebraska.
- 4:15 15 Evaluation of low input dairy farming systems by on-farm research, prototyping, and simulation modelling with emphasis on grazing management, seasonal calving, crossbreeding and outwintering. D. Johnson\*, E. Ballinger, J. Linn, M. Rudstrom, L. Hansen, A. Seykora, and B. Heins, University of Minnesota.
- 4:30 Panel Discussion

## Breeding and Genetics II

### Growth, Development, Muscle Biology, and Meat Science I Symposium: Application of Biotechnology in Animal Production

Room: 140

1:00–4:00

Chair: Yang Da, University of Minnesota, St. Paul, and  
Bryon Wiegand, Illinois State University, Normal

- 1:00 (Invited) Biological functions, meat and milk compositions of bovine clones. J. Yang, University of Connecticut.
- 1:45 (Invited) Application of microarray technologies in animal agriculture. J. Reecy, Iowa State University.
- 2:30 Break

- 2:45 29 (Invited) Bovine single nucleotide polymorphisms (SNPs) and their use in animal identification, parentage testing, and traceback. M. Heaton, USDA, ARS, U. S. Meat Animal Research Center.
- 3:30 (Invited) Molecular testing for pork traceability. M. Abrahamsen, University of Minnesota.

**Nonruminant Nutrition III, Odor and Nutrient Management I  
Symposium: Impact and Implications of Low Nutrient Excretion  
Diets in the Pork Industry**

Sponsored by: National Pork Board and The Kent Group

Room: 204AB

1:00–4:30

Chair: Scott Radcliffe, Purdue University, West Lafayette, IN

- 1:00 210 Impact of diet manipulation on nutrient excretion and air emissions - intensive studies. B. T. Richert\*, A. L. Sutton, A. P. Schinckel, J. S. Radcliffe, and A. J. Heber, Purdue University.
- 1:30 211 On-farm application of diet manipulation to reduce nutrient excretion. G. Allee, University of Missouri.
- 2:00 212 Using growth models to predict nutrient requirements and excretions. A. Schinckel\*, R. Hinson, A. Sutton, B. Richert, and S. Radcliffe, Purdue University.
- 2:30 Break
- 2:45 213 Economic impact of low nutrient excretion diets in pork production with policy implications. K. Foster\*, M. Echarnier, B. Richert, and A. Sutton, Purdue University.
- 3:15 Future nutrient issues affecting swine production. G. Hill, Michigan State University.
- 3:45 214 Acceptance and impact of environmentally friendly diets in Europe. M. W. A. Verstegen\* and A. J. A. Aarnink, Wageningen University.
- 4:15 Questions and discussion

**Nonruminant Nutrition IV  
Nutrition of Weanling Pigs**

Sponsored by: Hubbard Feeds, Inc.

Room: 205IJ

1:00–5:00

Chair: Ken Purser, Prince Agri Products, Inc., Quincy, IL,  
and Sam Baidoo, University of Minnesota, Waseca,

- 1:00 158 Effects of dietary nucleotides on intestinal morphology and microbial activity in newly weaned pigs. C. D. Mateo\*, D. N. Peters, R. I. Dave, A. Rosa, and H. H. Stein, South Dakota State University.
- 1:15 159 Evaluation of high synthetic amino acid inclusion and supplemental arginine in starter diets. B. W. Ratliff\*<sup>1</sup>, A. M. Gaines<sup>1</sup>, P. Srichana<sup>1</sup>, G. L. Allee<sup>1</sup>, and J. L. Usry<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Ajinomoto Hearland, LLC.
- 1:30 160 Determining the optimal lysine:calorie ratio for growth performance of 10 to 25 kg nursery pigs. J. D. Schneider\*, M. D. Tokach, S. S. Dritz, R. D. Goodband, J. L. Nelssen, and J. M. DeRouchey, Kansas State University.

- 1:45 161 Comparison of the relative bioefficacy of Alimet® feed supplement and DL-methionine in nursery pigs. A. M. Gaines\*<sup>1</sup>, G. F. Yi<sup>2</sup>, B. W. Ratliff<sup>1</sup>, P. Srichana<sup>1</sup>, G. L. Allee<sup>1</sup>, C. D. Knight<sup>2</sup>, and K. R. Perryman<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Novus International Inc.
- 2:00 162 Estimation of the ideal ratio of true ileal digestible sulfur amino acids:lysine in 12 to 24 kg pigs and comparison of methionine sources. A. M. Gaines<sup>1</sup>, G. F. Yi\*<sup>2</sup>, B. W. Ratliff<sup>1</sup>, P. Srichana<sup>1</sup>, G. L. Allee<sup>1</sup>, C. D. Knight<sup>2</sup>, and K. R. Perryman<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Novus International Inc.
- 2:15 163 Effects of feeding diets containing spray dried corn condensed distillers solubles and associated fractions to early-weaned pigs on intestinal morphology, immune status, circulating IGF-1 concentrations, and organ weights. J. Knott\*, G. Shurson, M. Hathaway, and L. Johnston, University of Minnesota.
- 2:30 164 Effects of feeding diets containing spray dried corn condensed distillers solubles (CDS) and associated fractions on growth performance of early-weaned pigs. J. Knott\*, G. Shurson, M. Hathaway, and L. Johnston, University of Minnesota.
- 2:45 165 Effect of lactose addition in 8 to 15 kg pigs reared under commercial conditions. P. Srichana\*, A. M. Gaines, B. W. Ratliff, and G. L. Allee, University of Missouri.
- 3:00 Break
- 3:15 166 Response of weanling pigs to declining energy intake when amino acid intake declines either in direct proportion to energy or at a reduced rate. T. F. Oresanya<sup>1,2</sup>, A. D. Beaulieu<sup>1</sup>, and J. F. Patience\*<sup>1</sup>, <sup>1</sup>Prairie Swine Centre Inc., <sup>2</sup>University of Saskatchewan.
- 3:30 167 Relative availability of phosphorus in feed phosphates by growing pigs. G. I. Petersen\*, C. Pedersen, and H. H. Stein, South Dakota State University.
- 3:45 168 Body P partitioning in pigs as influenced by dietary P regimen. T. S. Stahly\*, T. R. Lutz, D. R. Cook, B. C. Tooker, and J. Zamzow, Iowa State University.
- 4:00 169 Microarray analysis of the effects of phosphorus on gene expression in porcine muscle. A. Qu\*, L. Grapes, M. Rothschild, and C. Stahl, Iowa State University.
- 4:15 170 Effect of supplementing zinc oxide and biotin on growth performance and the stability of the intestinal flora in nursery pigs. H. Wilt\* and M. Carlson, University of Missouri.
- 4:30 171 Effect of supplementing zinc oxide and biotin with an oral dose of *Escherichia coli* on growth performance and stability of intestinal flora in nursery pigs. H. Wilt\* and M. Carlson, University of Missouri.
- 4:45 186 Inadequate diet mixing time greatly reduces nursery pig performance. C. N. Groesbeck\*, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and C. R. Neill, Kansas State University.

### Physiology III Reproductive Physiology

Room: 134

1:00–3:00

Chair: Richard Pursley, Michigan State University, East Lansing

- 1:00 227 Expression of vascular endothelial growth factor (VEGF) mRNA isoforms-120 and 164 are coordinately expressed during corpus luteum regression but appear differentially regulated after the LH surge in the bovine pre-



- ovulatory follicle. R. Ten Broeck\*, D. Clopton, R. Bott, and A. Cupp, University of Nebraska.
- 1:15 228 Comparison of circulating concentrations of vascular endothelial growth factor (VEGF) between cows gestating single and twin calves. S. Echterkamp\*<sup>1</sup>, K. Vonnahme<sup>2</sup>, and S. Ford<sup>2</sup>, <sup>1</sup>U.S. Meat Animal Research Center, <sup>2</sup>University of Wyoming.
- 1:30 229 Evaluation of ovulation rate and ovarian phenotype in puberal heifers from a cattle population selected for multiple births. R. A. Cushman\*, M. F. Allan, G. D. Snowder, R. M. Thallman, and S. E. Echterkamp, U.S. Meat Animal Research Center.
- 1:45 230 A 12 bp insertion/deletion (in/del) polymorphism in the secreted folate binding protein (sFBP) gene is associated with uterine capacity and ovulation rate in swine. J. L. Vallet\*, B. A. Freking, K. A. Leymaster, and R. K. Christenson, USDA, ARS, U.S. Meat Animal Research Center.
- 2:00 231 Physiological effects and semen quality changes in boars treated with PGF<sub>2α</sub>. A. de Grau\*<sup>1</sup>, A. Ruiz<sup>2</sup>, M. Wilson<sup>3</sup>, R. Friendship<sup>2</sup>, J. Ward<sup>1</sup>, and K. Rozeboom<sup>3</sup>, <sup>1</sup>Minitube Canada, <sup>2</sup>University of Guelph, <sup>3</sup>Minitube of America.
- 2:15 232 A method for the estimation of energy metabolic rate by oxygen consumption of broilers at different temperatures. Q. M. Yang\*<sup>1,2</sup>, S. K. Baidoo<sup>2</sup>, and Y. Z. Ma<sup>1</sup>, <sup>1</sup>Dept. of Anim. Sci., Shandong Agricultural University, <sup>2</sup>University of Minnesota.
- 2:30 92 Developmental potential of porcine nuclear transfer embryos using non-differentiated donor cells. K. Lee\*<sup>1</sup>, W. L. Fodor<sup>2</sup>, and Z. Machaty<sup>1</sup>, <sup>1</sup>Purdue University, <sup>2</sup>University of Connecticut.
- 2:45 94 Endocrine and follicular dynamics in beef heifers divergently selected for peripheral IGF-I concentrations. D. Dauch\*, K. Fike, M. Mussard, G. Bridges, C. Gasser, D. Grum, M. Davis, and M. Day, Ohio State University.

**Ruminant Nutrition III; Extension-Beef II; Extension-Dairy III  
Symposium: Effective Use of Ethanol Co-Products  
in Ruminant Diets**

Sponsored by: Dakota Gold Research Association, Iowa Corn Promotion Board, and NC-1020

Room: 204FG

1:00–4:45

Chair: Greg Lardy, North Dakota State University, Fargo

- 1:00 Welcome, G. Lardy, North Dakota State University
- 1:05 64 **(Invited)** Overview of the ethanol industry. M. Gibson, Dakota Gold Research Association.
- 1:35 65 **(Invited)** Ethanol industry coproducts: milling process, nutrient content, and variation. P. H. Robinson, University of California at Davis.
- 2:05 66 **(Invited)** Using ethanol industry coproducts in diets for forage-fed cattle. T. Klopfenstein\* and D. Adams, University of Nebraska.
- 2:35 Break
- 2:50 67 **(Invited)** Using distillers grains in diets for growing and finishing beef cattle. G. Erickson\* and T. Klopfenstein, University of Nebraska.
- 3:20 68 **(Invited)** Storage, ensiling, and handling wet ethanol coproducts. K. F. Kalscheur\* and A. D. Garcia, South Dakota State University.
- 3:50 69 **(Invited)** Using ethanol industry co-products in dairy rations. R. Kaiser, R. Shaver\*, and L. Armentano, University of Wisconsin.
- 4:20 Panel Discussion

**Teaching I**  
**Symposium: Helping Students Learn Outside the Classroom**

Room: 136

1:00–2:45

Chair: Curt Youngs, Iowa State University, Ames

- 1:00 273 **(Invited)** Using online tools as supplements in large lecture classes. D. W. Moser, Kansas State University.
- 1:35 274 **(Invited)** Using web-based tools in small enrollment discussion-type classes. M. Wattiaux, University of Wisconsin.
- 2:10 275 **(Invited)** Using case study format to teach applied dairy herd evaluation. L. Kilmer, Iowa State University.

**Teaching II**  
**Teaching and Career Development**

Room: 136

2:45–3:00

Chair: Curt Youngs, Iowa State University, Ames

- 2:45 276 Workshops used to provide animal science teaching materials to high school educators. K. Kephart, Penn State University.

**Wednesday, March 23, 2005**  
**Morning Sessions**

**Breeding and Genetics III**  
**Molecular and Quantitative Genetics**

Room: 144

9:00–12:15

Chair: Diane Moody, Iowa State University, Ames

- 9:00 41 Divergent selection for heat loss in mice: I. Responses in heat loss, feed intake and body weight during four generations of re-initiated selection. J. McDonald and M. Nielsen\*, University of Nebraska.
- 9:15 42 Divergent selection for heat loss in mice: II. Correlated responses in milk production and dam feed intake during lactation. J. McDonald\* and M. Nielsen, University of Nebraska.
- 9:30 43 Genetics of gene expression of the insulin signaling pathway in polygenic obesity. A. D. Ferrell\*<sup>1</sup>, M. F. Allan<sup>2</sup>, and D. Pomp<sup>1</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>USDA-ARS U.S. Meat Animal Research Center.
- 9:45 44 Exploring the effect of dietary phosphorous levels on gene expression in two lines of pigs using microarrays. L. Grapes\*, A. Qu, L. Hittmeier, M. Rothschild, and C. Stahl, Iowa State University.
- 10:00 45 A refined comparative map between porcine chromosome 3 and human chromosomes 2, 7 and 16. M. Mousel\*, D. Nonneman, and G. Rohrer, USDA-ARS, U.S. Meat Animal Research Center.
- 10:15 46 Effects of prion haplotype on growth and carcass traits in sheep. B. J. Isler\*,

- B. A. Freking, M. A. Heaton, R. M. Thallman, and K. A. Leymaster, USDA, ARS, U.S. Meat Animal Research Center.
- 10:30 47 Interval mapping of QTL for Marek's disease resistance with selective DNA pooling in crosses of commercial layer chicken lines. E. M. Heifetz\*<sup>1</sup>, J. E. Fulton<sup>2</sup>, N. O'Sullivan<sup>2</sup>, M. Soller<sup>3</sup>, and J. C. M. Dekkers<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Hy-Line Int., <sup>3</sup>The Hebrew University of Jerusalem.
- 10:45 Break
- 11:00 48 Marker to marker linkage disequilibrium in commercial chicken breeding populations. E. M. Heifetz\*<sup>1</sup>, J. E. Fulton<sup>2</sup>, N. O'Sullivan<sup>2</sup>, H. Zhao<sup>1</sup>, J. C. M. Dekkers<sup>1</sup>, and M. Soller<sup>3</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Hy-Line Int., <sup>3</sup>The Hebrew University of Jerusalem.
- 11:15 49 Discriminant analysis for multitrait quantitative trait loci detection in a Berkshire x Yorkshire F<sub>2</sub> population. H. Zhao\*<sup>1</sup>, H. Gilbert<sup>2</sup>, and J. C. M. Dekkers<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>INRA.
- 11:30 50 Determining inheritance and genetic cause of a polydactyl phenotype in pigs. B. Mote\*<sup>1</sup>, D. Rocha<sup>2</sup>, J. Loy<sup>1</sup>, L. Totir<sup>1</sup>, R. Fernando<sup>1</sup>, and M. Rothschild<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Sygen International, University of Cambridge.
- 11:45 51 A QTL resource and comparison tool for pigs: PigQTLDB. Z.-L. Hu\*<sup>1</sup>, S. Dracheva<sup>2</sup>, W. Jang<sup>2</sup>, D. Maglott<sup>2</sup>, J. Bastiaansen<sup>3</sup>, J. Reecy<sup>1</sup>, and M. Rothschild<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>National Center for Biotechnology Information, <sup>3</sup>Sygen International.
- 12:00 52 Marker-assisted selection on multiple QTL in a crossbred population. N. Piyasatian\*<sup>1</sup>, L. R. Totir, R. L. Fernando, and J. C. M. Dekkers, Iowa State University.

### **Extension-Dairy IV University Updates**

Room 146

9:00–10:00

Chair: Leo Timms, Iowa State University, Ames

- 9:00 80 Dietary supplements for prevention of fatty liver and ketosis. A. R. Hippen, South Dakota State University.

### **Growth and Development, Muscle Biology and Meat Science II Pork and Beef Quality**

Room 138

9:00–12:00

Chair: Bryon Wiegand, Illinois State University, Normal

- 9:00 114 Effect of cooking temperature on tenderness and cook loss in Landrace and Berkshire boneless loin chops. S. Still\*, T. Leeds, H. Zerby, S. Moeller, and K. Irvin, Ohio State University.
- 9:15 115 Histological characterization of pork longissimus muscle: correlations with pork quality attributes. T. D. Leeds\*, S. J. Moeller, S. G. Velleman, H. N. Zerby, and K. M. Irvin, Ohio State University.
- 9:30 116 Evaluation of ascorbic acid and Origanox™ to decrease the incidence of pork lumbar vertebrae darkening in different packaging types. C. R. Raines\*, M. E. Dikeman, and J. P. Grobbel, Kansas State University.

- 9:45 117 Ultrasound determination of degree of doneness in beef steaks. E. S. Blake\*, M. A. Haidekker, M. M. Hdeib, and C. L. Lorenzen, University of Missouri.
- 10:00 Break
- 10:15 118 Influence of Lactate, Salt, Phosphate, and Acetate on Properties of Injection Enhanced Beef. R. Wagner\*, M. Seyfert, M. Hunt, and M. Dikeman, Kansas State University.
- 10:30 119 Effects of polyvinyl chloride film, high-oxygen modified atmosphere, or ultra-low oxygen modified atmosphere packaging on bone marrow discoloration in beef humeri, ribs, thoracic vertebrae, and scapulas. J. P. Grobbel\*, M. E. Dikeman, J. S. Smith, D. H. Kropf, and G. A. Milliken, Kansas State University.
- 10:45 120 Effects of ascorbic acid, rosemary, and Origanox™ in preventing bone marrow discoloration in beef lumbar vertebrae packaged in polyvinyl chloride film, high-oxygen modified atmosphere, or ultra-low oxygen modified atmosphere packaging. J. P. Grobbel\*, M. E. Dikeman, E. J. Yancey, J. S. Smith, D. H. Kropf, and G. A. Milliken, Kansas State University.
- 11:00 121 A Single Nucleotide Polymorphism in the Bovine Leptin Gene and the effect on Gain and Carcass Characteristics. D. L. Larson\*, M. L. Bauer, E. A. DeVuyst, P. T. Berg, and J. R. Bullinger, North Dakota State University.
- 11:15 100 Effects of orally administered 25-hydroxyvitamin D<sub>3</sub> and vitamin E on calcium and vitamin D metabolites in plasma and on vitamin D metabolites in beef *longissimus dorsi* muscle. K. M. Carnagey\*, A. E. Wertz, T. J. Knight, R. L. Horst, E. J. Huff-Lonergan, A. H. Trenkle, and D.C. Beitz, Iowa State University.
- 11:30 101 Influence of finisher facilities on growth performance. D. B. Edwards\*, M. E. Doumit, C. W. Ernst, and R. O. Bates, Michigan State University.
- 11:45 106 Effect of conjugated linoleic acid and/or a specific Δ6-desaturase inhibitor on body composition of mice. K. M. Hargrave\*<sup>1</sup>, M. J. Azain<sup>2</sup>, M. G. Obukowicz<sup>3</sup>, and J. L. Miner<sup>1</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>University of Georgia, <sup>3</sup>Pfizer Global Research and Development.

### **Nonruminant Nutrition V Additives and Gut Modifiers**

Room: 204AB

9:00–12:15

Chair: Gary Apgar, Southern Illinois University, Carbondale,  
and Randy Walker, Distributors Processing, Inc., Fort Dodge, IA

- 9:00 187 Growth performance of nursery pigs fed yeast alone or in combination with in-feed antimicrobial. B. Hildabrand\*, C. Neill, T. Burkey, S. Dritz, B. Johnson, and J. Minton, Kansas State University.
- 9:15 188 Effect of milk supplementation with a direct-fed microbial during lactation on subsequent nursery performance. E. A. Halbrosk\*<sup>1</sup>, C. V. Maxwell<sup>1</sup>, M. E. Davis<sup>1</sup>, D. C. Brown<sup>1</sup>, Z. B. Johnson<sup>1</sup>, and T. Rehberger<sup>2</sup>, <sup>1</sup>University of Arkansas, <sup>2</sup>Agtech Products, Inc.
- 9:30 189 Comparison of direct-fed microbials and antibiotic supplementation on gastrointestinal morphology of weanling pigs. D. C. Brown\*<sup>1</sup>, M. S. Dirain<sup>1</sup>, M. E. Davis<sup>1</sup>, C. V. Maxwell<sup>1</sup>, Z. B. Johnson<sup>1</sup>, and T. Rehberger<sup>2</sup>, <sup>1</sup>University of Arkansas, <sup>2</sup>Agtech Products, Inc.
- 9:45 190 Comparison of direct-fed microbials and antibiotic supplementation on gastrointestinal microflora and immune characteristics of weanling pigs. M. E.

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|-------|-----|--|
|       |     | Davis* <sup>1</sup> , M. S. Dirain <sup>1</sup> , D. C. Brown <sup>1</sup> , C. V. Maxwell <sup>1</sup> , Z. B. Johnson <sup>1</sup> , and T. Rehberger <sup>2</sup> , <sup>1</sup> University of Arkansas, <sup>2</sup> Agtech Products, Inc.   |
| 10:00 |     | Break  |
| 10:15 | 191 | Evaluation of two direct fed microbials on the ability of pigs to resist an infection from <i>Salmonella</i> Typhimurium. M. Spiels*, G. Shurson, and L. Johnston, University of Minnesota.  |
| 10:30 | 192 | Efficacy of organic selenium (SelenoSource AF™) in grower-finisher diets: Effects on growth and carcass characteristics. R. D. Mateo* <sup>1</sup> , J. E. Spallholz <sup>1</sup> , F. Ji <sup>1</sup> , R. Elder <sup>2</sup> , I. K. Yoon <sup>3</sup> , and S. W. Kim <sup>1</sup> , <sup>1</sup> Texas Tech University, <sup>2</sup> Seaboard Farms, <sup>3</sup> Diamond V Mills, Inc.            |
| 10:45 | 193 | Virginiamycin improves phosphorus digestibility in growing-finishing pigs. J. H. Agudelo* <sup>1</sup> , M. D. Lindemann <sup>1</sup> , G. L. Cromwell <sup>1</sup> , and R. D. Nimmo <sup>2</sup> , <sup>1</sup> University of Kentucky, <sup>2</sup> Phibro Animal Health.   |
| 11:00 | 194 | <b>NATIONAL PORK BOARD RESEARCH AWARD</b> - The effect of phytase and dietary Ca:P ratio on the excretion of total and soluble phosphorus by weanling pigs. A. D. Beaulieu* <sup>1</sup> , M. R. Bedford <sup>2</sup> , and J. F. Patience <sup>1</sup> , <sup>1</sup> Prairie Swine Centre, Inc., <sup>2</sup> Zymetrics.   |
| 11:15 | 195 | Effect of xylanase and (or) phytase supplementation on nutrient digestibility and growth performance of grower pigs fed wheat-based diets containing wheat millrun. T. Nortey* <sup>1,2</sup> , J. Patience <sup>1</sup> , P. Simmins <sup>3</sup> , and R. Zijlstra <sup>1</sup> , <sup>1</sup> Prairie Swine Centre, <sup>2</sup> University of Saskatchewan, <sup>3</sup> Danisco Animal Nutrition. |
| 11:30 | 196 | Tissue mineral compositions of two genotypes of pigs during the grower finisher period. T. Wiseman*, D. Mahan, J. Peters, N. Fastinger, S. Ching, and Y. Kim, Ohio State University.   |
| 11:45 | 197 | The effect of copper and vitamin E on growth performance and tissue vitamin E of pigs. N. R. Augspurger* <sup>1</sup> , J. D. Spencer <sup>1</sup> , D. M. Webel <sup>1</sup> , and J. Cohen <sup>2</sup> , <sup>1</sup> United Feeds, Inc., <sup>2</sup> Micronutrients.  |
| 12:00 | 198 | Future nutrient issues in formulating environmentally friendly diets. G. M. Hill* <sup>1</sup> and B. Hill* <sup>2</sup> , <sup>1</sup> Michigan State University, <sup>2</sup> Hamilton Farm Bureau.  |

## Nonruminant Nutrition VI

### Energy and Fiber

Sponsored by: Pig Improvement Company, Inc.

Room: 205IJ

9:00–10:30

Chair: Marcia Carlson Shannon, University of Missouri, Columbia

|      |     |  |
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| 9:00 | 199 | Energy and nutrient digestibility in dried distillers grain with solubles by growing pigs. H. H. Stein*, C. Pedersen, and M. G. Boersma, South Dakota State University.  |
| 9:15 | 200 | Effects of dietary level of distiller's dried grains with solubles and fat on the growth performance of growing pigs. J. M. DeDecker* <sup>1</sup> , M. Ellis <sup>1</sup> , B. F. Wolter <sup>2</sup> , J. Spencer <sup>3</sup> , D. M. Webel <sup>3</sup> , C. R. Bertelsen <sup>1</sup> , and B. A. Peterson <sup>1</sup> , <sup>1</sup> University of Illinois, <sup>2</sup> The Maschhoffs, <sup>3</sup> United Feeds, Inc. |
| 9:30 | 201 | Evaluation of an optimum fat level for early and late finishing pigs. P. Srichana* <sup>1</sup> , A. M. Gaines <sup>1</sup> , B. W. Ratliff <sup>1</sup> , G. L. Allee <sup>1</sup> , and J. L. Usry <sup>2</sup> , <sup>1</sup> University of Missouri, <sup>2</sup> Ajinomoto Heartland LLC.   |
| 9:45 | 202 | Effect of sorting and added fat level on performance of grow-finish pigs reared in a commercial facility. C. W. Hastad*, M. D. Tokach, J. L. Nelssen, S. S. Dritz, R. D. Goodband, J. M. DeRouchey, C. L. Jones, and N. Z. Frantz, Kansas State University.  |

- 10:00 98 Apparent and true ileal amino acid and energy digestibility and weaning pig performance of five sources of distillers dried grains with solubles. N. D. Fastinger\* and D. C. Mahan, Ohio State University.
- 10:15 203 Pig feed intake correction calculator using a Microsoft® Excel macro. M. D. Lindemann and B. G. Kim\*, University of Kentucky.

### **Nonruminant Nutrition VII Breeding Herd Nutrition**

Sponsored by: Ajinomoto Heartland, Inc.

Room: 140

9:00–10:45

Chair: Nathalie Trottier, Michigan State University, East Lansing

- 9:00 204 Effects of dietary organic and inorganic trace minerals at NRC or elevated levels on sow reproductive performance over four parities. J. C. Peters\* and D. C. Mahan, Ohio State University.
- 9:15 205 Prewean piglet survivability: Sel-Plex® versus sodium selenite as selenium source in sow diets. J. Lampe\*<sup>1</sup>, G. Gourley<sup>1</sup>, J. Sparks<sup>2</sup>, and T. Stumpf<sup>3</sup>, <sup>1</sup>Swine Graphics Enterprises, <sup>2</sup>NutraBlend, <sup>3</sup>Alltech.
- 9:30 206 Postwean piglet survivability: Sel-Plex® versus sodium selenite as selenium source in sow and nursery phase diets. J. Lampe<sup>1</sup>, G. Gourley\*<sup>1</sup>, J. Sparks<sup>2</sup>, and T. Stumpf<sup>3</sup>, <sup>1</sup>Swine Graphics Enterprises, <sup>2</sup>NutraBlend, <sup>3</sup>Alltech.
- 9:45 207 Interactive effects of milk supplementation and parity on pre- and postweaning mortality and growth performance of piglets on a commercial farm. B. W. Ratliff\*<sup>1</sup>, A. M. Gaines<sup>1</sup>, G. L. Allee<sup>1</sup>, and J. A. Coalson<sup>2</sup>, <sup>1</sup>University of Missouri, <sup>2</sup>Merricks, Inc.
- 10:00 208 Influence of WEANMOR+® fed to sows on urine pH, stillbirth rate and preweaning mortality. J. D. DeRouche\*<sup>1</sup>, M. D. Tokach<sup>1</sup>, R. D. Goodband<sup>1</sup>, J. L. Nelssen<sup>1</sup>, S. S. Dritz<sup>1</sup>, and B. Christopherson<sup>2</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>Soda Feed Ingredients LLC.
- 10:15 209 Corn dried distillers grains with solubles in sow lactation diets. G. M. Hill<sup>1</sup>, J. E. Link<sup>1</sup>, M. J. Rincker<sup>1</sup>, K. D. Roberson<sup>1</sup>, D. L. Kirkpatrick\*<sup>1</sup>, and M. L. Gibson<sup>2</sup>, <sup>1</sup>Michigan State University, <sup>2</sup>Dakota Gold Research Association.
- 10:30 105 Evaluation of the threonine to valine requirement ratio for lactating sows. K. Soltwedel\*<sup>1</sup>, V. Perez<sup>1</sup>, D. Fernandez<sup>2</sup>, J. Cuaron<sup>3</sup>, and J. Pettigrew<sup>1</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>Universidad Nacional Autonoma de Mexico, <sup>3</sup>Instituto Nacional de Investigaciones Forestales Agricolas y Pecuarias.

### **Odor and Nutrient Management II**

Room: 136

9:00–9:45

Chair: Galen Erickson, University of Nebraska, Lincoln

- 9:00 216 The effect of feeding low nutrient excretion diets with the addition of soybean hulls and non-sulfur trace minerals on growth performance and carcass characteristics in grow-finish pigs. R. Hinson\*, M. Walsh, A. Yager, D. Sholly, L. Wilson, J. Beagle, S. Pence, K. Saddoris, D. Kelly, S. Radcliffe, A. Schinckel, A. Sutton, and B. Richert, Purdue University.
- 9:15 217 The effect of feeding low nutrient excretion diets with the addition of soybean hulls and non-sulfur trace minerals on manure generation and compo-

- sition from grow-finish swine. R. Hinson\*, D. Kelly, M. Cobb, J. Radcliffe, A. Schinckel, A. Sutton, and B. Richert, Purdue University.
- 9:30 218 Effect of clinoptilolite zeolite on cattle performance and nitrogen mass balance. D. Sherwood\*, G. Erickson, T. Klopfenstein, and D. Schulte, University of Nebraska.

**Ruminant Nutrition IV  
Co-Products and Nontraditional Feeds**

Room: 134

9:30–11:30

Chair: Kenneth Kalscheur, South Dakota State University, Brookings

- 9:30 265 Selenium supplementation of dairy cattle: Responses to organic and inorganic forms of selenium. S. Elliott\*, G. Harrison, and K. Dawson, Alltech Biotechnology, Inc.
- 9:45 266 Feeding an alpha-amylase enzyme preparation to improve the glycemic status and performance of transition dairy cows. J. M. DeFrain\*<sup>1</sup>, A. R. Hippen<sup>1</sup>, K. F. Kalscheur<sup>1</sup>, and J. M. Tricarico<sup>2</sup>, <sup>1</sup>South Dakota State University, <sup>2</sup>Alltech, Inc.
- 10:00 267 Effects of level and processing field peas in growing and finishing diets. E. Fendrick\*, I. Rush, D. Brink, G. Erickson, and D. Baltenspurger, University of Nebraska.
- 10:15 89 Effects of dried distillers grains on heifer consumption of low or high quality forage. S. Morris\*, T. Klopfenstein, and D. Adams, University of Nebraska.
- 10:30 97 Effect of corn hybrid and processing method on digestibility. M. Luebbe\*<sup>1</sup>, G. Erickson<sup>1</sup>, T. Klopfenstein<sup>1</sup>, and W. Fithian<sup>2</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>J. C. Robinson Seed Co.
- 10:45 91 Impact of feeding distillers grains on beef tenderness and sensory traits. D. L. Roeber, R. K. Gill\*, and A. DiCostanzo, University of Minnesota.
- 11:00 103 Effect of level of wet distillers grains on feedlot performance of finishing cattle and energy value relative to corn. K. Vander Pol\*, G. Erickson, T. Klopfenstein, and M. Greenquist, University of Nebraska.
- 11:15 104 Effects of feeding polyclonal antibody preparations against *Streptococcus bovis* and *Fusobacterium necrophorum* on target bacteria and rumen fermentation patterns of steers fed high-grain diets. N. DiLorenzo\*, G. I. Crawford, F. Diez-Gonzalez, and A. DiCostanzo, University of Minnesota.

**Ruminant Nutrition V  
Nutrition of Dairy Cattle**

Room: 142

9:00–10:15

Chair: Monty Kerley, University of Missouri, Columbia

- 9:00 268 **DAIRY INNOVATION AWARD** - The impact of ruminal butyrate production and plasma betahydroxybutyrate on the glycemic status of transition cows. J. M. DeFrain\*, A. R. Hippen, K. F. Kalscheur, and D. J. Schingoethe, South Dakota State University.
- 9:15 269 Wet sorghum distiller's grains with solubles in flaked corn finishing diets for heifers. J. Drouillard\*, R. Daubert, E. Loe, B. Depenbusch, J. Sindt, M. Greenquist, and M. Corrigan, Kansas State University.

- 9:30 270 Degree of starch availability: An index to define relative starch digestion potential in corn based feeds. H. Blasel, P. Hoffman\*, R. Shaver, and S. Offer, University of Wisconsin.
- 9:45 271 Economics of wet distillers grains use in feedlot diets. K. Vander Pol\*, G. Erickson, and T. Klopfenstein, University of Nebraska.
- 10:00 272 Impact of alfalfa hay neutral detergent fiber concentration and digestibility on Holstein dairy cow performance. M. Raeth-Knight\*<sup>1</sup>, J. Linn<sup>1</sup>, H. Jung<sup>1,2</sup>, and D. Mertens<sup>2</sup>, <sup>1</sup>University of Minnesota, <sup>2</sup>USDA-ARS, <sup>3</sup>US Dairy Forage Research Center.



# Poster Sessions

## Monday and Tuesday

**Sponsored by: Zinpro**

All posters will be in the Convention Complex Exhibit Hall (Room 206) and will be in place from Monday at 1:00 p.m. until Noon on Wednesday.

See program for the dates authors will present.

**Both dates are 4:30 p.m. – 6:00 p.m.**

Exhibit Hall

### **Animal Behavior, Housing, Well Being II**

All authors present Monday, March 21

- 1 Effect of recorded calf vocalizations on milk production with an automatic milking system. C. Jones\*<sup>1</sup>, E. Pajor<sup>1</sup>, S. Donkin<sup>1</sup>, J. Marchant-Forde<sup>2</sup>, and M. Schutz<sup>1</sup>, <sup>1</sup>Purdue University, <sup>2</sup>USDA Livestock Behavior Research Unit.
- 2 Effects of bedding on winter performance of feedlot cattle and nutrient conservation in composted manure. V. Anderson\*, E. Aberle, and L. Swenson, North Dakota State University.
- 3 The effect of housing systems on sow longevity and performance- a comparison of stalls and pens with electronic sow feeders (ESF). L. Anil\*, J. Deen, S. S. Anil\*, S. K. Baidoo, and R. Walker, University of Minnesota.
- 4 Farrowing performance of sows housed in gestation crates vs. pens containing electronic sow feeders. R. Walker\*, D. Goetz, and S. Baidoo, University of Minnesota.
- 5 The effects of sire line and floor space on growth performance and carcass and meat quality characteristics of pigs. B. A. Peterson\*<sup>1</sup>, M. Ellis<sup>1</sup>, B. F. Wolter<sup>2</sup>, N. Williams<sup>3</sup>, J. M. DeDecker<sup>1</sup>, M. R. Ritter<sup>1</sup>, C. R. Bertelsen<sup>1</sup>, and C. Zeir<sup>3</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>The Maschhoffs, <sup>3</sup>PIC USA.
- 6 Effect of birth weight and creep feeding on lactating gilt and litter performance pre- and postweaning. C. R. Bertelsen\*<sup>1</sup>, M. Ellis<sup>1</sup>, B. F. Wolter<sup>2</sup>, R. Bowman<sup>2</sup>, S. Webel<sup>3</sup>, and D. Webel<sup>3</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>The Maschhoffs, <sup>3</sup>United Feeds.

### **Extension-Beef III**

#### **Nutrition and Management**

All authors present Monday, March 21

- 53 Cultural energy analysis of pasturing systems for cattle finishing programs. H. Koknaroglu<sup>1</sup>, K. Ekinci<sup>1</sup>, M. P. Hoffman<sup>2</sup>, and P. Tsengeg\*<sup>2</sup>, <sup>1</sup>Suleyman Demirel University, <sup>2</sup>Iowa State University.
- 54 The effectiveness of synergistic blends of organic acids in the stabilization of wet distillers grains. S. Moore\*, J. Smith, and V. Sewalt, Kemin Agri-Foods North America.
- 55 Comparison of doramectin and albendazole on feedlot steer performance and carcass traits. J. A. Christopher\*, T. T. Marston, and J. R. Brethour, Kansas State University.
- 56 Comparative efficacy and corrosivity of various liquid mold inhibitor formulations. M. Burke\*, T. Truong, A. Lamptey, and V. Sewalt, Kemin AgriFoods North America, Inc.

- 57 Influence of early weaning on the requirement for winter protein supplementation of spring-calving beef cows grazing native tallgrass prairie. K. W. Harborth\*, D. A. Lewellyn, and T. T. Marston, Kansas State University.

### **Nonruminant Nutrition VIII**

All authors present Monday, March 21

- 128 Evaluation of corn distillers dried grains with solubles and a polyclonal antibody on growth performance and the ability of pigs to resist an infection from *Salmonella* Typhimurium. M. Spiels\*, G. Shurson, L. Johnston, and K. Seifert, University of Minnesota.
- 129 The effect of replacing specialty protein sources with synthetic amino acids in phase II nursery pig diets. N. Z. Frantz\*<sup>1</sup>, S. S. Dritz<sup>1</sup>, M. D. Tokach<sup>1</sup>, J. M. DeRouchey<sup>1</sup>, R. D. Goodband<sup>1</sup>, J. L. Nelssen<sup>1</sup>, and J. L. Usry<sup>2</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>Ajinomoto-Heatland LLC.
- 130 The effects of dietary Biotite V supplementation on growth performance, nutrients digestibility and fecal noxious gas content in finishing pigs. Y. J. Chen\*, O. S. Kwon, B. J. Min, K. S. Son, J. H. Cho, and I. H. Kim, Dankook University.
- 131 Evaluating oregano oil as a growth enhancer in nursery pig diets. C. R. Neill\*, J. L. Nelssen, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. M. DeRouchey, K. R. Lawrence, and C. N. Groesbeck, Kansas State University.
- 132 Effects of weaning time (pm or am) on nursery pig growth performance. C. R. Neill\*, M. D. Tokach, J. L. Nelssen, R. D. Goodband, S. S. Dritz, J. M. DeRouchey, C. N. Groesbeck, and K. R. Lawrence, Kansas State University.
- 133 Particle size of salt and grinding of samples influence the results of mixing efficiency testing. C. N. Groesbeck\*, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. L. Nelssen, and J. M. DeRouchey, Kansas State University.
- 134 Effects of in-feed antimicrobials on growth performance of weanling pigs in a research environment. R. O. Gottlob\*, J. M. DeRouchey, M. D. Tokach, R. D. Goodband, S. S. Dritz, J. L. Nelssen, C. W. Hastad, C. N. Groesbeck, and K. R. Lawrence, Kansas State University.
- 135 Evaluation of normal corn and quality protein maize in feed rations for laying hens. S.W. Zhai\*<sup>1,2</sup>, G.H. Qi<sup>1</sup>, and F.Z. Liu<sup>2</sup>, <sup>1</sup>FRI, Chinese Academy of Agriculture Science, <sup>2</sup>Northwest Sci-Tech University of Agriculture and Forestry.
- 136 Effects of long term feeding of virginiamycin in growing-finishing pigs fed phosphorus deficient diets. J. H. Agudelo\*<sup>1</sup>, M. D. Lindemann<sup>1</sup>, M. C. Newman<sup>1</sup>, G. L. Cromwell<sup>1</sup>, and R. D. Nimmo<sup>2</sup>, <sup>1</sup>University of Kentucky, <sup>2</sup>Phibro Animal Health.
- 137 Effect of sex and slaughter weight on pig performance and carcass quality. J. Mullane<sup>1,2</sup>, P. G. Lawlor\*<sup>1,2</sup>, P. B. Lynch<sup>1</sup>, J. P. Kerry<sup>2</sup>, and P. Allen<sup>3</sup>, <sup>1</sup>Teagasc, Moorepark Research Centre, Fermoy, Co. Cork, Ireland, <sup>2</sup>Department of Food Technology, University College, Cork, Ireland, <sup>3</sup>National Food Centre, Ashtown, Dublin 15, Ireland.
- 138 Apparent and true ileal amino acid digestibility and DE and ME of specialty protein sources intended for nursery pig diets. R. O. Gottlob\*<sup>1</sup>, J. M. DeRouchey<sup>1</sup>, M. D. Tokach<sup>1</sup>, R. D. Goodband<sup>1</sup>, J. L. Nelssen<sup>1</sup>, S. S. Dritz<sup>1</sup>, C.W. Hastad<sup>1</sup>, K. L. Lawrence<sup>1</sup>, and D. A. Knabe<sup>2</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>Texas A & M University.
- 139 The effects of Natuphos® phytase, Ronozyme® phytase, and a combination of the two products on nutrient digestibility in growing pigs. K. Saddoris\*, L. Peddireddi, B. Richert, and J. Radcliffe, Purdue University.
- 140 Effect of lactation nutritional supplements on the pre-weaning performance of gilts and their litters. C. R. Bertelsen\*<sup>1</sup>, M. Ellis<sup>1</sup>, B. F. Wolter<sup>2</sup>, S. Webel<sup>3</sup>, and D. Webel<sup>3</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>The Maschhoffs, <sup>3</sup>United Feeds.

- 141 Evaluation of beta-glucan and antibiotics on growth performance of weanling and finishing pigs. R. Cueno\*, S. Carter, T. Morillo, M. Lachmann, and J. Park, Oklahoma State University.
- 142 Energy content of maize grain: sample variability and prediction by near infra-red spectroscopy. T. Sauber\*, D. Jones, D. Sevenich, R. Allen, F. Owens, M. Hinds, D. Rice, and G. Baldner, Pioneer-A DuPont Company.

### **Ruminant Nutrition VI**

All authors present Monday, March 21

- 233 Estimation of undegradable intake protein digestibility in forages using a mobile nylon bag technique. J. Benton\*, T. Klopfenstein, J. MacDonald, and M. Lamothe, University of Nebraska.
- 234 Cultural energy analysis of lamb production in the feedlot or on pasture and in the feedlot. H. Koknaroglu<sup>1</sup>, A. Ali<sup>2</sup>, K. Ekinici<sup>1</sup>, D. G. Morrical<sup>2</sup>, M. P. Hoffman<sup>2</sup>, and P. Tsengeg<sup>\*2</sup>, <sup>1</sup>Suleyman Demirel University, <sup>2</sup>Iowa State University.
- 235 A low cost vacuum storage method can preserve high moisture, distiller's grains. P. Walker\*<sup>1</sup>, K. Earing<sup>2</sup>, and L. Mathews<sup>1</sup>, <sup>1</sup>Illinois State University, <sup>2</sup>University of Kentucky.
- 236 Relationship of milk urea nitrogen and total nitrogen excretion from lactating cows. S.W. Zhai\* and J.X. Liu, Zhejiang University.
- 237 Milk urea nitrogen response to a change in dietary crude protein for Chinese Holstein lactating cows. S.W. Zhai\* and J.X. Liu, Zhejiang University.
- 238 Combinations of dDistiller's grains, gluten feed, and soy hulls for growing cattle. J. R. Sewell\*, L. L. Berger, T. G. Nash, J. Sewell\* and L. Berger, University of Illinois.
- 239 The effect of vacuum stored high moisture distiller's grains as a protein and energy supplement for beef cows. P. Walker\*<sup>1</sup>, K. Earing<sup>2</sup>, and L. Mathews<sup>1</sup>, <sup>1</sup>Illinois State University, <sup>2</sup>University of Kentucky.
- 240 Effects of feeding polyclonal antibody preparations against *Streptococcus bovis* or *Fusobacterium necrophorum* on target bacteria populations and pH of steers fed high-grain diets. N. DiLorenzo\*, F. Diez-Gonzalez, J. E. Larson, and A. DiCostanzo, University of Minnesota.
- 241 Effect of live bacterial inoculants on performance of lactating dairy cows. J. W. West\*, J. K. Bernard, G. H. Cross, and D. S. Trammell, University of Georgia.

### **Breeding and Genetics IV**

All authors present Tuesday, March 22

- 30 Genetic optimization of sow productivity. S. Oh\*<sup>1</sup>, M. See<sup>1</sup>, T. Baas<sup>2</sup>, R. Bates<sup>3</sup>, A. Schinckel<sup>4</sup>, K. Stalder<sup>2</sup>, and R. Pfortmiller<sup>5</sup>, <sup>1</sup>North Carolina State University, <sup>2</sup>Iowa State University, <sup>3</sup>Michigan State University, <sup>4</sup>Purdue University, <sup>5</sup>National Swine Registry.
- 31 Reproductive performance in daughters of Holstein sires selected for high and average milk yield or fat plus protein yield. P. J. Berger, M. H. Healey, and G. A. Gutierrez\*, Iowa State University.
- 32 A Bayesian threshold-linear evaluation of perinatal mortality, dystocia, birth weight, and gestation length in a Holstein herd. J. M. Johanson<sup>1</sup> and P. J. Berger\*<sup>2</sup>, <sup>1</sup>Western Carolina University, <sup>2</sup>Iowa State University.
- 33 Selection lines for residual feed intake in yorkshire swine. W. Cai\*<sup>1</sup>, D. Casey<sup>2</sup>, B. Mote<sup>1</sup>, and J. Dekkers<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Pig Improvement Company.
- 34 Sperm bull morphology evaluated by two different methods. G. Freneau\*<sup>3,1</sup>, R. Ellis<sup>2</sup>, and P. Chenoweth<sup>1</sup>, <sup>1</sup>Kansas State University, <sup>2</sup>University of Nebraska GPVEC, <sup>3</sup>Universidade Federal de Goias.

- 35 Physical mapping of five pig genes whose expression level is acutely affected by *Salmonella* challenge. J. W. Kim<sup>\*1,2</sup>, S.-H. Zhao<sup>1</sup>, J. J. Uthe<sup>1,3</sup>, S. M. D. Bearson<sup>3</sup>, and C.K. Tuggle<sup>1</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>Yeungnam University, <sup>3</sup>USDA, ARS, National Animal Disease Center.
- 36 SNP discovery within the differentially expressed porcine ovarian transcriptome. J. Potts\*, B. Simpson, and D. Pomp, University of Nebraska.
- 37 The National Swine Registry Pork Alliance program. R. Bates<sup>\*1</sup>, P. Saama<sup>1</sup>, K. Stalder<sup>2</sup>, T. Baas<sup>2</sup>, T. See<sup>3</sup>, A. Schinckel<sup>4</sup>, and R. Pfortmiller<sup>5</sup>, <sup>1</sup>Michigan State University, <sup>2</sup>Iowa State University, <sup>3</sup>North Carolina State University, <sup>4</sup>Purdue University, <sup>5</sup>National Swine Registry.
- 38 Lack of association of calpastatin haplotypes with meat quality in a Duroc-Landrace swine resource population. D. Nonneman\*, G. A. Rohrer, S. D. Shackelford, T. L. Wheeler, and M. Koohmaraie, USDA-ARS, U.S. Meat Animal Research Center.
- 39 Effect of three cathepsin genes on processing quality traits of fresh and dry-cured hams. A. Ramos\*, K. Stalder, N. Nguyen, and M. Rothschild, Iowa State University.
- 40 Heat-induced subfertility in male mice. K. M. Cammack\*, H. Mesa, P. Sutovsky, and W. R. Lamberson, University of Missouri.

### Extension-Dairy V

All authors present Tuesday, March 22

- 79 Somatic cell count, yield and chemical composition of milk from cross-bred cows. C. T. Sathian, S. S. Anil\*, and M. Mukundan, Kerala Agricultural University, India.

### Growth and Development, Muscle Biology and Meat Science III

All authors present Tuesday, March 22

- 107 A mechanism for linking the peripheral layer of cellular myofibrils to the muscle cell sarcolemma. R. C. Bhosle\* and R. M. Robson, Iowa State University.
- 108 Respiratory chain complex activity in longissimus and spinalis dorsi muscle in high and low feed efficient swine within a single genetic line. E. A. de Feliz\*, C. Ojano-Dirain, M. E. Davis, C. V. Maxwell, M. Iqbal, and W. G. Bottje, University of Arkansas.
- 109 Microbial colonisation affects Toll-like receptor gene expression in the pig small intestine. B. Willing\* and A. Van Kessel, University of Saskatchewan.
- 110 Including flax in feedlot diets alters beef fatty acid profiles. T. D. Maddock<sup>\*1</sup>, V. L. Anderson<sup>2</sup>, M. L. Bauer<sup>1</sup>, G. Barceló-Coblijn<sup>3</sup>, E. J. Murphy<sup>3</sup>, and G. P. Lardy<sup>1</sup>, <sup>1</sup>North Dakota State University, <sup>2</sup>Carrington Research Extension Center, <sup>3</sup>University of North Dakota.
- 111 Effects of ractopamine feeding level on carcass cutting yield and loin quality measurements. P. J. Rincker<sup>\*1</sup>, M. T. See<sup>2</sup>, T. A. Armstrong<sup>3</sup>, P. D. Matzat<sup>3</sup>, B. A. Belstra<sup>2</sup>, F.K. McKeith<sup>1</sup>, L. Xi<sup>2</sup>, J. Odle<sup>2</sup>, M. Culbertson<sup>4</sup>, W. Herring<sup>4</sup>, and J. Hansen<sup>5</sup>, <sup>1</sup>University of Illinois, <sup>2</sup>North Carolina State University, <sup>3</sup>Elanco Animal Health, <sup>4</sup>Smithfield Premium Genetics, <sup>5</sup>Murphy-Brown.
- 112 Effect of ractopamine feeding level on growth performance and carcass composition. M. T. See<sup>\*1</sup>, T. A. Armstrong<sup>2</sup>, P. D. Matzat<sup>2</sup>, B. A. Belstra<sup>1</sup>, F. K. McKeith<sup>3</sup>, P. J. Rincker<sup>3</sup>, L. Xi<sup>1</sup>, J. Odle<sup>1</sup>, M. Culbertson<sup>4</sup>, W. Herring<sup>4</sup>, and J. Hansen<sup>5</sup>, <sup>1</sup>North Carolina State University, <sup>2</sup>Elanco Animal Health, <sup>3</sup>University of Illinois, <sup>4</sup>Smithfield Premium Genetics, <sup>5</sup>Murphy-Brown.
- 113 The effect of ractopamine feeding level on fatty acid profiles in belly and clearplate fat of finishing pigs. L. Xi<sup>1</sup>, M. T. See<sup>\*1</sup>, K. N. Wentz<sup>1</sup>, J. Odle<sup>1</sup>, T. A. Armstrong<sup>2</sup>, P. D. Matzat<sup>2</sup>, B. A. Belstra<sup>1</sup>, P. J. Rincker<sup>3</sup>, F. K. McKeith<sup>3</sup>, M. Culbertson<sup>4</sup>, W.

Herring<sup>4</sup>, and J. Hansen<sup>5</sup>, <sup>1</sup>North Carolina State University, <sup>2</sup>Elanco Animal Health, <sup>3</sup>University of Illinois, <sup>4</sup>Smithfield Premium Genetics, <sup>5</sup>Murphy-Brown.

### Nonruminant Nutrition IX

All authors present Tuesday, March 22

- 173 Effects of dried distillers grains with solubles on feed preference in growing pigs. C. W. Hastad\*, J. L. Nelssen, R. D. Goodband, M. D. Tokach, S. S. Dritz, J. M. DeRouchey, and N. Z. Frantz, Kansas State University.
- 174 The effect of dried palm oil powder containing different amount of monoglyceride on the growth performance and serological cholesterol changes in weaned pigs. B. J. Min\*, O. S. Kwon, W. B. Lee, J. W. Hong, and I. H. Kim, Dankook University.
- 175 The effects of herbal plant mixture(Miracle20<sup>®</sup>) supplementation on the productions of lactating sows and growth performance and hematological changes of piglets. B. J. Min\*<sup>1</sup>, O. S. Kwon<sup>1</sup>, J. W. Hong<sup>1</sup>, W. B. Lee<sup>1</sup>, K. S. Son<sup>1</sup>, Y. H. Yu<sup>2</sup>, and I. H. Kim<sup>1</sup>, <sup>1</sup>Dankook University, <sup>2</sup>HANPEL TECH Co., Ltd.
- 176 Effect of Phosphorous Deficiency and Genetics on Bone Characteristics and Gene Expression in Young Pigs. L. Hittmeier\*, R. Lensing, L. Grapes, M. Rothschild, and C. Stahl, Iowa State University.
- 177 A comparison of whey protein concentrate and spray-dried animal plasma in diets for weanling pigs. R. O. Gottlob\*, J. M. DeRouchey, M. D. Tokach, R. D. Goodband, S. S. Dritz, J. L. Nelssen, and C. W. Hastad, Kansas State University.
- 178 Chelated minerals in diets for weaned piglets. M. Muniz<sup>1</sup>, D. Berto<sup>1</sup>, F. Wechsler<sup>1</sup>, A. Passos\*<sup>2</sup>, and G. Lima<sup>3</sup>, <sup>1</sup>UNESP, <sup>2</sup>TORTUGA, <sup>3</sup>EMBRAPA.
- 179 Phytobiotics and organic acids as alternatives to the use of antibiotics in nursery pig diets. R. D. Mateo\*<sup>1</sup>, F. Ji<sup>1</sup>, F. Neher<sup>2</sup>, and S. W. Kim<sup>1</sup>, <sup>1</sup>Texas Tech University, <sup>2</sup>BioMin Inc.
- 180 Assessment of growth performance and nutrient balance of early-weaned pigs fed diets containing spray dried corn distillers solubles by-products, carbadox, and porcine plasma. J. Knott\* and G. Shurson, University of Minnesota.
- 181 Effect of sex and slaughter weight on carcass measurements. J. Mullane<sup>1,2</sup>, P. G. Lawlor\*<sup>1</sup>, P. B. Lynch<sup>1</sup>, J. P. Kerry<sup>2</sup>, and P. Allen<sup>3</sup>, <sup>1</sup>Teagasc, Moorepark Research Centre, Fermoy, Co. Cork, Ireland, <sup>2</sup>Department of Food Technology, University College, Cork, Ireland, <sup>3</sup>National Food Centre, Ashtown, Dublin 15, Ireland.
- 182 Yearling horse growth and development: acceptability and replacement value of field peas for oats. D. Landblom\*<sup>1</sup>, D. Olson<sup>1</sup>, K. Ringwall<sup>1</sup>, and B. Knudsen<sup>2</sup>, <sup>1</sup>North Dakota State University, <sup>2</sup>Dickinson State University.
- 183 Effect of dietary phosphorus and genetic background on growth performance and IGF-1 levels in young gilts. S. Cutler\*, L. Grapes, M. Rothschild, and C. Stahl, Iowa State University.
- 184 Effects of intermittent ractopamine use on pig growth performance in late finishing. C. R. Neill\*, R. D. Goodband, M. D. Tokach, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, C. N. Groesbeck, and K. R. Lawrence, Kansas State University.
- 185 Effects of a solid-state fermented phytase on growth performance and nutrient digestibility of growing pigs fed barley-soybean meal based diets. J. Park<sup>1</sup>, M. Lachmann\*<sup>1</sup>, S. Carter<sup>1</sup>, J. Schneider<sup>1</sup>, T. Morillo<sup>1</sup>, and J. Pierce<sup>2</sup>, <sup>1</sup>Oklahoma State University, <sup>2</sup>Alltech, Inc.
- 172 A technique for mammary biopsy in lactating sows. J. Pérez Laspiur, R. N. Kirkwood, B. J. Moore, N. K. Ames, and N. L. Trottier\*, Michigan State University.

### **Odor and Nutrient Management III**

All authors present Tuesday, March 22

- 215 Effect of feeding a low nutrient excretion diet on pig growth performance and carcass characteristics in a commercial wean-finish setting. R. Hinson\*, D. Sholly, A. Yager, M. Walsh, K. Soddoris, L. Wilson, D. Kelly, J. Radcliffe, A. Sutton, A. Schinckel, and B. Richert, Purdue University.

### **Ruminant Nutrition VII**

All authors present Tuesday, March 22

- 256 The effect of eicosapentaenoic acid and docosapentaenoic acid on vaccenic acid formation in cultures of mixed ruminal microorganisms. A. AbuGhazaleh\* and B. Jacobson, Southern Illinois University.
- 257 Evaluation of performance and carcass quality of finishing beef with natural feeding practices in North Dakota. V. Anderson and J. Schoonmaker\*, North Dakota State University.
- 258 Effect of corn hybrid on digestibility and ruminal fermentation. M. Luebbe\*<sup>1</sup>, G. Erickson<sup>1</sup>, T. Klopfenstein<sup>1</sup>, and W. Fithian<sup>2</sup>, <sup>1</sup>University of Nebraska, <sup>2</sup>J. C. Robinson Seed Co.
- 259 Selection of bactericidal peptides against *E. coli* O157:H7 by phage display technology. C. J. Fu\*, F. J. Schmidt, and M. S. Kerley, University of Missouri.
- 260 The effects of saponified fatty acids on ruminal fermentation. D. O. Alkire\* and M. S. Kerley, University of Missouri.
- 261 Effect of housing, initial weight and season interaction on feedlot performance of steers. H. Koknaroglu<sup>1</sup>, D. D. Loy<sup>2</sup>, D. E. Wilson<sup>2</sup>, M. P. Hoffman\*<sup>2</sup>, and J. D. Lawrence<sup>2</sup>, <sup>1</sup>Suleyman Demirel University, <sup>2</sup>Iowa State University.
- 262 Influence of increasing ME intake on nutrient utilization by beef steers consuming alfalfa hay. P. E. F. Prohmann<sup>2,1</sup>, E. S. Vanzant\*<sup>1</sup>, K. R. McLeod<sup>1</sup>, D. L. Harmon<sup>1</sup>, N. A. Elam<sup>1</sup>, and W. G. Doig<sup>1</sup>, <sup>1</sup>University of Kentucky, <sup>2</sup>Universidade Estadual de Maringa.
- 263 Fatty acid changes in the digestive tract of Holstein steers fed canola supplemented dairy lactation diets. S. Bedgar\*, J. Schroeder, M. Bauer, and W. Keller, North Dakota State University.
- 264 Influence of a concentrated live yeast as a supplement for newly received calves. J. C. Silva\*, and L. W. Greene, Texas A&M University.

### **Extension-Swine III**

All authors present Tuesday, March 22

- 87 Evaluation of a method to analyze pig live weight data from animal sorting technologies. A. Schinckel\*, M. Einstein, and D. Miller, Purdue University.
- 88 A comparison of six maternal genetic lines for sow longevity. T. Serenius\*<sup>1</sup>, K. J. Stalder<sup>1</sup>, T. J. Baas<sup>1</sup>, J. W. Mabry<sup>1</sup>, and R. N. Goodwin<sup>2</sup>, <sup>1</sup>Iowa State University, <sup>2</sup>National Pork Board.

### **Teaching III**

All authors present Tuesday, March 22

- 277 Encouraging reading beyond the curriculum. W. Lamberson\* and M. Smith, University of Missouri.

**MIDWEST SECTION ADSA/ASAS  
Committee Assignments  
2004-2005**

**PROGAM COMMITTEES**

**Animal Behavior, Housing, Well Being**

Jeanne Burton, Chair  
Ernest Minton  
Ed Pajor

**Breeding and Genetics**

Yang Da, Chair  
Diane Moody  
Ken Stalder

**Extension - Beef**

Greg Lardy, Chair  
Alfredo DiConstanzo  
Jeff Pastoor

**Extension - Dairy**

Alvaro Garcia, Chair  
Paul Fricke  
Spence Driver

**Extension - Swine**

Steve Moeller, Chair  
Joel DeRouchey  
Marcia Carlson Shannon

**Growth, Development, Muscle Biology and Meat Science**

Bryon Wiegand, Chair  
Tim Smith  
Brad Johnson

**Nonruminant Nutrition**

Brad Lawrence, Chair  
Dale Rozeboom  
Daniel Nelson

**Odor and Nutrient Management**

Galen Erickson, Chair  
Brian Richert  
Gretchen Hill

**Physiology**

Todd Armstrong, Chair  
Richard Pursley  
Robert Cushman

**Ruminant Nutrition**

Monty Kerley, Chair  
Kenneth Kalscheur  
Jeff Lehmkuhler

**Teaching / Career Development**

Curtis Youngs, Chair  
Michel Wattiaux  
Dan Moser

**David H. Baker Symposium**

Doug Webel, Chair  
Lee Southern  
Mike Edmonds

**YOUNG ANIMAL/DAIRY SCIENCE  
LEADERS AWARDS COMMITTEES**

**Extension Award**

Mike Brouk, Chair  
Bob Thaler  
Todd See  
Wendy Powers  
Steve Moeller

**Research Award**

John Shirley, Chair  
Mark Morrison  
Tim Smith  
Mark Engstrom  
Larry Berger  
Catherine Ernst



**Teaching Award**

Cindie Luhman, Chair  
Wes Osburn  
Steve Kelm  
Roger Johnson  
Miriam Weber Nielsen  
Don Beitz

**Agribusiness**

Dan Faulkner, Chair  
Catherine Davis  
Joy Campbell  
Doug Webel

**National Pork Board Swine Innovation**

Jerry Shurson, Chair  
Don Levis  
Lee Johnston  
Joe Ford

**Innovation in Dairy Research**

David Combs, Chair  
Mike Schutz  
Richard Pursley  
Jim Drackley

**SPECIAL COMMITTEES**

**ASAS Nominations**

Jerry Shurson  
Cal Ferrell  
Rodger Johnson

**ADSA Nominations**

David Combs  
Sharon Franklin  
Jim Quigley

**Academic Quadrathlon**

Anthony Seykora, Chair

Gary Onan

James Reecy

Brian Wiegand

Karol Fike

Terry Jobsis

Georgia Younglove

Matt Wilson

Dick Cobb

John Tembei

Carolyn Komar

**Career Development**

Deana Hancock

Don Orr

**COMPETITIVE RESEARCH PAPER  
COMMITTEES**

**Graduate Student**

Sam Baidoo, Chair

Denise Beaulieu

Gary Rohrer

Brenda De Rodas

Mike Tokach

Andrea Cupp

Darrel Kesler

Matt Wilson

**Undergraduate**

Paul Walker, Chair

Jess Miner

Bob Goodband

Arnold Hippen

Steven Loerch

Catherine Ernst

## **PAST RECIPIENTS OF AWARDS FOR YOUNG ANIMAL SCIENCE LEADERS**

### **OUTSTANDING EXTENSION SPECIALIST AWARD**

|      |  |
|------|--|
| 1971 | G. E. Ricketts, University of Illinois         |
| 1972 | V. B. Mayrose, Purdue University               |
| 1974 | M. R. Geasler, Iowa State University           |
| 1976 | R. J. Vatthauer, University of Wisconsin       |
| 1977 | R. J. Epley, University of Minnesota           |
| 1978 | W. L. Singleton, Purdue University             |
| 1979 | D. E. Schafer, Kansas State University         |
| 1980 | L. R. Corah, Kansas State University           |
| 1981 | M. G. Hogberg, Michigan State University       |
| 1982 | C. W. Spaeth, Kansas State University          |
| 1983 | L. H. Thompson, University of Illinois         |
| 1984 | M. F. Hutjens, University of Illinois          |
| 1985 | G. L. Kuhl, Kansas State University            |
| 1986 | D. D. Simms, Kansas State University           |
| 1987 | F. K. Brazle, Kansas State University          |
| 1988 | S. B. Laudert, Kansas State University         |
| 1989 | M. A. Russell, Purdue University               |
| 1990 | D. F. Parrett, University of Illinois          |
| 1991 | D. B. Faulkner, University of Illinois         |
| 1992 | J. L. Nelssen, Kansas State University         |
| 1993 | A. P. Schinckel, Purdue University             |
| 1994 | D. A. Funk, University of Wisconsin, Madison   |
| 1995 | G. C. Shurson, University of Minnesota         |
| 1996 | R. D. Shaver, University of Wisconsin, Madison |
| 1997 | R. D. Goodband, Kansas State University        |
| 1998 | Not given                                      |
| 1999 | M. D. Tokach, Kansas State University          |
| 2000 | J. F. Smith, Kansas State University           |
| 2001 | W. O. Herring, University of Missouri          |
| 2002 | M. J. Brouk, Kansas State University           |
| 2003 | W. J. Powers, Iowa State University            |
| 2004 | S. J. Moeller, The Ohio State University       |

### **OUTSTANDING RESEARCHER AWARD**

|      |  |
|------|--|
| 1971 | D. H. Baker, University of Illinois                              |
| 1972 | C. E. Allen, University of Minnesota                             |
| 1974 | F. N. Owens, University of Illinois                              |
| 1976 | W. G. Bergen, Michigan State University                          |
| 1977 | D. E. Bauman, University of Illinois                             |
| 1978 | G. L. Allee, Kansas State University                             |
| 1979 | S. E. Curtis, University of Illinois                             |
| 1980 | T. L. Veum, University of Missouri                               |
| 1981 | R. L. Prior, Roman L. Hruska U.S. Meat Animal<br>Research Center |

1982 B. D. Schanbacher, Roman L. Hruska U.S. Meat Animal Research Center  
 1983 H. A. Garverick, University of Missouri  
 1984 G. C. Fahey, Jr., University of Illinois  
 1985 J. J. Ford, Roman L. Hruska U.S. Meat Animal Research Center  
 1986 C. L. Ferrell, Roman L. Hruska U.S. Meat Animal  
 Research Center  
 1987 D. Gianola, University of Illinois  
 1988 S. P. Ford, Iowa State University  
 1989 L. L. Berger, University of Illinois  
 1990 M. F. Rothschild, Iowa State University  
 1991 M. F. Smith, University of Missouri  
 1992 D. L. Harmon, Kansas State University  
 1993 M. Koohmaraie, Roman L. Hruska, U.S. Meat Animal Research Center  
 1994 L. G. Sheffield, University of Wisconsin, Madison  
 1995 J. Odle, University of Illinois  
 1996 J. L. Nelssen, Kansas State University  
 1997 R. S. Prather, University of Missouri  
 1998 D. Pomp, University of Nebraska  
 1999 R. W. Johnson, University of Illinois  
 2000 M. C. Lucy, University of Missouri  
 2001 C. K. Tuggle, Iowa State University  
 2002 M. Morrison, Ohio State University  
 2003 T. P. L. Smith, USDA, NE  
 2004 C. W. Ernst, Michigan State University

### **OUTSTANDING TEACHER AWARD**

1971 B. G. Harmon, University of Illinois  
 1972 R. E. Hunsley, Purdue University  
 1974 D. H. Gee, South Dakota State University  
 1976 T. R. Cline, Purdue University  
 1977 P. J. Cunningham, University of Nebraska  
 1978 B. D. Moser, University of Nebraska  
 1979 C. L. Hausler, Southern Illinois University  
 1980 T. R. Carr, University of Illinois  
 1981 M. E. Dikeman, Kansas State University  
 1982 R. E. Morrow, University of Missouri  
 1983 D. J. Kesler, University of Illinois  
 1984 R. A. Easter, University of Illinois  
 1985 D. F. Parrett, University of Illinois  
 1986 J. G. Sebranek, Iowa State University  
 1987 D. R. Brink, University of Nebraska  
 1988 K. M. Irvin, The Ohio State University  
 1989 R. P. Lemenager, Purdue University  
 1990 B. R. Skaar, Iowa State University  
 1991 D. A. Nichols, Kansas State University  
 1992 M. A. Russell, Purdue University  
 1993 D. K. Combs, University of Wisconsin, Madison  
 1994 L. C. Martin, Kansas State University  
 1995 M. E. Benson, Michigan State University  
 1996 B. D. Banks, Michigan State University  
 1997 H. D. Tyler, Iowa State University  
 1998 C. R. Youngs, Iowa State University  
 1999 J. N. Spain, University of Missouri

2000 M. E. Doumit, Michigan State University  
 2001 S. M. Lonergan, Iowa State University  
 2002 W. N. Osburn, Michigan State University  
 2003 S. C. Kelm, University of Wisconsin-River Falls  
 2004 M. S. Weber Nielsen, Michigan State University

### **AGRIBUSINESS AWARD**

1995 P. L. Houghton, Heartland Cattle Co., McCook, Nebraska  
 1996 J. A. Barmore, Vita Plus Corp., Madison, Wisconsin  
 1997 D. E. Dill, Dairy Strategies, Mendota Heights, MN  
 1998 C. M. Luhman, Land O'lakes Research Farm, Webster City, IA  
 1999 Not Given  
 2000 D. L. Hancock, Elanco Animal Health, Greenfield, IN  
 2001 J. M. Lynch, Heartland Cattle Co., McCook, NE  
 2002 Not Given  
 2003 J. M. Campbell, APC, Inc., IA  
 2004 D. M. Webel, United Feeds, IN

## **PAST WINNERS OF INVITATIONAL COMPETITIVE RESEARCH PAPER AWARDS**

### **UNDERGRADUATE STUDENTS**

1987 R. E. Raw, University of Missouri  
 1988 J. A. Ragains, University of Missouri  
 1989 G. L. Ambrose, South Dakota State University  
 1990 C. N. Kemper, University of Missouri  
 1991 T. R. Eberle, North Dakota State University  
 1992 B. J. MacDonald, North Dakota State University  
 1993 B. L. Dunn, Kansas State University  
 1994 S. M. Nelson, University of Nebraska  
 1995 L. J. Trinity, Iowa State University  
 1996 M. E. Cunningham, Oklahoma State University  
 1997 C. E. Sorenson, South Dakota State University  
 1998 J. L. Strickland, University of Nebraska  
 1999 B. A. DeMontigny, North Dakota State University  
 2000 K. S. Freise, University of Illinois  
 2001 K. R. Nollette, University of Nebraska  
 2002 B. Meyer, University of Nebraska  
 2003 A. Harvey, South Dakota State University  
 2004 L. H. Bach, Michigan State University

### **GRADUATE STUDENTS**

1976 D. G. Haught, Iowa State University  
 1977 L. L. Berger, University of Nebraska  
 1978 G. F. Collings, Michigan State University  
 1979 R. D. Boyd, University of Nebraska  
 1980 D. G. Cieslak, University of Wisconsin

|      |  |
|------|--|
| 1981 | W. F. Pope, University of Nebraska               |
| 1982 | P. F. Saenger, Purdue University                 |
| 1983 | D. A. Redmer, University of Missouri             |
| 1984 | W. F. Brown, University of Nebraska              |
| 1985 | J. H. Brendemuhl, University of Nebraska         |
| 1986 | P. L. Houghton, Purdue University                |
| 1987 | M. H. Wilde, The Ohio State University           |
| 1988 | T. R. Radke, University of Nebraska              |
| 1989 | K. K. Kreikemeier, Kansas State University       |
| 1990 | R. A. Nold, Kansas State University              |
| 1991 | M. D. Tokach, University of Minnesota            |
| 1992 | G. F. Louis, University of Nebraska              |
| 1993 | B. T. Larson, University of Missouri             |
| 1994 | L. H. Anderson, The Ohio State University        |
| 1995 | M. L. Augenstein, University of Minnesota        |
| 1996 | D. D. Koehler, University of Minnesota           |
| 1997 | R. A. Nold, South Dakota State University        |
| 1998 | K. J. Rozeboom, University of Minnesota          |
| 1999 | L. A. Averette, North Carolina State University  |
| 2000 | T. A. Armstrong, North Carolina State University |
| 2001 | T. G. McDanel, University of Nebraska*           |
|      | J. H. Hampton, University of Missouri**          |
| 2002 | K. M. Hargrave, University of Nebraska*          |
|      | M. J. Hersom, Oklahoma State University**        |
| 2003 | J. Luther, North Dakota State University*        |
|      | R. Main, Kansas State University**               |
| 2004 | R. C. Bott, University of Nebraska*              |
|      | M. M. Martinez, Michigan State University**      |

\*M.S. Division

\*\*Ph.D. Division

## **PAST WINNERS OF UNDERGRADUATE CONTEMPORARY ISSUES COMPETITION**

|      |   |
|------|---|
| 1998 | M. Bode, University of Missouri           |
|      | D. Hasekamp, University of Missouri       |
|      | J. Rumph, Michigan State University       |
|      | M. Schoenfield, University of Minnesota   |
| 1999 | L. Becker, University of Minnesota        |
| 2000 | R. Hawkins, North Dakota State University |
| 2001 | Discontinued                              |

## **ASAS MIDWESTERN SECTION PRESIDENTS**

|         |   |
|---------|---|
| 1963    | O. G. Bentley, University of Illinois         |
| 1964-65 | R. H. Grummer, University of Wisconsin        |
| 1966-67 | G. R. Johnson, The Ohio State University      |
| 1968    | R. J. Meade, University of Minnesota          |
| 1969    | J. A. Hoefler, Michigan State University      |
| 1970-71 | W. E. Dinusson, North Dakota State University |

|         |  |
|---------|--|
| 1972    | J. F. Lasley, University of Missouri                             |
| 1973    | U. S. Garrigus, University of Illinois                           |
| 1974-75 | V. C. Speer, Iowa State University                               |
| 1976    | H. S. Teague, The Ohio State University                          |
| 1977    | R. M. Luther, South Dakota State University                      |
| 1978    | B. N. Day, University of Missouri                                |
| 1979-80 | D. R. Zimmerman, University of Nebraska                          |
| 1981    | A. L. Pope, University of Wisconsin                              |
| 1982    | R. D. Goodrich, University of Minnesota                          |
| 1983    | E. R. Miller, Michigan State University                          |
| 1984    | W. R. Woods, Purdue University                                   |
| 1985    | L. R. Corah, Kansas State University                             |
| 1986    | B. D. Moser, University of Missouri                              |
| 1987    | S. E. Curtis, University of Illinois                             |
| 1988    | R. G. Zimbelman, Upjohn; D. J. Meisinger, Indiana                |
| 1989    | T. J. Klopfenstein, University of Nebraska                       |
| 1990    | J. R. Romans, South Dakota State University                      |
| 1991    | J. E. Pettigrew, University of Minnesota                         |
| 1992    | C. E. Sasse, Cenex/Land O'Lakes                                  |
| 1993    | M. G. Hogberg, Michigan State University                         |
| 1994    | G. L. Allee, University of Missouri                              |
| 1995    | S. K. Webel, Purina Mills, Bloomington, IL                       |
| 1996    | D. L. Meeker, National Pork Producers Council,<br>Des Moines, IA |
| 1997    | T. S. Stahly, Iowa State University                              |
| 1998    | R. P. Lemenager, Purdue University                               |
| 1999    | S. P. Ford, Iowa State University                                |
| 2000    | J. R. Males, Oregon State University                             |
| 2001    | M. L. Day, The Ohio State University                             |
| 2002    | R. K. Johnson, University of Nebraska                            |
| 2003    | C. L. Ferrell, USDA, Clay Center                                 |
| 2004    | G. C. Shurson, University of Minnesota                           |

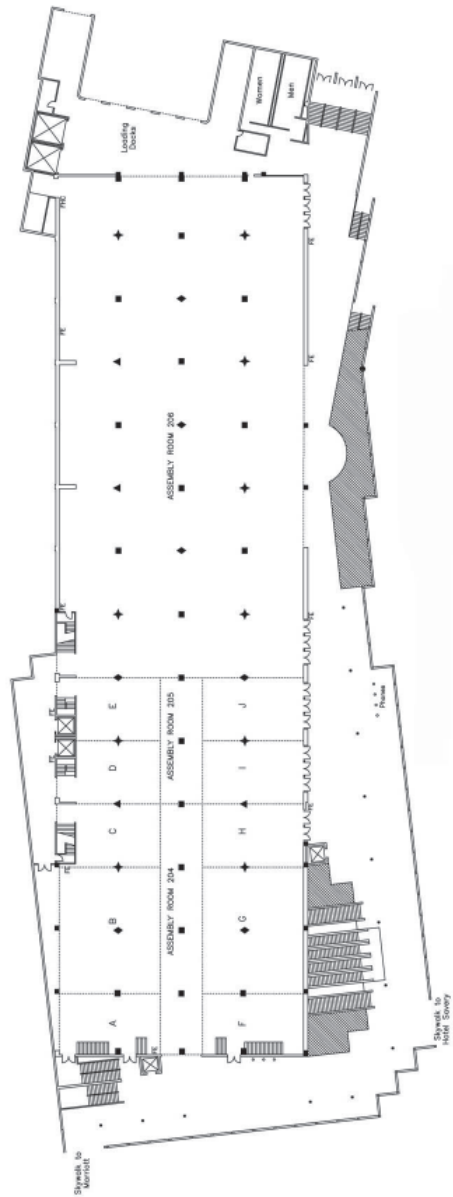
## **ADSA MIDWEST BRANCH PRESIDENTS**

|      |  |
|------|--|
| 1992 | J. F. Keown, University of Nebraska              |
| 1993 | J. G. Linn, University of Minnesota              |
| 1994 | D. J. Schingoethe, South Dakota State University |
| 1995 | J. L. Morrill, Kansas State University           |
| 1996 | M. F. Hutjens, University of Illinois            |
| 1997 | M. A. Faust, Iowa State University               |
| 1998 | J. K. Drackley, University of Illinois           |
| 1999 | R. D. Shaver, University of Wisconsin            |
| 2000 | R. J. Grant, University of Nebraska              |
| 2001 | M. L. Eastridge, The Ohio State University       |
| 2002 | J. D. Quigley III, APC, Inc.                     |
| 2003 | S. T. Franklin, University of Kentucky           |
| 2004 | D. K. Combs, University of Wisconsin             |

## **FUTURE MEETINGS**

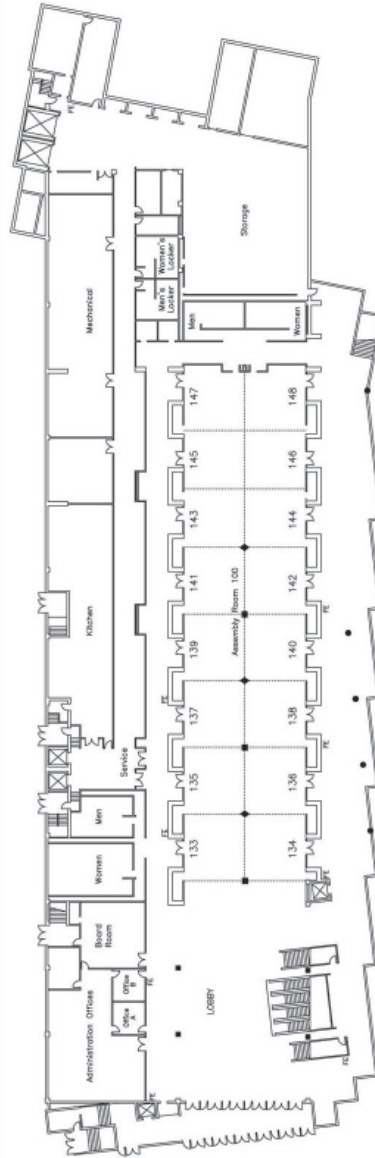
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|------|-------------|
| 2006 | March 20-22 |
| 2007 | March 19-21 |

# POLK COUNTY CONVENTION COMPLEX Upper Level

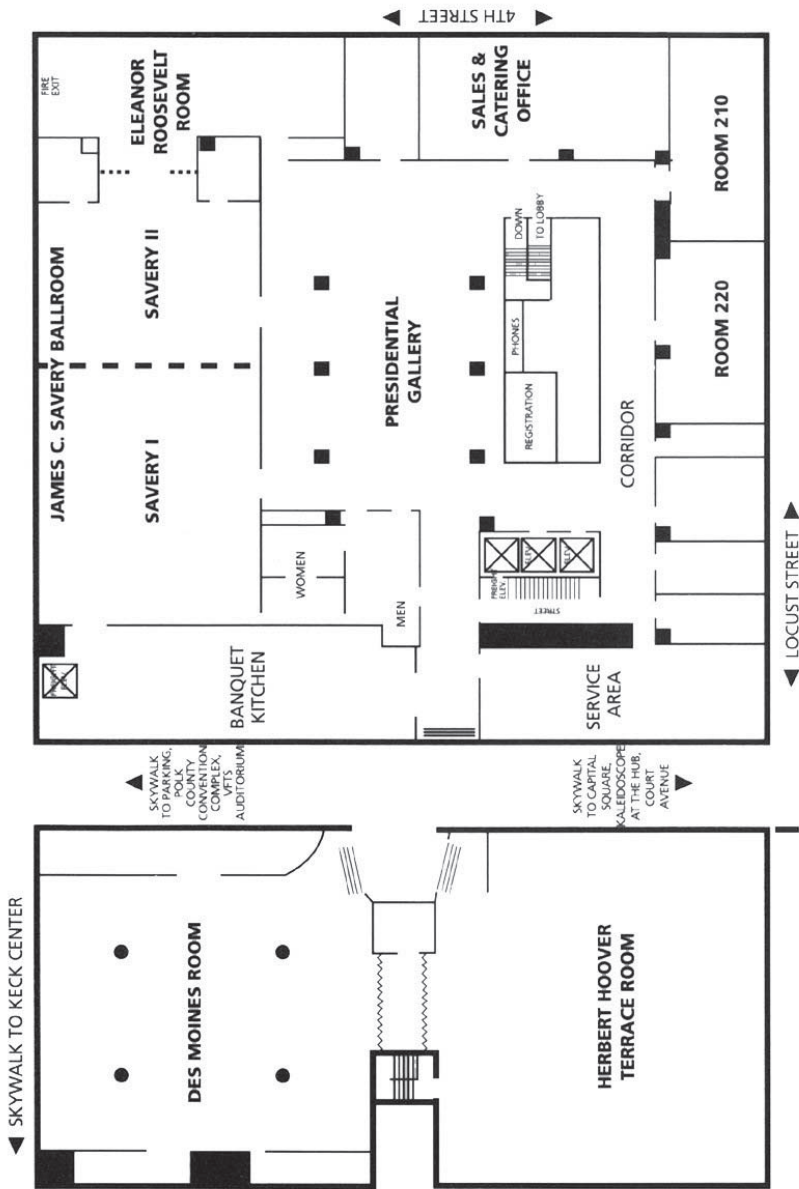




# POLK COUNTY CONVENTION COMPLEX Lower Level



# THE SAVERY HOTEL SECOND FLOOR



## Room Assignments

| ACTIVITY  | Monday p.m. | ROOM         |
|---|-------------|--------------|
| AQ Quiz Bowl.....   |             | 204FG        |
| David H. Baker Symposium .....  |             | 204AB        |
| Undergraduate Student Competitive Papers .....                          |             | 205IJ        |
| Graduate Student Competitive Papers – M.S. ....                         |             | 204FG        |
| Extension-Swine I .....   |             | 138          |
| Animal Behavior, Housing, and Well Being II .....                       |             | Exhibit Hall |
| Extension-Beef III .....  |             | Exhibit Hall |
| Nonruminant Nutrition VIII .....  |             | Exhibit Hall |
| Ruminant Nutrition VI .....   |             | Exhibit Hall |
| <b>Tuesday a.m.</b>   |             |              |
| Breeding Genetics I .....   |             | 144          |
| Graduate Student Competitive Papers – Ph.D. ....                        |             | 205IJ        |
| Extension-Beef I .....  |             | 138          |
| Extension-Dairy I .....   |             | 146          |
| Extension-Dairy II .....  |             | 146          |
| Nonruminant Nutrition II .....  |             | 204AB        |
| Billy N. Day Symposium .....  |             | 136          |
| Physiology II .....   |             | 134          |
| Ruminant Nutrition I .....  |             | 140          |
| Ruminant Nutrition II .....   |             | 140          |
| Extension-Swine II .....  |             | 142          |
| <b>Tuesday p.m.</b>   |             |              |
| Animal Behavior, Housing, and Well Being I .....                        |             | 138          |
| Breeding and Genetics II .....  |             | 140          |
| Nonruminant Nutrition III, Odor and Nutrient<br>Management I .....      |             | 204AB        |
| Nonruminant Nutrition IV .....  |             | 205IJ        |
| Physiology III .....  |             | 134          |
| Ruminant Nutrition III, Extension-Beef II,<br>Extension-Dairy III ..... |             | 204FG        |
| Teaching I .....  |             | 136          |
| Teaching II .....   |             | 136          |
| Breeding and Genetics IV .....  |             | Exhibit Hall |
| Extension-Dairy V .....   |             | Exhibit Hall |

|   |              |
|---|--------------|
| Growth and Development, Muscle Biology, and<br>Meat Science III ..... | Exhibit Hall |
| Nonruminant Nutrition IX .....  | Exhibit Hall |
| Odor and Nutrient Management III .....                                | Exhibit Hall |
| Ruminant Nutrition VII .....  | Exhibit Hall |
| Extension-Swine III .....   | Exhibit Hall |
| Teaching III .....  | Exhibit Hall |

**Wednesday a.m.**

|  |       |
|--|-------|
| Breeding and Genetics III .....                                      | 144   |
| Extension-Dairy IV .....   | 146   |
| Growth and Development, Muscle Biology, and<br>Meat Science II ..... | 138   |
| Nonruminant Nutrition V .....  | 204AB |
| Nonruminant Nutrition VI .....                                       | 205IJ |
| Nonruminant Nutrition VII .....                                      | 140   |
| Odor and Nutrient Management II .....                                | 136   |
| Ruminant Nutrition IV .....  | 134   |
| Ruminant Nutrition V .....   | 142   |