

ILHAC

Iowa Livestock Health Advisory Council

February 2017 Newsletter

In support of ILHAC

Animal agriculture plays a critical role in Iowa's economy as evidenced by its \$15 billion annual impact. Iowa is the leading pork- and egg-producing state with production of other species also playing a significant role in the state's economy. In fact, production agriculture and ag-related industries account for a quarter of Iowa's total economy.

As the world's population continues to grow with more than 9 billion people projected by 2050, it is essential that Iowa, a world leader in food production, improves and expands its vibrant animal agricultural industry.

ILHAC at Iowa State College of Veterinary Medicine is critical to the continued growth and health of the state's economy. ILHAC funding ensures that our food production system meets the needs of the world's ever-expanding population.

A cooperative effort between Iowa's livestock industry, the State of Iowa and the college, the ILHAC advisory board identifies high impact animal disease research projects. Through this funding, college researchers actively pursue innovative research in animal health, food safety and security that proactively addresses disease concerns threatening Iowa's livestock industry.

While ILHAC is a strong and vital contributor to the economic well-being of our state, it is not the only critical area for which the College of Veterinary Medicine will be seeking legislative support. The college will also request funding for a new stand-alone Veterinary Diagnostic Laboratory.

The new \$124 million VDL building will provide a safe environment to conduct testing, meet present and future space needs, allow for development and implementation of new and emerging technologies, and support competitiveness and growth of Iowa's export-centric agricultural economy. ISU plans to fund this capital project through a mix of state appropriations and private giving.

We appreciate your support.

Sincerely,
Lisa K. Nolan, DVM, PhD
Dr. Stephen G. Juelsgaard
Dean of Veterinary Medicine
Iowa State University

From 2009-2016, every \$1 in ILHAC funding to Iowa State University College of Veterinary Medicine generated \$11.63 in outside funding.

ILHAC – Partnering with Iowa Animal Agriculture

Raising healthy livestock to provide safe and wholesome food to Iowa citizens and people around the world is important to Iowa's livestock farmers. For more than 30 years, Iowa farmers, in partnership with Iowa legislators and veterinary researchers at Iowa State University, have funded research projects that address the health and well-being of livestock. This partnership, named the Iowa Livestock Health Advisory Council (ILHAC), has recently funded projects in areas such as animal well-being and several animal-health diseases – all critically important to maintaining a safe food supply for Iowans. In other words, ILHAC-funded research benefits all of society.

Importance of ILHAC Funding

- ILHAC is a cooperative effort between Iowa livestock industry stakeholders, the State of Iowa and the Iowa State University College of Veterinary Medicine.
- ILHAC was created in 1977 to strengthen Iowa's animal-agriculture industry and was funded with an initial appropriation of \$200,000. Since then, ILHAC funding has decreased 14% to \$172,844 while the value of Iowa animal agriculture has increased significantly (375%) from **\$4 billion to \$15 billion**.
- Only 1 in 5 proposals submitted to ILHAC are funded due to diminishing funding levels.
- ILHAC is funded through Education Appropriations. This line item provides critically needed "seed money" resulting in an additional \$10 million in externally funded research dollars to the ISU College of Veterinary Medicine over the past decade for high-impact, producer-prioritized research, including emerging livestock diseases.
- ILHAC funds are applied to research projects that advance knowledge of animal health, food safety and animal well-being in Iowa livestock.
- Recently funded projects include studying ways to better prevent and control PED and PRRS in pigs; *E.coli* and *Clostridium spp* in poultry; and lameness, respiratory disease, and pinkeye in beef and dairy cattle.

ILHAC Funds Research Experiences for Veterinary Students

Several national studies have identified a critical shortage of veterinarians who pursue research-oriented careers. ILHAC funding provides three to four ISU veterinary students with an opportunity to explore the field of research. For 13 weeks each summer, students gain first-hand experience in research by working with veterinary mentors on ILHAC-funded projects. At the end of the summer, the students present their research posters at the college's annual Summer Scholar Research Day which includes a poster session, and recognition luncheon at a nearby conference facility.

ILHAC Voting Board Members

Iowa Cattlemen's Association

Isaiah Shnurman, *Prole (Warren County)*
Callie Garoutte, *Adel (Dallas County)*
Matt Winters, *Volga (Clayton County)*

Iowa State Dairy Association

Norm Voelker, *Ryan (Delaware County)*

Iowa Pork Producers Association

Steve Kerns, *Clearfield (Taylor County)*
Dave Moody, *Nevada (Story County)*
Greg Lear, *Spencer (Clay County)*

Iowa Poultry Association

Dr. Bernie Beckman, *Dallas Center (Dallas County)*

Iowa Sheep Industry Association

Vacant

Iowa Veterinary Medical Association

Dr. John Hicks, *Carroll (Carroll County)*

ILHAC Advisory Board Members

Iowa Cattlemen's Association

Mr. Matt Deppe, *Ames (Story County)*

Iowa State Dairy Association

Sue Ann Claudon, *Ankeny (Polk County)*

Iowa Pork Producers Association

Stephanie Carlson, *Clive (Polk County)*

Iowa Egg Council and Iowa Poultry Association

Kevin Stiles, *Urbandale (Polk County)*

Iowa Sheep Industry Association

Michelle Harland, *Nevada (Story County)*

Iowa Turkey Federation

Gretta Irwin, *Ames (Story County)*

Iowa Veterinary Medical Association

Dr. Randy Wheeler, *Ankeny (Polk County)*

State Veterinarian

Dr. David Schmitt, *Des Moines (Polk County)*

Iowa State University

Dr. Lisa Nolan, *Ames (Story County)*
Dr. Qijing Zhang, *Ames (Story County)*

ILHAC Research Priorities: 2017

Swine

1. Animal Well-being (analgesics for castration, sow housing, pain relief)
2. Antimicrobial Resistance (monitoring antibiotic use, looking for information/data to counteract misinformation, prevention control treatment, proof that drugs (antibiotics) are used properly, variability of normal dose)
3. PEDv
4. PRRS
5. Swine Influenza (new vaccine technologies-intranasal product)
6. Methicillin-resistant *Staphylococcus aureus* (MRSA)
7. *Clostridium difficile*
8. *Mycoplasma hyopneumoniae*
9. Seneca Valley Virus

Dairy Cattle

1. Animal Well-being Issues
 - a. Mastitis
 - b. Lameness
 - c. Respiratory Disease
 - d. Discover or develop an FDA approved Analgesic for producing animals
2. Johne's Disease
3. *Mycoplasma bovis*
4. Antimicrobial Resistance (monitoring antibiotic use, looking for information/data to counteract misinformation, prevention control treatment, proof that drugs (antibiotics) are used properly, variability of normal dose)

Beef Cattle

1. Anaplasmosis
2. Digital Dermatitis (hairy heel wart)
3. Trichomiasis (surveillance, identification/verification-cost effective manner)
4. Animal Well-being issues
5. Bovine Respiratory Disease (BRD)/
Mycoplasma bovis – respiratory

Poultry

All Poultry–Influenza infections

1. AI infections
2. Antimicrobial resistance and Antibiotic substitutes in poultry production
3. Animal Well-being

Turkeys

1. Food Safety
 - a. *Salmonella*
 - i. *Salmonella* Oranienburg
 - b. *Listeria*
 - c. *Campylobacter jejuni*
2. *Clostridium* - Dermatitis or cellulitis
3. Leg & joint abnormalities
4. *Mycoplasma gallisepticum*

Layers

1. Food Safety - *Salmonella spp.* (SE)
2. Peritonitis – *E. coli*
3. Focal Duodenal Necrosis (FDN)

Sheep and Goats

1. Improved treatment of parasitic diseases
2. Barn Cough (Pneumonia, *Mycoplasma* – isolate vaccine, differences between two)
3. Abortions-Cache Valley (and partial abortions), "Pregnancy Wastage" (Neonatal death, failure to dilate)

IVMA CONCERNS:

Represents All Species

1. Animal Well-being
 - a. Pain Control
 - b. Lameness
2. Seneca Valley Virus
3. Trichomiasis
4. Methicillin-resistant *Staphylococcus aureus* (MRSA)
5. Johne's Disease
6. Anthelmintic resistance

Four projects received new funding from ILHAC in 2016-17:

- **Dr. Douglas Jones**, "Development of a vaccine implant to control bovine anaplasmosis"
- **Dr. Patrick Halbur**, "Efficacy of a novel interferon inducing PRRSV vaccine candidate against homologous and heterologous challenge"
- **Dr. Tanja Opriessnig**, "Evaluation of two novel vaccine platforms targeting the IAV M2e epitope for a universal flu vaccine in the pig model"
- **Dr. Kelly Still-Brooks**, "Pharmacokinetics, Tissue Residue Depletion of Ponazuril in Feeder Lambs"

ILHAC-Funded Research Projects

Two projects received new funding from ILHAC in 2015-16, and also a second year of funding in 2016-17:

- **Dr. Patrick Gorden**, "Comparative pharmacokinetics, milk and tissue disposition of ceftiofur crystalline free acid and its impact on antimicrobial resistance selection in healthy and diseased dairy cows"
- **Dr. Lisa Nolan**, "FNR regulates important virulence factors in Avian Pathogenic *Escherichia coli* (APEC)"