Animal Health in the Heartland
WHOLE ANIMAL HEALTH

Hosted By

IOWA BIO
Bio Nebraska

AUGUST 18–19, 2020
VIRTUAL SYMPOSIUM

For more information about the symposium, visit www.iowabio.org/AnimalHealth

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SYMPOSIUM AGENDA - DAY 1
Draft Agenda - Subject to Change

Pending approval, veterinarians and veterinarian technicians licensed in Nebraska may claim 3 hours of continuing competency activities for participating in Track 1 (red icon) on August 18. Assignment of Continuing Educations credits for Iowa attendees is currently under review.

Tuesday, August 18

8:00 - 8:15am  Welcome Remarks
Event Hosts and Iowa Secretary of Agriculture, Mike Naig

8:15 - 9:15am  Track Presentations
- Development of Novel Vaccines to Improve Animal Health
- Integrated Health Management: An Ecosystem Approach to Modern Swine Production

9:15 - 9:20am  Break

9:20 - 10:20am  Track Presentations
- Mitigating Animal-to-Human Disease Transmission in a Live/Modified Viral Facility
- New Smart Livestock Building Technology

10:20 - 10:30am  Break

10:30 - 11:30am  Track Presentations
- Use of Anti-Hormone Vaccination to Increase Livestock Productivity
- Simulation Applications in Animal Health

11:30 - 11:35am  Break

11:35 - 12:35pm  Track Presentations
- A Novel Vaccine Approach for Preventing the Worldwide Threat of African Swine Fever (ASF) in Pigs
- Big Data – Small Birds

12:35 - 12:45pm  Host Remarks; Invitation to Speaker Meet & Greet Following Lunch Break

12:45 - 1:15pm  Lunch Break

1:15 - 1:25pm  Instructions for Speaker Meet & Greet

1:25 - 2:30pm  Virtual Speaker Meet & Greet
Pending approval, veterinarians and veterinarian technicians licensed in Nebraska may claim 3 hours of continuing competency activities for participating in Track 3 (green icon) on August 19. Assignment of Continuing Educations credits for Iowa attendees is currently under review.

**Wednesday, August 19**

8:00 – 8:15am  
*Welcome Remarks*  
Event Hosts and Nebraska Department of Agriculture Director, Steve Wellman

8:15 – 9:15am  
*Track Presentations*  
- Feed Biosecurity Benefits of R2-Product Line in Animal Industry  
- U.S. Oversight of Animal Biotechnology and the Need for Change

9:15 – 9:20am  
*Break*

9:20 – 10:20am  
*Track Presentations*  
- Expanding Feed Market Opportunities for Corn  
- Gene Editing and Animal Health Applications

10:20 – 10:30am  
*Break*

10:30 – 11:30am  
*Track Presentations*  
- ProPreg®-Supporting Dairy Cow Reproductive Health  
- Assessing Animal Health from Farm Gate to Dinner Plate

11:30 – 11:35am  
*Break*

11:35 – 12:35pm  
*Track Presentations*  
- Live Therapeutics for Control of Necrotic Enteritis Caused by Clostridia Perfringens in Poultry  
- COVID-19 and Meat Processing: Impacts on Workers, Producers, and Animal Health

12:35 – 12:45pm  
*Host Remarks; Invitation to Speaker Meet & Greet Following Lunch Break*

12:45 – 1:15pm  
*Lunch Break*

1:15 – 1:25pm  
*Instructions for Speaker Meet & Greet*

1:25 – 2:30pm  
*Virtual Speaker Meet & Greet*
Development of Novel Vaccines to Improve Animal Health

As the use of antibiotics in animal agriculture continues to scrutinized, other approaches to manage animal health and production efficiencies will need to be considered. One such area will be the continued use and expansion of effective vaccine regimen to induce protection from diseases that have an economic effect on livestock species. It is proposed that a panel discussion be held to discuss the role immunization practices play in animal agriculture. New approaches that may be employed to develop more efficacious vaccines, how this would alter the use/dependence on growth promoting antibiotics, and how collaborations between individuals from universities, animal agriculture industry, and government agencies would/will play a role in a program of expanded use of vaccines to control infectious agents.

- Dr. Michael Roof, Director of Research at ARKO Labs
- Meghan Wymore Brand, DVM PhD, ORISE Postdoctoral Research Fellow at National Animal Disease Center, USDA–ARS
- Lucas Huntimer, Ph.D., Senior Advisor - External Innovation at Elanco Animal Health

Mitigating Animal-to-Human Disease Transmission in a Live/Modified Viral Facility

Protecting the product, the environment, and personnel while handling live viral products can be tricky. Most mitigation strategies involve complicated HVAC systems, electrical interlocks, and specialized fogging/VHP equipment. This presentation will compare different approaches and associate pros/cons with each.

- Payton Fraley, Chemical Engineer at CRB
- Bill Donahue, Process Engineer at CRB
- Moderated by Eric Danielson, Director of Business Development at CRB

Use of Anti-Hormone Vaccination to Increase Livestock Productivity

The replacement of drugs for animal growth has necessitated alternate strategies. One proven method is by the use of anti-somatostatin hormone vaccines. The vaccines are safe and effective in multiple species.

- Dr. Keith N. Haffer, President and CSO of Braasch Biotech LLC

A Novel Vaccine Approach for Preventing the Worldwide Threat of African Swine Fever (ASF) in Pigs

Aptimmune believes we can solve the global ASF epidemic crisis using core components from our existing portfolio to develop an effective vaccine. There is no efficacious vaccine currently available for this disease, and one of the major limiting factors in making a vaccine is the ability of the virus to grow in cell culture. Aptimmune owns the only known commercially scalable cell line proven to support growth of ASF virus and has licensed ASF antigens from USDA – core building blocks of a vaccine – that will be used to help solve this devastating, deadly disease that would have a significant impact on U.S. livestock producers, their communities and the economy if the disease were found here.

- Heather J. Bessoff, DVM, President and Chief Executive Officer of Aptimmune Biologics, Inc.

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Track 2*: Technology on Today’s Smart Farm

This Track will look at the use of artificial intelligence, data collection and connectivity on the farm and how these advances in technology improve animal health and increase farm operation efficiencies.

Integrated Health Management: An Ecosystem Approach to Modern Swine Production

Boehringer Ingelheim Animal Health has broken new ground and is working to pave the way for new technologies to support swine production, now in the digital health management space. Integrated Health Management is unique ecosystem approach to animal health that merges multiple data streams from software, smart barn technology/sensors, traditional swine production methodology and other partnering companies into a consolidated, actionable data output presentation (Farmera™). With a real-time approach to swine production and management, producers can identify and act upon production changes faster than ever before, allowing for the potential for earlier interventions and mitigation of problems.

- Kellie Hogan, PhD, Technical Marketing Manager – Integrated Health Management at Boehringer Ingelheim Animal Health USA Inc.
- Erin Lowe, DVM, Associate Director, Data Integration and Performance – Integrated Health Management at Boehringer Ingelheim Animal Health USA Inc.

New Smart Livestock Building Technology

RealmFive offers world-class, full-stack connectivity to automate agriculture. As part of its product offering, RealmFive is continuing to bring innovation to the livestock market for the purpose of increasing efficiencies and reducing labor in livestock buildings.

- Steve Tippery, CEO of RealmFive

Simulation Applications in Animal Health

It is better to perform simulations rather than experimenting on the real system. Simulation models can be used to depict actual system dynamics that includes time, events and the changes that occur over time. They further can model variability and stochastic events and perform what-if analyses. This session discusses how operational simulations can be used to address bottlenecks, evaluate capacities, improve designs/layout, and help justify business case within the animal health domain.

- Niranjan Kulkarni, PhD, Director, Operation Improvements at CRB
- Moderated by Eric Danielson, Director of Business Development at CRB

Big Data – Small Birds

Simple Ag Solutions partnered with a top 15 US broiler producer to explore the use of animal health data as a means to solve a production problem. Using an artificial intelligence algorithm to predict animal growth and trajectory has reduced the need for animal handling and improved production scheduling. What else can animal health data teach us about production?

- Will Payne, PhD, MBA, Co-Founder and CTO of Simple Ag Solutions
- Will Frei, CPA, Director of Integration at Simple Ag Solutions

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**Track 3**: Advancements in Probiotics and Animal Feed

This Track will explore the development and introduction of new probiotic and feed products into livestock and the positive health effects they provide while eliminating the dependency on antibiotics.

**Feed Biosecurity Benefits of R2-Product Line in Animal Industry**

R2 is Feed Energy’s patent pending low pKa, lipid–based product that provides nutrient–dense source of essential fatty acids along with proven feed biosecurity benefits. R2 contains a blend of short, medium and long chain fatty acids with high oxidative stability deliver nutrients to the animal through their feed.

- Abdullah Mahfuz, PhD, R&D Manager (Animal Nutrition & Product Development) at Feed Energy Company

**Expanding Feed Market Opportunities for Corn**

Corn is traditionally considered an energy crop. New processing technology in the dry grind ethanol industry can produce corn fermentation protein, a high value functional protein supplement suitable for aquanutrition and companion animals. Ethanol becomes the co-product.

- Joseph W. Ward, Ph.D., Senior Nutritionist at Fluid Quip Technologies

**ProPreg®-Supporting Dairy Cow Reproductive Health**

This presentation will detail ProPreg®, a ready to use easy to administer intravaginal formulation that contains a consortia of three natural resident lactobacillus microorganism, that supports the establishment and maintenance of a normal microbiome and prevents the colonization of environmental bacteria that cause uterine infections. Lactobacillus strains suppress the growth of the bad bacteria by the natural production of organic acids such as lactic acid, hydrogen peroxide and bacteriocins. By supporting the normal microbiome, the growth of pathogenic bacteria is inhibited, without the use of antibiotics. The use of ProPreg on our test farms has shown an average of 40-50% reduction in antibiotic use. This is good for the cow, the dairy, the creamery, the consumer and the environment. The presentation will present current data from on-farm trials.

- Dr. Edward Robb, Managing Partner of Healthy Cow Corp.

**Live Therapeutics for Control of Necrotic Enteritis Caused by Clostridia Perfringens in Poultry**

This presentation will discuss the agile research and development of live biotherapeutics against Clostridia perfringens. We will present results of animal trials demonstrating the effectiveness and safety of this technology. Based on these results, the FDA CVM deemed our technology innovative and granted us a waiver of fees to open an investigational new animal drug file. We will detail the unique development path for registering our product with the FDA CVM. To our knowledge this a first for a probiotic–based technology.

- Yiannis Kaznessis, PhD, Chief Executive Officer of General Probiotics, Inc.
- Kathryn Kruziki, PhD, Senior Engineer at General Probiotics, Inc.

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**Track 4**: Overcoming Challenges: Regulatory Pathways, Facing Pandemics, and Making Rapid Decisions

This Track provides a broad look at the way innovation meets and overcomes challenges on the path to success. From understanding and navigating regulatory hurdles, to stepping up during pandemics, to being able to respond at a moment’s notice to the consumer’s needs, these presentations will showcase how organizations face the challenges head-on to improve animal health in a successful and ethical manner.

**U.S. Oversight of Animal Biotechnology and the Need for Change**

Innovations in animal biotechnology can improve human and animal health, make our farming and food systems more sustainable, and boost our biobconomy. But these breakthroughs are dependent on a clear, timely, and science-based regulatory approval process that provides a viable path to market. The current U.S. regulatory system for oversight of these innovations is administered by the U.S. Food and Drug Administration, which considers genetic alterations in animals to be "new animal drugs." The FDA current evaluation process is time-consuming, opaque, unpredictable, and disproportionate to the actual risk posed by the products being evaluated, and as a result is strongly disincentivizing innovation in the U.S. and driving developers to turn to other markets. This presentation will walk through this issue and update on attendees on the discussion surrounding the need to reform and develop more appropriate and functioning oversight of animal biotechnology.

- Dr. Clint Nesbitt, Senior Director, Science and Regulatory Affairs at Biotechnology Innovation Organization

**Gene Editing and Animal Health Applications**

The technology exists to solve many animal health challenges through gene editing, from pet health to diseases in livestock. What are the possibilities? What does the regulatory pathway look like today? Will potential food security and the pandemic reshape potential speed to market? And, how are the next several years likely to unfold?

- Cassie Edgar, Partner, Chair Regulatory Law Practice Group at McKee, Voorhees & Sease
- Wesley A. Wierson, PhD, Founder and CEO of LEAH Labs
- Steve Brody, Global Director at Genus
- Yehuda Elram, Co-Founder and CEO of eggXYt

**Assessing Animal Health from Farm Gate to Dinner Plate**

Identification of desirable production traits or genetic predispositions, surveillance and diagnostics for infectious diseases, and detection of foodborne pathogens are important steps in assessing whole animal health. All of these applications are possible using MatMaCorp’s Solas 8 device and custom C–SAND™ assay kits, and can be performed rapidly at the point of use. Genotyping for bovine congestive heart failure (BCHF), surveillance for PRRSV and identification of vaccine strains, determination of antimicrobial resistance and susceptibility of bovine respiratory bacteria, and detection of African Swine Fever Virus and foodborne pathogens such as Salmonella and Listeria are just a few ways that the technology can be used from birth to butcher.

- Dustin Petrik, PhD, Senior Scientist at MatMaCorp
- Michael P. Heaton, PhD, Research Microbiologist at USDA, ARS, US Meat Animal Research Center
- Christine Mainquist–Whigham, DVM, Veterinarian at Pillen Family Farms
- Moderated by Phil Kozer, CEO of MatMaCorp

**COVID–19 and Meat Processing: Impacts on Workers, Producers, and Animal Health**

Outbreaks of COVID-19 have emerged in small, rural towns centered around meat processing facilities. A team from the University of Nebraska Medical Center’s Global Center for Health Security and College of Public Health provided onsite technical assistance to meat processing plants across the state and developed a Playbook to mitigate the spread of COVID–19 as these facilities continue to operate. This panel presentation will discuss goals of technical site visits to promote worker health and maintain production capacity, effects of meat processing plant closures and reduced production on producers and animals, and impacts on animal welfare.

- Jocelyn Herstein, PhD, MPH, Director, Sub-Saharan Africa Region at Global Center for Health Security, University of Nebraska Medical Center
- Shelly Schwedhelm, MSN, RN, Executive Director of Emergency Management and Clinical Operations at Global Center for Health Security, Nebraska Medicine
- Clinton Krehbiel, PhD, PAS, Marvel L. Baker Head and Professor of Animal Science at University of Nebraska–Lincoln

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