
Sunday, June 3, 2018

4:00 – 6:30
p.m. Registration

6:00 – 7:30
p.m. Welcome Reception w/ Bar

Monday, June 4, 2018

6:30 – 8:00
a.m. Full Breakfast

7:00 a.m. –
6:00 p.m. Registration

Session 1 **Technology Development and Bioethics**

Session Chair: Kenneth White

8:00 – 8:15
a.m. Kenneth White, Utah State University
Welcome and opening remarks

8:15 – 8:45
a.m. Yinan Kan, eGenesis
Unleashing Technology: “The Future without Limit”

8:45 – 9:15
a.m. Shengdar Tsai, Department of Hematology, St. Jude Children’s Research Hospital
Strategies for Defining and Improving Specificity of CRISPR-Cas9 Genome Editing

9:15 – 9:45
a.m. Margaret Riley, University of Virginia School of Law
CRISPR Quandries: Ethics in Large Animal Genetic Engineering

9:45 – 10:15
a.m. Refreshment Break

Session 2 **Livestock Industry Perspective**

Session Chair: Diane Wray-Cahen, USDA

10:15 –
10:35 a.m. Mark Cigan, Genus
Gene Editing to Tackle Livestock Diseases

10:35 –
10:55 a.m. Michael Lohuis, Semex (dairy & beef)
New Breeding Techniques. Perspectives from the Cattle Industry

10:55 –
11:15 a.m. Johan van Arendonk, Hendrix Genetics (Poultry & Swine)
Gene Editing and Animal Breeding: An Industry Perspective

11:15 –
11:35 a.m. Larisa Rudenko, Massachusetts Institute of Technology, Center for International Studies
Governance of Emerging Technologies: An Integrative Approach

11:35 –
12:00 p.m. Panel discussion

12:00 – 1:30
p.m. Lunch

Session 3 **Biomedical 1 (human disease models)**

Session Chair: Pascale Chavatte-Palmer, Institut National de la Recherche Agronomique (INRA)

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- 1:30 – 2:00 p.m. Chris Davies, Utah State University
Production of an Ovine Interferon Type 1 Receptor Knockout Model
- 2:00 – 2:30 p.m. Angelika Schnieke, Technical University of Munich
Modeling Human Cancers in Pigs
- 2:30 – 3:00 p.m. Chris Rogers, Exemplar Genetics
Porcine Models of Rare Human Diseases
- 3:00 – 3:40 p.m. Poster Flash Talks (5 min per presentation)
Zhiqiang Fan, Joseph Hawkes, Jeffrey Mason, Maci Mueller, Ki-Wun Park, Evan Peterson, Misha Regouski
- 3:40 – 5:20 p.m. Poster Presentations with wine and cheese

Tuesday, June 5, 2018

7:00 – 8:30 a.m. Full Breakfast

7:00 a.m. – 12:30 p.m. Registration

Session 4 **Farm Animal Breeding**
Session Chair: Jeffrey Mason, Utah State University

8:30 – 9:00 a.m. Jon Oatley, Washington State University
Generation of Germline Ablated Male Pigs by CRISPR/Cas9 Editing of the NANOS2 Gene

9:00 – 9:30 a.m. Pablo Ross, University of California-Davis
Efficient derivation of bovine ESC: prospective for In Vitro Breeding

9:30 – 9:45 a.m. Amy Desaulniers, University of Nebraska-Lincoln
A Transgenic Swine Model to Elucidate Ovarian Steroidogenesis in Gilts

9:45 – 10:00 a.m. Xiaolong Wang, Northwest A&F University
Trio-based Deep Sequencing Reveals Low Incidence of Off-target Mutations in Genetically Edited Small Ruminants

10:00 – 10:20 a.m. Refreshment break with Famous Aggie Ice Cream

Session 5 **Biotechnology**
Session Chair: Simon Lilloco, Roslin Institute

10:20 – 10:50 a.m. Hua Wu, SAB Biotherapeutics
Using Fully Human Antibodies from Tc Bovine to Fight Infectious Diseases

11:20 – 11:50 p.m. Bhanu Telugu, University of Maryland
Unleashing the Translational Potential of Pig Models Using CRISPR/Cas9 System

11:50 – 12:05 p.m. Mark Fife, The Pirbright Institute
chIFITM Gene Knockout Technology for Increased Vaccine Yields in Embryonated Eggs

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- 12:05 – Genevieve Jolivet, Institut National de la Recherche Agronomique (INRA)
12:20 p.m. *The Rabbit as Experimental Model for Studying the Function of Genes Using the New Genome Editing Technologies: The Example of AROMATASE -/- Rabbits*
- 12:20 p.m. Free Time

Wednesday, June 6, 2018

- 7:00 – 8:30 Full Breakfast
a.m.

- 7:00 – 10:00 Registration
a.m.

Session 6 **Biomedical 2 (human disease models)**

Session Chair: Kristin Whitworth, University of Missouri

- 8:30 – 9:00 Irina Polejaeva, Utah State University
a.m. Ann Harris, Case Western Reserve
A New Member of the Cystic Fibrosis Menagerie: The CF Sheep

- 9:00 – 9:30 Tom Wishart, Roslin Institute
a.m. *Modelling Lysosomal Storage Disorders in Sheep*

- 9:30 – 9:45 Yunsheng Li, Iowa State University
a.m. *Generation of IL2RG^{TY} ART⁷⁻ Double Mutant Piglets Using CRISPR/Cas9*

- 9:45 – 10:00 Timothy Sheets, University of Maryland-College Park and USDA-ARS Animal
a.m. Biosciences and Biotechnology Laboratory
Targeted Mutation of NGN3 Gene Disrupts Pancreatic Endocrine Cell Development in Pigs

- 10:00 – Refreshment break
10:30 a.m.

Session 7 **Animal Model Development and Regulation of GE Animals**

Session Chair: S. Clay Isom, Utah State University

- 10:30 – Yonglun Luo, BGI
11:00 a.m. *Pig Models for Regenerative Medicine*

- 11:00 – Heather Lombardi, emerging technology team leader, CVM, FDA
11:20 a.m. *FDA's Regulation of Intentionally Genetically Altered Animals*

- 11:20 – Laura Epstein, senior policy advisor FDA's Center for Veterinary Medicine
11:40 p.m. *Clearing up the Confusion: FDA Addresses Common Misconceptions*

- 11:40 – Regulatory Q&A
12:00 p.m.

- 12:00 – 1:30 Lunch - Sundial Pavilion
p.m.

Session 8 **Feeding The World**

Session Chair: Benjamin Beaton, Genus plc

- 1:30 – 2:00 Jianguo Zhao, Chinese Academy of Agricultural Sciences
p.m. *Production of Leaner Pigs with Better Thermoregulation*

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- 2:00 – 2:30 Tad Sonstegard, Recombinetics Inc.
p.m. *A SLICK Way to Improve Dairy and Beef Production in the Tropics*
- 2:30 – 3:00 Nick Manson, CGIAR
p.m. *Laying the Way: Preparing for the Introduction of
Transgenic Trypanosome Resistant Animals into Sub-Saharan Africa*
- 3:00 – 3:30 Bruce Whitelaw, Roslin Institute
p.m. *Genome Editing: The Hype is Justified*