

# 15<sup>th</sup> International Symposium on Milk Genomics and Human Health

November 13-15, 2018

Kimpton Sawyer Hotel, Sacramento, California



## Day 1- Tuesday, November 13, 2018

8:00 am **Registration**

9:00 am **Welcome**  
*Bruce German, University of California-Davis, Davis, CA, USA*

### Hot Topics

9:20 am **Highlights from IMGC's "SPLASH!® milk science update" and Upcoming Hot Topics**  
*Danielle Lemay, Western Human Nutrition Research Center, USDA, Davis, CA, USA*

9:45 am **KEYNOTE: Maternal Nicotinamide Riboside Enhances Juvenile Development and Adult Neurogenesis**  
*Charles Brenner, University of Iowa, Iowa City, IA, USA*

10:30 am **Coffee Break**

11:00 am **Invited Speaker: The Impact of Dairy Management and Animal Genomics on Product Quality and Environmental Impact: The Need for an Integrated and Interdisciplinary Approach**  
*John Finley, USDA, Beltsville, MD, USA*

11:30 am **What's Normal? Genome-Wide Association Analysis of Human Milk Produced by Healthy Women Across Different Geographic Locations**  
*Janet Williams, University of Idaho, Moscow, ID, USA*

12:00 pm **Lunch**

### Genetics and Genomics

1:00 pm **KEYNOTE: Gene Editing and the Future of Bovine Genetics**  
*Alison L. Van Eenennaam, University of California-Davis, Davis, CA, USA*

1:45 pm **GWAS and Expression of Candidate Genes for Oligosaccharide Synthesis in Danish Dairy Breeds**  
*Nina Aagaard Poulsen, Aarhus University, Tjele, Denmark*

2:15 pm **The Genetics of Phosphorylation of Caseins in Bovine Milk**  
*Marlene Visker, Wageningen University, Wageningen, Netherlands*

2:45 pm **Coffee Break**

3:15 pm **Milk Genomics: Variation in Danish Dairy Milk and Its Possible Exploitation in the Dairy Chain**  
*Lotte Bach Larsen, Aarhus University, Tjele, Denmark*

3:45 pm **Beta-Casein Derived Beta-Casomorphin Peptides in Human Milk for Infant Nutrition**  
*Ashwantha Kumar Enjapoori, Deakin University, Geelong, Victoria, Australia*

4:15 pm **Update from 2017's MVP, Benoit Lamarche, Laval University**  
**Facilitated by Bruce German, University of California-Davis, Davis, CA, USA**

4:30 pm **Quantitative Proof of Why It's Good to Be Here**  
*Danielle Lemay, Western Human Nutrition Research Center, USDA, Davis, CA, USA*

### Evening Sessions

5:30-6:30 pm **Joint Scientific Advisory Council/Steering Committee Meeting (Closed Session)**

6:00-8:00 pm **Poster Reception**

Day 2- Wednesday, November 14, 2018

Health Impact of the Gut Microbiota

- 9:00 am **Keynote Speaker: A Systems Biology Approach to Characterizing the Gut Microbiome of Breastfed Infants Colonized by *B. infantis* EVC001**  
*Steve Frese, Evolve Biosystems, Davis, CA USA*
- 9:45 am **Population Duration of Breastfeeding and Prevalence of Bifidobacterium**  
*Diana H. Taft, University of California-Davis, Davis, CA, USA*
- 10:15 am **Coffee Break**
- 10:45 am **Bifidobacterium Longum Subsp. Infantis Stably Restores the Infant Gut Microbiome Over the First Year of Life in Breastfed Infants**  
*Jennifer Smilowitz, University of California-Davis, Davis, CA, USA*
- 11:15 am **Student Travel Award Recipient: Structural and Functional Insights into EchAMP, a Unique Monotreme Antimicrobial Protein Expressed During Lactation**  
*Alok Kumar, CSIR-Centre For Cellular and Molecular Biology, Habsiguda, Hyderabad, INDIA*
- 11:35 am **Moderated Discussion**  
**Moderator:** *Bruce German, University of California-Davis, Davis, CA, USA*
- 12:00 pm **Lunch**

Milk microbiomes: Do they matter?

- 1:00 pm **The Human Milk Microbiome**  
*Michelle K McGuire, University of Idaho, Moscow, ID, USA*
- 1:30 pm **Milk Microbiomes in Large-Scale Dairy Processing**  
*Mary Kable, University of California-Davis, Davis, CA, USA*
- 2:00 pm **Panel Discussion- Milk as a Source of Microorganisms: Practical Implications**  
**Moderator:** *Danielle Lemay, Western Human Nutrition Research Center, USDA*  
**Panelists:** *Maria Marco (Dept. of Food Science, University of California, Davis), Steve Frese (Evolve Biosystem) and Michele Jay-Russell (Western Center for Food Safety, University of California, Davis)*
- 2:30 pm **Coffee Break**

Milk and Dairy Products Impact on Health - Glycans

- 3:00 pm **Keynote Speaker: Utilization of Oligosaccharides and Bioactive Carbohydrates from Milk**  
*Carlito Lebrilla, University of California-Davis, Davis, CA, USA*
- 3:45 pm **Human Milk Oligosaccharides Directly Enhance Gut Barrier Integrity to Alter Infection**  
*Ishita Shah, University of California-Davis, Davis, CA, USA*
- 4:15 pm **Student Travel Award Recipient: Evaluate the Effect of Industrial Thermal Treatments on the Enzymatic Release of N-Glycans from Milk Glycoprotein**  
*Apichaya Bunyatratchata, University of California-Davis, Davis, CA, USA*

Evening Event

5:30-9:30 pm Group Dinner (meet in the lobby at 5:20pm to walk to Golden 1 Center)

Day 3- Thursday, November 15, 2018

The Lipids of Milk: Globules to Vesicles

- 9:00 am **Keynote: The Milkfat Globule an Ever Evolving Story**  
*Sophie Gallier, Fonterra Co-operative Group, Palmerston North, New Zealand*
- 9:40 am **Student Travel Award Recipient: Commercial Bovine Milk Fat Globule Membrane Fractions- Variations Among Sources**  
*Lauren Brink, University of California-Davis, Davis, CA, USA*
- 10:00 am **Student Travel Award Recipient: The Therapeutic Potential of Bovine Milk-Derived Extracellular Vesicles for Treatment of Osteoarthritis Patients**  
*Bartijn Pieters, Radboud University Medical Center, Nijmegen, The Netherlands*
- 10:20 am **Coffee Break**

The Digestion of Milk

- 10:50 am **Milk Protein Digestion and Bioactive Peptide Release in Term and Preterm Infants**  
*Dave Dallas, Oregon State University, Corvallis, OR, USA*
- 11:20 am **Comparison of Human Milk Immunoglobulin Survival during Gastric Digestion between Preterm and Term Infants**  
*Veronique Demers-Mathieu, Oregon State University, Corvallis, OR, USA*
- 11:40 am **Differences in Composition and Structure Between Human Milk and Infant Formula: Do They Affect Their Digestion?**  
*Didier Dupont, INRA-Agrocampus Ouest, Rennes, France*
- 12:00 pm **Closing Remarks**
- 12:30 pm **Lunch**