



Day 1 – Tuesday, October 18, 2022

All times are shown in Pacific Daylight Time

Applications of Milk Extracellular Vesicles

Moderated by Distinguished Professor Bruce German, University of California Davis, Davis, USA

- 8:45-9:00 a.m. **Knowledge to Practice: Lactation as the Guide for Biotechnology in the 21st Century**
Bruce German, University of California Davis, CA, USA
- 9:05-9:40 a.m. **Keynote Address: Emerging Prospects of Bovine Milk-Derived Extracellular Vesicles for Arthritis Therapy**
Fons van de Loo, Radboud Institute for Medical Sciences, Nijmegen, Netherlands
- 9:45-10:10 a.m. **Industrial Large-Scale Isolation of Milk Extracellular Vesicles for Utilization in Infant Nutrition**
Marie Stampe Ostenfeld, Arla Foods Ingredients, Aarhus, Denmark
- 10:15-10:40 a.m. **Genetically Altered Milk Exosomes Facilitate Nutrition Research and Drug Delivery**
Janos Zemleni, University of Nebraska, NE, USA
- 10:40-11:10 a.m. **Refreshment Break**
- 11:10-11:35 a.m. **Many Human Milk Extracellular Vesicle Proteins are Lost in Human Digestion, Do the Survivors Convey Beneficial Effects?**
Sarah Andres, Oregon Health & Science University, OR, USA
- 11:40 a.m.-12:05 p.m. **Bovine Milk-Derived Exosomes as a Novel Injury-Targeting Drug Delivery System**
Spencer Marsh, The Tiny Cargo Company, VI, USA
- 12:10 a.m.-12:35 p.m. **Identification of Human Milk-Derived microRNAs Associated with Low Milk Supply, Reduced Infant Growth and Early Breastfeeding Cessation**
Shannon Kelleher, University of Massachusetts Lowell, MA, USA
- 12:35-1:35 p.m. **Lunch**

Hottest Topics in Milk Science

Moderated by Dr. Leila Strickland, BIOMILQ, NC, USA

- 1:35-2:10 p.m. **Keynote Address: Hot Topics in Human Milk Research – Milk as a Biological System and COVID-19 Update**
Shelley McGuire, Idaho State University, ID, USA
- 2:15-2:40 p.m. **Cellular and Transcriptional Diversity Over the Course of Human Lactation**
Brittany Goods, Dartmouth College, NH, USA



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- 2:45-3:00 p.m. **Student Award Presentation: Stimulated Preterm Infant Digestion of Human Milk Processed by High Pressure Processing and Holder Pasteurization Using the TIM-1 Dynamic Model**
Michael Pitino, University of Toronto, Canada
- 3:05-3:20 p.m. **Invited Presentation: SPLASH!® Milk Science Update: 10th Anniversary: Highlights and Upcoming Topics**
Danielle Lemay, USDA, ARS, WHNRC, Davis, CA, USA
- 3:20-3:50 p.m. **Refreshment Break**
- 3:50-4:15 p.m. **High Temperature Processing and Subsequent Storage of Infant Formulas Induces Protein Modifications, Gut Dysfunction, and Inflammation in Preterm Pigs**
Stine Brandt Bering, University of Copenhagen, Copenhagen, Denmark
- 4:20-4:35 p.m. **Student Award Presentation: Infant Feeding Practices and Parental Perceptions During the 2022 United States Infant Formula Shortage Crisis**
Karina Cernioglo, University of California Davis, CA, USA
- 4:40-4:55 p.m. **Student Award Presentation: Microbiome Based Mastitis Therapeutics**
Kevin Linehan, University College Cork, Cork, Ireland
- 5:00-5:25 p.m. **FinnBrain Birth Cohort Study – Human Breast Milk Metabolites Over 24 Months Lactation Associate with Infant Socio-Emotional Development**
Ulrik Sundekilde, Aarhus University, Aarhus, Denmark
- 6:00-8:00 p.m. **Poster Reception**

Day 2 – Wednesday, October 19, 2022

Functional Discoveries of the Microbiome

Moderated by Professor Henrik Jørgen Andersen, Arla Foods amba, Aarhus, Denmark

- 8:30-9:05 a.m. **Keynote Address: Developing a Metabolic Taxonomy of Pregnancy and the Newborn-Scientific Rationale and Use Case**
Karl Sylvester, Stanford University, CA, USA
- 9:10-9:35 a.m. **Invited Presentation: Human Milk Non-Protein Nitrogen is Utilized by Commensal Bifidobacteria and is Interconnected with Carbohydrate Metabolism within the Infant Gut Microbiome**
David Sela, University of Massachusetts, MA, USA
- 9:40-9:55 a.m. **Student Award Presentation: Human Milk Oligosaccharide DSLNT and Gut Microbiome, but not Breast Milk Microbiome, in Preterm Infants Predicts Necrotizing Enterocolitis**
Andrea Chiara Masi, Newcastle University, Newcastle, UK
- 9:55-10:25 p.m. **Refreshment Break**

The logo for the IMGC Hybrid 2022 Symposium features a stylized water drop on the left containing a cluster of blue and white dots. To the right, the text "IMGC HYBRID 20" is in a bold, dark blue font, and "SYMPOSIUM 22" is in a lighter blue, outlined font.

- 10:25-11:00 a.m. **Invited Presentation: Feedomics: Omics-Based Nutrition to Improve Milk Production and Nutritional Composition**
Leluo Guan, University of Alberta, Alberta, Canada
- 11:05-11:30 a.m. **The Genetic Basis of Gene Expression in Human Milk and Effects on the Infant Gut Microbiome**
Kelsey Johnson, University of Minnesota, MI, USA
- 11:35 a.m.-12:00 p.m. **Human Milk Feeding Reduces Infant Carriage of Antimicrobial Resistance Genes, Even in Antibiotic Exposed Infants**
Diana Taft, University of Florida, FL, USA
- 12:00-1:00 p.m. **Lunch**

Immunity Tackles 21st Century Challenges

Moderated by Dr. Danielle G. Lemay, USDA, ARS, WHNRC, Davis, USA

- 1:00-1:35 p.m. **Keynote Address: From Farm to Table – Gut Microbiome and Immune Development in Farming-Lifestyle Infants**
Kirsi Jarvinen-Seppo, University of Rochester, NY, USA
- 1:40-2:05 p.m. **Comparative Profiles of SARS-CoV-2 Spike-Specific Human Milk Antibodies Elicited by mRNA- and Adenovirus-Based COVID-19 Vaccines**
Rebecca Powell, Icahn School of Medicine, NY, USA
- 2:10-2:35 p.m. **Anti-SARS-Co-V-2 Milk Antibodies Over the Course of Lactation, After Infection and Vaccination**
Yarden Golan, University of California San Francisco, CA, USA
- 2:35-3:05 p.m. **Refreshment Break**
- 3:05-3:40 p.m. **Keynote Address: Colostrum as Nutrition and Therapy in Pediatrics**
Per Sangild, University of Copenhagen, Copenhagen, Denmark
- 3:45-4:10 p.m. **Invited Presentation: *B. Infantis* EVC001 Colonization in Breastfed Infants Modulates Enteric Inflammation Leading to Improved Health Outcomes**
Bethany Henrick, In infant Health, CA, USA
- 4:15-4:40 p.m. **Influence of Human Milk Oligosaccharides on the Vaginal Microbiota and Colonization by Neonatal Pathogen Group B Streptococcus**
Katy Patras, Baylor College of Medicine, TX, USA
- 5:45-10:00 p.m. **Dinner Reception**



Day 3 – Thursday, October 20, 2022

Discovery of Novel Applications of Milk Bioactives

Moderated by Distinguished Professor Bruce German, University of California Davis, CA, USA

- 9:00-9:35 a.m. **Outstanding Legacy Career Award & Keynote Address: Bioactive Milk Proteins and their Impact on Infant Health and Development**
Bo Lonnerdal, University of California Davis, CA, USA
- 9:40-10:05 a.m. **Invited Presentation: Human Immune System Imprinting by Environmental Factors in Early Life**
Petter Brodin, Imperial College London, London, UK
- 10:10-10:35 a.m. **Invited Presentation: Understanding the Function of Milk Components on Infant Health**
Carolyn Slusky, University of California Davis, CA, USA
- 10:40-10:55 a.m. **Student Award Presentation: From Colostrum to Milk: Key Changes in Bovine IgG N-Glycosylation**
Inge Gazi, Utrecht University, Utrecht, Netherlands
- 10:55-11:25 a.m. **Refreshment Break**
- 11:25-11:40 a.m. **2021 Most Valuable Presentation Award (Dr. Tian Tian): Structural Insights on Oligosaccharides in Commercial Infant Formula Products with Ion Chromatography-Mass Spectrometry**
Neil Rumachik, Thermo Fisher Scientific, CA, USA
- 11:45 a.m.-12:00 p.m. **Student Award Presentation: Bovine Caseinomacropeptide: Mass Spectrometric Characterization, Digestive Survival in Adults and the In Vivo Bioactivity in Adults with IBS**
Yunyao Qu, Oregon State University, OR, USA
- 12:05-12:30 p.m. **Determination of the Effect of High-Pressure Processing Conditions on Bile Salt-Stimulated Lipase Activity in Human Milk**
Ningjian Liang, Oregon State University, OR, USA
- 12:35-1:00 p.m. **Effects of 12-Month Supplementation of Term Infants with Bovine Milk Fat Globule Membrane on Neurodevelopmental Outcome Measured at 12 Months of Age**
Bing Wang, Charles Sturt University, Canberra, Australia
- 1:05-1:15 p.m. **Closing Remarks: The Future of IMGC**
Jennifer Smilowitz, University of California Davis, CA, USA
- 1:15-2:15 p.m. **Lunch**
- 2:15 p.m. **End of Conference**