Monday, April 20

***Invited/Plenary Talks (By invitation only)** **Special Session: 75th Diamond Jubilee - History of the Gut Function Congress and the Discovery of Interspecies Hydrogen Transfer** Chair: **Phil B. Pope, Centre for Microbiome Research - QUT, Australia** **NCSA Auditorium - Room 1122** **8:45 AM - 2:00 PM**		
8:45 AM		**Introduction.** Itzhik Mizrahi, Ben Gurion University of the Negev, Israel.
9:00 AM	1	**CGIF is 75!: A history of the Congress of Gastrointestinal Function and its predecessor, the Rumen Function Conference.** R. Mackie* and S. Daniel, *Department of Animal Sciences and Institute for Genomic Biology, University of Illinois Urbana-Champaign, Urbana-Champaign, IL, USA.*
9:45 AM	2	**Interspecies hydrogen transfer: Discovery, expansion, and the future.** J. Ferry*, *Department of Biochemistry and Molecular Biology, Penn State University, State College, PA, USA.*
10:30 AM		**Break (Foyer outside auditorium).**
11:00 AM	3	**The Hungate1000 project: The first large scale rumen microbial genome sequencing project.** W. Kelly*, S. Leahy, and G. Attwood, *AgResearch, Palmerston North, New Zealand*.
11:20 AM	4	**The RUMEN Gateway Project: Unlocking rumen microbial diversity to transform sustainable ruminant production.** F. Santos* and The Rumen Gateway Consortia, *School of Biological Sciences/Institute for Global Food Security Queen's University Belfast, Belfast, United Kingdom*.
11:40 AM		**Discussion and Synthesis.**
12:00 PM		**Unveiling of Interspecies Hydrogen Transfer Historical Marker** **(immediately south side of Animal Science Laboratory at 1207 W Gregory Dr.)**
12:30 PM		**Lunch and Remarks (Stock Pavilion at 1402 W Pennsylvania Ave.)** 5 min walk from Animal Sciences Lab
1:30 PM		**Return to NCSA** 25 min walk Or take GOLD East bus from Mumford Hall to Goodwin/Ceramics Building (no charge) Or take BLUE East bus from Sixth & Peabody to White & Wright
***Invited/Plenary Talks (By invitation only)** **2026 CGIF Opening Session Invited presentations and Bryant Memorial Lecture** Chair: **Itzik Mizrahi , Ben Gurion University of the Negev, Israel** **NCSA Auditorium - Room 1122** **2:00 PM - 5:00 PM**		
2:00 PM		**Welcome.** Rod Mackie, Treasurer, University of Illinois at Urbana-Champaign, USA.
2:15 PM	5	**Mapping and engineering the intestinal host-microbiome interface.** H. Wang*, *Department of Systems Biology, Columbia University Irving Medical Center, New York, NY, USA.*
3:00 PM	6	**Evolution of gut microbiota in humans and mice.** A. Moeller*, *Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ, USA.*
3:45 PM		**Break (Foyer outside auditorium).**
4:00 PM	7	**Bryant Memorial Lecture: How cows, microbes, and evolution taught humans to drink milk.** R. Ley*, *Microbiome Science, Max Planck Institute for Biology Tübingen, Tübingen, Germany.*
5:00 PM		**Mixer and Informal Poster Session (Foyer outside auditorium).**

Tuesday, April 21

Podium presentations: Session 1 Advances in Rumen Biology Chair: **Phil B. Pope, Centre for Microbiome Research - QUT, Australia** **NCSA Auditorium - Room 1122** **9:00 AM - 1:30 PM**		
9:00 AM	8	**Early-life interventions: Rewiring the rumen microbiome and shaping long-term ruminant health and performance.** D. Pitta*, *PennVet New Bolton Center, University of Pennsylvania, Kennett Square, PA, USA.*
9:45 AM	9	**Metagenomic dissection of *Asparagopsis*-mediated methane reduction reveals vitamin B12 biosynthesis disruption and functional redundancy in the rumen microbiome.** K. Lawther[1,2], N. J. Dimonaco[1], P. Donnelly[1], A. Guinguina[3], S.J. Krizsan[4], and S. A. Huws*[1], [1]*School of Biological Sciences, Institute for Global Food Security, Queen's University Belfast, United Kingdom*, [2]*Laboratory of Microbiology, Wageningen University*, *Laboratory of Microbiology, Wageningen University, Wageningen, the Netherlands*, [3]*Production Systems, Natural Resources Institute Finland (LUKE), Production Systems, Natural Resources Institute Finland (LUKE), Jokioinen, Finland*, [4]*Department of Agricultural Sciences, Faculty of Applied Ecology, Agricultural Sciences and Biotechnology, Inland Norway University of Applied Sciences, Blæstad, Norway*.
10:05 AM	10	**Smart Underwear: A novel wearable for long-term monitoring of gut microbial gas production via flatus.** B. Hall*, *Department of Cell Biology and Molecular Genetics, University of Maryland, College Park, MD, USA.*
10:40 AM		**Break (Foyer outside auditorium).**
11:00 AM	11	**Metabolic ecology as a framework for understanding and controlling bioactive metabolite production in the gut microbiome.** S. Light*, *University of Chicago, Biological Science Division, Chicago, IL, USA.*
11:30 AM		**Platinum sponsor.** Dairy Management Inc Juan Tricarico.
11:50 AM		**Business Meeting: CGIF 2026 (open to all registrants).**
12:50 PM		**Lunch Break (Foyer outside auditorium).**
Podium presentations: Session 2 Advances in Rumen Biology Chair: **Itzik Mizrahi, Ben Gurion University of the Negev, Israel** **NCSA Auditorium - Room 1122** **1:30 PM - 10:30 PM**		
1:30 PM	12	**Microbial adaptation to combined feeding strategies alters ecosystem structure and fermentation.** R. Petri* and C. Benchaar, *Science and Technology Branch Agriculture and Agri-Food Canada/Government of Canada, Ottawa, ON, Canada.*
2:00 PM	13	**Differential rumen responses in neonatal ruminants to volatile fatty acids, glucose, and physical stimulation: Insights into the drivers of early rumen development.** T. Chen*[1,2], K. Li[1,2], Y. Yin[3], K. Huang[1,2], Q. Hong[2], J. Wang[1,2], Y. Zhang[1,2], Z. Yuan[4], Y. Wang[5], Z. Yu[6], and J. Wang[1,7], [1]*Institution of Dairy Science, College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*, [2]*MoE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, Zhejiang, China*, [3]*Huzhou Academy of Agricultural Sciences, Huzhou, Zhejiang, China*, [4]*Jiaxing Animal Husbandry and Veterinary Station, Jiaxing, Zhejiang, China*, [5]*Kemin (China) Technologies Co. Ltd, Zhuhai, Guangdong, China*, [6]*Department of Animal Sciences and Center of Microbiome Science, The Ohio State University, Columbus, OH, USA*, [7]*Zhejiang Key Laboratory of Nutrition and Breeding for High-quality Animal Products, Zhejiang University, Hangzhou, Zhejiang, China*.
2:20 PM	14	**Host genetic variation in *SPINK5* regulates rumen epithelial barrier function and shapes heritable microbial communities through SCFA-mediated mechanisms in dairy cattle.** Z. Lai*[1,2], Z. Chen[1], J. Tian[1], Z. Huang[1], J. P. Schoonmaker[2], L. J. R. Nolasco Padilla[2], D. C. St Herzog[2], C. M. Snethen[2], and L. Ferreira De Souza[2], [1]*Nanjing Agricultural University, Nanjing, Jiangsu, China*, [2]*Purdue University, West Lafayette, IN, USA.*
2:40 PM		**Platinum sponsor.** ZYMO research.
3:00 PM		**Break (Foyer outside auditorium).**
3:30 PM		**Poster Session.**
5:30 PM		**Social Function.** Riggs Brewery (1901 S High Cross Rd, Urbana, IL 61802) Open Bar and Food Truck Included Bus will depart from NCSA at 5:00 and make return trips to Hampton Inn.

POSTER PRESENTATIONS

Computational approaches and applications
Foyer outside auditorium
3:30 PM - 5:00 PM

23 **Characterization of cooperative network structure of rumen bacterial communities centered on *Aristaeella* spp. (*Christensenellaceae* R-7 group) and its role in fermentation.**
K. Ito*[1], N. Sogawa[2], and S. Koike[1], [1]*Hokkaido University, Hokkaido, Japan*, [2]*Honda R&D Co., Ltd., Tochigi, Japan*.

24 **Method choice matters—Identifying intestinal fungi and protists from shotgun metagenomic data.**
D. Claypool* and B. Bernabé, *University of Illinois, Chicago, IL, USA*.

Environmental impacts (Including livestock waste, GHG's, and antibiotic resistance)
Foyer outside auditorium
3:30 PM - 5:00 PM

25 **3-Nitropropionic acid induces biphasic microbial restructuring and redirects hydrogen flux during in vitro rumen fermentation.**
M. M. Mulandi*[1], C. Yamaga[1], R. Yano[2], and N. Fukuma[2,3], [1]*Graduate School of Animal and Veterinary Sciences and Agriculture, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [2]*Department of Life and Food Sciences, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [3]*Research Center for Global Agromedicine, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

26 **The transcriptional plasticity of rumen microbes underlies growth performance and methane output in hay-fed beef cattle.**
A. N. Hall[1], S. R. Talley[2], N. T. Baxter[1], K. Srinivasan[3], J. C. Ellis[1], J. Carter[1], D. Susanti[1], P. Dixit[3], A. Foote[2], D. L. Lalman[2], and G. Plata*[1], [1]*BiomEdit Inc, Greenfield, IN, USA*, [2]*Oklahoma State University, Stillwater, OK, USA*, [3]*Yale University, New Haven, CT, USA*.

27 **Genetic toolkits for rumen bacteria to advance methane control.**
Y. Li*[1], A. Hetta[1], M. Adachi[1], K. M. Pilkington[2], W. Alexander[3], A. Guss[3], W. J. Kelly[2], G. T. Atwood[2], W. W. Metcalf[1,4], R. Mackie[1,5], and I. Cann[1,5], [1]*Carl R Woese Institute for Genomic Biology, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [2]*Grasslands Research Centre, Bioeconomy Science Institute, Palmerston North, New Zealand*, [3]*Oak Ridge National Laboratory, Oak Ridge, TN, USA*, [4]*Department of Microbiology, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [5]*Department of Animal Sciences, University of Illinois Urbana-Champaign, Urbana, IL, USA*.

28 **Inhibition of methanogenesis with biochar in combination with nitrate in continuous culture of ruminal microbes.**
A. Kolganova*[1], J. Firkins[1], R. Lal[1], B. Wenner[2], M. Minnema[3], K. E. Mitchell[4], and N. Pickard[1], [1]*The Ohio State University, Columbus, OH, USA*, [2]*Feedworks USA, Cincinnati, OH, USA*, [3]*Biochar Solutions, White City, OR, USA*, [4]*Elanco, Indianapolis, IN, USA*.

29 **Isolation of rumen acetogens and methanogens from bovine and ovine rumen contents.**
K. Rajasekaran[1], L. Crouzet[1], M. Tavendale[1], D. Gagic[2], A. Sutherland-Smith[2], R. Chanyi*[1], P. Janssen[1], W. Kelly[1], and G. Attwood[1], [1]*Bioeconomy Science Institute, Palmerston North, Manawatu-Whanganui, New Zealand*, [2]*School of Food Technology and Natural Sciences, Massey University, Palmerston North, Manawatu-Whanganui, New Zealand*.

Immunology (Including host-microbe interactions)
Foyer outside auditorium
3:30 PM - 5:00 PM

30 **Fermented food associated aromatic amino acid microbial metabolites regulate macrophage inflammatory tone and function.**
E. Eck*, C. Lim, M. Kasparek, B. McCusker, M. Miller, and J. Allen, *University of Illinois Urbana-Champaign, Urbana-Champaign, IL, USA*.

31 **Identification of arabinoxylan-responsive bacteria in the gut microbiota via D-amino acid metabolism probe technology.**
Y. He*, *Zhejiang University, Hangzhou City, Zhejiang Province, China*.

Microbiology (Including ecology, (meta)genomics, physiology, and proteomics)
Foyer outside auditorium
3:30 PM - 5:00 PM

32 **Vitamin B12-mediated regulation of BtuB receptor-dependent bacteriophage L6jm infection of *Salmonella enterica* serovar Choleraesuis.**
X. Y. Yang*[1,2], W. Y. Zhu[1,2], and Y. Lin[1,2], [1]*National Center for International Research on Animal Gut Nutrition, Nanjing, Jiangsu, China*, [2]*College of Animal Science and Technology, Nanjing Agricultural University, Nanjing, Jiangsu, China*.

33 **Cross-platform and cross-database comparative analysis of 16S rRNA sequencing analysis for high-resolution profiling of rumen bacterial communities.**
H. Kim*[1], M. Zhou[1], L. Lin[1], W. Zhu[2], T. McAllister[3], and L. Guan[1], [1]*The University of British Columbia, Vancouver, BC, Canada*, [2]*Anhui Agricultural University, Hefei, China*, [3]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

34	**Analysis of rumen microbial composition of Scottish Blackface sheep consuming pasture- or concentrate-based diets using culture based and culture-independent metagenomic techniques.** G. Karakaya*[1], S. Mills[1], F. Campion[2], N. Claffey[2], V. O'Flatherty[1], and S. Waters[1], [1]*School of Biological and Chemical Sciences and Ryan Institute, University of Galway, Galway, Ireland*, [2]*Teagasc, Animal and Bioscience Research Department, Animal & Grassland Research Centre, Mellow's Campus, Athenry, Galway, Ireland*.
35	**Community context reshapes microbial proteomes and reduces functional overlap.** S. Morais*[1], M. Mazor[1], I. Amit[1], P. Gerth[2], A. Trautwein-Schult[2], S. Maaß[2], I. Grinshpan[1], Y. Shelly[1], L. Levin[1], D. Becher[2], and I. Mizrahi[1], [1]*Ben Gurion University, Israel*, [2]*University of Greisfwald, Germany.*
37	**UHPLC-QTOF-IMS metabolomics-based phytochemical characterization of high-altitude Himalayan green leafy crops and determination of gastro-intestinal digestibility of antioxidants.** S. Gupta*[1,2] and V. Srivatsan[1,2], [1]*CSIR – Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh, India*, [2]*Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh, India*.
38	**Diet-influenced hydrogen accumulation, VFA shifts, and methane responses to 3-nitrooxypropanol in a dual flow continuous culture rumen fermentation system.** N.-K. Kim*[1], J. A. Hartman[1], J. C. McCann[1], and R. I. Mackie[1,2], [1]*Department of Animal Sciences, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [2]*Carl R. Woese Institute for Genomic Biology, University of Illinois Urbana-Champaign, Urbana, IL, USA.*
39	**Life without an enolase does not disadvantage *Butyrivibrio* and *Pseudobutyrivibrio* species growth on glucose.** K. Reilly*[1,3], N. Palevich[1], P. H. Janssen[1], W. J. Kelly[1], S. C. Leahy[2], S. E. Morales[4], G. M. Cook[3], and G. T. Attwood[1], [1]*Rumen Microbiology, Bioeconomy Science Institute, Agresearch Group, Palmerston North, New Zealand*, [2]*AgEmmissions Centre, Palmerston North, New Zealand*, [3]*Department of Microbiology and Immunology, University of Otago, Dunedin, New Zealand*, [4]*MPG Ranch, Montana, USA.*
40	**Establishing a working culture collection of anaerobic rumen bacteria and methanogenic archaea for the development of genetic toolkits.** S. A. Sanguedolce*[1], K. M. Pilkington[2], W. J. Kelly[2], G. T. Attwood[2], W. W. Metcalf[1], I. Cann[1], and R. I. Mackie[1], [1]*University of Illinois Urbana-Champaign, Urbana, IL, USA*, [2]*New Zealand Institute for Bioeconomy Science, Palmerston North, New Zealand*.
41	**Transcriptional analysis of arabinan utilization and acetate production via heterolactic fermentation in ruminal *Streptococcus*.** M. Adachi*[1,2], A. J. Scheftgen[1], R. Hiyama[3], K. Seki[3], R. Yano[4], and N. Fukuma[4,5], [1]*Graduate School of Animal and Veterinary Sciences and Agriculture, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan*, [2]*Current address: Carl R. Woese Institute for Genomic Biology, Department of Animal Sciences, University of Illinois at Urbana-Champaign, Urbana, IL, USA*, [3]*Forest Research Department, Forest Products Research Institute, Hokkaido Research Organization, Asahikawa, Japan*, [4]*Department of Life and Food Sciences, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan*, [5]*Research Center for Global Agromedicine, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.*
42	**Microbial correlates of fecal lactate concentration and evaluation of the genomic potential for lactate utilization in a *Schwartzia*-related MAG from Japanese draft horses.** R. Yano*[1], A. J. Scheftgen[2], and N. Fukuma[1,3], [1]*Department of Life and Food Sciences, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [2]*Graduate School of Animal and Veterinary Sciences and Agriculture, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [3]*Research Center for Global Agromedicine, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.
43	**Comparative fecal microbiome analysis of Japanese Dosanko and Japanese draft horses reveals functional and resistome differences.** A. J. Scheftgen*[1], R. Yano[2], and N. Fukuma[2,3], [1]*Graduate School of Animal and Veterinary Sciences and Agriculture, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [2]*Department of Life and Food Sciences, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [3]*Research Center for Global Agromedicine, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.
44	**Isolation and partial characterization of a cellulolytic consortium derived from the rumen of a grazing cow.** F. Moralejo[1], S. Cravero[2], O. Ontañon[2], R. Castaño Zubieta[1], M. Popova[3], D. Morgavi[3], and M. Cerón-Cucchi*[1], [1]*Instituto de Patobiología/IPVet, CICVyA, Instituto Nacional de Tecnología Agropecuaria UEDD INTA-CONICET, Hurlingham, Buenos Aires, Argentina*, [2]*Instituto de Agrobiotecnología y Biología Molecular (IABIMO), CICVyA, Instituto Nacional de Tecnología Agropecuaria UEDD INTA-CONICET, Hurlingham, Buenos Aires, Argentina*, [3]*Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement INRAE, Saint-Genès-Champanelle, France.*
45	**Metagenomic profiling using long reads PacBio sequencing revealed key metabolic functions of rumen microbiome in beef cattle across seasonal grazing.** Y. Choi*[1], S. W. Na[2], M. Zhou[1], H. Kim[1], Y. Chen[2,3], E. W. Bork[2], C. Fitzsimmons[2,3], and L. L. Guan[1,2], [1]*The University of British Columbia, Vancouver, British Columbia, Canada*, [2]*University of Alberta, Edmonton, Alberta, Canada*, [3]*Lacombe Research and Development Centre, Lacombe, Alberta, Canada.*
46	**Diet quality and microbial tryptophan metabolism in colorectal cancer risk.** A. Chhetri*[1], A. Moffitt[1], B. Binion[2], H. Dai[3], D. Bhaskaran[5], C. Greening[4], C. Welsh[4], H. R. Gaskins[2], K. Anantharaman[5], E. Mutlu[3], J. Ridlon[2], L. Tussing-Humphreys[3], and P. Wolf[1], [1]*Purdue University, West Lafayete, IN, USA*, [2]*University of Illinois, Urbana-Champaign,*

	Urbana, IL, USA, [3]*University of Illinois Chicago, Chicago, IL, USA,* [4]*Monash University, Melbourne, Australia,* [5]*University of Wisconsin–Madison, Madison, WI, USA.*
47	**Improving rapid identification of rumen bacteria: Development and evaluation of a rumen specific MALDI-TOF MS database.** J. Pickup*[1], T. Stoikidou[1], Z. Zhang[1], G. Karakaya[2], E. Fuertes[1], F. Godoy Santos[1], and S. Huws[1], [1]*Queen's University Belfast, Belfast, Northen Ireland, United Kingdom,* [2]*University of Galway, Galway, Ireland*.
48	**The effects of tail docking status on fecal microbiome adaptation to pasture in Polyplay ewe lambs.** J. M. Woods[1], M. K. Costello*[1,3], S. A. Bowdridge[2], H. C. Mantovani[1], and S. J. J. Adcock[1], [1]*University of Wisconsin–Madison, Madison, WI, USA,* [2]*West Virginia University, Morgantown, WV, USA,* [3]*Oak Ridge Institute for Science Education, Oak Ridge, TN, USA.*
49	**Enterosignature dynamics of healthy and diarrheic dairy calves during the preweaning period.** A. Rodrigues*, G. Alam, G. Larsen, N. Sheybani, J. Laporta, and H. Mantovani, *Department of Animal and Dairy Sciences, University of Wisconsin–Madison, Madison, WI, USA.*
50	**Carbon-responsive phase variation drives adaptive regulation in *Bacteroides thetaiotaomicron*.** H. Choi*[1], R. Chanin[1], Y. Kiguchi[1], and A. Bhatt[1,2], [1]*Division of Hematology, Department of Medicine, Stanford University, Stanford, CA, USA,* [2]*Department of Genetics, Stanford University, Stanford, CA, USA.*
51	**A functionally selected *Acinetobacter* sp. phosphoethanolamine transferase gene from the goose fecal microbiome confers colistin resistance in *Escherichia coli*.** E. Bernate[4], Y. Shi[1], E. Franck[5], and T. Crofts*[1,2], [1]*Department of Animal Sciences, University of Illinois at Urbana-Champaign, Urbana, IL, USA,* [2]*Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, IL, USA,* [3]*Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, Urbana, IL, USA,* [4]*College of Veterinary Medicine, University of Florida, Gainesville, FL, USA,* [5]*Department of Biomedical Sciences, Florida State University, Tallahassee, FL, USA.*
52	**Capsule-mediated sensitivity to antipsychotic drugs reveals a new vulnerability in *Escherichia coli*.** M. O. Gill*[1], J. A. Cook[1], K. X. Jiang[2], A. Ambat[2,3], H. Shi[2,3], A. Natarajan[4], R. B. Chanin[4], K. C. Huang[2,3], and A. S. Bhatt[1,4], [1]*Department of Genetics, Stanford University, Stanford, CA, USA,* [2]*Department of Microbiology & Immunology, Stanford University, Stanford, CA, USA,* [3]*Department of Bioengineering, Stanford University, Stanford, CA, USA,* [4]*Department of Medicine, Division of Hematology, Stanford University, Stanford, CA, USA.*
53	**Longitudinal gut microbiome restructuring associates with pain burden following kidney transplantation.** L. Raasch*[1], S. Alvernaz[1], E. Lee[1], S. Green[2,3], G. Chlipala[4], M. Mainschein Cline[4], M. Samra[5], H. DeVon[6,7], L. Tussing-Humphreys[8], C. Park[9], M. Spaggiari[10], L. Gallon[11], A. Doorenbos[11], B. Peñalver Bernabé[1,12], M. Lockwood[9], [1]*Department of Biomedical Engineering, University of Illinois Chicago, Chicago, IL, USA,* [2]*Core Laboratory Services and Genomics and Microbiome Core Facility, Rush University Medical Center, Chicago, IL, USA,* [3]*Department of Internal Medicine, Rush University Medical Center, Chicago, IL, USA,* [4]*Research Informatics Core, Chicago, IL, USA,* [5]*Department of Medicine, Edward Hines Jr. VA Transplant Center, Loyola University Medical Center, Chicago, IL, USA,* [6]*Community Health Research, University of California Los Angeles School of Nursing, Los Angeles, CA, USA,* [7]*University of California San Diego, San Diego, CA, USA,* [8]*Department of Kinesiology and Nutrition, University of Illinois Chicago, College of Applied Health Sciences, Chicago, IL, USA,* [9]*Department of Population Health Nursing Science, University of Illinois Chicago, College of Nursing, Chicago, IL, USA,* [10]*University of Illinois Chicago, College of Medicine/Surgery, Chicago, IL, USA,* [11]*Department of Biobehavioral Health Science, University of Illinois Chicago, College of Nursing, Chicago, IL, USA,* [12]*Center of Bioinformatics and Computational Biology, Chicago, IL, USA.*
54	**Enrichment of a novel methanogen from the bovine rumen.** S. R. Khan*[1], G. Cronan[2], R. I. Mackie[1], and W. W. Metcalf[1], [1]*University of Illinois at Urbana-Champaign, Urbana, IL USA,* [2]*Abbott Nutrition, Columbus, OH, USA.*
55	**Sensing and regulation of the utilization of dietary polysaccharides in Bacteroides spp.** M. A. Alhawsawi[1,2], A. M. Hetta*[2], J. Akresi[3], D. M. Bianchi[4], J. J. Cavalcante[2], G. V. Pereira[2], K. A. Boateng[2], Y. Li[2], M. Adachi[2], J. Chen[2], W. Me[1,5], N. M. Koropatkin[6], Y. Yin[3], R. I. Mackie[2,7], I. Cann[2,7], [1]*Division of Nutritional Sciences, University of Illinois, Urbana, IL, USA,* [2]*Carl R. Woese Institute for Genomic Biology, University of Illinois, Urbana, IL, USA,* [3]*Department of Food Sciences and Technology, University of Nebraska–Lincoln, Lincoln, NE, USA,* [4]*National Center for Supercomputing Applications, University of Illinois, Urbana, IL, USA,* [5]*Department of Comparative Biosciences, College of Veterinary Medicine, University of Illinois, Urbana, IL, USA,* [6]*Department of Microbiology & Immunology, University of Michigan Medical School, Ann Arbor, MI, USA,* [7]*Department of Animal Science, University of Illinois, Urbana, IL, USA.*
77	**Persistent auxiliary microbiome of early colonizers shapes the developing rumen ecosystem.** O. Furman*, *Mizrahi Lab, Ben-Gurion University of the Negev, Beer Sheva, Israel*.
	Nutrition and metabolism of livestock, humans, and companion animals **Foyer outside auditorium** **3:30 PM - 5:00 PM**
56	***In vitro* evaluation of feed additive combinations for methane emission mitigation.** I. R. R. Castro*[1], B. Hiley[1], O. C. Carballo[2], G. Scoley[2], and S. Huws[1], [1]*Institute for Global Food Security, School of Biological Sciences, Queen's University Belfast, Belfast, Northern Ireland, United Kingdom,* [2]*Agri-Food and Biosciences Institute, Large Park, Hillsborough, Northern Ireland, United Kingdom*.

57 **Dietary transition from high-forage to finishing ration reshapes the ecology of *Neocallimastigomycota* in the rumen.**
R. J. Gruninger*, T. Rogelio Ramos, N. Chomistek, and S. A. Terry, *Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

58 **Genomic insights into tryptophan metabolism in lactic acid bacteria of bovine origin.**
Y. Kim*, H. Kim, M. Moran, and L. L. Guan, *The University of British Columbia, Vancouver, BC, Canada*.

59 **Ultra-processed foods link to gut microbial sulfite metabolism genes.**
S. Harvey*[1], A. Chhetri[1], E. Pfeifer[1], A. Hamm[2], D. K. Baskaran[4], C. Welsh[5], J. Ridlon[3], K. Anantharaman[4], C. Greening[5], E. Mutlu[2], V. Oddo[2], L. Tussing-Humphreys[2], H. R. Gaskins[3], Q. Wang[3], P. Wolf[1], [1]*Purdue University, West Lafayette, IN, USA*, [2]*University of Illinois at Chicago, Chicago, IL, USA*, [3]*University of Illinois at Urbana-Champaign, Urbana, IL, USA*, [4]*University of Wisconsin–Madison, Madison, WI, USA*, [5]*Monash University, Melbourne, Australia*.

60 **Discriminating peptides from ammonia and branched-chain volatile fatty acids on nutrient digestibility, bacterial protein synthesis, and bacterial communities in continuous culture.**
A. R. Sanders[1,2], B. A. Wenner[3], C. Lee[4], M. T. Socha[5], D. H. Kleinschmit[5], N. Pickard[1], S. Somasundaram[1], Z. Yu[1], and J. L. Firkins*[1], [1]*The Ohio State University, Columbus, OH, USA*, [2]*Novus International Inc, Chesterfield, MO, USA*, [3]*Feedworks USA, Cincinnati, OH, USA*, [4]*The Ohio State University, Wooster, OH, USA*, [5]*Zinpro Corporation, Eden Prairie, MN, USA*.

61 **Dietary modulation of rumen microbial structure and functional potential influences stress physiology and performance in beef bulls.**
P. Donnelly*[1], N. Rutherford[2], N. Dimonaco[1], F. Lively[2], F. Godoy Santos[1], S. Huws[1], and G. Arnott[1], [1]*Institute for Global Food Security, School of Biological Sciences, Queen's University Belfast, Belfast, United Kingdom*, [2]*Agri-Food and Biosciences Institute, Livestock Production Sciences Branch, Agri-Food and Biosciences Institute, Hillsborough, United Kingdom*.

62 **Gut *Akkermansia muciniphila* attenuates obesity via modulating bile acid metabolism.**
J. Liu* and X. Wang, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

63 **Lower-gut delivery of brassica-derived isothiocyanates links vegetable intake to GLP-1, appetite, and metabolic health.**
F. Yang*, M. Black, and M. J. Miller, *University of Illinois Urbana-Champaign, Urbana, IL, USA*.

64 **Association of *Undaria pinnatifida* rhizoid chemical composition with ruminal methane mitigation.**
C. Yamaga*[1], M. M. Mulandi[1], R. Yano[2], and N. Fukuma[2,3], [1]*Graduate School of Animal and Veterinary Sciences and Agriculture, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [2]*Department of Life and Food Sciences, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*, [3]*Research Center for Global Agromedicine, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

65 **Investigating the source of liver abscess pathogens in the gastrointestinal tract of ruminants.**
P. E. Berkmeyer*[1], H. F. Linder[1], T. G. Nagaraja[2], and J. C. McCann[1], [1]*University of Illinois at Urbana-Champaign, Champaign, IL, USA*, [2]*College of Veterinary Medicine, Kansas State University, Manhattan, KS, USA*.

Prebiotics, probiotics, and DFM development
Foyer outside auditorium
3:30 PM - 5:00 PM

66 **A *Bacillus*-based direct-fed microbial (DFM) mixture remodels the gut microbiome to augment respiratory health of *Salmonella* infected pigs.**
T. Putman*[1], A. M. Abdel-Hamid[2,3], E. Galbraith[4], P. Schimmel[2], H. Kim[1], T. Yasuma[5,6], M. A. B. Alhawsawi[2,7], K. Boateng[2], J. Holmes[9], M. Duersteler[4], C. N. D'Alessandro-Gabazza[2,5], H. Fujimoto[11], T. Kobayashi[10,11], K. K. O. Walden[9], G. Rendon[9], [1]*Department of Animal Science, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [2]*Carl R. Woese Institute for Genomic Biology (Microbiome Metabolic Engineering), University of Illinois Urbana-Champaign, Urbana, IL, USA*, [3]*Department of Botany and Microbiology, Faculty of Science, Minia University, El-Minia, Egypt*, [4]*Microbial Discovery Group, Oak Creek, WI, USA*, [5]*Department of Immunology, Mie University Faculty and Graduate School of Medicine, Tsu, Mie, Japan*, [6]*Department of Diabetes and Endocrinology, Mie University Faculty and Graduate School of Medicine, Tsu, Mie, Japan*, [7]*Division of Nutritional Sciences, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [8]*Clinical Nutrition Department, College of Applied Medical Sciences, University of Hafr Al Batin, Hafr Al Batin, Saudi Arabia*, [9]*Roy J. Carver Biotechnology Center, the University of Illinois Urbana-Champaign, Urbana, IL, USA*, [10]*Microbiome Research Center, Mie University, Tsu, Mie, Japan*, [11]*Department of Pulmonary and Critical Care Medicine, Mie University Faculty and Graduate School of Medicine, Tsu, Mie, Japan*, [12]*Department of Pathobiology, College of Veterinary Medicine, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [13]*Center for East Asian and Pacific Studies, University of Illinois Urbana-Champaign, Urbana, IL, USA*, [14]*Department of Microbiology, University of Illinois Urbana-Champaign, Urbana, IL, USA*.

67 **Rumen-native microbe supplementation to consistently improve dairy cow productivity.**
B. Anderson*[1], K. A. Calapa[1], J. K. Drackley[2], T. R. Overton[3], M. J. Vandehaar[4], J. E. P. Santos[5], J. S. Osorio[6], A. Lago[7], G. Martinez Boggio[8], H. Mantovani[8], J. Laporta[8], and M. Embree[1], [1]*Native Microbials, San Diego, CA, USA*, [2]*University of Illinois Urbana-Champaign, Urbana, IL, UNSA*, [3]*Cornell University, Ithaca, NY, USA*, [4]*Michigan State University, East Lansing, MI, USA*, [5]*University of Florida, Gainesville, FL, USA*, [6]*Virginia Polytechnic Institute, Blacksburg, VA, USA*, [7]*DairyExperts, Tulare, CA, USA*, [8]*University of Wisconsin–Madison, Madison, WI, USA*.

69 **How complex dietary fibers can be used to shape the human gut microbiome toward reduced inflammatory potential.**
M. L. Savo Sardaro*[1,2], S. Kuthyar[3], O. Dada[1], N. Deivassagayame[4], M. Tran[4], R. Kern[5], Y. Seidman[4], M. Atallah[1], and K. R. Amato[1], [1]*Northwestern University, Evanston, IL, USA*, [2]*University of San Raffaele, Rome, Rome, Italy*, [3]*University of California, San Diego, CA, USA*, [4]*Oakton College, Des Plaines, IL, USA*, [5]*New York University, New York, NY, USA*.

70	**Probiotic-induced restructuring of the canine gut microbiome and functional gene profiles is associated with behavioral modulation and physiological biomarkers in breeding dogs.** P. Donnelly*, B. McAnoy, N. Dimonaco, F. Godoy Santos, S. Huws, and G. Arnott, *Queen's University Belfast, Belfast, United Kingdom*.
72	***Lactobacillus*-vectored nanobodies improve broiler productivity in sub-clinical necrotic enteritis with integrated microbiome and host transcriptomic effects.** A. Hall[1], S. Manuja[1], L. Payling[2], L. Romero[2], F. Hoerr[3], J. Shields[1], C. Hofacre[4], D. Susanti[1], D. Gangaiah[1], G. Plata[1], and A. Kumar*[1], [1]*BiomEdit, Inc, Greenfield, IN, USA*, [2]*Biofractal, Loulé, Portugal*, [3]*Veterinary Diagnostic Pathology, LLC, Polkton, NC, USA*, [4]*Southern Poultry Research Group, Inc, Watkinsville, GA, USA.*
73	**Characterization of early-colonizing gut bacteria from neonatal calves for potential probiotic application.** F. Viquez-Umaña, G. Alam, P. Tiwari, M. de la Paz, S. Davison, and H. Mantovani*, *University of Wisconsin–Madison, Madison, WI, USA*.
74	**Functional screening of novel propionate-producing ruminal bacteria as direct-fed microbial candidates.** E. Fuertes*, F. Godoy-Santos, J. Pickup, and S. Huws, *Queen's University Belfast, Belfast, United Kingdom*.
75	**Optimization of protease combination under simulated chicken gastrointestinal conditions.** H. Kim*[1], B. L. Vasanthakumari[2], and R. I. Mackie[1], [1]*University of Illinois at Urbana-Champaign, Urbana, IL, USA*, [2]*Kemin Industries, Waukee, IA, USA*.
76	**Effects of CLOSTAT® 500 (*Bacillus subtilis* PB6) in milk replacer on intestinal barrier function and disease incidence in pre-weaned calves.** E. Lima Neto*[1], M. Wieghart[2], J. Traini[1], D. LaFleur[3], S. Trojan[4], and D. O' Connor[5], [1]*Kemin Industries, Inc, Des Moines, IA, USA*, [2]*All Dairy Consulting, LLC, Beldenville, WI, USA*, [3]*LaFleur Consulting, LLC, Sioux City, IA, USA*, [4]*Peak Beef Cattle Nutrition and Management Consulting, LLC, Casper, WY, USA*, [5]*DLOC Consulting LLC, Groveland, IL, USA*.

Wednesday, April 22

Podium presentations: Session 3 The human microbiome/host-microbe interactions in health and disease Chair: **Rod I. Mackie, Chair, University of Illinois at Urbana-Champaign, USA** **NCSA Auditorium - Room 1122** **9:00 AM - 1:00 PM**		
9:00 AM	15	**Toward microbiome-informed personalized medicine: Rescuing the non-responders.** S. Gibbons*, *Institute for Systems Biology, Seattle, WA, USA.*
9:45 AM	16	**Niche dimensionality drives microbial community structure.** K. Srinivasan[1], G. Plata[2], and P. Dixit*[1], [1]*Yale University, New Haven, CT, USA,* [2]*BiomEdit LLC, Fishers, IN, USA.*
10:05 AM	17	**Revealing the pervasive landscape of MGE-host interactions in situ with single-cell genomics.** M. Yan*[1], J. F. Banfield[1,2], and R. Sachdeva[1], [1]*Innovative Genomics Institute, University of California, Berkeley, Berkeley, CA, USA,* [2]*Department of Microbiology, Biomedicine Discovery Institute, Monash University, Clayton, Victoria, Australia.*
10:25 AM		**Break (Foyer outside auditorium).**
11:00 AM		**Platinum sponsor.** Applied Microbiology International (AMI).
11:20 AM	18	***Bacteroides intestinalis*-driven arabinoxylan fermentation mitigates inflammatory and metabolic dysfunction.** Z. Zhou, K. L. Nguyen, S. Chen, Y. Wang, M. Li, D. Bianchi, W. Ge, S. Kuo, R. Khorana, A. Hetta, I. Cann, R. Mackie, G. Lau, J. Yang, W. Mei*, *University of Illinois Urbana-Champaign, Urbana, IL, USA.*
11:40 AM	19	**A functional role for a microbial cortisol-metabolizing enzyme in the human gut.** M. Freiberg*[1,2], J. Ridlon[1,2], T. Wang[1,2], R. Rosa[3], R. Bernardi[3], and J. W. Lee[4], [1]*Department of Animal Sciences, University of Illinois at Urbana-Champaign, Urbana, IL, USA,* [2]*Microbial Metabolic Engineering Theme, Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, IL, USA,* [3]*Physics Department – COSAM Leach Science Center, Auburn AL, USA,* [4]*Sungshin, Seoul, South Korea.*
12:00 PM		**Lunch Break (Foyer outside auditorium).**
Podium presentations: Session 4 Animal nutrition Chair: **Katie Lawther, Research Fellow at Queen's University Belfast** **NCSA Auditorium - Room 1122** **1:00 PM - 2:35 PM**		
1:00 PM		**Platinum sponsor.** Adisseo.
1:20 PM	20	**Abrupt dietary shifts as a pre-harvest food safety intervention strategy leads to profound shifts in the ruminant gastrointestinal microbiome in feedlot cattle.** H. G. Perez, A. M. Osorio-Doblado, K. P. Feldmann, M. M. Dycus, C. Burner, S. Locke, J. M. Lourenco, F. L. Fluharty, and T. R. Callaway*, *Department of Animal and Dairy Science, University of Georgia, Athens, GA, USA.*
1:40 PM	21	**Effects of supplementing the homoacetogen *Blautia pseudococcoides* as an alternative hydrogen sink on in vitro rumen fermentation and methanogenesis.** T. Stoikidou*[1], R. Duong[1], P. Romero[1], and M. Hess[1,2], [1]*University of California Davis, Davis, CA, USA,* [2]*University of California Berkeley, Berkeley, CA, USA.*
2:00 PM	22	**Effect of dietary supplementation of bovine-derived *Bifidobacterium longum* ssp. *longum* on the gut bacterial establishment in colostrum-compromised calves.** X. Wu*[1], R. Nakandalage[2], P. Griebel[3], K. Rajamanickam[3], N. Malmuthuge[4], and L.L. Guan[1,2], [1]*The University of British Columbia, Vancouver, BC, Canada,* [2]*University of Alberta, Edmonton, AB, Canada,* [3]*University of Saskatchewan, Saskatoon, SK, Canada,* [4]*University of Calgary, Calgary, AB, Canada.*
2:20 PM		**Presentation of Russell Awards.** Best oral presentations by Graduate students and Young investigators.
2:35 PM		**Closing remarks and Invitation to CGIF 2028**