Conference Information and Scientific Program

ADSA® Annual Meeting
June 25–28, 2023
Ottawa, Ontario, Canada

Content · Community · Connection

www.adsa.org/2023

2023 ADSA Annual Meeting
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◀ Access the online ADSA Annual Meeting program.

Get the most up-to-date schedule with the EventPilot conference app. ▶

Meeting program

Meeting app

https://www.adsa.org/2023/

Notice

Portions of this meeting will be photographed, videotaped, and recorded for future distribution, promotion, or other purpose by ADSA. ADSA reserves the right to use any photo or video taken at the annual meeting without the expressed written consent of those included in the content.

Important Message

In the event that protestors interrupt the meetings, please ignore them. Their goal is to attract attention, and any attention you give them will only help their cause. Convention staff have a plan in place to handle these situations, and they depend on our cooperation. If members of the media approach you for an interview about the disturbance, please politely decline and direct them to the convention's media room, where spokespersons will be available.

Thank you for your cooperation.

Welcome to ADSA 2023!

On behalf of the American Dairy Science Association and the Board of Directors, we welcome you to beautiful Ottawa, Ontario, Canada, and the 2023 ADSA Annual Meeting. I am particularly pleased to welcome you to Canada as I grew up in Quebec, Canada, and completed both my bachelor's and master's degrees at Université Laval in Québec City. ADSA last met in Canada in Montreal in 2009, and we are very excited to be back in 2023. We look forward to revitalizing strong connections with colleagues and coming together to share the latest dairy research. And in your down time, I recommend brushing up on your French a bit, exploring a National Museum or two in Ottawa, enjoying the amazing cuisine, and simply exploring Ottawa for the uniquely Canadian experiences you will find in the city.

We are a dairy science community, we are global, and this year's Annual Meeting truly brings that reality into focus. We have a very strong meeting planned for you this year, packed with technical sessions and symposia that are noteworthy for the quality of their scientific programming, their theoretical and practical value in seeking answers to today's urgent needs, and their visionary anticipation of future challenges and opportunities. The ADSA Annual Meeting will again offer many, many opportunities to network with colleagues in informal social opportunities and in the sessions.

The 2023 meeting also offers many noteworthy symposia. Starting on Sunday, with the Todd R. Klaenhammer Memorial Symposium: Contributions to Our Understanding of Lactic Acid Bacteria session. We will also recognize the work of Mike Akers and Bill Weiss during symposia based on their research. This week brings the return of the Mixed Models Workshop, and our international Partnership Symposium for 2023, ADSA-INRAE International Partnership Symposium: Milk—From Production to Effect on Human Health | The Latest Results of INRAE in Rennes in the PEGASE, STLO Research Units, as well as a partnership symposium with the Canadian Society of Animal Science, Mitigation Strategies to Achieve Dairy Net Zero. There is more dairy science in the program than I can expand on here, so please read through the program, use the app, and take in as many talks as you are able to fit in this week.

Finally, the 2023 ADSA Annual Meeting could not have happened without the extraordinary yearlong (or more, in some cases) effort by the Program Committee, volunteers, and staff! My sincere thanks to Corwin Nelson (overall program chair) and his committee: Sam Alcaine, Pedram Rezemand, Nicole Martin, Kevin Harvatine, Kayanush Aryana, and Trevor DeVries. Also, sincere thanks to the FASS staff and the ADSA executive director, Jerry Bowman, for their support in working together to create a great meeting. I would like to recognize our sponsors and volunteers for helping to deliver an outstanding meeting. And, of course, special thanks to our session chairs, speakers, presenters, and exhibitors—we would not be able to have this event without you.

Bienvenue à Ottawa!

Normand St-Pierre
ADSA President

General Meeting Information

Location

The 2023 ADSA Annual Meeting is being held at the Shaw Centre and surrounding hotels in Ottawa, Ontario, Canada.

Schedule of Events

Pre-conference symposia and workshops are scheduled for Sunday, June 25; scientific sessions will begin Monday morning, June 26, and run through 5:30 pm on Wednesday, June 28; please check the scientific program starting on page 35.

As well as great scientific programming, we have an outstanding lineup of networking events where you can reconnect with friends and colleagues and catch up after a long three years! You won't want to miss the following events, which are included as part of your registration. We look forward to seeing you at these events during your week at ADSA!

First-Time Attendees' Reception
Sunday, June 25, 5:00 – 5:45 pm

If this is your first time attending an ADSA annual meeting, please join us at this reception to meet ADSA leadership and members of the ADSA staff and learn how to get the most out of your first ADSA annual meeting.

Opening Session and Reception
Sunday, June 25, 6:00 – 8:30 pm

Join us at the opening session to hear from ADSA President Normand St-Pierre with updates on the state of the association and celebrate the new ADSA Fellows, the recipients of the ADSA Award of Honor and ADSA Distinguished Service Award, and the new inductees into JDS Club 100.

ADSA Awards Program and Ice Cream Social
Tuesday, June 27, 7:00 – 8:00 pm; 8:15 – 9:30 pm

All meeting participants, families, and friends are welcome to attend the 2023 ADSA awards program. Please join us at this special event to recognize and congratulate the 2023 award winners. Stay after the awards program and enjoy ice cream at the perennial favorite—the Ice Cream Social!

Back Again for 2023!

Closing Reception
Wednesday, June 28, 6:00 – 9:00 pm

Wrap up the week at ADSA with great food and great company! All meeting participants are invited to join us for our all-attendee closing reception. Cocktails will be provided by Dairy Distillery—famous for their "VodKow" vodka, made from milk permeates.

Use this last event of the week to talk about all of the great science exchanged at ADSA 2023.

Scientific Program Format for 2023

Poster sessions (Monday–Wednesday)	7:30 am – 9:30 am
Morning scientific sessions	9:30 am – 12:30 pm
Lunch break	12:30 pm – 2:00 pm
Afternoon scientific sessions (Monday–Wednesday)	2:00 pm – 5:30 pm
Afternoon ice cream break in the exhibit hall (Monday–Wednesday)	3:30 pm – 4:00 pm

Meeting rooms will be equipped for electronic presentations and preloaded sessions.

Registration Hours

Registration for the ADSA Annual Meeting will be located in the Rideau Canal Atrium in the Shaw Centre. Registration hours are as follows:

Saturday, June 24	3:00 pm – 5:00 pm
Sunday, June 25	7:00 am – 7:00 pm
Monday, June 26	6:30 am – 5:30 pm
Tuesday, June 27	7:00 am – 5:30 pm
Wednesday, June 28	7:00 am – 5:30 pm

Media Check-In

Please check in at the Registration Desk in the Shaw Centre.

Media Room

A media room will be available throughout the meeting to provide a space for media representatives to work. Meeting press releases will be available there. Complimentary registration is available for members of the media. For more information, please contact **adsa@adsa.org.**

Job Resource Center

The Job Resource Center is located in the exhibit hall. Job announcements and CVs will be organized into the following categories for posting: Animal Behavior and Well-Being; Animal Health; Animal Breeding; Extension; Food Safety; Food Science; Forages and Pastures; Genetics; Growth and Development; International Animal Agriculture; Lactation; Pharmacology and Toxicology; Physiology and Endocrinology; Production and Management; Ruminant Nutrition; and Teaching.

Camera, Video Camera, and Cell Phone Policy

Use of cameras, video cameras, tablets, and smartphone (for calls or audio/video recording) is prohibited during oral and poster presentations to minimize disruption and unauthorized dissemination of data. Anyone found in violation of this policy will be asked to leave the session.

ARPAS Continuing Education Units

The 2023 ADSA Annual Meeting has been approved for up to 21 continuing education units (CEUs) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

Presentation Information

Oral and Invited Speakers: Onsite Upload Information

Oral sessions will begin at 9:30 am on Monday, Tuesday, and Wednesday.

Onsite upload: Onsite presentation upload will be available; files can be delivered to the Preload Room (107) at the convention center (Saturday: 3:00 – 5:00 pm; Sunday through Wednesday: 7:00 am – 5:00 pm).

Presentations must be uploaded by 5:00 pm on the day before your scheduled presentation. Files will not be accepted via email. No presentations will be loaded while the session is in progress or between presentations.

Speakers may also use the Preload Room if they need to review slides.

Poster Presentations

We have dedicated a two-hour block on Monday, Tuesday, and Wednesday to poster presentations. The "open poster" sessions will be from 7:30 to 9:30 am in Canada Hall. Coffee and pastries will be served in the hall from 8:00 to 9:00 am on all days.

Each poster will be available for public viewing for the entire day, with the presenting authors in attendance during the open posters time (7:30–9:30 am). All posters must be mounted on the board 30 minutes before the beginning of the day's session (**poster sessions begin at 7:30 am, so posters must be mounted on boards by 7:00 am**) and must list the abstract number and corresponding day. The exhibit hall will open at 6:30 am on Monday and Tuesday. **Posters must be removed after 5:00 pm each day.** Any posters remaining after those times will be removed by the convention center staff and discarded.

Each poster board area is **48 inches high and 96 inches wide**. Use of this space is determined by the presenter, with the following exceptions: the top of the poster space must include the abstract number with corresponding letter of the day it is being presented, title, authors, and affiliations. The lettering for this section should be at least 1 inch high.

Locating the Correct Poster Board

Each poster board number corresponds to the abstract number as noted in the program. For Monday posters an "M," Tuesday posters a "T," and Wednesday posters a "W" precedes the board number.

ADSA 2023 Mobile App—An Easy Way to Plan Your Schedule

Using the ADSA 2023 mobile app, (for Android and iOS devices), you can browse sessions, read abstracts, build a personal schedule, view content offline, connect with other meeting attendees, share photos, and start discussions — all from within the app. To download the app, please visit the app store (Google or Apple), download and launch the "Event Pilot conference app," and then search for "ADSA23." If you previously used this app for a different conference, click "…More" from the home screen, choose "Find Event," and then enter "ADSA23". You can also scan the QR codes on the inside front cover of this book to download the app to your device. Stop by the registration desk or the preload area if you have questions on how to use the app!

Ottawa Information

Scan the QR code below to plan your visit, including stops at must-see sites in Ottawa, such as the Rideau Canal, national musems, the ByWard Market neighborhood, the Ottawa River, and Parliament Hill! Photos courtesy of Ottawa Tourism.

Dairy Education at the University of Guelph

Masters in Dairy Technology Management
1-year, fully-online Masters degree integrating innovations in diary science and business

Ice Cream Technology short course
With a legacy of more than 100 years, this is Canada's most established ice cream course

Cheese making courses
Ranging from introductory to master classes, courses can be taken seperately or as part of a Cheesemaker certificate

Notes

Special Events

Events listed are at the Convention Center unless otherwise noted. Coffee and pastries will be served from 8:00 to 9:00 am, and ice cream will be served from 3:30 to 4:00 pm in the exhibit hall on Monday, Tuesday, and Wednesday. Please make time to talk with our exhibitors while you are enjoying complimentary breakfast or afternoon ice cream!

Canada Agriculture and Food Museum
Saturday, June 24, 2:00 – 5:00 pm
Buses will depart from Les Suites Hotel, Student Headquarters Hotel
Tickets: $30

The Canada Agriculture and Food Museum offers visitors a unique opportunity to see diverse breeds of farm animals important to past and present Canadian agriculture. In addition to breeds common to Canadian agriculture, such as Holstein dairy cows and Angus beef cows, the museum also has Canadienne and Milking Shorthorn dairy cows, and Tamworth pigs. Many other breeds of dairy and beef cattle, pigs, sheep, horses, poultry, goats, rabbits, and even honeybees round out the collection. Museum programs and exhibitions are related to Canada's agricultural heritage, food literacy, and the benefits and relationship of agricultural science and technology to Canadians' everyday lives. Price includes museum ticket, barn tour, and bus transportation. Undergraduate students and their club advisors are given first opportunity; tour will be offered to others on a remaining availability basis.

USD Hospitality Room
Saturday, June 24, 6:30 – 7:00 pm
Les Suites Hotel, Student Headquarters Hotel

The Undergraduate Student Division (USD) Hospitality Room will be available on Saturday evening for members to gather and meet others as you arrive. Information about the USD schedule will be available.

USD Informal Mixer: USD Dine Around
Saturday, June 24, 7:00 pm
Meet in USD Hospitality Room, Les Suites Hotel, Student Headquarters Hotel

USD officers will host a dine-around event on Saturday for schools arriving early. Stop by the USD hospitality room Saturday evening if your club would like to participate. Students from participating schools are encouraged to join different dinner groups for a fun evening of networking and good food. Participants are responsible for the cost of their meal.

USD Midday Mixer and Luncheon
Sunday, June 25, 11:00 am – 12:00 pm
Tickets: $5

Join your fellow dairy clubs and meet your 2023–2024 USD Officer candidates. Ticket price includes lunch. Note: Registration is limited to ADSA undergraduate student members and dairy club advisors.

Dairy Quiz Bowl Preliminary Rounds
Sunday, June 25, 12:15 – 4:15 pm

GSD Business Meeting and Open Forum
Sunday, June 25, 4:00 – 4:45 pm

The opening discussion of the meeting will welcome our new officers and provide important details for GSD's upcoming week.

Dairy Quiz Bowl Final Round
Sunday, June 25, 4:30 – 5:00 pm

University teams from across North America are excited to compete in the ADSA-USD Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. USD invites you to join them for the thrill of the final round of competition as the top two schools go head-to-head for the title of 2023 Dairy Quiz Bowl Champion.

First-Time Attendees' Reception
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GSD Mixer
Sunday, June 25, 8:00 – 10:30 pm
Lowertown Brewery Ottawa
Tickets: $10

Kick off the week with a fun night of entertainment and networking with your fellow dairy science graduate students! Use this opportunity to meet other graduate students you can network with throughout the week at the annual meeting.

Located in the ByWard Market in Ottawa, Lowertown Brewery is the newest addition to the Ontario craft beer market. Serving great comfort food and delicious cocktails, you won't want to miss what we're brewing next!

Undergraduate Poster and Paper Presentation Competitions
Monday, June 26

Support the future of ADSA—plan time in your schedule to visit the undergraduate poster and oral presentations on Monday morning. See program for locations and complete details.

GSD Educational Session: Entrepreneurship in the Dairy Industry
Monday, June 26, 12:30 – 2:00 pm
Tickets: $15

The potential of scientific findings can be exploited by transformation into commercial product. Whether through technological innovation or sustainable product design, we can make a larger impact on the productivity and sustainability of the society by tapping the gold mine of our research findings. However, even students who excel at science might find this process difficult, because, to get on the path of entrepreneurship, students often need to develop a deeper understanding in areas out of their comfort zones, including legal issues, marketing strategies, and consumer insights. This session is aimed to address these needs.

Attendees will hear the true stories behind successful entrepreneurs, learn various essential skills for a startup, and explore different resources available. The session will finish with a roundtable to answer any questions from students. Ticket price includes a boxed lunch.

USD Career Roundtable Luncheon
Monday, June 26, 12:45 – 2:15 pm
Tickets: $10

A program favorite, the Career Roundtable Luncheon gives undergraduate students the opportunity to dine and network with professional members representing a wide array of careers in the dairy industry. The program is conveniently scheduled during the annual meeting lunch break on Monday. Participants will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities. Ticket includes lunch.

USD Activities Symposium
Monday, June 26, 2:30 – 3:45 pm

The Activities Symposium is an opportunity for each chapter to share their dairy club work with others attending the meeting. The Activities Symposium can be a very valuable exchange of ideas that will help other chapters in organizing new activities.

ADSA Three-Minute Thesis (3MT) Challenge
Monday, June 26, 4:00 – 5:30 pm

ADSA graduate students are encouraged to participate in the return of the Three-Minute Thesis Challenge. This event will test competitors' ability to convey their research in a way that is understandable to all, in three minutes or less! Emphasis will be placed on the ability to explain research to a lay audience.

Entry details will be released prior to the annual meeting, and competition will be limited to 10 students selected by a panel of judges based upon strength of CV and a 300-word interpretive summary.

All ADSA members are invited to attend the challenge and watch students compete for cash prizes and present their research in a fun and exciting way!

USD Undergraduate Student Dine Around and Mixer: ByWard Market
Monday, June 26, 7:00 – 11:00 pm
ByWard Market District

With competitions behind you, undergrads are invited to take the evening off for a night of fun on the town at ByWard Market. ByWard Market is the spot for everything from farmers' markets to specialty food shops, colorful street art, and hip stores by local designers. Eateries, taverns, and nightclubs will entertain you well into the wee hours. We hope to see you there!

Small Group Mentoring Sessions
Tuesday, June 27, 9:15 – 10:15 am

ADSA Mentor Program connects professional members with undergraduate students for small group mentoring sessions during the annual meeting. ADSA Past Presidents and others will meet with small groups of students to attend scientific presentations by interest area, followed by discussions of the topics presented. Engagement in scientific presentations and interactions with conference attendees will help students develop their technical skills and build their professional network. Advance registration is required. Students are encouraged to register for this session. Please indicate at least two research interest areas on the registration form.

USD Educational Workshop: Dairy Farmers of Canada
Tuesday, June 27, 10:30 – 11:30 am

While dairying in the United States and Canada has many similarities, there are just as many differences. For example, Canada's farm sizes tend to be smaller, and there are fewer farms in Canada. At the same time dairying is consistently profitable for Canadian farmers. We are pleased to welcome representatives from Dairy Farmers of Canada to our program. They will give us an overview of dairying in Canada and will explain management and trade policies and programs unique to Canada that support the dairy industry.

ADSA Undergraduate Student Awards Luncheon
Tuesday, June 27, 11:45 am – 2:00 pm
Tickets: $50 professional member; $40 student

Plan to attend this year's Undergraduate Student Division awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new USD officers. Both students and professionals are encouraged to attend.

This is a wonderful chance to show your support and appreciation for our industry's next generation.

GSD Career Insights Networking Luncheon
Tuesday, June 27, 12:30 – 2:00 pm
Tickets: $10

Graduate students, plan to join us for lunch and networking with a diverse assortment of academia and industry professionals! With a roundtable format this year, you will have the opportunity to connect with professional members about their experiences moving from graduate school to the professional world. This lunch is intended to give students an informal environment in which to inquire about each professional's personal journey and the challenges they encountered along the way. Ticket price includes a boxed lunch.

ADSA Awards Program and Ice Cream Social
Tuesday, June 27, 7:00 – 8:00 pm; 8:15 – 9:30 pm

All meeting participants, families, and friends are welcome to attend the 2023 ADSA awards program. Please join us at this special event to recognize and congratulate the 2023 award winners. Stay after the awards program and enjoy ice cream at the perennial favorite—the Ice Cream Social!

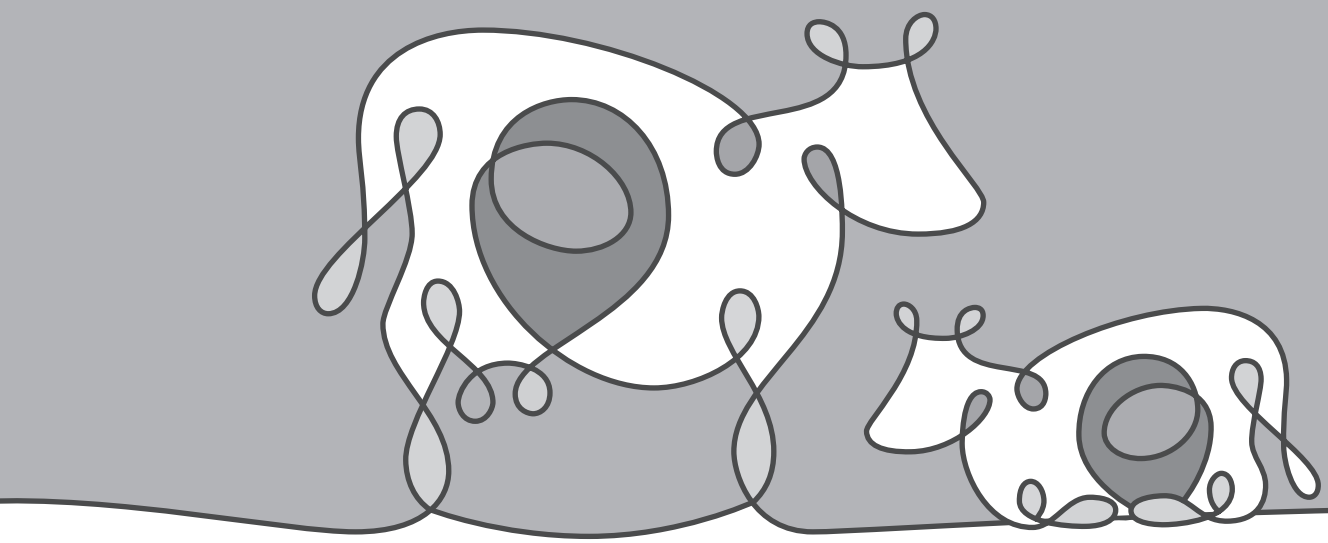
Closing Reception
Wednesday, June 28, 6:00 – 9:00 pm

Wrap up the week at ADSA with great food and great company! All meeting participants are invited to join us for our all-attendee closing reception. Cocktails will be provided by Dairy Distillery—famous for their "VodKow" vodka, made from milk permeates.

Use this last event of the week to talk about all of the great science exchanged at ADSA 2023.

2023 ADSA Award Donors

Alltech Biotechnology Center
American Feed Industry Association
Cargill Animal Nutrition
Council on Dairy Cattle Breeding
Dairy Management Inc.
Daisy Brand
DeLaval Inc.
Hoard's Dairyman
International Dairy Foods Association
Lallemand Animal Nutrition
National Milk Producers Federation Dairy Scholarship Fund
Nutrition Professionals Inc.
Novus International Inc.
Purina Animal Nutrition
Schreiber Foods
West Agro Inc.
Zinpro Corporation
Zoetis
ADSA Foundation
ADSA



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- Optimize **milk yield**
- Improve **feed efficiency**

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Exhibit Schedule

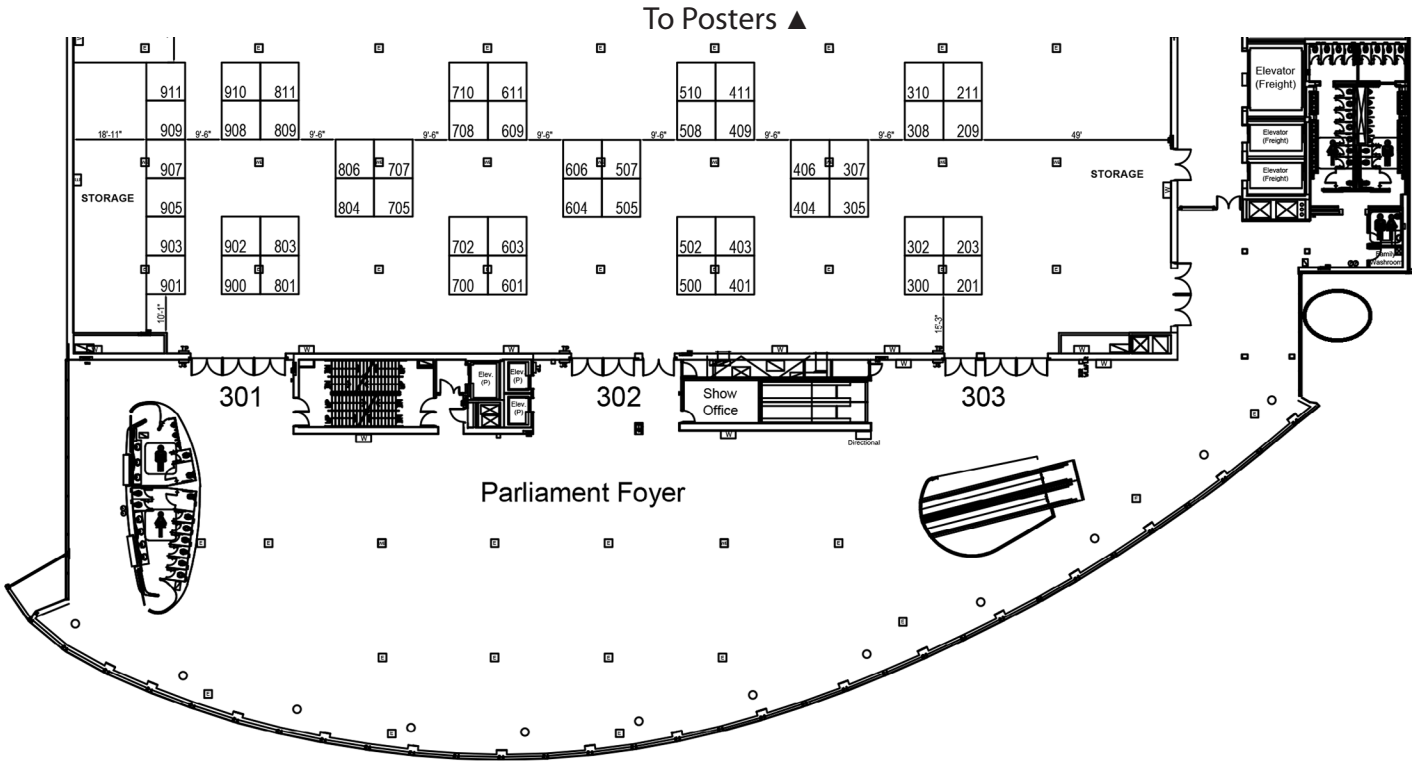
Sunday, June 25
- Set up exhibits ..... 10:00 am – 6:00 pm

Monday, June 26
- Exhibits open ..... 8:00 am – 5:00 pm

Tuesday, June 27
- Exhibits open ..... 8:00 am – 4:00 pm
- Dismantle exhibits ..... 4:00 pm – 6:00 pm

Coffee and pastries will be served from 7:30 to 9:30 am, and ice cream will be served from 3:30 to 4:00 pm on Monday, Tuesday, and Wednesday in the exhibit hall.

Exhibit Floor Plan



Guide to Exhibitors/Booth Numbers

AB Vista 403
Adisseo North America 209, 308
ADSA 2024 West Palm Beach 307
ADSA Graduate Student Division (GSD) 809, 811, 908, 910
ADSA Undergraduate Student Division (USD) 901, 903
Afimilk 900
Ag Processing Inc./Amino Plus 700
Ajinomoto Health & Nutrition NA Inc. 203
American Dairy Science Association (ADSA) 211, 310
Amerian Dairy Science Association Journals 310
American Registry of Professional Animal Scientists 806
Balchem 305, 404
Bar Diamond Inc 508
Berg+Schmidt 409
C-Lock Inc. 401
Cumberland Valley Analytical Services 201, 300
Dairy Distillery—VODKOW 710
Dairy Records Management Systems 907
DSM Animal Nutrition and Health 702
Evonik Corporation 804
FASS Inc. 603
Förster-Technik North America 500
Hampel's Calf-Tel 502
Hoard's Dairyman 604
Mapleview Agri Ltd. 803
Poultry Protein & Fat Council 601
Probiotech International Inc. 505
Protekta Inc. 606
RP Nutrients 705
University of Guelph 801
Vetagro Inc. 609

A special thank you to our 2023 ADSA Annual Meeting Exhibitors!

Exhibit Directory

AB Vista
8151 Peters Rd. Suite 2001
Plantation, FL 33324
www.abvista.com
Booth(s): 403

AB Vista is an animal nutrition technology company offering pioneering products and technical services to the global animal feed industry. We invest heavily in research and development and have a growing portfolio of products and services to serve the ruminant sector. AB Vista pioneers new scientific approaches with the intention of facilitating ever-greater nutrient release from animal foodstuffs to efficiently farm the microbiome. Offering fiber utilizing enzymes, uniquely formed live yeasts and new, pioneering, functional products complemented by nutritional expertise and a range of technical services, AB Vista is here to maximize your on-farm ROI.

Adisseo North America
4400 N Point Pkwy, Ste 275
One Point Royal
Alpharetta, GA 30022-2429
www.adisseo.com
Booth(s): 209, 308

At Adisseo, we are nutritionists with a long tradition of applying our expertise to nutritional additives. We are dedicated to serving the animal production industry by helping premixers, feed manufacturers and integrators to improve their performance and to become more competitive.

ADSA 2024 West Palm Beach
Booth (s): 307

Join us in West Palm Beach, June 16–20, 2024, for the American Dairy Science Association's Annual Meeting.

ADSA Graduate Student Division (GSD)
1800 S. Oak St., Ste 100
Champaign, IL 61820
www.adsa.org/Membership/Graduate-Student-Division
Booth(s): 809, 811, 908, 910

The ADSA Graduate Student Division (GSD) offers meetings, webinars, and workshops that focus on career development and professional growth topics. We also provide extensive networking opportunities with the goal of increasing the graduate student experience. Membership in the GSD provides dairy science graduate students access to the benefits of traditional ADSA membership, such as:

- myDairy Career—a free employment website for both dairy production and dairy food students
- Access to the Searchable Proceedings of Animal Conferences® (S-PAC), the most comprehensive animal production and management conference proceeding database
- Deep registration discount for the ADSA Annual Meeting
- Connections with dairy scientists across the globe through the ADSA membership directory and the NEW mentorship program!

ADSA Undergraduate Student Division (USD)
1800 S. Oak St., STE 100
Champaign, IL 61820
www.adsa.org/Membership/Undergraduate-Student-Division
Booth(s): 901, 903

The Undergraduate Student Division (USD) of ADSA consists of student affiliate chapters across the country. The chapters are local clubs organized at colleges and universities offering courses that pertain to the production of dairy cattle and dairy foods. The purpose of the USD is to provide a channel of communication for the exchange of information among the various member chapters and between ADSA and the member chapters; to acquaint students with ADSA, its scope, purpose, and program; and to develop leadership and promote scholastic achievement among students interested in the dairy industry.

Afimilk
5520 Nobel Dr, Ste 175
Madison, WI 53711
www.afimilk.com
Booth(s): 900

Afimilk provides dairy technology, software, and data management for dairy farms.

Ag Processing Inc./Amino Plus
12700 West Dodge Road
Omaha, NE 68154
www.aminoplus.com
Booth(s): 700

Ag Processing Inc., the largest cooperative soybean processor in the world, producer of AminoPlus® the number one volume bypass soybean meal supplement in United States. The AminoPlus process utilizes soybean meal to provide high: amino acid quality, rumen bypass and intestinal digestibility without the addition of chemicals or non-soybean components.

Ajinomoto Health & Nutrition NA Inc.
250 E. Devon Avenue
Itasca, IL 60143
www.ajihealthandnutrition.com/
Booth (s): 203

Ajinomoto Health & Nutrition NA Inc., (previously Ajinomoto Animal Nutrition NA Inc.) is proud to again be an exhibitor at the ADSA Annual Meeting. Since our first US production run of feed-grade amino acids in 1986, the Ajinomoto Group has continually advanced the field of animal nutrition. Our solutions improve the environmental, social, and economic sustainability of animal husbandry through gains in feed efficiency and other operational efficiencies.

The integration of our animal nutrition and food ingredient businesses has created synergies and opportunities for strategic partnership with similarly diversified clients or suppliers. With this growth mindset Ajinomoto Health & Nutrition NA Inc. continues to solidify our leadership across the supply chain spectrum, from field to farm to table.

Thanks our long, fruitful, and eventful collaboration with the scientific community at large, AjiPro®-L Rumen-Protected Lysine is the success it is today. Validation studies with the weight of the scientific review process behind them is a key source of trust within the industry, and Ajinomoto Group understands the importance of unbiased research in evaluating success.

American Dairy Science Association (ADSA)
1800 S Oak St, Ste 100
Champaign, IL 61820-6974
www.adsa.org
Booth(s): 211, 310

Established in 1906, ADSA is an international organization of educators, scientists, industry, and government representatives who are committed to advancing the dairy industry. All are keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world's population. Together, ADSA members have discovered new methods and technologies that have revolutionized the dairy industry. Please visit www.adsa.org for more information.

Amerian Dairy Science Association Journals
1800 S. Oak St., Ste 100
Champaign, IL 61820
www.journalofdairyscience.org
www.jdscommun.org
Booth(s): 310

Journal of Dairy Science (JDS), an official journal of ADSA, is the leading general dairy research journal in the world. JDS readers represent education, industry, and government agencies in more than 70 countries with interests in biochemistry, breeding, economics, engineering, environment, food science, genetics, microbiology and food safety, nutrition, pathology, physiology, processing, public health, quality assurance, and sanitation. *JDS Communications*, an official journal of ADSA, publishes focused, hypothesis-driven original research studies designed to answer a specific question on the production or processing of milk or milk products intended for human consumption. Research published in this journal is broadly divided into animal production, physiology, health, and genetics, and dairy foods for human consumption.

American Registry of Professional Animal Scientists (ARPAS)
1800 S Oak St., Ste 100
Champaign, IL 61820-6974
www.arpas.org
Booth(s): 806

All successful certification and licensing programs are targeted to serve and protect the public's interest. More government regulations and controls require that practicing professionals establish accountability by means of registry and certification programs. In today's business climate, producer and industry clients want assurance that they are getting advice from certified professionals who stay on the cutting edge. By completing the requirements for registration, maintaining your continuing education units, and adhering to the code of ethics, ARPAS registration provides you with a new level of recognition to help you distinguish yourself to your clients as a Professional Animal Scientist. NEW! Stop by the booth to ask about the new credentials route to membership!

Balchem
5 Paragon Drive
Montvale, NJ 07645
www.balchem.com
Booth(s): 305, 404

Balchem provides state-of-the-art solutions and the finest quality products for a range of industries worldwide, including human nutrition, animal nutrition, plant nutrition and industrial applications. We apply proven science and industry-leading technologies backed by years of success in the feed industry. You will not find a more experienced and committed team of scientists and researchers strategically aligned to identify and develop high-quality, innovative, proprietary products designed to meet your animal nutrition, productivity and wellness needs.

But in the end, it all comes down to results—real results you can count on, results that help you meet your goals.

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P O Box 60
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Voice: 208-722-6761
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Booth (s): 508

Providing the world with rumen cannulae and accessories since 1976!

Berg + Schmidt
An der Alster 81
20099 Hamburg
www.berg-schmidt.com
Booth (s): 409

Berg+Schmidt has been operating in the field of lipids for nearly 70 years, gathering experience that has made it a highly competent supplier of essential substances to the feed industry. Berg+Schmidt is part of the Stern-Wywiol Gruppe, an internationally operating family company.

Our corporate policy is responsibly based on long-term thinking and sustainability to leave an intact environment to future generations - ecologically, socially, and economically. Ethically, morally, and legally correct conduct is important to us, and therefore we orient our daily actions on a Code of Conduct that applies worldwide.

C-Lock Inc.
1350 Concourse Dr.
Rapid City, SD 57703
www.c-lockinc.com
Booth (s): 401

C-Lock utilizes cutting-edge science and engineering to measure, monitor, analyze, and control ruminant biological parameters on an individual basis. Our company's mission is to provide technological solutions for researchers and producers to improve efficiency, productivity, and sustainability across the livestock sector. Get connected with us on our social media platforms such as Instagram, Facebook, Twitter, and LinkedIn!

Cumberland Valley Analytical Services
4999 Zane A Miller Drive
Waynesboro, PA 17268
www.foragelab.com
Booth(s): 201, 300

Cumberland Valley Analytical Services is a full-service forage and feed testing laboratory serving the U.S., Canada, and worldwide. We specialize in providing contract support for the establishment and operation of NIR feed labs. We are focused on serving the analytical needs of the research community.

Dairy Distillery—VODKOW
34 Industrial Drive
Almonte, ON, K0A 1A0
Canada
www.dairydistillery.com
Booth (s): 710

Dairy Distillery develops technology to transform lactose into sustainable alcohol used to make award-winning spirits (Vodkow), hand sanitizer and transport fuel. Vodkow vodka is Canada's only carbon neutral vodka and Vodkow cream liqueur the only spirits bottle to feature the Dairy Farmers of Canada's logo. The company is working to build a large-scale ethanol plant to produce low carbon ethanol for transportation fuel. Dairy Distillery is based in the idyllic town of Almonte, Ontario where it operates a state-of-the art distillery. For more information visit dairydistillery.com

Dairy Records Management Systems
313 Chapanoke Rd, Ste 100
Raleigh, NC 27603-3435
www.drms.org
Booth(s): 907

DRMS is the country's largest volume Dairy Records Processing Center for managing and delivering dairy data. Immediate, continuous processing occurs as herd and lab data arrive, with automated edits to ensure accuracy. Choose from 60+ DHI reports. On-farm software solutions include Dart, the PocketDairy app, and the most automatic milk recording, heat monitoring and robotic system interfaces in the industry. Get more. Do more.

DSM Animal Nutrition & Health
45 Waterview Blvd.
Parsippany, NJ 07054
www.dsm.com/anh/en_NA/home.html
Booth (s): 702

We supply science-based products, services and innovations for the health, well-being and sustainability of farm animals. Our 3 business lines: **Essential Products**—vitamins, premixes and carotenoids; 2) **Performance Solutions + BIOMIN®**—advanced nutritional solutions including enzymes, mycotoxin deactivation and eubiotics; 3) **Precision Services**—Data analysis and diagnostics at work. DSM Animal Nutrition & Health | North America.

Evonik Corporation
1701 Barrett Lakes Blvd., Suite 340
Kennesaw, GA 30144
https://corporate.evonik.com/en
Booth (s): 804

Better feed for better food: the science of animal nutrition is one of the keys to efficient and sustainable livestock production. Through decades of experience in animal nutrition, deep understanding of customer requirements, scientific expertise, and global presence we provide you with knowledge-based system solutions for your sustainable and efficient production of meat, fish, eggs, and milk.

FASS Inc..
1800 S Oak St., Ste 100
Champaign, IL 61820-6974
www.fass.org
Booth(s): 603

Since 1998, FASS has provided shared management services to not-for-profit animal science and related organizations. FASS services include accounting, conference planning and event management, membership and administration, publication services, and information technology services. FASS is a 501(c)(3) support organization. Our tax-exempt status allows us to serve our clients at very reasonable rates. Currently, we provide services to more than 10,000 professionals in animal agriculture and other sciences. FASS has the staff resources, talent, and experience your organization needs to let your leadership focus on driving your organization forward.

Förster-Technik North America
56 Yates Avenue
Cambridge, ON N1P 0A3
Canada
Phone: 519-239-9756
www.foerster-technik.com
Booth(s): 500

We have automatic calf feeders for group housing and single housing, and we can measure activity in calves while they are in pens using our Smart Neck Bands, including light to find calves quickly. We have Smart Tanks for whole-milk calf feeding, which knows when the tank is full or empty, and with fully automatic cleaning of nipple and hoses to and from the feed stations. We also have the 40 fit program to feed the right amount to each calf all day long, including the ability to feed paired calves in a single stall.

Hampel's Calf-Tel
W194 N11551 McCormick Drive
Germantown, WI 53022
United States
www.calftel.com
Phone: 1-800-558-8558
Booth (s) : 502

For more than 40 years, Calf-Tel® has been listening. Listening to your needs, your challenges, and your big ideas. We speak your language, because we too have deep experience raising healthy calves. We put the calf first and understand that the welfare of the calf is the first priority—innovation in caring for them follows. We create the most durable, labor-efficient, and cost-effective solutions available so you can raise healthier, more productive calves.

There are over 40 countries where Calf-Tel products are in use today, and an estimated 2 million calves raised in Calf-Tel each year. It is not uncommon to see Calf-Tel hutches, manufactured 25 years ago, still in use today showing the strength, durability and quality of the Calf-Tel product line.

Calf-Tel®, manufactured in Wisconsin, USA, is the industry's number one choice for calf housing. Whether you're raising just one calf or thousands of calves, indoors or out, the Calf-Tel family of products

offers calf raisers around the world the best and most cost-effective systems for raising healthy, productive calves.

Hoard's Dairyman
28 Milwaukee Avenue West, PO Box 801
Fort Atkinson, WI 53538
www.hoards.com
Booth(s): 604

Hoard's Dairyman is the most read and trusted dairy industry magazine. Since 1885, *Hoard's Dairyman* has provided dairy producers of every size and type, as well as veterinarians, nutritionists, and other decision makers insights with expertise on feeding, breeding, animal health, and milk quality. Online, **hoards.com** is the dairy producer's top resource for headline news, industry updates, market trends, and more to help them be more efficient and profitable.

Mapleview Agri Ltd.
8610 concession 12, RR#1
Palmerston, ON N0G 2P0
Canada
www.mapleviewagri.ca/
Booth(s): 803

Mapleview Agri Ltd. specializes in manufacturing, research and development, and distribution of products related to animal health and nutrition. Since 2016, Mapleview has conducted many projects at their state-of-the-art calf research centre designed to develop and scientifically validate nutritional, nutraceutical, as well as pharmaceutical products used in raising healthy calves. Mapleview consistently collaborates with well-respected industry and academia partners to properly design and execute projects that have led to numerous peer reviewed publications.

Poultry Protein and Fat Council
1530 Cooledge Rd
Tucker, GA 30084-7303
www.poultryrenderers.org
Booth(s): 601

The Poultry Protein and Fat Council was formed to provide funding for research on related topics in the poultry rendering industry. Renderers agreed that research was an urgent and vital need and have funded over $2.2 million in subsequent years on numerous topics.

Probiotech International Inc.
6225 Boulevard Choquette
Saint-Hyacinthe, QC J2S8L2
Canada
www.probiotech.com
Booth (s): 505

Probiotech International Inc. is a proudly Canadian company that has been working in the field of dairy herd nutrition for over thirty years. Probiotech International Inc. collaborates with several local and international research centers to develop and provide technical support, the latest scientific findings, and innovative products in dairy animal nutrition and health. Always by the company's mission, Probiotech's products offer natural solutions specifically intended for the dairy feed industry. Probiotech International is the creator of alternative solutions for dairy animal nutrition, health and welfare, always inspired by nature.

Protekta Inc.
100 Bayview Cir, Suite 100
Newport Beach, CA 92660
www.protekta.com
Booth (s): 606

The team at Protekta® is dedicated to living up to the essence of the company name. Its transformative products are specifically designed to protect animals from common stressors that impact their health. All of the products offered by Protekta are innovative and evidence-based solutions that are designed to prevent illness through optimal nutrition, specialty feed ingredients, and healthy environmental conditions.

RP Nutrients
1988 Energy Dr.
East Troy, WI 53120
www.rpnutrients.com
Booth (s): 705

RP Nutrients Inc. was established in 2008 with the vision to bring innovative and well-researched products to market. Prioritizing research and effectiveness, we look to build a better, more efficient agricultural environment with nutrition, technology, and management by partnering with similarly motivated companies and individuals.

University of Guelph
Food Science
50 Stone Road E.
Guelph, ON, N1G 2W1
Canada
Booth (s): 801

The Department of Food Science at the University of Guelph is a world-class academic department with a long history of ground-breaking research in dairy science, with a particular focus on dairy microbiology, processing, and product development. With a diverse group of faculty members who specialize in various areas of food science, the department is committed to advancing the understanding of the composition, processing, and safety of food. Through innovative research, state-of-the-art facilities, and a strong focus on industry partnerships, the department provides students with a rigorous education needed to advance their careers in the dairy industry.

Vetagro Inc.
17 E. Monroe St., Suite 179
Chicago IL 60603
www.vetagro.com
Booth(s): 609

Vetagro specializes in the microencapsulation of feed additives and nutrients tailored to match the digestive capacity and intestinal transit time of ruminants, poultry and swine. We are present globally, with international patents evidencing our novelty and innovation. Our dairy products include Timet®, rumen-protected Methionine to optimize nitrogen metabolism and therefore improving milk protein yield, MecoVit®, a synergistic combination of rumen-protected Methionine, Choline, Betaine, and B vitamins, targeting the metabolism of the transition dairy cow; SmartSel®, the "smart" alternative to organic selenium and free sodium selenite. To find out more about Vetagro products, please visit us at our booth.

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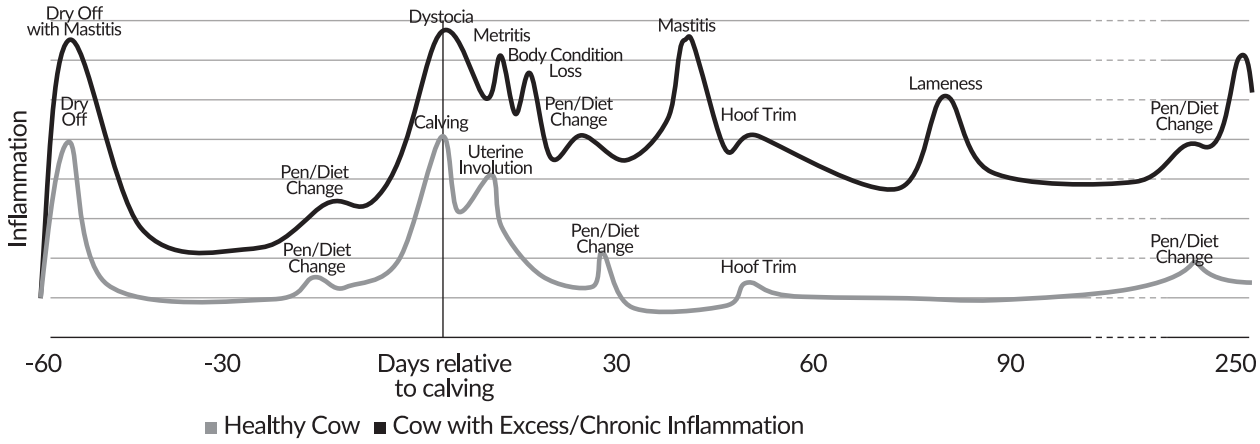
Thank you for your support!

Inflammation Happens.
It's how she responds that matters.

INFLAMMATORY EVENTS



Whether she's a healthy or chronic cow, dealing with inflammation is simply part of life. From mammary changes at dry off to metritis or pen changes, these inflammatory events are much more manageable when a cow has been fed a diet with adequate levels of EPA/DHA Omega-3.

Research shows that **EPA/DHA enables her immune system to rapidly resolve inflammation**, preventing chronic inflammation and the lost milk and health that ensues.

Equip your herd to be resilient through whatever challenges come their way by feeding EPA/DHA at an essential level.

EPA/DHA Omega-3. It's Essential.

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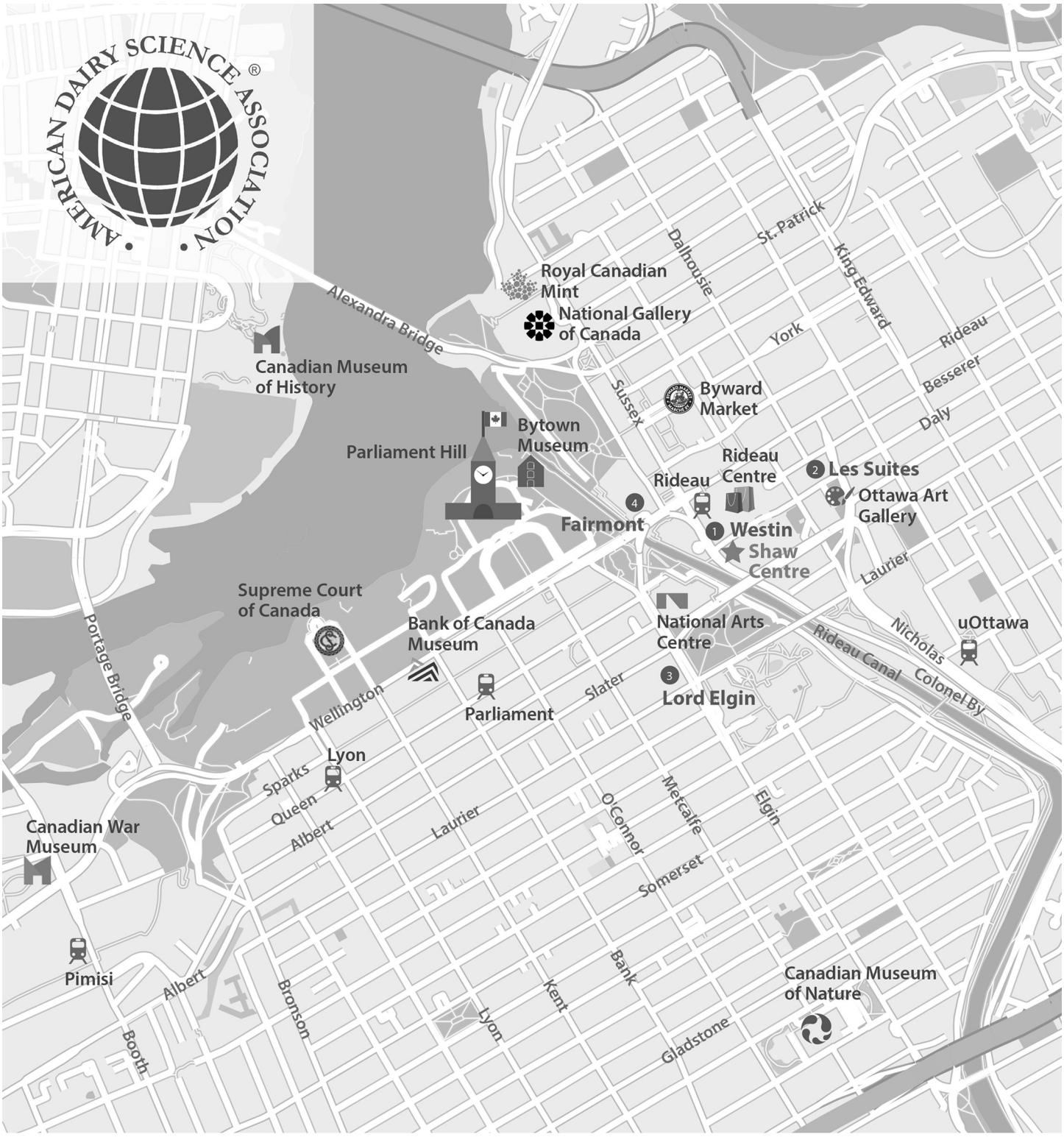
Consult your nutritionist for specific feeding recommendations. All logos and trademarks are property of Virtus Nutrition, LLC

Downtown Ottawa Map



Hotels

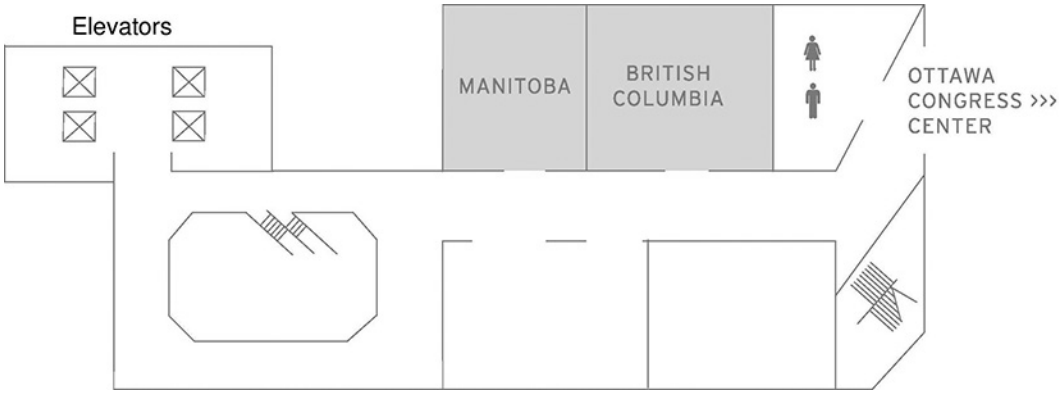
1. **The Westin Ottawa**
   11 Colonel By Drive
2. **Les Suites Hotel Ottawa**
   130 Besserer Street
3. **Lord Elgin Hotel**
   100 Elgin Street
4. **Fairmont Château Laurier**
   1 Rideau Street

★ **Shaw Centre**
55 Colonel By Drive

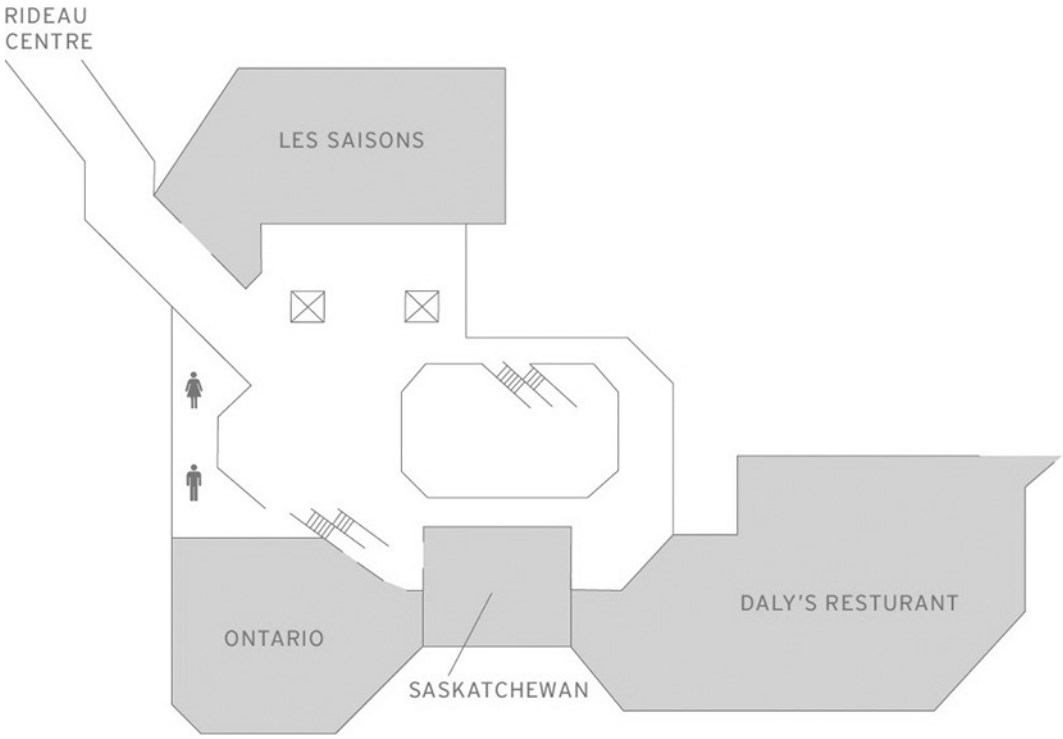
OTTAWA

The Westin Ottawa
Executive Meeting Centre

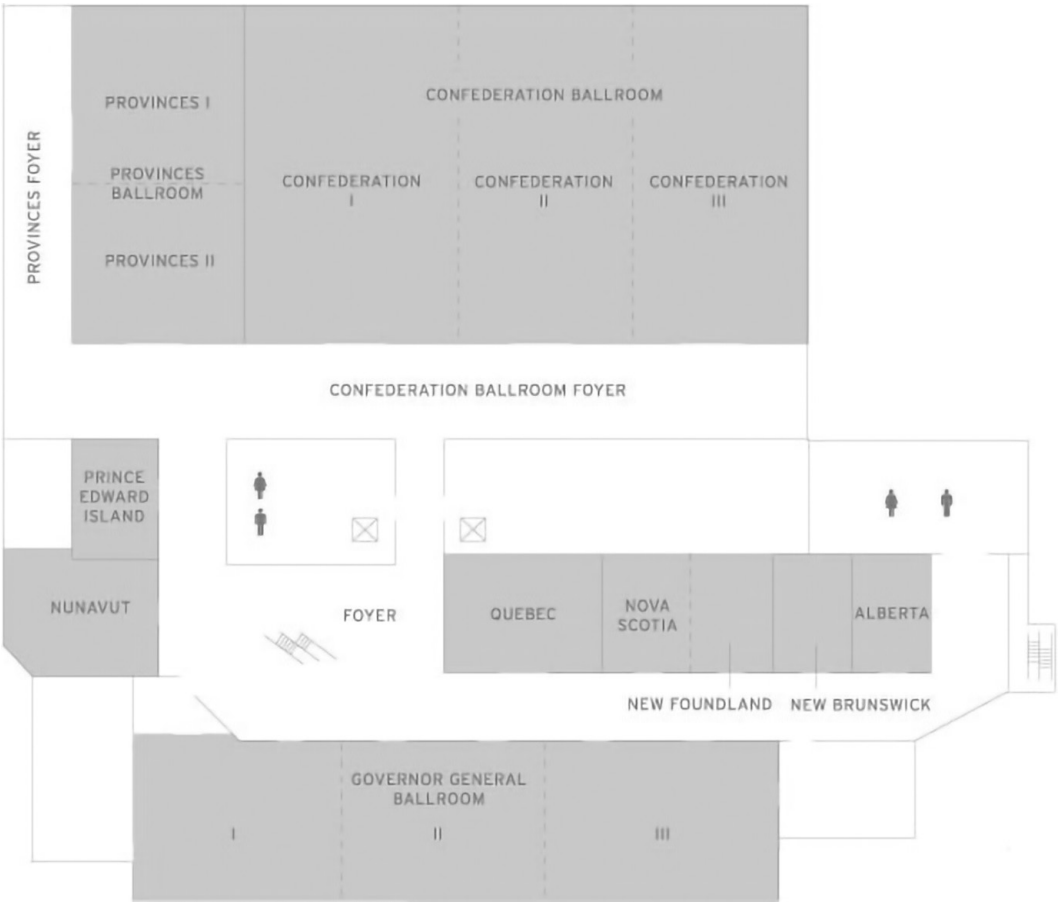
Level 2



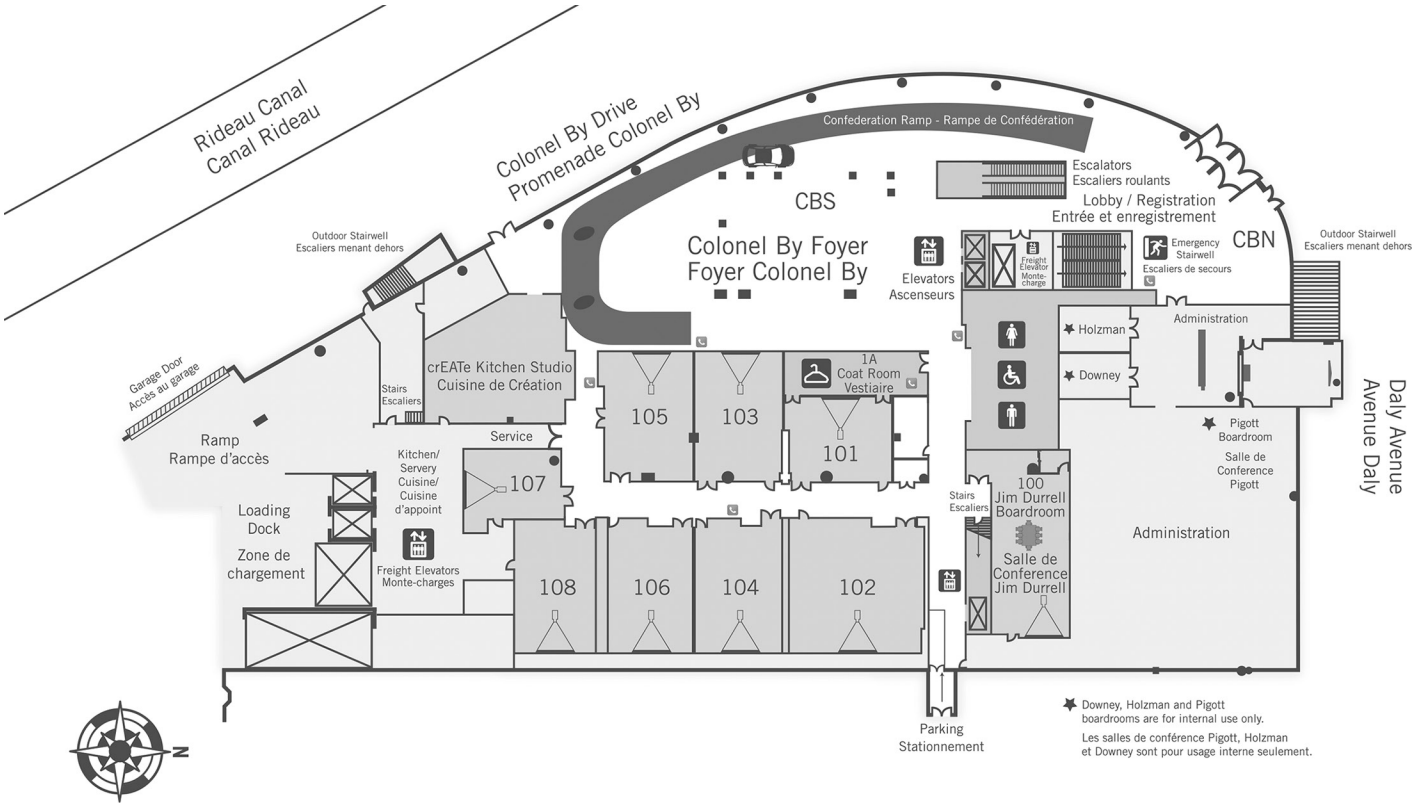
The Westin Ottawa
Level 3



Level 4



Shaw Centre
Level 1



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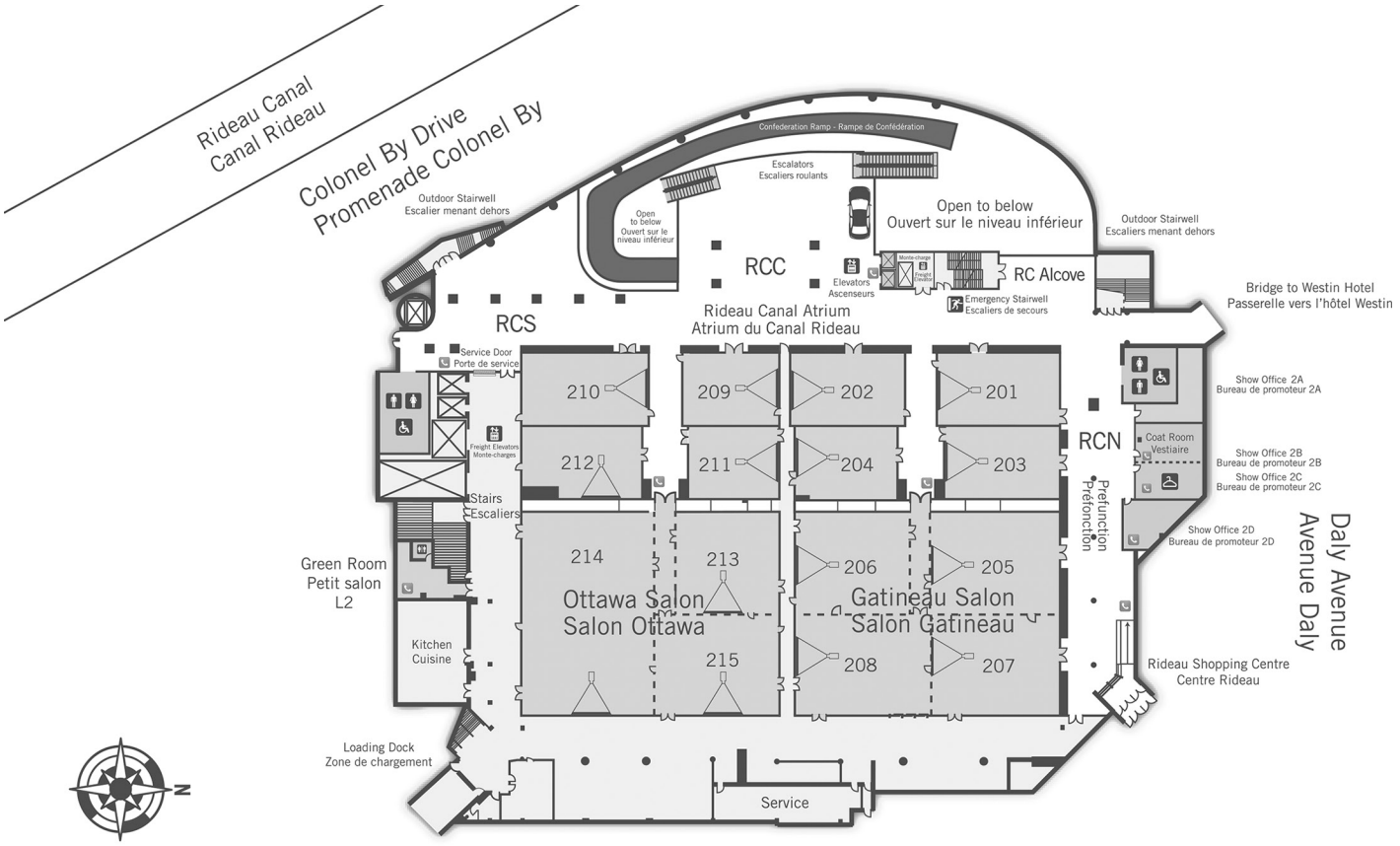
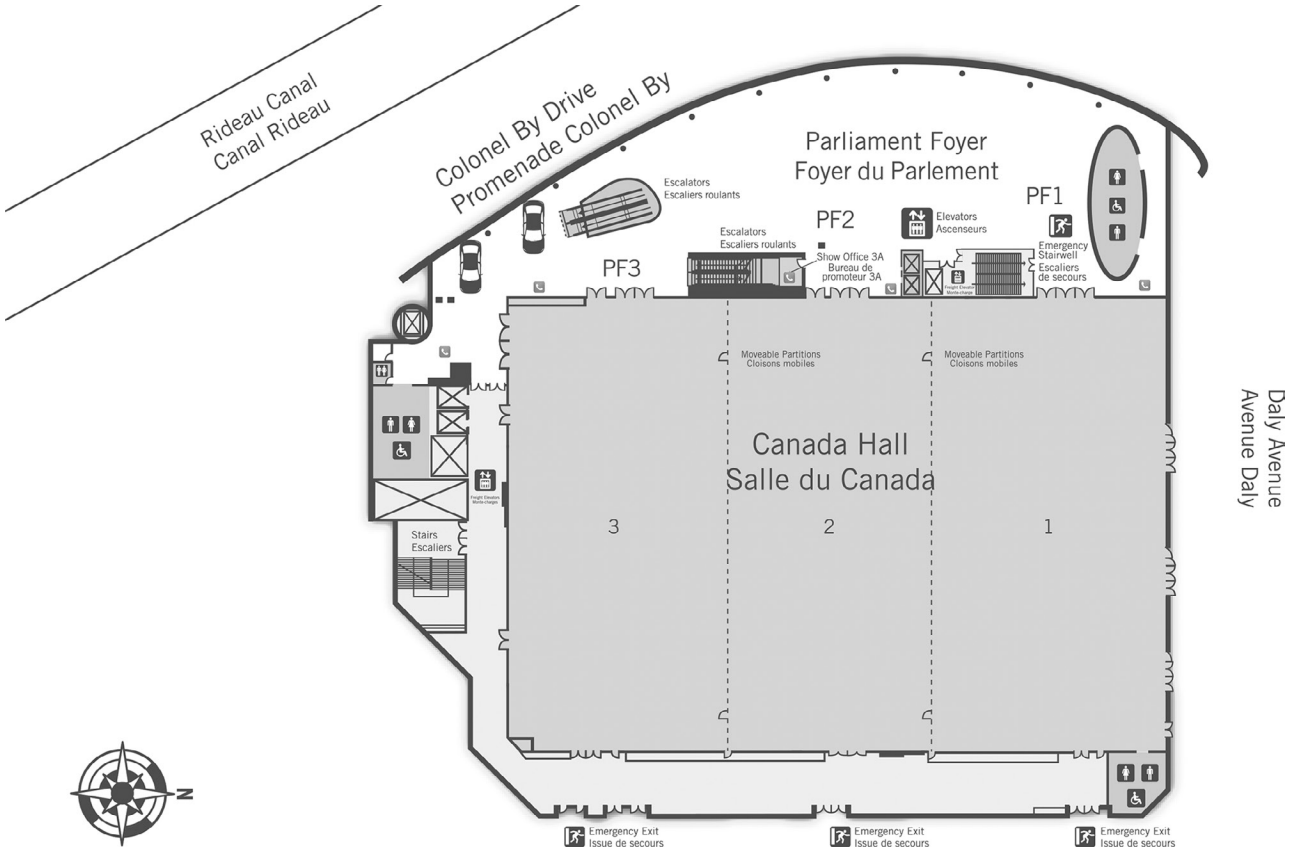


Shaw Centre
Level 3



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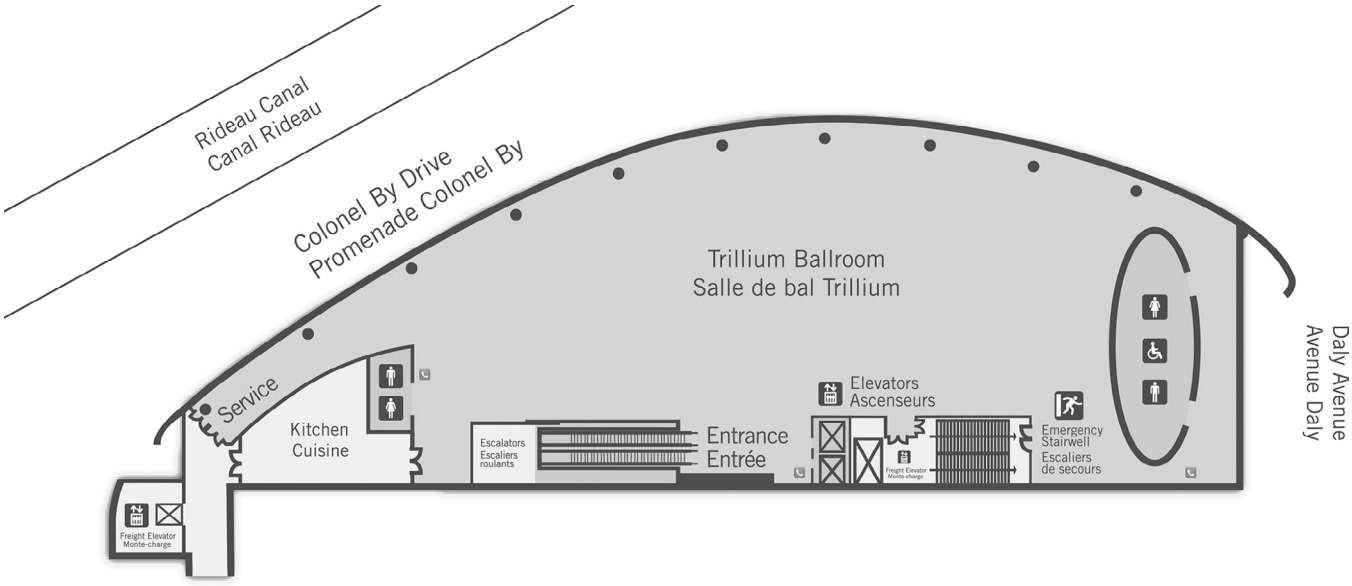

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Schedule of Events

Scheduling and locations are subject to change without notice.
All events take place at the Westin (W) and the Shaw Centre (SC) unless otherwise noted.

Friday, June 23, 2023

8:00 am – 12:00 pm	ADSA Executive and Finance Committee Meeting	W Oak
12:00 pm – 5:00 pm	ADSA Board of Directors Meeting	W Oak

Saturday, June 24, 2023

8:00 am – 4:00 pm	Animal Science Modellers Group	W Ontario
8:00 am – 5:00 pm	ADSA Board of Directors Meeting	W Oak
2:00 pm – 5:00 pm	USD Tour	Offsite
6:30 pm – 7:00 pm	USD Hospitality Room	Les Suites Hotel
7:00 pm	USD Informal Mixer: USD Dine Around	Offsite

Sunday, June 25, 2023

All Day	International Lounge	SC 102
7:30 am – 9:30 am	USD Breakfast	SC 105
8:00 am – 12:00 pm	ADSA New Board Orientation/FASS BOD Meeting	W Cedar
8:00 am – 12:00 pm	Workshop: Dairy Records Management	SC 103
8:15 am – 9:15 am	USD Officers and Advisors Meeting	SC Jim Durrell Boardroom
9:00 am – 4:00 pm	National Animal Nutrition Program (NANP), Journal of Dairy Science, and JDS Communications Joint Workshop: Modeling Methods	SC 212
9:30 am – 10:15 am	USD First Business Meeting	SC 202
10:00 am – 11:00 am	USD Quiz Bowl Officials Meeting	SC Jim Durrell Boardroom
10:30 am – 11:00 am	USD Quiz Bowl Seeding Test	SC 210
11:00 am – 12:00 pm	USD Midday Mixer	SC 210
11:00 am – 12:00 pm	ADSA JDSC Editors Meeting	W Oak
12:00 pm – 1:00 pm	ADSA JDS/JDSC Luncheon	W Oak
12:00 pm – 5:00 pm	Media Room	SC 104
12:15 pm – 4:15 pm	USD Quiz Bowl Preliminary Rounds	SC 202
12:15 pm – 4:15 pm	USD Quiz Bowl Preliminary Rounds	SC 203
12:15 pm – 4:15 pm	USD Quiz Bowl Holding Room	SC 204
1:00 pm – 1:30 pm	ADSA JDS/JDSC Editors Meeting	W Oak
1:30 pm – 4:00 pm	ADSA JDS Editors Meeting	W Oak
2:00 pm – 3:30 pm	ADSA Foundation Board of Trustees Meeting	W Saskatchewan
4:00 pm – 4:45 pm	GSD Business Meeting and Open Forum	SC 201
4:00 pm – 6:00 pm	ADSA JDS/JDSC Editors Reception	W Daly's Restaurant
4:30 pm – 5:00 pm	USD Quiz Bowl Final Round	SC 202
5:00 pm – 5:45 pm	First Time Attendees Orientation and Reception	SC 210
6:00 pm – 6:45 pm	Opening Session	SC Ottawa Salon
6:45 pm – 8:30 pm	Opening Reception	SC Parliament Foyer
8:00 pm – 10:30 pm	GSD Mixer	Offsite

Monday, June 26, 2023

All Day	International Lounge	SC 102
6:30 am – 8:00 am	ADSA Production Division Extension Breakfast	W Ontario
6:30 am – 8:00 am	Dairy Foods Breakfast (Prot. and Enzymes)	W Alberta
6:30 am – 7:00 am	USD Poster Setup	SC Canada Hall

7:00 am – 9:00 am	USD Breakfast	SC 105
7:15 am – 8:30 am	USD Turns in Yearbooks and Scrapbooks	SC Canada Hall
7:30 am – 9:30 am	USD Poster Competitions	SC Canada Hall
7:30 am – 9:30 am	Coffee and Pastries	SC Canada Hall
8:00 am – 5:00 pm	Media Room	SC 104
8:00 am – 5:00 pm	Job Resource Center	SC Canada Hall
8:15 am – 9:15 am	USD Interviews for Outstanding Student, etc.	SC 202
8:15 am – 9:15 am	USD Judging of Yearbooks, Scrapbooks, etc.	SC Canada Hall
9:30 am – 11:15 am	USD Original Research Poster Competition Presentations	SC 203
9:30 am – 10:45 am	USD Production Competition Presentations	SC 204
11:15 am – 12:15 pm	USD Dairy Foods Competition Presentations	SC 204
12:30 pm – 2:00 pm	GSD Educational Session	SC 105
12:30 pm – 2:00 pm	ADSA Past Presidents' Luncheon	W Ontario
12:45 pm – 2:15 pm	USD Career Roundtable Luncheon	SC 214
1:00 pm – 2:00 pm	Dairy Foods Division Business Meeting	SC 215
2:00 pm – 4:00 pm	ARPAS Exam	SC 101
2:00 pm – 5:30 pm	Southern Branch Symposium and Business Meeting	SC 210
2:30 pm – 3:45 pm	USD Activities Symposium	SC 204
3:30 pm – 4:00 pm	Canada Hall Ice Cream Break	SC Canada Hall
4:00 pm – 5:30 pm	GSD 3 Minute Thesis	SC 212
5:00 pm – 5:30 pm	Remove Posters	SC Canada Hall
6:00 pm – 9:00 pm	CSAS Wine and Cheese Social	Offsite
7:00 pm – 10:00 pm	Iowa State University Reception	W Governor General I
7:00 pm – 11:00 pm	USD Dine Around and Mixer	Offsite

Tuesday, June 27, 2023

All Day	International Lounge	SC 102
6:30 am – 8:00 am	JDS/JDSC/JMC Editorial Board Breakfast/Meeting	W Saskatchewan
6:30 am – 8:00 am	USD Breakfast	SC 105
7:30 am – 9:30 am	Coffee and Pastries	SC Canada Hall
8:00 am – 9:00 am	USD Business Meeting – Election of Officers	SC 207
8:00 am – 5:00 pm	Media Room	SC 104
9:15 am – 10:15 am	USD Small Group Mentoring Session	SC 105
10:00 am – 11:00 am	Discover Conference Steering Committee Meeting	SC Jim Durrell Boardroom
10:30 am – 12:30 pm	ARPAS Exam	SC 101
10:30 am – 11:30 am	USD Educational Workshop: Dairy Farmers of Canada	SC 207
11:45 am – 2:00 pm	USD Award Luncheon	SC 214
12:30 pm – 2:00 pm	GSD Career Insights Networking Luncheon	SC Trillium Ballroom
12:30 pm – 2:00 pm	Dairy Foods Division Program Planning Lunch	SC Jim Durrell Boardroom
12:30 pm – 2:00 pm	Production Division Business Meeting Lunch	SC 207
2:00 pm – 4:00 pm	USD Student Exhibits – Pick up Yearbooks and Scrapbooks	SC Canada Hall
2:30 pm – 3:30 pm	USD Committee Meeting – Old and New Officers and Advisors	SC 207
3:30 pm – 4:00 pm	Canada Hall Ice Cream Break	SC Canada Hall
5:00 pm – 6:30 pm	ADSA Award Dinner	W Governor General I
5:00 pm – 7:00 pm	Informal Calf Gathering	W Governor General II
7:00 pm – 8:00 pm	ADSA Awards Program	W Confederation II-III
8:15 pm – 9:30 pm	Ice Cream Social	W Confederation II-III

Wednesday, June 28, 2023

All Day	International Lounge	SC 102
7:30 am – 9:30 am	Coffee and Pastries	SC Canada Hall
8:00 am – 12:00 pm	Media Room	SC 104
8:00 am – 5:00 pm	Workshop: Mixed Models	SC 209
8:30 am – 9:30 am	ADSA Business Meeting and Open Forum	SC 204
9:30 am – 5:15 pm	ADSA-INRAE International Partnership Symposium	SC 213/215
10:30 am – 12:30 pm	ARPAS Exam	SC 101
12:30 pm – 2:30 pm	ADSA Board of Directors Meeting	W Saskatchewan
3:30 pm – 4:00 pm	Canada Hall Ice Cream Break	SC Canada Hall
6:00 pm – 9:00 pm	Closing Reception	SC Trillium Ballroom

Thursday, June 29, 2023

8:00 am – 12:00 pm	Workshop: Mixed Models	SC 209

ADSA-Undergraduate Student Division (USD) Special Events

Saturday, June 24

Canada Agriculture and Food Museum
2:00 pm – 5:00 pm
Buses will depart from Les Suites Hotel, Student Headquarters Hotel
Tickets: $30

The Canada Agriculture and Food Museum offers visitors a unique opportunity to see diverse breeds of farm animals important to past and present Canadian agriculture. In addition to breeds common to Canadian agriculture, such as Holstein dairy cows and Angus beef cows, the museum also has Canadienne and Milking Shorthorn dairy cows, and Tamworth pigs. Many other breeds of dairy and beef cattle, pigs, sheep, horses, poultry, goats, rabbits, and even honeybees round out the collection. Museum programs and exhibitions are related to Canada's agricultural heritage, food literacy, and the benefits and relationship of agricultural science and technology to Canadians' everyday lives. Price includes museum ticket, barn tour, and bus transportation. Undergraduate students and their club advisors are given first opportunity; tour will be offered to others on a remaining availability basis.

USD Hospitality Room
6:30 pm – 7:00 pm
Les Suites Hotel, Student Headquarters Hotel

The Undergraduate Student Division (USD) Hospitality Room will be available on Saturday evening for members to gather and meet others as you arrive. Information about the USD schedule will be available.

USD Informal Mixer: USD Dine Around
7:00 pm
Meet in USD Hospitality Room, Les Suites Hotel, Student Headquarters Hotel

USD officers will host a dine-around event on Saturday for schools arriving early. Stop by the USD hospitality room Saturday evening if your club would like to participate. Students from participating schools are encouraged to join different dinner groups for a fun evening of networking and good food. Participants are responsible for the cost of their meal.

Sunday, June 25

USD Midday Mixer and Luncheon
11:00 am–12:00 pm
Convention Center
Tickets: $5

Join your fellow dairy clubs and meet your 2023–2024 USD Officer candidates. Ticket price includes lunch. Note: Registration is limited to ADSA undergraduate student members and dairy club advisors.

Dairy Quiz Bowl Final Round
4:30 pm – 5:00 pm
Convention Center

University teams from across North America are excited to compete in the ADSA-USD Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. USD invites you to join them for the thrill of the final round of competition as the top two schools go head-to-head for the title of 2023 Dairy Quiz Bowl Champion.

Monday, June 26

Undergraduate Poster and Paper Presentation Competitions
Convention Center

Support the future of ADSA—plan time in your schedule to visit the undergraduate poster and oral presentations on Monday morning. See program for locations and complete details.

USD Career Roundtable Luncheon
12:45 pm – 2:15 pm
Convention Center
Tickets: $10

A program favorite, the Career Roundtable Luncheon gives undergraduate students the opportunity to dine and network with professional members representing a wide array of careers in the dairy industry. The program is conveniently scheduled during the annual meeting lunch break on Monday. Participants will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities. Ticket includes lunch.

USD Activities Symposium
2:30 pm – 3:45 pm
Convention Center

The Activities Symposium is an opportunity for each chapter to share their dairy club work with others attending the meeting. The Activities Symposium can be a very valuable exchange of ideas that will help other chapters in organizing new activities.

USD Dine Around and Mixer:
ByWard Market
Monday, June 26, 7:00 pm – 11:00 pm
ByWard Market District

With competitions behind you, undergrads are invited to take the evening off for a night of fun on the town at ByWard Market. ByWard Market is the spot for everything from farmers' markets to specialty food shops, colorful street art, and hip stores by local designers. Eateries, taverns, and nightclubs will entertain you well into the wee hours. We hope to see you there!

Tuesday, June 27

Small Group Mentoring Sessions
9:15 am – 10:15 am
Convention Center

ADSA Mentor Program connects professional members with undergraduate students for small group mentoring sessions during the annual meeting. ADSA Past Presidents and others will meet with small groups of students to attend scientific presentations by interest area, followed by discussions of the topics presented. Engagement in scientific presentations and interactions with conference attendees will help students develop their technical skills and build their professional network. Advance registration is required. Students are encouraged to register for this session. Please indicate at least two research interest areas on the registration form.

USD Educational Workshop: Dairy Farmers of Canada
10:30 am – 11:30 am
Convention Center

While dairying in the United States and Canada has many similarities, there are just as many differences. For example, Canada's farm sizes tend to be smaller, and there are fewer farms in Canada. At the same time dairying is consistently profitable for Canadian farmers. We are pleased to welcome representatives from Dairy Farmers of Canada to our program. They will give us an overview of dairying in Canada and will explain management and trade policies and programs unique to Canada that support the dairy industry.

ADSA Undergraduate Student Awards Luncheon
11:45 am–2:00 pm
Convention Center
Tickets: $50 professional member; $40 student

Plan to attend this year's Undergraduate Student Division awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new USD officers. Both students and professionals are encouraged to attend.

This is a wonderful chance to show your support and appreciation for our industry's next generation.

USD Schedule of Events

All events take place at the Westin and the Shaw Centre (SC) unless otherwise noted.
*Consult the meeting website (**https://www.adsa.org/usd**) for the latest program information.*

Saturday, June 24

2:00 pm – 5:00 pm	USD Tour	Offsite
6:30 pm – 7:00 pm	USD Hospitality Room	Les Suites Hotel
7:00 pm	USD Informal Mixer: USD Dine Around	Offsite

Sunday, June 25

7:30 am – 9:30 am	USD Breakfast	SC 105
8:15 am – 9:15 am	USD Officers and Advisors Meeting	SC Jim Durrell Boardroom
9:30 am – 10:15 am	USD First Business Meeting	SC 202
10:00 am – 11:00 am	USD Quiz Bowl Officials Meeting	SC Jim Durrell Boardroom
10:30 am – 11:00 am	USD Quiz Bowl Seeding Test	SC 210
11:00 am – 12:00 pm	USD Midday Mixer	SC 210
12:15 pm – 4:15 pm	USD Quiz Bowl Preliminary Rounds	SC 202
12:15 pm – 4:15 pm	USD Quiz Bowl Preliminary Rounds	SC 203
12:15 pm – 4:15 pm	USD Quiz Bowl Holding Room	SC 204
4:30 pm – 5:00 pm	USD Quiz Bowl Final Round	SC 202

Monday, June 26

6:30 am – 7:00 am	USD Poster Setup	SC Canada Hall
7:00 am – 9:00 am	USD Breakfast	SC 105
7:15 am – 8:30 am	USD Turns in Yearbooks and Scrapbooks	SC Canada Hall
7:30 am – 9:30 am	USD Poster Competitions	SC Canada Hall
8:15 am – 9:15 am	USD Interviews for Outstanding Student, etc.	SC 202
8:15 am – 9:15 am	USD Judging of Yearbooks, Scrapbooks, etc.	SC Canada Hall
9:30 am – 11:15 am	USD Original Research Poster Competition Presentations	SC 203
9:30 am – 10:45 am	USD Production Competition Presentations	SC 204
11:15 am – 12:15 pm	USD Dairy Foods Competition Presentations	SC 204
12:45 pm – 2:15 pm	USD Career Roundtable Luncheon	SC 214
2:30 pm – 3:45 pm	USD Activities Symposium	SC 204
5:00 pm – 5:30 pm	Remove Posters	SC Canada Hall
7:00 pm – 11:00 pm	USD Dine Around and Mixer	Offsite

Tuesday, June 27

6:30 am – 8:00 am	USD Breakfast	SC 105
8:00 am – 9:00 am	USD Business Meeting – Election of Officers	SC 207
9:15 am – 10:15 am	USD Small Group Mentoring Session	SC 105
10:30 am – 11:30 am	USD Educational Workshop: Dairy Farmers of Canada	SC 207
11:45 am – 2:00 pm	USD Award Luncheon	SC 214
2:00 pm – 4:00 pm	USD Student Exhibits – Pick up Yearbooks and Scrapbooks	SC Canada Hall
2:30 pm – 3:30 pm	USD Committee Meeting – Old and New Officers and Advisors	SC 207
7:00 pm – 8:00 pm	ADSA Awards Program	W Confederation II-III
8:15 pm – 9:30 pm	Ice Cream Social	W Confederation II-III

Wednesday, June 28

6:00 pm – 9:00 pm	Closing Reception	SC Trillium Ballroom

Thank you to sponsors and donors for their generous support of USD and GSD events at ADSA 2023!

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ADSA USD Oral and Poster Competition
Amanda Stone (chair)
Molly Kelley

Graduate Student Competition: ADSA Dairy Foods Oral
Rodrigo Ibanez Alfaro (chair)
Neha Singh
Ni Cheng

Graduate Student Competition: ADSA Dairy Foods Poster
Minto Michael (chair)
Ashraf Hassan
Venkateswarlu Sunkesula

Graduate Student Competition: ADSA Production Oral (MS/PhD)
Virginia Brandao (chair)
Mike Socha (chair)
Kristen Glosson
Robin White
Heidi Rossow
Joseph McFadden

Graduate Student Competition: ADSA Production Poster (MS/PhD)
Kayla Rink (chair)
Lorenzo Hernandez Castellano
Jessica McArt
Kari Estes
Anne Laarman
Barry Bradford

Graduate Student Competition: ADSA Southern Section Oral Competition
Amanda Stone (chair)

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Sunday, June 25

SYMPOSIA AND ORAL SESSIONS

Dairy Foods Symposium: Todd R. Klaenhammer Memorial Symposium—Contributions to Our Understanding of Lactic Acid Bacteria

Chair: Michael Miller, University of Illinois at Urbana-Champaign
Shaw Centre 206
2:00 PM – 5:30 PM

2:00 PM	2000	**Extending the Klaenhammer legacy by engineering probiotics using CRISPR.** R. Barrangou*, *North Carolina State University*, *Raleigh, NC*.
2:40 PM	2001	**Bacteriophage-bacterial interaction, then and now.** C. Hill*, *University College Cork*, *Cork, Ireland*.
3:20 PM		**Break.**
3:30 PM	2002	**Probiotics and prebiotics: A healthy gut and healthy aging.** M. A. Azcárate-Peril*[1,2], M. Aljumaah[2], J. Gunstad[3], A. J. Ritter[4], D. A. Savaiano[5], J. W. Arnold[1], and J. M. Bruno-Barcena[2], [1]*University of North Carolina at Chapel Hill*, *Chapel Hill, NC*, [2]*North Carolina State University*, *Raleigh, NC*, [3]*Kent State University*, *Kent, OH*, [4]*Myosin Therapeutics Inc*, *Jupiter, FL*, [5]*Purdue University*, *West Lafayette, IN*.
4:10 PM	2003	**Innovation toward a dairy-based platform for effective next-generation, probiotics.** D. Mills*, *University of California*, *Davis, CA*.
4:50 PM		**Discussion with reception following.**

PRE-MEETING VIRTUAL JUDGING ORAL COMPETITIONS

ADSA-GSD Competition: Production Oral Presentations (MS)†

2100 **Evaluation of time budgets and vaginal temperature of lactating Holstein cows offered a choice of shade and sprinklers on pasture.**
K. Braman*, J. Drewry, and A. Stone, *Mississippi State University*, *MS*.

2101 **Effect of group housing of preweaned dairy calves on health and fecal shedding of antimicrobial resistant *Escherichia coli* and *Enterococcus* spp.**
M. J. Breen*[1], D. R. Williams[1], E. M. Abdelfattah[1,4], B. M. Karle[3], T. W. Lehenbauer[1,2], and S. S. Aly[1,2], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare, CA*, [2]*Department of Population Health & Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis, CA*, [3]*Cooperative Extension, Division of Agriculture and Natural Resources, University of California, Davis*, *Orland, CA*, [4]*Department of Animal Hygiene, and Veterinary Management, Faculty of Veterinary Medicine, Benha University*, *Moshtohor, Qalyubia, Egypt*.

2102 **The "biosecurity basket": Using Association Rule Learning (ARL) algorithms to target recommendations more likely to be implemented by dairy farmers.**
F. Farison*[1,2], V. R. Lima Campêlo[1,2], M.-E. Paradis[4,5], S. Buczinski[3], G. Fecteau[2,3], J.-P. Roy[2,3], P. Valdes Donoso[2,3], S. Dufour[1,2], and J. C. Arango-Sabogal[1,2], [1]*Département de pathologie et microbiologie, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Chaire de recherche de biosécurité en production laitière, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [3]*Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [4]*Association des médecins vétérinaires praticiens du Québec (AMVPQ)*, *Saint-Hyacinthe, Québec, Canada*, [5]*DSAHR Inc*, *Saint-Hyacinthe, Québec, Canada*.

2103 **Adipogenesis is modulated by depot-specific extracellular matrix microenvironment in adipose tissue of dairy cattle.**
J. F. Fiallo Diez*[1], C. G. Flesher[2], A. P. Tegeler[1], T. C. Michelotti[1], M. N. Hoque[4], B. Bhattarai[4], L. S. Florez[1], O. J. Benitez[1,3], G. Christopher[4], and C. Strieder-Barboza[1,3], [1]*Department of Veterinary Sciences, Davis College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*Department of Medicine, University of Pennsylvania*, *Philadelphia, PA*, [3]*School of Veterinary Medicine, Texas Tech University*, *Amarillo, TX*, [4]*Department of Mechanical Engineering, Texas Tech University*, *Lubbock, TX*.

2104 **Comparison of bolt penetration depth by three low-cost captive bolt devices used for on-farm cattle euthanasia.**
S. Frazer*, M. Denicourt, L. DesCôteaux, I. Masseau, and M. Rousseau, *Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Quebec, Canada*.

2105 **Changes in body measurements, blood glucose and β-hydroxybutyrate concentrations, and milk yield due to prepartum muscle reserves and branched-chain volatile fatty acid supplementation of transition dairy cattle.**
K. M. Gouveia*, L. M. Beckett, J. F. Markworth, T. M. Casey, and J. P. Boerman, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

2106 **Automatic milking system decision support tool for southern dairy businesses.**
A. McCalmon*, Y. Zhao, C. Martinez, and E. Eckelkamp, *University of Tennessee*, *Knoxville, TN*.

2107 **The effect of limited outdoor access frequencies on gait score, hoof lesions and hoof surface temperature of non-clinically lame cows housed in a movement-restricted environment.**
S. Mokhtarnazif*[1], E. Shepley[2], A. Nejati[1], G. M. Dallago[3], and E. Vasseur[1], [1]*McGill University*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*University of Minnesota*, *Minneapolis, MN*, [3]*Université du Québec À Montréal*, *Montreal, QC, Canada*.

2108 **Description of local immune responses within the pulmonary tract of dairy calves exposed to wildfire smoke.**
A. Pace*, K. Mirkin, M. Larson, D. Konetchy, P. Rezamand, and A. L. Skibiel, *University of Idaho*, *Moscow, ID*.

2109 **Supplementation of omega-3 fatty acids as a strategy to regulate postpartum inflammation.**
B. Van Winters*[1], G. Madureira[1], M. G. S. Santos[1], B. Mion[1], C. Van Dorp[1], D. W. L. Ma[2], N. Karrow[1], S. J. LeBlanc[3], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Human Health and Nutritional Sciences, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

†Abstracts for the ADSA-GSD Competition: Production Oral Presentations (MS) are being presented in general oral sessions. The judging session for this competition took place virtually on June 19, 2023.

ADSA-GSD Competition: Production Oral Presentations (PhD)‡

2110 **Oleic acid promotes lipid accumulation and improves mitochondrial function in bovine adipocytes.**
U. Abou-Rjeileh*, A. L. Lock, and G. A. Contreras, *Michigan State University*, *East Lansing, MI*.

2111 **Derivation of the maintenance energy requirements in Jersey cows differing in body condition score (BCS).**
A. L. Carroll* and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln, NE*.

2112 **Immunoglobulin G transport kinetics and histological features in the postnatal bovine intestine are maximized during very early life.**
R. Hiltz*, D. Vine, D. R. Barreda, and A. H. Laarman, *University of Alberta*, *Canada*.

2113 **Effects of individual and additive amino acids on intracellular concentrations in bovine mammary epithelial cells.**
A. Hruby-Weston*, M. Morozyuk, T. Pilonero, and M. D. Hanigan, *School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*.

2114 **Describing the distribution type of dry matter intake to predict the quantity for cow pens based on pen characteristics.**
P. Lucey* and H. Rossow, *Veterinary Medicine Teaching and Research Center, UC Davis*, *Tulare, CA*.

2115 **Associations between residual feed intake (RFI) and digestibility or hepatic mitochondrial respiration in Holstein cows.**
M. Nehme Marinho*, S. E. Wohlgemuth, M. C. Perdomo, and J. E. P. Santos, *University of Florida*, *Gainesville, FL*.

2116 **Abomasal infusions of essential and non-essential amino acids to evaluate energy and amino acid utilization, productive efficiencies, and metabolism in lactating dairy cattle.**
A. F. Ortega*[1], A. Zanotti[2], A. B. P. Fontoura[1], J. L. Marumo[1], P. A. LaPierre[1], D. M. Barbano[1], and M. E. Van Amburgh[1], [1]*Cornell University*, *Ithaca, NY*, [2]*University of Parma*, *Parma, Italy*.

2117 **Effects of branched-chain volatile fatty acids at different levels of rumen degradable protein on milk production and nutrients digestibility in lactating cows.**
K. Park*[1], K. L. Clark[1], J. L. Firkins[2], D. H. Kleinschmit[3], M. T. Socha[3], and C. Lee[1], [1]*Department of Animal Sciences, The Ohio State University*, *Wooster, OH*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*, [3]*Zinpro Corporation*, *Eden Prairie, MN*.

2118 **DNA methylation of first exons negatively correlate with gene expression during *Staphylococcus chromogenes* subclinical mastitis.**
M. Wang*[1,2], N. Bissonnette[1], M. Laterrière[3], D. Gagné[3], M.-A. Sirard[2], and E. M. Ibeagha-Awemu[1], [1]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, Laval University*, *Quebec city, Quebec, Canada*, [3]*Quebec Research and Development Centre, Agriculture and Agri-Food Canada*, *Quebec city, Quebec, Canada*.

2119 **Effect of peripartum metabolizable protein supply on performance and metabolic indicators.**
T. A. Westhoff*[1], T. L. Chandler[1], T. R. Overton[1], J. N. Tikofsky[2], M. E. Van Amburgh[1], and S. Mann[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Purina Animal Nutrition*, *Gray Summit, MO*.

‡ADSA-GSD Competition: Production Oral Presentations (PhD) are being presented as general oral abstracts in relevant sections. The judging session for this competition took place virtually on June 20, 2023.

Monday, June 26

POSTER PRESENTATIONS

ADSA-Graduate Student Competition: Dairy Foods—Poster

1000M **Impact of gas ultrafine bubbles on the efficacy of antimicrobials for removing fresh (3-day) and aged (30-day) *Bacillus subtilis* biofilms on dairy processing surfaces.**
P. Unger*, A. S. Sekhon, S. Sharma, A. Lampien, and M. Michael, *Washington State University*, *Pullman, WA*.

1001M **Production of lactose-derived oligosaccharides under high temperature and low pH using β-galactosidase from *Lactobacillus helveticus* OSU-PECh-4A.**
S. Ruiz-Ramírez* and R. Jiménez-Flores, *The Ohio State University*, *Columbus, OH*.

1002M **Enhanced probiotic potential of *Lactobacillus kefiranofaciens* bdgo1 co-cultured with *Kluyveromyces marxianus* for application in dairy products.**
B. D. González-Orozco*, E. Kosmerl, R. Jiménez-Flores, and V. B. Alvarez, *The Ohio State University*, *Columbus, OH*.

1003M **Withdrawn.**

1004M **Impact of milk serum protein and lactose removal on the properties of ultrapasteurized protein beverages.**
K. Ow-Wing*[1], M. A. Drake[1], and D. M. Barbano[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

1005M **Bacteria enumerated by laboratory pasteurization count in organic raw milk are predominantly Gram-positive sporeformers and Gram-positive cocci.**
R. Lee*[1], R. Evanowski[1], H. Greenbaum[2], M. Wiedmann[1], and N. Martin[1], [1]*Cornell University*, *Ithaca, NY*, [2]*University of Southern California*, *Los Angeles, CA*.

1006M **Impact of ultrafiltration temperature on the physical and sensory properties of skim milk.**
T. P. Truong*[1], A. J. Hernandez[1], M. A. Drake[1], and D. M. Barbano[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

1007M **Consumer acceptance of protein beverage ingredients: Less is more.**
D. Rovai*[1], M. E. Watson[1], P. D. Gerard[3], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*, [3]*Clemson University*, *Clemson, SC*.

1008M **The role of storage on the physical and sensory properties of aseptic milk.**
D. C. Cadwallader*[1], Y. Liu[1], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

1009M **Synergistic interaction of milk fatty acid composition and butter making conditions could produce a softer butter.**
C. Nelson*[1], M. A. Drake[1], and D. M. Barbano[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

1010M **Changes in milk protein functionality at low temperature and low rennet concentrations.**
M. Hamouda* and P. Salunke, *Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*.

1011M **Preliminary studies on the development of a simple water adsorption-based approach to measure the solubility of milk protein powders.**
S. Roy* and J. Amamcharla, *Kansas State University*, *Manhattan, KS*.

1013M **A preliminary study on using electrical resistance tomography (ERT) as a tool to detect the stability of high-protein dairy beverages.**
B. Zaitoun* and J. Amamcharla, *Kansas State University*, *Manhattan, KS*.

1014M **Effect of polyphenols on functional properties of milk protein concentrate.**
A. Sharma*, R. Joshi, and P. Salunke, *South Dakota State University*, *Brookings, SD*.

ADSA-Graduate Student Competition: Production—Poster (MS)

1015M **Effects of bovine somatotropin on development and feed efficiency of pre-pubertal Holstein × Gyr heifers.**
G. Berzoini Costa Leite*[1], A. L. Lacerda Sguizzato[2], G. Magalhães Santos[3], E. Ferreira Santos[2], S. E. Facione Guimarães[2], and M. I. Marcondes[1], [1]*Washington State University*, *Pullman, WA*, [2]*Universidade Federal de Viçosa*, *Viçosa, Minas Gerais, Brazil*, [3]*Cenva Post Graduation*, *Viçosa, Minas Gerais, Brazil*.

1016M **Killed *Staphylococcus aureus* intramammary challenge induces subclinical mastitis and clear changes in milk composition but not milk yield.**
C. S. Gammariello*, M. Oliveira, G. M. Canny, K. M. Enger, and B. D. Enger, *Ohio State University*, *Wooster, OH*.

1017M **Plasma oxylipid profile of postpartum dairy cows categorized into different systemic inflammatory grades in the first week after parturition.**
J. M. Grantz*[1], A. Mukhopadhyay[1], A. H. Jannasch[2], C. Ferreira[2], P. R. Menta[3], V. S. Machado[3], and R. C. Neves[1], [1]*Department of Veterinary Clinical Sciences, Purdue University*, *West Lafayette, IN*, [2]*Metabolite Profiling Facility, Bindley Bioscience Center, Purdue University*, *West Lafayette, IN*, [3]*Department of Veterinary Sciences, Texas Tech University*, *Lubbock, TX*.

1018M **Evaluating the influence of heritable, metabolic, and production parameters on cyclicity resumption in a dairy with a robotic milking system.**
S. Johnson*, T. Marins, S. Tao, and J. Bohlen, *University of Georgia*, *Athens, GA*.

1019M **Effects of differing durations of low feed intake on gastrointestinal tract function and recovery in cattle.**
K. Lambert* and G. Penner, *University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

1020M **Direct effects of heat stress on mitochondrial structure and energy metabolism in lactating dairy cows.**
A. S. Marquez Acevedo*, R. J. Collier, and A. L. Skibiel, *University of Idaho*, *Moscow, ID*.

1021M **Postpartum acetylsalicylic acid administration and calcium supplementation: Effects on clinical health events and milk production.**
P. Zarei*, E. Jimenez, J. Spring, M. Dailey, M. Martinez, E. Hovingh, and A. Barragan, *Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*.

ADSA-Graduate Student Competition: Production—Poster (PhD)

1022M **Performance, sorting behavior, and nondisease probability of Holstein calves fed different physical forms of starter.**
I. R. R. Castro[1,2], G. B. C. Leite[2], J. C. C. Chagas[3], G. A. Fields[2], A. E. Bartelheimer[2], A. L. Harder[2], D. V. Landin[2], I. F. Carrari*[2], and M. I. Marcondes[2], [1]*Universidade Federal de Viçosa*, *Viçosa, MG, Brazil*, [2]*Washington State University*, *Pullman, WA*, [3]*Swedish University of Agricultural Sciences*, *Umeå, Sweden*.

1023M **Endotoxemia induces lipolysis and alters adipose tissue function in dairy cows.**
M. Chirivi*[1], L. Worden[2], J. Parales-Giron[2], A. L. Lock[2], and G. A. Contreras[1], [1]*Department of Large Animal Clinical Sciences Michigan State University*, *East Lansing, MI*, [2]*Department of Animal Science, Michigan State University*, *East Lansing, MI*.

1024M **Feeding rumen-protected methionine and calcium salts enriched in omega-3 fatty acids modify plasma and liver phosphatidylcholine and phosphatidylethanolamine concentrations of periparturient dairy cows.**
T. L. France*[1], K. Juarez-Leon[1], A. Javaid[1], P. Deme[2], N. J. Haughey[2], and J. W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Johns Hopkins University*, *Baltimore, MD*.

1025M **Utilization of algae biomass as a partial replacement for soybean meal in the diet of dairy cows in vitro.**
R. R. Lobo*[1], M. U. Siregar[1], S. S. da Silva[1], A. R. Monteiro[2], G. Salas-Solis[1], A. C. S. Vicente[1], J. Vinyard[1], M. L. Johnson[1], S. Ma[1], E. Sarmikasoglou[1], and A. P. Faciola[1], [1]*University of Florida*, *Gainesville, FL*, [2]*University of Sao Paulo*, *Piracicaba, SP, Brazil*.

1026M **Activation of immune signaling pathways by microRNAs extracted from bovine colostrum.**
R. Santos*[1], A. Brown[1], Y. Ahn[2], U. Bickel[2], and F. Rosa[1], [1]*Texas Tech University, School of Veterinary Medicine*, *Amarillo, TX*, [2]*Texas Tech University, Health Sciences Center, School of Pharmacy*, *Amarillo, TX*.

1027M **Prevalence and timing of bovine leukemia virus infection in dairy youngstock.**
M. Sokacz*[1], K. R. B. Sporer[2], C. Droscha[2], P. Bartlett[3], B. Norby[3], and T. M. Taxis[1], [1]*Michigan State University Department of Animal Science*, *East Lansing, MI*, [2]*CentralStar Cooperative*, *Lansing, MI*, [3]*Michigan State University College of Veterinary Medicine Large Animal Clinical Sciences*, *East Lansing, MI*.

1028M **Use of long short-term memory models with integrated cow-level data for early prediction of clinical ketosis in dairy cows.**
N. Taechachokevivat*[1], B. Kou[2], T. Zhang[2], M. E. Montes[3], J. P. Boerman[3], J. Doucette[4], and R. C. Neves[1], [1]*Department of Veterinary Clinical Sciences, Purdue University*, *West Lafayette, IN*, [2]*Department of Computer Science, Purdue University*, *West Lafayette, IN*, [3]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [4]*Department of Forestry and Natural Resources, Purdue University*, *West Lafayette, IN*.

1029M **State of the Tennessee value-added dairy industry.**
C. Zaring*[1], K. Jensen[2], D. Hughes[2], R. Holland[3], W. Pepper[3], M. Leffew[3], and E. Eckelkamp[1], [1]*Department of Animal Science, University of Tennessee*, *Knoxville, TN*, [2]*Department of Agricultural and Resource Economics, University of Tennessee*, *Knoxville, TN*, [3]*Center for Profitable Agriculture, University of Tennessee*, *Columbia, TN*.

USD Original Research Poster Competition Presentations

1030M **Effect of drought stress on in situ ruminal starch digestibility of corn grain.**
J. Becker*[1], H. Galyon[1], J. Bell[2], Q. Xue[2], T. Marek[2], and G. Ferreira[1], [1]*Virginia Tech*, *Blacksburg, VA*, [2]*Texas A&M AgriLife Research & Extension Center*, *Amarillo, TX*.

1031M **Impact on cheese yield of nonstandardized milk with seasonal variation, a 2-year retrospective.**
E. Cole*, S. L. Beckman, and P. Salunke, *South Dakota State University*, *Brookings, SD*.

1032M **Development of whey protein-lignin based film materials for food packaging applications.**
Y. Deng*, S. Kolodjski, Y. Kim, and G. Lewis, *University of Wisconsin-River Falls*, *River Falls, WI*.

1033M **Impact of feeding branched-chain volatile fatty acids during the dry period on colostrum composition and neonatal calf muscle metabolic activity.**
B. L. Gast*, L. M. Beckett, E. Tobolski, L. Jones, K. Gouveia, J. P. Boerman, and T. M. Casey, *Purdue University*, *West Lafayette, IN*.

1034M **Molecular and gene expression changes in liver tissue from mid-lactation dairy cows supplemented with methionine during a subclinical mastitis challenge.**
E. Harrison*[1], A. Paz[2], T. C. Michelotti[2,3], M. Suazo[2,4], J. Bonilla[2], M. Bulnes[2], A. Minuti[5], D. Luchini[6], J. Halfen[1], E. Trevisi[5], M. Rovai[2], and J. S. Osorio[1,2], [1]*School of Animal Science, Virginia Tech*, *Blacksburg, VA*, [2]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [3]*INRAE, UMR Herbivores*, *Saint-Genès-Champanelle, France*, [4]*Department of Animal Science, University of Minnesota*, *Twin Cities, MN*, [5]*Department of Animal Science, Food and Nutrition, Università Cattolica del Sacro Cuore*, *Milano, Italy*, [6]*Adisseo*, *Alpharetta, GA*.

1035M **Evaluating the influence of glucose and nonesterified fatty acids during the transition period on characteristics of cyclicity resumption postpartum.**
N. Hendrix*, S. Johnson, T. Marins, S. Tao, and J. Bohlen, *University of Georgia*, *Athens, GA*.

1036M **Understanding postpartum factors effecting fertility rates in dairy cattle across body condition score.**
K. Hill*, E. Eckelkamp, K. McLean, and S. Moorey, *University of Tennessee*, *Knoxville, TN*.

1037M **Optimization of casein micelle nanoparticle formation using high-pressure homogenization.**
K. Petersen*, *University of Wisconsin-River Falls*, *River Falls, WI*.

1038M **Evaluation of effectiveness between 2 caustic paste brands and volumes when disbudding dairy calves.**
K. Juckem, J. Saemrow*, J. Schuh, K. C. Creutzinger, and S. I. Kehoe, *UW-River Falls*, *River Falls, WI*.

1039M **Changes in oxylipid concentrations in dairy calves in response to wildfire-$PM_{2.5}$ exposure.**
O. C. Shaul*, B. C. Agustinho, L. Deobold, A. Pace, K. Mirkin, A. L. Skibiel, and P. Rezamand, *University of Idaho*, *Mosocw, ID*.

Animal Behavior and Well-Being 1

1040M **The climatic cost of impaired welfare in dairy sheep farming: A scenario study.**
L. Lanzoni*[1], K. Waxenberg[2], R. Ramsey[2], R. M. Rees[2], J. Bell[2], E. D. Costa[3], S. Throude[4], G. Vignola[1], and A. S. Atzori[5], [1]*Department of Veterinary Medicine, University of Teramo*, *Teramo, Italy*, [2]*Scotland's Rural College*, *Edinburgh, United Kingdom*, [3]*Department of Veterinary Medicine and Animal Sciences, University of Milan*, *Lodi, Italy*, [4]*Department of Farming Techniques and Environment, Institut de l'Élevage*, *Lyon, France*, [5]*Department of Agriculture, University of Sassari*, *Sassari, Italy*.

1041M **Dietary supplementation of vitamin D_3 and Ca partially recover compromised lying behavior and its circadian rhythm in lactating cows under heat stress.**
K. Wang*[1], A. Ruiz-González[2,3], S. E. Räisänen[1], V. Ouellet[3], A. Boucher[3], D. E. Rico[2], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*, [2]*Centre de Recherche en Sciences Animales de Deschambault (CRSAD)*, *Deschambault, QC, Canada*, [3]*Department of Animal Science, Université Laval*, *Québec, QC, Canada*.

1042M **Dairy cull cow condition and its effect on selling price in Québec, Canada.**
M. Puerto-Parada*[1], S. Buczinski[1], J. Dubuc[1], L. Blouin[2], and M. Villettaz-Robichaud[1], [1]*Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Producteurs de bovins du Québec*, *Longueuil, Québec, Canada*.

1043M **Investigating the efficacy of *Faecalibacterium prausnitzii*: A putative psychobiotic on health, growth, and behavior of dairy calves during the preweaning period.**
K. Narayan*, N. Indugu, M. Pierdon, T. Webb, and D. Pitta, *University of Pennsylvania*, *Kennett Square, PA*.

1044M **A global review of dairy quality assurance: What do we know and where are we headed?**
J. Saraceni*[1], P. Lawlis[1], D. Renaud[1,2], B. Hampton-Phifer[3], E. Yeiser-Stepp[3], and S. Roche[1,2], [1]*ACER Consulting*, *ACER Consulting, Guelph, ON, Canada*, [2]*The University of Guelph*, *The University of Guelph, Guelph, ON, Canada*, [3]*The National Dairy FARM Program, National Milk Producers Federation*, *The National Dairy FARM Program, National Milk Producers Federation, Arlington, VA*.

1045M **Effects of udder edema on parlor behavior in first and second-lactation Holstein dairy cows.**
C. Okkema*, K. Eilertson, and T. Grandin, *Colorado State University*, *Fort Collins, CO*.

1046M **Hoof disorders in Korean dairy cattle and the correlation of farm conditions to their prevalence.**
H. Espiritu*[1], S. Kwon[2], S. Jin[1], E. J. Valete[1], J. Pioquinto[1], S. Lee[1], and Y. Cho[1], [1]*Sunchon National University*, *Suncheon, South Korea*, [2]*Woosarang Animal Hospital*, *Yongin, Gyeonggi, South Korea*.

1047M **Effects of heat stress and abomasally infused fish oil on lactating cow behavior.**
A. Boucher*[1], K. Wang[2], A. Ruiz-González[1,3], M. Niu[2], V. Ouellet[1], and D. E. Rico[3], [1]*Université Laval*, *Québec, QC, Canada*, [2]*Department of Environmental Systems Science, Institute of Agricultural Sciences*, *Zürich, Zürich, Switzerland*, [3]*Centre de recherche en sciences animales de Deschambault (CRSAD)*, *Deschambault, QC, Canada*.

1048M **Associations between personality traits of dairy cows and their heifer offspring.**
C. Z. Czachor, A. J. Schwanke*, J. E. Brasier, B. J. Van Soest, and T. J. DeVries, *Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*.

1049M **Individual feeding consistency across stocking densities and feed efficiency in lactating cows.**
F. Reyes*, K. Weigel, H. White, and J. Van Os, *University of Wisconsin–Madison*, *Madison, WI*.

1050M **Evaluation of stocking density on feeding patterns in lactating cows.**
F. Reyes*, K. Weigel, H. White, and J. Van Os, *University of Wisconsin–Madison*, *Madison, WI*.

1051M **Role of methodology and operationalization for inferring dominance hierarchy from observed behavior of dairy cows.**
A. E. Pape*, A. V. Brown, and R. J. Grant, *William H. Miner Agricultural Research Institute*, *Chazy, NY*.

1052M **Effects of weaning and tyndallized *Lactobacillus helveticus* supplementation on dairy calf behavioral and physiological indicators of affective state.**
B. K. McNeil[1], D. L. Renaud[2], M. A. Steele[1], L. R. Cangiano[1,3], M. F. Olmeda[1], and T. J. DeVries*[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

Animal Health 1

1053M **Variables associated with the magnitude and time of the nadir body condition score during the early lactation of Holstein cows.**
C. Hernandez-Gotelli*[1], D. Manriquez[1], J. Azocar[3], A. De Vries[2], and P. Pinedo[1], [1]*Department of Animal Sciences, Colorado State University*, *Fort Collins, CO*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [3]*DeLaval Inc*, *Madison, WI*.

1054M **Impact of the reduction of metabolizable proteins in the ration during the transition period on immune and metabolic status of dairy cows.**
G. Tapp[1,2], F. Beaudoin[1], D. Ouellet[1], F. Malouin[1], P. Lacasse[1], and C. Ster*[1], [1]*AAFC- Sherbrooke R&D Centre*, *Sherbrooke, QC, Canada*, [2]*Biologie, Sciences, Université de Sherbrooke*, *Sherbrooke, QC, Canada*.

1055M **Effect of supplementing one or 2 calcium boluses at calving on serum pH and minerals, performance, rumination, and activity of multiparous dairy cows.**
D. Duhatschek[1], B. Newcomer[2], G. M. Schuenemann[3], B. T. Menichetti[4], S. Paudyal*[1], V. N. Gouvêa[1], and J. M. Piñeiro[1], [1]*Department of Animal Science, Texas A&M University*, *College Station, TX*, [2]*Large Animal Clinical Sciences Department, Texas A&M University*, *College Station, TX*, [3]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus, OH*, [4]*Inter-Ag Nutrition Services*, *South Solon, OH*.

1056M **Identification of potential blood biomarkers for early detection of periparturient diseases: A systematic review and meta-analysis.**
M. Bilal*[1], M. S. A. Hayda[2], N. Barbeau-Gregoire[3], V. Ouellet[4], J. Dubuc[3], D. Abdoulaye[2], Y. Chorfi[3], M. Leduc[1], and X. Zhao[1], [1]*Department of Animal Science, McGill University*, *Ste-Anne-De-Bellevue, QC, Canada*, [2]*Département d'informatique, Université du Québec à Montréal*, *Montréal, QC, Canada*, [3]*Département de sciences cliniques, Université de Montréal*, *Montréal, QC, Canada*, [4]*Département des sciences animales, Université Laval*, *Québec, QC, Canada*.

1057M ***Bacillus*** **direct-fed microbial impacts intestinal butyrate-producing microbial populations during feed restriction in mid-lactation Holstein cows.**
A. M. Lange*[1], S. R. Fensterseifer[2], E. A. Galbraith[1], R. P. Arias[2], B. M. Goetz[3], and L. H. Baumgard[3], [1]*Microbial Discovery Group*, *Oak Creek, WI*, [2]*United Animal Health Inc*, *Sheridan, IN*, [3]*Department of Animal Science, Iowa State University*, *Ames, IA*.

1058M **Epidemiology of high liver triglyceride prediction: Associations with postpartum performance metrics.**
E. M. Kammann*[1], N. S. Jozik[2], H. M. White[1], and R. S. Pralle[1,2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*School of Agriculture, University of Wisconsin–Platteville*, *Platteville, WI*.

1059M **Abomasal infusion of branched-chain amino acids or branched-chain keto-acids alter neutrophil immunometabolic gene expression in early lactation dairy cows.**
I. Bernstein*, K. Gallagher, C. Collings, J. Daddam, S. Naughton, M. Vandehaar, and Z. Zhou, *Michigan State University*, *East Lansing, MI*.

1060M **Gut microbiome is linked to functions of peripheral immune cells in transition cows during excessive lipolysis.**
F. Gu, S. Zhu, Y. Tang, X. Liu, M. Jia, J. Liu, and H. Sun*, *Institute of Dairy Science, College of Animal Sciences, Zhejiang University, Hangzhou 310058, China*, *Hangzhou, Zhejiang, China*.

1061M **Does knowledge of blood calcium at 2 DIM impact decisions of calcium supplementation?**
H. A. McCray*, C. R. Seely, and J. A. A. McArt, *Cornell University College of Veterinary Medicine*, *Ithaca, NY*.

1062M **Effect of supplementing rumen-protected arginine on immune and inflammation status of transition dairy cows.**
A. Fraz*[1], F. T. Saputra[1], T. M. Adeoti[1], B. Souza Simões[1], U. Arshad[1], A. Husnain[1], M. C. Perdomo[1], Y. Sugimoto[2], J. E. P. Santos[1], and C. D. Nelson[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [2]*Ajinomoto Co, Inc*, *Tokyo, Japan*.

1063M **Comparison of metabolic and immune biomarkers between primiparous and multiparous dairy cows during the peripartum period.**
A. Corset*[1,2], A. Boudon[1], S. Philau[1], O. Dhumez[1], A. Remot[3], P. Germon[3], and M. Boutinaud[1], [1]*INRAE-Institut Agro Rennes Angers, UMR 1348 PEGASE*, *Saint-Gilles, France*, [2]*Biodevas Laboratoires*, *Savigné-l'Évêque, France*, [3]*INRAE, Université de Tours, UMR 1282 ISP*, *Nouzilly, France*.

1064M **The relationship among serum haptoglobin concentration, fecal pH, and milk production in dairy cows immediately after calving.**
R. M. Duperron, L. E. Engelking, and M. Oba*, *University of Alberta*, *Edmonton, AB, Canada*.

1065M **Decreased in lactose percentage in milk due to quarter health disorder and negative energy balance of dairy cows.**
A. Hamon*[1], S. Dufour[2], D. Kurban[2], C. Hurtaud[1], S. Lemosquet[1], R. Gervais[3], and J. Guinard-Flament[1], [1]*PEGASE, INRAE, Institut Agro*, *Rennes, France*, [2]*Faculté de médecine vétérinaire, Université de Montréal*, *St-Hyacinthe, QC, Canada*, [3]*Université Laval*, *QC, Canada*.

1066M **Single-nuclei transcriptome reveals depot-specific changes in adipose tissue of dairy cows with subclinical ketosis.**
T. C. Michelotti[1], A. P. Tegeler[1], J. F. Fiallo[1], L. Flores[1], A. De-la-Cruz[1], O. J. Benitez[1,2], D. Dutton[2], V. Machado[1], and C. Strieder-Barboza*[1,2], [1]*Department of Veterinary Sciences, Davis College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*School of Veterinary Medicine, Texas Tech University*, *Amarillo, TX*.

1067M **Prepartum acetylsalicylic acid in high-priority cow groups: Effects on metabolic status, systemic inflammation, and daily milk yield.**
E. Jimenez*[1], P. Zarei[1], J. Spring[1], M. Dailey[1], C. Zheng[1], J. Lection[2,3], M. Martinez[1], E. Hovingh[1], and A. Barragan[1], [1]*Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*, [2]*Intercollege Graduate Degree Program in Integrative and Biomedical Physiology, Penn State University*, *University Park, PA*, [3]*Department of Animal Science, Penn State University*, *University Park, PA*.

1068M **Epidemiology of high liver triglyceride prediction: Prediction model agreement and case prevalence.**
E. M. Kammann[1], N. S. Jozik[2], H. M. White[1], and R. S. Pralle*[1,2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*School of Agriculture, University of Wisconsin–Platteville*, *Platteville, WI*.

1069M **Mitochondrial uncoupling protein 1 expression is increased postpartum in adipose tissue of Holstein dairy cows.**
U. Abou-Rjeileh*, A. L. Lock, and G. A. Contreras, *Michigan State University*, *East Lansing, MI*.

1070M **Prepartum anti-inflammatory therapies in high-priority cow groups: Effects on cow health and reproductive performance.**
A. Barragan*[1], E. Jimenez[1], J. Spring[1], P. Zarei[1], M. Martinez[1], E. Hovingh[2], and J. Lawhead[1], [1]*Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*, [2]*Millerstown Veterinary Associates*, *Millerstown, PA*.

1071M **The effect of oral or subcutaneous calcium at calving on ionized calcium and milk yield in Holstein cows fed anionic diets.**
A. Patterson[1], S. Poock[1], PRF Adkins[1], and P. Melendez*[2], [1]*University of Missouri*, *Columbia, MO*, [2]*City University of Hong Kong*, *Hong Kong*.

1072M **Association of fetid vaginal discharge or vaginal discharge appearance with cytological endometritis in Holstein cows.**
A. R. Guadagnin*[1] and F. C. Cardoso[2], [1]*University of Wisconsin*, *Madison, WI*, [2]*University of Illinois*, *Urbana, IL*.

1073M **Associations of heat stress during the transition period with herd-level markers of energy metabolism in early-lactation cows.**
C. Wagemann Fluxá*[1], S. J. Leblanc[2], E. S. Ribeiro[1], and T. J. DeVries[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

1074M **Postpartum acetylsalicylic acid administration and calcium supplementation: Effects on cow metabolic status and uterine health.**
P. Zarei*, E. Jimenez, J. Spring, M. Dailey, M. Martinez, E. Hovingh, and A. Barragan, *Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*.

1075M **Epidemiology of high liver triglyceride prediction: Peripartum risk factors.**
E. M. Kammann*[1], N. S. Jozik[2], H. M. White[1], and R. S. Pralle[1,2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*School of Agriculture, University of Wisconsin–Platteville*, *Platteville, WI*.

1076M **Association between body condition score and ultrasound abdominal fat in Jersey cows.**
P. Melendez*[1,2], P. K. Chelikani[1], D. Redrovan[1], and P. Gibbons[1], [1]*Texas Tech University*, *Amarillo, TX*, [2]*City University of Hong Kong*, *Hong Kong, China*.

1077M **Whole blood cytokine response and milking performance during the transition period of healthy and diseased multiparous Holstein dairy cows on an automatic milking system.**
T. N. Marins, J. Gao*, C. G. Savegnago, S. G. Johnson, J. F. Bohlen, and S. Tao, *Department of Animal and Dairy Science, University of Georgia*, *Athens, GA*.

1078M **Investigating risk factors for subclinical ketosis in robotic milking systems.**
S. Moore*, R. Conceicao, J. Marques, J. Denis-Robichaud, and R. Cerri, *University of British Columbia*, *Vancouver, BC, Canada*.

1079M **Predicting dyscalcemia at 4 days in milk using activity and rumination data in multiparous Holstein cows.**
C. R. Seely* and J. A. A. McArt, *Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University*, *Ithaca, NY*.

1080M **Association between access to grazing and respiratory disease in Holstein cows in organic-certified herds.**
A. Velasquez-Munoz*[1], D. Manríquez[2,3], and P. Pinedo[2], [1]*Universidad Catolica de Temuco*, *Temuco, Chile*, [2]*Department of Animal Sciences, Colorado State University*, *Fort Collins, CO*, [3]*National School of Veterinary Medicine of Toulouse*, *Toulouse, France*.

1081M **Association between access to grazing and the risk of leaving the herd in organic-certified Holstein cows.**
A. Velasquez-Munoz*[1], D. Manríquez[2,3], and P. Pinedo[2], [1]*Universidad Catolica de Temuco*, *Temuco, Chile*, [2]*Department of Animal Sciences, Colorado State University*, *Fort Collins CO*, [3]*National School of Veterinary Medicine of Toulouse*, *Toulouse, France*.

1082M **Exploration of dairy cow holobiont revealed an important sharing of microbes between anatomic sites within individual hosts throughout lactation but sharing was limited in the herd.**
M. Mariadassou[1], X. Nouvel[2], F. Constant[3], D. Morgavi[4], L. Rault[5], S. Barbey[6], E. Helloin[7], O. Rué[8], S. Schbath[1], F. Launay[6], O. Sandra[9], Y. Le Loir[5], P. Germon[7], C. Citti[2], S. Even*[5], [1]*Université Paris-Saclay, INRAE, MaIAGE*, *Jouy-en-Josas, France*, [2]*IHAP, Université de Toulouse, INRAE, ENVT*, *Toulouse, France*, [3]*Ecole Nationale Vétérinaire d'Alfort, Université Paris-Saclay, UVSQ, INRAE BREED*, *Maisons-Alfort, France*, [4]*Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores*, *Saint-Genes-Champanelle, France*, [5]*STLO, INRAE, Institut Agro*, *Rennes, France*, [6]*INRAE, UE326 Unité Expérimentale du Pin*, *Gouffern en Auge, France*, [7]*ISP, INRAE, Université de Tours*, *Nouzilly, France*, [8]*Université Paris-Saclay, INRAE, BioinfOmics, MIGALE bioinformatics facility*, *Jouy-en-Josas, France*, [9]*Université Paris-Saclay, UVSQ, INRAE, BREED*, *Jouy-en-Josas, France*.

1258M **Prepartum feed intake level is associated with transition metabolism and subsequent milk production in dairy cows.**
M. G. S. Santos*, B. Mion, B. Van Winters, and E. S. Ribeiro, *Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada.*

Breeding and Genetics 1: Inbreeding, Crossbreeding, and Lifetime Performance

1083M **Identification of US Jersey bulls for germplasm preservation.**
K. Srikanth*[1], M. A. Jaafar[1], M. Neupane[2], J. Metzger[3], H. Ben Zaabza[2,4], S. McKay[4], H. J. Huson[1], C. P. Van Tassell[2], and H. D. Blackburn[5], [1]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Animal Genomics and Improvement Laboratory, Agricultural Research Service, USDA*, *Baltimore Ave, Beltsville, MD*, [3]*Trans Ova Genetics*, *Sioux Center, IA*, [4]*Department of Animal and Veterinary Sciences, University of Vermont*, *Burlington, VT*, [5]*National Animal Germplasm Program, USDA*, *Fort Collins, CO*.

1084M **Effects of type traits, inbreeding, and production on survival in US Jersey cattle.**
B. M. Nascimento*[1], C. W. Wolfe[2], K. A. Weigel[1], and F. Peñagaricano[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*American Jersey Cattle Association*, *Reynoldsburg, OH*.

1085M **Multibreed variance components and genetic parameters for crossbred dairy animals.**
G. Vargas*, N. Vukasinovic, D. Gonzalez-Peña, T. Passafaro, Z. Ahmed, A. Kulkarni, C. Przybyla, and D. Nkrumah, *Zoetis Genetics*, *Kalamazoo, MI*.

1086M **Single-step genomic BLUP prediction in Holsteins, Jerseys, and their crosses in the United States.**
G. Vargas*, N. Vukasinovic, D. Gonzalez-Peña, T. Passafaro, Z. Ahmed, A. Kulkarni, C. Przybyla, and D. Nkrumah, *Zoetis Genetics*, *Kalamazoo, MI*.

1087M **Identification of signatures of selection within a structured crossbreed population.**
M. A. Jaafar*[1], B. J. Heins[2], C. Dechow[3], and H. J. Huson[1], [1]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [2]*West Central ROC, University of Minnesota*, *Morris, MN*, [3]*109 Almquist Research Center, The Pennsylvania State University*, *University Park, PA*.

1088M **First-lactation crossbreds of Holstein with Jersey, Montbéliarde, Normande, and Viking Red compared to pure Holsteins for 305-day production and somatic cell score in a pasture production system.**
B. J. Heins* and K. T. Sharpe, *University of Minnesota*, *Morris, MN*.

1089M **Understanding the production of beef from dairy systems in the UK: An analysis of trends.**
J. Gordon*[1,2], [1]*SRUC*, *Edinburgh, United Kingdom*, [2]*University of Edinburgh*, *Edinburgh, United Kingdom*.

1090M **Impact of using sexed semen and beef semen on genetic progress and economic benefits.**
Y. Gong*[1], K. F. Reed[2], and V. E. Cabrera[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Cornell University*, *Ithaca, NY*.

1091M **A meta-analysis of selection intensity, effective population size and inbreeding in sheep and goat populations.**
K. A. Sokoloff*[1], C. M. Rochus[1], J. L. Ellis[1], and C. F. Baes[1,2], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Institute of Genetics, Department of Clinical Research and Veterinary Public Health, University of Bern*, *Bern, Switzerland*.

1092M **Genetic parameters and candidate genes for lifetime milk yield in Chinese Holsteins.**
H. Zhang[1], A. Wang[1], S. Mi[1], L. Brito[2], G. Guo[3], Q. Yan[4], S. Chen[4], and Y. Wang*[1], [1]*China Agricultural University*, *Beijing, Beijing, China*, [2]*Purdue University*, *West Lafayette, IN*, [3]*Beijing Sunlon Livestock Development Company Limited*, *Beijing, Beijing, China*, [4]*Dairy Association of China*, *Beijing, Beijing, China*.

1093M **Genome-wide association studies of lifetime performance index in Canadian Holstein cattle.**
B. McIlquham*[1], E. Etten[1], S. Chen[2], L. Brito[2], FS Schenkel[3], and M. Melka[1], [1]*University of Wisconsin–River Falls*, *River Falls, WI*, [2]*Purdue University*, *West Lafayette, IN*, [3]*University of Guelph*, *Guelph, ON, Canada*.

Dairy Foods 1: Microbiology and Cheese

1094M **Effect of skim milk powder and whey protein concentrate addition on the manufacture of probiotic mozzarella cheese.**
M. Hamouda*, A. Sharma, R. Joshi, and P. Salunke, *Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*.

1095M **Lactic acid bacteria isolated from Minas artisanal cheese: Probiotic potential, safety and viability under conditions of the gastrointestinal tract.**
I. C. N. Coelho[1], T. B. A. Miranda[1], S. M. Fafá[2], L. M. M. Magalhães[1], I. M. Costa[1], J. E. G. Gomes[3], D. C. S. Assis[1], L. M. Fonseca*[1], C. F. A. M. Penna[1], E. H. P. Andrade[1], M. R. Souza[1], and B. M. Salotti-Souza[1], [1]*Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Vila Velha University*, *Vila Velha, ES, Brazil*, [3]*Laboratory of Microbiology, Enzyme Technology and Bioproducts - Federal University of Agreste de Pernambuco*, *Garanhus, PE, Brazil*.

1096M **Microbiological characterization of Minas artisanal cheese from the Campo das Vertentes region (Brazil) during ripening in rainy and dry seasons.**
G. L. C. Valente[1], R. C. Figueiredo[1], R. F. Brito[1], L. M. Fonseca*[1], A. P. Madureira[2], A. M. Silva[3], B. M. S. Souza[1], C. F. A. M. Penna[1], and M. R. Souza[1], [1]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Minas Gerais, Brazil*, [2]*Universidade Federal de São João del-Rei*, *São João del-Rei, Minas Gerais, Brazil*, [3]*Universidade Federal de São João del-Rei*, *Sete Lagoas, Minas Gerais, Brazil*.

1097M **Investigating the source of microorganisms causing discoloration on the surface of artisanal washed-rind cheeses.**
T. Wilson*, Y. Xi, and G. LaPointe, *University of Guelph*, *Guelph, Ontario, Canada*.

1098M **Inclusion of pasture in dairy cow's diet: Fatty acid profile of Danbo-type cheese.**
G. Casarotto*[1], C. Bonfiglio[1], A. López[1], I. Vieitez[2], A. Britos[1], J. L. Repetto[1], S. Carro[1], and C. Cajarville[1], [1]*Facultad de Veterinaria, Universidad de la República*, *Montevideo, Uruguay*, [2]*Facultad de Química, Universidad de la República*, *Montevideo, Uruguay*.

1099M **Molecular characterization of diarrheagenic *Escherichia coli* strains in bulk raw milk samples from Northern Tocantins, Brazil.**
J. R. Júnior*[1,2], F. Nunes[1], J. Mendonça[1], Y. Rodrigues[1], B. Dias[1], E. da Silva[1], K. Oliveira[1], L. Rodrigues[1], and A. Alfieri[2], [1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*.

1100M **Camel milk production and supply chain hygienic practice with isolation of *Escherichia coli* strains from selected pastoral community in Ethiopia.**
A. H. Hassan[1], A. H. Woshie*[1], S. Girma[1], J. Kaneene[2], and M. Wilkinsum[2], [1]*College of Veterinary Medicine, Haramaya University*, *Dire Dawa, Ethiopia*, [2]*College of Veterinary Medicine, Michigan State University*, *East Lansing, MI*.

1101M **Milk fat globule membrane enhances neurotransmitter synthesis of lactic acid bacteria.**
C. Miller*, E. Kosmerl, and R. Jimenez-Flores, *The Ohio State University*, *Columbus, OH*.

1102M **Effect of stretching temperature on the growth of four dairy pathogen bacteria in raw-milk pasta filata cheese manufacture.**
G. Licitra[1], S. Ruta[2], G. Mangione[1], S. Mirabella[3], G. Belvedere[3], A. Difalco[3], L. Settanni[2], M. Caccamo*[3], and R. Gaglio[2], [1]*University of Catania*, *Catania, Italy*, [2]*University of Palermo*, *Palermo, Italy*, [3]*CoRFiLaC*, *Ragusa, Italy*.

1103M **Characterization of a novel gene cluster encoding multiple bacteriocins in the dairy starter culture *Streptococcus thermophilus*.**
R. Eutsey[1], A. Oest[2], L. Eutsey[1], N. L. Hiller[1], and J. Renye*[2], [1]*Department of Biological Sciences, Carnegie Mellon University*, *Pittsburgh, PA*, [2]*Dairy and Functional Foods Research Unit, ARS, USDA*, *Wyndmoor, PA*.

1104M **A previously undescribed lactococcal CEP is proposed to be a new CEP type designated as group i.**
T. S. Oberg*[1], B. Wood[1], D. J. McMahon[1], and C. J. Oberg[2], [1]*Utah State University*, *Logan, UT*, [2]*Weber State University*, *Ogden, UT*.

1105M **Synergistic antimicrobial activity of bovine lactoferrin and cannabidiol (CBD) isolate from hemp (*Cannabis sativa*) against foodborne pathogens.**
A. Mora-Gutierrez*, R. Mora-Gutierrez, and M. T. Núñez de González, *Cooperative Agricultural Research Center, Prairie View A&M University*, *Prairie View, TX*.

1106M **Biofilm formation capability of *Listeria monocytogenes*' food-associated isolates.**
P. Myintzaw*[1], M. Holton[1], A. Lourenco[1], M. Callanan[2], and O. McAuliffe[1], [1]*Teagasc Food Research Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*, [2]*Department of Biological Sciences, Munster Technological University*, *Bishopstown, Cork, Ireland*.

1107M **Link between virulence, biofilm and antimicrobial-resistance genes and specific clonal complex types of *Listeria monocytogenes*.**
P. Myintzaw*[1], V. Pennone[1], M. Begley[2], O. McAuliffe[1], and M. Callanan[2], [1]*Teagasc Food Research Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*, [2]*Department of Biological Sciences, Munster Technological University*, *Bishopstown, Cork, Ireland*.

1108M **Growth behavior of *Listeria monocytogenes* in a semi-soft, rind-ripened artisanal cheese at cold chain and abuse temperatures.**
P. Myintzaw*[1], M. Holton[1], K. Hunt[2], F. Butler[2], and O. McAuliffe[1], [1]*Teagasc Food Research Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*, [2]*UCD School of Biosystems and Food Engineering, University College Dublin*, *Belfield, Ireland*.

1109M **A rapid stress test identifies post-pasteurization contamination in white and flavored fluid milk.**
R. L. Evanowski*, S. J. Reichler, and N. H. Martin, *Cornell University*, *Ithaca, NY*.

1110M **Optimization of fermentation parameters to valorize byproducts from the dairy and poultry industries.**
L. Castellanos-Suarez*, O. Campanella, and R. Jiménez-Flores, *The Ohio State University*, *Columbus, OH*.

1111M **Effect of the microbial population in the milking system and farm practices on the culturable bacteria of raw milk.**
Y. Xi*, T. Wilson, and G. LaPointe, *Dairy at Guelph, University of Guelph*, *Guelph, ON, Canada*.

1112M **Incremental reductions in bulk tank spore levels are achieved through on-farm interventions.**
R. L. Evanowski*, S. I. Murphy, N. H. Martin, and M. Wiedmann, *Cornell University*, *Ithaca, NY*.

1113M **Valorization of underutilized dairy waste residues: Production of lactic acid through microbial fermentation.**
C. R. Surana*[1,2], E. Byrne[1], M. Callanan[2,3], and O. McAuliffe[1,3], [1]*Department of Food Biosciences, Teagasc Food Research Centre*, *Fermoy, Co.Cork, Ireland*, [2]*Department of Biological Sciences, Munster Technological University*, *Cork, Co.Cork, Ireland*, [3]*VistaMilk SFI Research Centre, Teagasc Agricultural Food Research Center*, *Fermoy, Co.Cork, Ireland*.

1114M ***Saccharomyces cerevisiae* and *Lachancea thermotolerans* for milk acidification: Effects of yeast strain and glucose.**
P. Gamboa-Moreno*, T. DeMarsh, and S. Alcaine, *Cornell University*, *Ithaca, NY*.

1115M **Machine learning models suggest farm management practices and weather conditions only account for a small proportion of variance in spore levels of organic raw milk.**
C. Qian*, R. T. Lee, R. Evanowski, M. Wiedmann, and N. H. Martin, *Cornell University*, *Ithaca, NY*.

1116M **Genomic insight into antibiotic-resistant *Bacillus paralicheniformis* LL32 with blood hemolytic phenotype.**
A. Tarrah*, D. Zhang, and G. Lapointe, *University of Guelph*, *Guelph, Ontario, Canada*.

1117M **Molecular characterization of the toxigenic potential and antimicrobial resistance of *Staphylococcus aureus* isolates from Minas frescal cheese produced in Tocantins, Brazil.**
J. R. Júnior*[1,2], É. Rodrigues[1], B. Dias[1], M. Oliveira[3], C. Nascimento[1], B. Alexandrino[1,2], and A. Alfieri[2], [1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*, [3]*Federal University of Goiás*, *Goiania, Goiás, Brazil*.

1118M **Effect of refrigerated storage on the presence of *Listeria monocytogenes* in Brazilian mozzarella cheese.**
J. R. Júnior*[1,2], F. L. Nunes[1], J. Mendonça[1], N. Aguiar[1], B. Dias[1], E. da Silva[1], L. Rodrigues[1], and A. Alfieri[2], [1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*.

1119M **Upcycling whey permeate into an acetic-acid beverage with *Brettanomyces claussenii*, a preliminary study.**
D. G. Hauser*, V. K. Rivera Flores, and S. D. Alcaine, *Cornell University*, *Ithaca, NY*.

1120M **Survey of sodium gluconate content in retail Cheddar cheese.**
N. Mishra*[1], TS Oberg[1], DJ McMahon[1], CJ Oberg[2,1], and M. Culumber[2], [1]*Utah State University*, *Logan, UT*, [2]*Weber State University*, *Ogden, UT*.

1121M **Bacterial contamination of soft Wagashi cheese.**
M. Muntari*[1,2], P. K. Karikari[1], and J. S. Stevenson[3], [1]*Kwame Nkrumah University of Science and Technology*, *Kumasi, Ghana*, [2]*Texas A&M University*, *College Station, TX*, [3]*Kansas State University*, *Manhattan, KS*.

1122M **Effects of ultrafiltration followed by heat or high-pressure treatment on camel and bovine milk cheeses.**
M. Mbye*, M. Ayyash, and A. Kamal-Eldin, *United Arab Emirates University*, *Al Ain, Abu Dhabi, United Arab Emirates*.

1123M **Effect of polyphenol caffeic acid on the functionality of processed cheese product.**
A. Sharma*, R. Joshi, and P. Salunke, *South Dakota State University*, *Brookings, SD*.

Forages and Pastures 1

1124M **Effect of dosage level of fibrolytic enzyme and incubation time on in vitro rumen degradability of intercropped whole plant oat with whole plant faba bean silage in dairy cows.**
C. Nagy, V. H. Guevara Oquendo, and P. Yu*, *Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan*, *Saskatoon, Canada*.

1125M **The association of *Lentilactobacillus buchneri* and *Lentilactobacillus hilgardii* affects the starch degradability in snaplage.**
H. Scardini Junior, L. Lima, M. Cardoso, R. Ferreira, and T. Bernardes*, *University of Lavras, Brazil*.

1126M **Effects of ensiling method, microbial inoculation, and storage length on the fermentation profile and aerobic stability of whole-plant corn silage.**
M. R. Pupo*[1], C. Heinzen Jr.[1], M. S. Souza[1,2], and L. F. Ferraretto[1], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Federal University of Amazônia*, *Belém, PA, Brazil*.

1127M **Effects of ensiling method, microbial inoculation, and storage length on the fermentation profile of high-moisture corn.**
M. R. Pupo*, E. C. Diepersloot, C. H.P. Camisa-Nova, and L. F. Ferraretto, *University of Wisconsin-Madison*, *Madison, WI*.

1128M **The effects of a microbial inoculant on the fermentation of triticale silage harvested at two dry matters.**
X. Liu*, C. Mellinger, G. Weiner, and L. Kung, *University of Delaware*, *Newark, DE*.

1129M **Evaluating the effects of maturity at harvest, microbial inoculation, and ensiling durations on nutritive value, and fermentation characteristics of sorghum hybrids.**
S. Farooq*[1], M. Wallau[1], F. Amaro[1], C. Cornejo[2], R. Trump[1], J. Portuguez[1], C. A. Niño de Guzmán[1], L. Mu[1], K. Arriola[1], H. Sultana[1], L. Ferraretto[3], and D. Vyas[1], [1]*University Of Florida*, *Gainesville, FL*, [2]*National Agrarian University La Molina*, *Lima, Perú*, [3]*University of Wisconsin*, *Madison, WI*.

1130M **Relationship between sorghum silage berry processing score measured with different sieves.**
E. C. Diepersloot*[1], K. Raver[2], J. P. Goeser[1,2], J. M. Piñero[3], and L. F. Ferraretto[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Rock River Laboratory Inc*, *Watertown, WI*, [3]*Texas A&M Agrilife Extension, Texas A&M University System*, *College Station, TX*.

1131M **Effects of kernel type, processor adjustment, and fermentation time on starch characteristics of corn silage.**
A. M. Wilder*[1], J. Lawrence[2], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Cornell University*, *Ithaca, NY*.

1132M **Fermentation characteristics of pure and mixed sugar beet silages.**
E. M. V. Hvas*[1], M. Larsen[1], L. Andersen[2], and M. R. Weisbjerg[1], [1]*Department of Animal and Veterinary Sciences, AU Viborg, Research Centre Foulum, Aarhus University*, *Tjele, Denmark*, [2]*KWS SCANDINAVIA A/S*, *Vejle, Denmark*.

1133M **Variation of the alfalfa energy-to-protein ratio to maximize nitrogen use efficiency by rumen microbes.**
A.-A. Poulin*[1,2], F. Hassanat[2], G. F. Tremblay[2], D. Ouellet[3], R. Petri[3], M. Thériault[2], A. Claessens[2], A. Bertrand[2], and É. Charbonneau[1], [1]*Université Laval*, *Quebec, QC, Canada*, [2]*Agriculture & Agri-Food Canada*, *Quebec, QC, Canada*, [3]*Agriculture & Agri-Food Canada*, *Sherbrooke, QC, Canada*.

1134M **Effect of harvesting time on the nutritional quality of small grains' forage for silage.**
H. Galyon*, M. Schultz, and G. Ferreira, *Virginia Tech*, *Blacksburg, VA*.

Lactation Biology 1

1135M **Single cell multi-omics analysis reveals the underlying regulatory mechanism for lactation tailoring by hypothalamus-pituitary-mammary gland axis in dairy cows.**
C. Zhang* and H. Liu, *Zhejiang University*, *Hangzhou,Zhejiang, China*.

1136M **Characterization of bioactive lipids that promote lipid synthesis in bovine mammary epithelial cells.**
M.-C. Guesthier*[1,2], T. Kustova[1], P. Piantoni[2], G. Shroeder[2], and S. A. Burgos[1], [1]*Department of Animal Science, McGill University*, *St-Anne-de-Bellevue, QC, Canada*, [2]*Cargill Animal Nutrition and Health, Innovation Campus*, *Elk River, MN*.

1137M **Prepartum infusions of 5-HTP and EGTA are similarly effective in preventing postpartum hypocalcemia.**
H. H. Hanling*, A. Vang, W. Frizzarini, T. Cunha, H. Fricke, and L. L. Hernandez, *University of Wisconsin-Madison*, *Madison, WI*.

1138M **Characterization of immune cellular heterogeneity in milk from healthy bovine mammary glands.**
G. Perez-Hernandez*[1], A. J. Lengi[1], M. Makris[2], P. R. Timilsena[3], S. Li[3], and B. A. Corl[1], [1]*School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*, [2]*Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech*, *Blacksburg, VA*, [3]*School of Plant and Environmental Sciences, Virginia Tech*, *Blacksburg, VA*.

Physiology and Endocrinology 1

1139M **Brown Swiss and Holstein dairy cows have different inflammatory and immune responses to their first calving.**
L. Cattaneo*[1], M. Sfulcini[1], V. Lopreiato[2], F. Piccioli-Cappelli[1], A. Catellani[1], A. Minuti[1], and E. Trevisi[1], [1]*Department of Animal Sciences, Food and Nutrition, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*, [2]*Department of Veterinary Sciences, Università di Messina*, *Messina, Italy*.

1140M **Effects of phase feeding an acidified close-up ration for improved plasma calcium status in immediate postpartum period.**
M. B. Samarasinghe*[1], L. E. Hernández-Castellano[2], N. B. Kristensen[3], and M. Larsen[1], [1]*Department of Animal and Veterinary Sciences, Aarhus University Viborg, Foulum*, *Tjele, Denmark*, [2]*Animal Production and Biotechnology group, Institute of Animal Health and Food Safety, Universidad de Las Palmas de Gran Canaria*, *Arucas, Spain*, [3]*SEGES Innovation P/S*, *Aarhus, Denmark*.

1141M **Systemic transcriptional analysis in lactating cows with elevated peripheral serotonin.**
V. L. Pszczolkowski[1,2], A. M. Larsen[1,3], J. Laporta[1,2], L. L. Hernandez[1,2], W. Li[3], and S. I. Arriola Apelo*[1,2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Endocrinology and Reproductive Physiology Graduate Training Program, University of Wisconsin-Madison*, *Madison, WI*, [3]*USDA Dairy Forage Research Center*, *Madison, WI*.

1142M **Transition milk feeding shows marginal effects on blood metabolome of dairy calves.**
M. H. Ghaffari*[1], C. S. Ostendorf[1], C. Koch[2], and H. Sauerwein[1], [1]*Institute of Animal Science, University of Bonn*, *Bonn, NRW, Germany*, [2]*Educational and Research Centre for Animal Husbandry, Hofgut Neumühle*, *Münchweiler an der Alsenz, Germany*.

1143M **Divergence in feed efficiency yields differences in tissue-level gene expression.**
M. J. Caputo*[1], W. Li[2], S. J. Kendall[1], A. M. Larsen[1,2], K. A. Weigel[1], and H. M. White[1], [1]*University of Wisconsin Madison*, *Madison, WI*, [2]*US Dairy Forage Research Center*, *Madison, WI*.

1144M **Effects of feeding a body-cooling feed additive and chromium on milk and embryo production in lactating dairy cows.**
T. O. Carneiro[1], A. H. Souza[2], D. Langwinski[2], M. Luchesi[2], B. O. Cardoso[2], R. O. Rodrigues*[3], L. Greco[4], and R. Sartori[5], [1]*Independent Bovine Reproductive Veterinarian*, *Brotas, SP, Brazil*, [2]*Cargill Animal Nutrition*, *Campinas, SP, Brazil*, [3]*Cargill Animal Nutrition*, *Lewisburg, OH*, [4]*Kemin Industries*, *Valinhos, SP, Brazil*, [5]*ESALQ, University of Sao Paulo*, *Piracicaba, SP, Brazil*.

1145M **Lipolysis modulates the biosynthesis of palmitoyl- and oleaoyl-ethanolamines in bovine adipocytes.**
G. A. Contreras*[1], M. Chirivi[1], J. Gandy[1], Y. Tam[2], and M. Zachut[3], [1]*Department of Large Animal Clinical Sciences, Michigan State University*, *East Lansing, MI*, [2]*Obesity and Metabolism Laboratory, the Institute for Drug Research, School of Pharmacy, Faculty of Medicine, the Hebrew University of Jerusalem*, *Jerusalem, Israel*, [3]*Department of Ruminant Science, Institute of Animal Sciences, Agricultural Research Organization/Volcani Center*, *Rishon LeZion, Israel*.

1146M **Association between postpartum systemic inflammation and serum calcium in healthy multiparous dairy cows—An exploratory observational analysis.**
R. C. Serrenho* and S. LeBlanc, *Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*.

Production, Management and the Environment 1

1147M **Effect of feeding management during the first 21 days postpartum, on direct and residual productive response and adaptation to grazing of multiparous Holstein dairy cows.**
C. Rivoir*[1], G. Mendina[2], L. Adrien[2], and P. Chilibroste[1], [1]*Universidad de la Republica, Facultad de Agronomía, EEMAC*, *Paysandú, Uruguay*, [2]*Universidad de la Republica, EEMAC Facultad de Veterinaria*, *Paysandú, Uruguay*.

1148M **Characterization of heat stress in lactating Holstein cows at different lactation stage using productive performance, physiological indicators, blood, and milk characteristics based on South Korean climate conditions.**
J. H. Jo*[1], J. G. Nejad[1], J. S. Lee[1], M. K. Choi[1], Y. R. Kim[1], M. S. Ju[1], S. H. Keum[1], T. Z. Liu[1], S. Y. Maeng[1], H. R. Kim[2], and H. G. Lee[1], [1]*Department of Animal Science and Technology, Sanghuh College of Life Sciences, Konkuk University*, *Seoul, Republic of Korea*, [2]*Animal Nutrition and Physiology Team, National Institute of Animal Science, RDA*, *Wanju, Republic of Korea*.

1149M **Back to basics: Precision while mixing total mixed rations and its impact on milking performance.**
A. Bach*[1,2], [1]*Marlex Research and Education*, *Barcelona, Catalonia, Spain*, [2]*ICREA*, *Barcelona, Catalonia, Spain*.

1150M **Characterization of heifer raising costs in Quebec Holstein herds.**
L. Laflamme-Michaud*[1], R. A. Molano[1,2], É. Charbonneau[1], O. Brassard[2], S. Binggeli[1], R. Roy[2], D. Warner[2], É. Paquet[1], and D. E. Santschi[2], [1]*Département des sciences animales, Université Laval*, *Québec, Québec, Canada*, [2]*Lactanet, Canadian Network for Dairy Excellence*, *Ste-Anne-de-Bellevue, Québec, Canada*.

1151M **Climatic conditions, production, and composition of milk in 8 years of a pasture-based dairy farm in Southern Brazil.**
K. Frigeri[1], M. Deniz*[2], K. De-Sousa[1], and F. Vieira[1], [1]*Biometeorology Study Group, Federal University of Technology, Paraná*, *Dois Vizinhos, Paraná, Brazil*, [2]*School of Veterinary Medicine and Animal Science, São Paulo State University*, *Botucatu, São Paulo, Brazil*.

1152M **The impacts of lameness on reproduction and milk yield in lactating dairy cattle.**
L. P. Bielamowicz*[1] and B. W. Jones[1,2], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M AgriLife*, *Stephenville, TX*.

1153M **Buffalo milk quality: Somatic cell counts and microbial contamination.**
C. F. Viana[1], I. L. S. Gomes[1], E. H. P. Andrade[1,2], M. R. Souza[1], C. F. A. M. Penna[1], B. M. S. Souza[1], R. S. Conrrado[1,2], E. R. Campanha[1,3], G. Plefk[4], and L. M. Fonseca*[1,2], [1]*School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Laboratory of Milk Quality Analysis, School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [3]*Federal Institute of Minas Gerais*, *Bambuí, MG, Brazil*, [4]*Departament of Veterinary Medicine, Centro-Oeste State University of Paraná*, *Guarapuava, PR, Brazil*.

1154M **Milk urea nitrogen as a predictor tool of nitrogen efficiency and nitrogen excretion in dairy cows.**
I. A. M. A. Teixeira*[1], M. G. Podda[2], D. Salis[2], D. Scoresby[1], M. Chahine[1], and S. A. Santos[3], [1]*University of Idaho*, *Twin Falls, ID*, [2]*University of Sassari*, *Sassari, Italy*, [3]*Universidade Federal da Bahia*, *Salvador, BA, Brazil*.

1155M **Effect of yeast derivatives on somatic cell count and the immune function of dairy cows.**
A. Deliberalli[1], A. C. A. Abreu[1], B. Milla[1], S. N. de Oliveira[1], H. G. Bertagnon[1], M. A. Bonato[2], and W. L. S. dos Reis*[2], [1]*UNICENTRO*, *Guarapuava, Paraná, Brazil*, [2]*ICC*, *São Paulo, São Paulo, Brazil*.

1156M **Identifying on-farm factors associated with increased free fatty acids in bulk tank milk.**
H. Woodhouse*, D. Kelton, S. LeBlanc, T. DeVries, and K. Hand, *University of Guelph*, *Guelph, ON, Canada*.

1157M **Comparison of dry matter intake, production, and enteric methane emissions in dairy cows housed in respiration chambers vs. a head-chamber system (GreenFeed).**
X. Ma*[1], S. E. Räisänen[1], S. Amelchanka[2], K. Giller[1], MZ. Islam[1], Y. Li[1], R. Peng[1], M. Reichenbach[1], X. Sun[1], I. Müller[3], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH*, *Lindau, Zurich, Switzerland*, [2]*AgroVet-Strickhof, ETH Zürich*, *Lindau, Zurich, Switzerland*, [3]*Department of Animal Nutrition, DSM Nutritional Products*, *Kaiseraugst, Aargau, Switzerland*.

1158M **Management and facility factors associated with milk yield in freestall facilities in the Midwest and Northeast USA.**
K. M. Luchterhand*, *Novus International Inc*, *St. Charles, MO*.

1159M **Changes in lactation curve parameters associated with age at first calving, parity, and calving season in dairy cows in tropical regions.**
J. Castro-Montoya*[1], M. Mendoza[1], R. Gervais[2], and D. Innes[3], [1]*Faculty of Agricultural Sciences, University of El Salvador*, *San Salvador, El Salvador*, [2]*Department of Animal Sciences, Laval University*, *Quebec, QC, Canada*, [3]*Centre for Nutrition Modelling, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*.

1161M **Impact of environmental toxin, perfluorooctanoic acid, on endometrial stromal cells.**
M. J. Dickson*, S. E. Fenton, and F. J. DeMayo, *National Institute of Environmental Health Sciences*, *Durham, NC*.

1162M **Effects of polyphenolic compounds on enteric methane production and rumen fermentation in vitro.**
S. F. Cueva*[1], S. Sommai[2], L. F. Martins[1], N. Stepanchenko[1], D. E. Wasson[1], J. D. Lambert[1], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *University Park, PA*, [2]*Khon Kaen University*, *Khon Kaen, Thailand*.

1163M **Evaluation of plasma biotin and vitamin B_{12} concentrations of dairy cows fed varying concentrations of dietary vitamin D_3, vitamin E, Ca and Se under heat stress.**
M. Duplessis*[1], A. Ruiz-Gonzalez[2], and D. Rico[3], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Université Laval*, *Québec, QC, Canada*, [3]*Centre de recherche en sciences animales de Deschambault*, *Deschambault, QC, Canada*.

1164M **Effect of pre-mowing pasture management on dairy cow behavior and production.**
J. St John*[1,2], T. J. DeVries[1], K. Schneider[1], and R. Bergeron[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Lactanet*, *Montreal, Québec, Canada*.

1166M **Prediction of orthophosphate in feces and manure from dairy cattle.**
J. L. Marumo*, P. A. LaPierre, A. F. Ortega, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

1167M **Prediction of enteric methane emissions with and without monensin in dairy cattle.**
J. L. Marumo*, P. A. LaPierre, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

1168M **Effects of weight loss on milk production of nulliparous Gyr cows.**
K. De-Sousa*[1], C. Gonçalves[1], GG.layk Vilela[1], A. Fernandes[2], J. Negrão[3], M. Deniz[4], and L. El Faro[1], [1]*Centro de Pesquisas de Bovinos de Corte, Instituto de Zootecnia*, *Serãotizinho, São Paulo, Brazil*, [2]*Associação Brasileira de Gir Leiteiro*, *Uberaba, Minas Gerais, Brazil*, [3]*Faculdade de Zootecnia e Engenharia de Alimentos – Universidade de São Paulo*, *Pirassununga, São Paulo, Brazil*, [4]*Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista*, *Botucatu, São Paulo, Brazil*.

1169M **Transition management and cow performance in a sample of dairy farms in Argentina.**
P. Turiello*[1,2], R. C. Anton[3], M. Gorgerino[3], J. Prai[3], G. Ciepielak[3], N. Hajduczyk[3], L. Bussi[3], and C. Vissio[1,4], [1]*Universidad Nacional de Rio Cuarto*, *Rio Cuarto, Cordoba, Argentina*, [2]*Instituto de Formacion e Investigacion en Nutricion Animal*, *Rio Cuarto, Cordoba, Argentina*, [3]*Universidad Nacional de Villa Maria*, *Villa Maria, Cordoba, Argentina*, [4]*IDAS CONICET UNRC*, *Rio Cuarto, Cordoba, Argentina*.

1170M **Cow factors predictors of culling and death risk among dairy farms from Cordoba, Argentina.**
C. Vissio[1,2], P. Turiello*[1,3], M. Richardet[1], C. Bonetto[4], and A. Larriestra[1,4], [1]*Universidad Nacional de Rio Cuarto*, *Rio Cuarto, Cordoba, Argentina*, [2]*IDAS CONICET–UNRC*, *Rio Cuarto, Cordoba, Argentina*, [3]*IFINA*, *Rio Cuarto, Cordoba, Argentina*, [4]*Universidad Nacional de Villa Maria*, *Villa Maria, Cordoba, Argentina*.

1171M **Farm to gate nutrient balance in two dairy farm systems in Uruguay.**
L. Gil*, G. Ortega, D. Custodio, and P. Chilibroste, *Departamento de Producción animal y Pasturas, Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*.

1172M **Canadian dairy farm water footprint: Present and future.**
S. Binggeli*[1], G. Jégo[2], V. Ouellet[1], A. VanderZaag[3], T. Wright[4], B. Qian[3], and É. Charbonneau[1], [1]*Département des sciences animales, Université Laval*, *Québec, QC, Canada*, [2]*Québec research center, Agriculture and Agri-food Canada*, *Québec, QC, Canada*, [3]*Ottawa research center, Agriculture and Agri-food Canada*, *Ottawa, ON, Canada*, [4]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, ON, Canada*.

1173M **Presentation of a simplified method for on-farm greenhouse gas and ammonia emission factor calculations—Illustration based on a European study.**
X. Vergé*[1], P. Robin[2], E. Lorinquer[3], and J.-B. Dollé[4], [1]*French Livestock Institute (Idele)*, *Le Rheu, France*, [2]*National Research Institute for Agriculture, Food and Environment (INRAe)*, *Rennes, France*, [3]*Syndicat Mixte Kerné-Uhel (SMKU)*, *Saint-Brieuc, France*, [4]*French Livestock Institute (Idele), Saint-Laurent-Blangy, France*.

1174M **The availability of local tech support is the most important factor for dairy farmers when choosing precision dairy technologies.**
S. Paudyal*[1], K. Kaniyamattam[1], J. Piñeiro[1,2], J. Spencer[1,3], B. W. Jones[4], and E. Kim[1], [1]*Department of Animal Science, Texas A&M University*, *College Station, TX*, [2]*Texas A&M Agrilife Extension*, *Amarillo, TX*, [3]*Texas A&M Agrilife Extension*, *Stephenville, TX*, [4]*Tarleton State University and Texas A&M AgriLife Research*, *Stephenville, TX*.

1175M **A combined analysis to evaluate effects of a rumen-protected B-vitamin blend in Upper Midwest dairy farms.**
K. Malinov[1], E. Evans*[2], and V. Brisson[1], [1]*Jefo Nutrition*, *St. Hyacinthe, QC, Canada*, [2]*E +E Technical Advisory Services*, *Bowmanville, ON Canada*.

1176M **Comparison of deep learning-based models classifying Hanwoo (*Bos taurus coreanae*) and Holstein (*Bos taurus taurus)* individuals trained with whole-face and cropped-muzzle images.**
T. Lee*[1], Y. Choi[1], Y. Na[2,1], and S. Lee[1], [1]*Department of Animal Science, Konkuk University*, *Seoul, Republic of Korea*, [2]*Animal Data Laboratory, Antller Inc*, *Seoul, Republic of Korea*.

1256M **Veterinarians' barriers to communication with Ontario dairy producers.**
G. M. Power*[1], D. L. Renaud[1], C. Miltenburg[2], K. L. Spence[1], B. N. M. Hagen[1], and C. B. Winder[1], [1]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, Ontario, Canada*.

1257M **Dairy producers' barriers to biosecurity in Ontario, Canada.**
G. M. Power*[1], D. L. Renaud[1], C. Miltenburg[2], K. L. Spence[1], B. N. M. Hagen[1], and C. B. Winder[1], [1]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, Ontario, Canada*.

Reproduction 1

1177M **Demonstration of an automated system for cattle reproductive management under the Internet of Things framework: e-Synch system and cow responses.**
Y. Ren[1], D. Duhatschek[2], C. C. Bartolomeu[3], A. L. Kerwin*[2], D. Erickson[1], and J. O. Giordano[2], [1]*Sibley School of Mechanical and Aerospace Engineering, Cornell University*, *Ithaca, NY*, [2]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [3]*Universidade Federal Rural de Pernambuco*, *Recife, Pernambuco, Brazil*.

1178M **Reproductive performance at first artificial insemination of dairy cows assigned to estrous detection or a Double-Ovsynch program.**
A. Valenza[1] and A. Bach*[2,3], [1]*Ceva Salute Animale*, *Agrate Brianza, Italy*, [2]*Marlex Research and Education*, *Barcelona, Spain*, [3]*ICREA*, *Barcelona, Spain*.

1179M **Effects of in vitro maturation in the presence of resveratrol, chlorogenic acid, and ellagic acid on in vitro bovine embryo development.**
K. Giller*[1], D. Schmid[1], I. Serbetci[2], M. Meleán[2], H. Bollwein[2], and C. Herrera[2], [1]*Institute of Agricultural Sciences, ETH Zurich*, *Zurich, Switzerland*, [2]*Clinic of Reproductive Medicine, Vetsuisse Faculty, University of Zurich*, *Zurich, Switzerland*.

1180M **Key performance indicators used by dairy consultants during the evaluation of reproductive performance during routine visits.**
R. Armengol[1], L. Fraile[1], and A. Bach*[2,3], [1]*Universitat de Lleida*, *Lleida, Catalonia, Spain*, [2]*ICREA*, *Barcelona, Catalonia, Spain*, [3]*MARLEX*, *Barcelona, Catalonia, Spain*.

1181M **Milk composition of cows in estrus.**
N. Neeraj*[1], T. Alemu[1], D. Warner[2], D. Santschi[2], and R. Duggavathi[1], [1]*McGill University*, *Montreal, Quebec, Canada*, [2]*Lactanet*, *Sainte Anne de Bellevue, Quebec, Canada*.

1182M **Effect of delaying the additional $PGF_{2\alpha}$ on luteolysis in a modified 6-day Co-Synch protocol without progesterone implant for dairy heifers.**
I. M. R. Leão*, F. P. J. da Silva Junior, T. Valdes-Arciniega, D. Ponce-Aguilar, M. S. El Azzi, and J. P. N. Martins, *University of Wisconsin–Madison*, *Madison, WI*.

1183M **Prevalence of anatomical defects and pathological conditions involving the cervical os and cranial vagina in lactating dairy cows evaluated using a digital vaginoscope.**
M. B. U. Marin*[1], M. Newman[1], M. E. Hernandez[1], T. D. Gonzalez[1], C. Rouillon[2], T. Allard[2], and R. S. Bisinotto[1], [1]*Department of Large Animal Clinical Sciences, University of Florida*, *Gainesville, FL*, [2]*IMV Technologies*, *L'Aigle, France*.

1184M **Effects of rumen-protected arginine (RPA) on conceptus development and reproduction in dairy cows.**
Z. Sarwar[1], B. S. Simoes[1], A. Husnain[1], U. Arshad[1], M. Nehme Marinho*[1], M. C. Perdomo[1], Y. Sugimoto[2], C. D. Nelson[1], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Ajinomoto Co. Inc*, *Tokyo, Japan*.

Ruminant Nutrition: Calves and Heifers 1

1185M **Effect of starter protein content and milk replacer feeding level on calf performance during preweaning.**
G. Frossasco[1,2], A. Echeverria[1,3], and P. Turiello*[4,5], [1]*Universidad Nacional de Villa Maria*, *Villa Maria, Cordoba, Argentina*, [2]*INTA*, *Rafaela, Santa Fe, Argentina*, [3]*INTA*, *Manfredi, Cordoba, Argentina*, [4]*Universidad Nacional de Rio Cuarto*, *Rio Cuarto, Cordoba, Argentina*, [5]*Instituto de Formación e Investigación en Nutricion Animal (IFINA A)*, *Rio Cuarto, Cordoba, Argentina*.

1186M **Effects of different tropical forages sources in the diet of dairy calves.**
A. F. Toledo*[1], A. P. Silva[1], C. R. Tomaluski[1], R. D. F. Barboza[1], I. C. R. Oliveira[1], N. I. Carvalho[1], E. D. Marino[1], J. G. Dantas[1], A. M. Teixeira[2], and C. M. M. Bittar[1], [1]*Department of Animal Sciences, Luiz de Queiroz College of Agriculture, University of Sao Paulo*, *Piracicaba, SP, Brazil*, [2]*Methodist University of Piracicaba*, *Piracicaba, SP, Brazil*.

1187M **Effects of forage supplementation on growth and development of pre-weaning Holstein calves.**
K. M. Krause* and E. E. Felton, *West Virginia University*, *Morgantown, WV*.

1188M **Impact of starter starch content on pre-weaning performance of beef × dairy calves.**
T. A. Klipp*, D. L. Schwab, G. Dahlke, D. U. Thomson, L. M. Dunaway, and A. J. Carpenter, *Iowa State University*, *Ames, IA*.

1189M **Impact of trace mineral source supplied in milk replacer on performance of calves fed via an automatic calf feeder.**
W. C. Porter[1], A. J. Geiger*[2], C. Engel[2], and S. H. Ward[1], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1190M **The impact of feeding a whole milk fortifier to calves on a commercial dairy farm on calf growth.**
A. J. Geiger*[1] and C. S. Colburn[2], [1]*Zinpro Corporation*, *Eden Prairie, MN*, [2]*J. D. Heiskell and Company*, *Tulare, CA*.

1191M **Effect of milk replacer nutrition on performance and health of beef × dairy calves.**
M. Scott[1], M. Klejeski[2], V. Dahle[2], B. Hansen[1], and I. Salfer*[3], [1]*Milk Specialties Global*, *Eden Prairie, MN*, [2]*University of Minnesota Southern Research and Outreach Center*, *Waseca, MN*, [3]*University of Minnesota*, *Saint Paul, MN*.

1192M **Effects of lysophospholipids on growth performance and nutrient digestibility in dairy calves.**
H. Baraz, H. Jahani-Azizabadi*, and O. Azizi, *University of Kurdistan*, *Sanandaj, Kurdistan, Iran*.

1193M **Evaluation of branched-chain amino acid inclusion in milk replacers on growth of Holstein calves.**
S. Y. Morrison*[1] and J. Ono[2], [1]*The William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*ZEN-NOH National Federation of Agricultural Cooperative Associations*, *Tokyo, Japan*.

1194M **Replacing milk ingredients in calf milk replacer with Dried Cheese MR.**
D. A. Vermeire*[1], J. W. Frank[2], and S. E. Dyer[2], [1]*Nouriche Calf Research Center*, *McMurray, PA*, [2]*International Ingredient Corporation*, *Fenton, MO*.

1195M **Evaluation of high hydrophilic-lipophilic balance emulsifier in calf milk replacer and grain.**
D. Wood*[1], R. Blome[1], A. Keunen[2], B. Keunen[2], and D. Renaud[3], [1]*Animix*, *Juneau, WI*, [2]*Mapleview Agri Ltd*, *Palmerston, Ontario, Canada*, [3]*Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

1196M **Effects of supplementing the direct-fed microbial *Enterococcus faecium* 669 on performance of pre-weaning dairy calves.**
B. I. Cappellozza[1], K. Morrill*[2], G. Copani[1], E. J. Boll[1], and O. Queiroz[1], [1]*Chr. Hansen A/S*, *Hørsholm, Denmark*, [2]*Chr. Hansen Inc*, *Milwaukee, WI*.

Ruminant Nutrition: Carbohydrates and Lipids 1

1197M **Effect of palmitic and stearic acids on plasma ceramide concentrations in lactating dairy cows.**
S. L. Burtnett* and K. J. Harvatine, *Pennsylvania State University*, *State College, PA*.

1198M **Supplemental palmitic acid and chromium propionate impact milk fatty acid yield and content during the immediate postpartum in multiparous dairy cows.**
J. E. Parales-Giron* and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

1199M **Effect of seasonality on production responses and milk fatty acid profile of lactating dairy cows when C16:0-enriched supplements are included in diets: A meta-analysis.**
M. A. Karpyn Esqueda*, J. M. dos Santos Neto, and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

1200M **Different ratios between palmitic and oleic acids in calcium salts of fatty acids form greatly influenced the digestibility and production performance of dairy cows.**
J. Shpirer*[1,2], L. Lifshitz[1], H. Kamer[1], Y. Portnik[1], and U. Moallem[1], [1]*Department of ruminants Science, Volcani Institute*, *Rishon LeZion, Israel*, [2]*Department of Animal Science, the Hebrew University of Jerusalem*, *Rehovot, Israel*.

1201M **Feeding a fat supplement containing palmitic and oleic acids interacts with parity in peak-lactation dairy cows during summer in Michigan.**
S. R. Naughton*, M. N. Mills, J. M. Dos Santos Neto, J. S. Liesman, A. L. Lock, and M. J. VandeHaar, *Michigan State University*, *East Lansing, MI*.

1202M **Effect of increasing dietary inclusion of whole cottonseed on nutrient digestibility of high-producing dairy cows.**
A. M. Bales* and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

1203M **Effect of increasing dietary inclusion of whole cottonseed on milk production of high-producing dairy cows.**
A. M. Bales*, J. M. dos Santos Neto, and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

1204M **Impact of abomasal infusion of linoleic and linolenic acids on the incorporation of n-6 and n-3 fatty acids into milk fat of lactating cows.**
J. M. dos Santos Neto, L. C. Worden, M. Miller*, J. E. Parales-Giron, and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

1205M **Mammary gland responses to altering the dietary supply of de novo and preformed fatty acids: Effects on milk fatty acid composition and yield.**
A. C. Benoit* and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

Ruminant Nutrition: General 1

1206M **Feed preference in lactating dairy cows of different pellet formulations.**
A. L. Carroll*, G. M. Fincham, and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln, NE*.

1207M **Preliminary study into methane emissions in mid-lactation primiparous dairy cows.**
K. M. Kennedy*, S. J. Johnson, S. J. Kendall, M. M. Caputo, F. Peñagaricano, K. A. Weigel, and H. M. White, *University of Wisconsin–Madison*, *Madison, WI*.

1208M **Determination of the milk urea and milk urea nitrogen content of fluid milk by spectrophotometric enzymatic analysis: Collaborative study.**
M. Portnoy* and D. M. Barbano, *Cornell University, Northeast Dairy Foods Research Center*, *Ithaca, NY*.

1209M **Effect of steam pressure toasting times on truly digestible protein supply of whole faba bean seeds to dairy cows evaluated with the DVE/OEB dairy nutrition system.**
M. E. Rodríguez Espinosa, V. H. Guevara Oquendo, and P. Yu*, *Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan*, *Saskatoon, Canada*.

1210M **Effects of a specific blend of essential oil compounds on in vitro ruminal fermentation and nutrient degradation.**
A. Jili, S. Yang, Y. Huang, Y. Lin, and H. Shi*, *Southwest Minzu University*, *Chengdu, Sichuan, China*.

1211M **Performance of lactating Holstein cows fed a diet containing a blend of essential oils.**
H. Tucker*[1], M. Swango[2], and J. Boerman[2], [1]*Novus International*, *St. Charles, MO*, [2]*Purdue University*, *West Lafayette, IN*.

1212M **Health, reproduction, and lactational performance of dairy cows supplemented with a rumen-protected blend of B vitamins under a grazing system.**
R. Balogun*[1], A. Henry[1], and O. AlZahal[2], [1]*Jefo Australia Pty Ltd*, *Toowoomba, Qld, Australia*, [2]*AlZahal Innovation and Nutrition*, *Kitchener, Ontario, Canada*.

1213M **Effect of red clover extract hormone level, immune trait, and on plasma biochemical parameters in lactating dairy cows.**
S. Q. Zhang[1], X. Y. Zhang*[1], Z. B. Xiong[1], K. X. Li[1], Y. Gao[1], Y. Bu[1], N. Zheng[1], S. G. Zhao[1], and J. Q. Wang[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*Key Laboratory of Quality and Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China*.

1214M **Estimation of the nutrient variation in feed delivery and impacts on milk production and measures of fertility.**
A. L. Carroll*[1], P. J. Kononoff[1], K. J. Hanford[1], and C. Abney-Schulte[2], [1]*University of Nebraska-Lincoln*, *Lincoln, NE*, [2]*Cargill*, *Minneapolis, MN*.

1216M **Evaluation of a rumen-protected B-vitamin blend in a California Jersey dairy.**
V. Brisson*[1], K. Ortega[1], O. AlZahal[2], E. Evans[3], and E. Fontaine[1], [1]*Jefo Nutrition Inc*, *Saint-Hyacinthe, QC, Canada*, [2]*AlZahal Innovation and Nutrition*, *Kitchener, ON, Canada*, [3]*E + E Technical Advisory Services*, *Bowmanville, ON, Canada*.

1217M **Supplementation strategy and level of replacement of corn with cassava root silage in dairy grazing system.**
L. T. O. Galvão[1], R. R. Lobo[2], R. Mezzomo[1], L. R. S. Oliveira[1], P. M. dos Santos[1], T. G. dos Santos[1], C. S. Caldas[1], T. C. da Silva[1], D. I. Gomes[1], A. C. S. Vicente*[2], A. P. Faciola[2], and K. S. Alves[1], [1]*Federal Rural University of the Amazon*, *Parauapebas, Para, Brazil*, [2]*University of Florida*, *Gainesville, FL*.

1218M **Associations of diets fed and their nutrient content with milk and component yield on Canadian dairy farms utilizing automated milking systems.**
B. J. Van Soest[1], R. D. Matson[1], T. F. Duffield[2], M. A. Steele[1], D. E. Santschi[3], K. Orsel[4], E. A. Pajor[4], G. B. Penner[5], T. Mutsvangwa[5], and T. J. DeVries*[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*, [4]*Faculty of Veterinary Medicine, University of Calgary*, *Calgary, AB Canada*, [5]*Department of Animal and Poultry Science, University of Saskatchewan*, *Saskatoon, SK, Canada*.

1219M **Effects of lysophospholipid supplementation on performance and some reproduction parameters of early-lactating Holstein dairy cows.**
F. Mirzaei, H. Jahani-Azizabadi*, and O. Azizi, *University of Kurdistan*, *Sanandaj, Kurdistan, Iran*.

1220M **Production and composition of milk from Holstein cows supplemented with polyphenol-based sugarcane extract.**
E. D. Marino[1], L. Castelani[2], L. C. Roma Jr.[2], R. Marchetto[2], W. V. B. Soares[2], and C. M. M. Bittar*[1], [1]*Department of Animal Sciences, Luiz de Queiroz College of Agriculture, University of Sao Paulo*, *Piracicaba, Sao Paulo, Brazil*, [2]*Animal Science Institute, Secretary of Agriculture and Supply of the State of São Paulo*, *Nova Odessa,* ão *Paulo, Brazil*.

1221M **25-Hydroxyvitamin D_3 supplementation increased productive performance during lactation in dairy cows.**
J. M. Albuquerque[1], C. Cortinhas*[2], T. Acedo[2], A. S. Silva[1], K. M. Borges[1], J. Diavão[1], M. H. Ferreira[3], F. C. F. Lopes[1], M. M. Campos[1], D. S. C. Paciullo[1], C. A. M. Gomide[1], and M. J. F. Morenz[1], [1]*Embrapa Dairy Cattle*, *Juiz de Fora, Minas Gerais, Brazil*, [2]*DSM Produtos Nutricionais*, *São Paulo, São Paulo, Brazil*, [3]*Federal University of Juiz de Fora*, *Juiz de Fora, Minas Gerais, Brazil*.

1222M **Changes of rumen microbes related to hormonal response in the rumen of lactation dairy cows under heat stress.**
Z. Guo, S. Gao, L. Ma, and D. Bu*, *State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

1223M **Complete genome sequence of *Corynebacterium* sp. SCR221107, a potential probiotic strain, isolated from the rumen fluid of Holstein dairy cows.**
S. H. Na[1], K. S. Baik[1], S. H. Kim[1], A.-R. Son[1], M. J. Ku[2], and S. S. Lee*[1], [1]*Ruminant Nutrition and Anaerobe Laboratory, College of Bio-Industry Science, Sunchon National University*, *Suncheon, Republic of Korea*, [2]*Livestock Research Institute, Jeonnam Agricultural Research and Extension Services*, *Gangjin, Republic of Korea*.

1224M **Effects of feeding silage inoculated with microbial inoculants on lactational performance, and rumen fermentation of transition dairy cows.**
C. Niño-de-Guzman*[1], J. Portuguez[2], R. Trumpp[2], D. Vassolo[1], C. Cornejo[1], S. Paladugu[1], L. Lima[1], F. Amaro[1], K. Arriola[1], and D. Vyas[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [2]*Department of Agronomy, University of Florida*, *Gainesville, FL*.

1225M **Effect of starch and forage NDF concentrations on intake, milk yield, and composition of dairy cows receiving rations containing OneTrak.**
S. Hagerty*[1], P. French[1], and H. Ohlde[2], [1]*PHD R&D*, *Fort Atkinson, WI*, [2]*Cargill Corn Milling*, *Blair, NE*.

1226M **Effect of abomasal starch and hindgut buffers on lymphocyte kinome profile.**
S. Cronin*[1], F. Perry[1], C. M. K. Bradley[2], V. Daley[2], F. Gadeyne[3], M. Bustos[3], R. J. Arsenault[1], and T. F. Gressley[1], [1]*University of Delaware, Department of Animal and Food Sciences*, *Newark, DE*, [2]*Purina Animal Nutrition LLC*, *Arden Hills, MN*, [3]*Royal Agrifirm Group*, *Apeldoorn, The Netherlands*.

Ruminant Nutrition: Gut Physiology, Fermentation, and Digestion 1

1227M **Three new genera of bacteria that carry out biohydrogenation of unsaturated fatty acids.**
T. Hackmann*, H. De Groot, and P. Vahmani, *University of California, Davis*, *Davis, CA*.

1228M **Comparing rumen headspace sampling devices in ruminal cannulated cows.**
E. M. V. Hvas*, M. R. Weisbjerg, T. N. Jakobsen, and M. Larsen, *Department of Animal and Veterinary Sciences, AU Viborg, Research Centre Foulum, Aarhus University*, *Tjele, Denmark*.

1229M **Characterization of microbial population changes in continuous culture during the adaptation phase.**
B. A. Wenner*[1], G. Praisler[1], and T. Park[2], [1]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*, [2]*Department of Animal Science and Technology, Chung-Ang University*, *Anseong-si, Gyeonggi-do, Korea*.

1230M **Treatment of continuous culture fermenters with an organic essential oil product minimally influenced bacterial relative abundance.**
T. Park[1], G. Praisler*[2], and B. A. Wenner[2], [1]*Department of Animal Science and Technology, Chung-Ang University*, *Anseong-si, Gyeonggi-do, Korea*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*.

1231M **Use of appropriate molecular biological techniques to identify true microbial community in low microbial biomass samples.**
R. Nakandalage*[1,2], P. J. Griebel[3], L. L. Guan[1], and N. Malmuthuge[2], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, Canada*, [2]*Lethbridge Research and Development Center, Agriculture Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [3]*Vaccine and Infectious Disease Organization, University of Saskatchewan*, *Saskatoon, Saskatchewan, Canada*.

1232M **Insight into the ruminal microbiota of dairy cows using the culturomics and amplicon-based approaches.**
X. Duan[1,2], R. Ma[3], S. Vigors[2], L. Ma[1], J. Gu[3], and D. Bu*[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*School of Agriculture and Food Science, University College Dublin*, *Dublin, Ireland*, [3]*Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

1233M **Characterization of proteins involved in the absorption of fatty acids in the gastrointestinal tract of cattle.**
F. Hentz, B. Barreta, and F. Batistel*, *University of Florida*, *Gainesville, FL*.

1234M **Effect of acetate on dry matter intake may not be related to circulating GLP-1 and PYY plasma concentration.**
C. Matamoros*[1,2] and K. J. Harvatine[1], [1]*Department of Animal Science, The Pennsylvania State University*, *State College, PA*, [2]*Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University*, *State College, PA*.

1235M **Gut microbiome is linked to functions of peripheral immune cells in transition cows during excessive lipolysis.**
F.-F. Gu*, S.-L. Zhu, Y.-F. Tang, X.-H. Liu, M.-H. Jia, J.-X. Liu, and H.-Z. Sun, *Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University*, *Hangzhou, China*.

1236M **Effects of early lactation milking frequency in an automatic milking system on rumen fermentation characteristics.**
E. A. French*[1], E. M. Kammann[2], N. S. Jozik[3], W. Li[1], and R. S. Pralle[2,3], [1]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [2]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [3]*School of Agriculture, University of Wisconsin-Platteville*, *Platteville, WI*.

1237M ***Bacillus*-based direct-fed microbial alters fecal parameters during feed restriction in mid-lactation Holstein cows.**
S. R. Fensterseifer*[1], R. P. Arias[1], B. M. Goetz[2], M. A. Abeyta[2], S. Rodriguez-Jimenez[2], J. Opgenorth[2], A. D. Freestone[2], A. Lange[3], E. Galbraith[3], and L. H. Baumgard[2], [1]*United Animal Health Inc*, *Sheridan, IN*, [2]*Department of Animal Science, Iowa State University*, *Ames, IA*, [3]*Microbial Discovery Group*, *Oak Creek, WI*.

1238M **Microbial inoculum alters the rumen epithelial transcriptome and associated meta-transcriptome in calves.**
P. Fregulia*[1,2], T. Park[2], W. Li[2], L. Cersosimo[2], and G. Zanton[2], [1]*Oak Ridge Institute for Science and Education*, *Oak Ridge, TN*, [2]*USDA Agricultural Research Service, US Dairy Forage Research Center*, *Madison, WI*.

1239M **Immune and antioxidant cellular pathways and ruminal microbiota are altered during a gastrointestinal challenge in Angus steers.**
Q. Jiang*[1], M. C. Galvao[1,2], A. Aboragah[1], M. P. Gionbelli[2], and J. J. Loor[1], [1]*Department of Animal Sciences, University of Illinois, Urbana, IL*, [2]*Universidade Federal de Lavras, Lavras, Minas Gerais, Brazil*.

1240M **Lactation performance of Holstein cows fed a diet containing an essential oil blend.**
S. Y. Morrison*[1], H. A. Tucker[2], H. M. Dann[1], and C. S. Ballard[1], [1]*The William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Novus International Inc*, *St. Charles, MO*.

1241M **Effects of heat stress on rumen fermentation characteristics, blood parameters, and rumen microbiota in Holstein dairy cows during late lactation.**
Y. P. Naing, S.-H. Kim, A.-R. Son, M. Miguel*, J. Berdos, Y.-I. Cho, and S.-S. Lee, *Department of Animal Science and Technology, College of Bio-Industry Science, Sunchon National University*, *Suncheon, Republic of Korea*.

1242M **Impacts of acute in vitro heat stress on preruminant jejunal integrity.**
C. L. M. Parsons*[1], L. J. Banda[2,1], M. D. Ellett[1], and K. M. Daniels[1], [1]*Virginia Tech*, *Blacksburg, VA*, [2]*Lilongwe University of Agriculture and Natural Resources*, *Lilongwe, Malawi*.

1243M **Live or autolyzed yeast supplementation: effects on performance, feed sorting, and nutrient digestibility in dairy cows.**
C. S. Takiya[1], G. Poletti[1], A. C. de Freitas[1], O. P. Sbaralho[1], D. J. C. Vieira[1], R. G. Chesini[1], P. C. Vittorazzi[1], N. P. Martins[1], N. T. S. Grigoletto[1], C. V. de Almeida[1], T. S. Acedo[2], C. Cortinhas[2], and F. P. Rennó*[1], [1]*University of São Paulo*, *Pirassununga, SP, Brazil*, [2]*DSM Produtos Nutricionais Brasil S.A*, *São Paulo SP, Brazil*.

1244M **Red sorghum powder modifies rumen fermentation characteristics in vitro.**
R. Yi[1,2], S. Vigors[2], J. Xu[1], D. Bu[1], and L. Ma*[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P.R. China*, [2]*School of Agriculture and Food Science, University College Dublin*, *Belfield, Ireland*.

Ruminant Nutrition: Protein and Amino Acids 1

1245M **Stability of liquid 2-hydroxy-4-methylthiobutanoic isopropyl esters (HMBi) in compound feed and total mixed rations.**
S. Van De Craen[1], B. Vennekens[1], B. Janssens[1], E. Eren Gültepe[1], J. Salaklang[2], D. Martinez del Olmo[1], F. Nuyens[1], and F. Sun*[2], [1]*Kemin Europa N.V*, *Herentals, Belgium*, [2]*Kemin Industries Inc*, *Des Moines, IA*.

1246M **Ability of three dairy feed programs to predict post-rumen outflows of essential amino acids (EAA) in dairy cows: A meta-analysis.**
R. Martineau[1], D. R. Ouellet[1], D. Pellerin[2], J. L. Firkins[3], M. D. Hanigan[4], R. R. White[4], P. A. LaPierre[5], M. E. Van Amburgh[5], and H. Lapierre*[1], [1]*Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Department of Animal Science, Laval University*, *Québec, QC, Canada*, [3]*The Ohio State University*, *Columbus, OH*, [4]*Department of Dairy Science, Virginia Tech*, *Blacksburg, VA*, [5]*Department of Animal Science, Cornell University*, *Ithaca, NY*.

1247M **Substitution of soybean meal by canola meal in dairy rations on fluid-associated and particle-associated bacteria at the duodenum.**
F. Nadon*[1,2], E. Charbonneau[1], M. Hasnaoui[1,2], H. Lapierre[2], and D. R. Ouellet[2], [1]*Université Laval*, *Québec, Québec, Canada*, [2]*Agriculture and Agri-Food Canada*, *Sherbrooke, Québec, Canada*.

1248M **Determining plasma lysine concentrations for lactating Holsteins supplemented with either infused lysine or two rumen-protected lysine prototypes using the in vivo plasma dose response method.**
N. L. Whitehouse*[1], M. M. Vetter[1], I. Brown-Crowder[2], T. Clifford[2], M. Poss[2], and D. Duskin[2], [1]*University of New Hampshire*, *Durham, NH*, [2]*Kemin Industries*, *Des Moines, IA*.

1249M **Energy source and amino acids independently alter mammary extraction of nutrients.**
K. E. Ruh*[1], L. A. Coelho Ribeiro[1], A. D. Benn[1], A. Negreiro[1], V. L. Pszczolkowski[1], D. N. Sherlock[2], and S. I. Arriola Apelo[1], [1]*Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Adisseo USA Inc*, *Alpharetta, GA*.

1250M **Effect of oat variety on total truly digestible protein supply and degraded protein balance in dairy cows in comparison with barley grain.**
M. R. Tosta[1], L. L. Prates[1], M. E. Rodríguez-Espinosa[1], J. He[2], and P. Yu*[1], [1]*Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan*, *Saskatoon, Canada*, [2]*Inner Mongolia Academy of Agriculture and Husbandry Science*, *Hohhot, China*.

1251M **Effects of two commercial rumen protected methionine products on milk yield and composition on lactating cows.**
N. P. G. Viana[1], L. Obialeski[2], J. M. Ebeling[1], E. S. Vaz[1], J. C. Grossmann[1], M. Poczynek[1], J. T. R. Carvalho[1], L. S. Nogueira[1], F. H. Dalmass[3], L. B. Los[3], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Pontifícia Universidade Católica do Paraná*, *Curitiba, PR, Brazil*, [3]*Frísia Cooperativa Agroindustrial*, *Carambeí, PR, Brazil*.

1252M **Bioavailability assessment of a rumen-protected methionine considering performance, plasma methionine concentration, and total-tract digestibility.**
J. Guyader*[1], L. Zhou[2], Y. Zhang[3], C. Parys[1], and Y. Cao[2], [1]*Evonik Operations GmbH*, *Hanau, Germany*, [2]*Northwest A&F University*, *Yangling, Shaanxi, P.R. China*, [3]*Evonik (China) Co. Ltd*, *Beijing, P.R. China*.

1253M **Effects of buffer composition on in vitro disappearance of rumen-protected amino acid products.**
A. D. Ferguson*, P. A. LaPierre, J. L. Marumo, A. F. Ortega, and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

1254M **Use of the Se-yeast method to estimate absolute bioavailability of rumen protected methionine.**
K. L. Clark*, L. R. Rebelo, and C. Lee, *Department of Animal Sciences, The Ohio State University*, *Wooster, OH*.

1255M **Effects of feeding controlled-energy and high-energy diets with rumen-protected lysine and methionine prepartum on performance and of Holstein cows.**
E. O'Meara*[1], D. del Olmo[2], J. Aguado[2], F. Valdez[2], J. Drackley[1], and F. Cardoso[1], [1]*University of Illinois*, *Urbana, IL*, [2]*Kemin Industries Inc*, *Des Moines, IA*.

ADSA-EAAP (European Federation of Animal Science) Speaker Exchange Symposium: Building a Resilient Dairy Sector—Circular Economies of Dairy Production and Dairy Foods

Chair: Corwin Nelson, University of Florida
Session sponsored by EAAP
Shaw Centre 205
9:30 AM – 12:30 PM

9:30 AM 2120 **Nutritional strategies to minimize carbon footprint and maximize nitrogen efficiency in dairy systems.**
N. I. Nielsen*[1], M. Ø. Kristensen[1], and M. Larsen[2], [1]*SEGES Innovation*, *Aarhus N, Denmark*, [2]*Aarhus University*, *Foulum, Denmark*.

10:10 AM 2121 **Understanding the production of beef from dairy systems in the UK: An analysis of trends.**
J. Gordon*[1], K. Glenk[1], V. Eory[1], E. Wall[1], and D. Moran[2], [1]*SRUC*, *Edinburgh, United Kingdom*, [2]*University of Edinburgh*, *Edinburgh, United Kingdom*.

10:50 AM 2122 **Dairy coproducts can be useful feedstocks for the circular bioeconomy.**
J. Lucey*, *University of Wisconsin-Madison*, *Madison, WI*.

11:30 AM 2123 **Upcycling strategies of dairy byproducts and waste for value-added applications.**
S. I. Martínez-Monteagudo*[1,2], [1]*Family and Consumer Sciences, New Mexico State University*, *Las Cruces, NM*, [2]*Department of Chemical and Materials Engineering, New Mexico State University*, *Las Cruces, NM*, [3]*Center of Excellence in Sustainable Food and Agricultural Systems, New Mexico State University*, *Las Cruces, NM*.

12:10 PM **Discussion.**

ADSA-GSD Competition: Dairy Foods Oral Presentations

Chair: Rodrigo Ibanez Alfaro, University of Wisconsin–Madison
Shaw Centre 209
9:30 AM – 12:00 PM

9:30 AM 2124 **Impact of protein content and pH on the properties of microwaved shelf-stable cheese puff snacks.**
J. Pronschinske*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], R. A. Ibáñez[2], M. E. Johnson[2], and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Center for Dairy Research*, *Madison, WI*.

9:45 AM 2125 **Sensory analysis, shelf stability, and cost analysis of manufacturing microwave vacuum dried cheese snacks.**
B. Gong*, A. Stelick, and C. Moraru, *Cornell University*, *Ithaca, NY*.

10:00 AM 2126 **Milk phospholipids protect *Bifidobacterium infantis* ATCC 15697 during in vitro digestion through changes in bacterial cell surface.**
E. Kosmerl*[1], B. Gonzalez-Orozco[1], I. García-Cano[2], J. Ortega-Anaya[3], and R. Jiménez-Flores[1], [1]*The Ohio State University*, *Columbus, OH*, [2]*National Institute of Medical Sciences and Nutrition Salvador Zubirán*, *Mexico City, Mexico*, [3]*Arla Innovation Centre*, *Aarhus, Denmark*.

10:15 AM 2127 **Evaluation of affinity between buttermilk proteins to hydroxyapatite and influence of physicochemical parameters.**
J. Iung*[1], Y. Pouliot[1], G. Remondetto[2], and G. Brisson[1], [1]*Institute of Nutrition and Functional Foods (INAF), Dairy Science and Technology Research Centre (STELA), Department of Food Sciences, Laval University*, *Quebec, Quebec, Canada*, [2]*Agropur Cooperative*, *St Hubert, Quebec, Canada*.

10:30 AM 2128 **Characterizing micellar casein and kappa-carrageenan gels: Ultrastructure, textural, and rheological analysis.**
N. Pougher*, A. Vollmer, and P. Sharma, *Utah State University*, *UT*.

10:45 AM 2129 **Nutritionally enhanced, in-mouth, self-disintegrating milk protein puffs for infants and elderly.**
J. Uhrin* and S. Rizvi, *Cornell University*, *Ithaca, NY*.

11:00 AM 2130 **Processing effects on buttermilk fractionation.**
R. D. Melendrez-Alvarez* and R. Jimenez-Flores, *The Ohio State University*, *Columbus, OH*.

11:15 AM 2131 **The impact of polymerized whey protein on the microstructure, probiotic survivability, and sensory properties of goat milk yogurt infused with hemp extract.**
H. Shi*[1], K. Freeman[2], E. Kawka[3], and M. Guo[1], [1]*Department of Nutrition and Food Sciences, University of Vermont*, *Burlington, VT*, [2]*Department of Emergency Medicine, University of Vermont*, *Burlington, VT*, [3]*Cattis LLC*, *Hardwick, VT*.

11:30 AM 2132 **Withdrawn.**

11:45 AM 2133 **Effect of micellar calcium phosphate adjustment on casein micelle structure.**
E. Ahmadi*[1], T. Huppertz[2], and T. Vasiljevic[1], [1]*Victoria University*, *Melbourne, Victoria, Australia*, [2]*Wageningen University*, *Wageningen, the Netherlands*.

USD Dairy Production Oral Competition Presentations

Shaw Centre 204
9:30 AM – 10:45 AM

9:30 AM 2138 **Use of clove oil for disbudding in dairy calves.**
K. Brody*, M. Ellett, K. Daniels, and D. Winston, *Virginia Tech*, *Blacksburg, VA*.

9:45 AM 2139 **Changes to industry efficiency through genetic management plans.**
R. Finchum*, J. Beever, and E. Eckelkamp, *University of Tennessee*, *Knoxville, TN*.

10:00 AM 2140 **Have you heard? Hearing loss in the agriculture workforce.**
K. Jenkins* and D. Olver, *The Pennsylvania State University*, *University Park, PA*.

10:15 AM 2141 **Evaluating correlations between blood and urine in young dairy calves to develop reference ranges for non-invasive disease testing.**
R. Powers* and S. I. Kehoe, *University of Wisconsin-River Falls*, *River Falls, WI*.

10:30 AM 2142 **Poop for profit: An analysis of the use of anaerobic digesters.**
I. Revere*, E. Lindner, and A. De Vries, *University of Florida*, *Gainesville, FL*.

USD Original Research Oral Competition Presentations

Shaw Centre 203
9:30 AM – 11:15 AM

9:30 AM 2143 **Effect of dietary replacement of alfalfa hay with sericea lespedeza hay on intake, performance, and milk composition of lactating dairy goats.**
T. Broussard, N. Mendez*, T. H. Terrill, B. Kouakou, and A. A. Pech-Cervantes, *Fort Valley State University*, *Fort Valley, GA*.

9:45 AM 2144 **Novel aspects of probiotics for improving cattle gut health.**
M. Moran*, A. Widenmann, M. Zhou, and L. Guan, *University of Alberta*, *Edmonton, AB, Canada*.

10:00 AM 2145 **Understanding the functional properties of dairy powders with varying protein, lactose content and particle sizes.**
N. Pace*, A. Parhi, and P. Sharma, *Utah State University*, *Logan, UT*.

10:15 AM 2146 **Fit or flabby: Can we simplify the body condition scoring system?**
E. M. Schafer* and B. A. Wenner, *The Ohio State University*, *Columbus, OH*.

10:30 AM 2147 **Evaluating the influence of heritable metabolic and biological factors during the periparturient period on resumption of cyclicity postpartum.**
M. Shaffer*, S. Johnson, T. Marins, S. Tao, and J. Bohlen, *University of Georgia*, *Athens, GA*.

10:45 AM 2148 **Pre-partum anti-inflammatory therapies in high-priority cow groups: Effects on metabolic status, systemic inflammation, and daily milk production.**
J. Spring*[1], E. Jimenez[1], P. Zarei[1], M. Martinez[1], E. Hovingh[1], J. Lawhead[2], and A. Barragan[1], [1]*Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*, [2]*Millerstown Veterinary Associates*, *Millerstown, PA*.

11:00 AM 2149 **Effect of cooling and *Moringa oleifera* supplementation on milk composition of heat stressed sows.**
E. M. Tobolski*[1], L. M. Beckett[1], W. Ogundare[2], M. Stansberry[1], T. M. Casey[1], A. Schinckel[1], and R. C. Minor[2], [1]*Purdue University*, *West Lafayette, IN*, [2]*North Carolina Agricultural and Technical State University*, *Greensboro, NC*.

USD Dairy Foods Oral Competition Presentations

Shaw Centre 204
11:15 AM – 12:15 PM

11:15 AM 2134 **Dairy products in a pandemic culture.**
J. Bratton* and D. Olver, *Pennsylvania State University*, *University Park, PA*.

11:30 AM 2135 **The saturated fat content in dairy products: A controversial look into the low-fat dairy food group recommendations in the USDA Dietary Guidelines for Americans.**
R. Hutton* and J. Bohlen, *University of Georgia*, *Athens, GA*.

11:45 AM 2136 **Maximizing the potential of dairy as a functional food.**
J. Marston* and D. Winston, *Virginia Tech*, *Blacksburg, VA*.

12:00 PM 2137 **The effects of using milk as a sports drink.**
M. Rossborough*, E. Lindner, and E. Miller-Cushon, *University of Florida*, *Gainesville, FL*.

Animal Behavior and Well-Being Symposium: Hot Topics in Calf Management—Welfare Considerations from Birth to Transport

Chair: Barbara Jones, Tarleton State University
Session sponsored by Danone North America
Shaw Centre 206
9:30 AM – 12:30 PM

9:30 AM 2150 **Cow-calf separation: Public acceptance and scientific evidence.**
M. A. G. von Keyserlingk* and D. M. Weary, *University of British Columbia*, *Vancouver, BC, Canada*.

10:15 AM 2151 **Calf housing and social impacts.**
E. K. Miller-Cushon*, *University of Florida*, *Gainesville, FL*.

10:45 AM 2152 **Transportation impact on preweaned calves.**
C. Cramer*, *Colorado State University*, *Fort Collins, CO*.

11:15 AM 2153 **Thermal stress impact on calves.**
J. Van Os* and K. Reuscher, *Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*.

11:45 AM **Discussion.**

Animal Health 1

Chair: Fabiana Cardoso, University of Maryland
Shaw Centre 201
9:30 AM – 12:30 PM

9:30 AM 2154 **Bovine monocyte-derived macrophages exhibit endotoxin tolerance after repeated stimulation with lipopolysaccharide.**
H. L. Reisinger*, L. K. Mamedova, and B. J. Bradford, *Michigan State University*, *East Lansing, MI*.

9:45 AM 2155 **Effects of β-caryophyllene supplementation on dry matter intake and productivity of late-lactation dairy cows through repeated lipopolysaccharide challenges.**
J. Fehn*[1], K. Krogstad[1], L. Mamedova[1], Maya Zachut[2], H. Reisinger[1], and B. Bradford[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*Agricultural Research Organization, Volcani Center*, *Rishon LeZion, Israel*.

10:00 AM 2156 **Effects of dietary rumen-protected choline supplementation on choline metabolites and inflammatory markers in mammary tissue during an intramammary lipopolysaccharide challenge.**
T. Swartz*[1,2], B. Bradford[1], L. Mamedova[1], and K. Estes[3], [1]*Michigan State University*, *East Lansing, MI*, [2]*South Dakota State University*, *Brookings, SD*, [3]*Balchem Corporation*, *Montvale, NJ*.

10:15 AM 2157 **Short- and long-term consequences of postpartum inflammation associated or not with clinical disease on feeding behavior, metabolism, and performance in dairy cows.**
B. Mion*[1], B. Van Winters[1], J. F. W. Spricigo[1], M. A. Steele[1], S. J. LeBlanc[2], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

10:30 AM **Break.**

10:45 AM 2158 **The impact of prepartal liver glutathione on milk performance parameters and welfare of peripartal dairy cows.**
A. F. Souza Lima*[1], G. Goncalves Begalli[1], M. H. Oliveira[1], R. C. Barcellos Grazziotin[1], J. Halfen[1], E. Trevisi[2], and J. Osorio[1], [1]*School of Animal Science, Dairy Science, Virginia Tech*, *Blacksburg, VA*, [2]*Department of Animal Sciences, Food and Nutrition (DIANA), Faculty of Agriculture, Food and Environmental Sciences, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

11:00 AM 2159 **Greater prepartal liver glutathione is associated with improved liver function and milk production in transition dairy cows.**
A. F. Souza Lima*[1], J. Halfen[1], E. Trevisi[2], Z. Zhou[3], J. Loor[4], and J. Osorio[1], [1]*School of Animal Science, Dairy Science, Virginia Tech*, *Blacksburg, VA*, [2]*Department of Animal Sciences, Food and Nutrition (DIANA), Università Cattolica del Sacro Cuore, Italy*, *Milan, Italy*, [3]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [4]*Department of Animal Sciences, University of Illinois, Champaign-Urbana*, *Urbana, IL*.

11:15 AM 2160 **Association of health, survival, and performance of dairy heifers with the postpartum health status of their dams.**
I. Avalos Rosario*, G. Lu, M. R. Carvalho, and E. S. Ribeiro, *Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*.

11:30 AM 2161 **Association between residual feed intake and ex-vivo immune cell response in mid-lactating Holstein dairy cows.**
M. H. De Oliveira*[1,2], T. C. Michelotti[3,4], N. Carpinelli[3,5], J. Halfen[1], E. Trevisi[6], and J. S. Osorio[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg, VA*, [2]*State University of São Paulo*, *Botucatu, SP, Brazil*, [3]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [4]*INRAE, UMR Herbivores*, *Saint-Genès-Champenelle, France*, [5]*Nutricorp*, *Araras, SP, Brazil*, [6]*Department of Animal Science, Food and Nutrition, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

11:45 AM 2162 **Predicting calcium status in early lactation multiparous Holsteins using milk constituent analysis.**
J. A. Seminara*[1], K. R. Callero[1], C. R. Seely[1], M. Van Althuis[3], S. An[3], C. M. Salpekar[3], D. M. Barbano[2], and J. A. A. McArt[1], [1]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University*, *Ithaca, NY*, [2]*Department of Food Science, College of Agriculture and Life Sciences, Cornell University*, *Ithaca, NY*, [3]*College of Agriculture and Life Sciences, Cornell University*, *Ithaca, NY*.

12:00 PM 2163 **A predictive model for hypocalcemia in dairy cows utilizing behavioral sensor data combined with deep learning.**
M. van Leerdam[1], A. Liseune[2], P. Hut[1], J. Hulsen[3], and M. Hostens*[1,2], [1]*Utrecht University*, *Yalelaan, Utrecht, the Netherlands*, [2]*Ghent University*, *Tweekerkenstraat, Ghent, Belgium*, [3]*Vetvice/Cowsignals*, *Moerstraatsebaan, PC Bergen op Zoom, the Netherlands*.

12:15 PM 2164 **Withdrawn.**

Joint Breeding and Genetics and Lactation Biology Symposium: Genomics and Phenomics of Lactation

Chair: Eveline Ibeagha-Awemu, Agriculture and Agri-Food Canada
Shaw Centre 208
9:30 AM – 12:30 PM

9:30 AM 2165 ***ADSA-EAAP Speaker Exchange Presentation:*** **Use of milk mid-infrared spectral data in dairy genetics: Past, present and future.**
N. Gengler*, *University of Liège-GxABT*, *Gembloux, Belgium*.

10:10 AM 2166 **Phenotypic and genomic modeling of lactation curves: A longitudinal perspective.**
H. R. Oliveira*, G. S. Campos, and L. F. Brito, *Purdue University*, *West Lafayette, IN*.

10:50 AM **Break.**

11:00 AM 2167 **Mitochondrial bioenergetics of extramammary tissues during lactation and in response to heat stress.**
A. Skibiel*[1], M. Zachut[2], G. Dahl[3], A. Kavazis[4], and W. Hood[4], [1]*University of Idaho*, *Moscow, ID*, [2]*ARO Volcani Center*, *Rishon Lezion, Israel*, [3]*University of Florida*, *Gainesville, FL*, [4]*Auburn University*, *Auburn, AL*.

11:40 AM 2168 **The microbiome of mammary gland: Implications for udder health and therapeutic potentials.**
H. Derakhshani*[1], J. C. Plaizier[1], H. W. Barkema[2], J. De Buck[2], E. Khafipour[3], and M. G. Surette[4], [1]*University of Manitoba*, *Winnipeg, MB, Canada*, [2]*University of Calgary*, *Calgary, AB, Canada*, [3]*Cargill Animal Nutrition and Health*, *Minneapolis, MN*, [4]*McMaster University*, *Hamilton, ON, Canada*.

12:20 PM **Discussion.**

Dairy Foods Symposium: Managing the Risks—Lessons from the Infant Formula Crisis

Chair: Nicole Martin, Cornell University
Shaw Centre 215
9:30 AM – 12:30 PM

9:30 AM 2169 **Current perspectives on the US infant formula crisis.**
C. Galer*, *Dairy Management Inc*, *Rosemont, IL*.

10:05 AM 2170 **Determining power of sampling and testing plans for detecting *Cronobacter* by simulating powdered infant formula batches with different sampling plans and hazard profiles.**
M. Kim and MJ Stasiewicz*, *University of Illinois at Urbana-Champaign*, *Urbana, IL*.

10:40 AM 2171 **Dry sanitation in dairy powder processing facilities.**
M. Bohanan*, *Leprino Foods*, *Denver, CO*.

11:15 AM 2172 **Underlying issues and security of national infant formula supplies.**
D. Clark*, *Bovina Mountain Consulting LLC*, *Englewood, FL*.

11:50 AM **Discussion.**

Production, Management and the Environment 1

Chair: Fabio Lima, University of California, Davis
Shaw Centre 213
9:30 AM – 12:30 PM

9:30 AM 2174 **In-barn and outdoor temperature-humidity index conditions in Canadian dairy barns in current and future climates.**
A. VanderZaag*[1], E. Le Riche[1], H. Baldé[1], S. Kallil[1], V. Ouellet[2], É. Charbonneau[2], T. Coates[3], T. Wright[4], P. Luimes[5], R. Gordon[6], W. Smith[1], and B. Qian[1], [1]*Agriculture and Agri-Food Canada - Ottawa*, *Ottawa, Ontario, Canada*, [2]*Université Laval*, *Québec, Quebec, Canada*, [3]*Agriculture and Agri-Food Canada-Lethbridge*, *Lethbridge, Alberta, Canada*, [4]*Ontario Ministry of Agriculture, Food, and Rural Affairs*, *Guelph, Ontario, Canada*, [5]*University of Guelph Ridgetown Campus*, *Ridgetown, Ontario, Canada*, [6]*University of Windsor*, *Windsor, Ontario, Canada*.

9:45 AM 2175 **A model for integrating rumination time measurements by two commercial wearable biosensors estimated actual rumination time with high accuracy in Holstein dairy cows.**
H. Cho*, M. Lee, and S. Seo, *Chungnam National University*, *Daejeon, Yuseong-gu, Korea*.

10:00 AM 2176 **Behavioral changes of heat stressed lactating dairy cows during lipopolysaccharide challenge.**
I. M. Toledo*, O. Martinez, F. Saputra, A. Fraz, C. Nelson, and G. E. Dahl, *University of Florida*, *Gainesville, FL*.

10:15 AM 2177 **Reducing water use to cool cows using "smart" technologies.**
L. T. Casarotto*, K. A. Forbes, J. M. Bobel, D. Martinez Cabrera, and G. E. Dahl, *University of Florida*, *Gainesville, FL*.

10:30 AM 2178 **Association of Ontario compost-bedded pack barn characteristics and herd-level cleanliness, lameness, milk volume and bulk tank somatic cell count.**
A. M. Wilson*[1], D. B. Haley[2], G. W. Price[3], T. C. Wright[4], D. F. Kelton[2], C. Wand[4], R. J. Gordon[5], G. LaPointe[6], and R. Bergeron[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Engineering, Faculty of Agriculture, Dalhousie University*, *Truro, NS, Canada*, [4]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, ON, Canada*, [5]*University of Windsor*, *Windsor, ON, Canada*, [6]*Dairy at Guelph, University of Guelph*, *Guelph, ON, Canada*.

10:45 AM 2179 **Description of local immune responses within the pulmonary tract of dairy calves exposed to wildfire smoke.**
A. Pace*, K. Mirkin, M. Larson, D. Konetchy, P. Rezamand, and A. L. Skibiel, *University of Idaho*, *Moscow, ID*.

11:00 AM 2180 **Programming effects of in utero hyperthermia on adrenal gland development.**
A. R. Guadagnin*[1], F. Peñagaricano[1], G. E. Dahl[2], and J. Laporta[1], [1]*University of Wisconsin*, *Madison, WI*, [2]*University of Florida*, *Gainesville, FL*.

11:15 AM 2181 **Effects of heat stress and supplementation of rumen-protected methionine during the transition period on immune function and liver functionality index of Holstein cows.**
A. R. Guadagnin*[1], B. D. Davidson[1], D. N. Sherlock[2], D. Luchini[2], S. I. Arriola Apelo[1], and J. Laporta[1], [1]*University of Wisconsin*, *Madison, WI*, [2]*Adisseo*, *Alpharetta, GA*.

11:30 AM 2182 **Rumen-protected methionine supplementation during the transition period under heat stress: Impact on cow-calf performance.**
B. D. Davidson*[1], A. Zambon[1], G. A. Larsen[1], A. R. Guadagnin[1], D. N. Sherlock[2], D. Luchini[2], S. I. Arriola Apelo[1], and J. Laporta[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Adisseo USA Inc*, *Alpharetta, GA*.

11:45 AM 2183 **The effect of limited outdoor access frequencies on gait score, hoof lesions and hoof surface temperature of non-clinically lame cows housed in a movement-restricted environment.**
S. Mokhtarnazif*[1], E. Shepley[2], A. Nejati[1], G. M. Dallago[3], and E. Vasseur[1], [1]*McGill University*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*University of Minnesota*, *Minneapolis, MN*, [3]*Université du Québec À Montréal*, *Montreal, QC, Canada*.

12:00 PM 2184 **Withdrawn.**

12:15 PM 2185 **Total nitrogen in excreta from dairy and beef cows and its relationship to production parameters in central China.**
Z. Shi*[1,2], L. Xi[1], and X. Zhao[2], [1]*Henan University of Animal Husbandry and Economy*, *Zhengzhou, Henan, China*, [2]*McGill University*, *Ste. Anne de Bellevue, Quebec, Canada*.

Ruminant Nutrition 1: Gut Physiology, Fermentation, and Digestion

Chair: Katie Kennedy, University of Wisconsin–Madison
Shaw Centre 207
9:30 AM – 12:30 PM

9:30 AM 2186 **Comparing toxicity of lipopolysaccharide endotoxin (LPS) obtained from pathogenic versus commensal gram-negative bacteria.**
A. A. Alizadeh, P. A. Azevedo, H. Derakhshani, and J. C. Plaizier*, *University of Manitoba*, *Winnipeg, MB, Canada*.

9:45 AM 2187 **Analysis of dual-flow continuous culture fermenter contents at termination may be a poor proxy for digestibility estimated by effluent sampling.**
B. A. Wenner*, *Department of Animal Sciences, The Ohio State University*, *Columbus, OH*.

10:00 AM 2188 **Exhalomics as a non-invasive method for assessing rumen fermentation in dairy cows: Can exhaled breath metabolomics replace rumen sampling?**
M. Z. Islam[1], S. E. Räisänen*[1], A. Schudel[1], K. Wang[1], F. Wahl[2], R. Zenobi[3], S. Giannoukos[3], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*, [2]*Food Microbial Systems Research Division, Agroscope*, *Bern, Switzerland*, [3]*Department of Chemistry and Applied Biosciences, Analytical Chemistry, ETH Zürich*, *Zürich, Switzerland*.

10:15 AM 2189 **Interaction of supplemental branched-chain volatile fatty acids (BCVFA) on neutral detergent fiber digestibility (NDFD) and rumen kinetics in Jersey cows.**
A. White*[1], K. Mitchell[1], C. Lee[1], D. Kleinschmit[2], M. Socha[2], and J. Firkins[1], [1]*The Ohio State University*, *Columbus, OH*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

10:30 AM 2190 **RNA-sequencing analysis of biopsied rumen papillae revealed that key rumen epithelium functions change in relation to short-chain fatty acids and rumen epithelium-attached microbiota during the weaning transition in dairy calves.**
K. Nishihara*[1], J. van Niekerk[2], D. Innes[1], Z. He[3], A. Cánovas[4], L. L. Guan[2], and M. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [3]*CAS Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences*, *Changsha, Hunan, China*, [4]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*.

10:45 AM 2191 **Reduction in the colon mucosa thickness during the weaning transition is associated with molecular changes involved in immune function in dairy calves.**
K. Nishihara*[1], J. van Niekerk[2], L. L. Guan[2], and M. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

11:00 AM **Break.**

11:15 AM 2193 **The relationship of gut permeability with inflammation, performance, and colon gene expression in fresh cows.**
L. E. Engelking* and M. Oba, *University of Alberta*, *Edmonton, Alberta, Canada*.

11:30 AM 2194 **Effects of heat stress conditions and dietary organic acid and pure botanical supplementation on milk fatty acid composition in relation to gut permeability.**
A. Javaid*[1], A. B. P. Fontoura[1], V. Sáinz de la Maza-Escolà[1,2], N. Seneviratne[1], E. Grilli[2,3], and J. W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*University of Bologna*, *Bologna, Italy*, [3]*Vetagro S.p.A*, *Reggio Emilia, Italy*.

11:45 AM 2195 **Description of gastrointestinal tract mycobiota of dairy cows.**
A. Sadek*[1,2], B. Taminiau[1,3], G. Daube[1,3], F. Coucheney[1], A. Bach[4], F. Chaucheyras-Durand[2,5], M. Castex[2], and D. Drider[1], [1]*Unité Mixte de Recherche (UMR) Transfrontalière BioEcoAgro 1158, Univ. Lille, INRAE, Univ. Liège, UPJV, YNCREA, Univ. Artois, Univ. Littoral Côte D'Opale, ICV—Institut Charles Viollette*, *Lille, France*, [2]*Lallemand SAS*, *Blagnac, France*, [3]*Fundamental and Applied Research for Animal & Health (FARAH), Veterinary Medicine Faculty*, *Liège, Belgium*, [4]*Institució Catalana de Recerca i Estudis Avançats (ICREA)*, *Barcelona, Spain*, [5]*Université Clermont Auvergne, INRAE, UMR 0454 MEDIS*, *Clermont-Ferrand, France*.

12:00 PM 2196 **Grazing diet promotes mycobiota richness and diversity in dairy cows' hindgut.**
A. Sadek*[1,2], B. Taminiau[1,3], G. Daube[1,3], F. Coucheney[1], P. Sapountzis[4], F. Chaucheyras-Durand[2,4], M. Castex[2], and D. Drider[1], [1]*Unité Mixte de Recherche (UMR) Transfrontalière BioEcoAgro 1158, Univ. Lille, INRAE, Univ. Liège, UPJV, YNCREA, Univ. Artois, Univ. Littoral Côte D'Opale, ICV—Institut Charles Viollette*, *Lille, France*, [2]*Lallemand SAS*, *Blagnac, France*, [3]*Fundamental and Applied Research for Animal & Health (FARAH), Veterinary Medicine Faculty*, *Liège, Belgium*, [4]*Université Clermont Auvergne, INRAE, UMR 0454 MEDIS*, *Clermont-Ferrand, France*.

12:15 PM 2197 **Cows with induced ketosis early postpartum have a different immunometabolic profile than healthy cows or cows with inflammatory disorders.**
J. K. Drackley*[1], H. M. Dann[1], G. Bertoni[2], and E. Trevisi[2], [1]*University of Illinois*, *Urbana, IL*, [2]*Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

Ruminant Nutrition 2: Protein and Amino Acids

Chair: Agustin Rius, University of Tennessee
Shaw Centre 212
9:30 AM – 12:30 PM

9:30 AM 2198 **Nutrient dynamics of dairy cattle milk protein concentration under the first limiting theory: A meta-analytical approach.**
T. Danese*[1], M. Van Amburgh[2], P. A. LaPierre[2], F. Righi[1], and A. Foskolos[3], [1]*Department of Veterinary Sciences, Parma University*, *Parma, Italy*, [2]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [3]*Department of Animal Science, University of Thessaly*, *Larissa, Greece*.

9:45 AM 2199 **Lysine, methionine, and histidine deficiency affect milk protein synthesis and mRNA expression of transcription factors by primary bovine mammary epithelial cells.**
B. Li*[1], D. Innes[1], M. Madison[1], J. Kim[1], C. Rodriguez[1], J. Doelman[1,2], and J. Cant[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Trouw Nutrition*, *Putten, the Netherlands*.

10:00 AM 2200 **Source and frequency of rumen-protected protein supplementation affects mammary gland amino acid metabolism.**
K. Nichols*[1], N. Wever[1], C. Cirot[2], M. Rolland[2], and J. Dijkstra[1], [1]*Animal Nutrition Group, Wageningen University and Research*, *Wageningen, the Netherlands*, [2]*Ajinomoto Animal Nutrition Europe*, *Paris, France*.

10:15 AM 2201 **Abomasal infusions of essential and non-essential amino acids to evaluate energy and amino acid utilization, productive efficiencies, and metabolism in lactating dairy cattle.**
A. F. Ortega*[1], A. Zanotti[2], A. B. P. Fontoura[1], J. L. Marumo[1], P. A. LaPierre[1], D. M. Barbano[1], and M. E. Van Amburgh[1], [1]*Cornell University*, *Ithaca, NY*, [2]*University of Parma*, *Parma, Italy*.

10:30 AM 2202 **Ile, Leu, and Met effect on milk production is independent of energy source.**
M. Killerby*[1], G. M. de Souza[2], K. Ruh[1], V. Pszczolkowski[1], L. A. C. Ribeiro[1], E. Cohan[1], M. A. C. Danes[1], and S. I. Arriola Apelo[1], [1]*Animal and Dairy Science, University of Wisconsin-Madison*, *Madison, WI*, [2]*Department of Animal Science, Federal University of Lavras*, *Lavras, MG, Brazil*.

10:45 AM 2203 **Production responses of dairy cows receiving jugular infusion of methionine and lysine or leucine and isoleucine.**
Y. T. Taguti[1,2], T. Fernandes*[2], A. Hruby-Weston[2], A. Pennington[2], M. Meador[2], D. Luchini[3], M. D. Hanigan[2], and I. A. M. A. Teixeira[1,4], [1]*Universidade Estadual Paulista*, *Jaboticabal, São Paulo, Brazil*, [2]*Virginia Tech*, *Blacksburg, VA*, [3]*Adisseo North America*, *Naperville, IL*, [4]*University of Idaho*, *Twin Falls, ID*.

11:00 AM 2204 **Supplemental methionine effects on plasma amino acid concentrations.**
G. I. Zanton*, *USDA-Agricultural Research Service, U. S. Dairy Forage Research Center*, *Madison, WI*.

11:15 AM 2205 **Effects of supplementing rumen-protected arginine (RPA) on production performance of transition cows.**
B. S. Simoes*[1], R. Lobo[1], T. Adeoti[1], M. N. Marinho[1], M. Perdomo[1], L. Sekito[1], F. Saputra[1], M. Bari[1], U. Arshad[1], A. Husnain[1], Y. Sugimoto[2], C. Nelson[1], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Ajinomoto Co., Inc*, *Tokyo, Japan*.

11:30 AM 2206 **Effect of peripartum metabolizable protein supply on performance and metabolic indicators.**
T. A. Westhoff*[1], T. L. Chandler[1], T. R. Overton[1], J. N. Tikofsky[2], M. E. Van Amburgh[1], and S. Mann[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Purina Animal Nutrition*, *Gray Summit, MO*.

11:45 AM 2208 **Amino acid supplementation as a potential strategy to mitigate milk fat depression.**
K. E. Ruh*[1], M. Killerby[1], G. M. de Souza[1,2], E. M. Cohan[1], A. D. Benn[1], L. A. Coelho Ribeiro[1], V. L. Pszczolkowski[1], D. N. Sherlock[3], and S. I. Arriola Apelo[1], [1]*Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Animal Science, Federal University of Lavras*, *Lavras, MG, Brazil*, [3]*Adisseo USA Inc*, *Alpharetta, GA*.

12:00 PM 2209 **Effects of individual and additive amino acids on intracellular concentrations in bovine mammary epithelial cells.**
A. Hruby-Weston*, M. Morozyuk, T. Pilonero, and M. D. Hanigan, *School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*.

12:15 PM 2316 **Impact of EcoFeed on feed consumption and performance of group-housed commercial Holstein heifers.**
J. Johnson*, N. Deeb, P. Khanal, and P. Ross, *STgenetics*, *Navasota, TX*.

Small Ruminants 1

Chair: Andres A. Pech-Cervantes, Fort Valley State University
Shaw Centre 210
9:30 AM – 12:30 PM

9:30 AM 2210 **A good start for a good productive life as a dairy goat.**
N. Gafsi*[1,2], F. Bidan[2], B. Grimard[3], M. Legris[2], O. Martin[1], and L. Puillet[1], [1]*Université Paris-Saclay, INRAE, AgroParisTech, UMR MoSAR*, *Palaiseau, France*, [2]*Institut de l'Elevage*, *Paris, France*, [3]*Université Paris-Saclay, INRAE, ENVA UMR BREED*, *Jouy-en-Josas, France*.

10:00 AM 2211 **Microbial enterotypes shape the divergence in gut fermentation, host metabolism and growth rate of young goats.**
D. Wang, G. Tang, J. Zhang, L. Wang, J. Yao, and Y. Cao*, *Northwest A&F University*, *China*.

10:15 AM 2212 **Potential roles of the rectum keystone microbiota in modulating the microbial community and growth performance in goat model.**
D. Wang, G. Tang, J. Zhang, L. Wang, J. Yao, and Y. Cao*, *Northwest A&F University*, *China*.

10:30 AM 2213 **Copper metabolism in growing lambs as affected by copper source.**
J. B. Daniel*[1], N. R. Kendall[2], and J. Martin-Tereso[1], [1]*Trouw Nutrition R&D*, *Amersfoort, the Netherlands*, [2]*School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonington Campus*, *Loughborough, UK*.

10:45 AM 2214 **Assessment of nutrient digestibility and ruminal protozoa count in lambs fed increasing levels of faveira pod.**
P. G. B. Gomes[2], G. M. Oliveira[1], M. O. M. Parente[3], G. A. Castelo Branco1[1], M. R. Santos[1], A. B. M. Lima[1], H. S. Cavalcanti[1], J. S. Oliveira[2], A. M. Zanine[1], D. J. Ferreira[1], F. C. S. Sousa[1], H. N. Parente[1], and T. C. S. Negreiros*[3], [1]*Federal University of Maranhão*, *Chapadinha, Maranhão Brazil*, [2]*Federal University of Paraíba*, *Areia, Paraíba, Brazil*, [3]*Federal University of Piauí*, *Teresina, Piauí, Brazil*.

11:00 AM 2215 **Effect of suckling method (natural vs. artificial) on the growth of lambs and their metabolic response to weaning stress.**
L. Lachemot, S. Serhan, X. Such, J. Piedrafita, G. Caja, and A. A. K. Salama*, *Grup de Recerca en Remugants (G2R), Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

11:15 AM 2216 **Fat deposition in the mammary gland of ewe lambs fed stearic acid (C18:0).**
C. G. Padilha[1], L. M. A. Pereira[2], T. R. Wiggers[1], R. Larsen*[1], R. Horstmann[1], and D. E. Oliveira[1], [1]*Universidade do Estado de Santa Catarina*, *Lages, Santa Catarina, Brazil*, [2]*Universidade do Oeste de Santa Catarina*, *Campos Novos, Santa Catarina, Brazil*.

11:30 AM 2217 **An ultrasound image-guided technique for liver biopsying in dairy small ruminants.**
S. González-Luna*[1,2], X. Moll[3], S. Serhan[2], B. Chaalia[2], A. A. K. Salama[2], X. Such[2], and G. Caja[2], [1]*Departmento de Ciencias Pecuarias, Facultad de Estudios Superiores Cuautitlán, Universidad Nacional Autónoma de México*, *Cuautitlán Izcalli, Mexico*, [2]*Group of Research in Ruminants (G2R), Department of Animal and Food Sciences, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*, [3]*Department of Animals, Medicine and Surgery, Universitat Autònoma de Barcelona*, *Bellaterra, Spain*.

11:45 AM 2218 **Differences in essential and toxic mineral content and in fatty acid profile between colostrum and mature milk in Sarda dairy sheep.**
A. Nudda*[1], G. Sanna[2], G. Battacone[1], S. Carta[1], F. Correddu[1], and G. Pulina[1], [1]*Department of Agricultural Science, University of Sassari*, *Sassari, Italy*, [2]*Department of Chemical, Physical, Mathematical and Natural Sciences, University of Sassari*, *Sassari, Italy*.

12:00 PM 2219 **Investigating gross composition and microbial quality of Ontario goat milk.**
O. Graydon* and C. Bauman, *University of Guelph*, *Guelph, Ontario, Canada*.

12:15 PM 2220 **Life Green Sheep: A European project to reduce the carbon footprint of sheep farming by 12%.**
L. Lanzoni*[1], A. S. Atzori[2], J. Dollé[3], M. Acciaro[4], C. Buckley[5], T. W. J. Keady[5], L. Bragina[5], O. Del Hierro[6], R. Ruiz[6], C. Dragomir[7], Giorgio Vignola[1], D. Usai[8], and S. Throude[3], [1]*Department of Veterinary Medicine, University of Teramo*, *Teramo, Italy*, [2]*Department of Agriculture, University of Sassari*, *Sassari, Italy*, [3]*Division on Livestock Techniques and Environmental issues, Institut de L'Elevage*, *Lyon, France*, [4]*AGRIS Sardegna*, *Sassari, Italy*, [5]*Animal & Grassland Research and Innovation Centre, Teagasc*, *Athenry, Co. Galway., Ireland*, [6]*Animal Production Department, Neiker-Basque Institute for Agricultural Research and Development*, *Arkaute, Spain*, [7]*National Research-Development Institute for Animal Biology and Nutrition*, *Balotesti, Romania*, [8]*LAORE Sardegna*, *Cagliari, Italy*.

Teaching/Undergraduate and Graduate Education Symposium and Workshop: Novel Teaching Strategies in Dairy Science

Chair: Tracy Burnett, University of Guelph, Ridgetown Campus
Shaw Centre 211
12:15 PM – 3:30 PM

12:15 PM **Introductions. Box lunch provided.**

12:30 PM 2221 **Case-based teaching in undergraduate animal and dairy science courses.**
C. Cramer*, *Colorado State University*, *Fort Collins, CO*.

1:00 PM 2222 **Teaching with the narrative and model in NASEM (2021) Nutrient Requirements of Dairy Cattle.**
M. G. Erickson*[1], M. D. Hanigan[2], and M. A. Wattiaux[1], [1]*Department of Animal & Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Department of Dairy Science, Virginia Polytechnic Institute and State University*, *Blacksburg, VA*.

1:30 PM **Break.**

1:45 PM **Strategies to enhance comprehension in a lactation physiology course: Skills session.**
Caitlin Foley.

2:00 PM 2223 **Experiences in teaching applied dairy cattle welfare to senior veterinary students.**
D. B. Haley*[1,2], L. J. Levison[1,2], and T. D. Duffield[1,2], [1]*Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [2]*Campbell Centre for the Study of Animal Welfare, University of Guelph*, *Guelph, ON, Canada*.

2:30 PM 2224 **The Dairy Consortium: 15 years of educating and training the next generation of dairy industry professionals.**
M. Tomaszewski[1], H. Czerminski[1], and R. Hagevoort*[2], [1]*Texas A&M University*, *College Station, TX*, [2]*New Mexico State University*, *Clovis, NM*.

3:00 PM **Panel discussion.**

ADSA Southern Branch Symposium: Incorporating Beef in Dairy Systems

Chair: Amanda Stone, Mississippi State University
Shaw Centre 210
2:00 PM – 5:30 PM

2:00 PM 2225 **Characterizing postpartum resumption of cyclicity on a biological and genetic basis in Jersey cattle.**
S. Johnson*, J. Lourenco, C. Welch, J. Clark, and J. Bohlen, *University of Georgia*, *Athens, GA*.

2:12 PM **Judges Q&A.**

2:15 PM 2226 **Can light affect microbial fermentation in in vitro rumen fermentation techniques?**
R. R. Lobo* and A. P. Faciola, *University of Florida*, *Gainesville, FL*.

2:27 PM **Judges Q&A.**

2:30 PM 2227 **A new look on beef: The end product value of beef × dairy.**
D. R. Woerner*, J. L. Frink, and B. A. Foraker, *Texas Tech University*, *Lubbock, TX*.

3:00 PM 2228 **Genetic selection considerations when using beef sires on dairy cows.**
C. D. Dechow*, B. L. Basiel, and T. L. Felix, *Penn State University*, *University Park, PA*.

3:30 PM **Break.**

3:50 PM 2229 **Management of beef-on-dairy calves: Should we raise them differently?**
V. S. Machado* and M. A. Ballou, *Texas Tech University*, *Lubbock, TX*.

4:20 PM 2230 **Improving mating decisions for beef-on-dairy production profitability.**
A. De Vries*[1], P. Pinedo[2], N. Bliznyuk[1], F. Fourdraine[3], and J. Clay[3], [1]*University of Florida*, *Gainesville, FL*, [2]*Colorado State University*, *Fort Collins, CO*, [3]*Dairy Records Management Systems*, *Raleigh, NC*.

4:50 PM **Discussion.**

5:00 PM **Southern Branch Business Meeting.**

Animal Health 2

Chair: Clarissa Strieder Barboza, Texas Tech University
Shaw Centre 201
2:00 PM – 5:30 PM

2:00 PM 2231 **Feeding different iodine sources to transition dairy cows: Effects on production performance and thyroid hormones.**
D. C. Reyes*[1], K. R. Johnston[1], K. V. Almeida[1], A. Konopka[1], M. A. Rahman[1], E. A. Cruz[1], N. Price[2], P. E. Erickson[1], and A. F. Brito[1], [1]*Department of Agriculture, Nutrition, and Food Systems, University of New Hampshire*, *Durham, NH*, [2]*Bigelow Laboratory for Ocean Sciences*, *East Boothbay, ME*.

2:15 PM **Break.**

2:30 PM 2233 **Effects of supplementing native rumen microbes on lactation performances and blood biomarkers in transition and mid-lactation Holstein cows.**
M. Bulnes*[1], J. Lefler[2], C. Marotz[2], E. Trevisi[4], M. Embree[2], J. Osorio[1,3], and M. E. Uddin[1], [1]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [2]*Native Microbials Inc*, *San Diego, CA*, [3]*School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*, [4]*Department of Animal Sciences, Food and Nutrition, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

2:45 PM 2234 **Validation of an on-farm dry chemical analyzer as a tool for quantifying blood analytes in transition Holstein dairy cows.**
S. J. Kendall*, S. E. Green, S. M. Edwards, G. R. Oetzel, and H. M. White, *University of Wisconsin-Madison*, *Madison, WI*.

3:00 PM 2235 **Effects of dietary rumen-protected choline supplementation on the plasma metabolome during an intramammary lipopolysaccharide challenge.**
T. Swartz*[1,2], B. Bradford[1], L. Mamedova[1], and K. Estes[3], [1]*Michigan State University*, *East Lansing, MI*, [2]*South Dakota State University*, *Brookings, SD*, [3]*Balchem Corporation*, *Montvale, NJ*.

3:15 PM 2236 **Decreased prepartal intake induces clinical ketosis postpartum: A retrospective analysis on dry matter intake from clinical and subclinical ketotic transition dairy cows.**
J. Halfen*[1], N. Carpinelli[2], A. F. S. Lima[1], E. Trevisi[3], and J. S. Osorio[1], [1]*School of Animal Science, Virginia Tech University*, *Blacksburg, VA*, [2]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [3]*Department of Animal Science, Food and Nutrition (DIANA), Università Cattolica del Sacro Cuore*, *Piacenza, Italy*.

3:30 PM **Break.**

4:00 PM 2237 **Postpartal inflammation affects dry matter intake but not milk production: A meta-analysis.**
J. Halfen*[1], N. Carpinelli[2], M. Bulnes[2], E. Trevisi[3], J. J. Loor[4], and J. S. Osorio[1], [1]*School of Animal Science, Virginia Tech University*, *Blacksburg, VA*, [2]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [3]*Department of Animal Science, Food and Nutrition (DIANA), Università Cattolica del Sacro Cuore*, *Piacenza, Italy*, [4]*Department of Animal Sciences, University of Illinois*, *Champaign-Urbana, IL*.

4:15 PM 2238 **Associations of heat stress during the close-up period with body condition loss in early-lactation dairy cows.**
C. Wagemann Fluxá*[1], S. J. Leblanc[2], E. S. Ribeiro[1], and T. J. DeVries[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

4:30 PM 2239 **Targeted lipidomics reveals depot-specific effects of subclinical ketosis in adipose tissue oxylipid profile of dairy cows.**
B. B. Sparks*[1], T. C. Michelotti[1], A. P. Tegeler[1], J. F. Fiallo[1], L. S. Flores[1], and C. Strieder-Barboza[1,2], [1]*Department of Veterinary Sciences, Davis College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*School of Veterinary Medicine, Texas Tech University*, *Amarillo, TX*.

4:45 PM 2240 **The effect of lipolysis inhibitors on adipose tissue function during clinical ketosis in dairy cows.**
M. Chirivi*, D. Cortes-Beltran, J. Rendon, and G. A. Contreras, *Department of Large Animal Clinical Sciences Michigan State University*, *East Lansing, MI*.

5:00 PM 2241 **Supplementation of omega-3 fatty acids as a strategy to regulate postpartum inflammation.**
B. Van Winters*[1], G. Madureira[1], M. G. S. Santos[1], B. Mion[1], C. Van Dorp[1], D. W. L. Ma[2], N. Karrow[1], S. J. LeBlanc[3], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Human Health and Nutritional Sciences, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

5:15 PM 2242 **Effects of a dietary immunomodulatory feed additive and different starch contents on the endotoxin response and measures of hepatic health in periparturient dairy cows.**
A. Javaid*, F. Gutierrez Ovideo, M. Yang, C. M. A. Zayas, T. L. France, and J. W. McFadden, *Cornell University*, *Ithaca, NY*.

Breeding and Genetics Platform Session: Novel Traits, Novel Technologies

Chair: Natascha Vukasinovic, Zoetis
Shaw Centre 206
2:00 PM – 5:30 PM

2:00 PM 2243 **Genetic improvement of calf health: Genomics makes it possible.**
B. Fessenden*[1,2], A. McNeel[1], D. Weigel[2], D. Gonzalez-Pena[1], N. Vukasinovic[3], and F. Di Croce[3], [1]*Zoetis Precision Animal Health*, *Kalamazoo, MI*, [2]*Zoetis Outcomes Research*, *Kalamazoo, MI*, [3]*Zoetis Precision Animal Health R&D*, *Kalamazoo, MI*.

2:30 PM 2245 **Candidate mutation for calf recumbency in Holsteins.**
C. D. Dechow*[1], P. M. VanRaden[2], D. J. Null[2], A. Al-Khudhair[2], and M. C. McClure[3], [1]*Pennsylvania State University*, *University Park, PA*, [2]*USDA Animal Genomics and Improvement Lab*, *Beltsville, MD*, [3]*ABS Global*, *DeForest, WI*.

2:45 PM 2244 **Genetic evaluation for stillbirth and pre-weaning mortality.**
M. M. Axford*[1,2], M. Khansefid[1,2], and J. Pryce[1,2], [1]*Agriculture Victoria, AgriBio, Centre for AgriBioscience*, *Bundoora, Victoria, Australia*, [2]*School of Applied Systems Biology, La Trobe University*, *Bundoora, Victoria, Australia*, [3]*DataGene Ltd*, *Bundoora, Victoria, Australia*.

3:00 PM 2246 **Feasibility study of genetic evaluation for Johne's disease in US Holstein cows.**
L. C. Novo*[1,2], J. Burcahard[2], H. D. Norman[2], J. Dürr[2], R. Fourdraine[3], T. M. McWhorter[2], F. Peñagaricano[1], K. L. Parker Gaddis[2], and X. L. Wu[2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Council on Dairy Cattle Breeding*, *Bowie, WI*, [3]*Dairy Records Management Systems*, *Raleigh, NC*.

3:15 PM 2247 **Individual measure of body weight on in-house commercial dairy cattle using a 3D camera system for genetic evaluations and improved management decisions.**
J. Lassen*, J. Thomasen, and S. Borchersen, *Vikinggenetics*, *Randers, Denmark*.

3:30 PM **Break.**

4:00 PM 2248 **Estrus expression in dairy cows: Phenotyping, genetic variability, and association with reproductive performance.**
J. A. Chasco*[1], R. C. Chebel[2], K. A. Weigel[1], and F. Peñagaricano[1], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*University of Florida*, *Gainesville, FL*.

4:15 PM 2249 **Genome-wide association analysis of white spotting in Montbeliarde-sired crossbred dairy cattle.**
B. J. Heins* and K. T. Sharpe, *University of Minnesota*, *Morris, MN*.

4:30 PM 2250 **Environmental factors and genetic parameters for milk fatty acids in Japanese Holstein cattle.**
Y. Masuda*, *Rakuno Gakuen University*, *Ebetsu, Hokkaido, Japan*.

4:45 PM 2251 **Genetic parameters of milkability traits derived from automatic milking systems in US Holstein cows.**
P. Khanal*, A. T. H. Utsunomiya, J. Johnson, P. Ross, and N. Deeb, *STgenetics*, *Navasota, TX*.

5:00 PM 2252 **Genomic prediction of breeding values for behavior traits measured in automatic milking systems in Holstein cattle using machine learning methods.**
V. B. Pedrosa*[1], S. Y. Chen[1,2], J. S. Doucette[3], L. S. Gloria[1], J. P. Boerman[1], and L. F. Brito[1], [1]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*, [2]*Sichuan Agricultural University*, *Chengdu, China*, [3]*Agriculture Information Technology (AgIT), Purdue University*, *West Lafayette, IN*.

5:15 PM 2253 **Exploring opportunities to evaluate genomically mid-infrared spectroscopy (MIR)-predicted residual CH_4 exploiting correlations to multiple across country evaluation (MACE) traits.**
H. Atashi[1,2] and N. Gengler*[1], [1]*University of Liège-GxABT*, *Gembloux, Belgium*, [2]*Shiraz University*, *Shiraz, Iran*.

Dairy Foods Symposium: Dairy Beverages 2.0—Current Innovations to Fuel Dairy-Based Beverages of the Future

Chair: Rohit Kapoor, National Dairy Council
Session sponsored by DMI
Shaw Centre 215
2:00 PM – 5:30 PM

2:00 PM 2254 **What's driving innovation in dairy beverages—A global perspective.**
K. Alexander*, *Dairy Management Inc*, *Rosemont, IL*.

2:30 PM 2255 **Ingredient/process innovations in high-protein dairy beverages.**
D. M. Barbano*[1] and M. Drake[2], [1]*Cornell University, Northeast Dairy Foods Research Center*, *Ithaca, NY*, [2]*North Carolina State University, Southeast Dairy Foods Research Center*, *Raleigh, NC*.

3:00 PM 2256 **Value-added dairy ingredients for functional beverage development.**
A. Abbaspourrad*, *Cornell University, Department of Food Science*, *Ithaca, NY*.

3:30 PM **Break.**

4:00 PM 2257 **Ingredient technologies to address technical challenges with high protein dairy beverages.**
J. K. Amamcharla*, *Kansas State University*, *Manhattan, KS*.

4:30 PM 2258 **Selecting ingredients to perform in dairy beverages—Tools and techniques.**
H. Zheng*[1] and C. K. Yeung[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*California Polytechnic State University*, *San Luis Obispo, CA*.

5:00 PM 2259 **Fermentation 2.0—Novel dairy beverages.**
S. D. Alcaine*, *Cornell University*, *Ithaca, NY*.

5:30 PM **Reception.**

Dairy Foods 1: Cheese

Chair: Rani Govindasamy-Lucey, Wisconsin Center for Dairy Research
Shaw Centre 209
2:00 PM – 5:30 PM

2:00 PM 2260 **Effect of ultrafiltered milk and calcium reduction on the properties of cream cheese.**
Q. Wu*[1,2], L. Ong[1,2], A. Aldalur[1,2], S. Nie[1,2], S. Kentish[1], and S. Gras[1,2], [1]*The University of Melbourne*, *Melbourne, VIC, Australia*, [2]*The Bio21 Molecular Science and Biotechnology Institute*, *Melbourne, VIC, Australia*.

2:15 PM 2261 **Impact of type of acid used for pre-acidification on calcium balances and functionality of low-moisture part-skim Mozzarella made from high casein milk.**
A. V. Swaminathan*[1], S. K. Lillevang[2], S. Govindasamy-Lucey[3], M. E. Johnson[3], J. J. Jaeggi[3], and J. A. Lucey[1,3], [1]*Department of Food Science, UW-Madison*, *Madison, WI*, [2]*Arla Foods Amba, Arla Innovation Center*, *Skejby, Denmark*, [3]*Wisconsin Center for Dairy Research, UW-Madison*, *Madison, WI*.

2:30 PM 2262 **Evaluation of plant proteases as rennet alternatives source in cheese development.**
U. M. Khan*[1], R. M. Aadil[1], and A. Latif[2], [1]*National Institute of Food Science and Technology, University of Agriculture*, *Faisalabad, Pakistan*, [2]*School of Food and Agricultural Sciences (SFAS), University of Management and Technology*, *Lahore, Pakistan*.

2:45 PM 2263 **Standardization and characterization of a pressed cheese soaked in wine.**
D. Olmos*, E. Dormedy, M. Pedroza, and C. Licon, *Fresno State University*, *Fresno, CA*.

3:00 PM 2264 **Cheese properties during ripening of milk collected from lactating dairy cows fed lipid supplements of varying fatty acid composition.**
M. Blouin*[1,2], M. Landry[1,2], I. Bennis[3], J. Larouche[1,2], É. Paquet[1], P. Y. Chouinard[1,2], R. Gervais[1,2], G. Brisson[1,2], and J. Chamberland[1,2], [1]*Université Laval*, *Québec, QC, Canada*, [2]*STELA Dairy Research Center, Institute on Nutrition and Functional Foods (INAF)*, *Québec, QC, Canada*, [3]*Institut Agro Rennes-Angers*, *France*.

3:15 PM 2265 **Pilot-plant production of natural Cheddar cheese supplemented with dairy-based bioactive peptides: Peptide retention and inhibition of angiotensin converting enzyme.**
B. V. Iesalnieks*[1], R. A. Ibáñez[2], J. J. Jaeggi[2], B. W. Bolling[1], and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Center for Dairy Research*, *Madison, WI*.

3:30 PM **Break.**

4:00 PM 2266 **Improving the functionality of frozen and superchilled shredded cheese during extended storage.**
P. M. Eberly*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], R. A. Ibáñez[2], M. E. Johnson[2], and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Wisconsin Center for Dairy Research*, *Madison, WI*.

4:15 PM 2267 **Continuous microwave-assisted extrusion for high moisture texturized foods.**
B. Graf*, F. Schmidt, C. Kern, and J. Hinrichs, *Institute of Food Science and Biotechnology, Department of Soft Matter Science and Dairy Technology*, *Stuttgart, Baden-Wuerttemberg, Germany*.

4:30 PM 2268 **A survey of biogenic amines and amine oxidase activity in commercial cheese.**
J. Larsen*[1], R. Ibáñez[2], J. Lucey[1,2], and M. Johnson[2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Wisconsin Center for Dairy Research*, *Madison, WI*.

4:45 PM 2269 **Effect of stretching temperature on alkaline phosphatase in the raw-milk pasta-filata cheese manufacture.**
G. Licitra[1], G. Mangione[1], VM Marino[2], G. Belvedere[2], A. Difalco[2], R. Petriglieri[2], and M. Caccamo*[2], [1]*University of Catania*, *Catania, Italy*, [2]*CoRFiLaC*, *Ragusa, Italy*.

5:00 PM 2270 **Relating consumer preferences to descriptive visual stringiness attributes of string cheese.**
M. A. Becher*[1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], M. E. Johnson[2], B. G. Prochaska[2], and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Wisconsin Center for Dairy Research*, *Madison, WI*.

5:15 PM 2271 **Evaluating impact of adding capsular and exo polysaccharide producing cultures in a model Mozzarella cheese system.**
S. Pant*, T. Oberg, and P. Sharma, *Utah State University*, *Logan, UT*.

Joint NMC (National Mastitis Council) and ADSA Lactation Biology Symposium: Unlocking the Potential of the Bovine Mammary Gland— Recognition of the Contribution of ADSA Fellow Mike Akers

Shaw Centre 208
2:00 PM – 6:45 PM

2:00 PM 2272 **Physiological regulation of lactogenesis and early lactation: Implications for milk and colostrum production.**
T. B. McFadden*, *University of Missouri*, *Columbia, MO*.

2:35 PM 2273 **Foundational studies on the role of nutrition on prepubertal mammary growth and development.**
K. Sejrsen*, S. Purup, and M. Vestergaard, *Aarhus University-Viborg, Department of Animal and Veterinary Sciences*, *Tjele, Denmark*.

3:10 PM 2274 **Nuances of pre-pubertal mammary gland development and the role of nutrition.**
H. L. M. Tucker*, *Novus International Inc*, *Saint Charles, MO*.

3:45 PM **Break.**

4:00 PM 2275 **Contributions of the mammary physiologist to the mastitis researcher.**
B. D. Enger*, *Department of Animal Sciences, Ohio Agricultural Research and Development Center, The Ohio State University*, *Wooster, OH*.

4:35 PM 2276 **Understanding mammary physiology and histology: A story told in pictures.**
R. Akers*, *Virginia Tech*, *Blacksburg, VA*.

5:15 PM **Discussion.**

5:45 PM **Reception.**

Physiology and Endocrinology 1

Shaw Centre 203
2:00 PM – 5:15 PM

2:00 PM 2277 **RNA-Seq Analysis reveals the transcriptional profile of bovine follicular wall cells treated with nerve growth factor-beta.**
S. Salman*[1], K. Conner[1], A. Morton[2], A. Denicol[2], P. Dini[1], D. Melo[1], T. Marques[1], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California*, *Davis, CA*, [2]*Department of Animal Science, University of California*, *Davis, CA*.

2:15 PM 2278 **Kidney function and nitrogen excretion in Brown Swiss and Holstein dairy cows.**
E. C. Kessler, R. M. Bruckmaier, and J. J. Gross*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Bern, Switzerland*.

2:30 PM 2279 **Palmitic acid alters pyruvate carboxylase expression and carbon flux in Madin Darby bovine kidney cells.**
L. M. Beckett*[1], N. E. Sunny[2], T. M. Casey[1], and S. S. Donkin[1,3], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Maryland*, *College Park, MD*, [3]*Oregon State University*, *Corvallis, OR*.

2:45 PM 2280 **Pyruvate carboxylase overexpression increases carbon flux of the tricarboxylic acid cycle.**
L. M. Beckett*[1], J. Laguna[1], N. E. Sunny[2], T. M. Casey[1], and S. S. Donkin[1,3], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Maryland*, *College Park, MD*, [3]*Oregon State University*, *Corvallis, OR*.

3:00 PM 2281 **Effects of hyperketonemia on metabolism and inflammation following an lipopolysaccharide administration in a ruminant model.**
S. Rodriguez-Jimenez*[1], M. A. Abeyta[1], B. M. Goetz[1], J. Opgenorth[1], A. D. Freestone[1], H. K. J. P. Wickramasinghe[1], J. A. R. D. N. Appuhamy[1], J. L. McGill[2], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*Department of Veterinary Microbiology and Preventive Medicine, Iowa State University*, *Ames, IA*.

3:15 PM 2282 **Effects of an intramammary endotoxin challenge on production, metabolism, and inflammation in early versus mid-lactation dairy cows.**
J. Opgenorth*[1], M. A. Abeyta[1], B. G. Goetz[1], S. Rodriguez-Jimenez[1], A. D. Freestone[1], R. P. Rhoads[2], R. P. McMillan[2], and L. H. Baumgard[1], [1]*Iowa State University*, *Ames, IA*, [2]*Virginia Polytechnic Institute and State University*, *Blacksburg, VA*.

3:30 PM **Break.**

4:00 PM 2283 **Inter-animal variability in systemic inflammation status in early lactation and its relation to the cow's metabolic status and reproductive performance.**
M. Q. Zhang*[1], S. Heirbaut[1], X. P. Jing[2], L. Vandaele[3], N. De Neve[1], and V. Fievez[1], [1]*Laboratory for Animal Production and Animal Product Quality (LANUPRO) Department of Animal Sciences and Aquatic Ecology, Faculty of Bioscience Engineering, Ghent University*, *Ghent, Flanders, Belgium*, [2]*State Key Laboratory of Grassland and Agro-Ecosystems, International Centre for Tibetan Plateau Ecosystem Management, School of Life Sciences, Lanzhou University*, *Lanzhou, Gansu, China*, [3]*Animal Sciences Unit, ILVO*, *Melle, Flanders, Belgium*.

4:15 PM 2284 **Heat stress and dietary organic acid and pure botanical supplementation alter the metabolome of lactating dairy cows.**
A. B. P. Fontoura*[1], A. Javaid[1], V. Sáinz de la Maza-Escolà[1,2], P. Deme[3], N. J. Haughey[3], S. L. Fubini[1], E. Grilli[2,4], and J. W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Department of Veterinary Medical Sciences, University of Bologna*, *Bologna, Italy*, [3]*The Johns Hopkins University School of Medicine*, *Baltimore, MD*, [4]*Vetagro S.p.A*, *Reggio Emilia, Italy*.

4:30 PM 2285 **Effects of heat stress and dietary organic acid and pure botanical on hepatic one-carbon metabolism.**
V. Sáinz de la Maza-Escolà*[1,2], A. B. P. Fontoura[1], A. Javaid[1], N. S. Salandy[1,3], S.L. Fubini[1], E. Grilli[2,4], and J.W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Department of Veterinary Medical Sciences, University of Bologna*, *Bologna, Italy*, [3]*Tuskegee University*, *Tuskegee, AL*, [4]*Vetagro S.p.A*, *Reggio Emilia, Italy*.

4:45 PM 2286 **Effect of high vs. low body condition score at dry-off on calcium homeostasis, neutrophil function, and energy balance in the subsequent parity of Holstein lactating cows.**
T. O. Cunha*[1], P. L. J. Monteiro Jr.[1], W. S. Frizzarini[1], L. A. C. Ribeiro[1], L. Lewandowski[1], H. Hanling[1], R. Zhu[1], N. N. Teixeira[1], M. Z. Toledo[3], R. D. Shaver[1], J. P. N. Martins[1,2], M. C. Wiltbank[1], and L. L. Hernandez[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin-Madison*, *Madison, WI*, [3]*Purina Animal Nutrition*, *Madison, WI*.

5:00 PM 2287 **Effects of three different prepartum diets on mineral concentrations in saliva and feces in multiparous Holstein cows.**
W. Frizzarini*, J. Campolina, A. Vang, P. Monteiro, and L. Hernandez, *University of Wisconsin*, *Madison, WI*.

Production, Management and the Environment 2

Chair: Gail Carpenter, Iowa State University
Shaw Centre 213
2:00 PM – 5:30 PM

2:00 PM 2289 **Automatic milking system decision support tool for southern dairy businesses.**
A. McCalmon*, Y. Zhao, C. Martinez, and E. Eckelkamp, *University of Tennessee*, *Knoxville, TN*.

2:15 PM 2290 **The association of production outcomes with continuous blood BHB concentrations in the first or second week post-partum in dairy cows.**
A. D. Ravelo*[1], G. Cramer[1], S. Mann[2], and L. S. Caixeta[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *Saint Paul, MN*, [2]*Department of Population Medicine and Diagnostic Sciences, Cornell University*, *Ithaca, NY*.

2:30 PM 2291 **A computer vision strategy to alleviate cow mastitis and improve dairy farm sustainability.**
C. P. J. Chen*, M. Das, and G. Ferreira, *Virginia Tech*, *Blacksburg, VA*.

2:45 PM 2292 **Using kinematic to quantify gait attributes and predict gait score in dairy cows.**
C. Julliot[1,2], G. M. Dallago*[3], A. Nejati[2], A. B. Diallo[3], and E. Vasseur[2], [1]*Institut Agro Rennes-Angers*, *Rennes, France*, [2]*McGill University*, *Sainte-Anne-de-Bellevue, Quebec, Canada*, [3]*Université du Québec à Montréal*, *Montreal, Quebec, Canada*.

3:00 PM 2293 **Automated extraction of domain knowledge for transition-cow management.**
J. Zhu*[1], R. Lacroix[1,2], and K. Wade[1], [1]*McGill University*, *Montreal, QC, Canada*, [2]*Lactanet*, *Ste. Anne de Bellevue, QC, Canada*.

3:15 PM 2294 **Using hyperspectral imaging to predict particle size distribution in total mixed rations fed to dairy cows.**
R. E. P. Ferreira, L. G. R. Pereira, and J. R. R. Dorea*, *University of Wisconsin-Madison*, *Madison, WI*.

3:30 PM **Break.**

4:00 PM 2295 **Descriptive evaluation of camera-based dairy cattle lameness detection technology paired with artificial intelligence.**
D. Swartz*[1], E. Shepley[1], J. Burchard[2], and G. Cramer[1], [1]*College of Veterinary Medicine, University of Minnesota*, *St. Paul, MN*, [2]*Council on Dairy Cattle Breeding*, *Bowie, MD*.

4:15 PM 2296 **Development of an automated diagnostic and anomaly detection system for milk profiles in dairy herds.**
D. Warner*, M. Ayat, A. Ben Abdelkrim, G. Bisson, D. E. Santschi, and R. Lacroix, *Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*.

4:30 PM 2297 **From averages to individuals: A data cleaning dashboard for automatically collected feed intake data.**
D. J. Innes*[1], L. M. Alcantara[2], and J. P. Cant[1], [1]*Centre for Nutrition Modelling, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Office of Research, Ontario Agri-Food Innovation Alliance, University of Guelph*, *Guelph, ON, Canada*.

4:45 PM 2298 **Using late lactation milk composition to predict cow's transition success: An exploratory study.**
L. Fadul*[1], K. MacFarlane[2], D. Warner[1], and D.E. Santschi[1], [1]*Lactanet*, *Sainte-Anne-de-Bellevue, Quebec, Canada*, [2]*McGill University*, *Sainte-Anne-de-Bellevue, Quebec, Canada*.

5:00 PM 2299 **Benchmarking first-lactation organic Holstein, Jersey, and crossbred cows for production, somatic cell score, and days open in the United States.**
B. J. Heins*[1], K. T. Sharpe[1], P. J. Pinedo[2], A. DeVries[3], E. K. Miller-Cushon[3], V. E. Cabrera[4], E. M. Silva[4], R. A. Lynch[5], and G. M. Schuenemann[6], [1]*University of Minnesota*, *Morris, MN*, [2]*Colorado State University*, *Fort Collins, CO*, [3]*University of Florida*, *Gainesville, FL*, [4]*University of Wisconsin*, *Madison, WI*, [5]*Cornell University*, *Ithaca, NY*, [6]*The Ohio State University*, *Columbus, OH*.

5:15 PM 2300 **Relationship between actual vs. targeted weight at first calving and lactation performance.**
M. Overton*[1] and S. Eicker[2], [1]*Zoetis*, *Blairsville, GA*, [2]*VAS*, *King Ferry, NY*.

Ruminant Nutrition Symposium: Improving Rumen Fermentation Through Altering Rumen Microbiota

Chair: Dengpan Bu, Institute of Animal Science, Chinese Academy of Agricultural Sciences
Session sponsored by Elanco Animal Health
Shaw Centre 205
2:00 PM – 5:30 PM

2:00 PM 2301 **The rumen microbiome and its function—Predators within and their implication in intraruminal recycling of microbial protein.**
Z. Yu* and M. Yan, *The Ohio State University*, *Columbus, OH*.

2:45 PM 2302 **New biochemical pathways for forming short-chain fatty acids during fermentation in rumen bacteria.**
T. Hackmann*, *University of California, Davis*, *Davis, CA*.

3:30 PM **Break.**

4:00 PM 2303 **Microbiome-guided strategies to improve cattle production.**
P. Fan*[1] and K. Jeong[2,3], [1]*Department of Animal and Dairy Sciences, Mississippi State University*, *Starkville, MS*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [3]*Emerging Pathogens Institute, University of Florida*, *Gainesville, FL*.

4:45 PM **Discussion.**

Ruminant Nutrition 3: Carbohydrates and Lipids

Chair: Jackie Boerman, Purdue University
Shaw Centre 207
2:00 PM – 5:30 PM

2:00 PM 2304 **Dietary fiber source and direct fed microbial supplementation effects on performance of high-producing dairy cows.**
M. R. Pupo*, E. C. Diepersloot, C. Heinzen Jr., M. P. Rodrigues, and L. F. Ferraretto, *University of Wisconsin-Madison*, *Madison, WI*.

2:15 PM 2305 **Effects of isoacids supplementation in lactating cows' diet varying in forage fiber level on performances, feed efficiency and milk fatty acids profile.**
S. Ahmed*[1], M. R. A. Redoy[1], M. L. Bulnes[1], J. B. Urbina[1], D. H. Kleinschmit[2], and M. E. Uddin[1], [1]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

2:30 PM 2306 **Fiber evaluation methods of novel feed ingredients for dairy cows: the case of macroalgae.**
E. Chasse*[1], M. V. Curtasu[1], K. E. Bach Knudsen[1], A. Bruhn[2,3], and M. O. Nielsen[1,3], [1]*Department of Animal and Veterinary Sciences, Aarhus University*, *Foulum, Denmark*, [2]*Department of Ecoscience, Aarhus University*, *Aarhus, Denmark*, [3]*Center for Circular Bioeconomy, Aarhus University*, *Foulum, Denmark*.

2:45 PM 2307 **Fatty acid supplementation interacts with starch content to alter production responses during the immediate postpartum in dairy cows.**
J. E. Parales-Giron*[1], A. C. Benoit[1], J. M. dos Santos Neto[1], J. de Souza[2], and A. L. Lock[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*Perdue Agribusiness*, *Salisbury, MD*.

3:00 PM 2308 **Effects of rumen-protected sugar supplementation on milk yield, subclinical ketosis and reproduction of dairy cows in the transit period.**
C. Brock*[1], H. Wenjuan[2], D. Zhuangzhao[3], and A. Robinson[3], [1]*Berg + Schmidt GmbH & Co. KG*, *Hamburg, Germany*, [2]*Beijing Mingrida Trade*, *Beijing, China*, [3]*Berg + Schmidt Asia Pte Ltd*, *Singapore*.

3:15 PM 2309 **Effects of adding field peas to the diet of lactating dairy cows on rumen fermentation and *de novo* milk fatty acids.**
J. C. Plaizier*[1], R. Gervais[2], K. H. Ominski[1], and C. Yang[1], [1]*University of Manitioba*, *Winnipeg, MB, Canada*, [2]*Laval University*, *Quebec City, QC, Canada*.

3:30 PM **Break.**

4:00 PM 2310 **Temporal changes in plasma choline and choline metabolite concentrations in response to an esophageal bolus of rumen-protected fish oil in early lactation cows fed rumen-protected choline.**
V. Sáinz de la Maza-Escolà*[1,2], M. F. Marchesi[1], M. Dei Cas[3], S. Casati[4], F. Piccioli-Cappelli[5], E. Trevisi[5], E. Grilli[1,6], and J. W. McFadden[2], [1]*Department of Veterinary Medical Sciences, University of Bologna*, *Bologna, Italy*, [2]*Cornell University*, *Ithaca, NY*, [3]*Department of Health Sciences, University of Milan*, *Milan, Italy*, [4]*Department of Biomedical, Surgical and Dental Sciences, University of Milan*, *Milan, Italy*, [5]*Department of Animal Sciences, Food and Nutrition, Faculty of Agriculture, Food and Environmental Science, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*, [6]*Vetagro S.p.A*, *Reggio Emilia, Italy*.

4:15 PM 2311 **Meta-analysis of the effects of the dietary inclusion of brewer's grain on feed intake, milk production, and feed efficiency of lactating dairy cows.**
S. C. Chelkapally*[1], T. H. Terrill[1], I. M. Ogunade[2], Z. M. Estrada-Reyes[3], and A. A. Pech-Cervantes[1], [1]*Agricultural Research Station, Fort Valley State University*, *Fort Valley, GA*, [2]*Division of Animal and Nutritional Sciences, West Virginia University*, *Morgantown, WV*, [3]*Department of Animal Science, North Carolina Agricultural and Technical State University*, *Greensboro, NC*.

4:30 PM 2312 **Production performance and nutrient digestibility in grazing dairy cows fed an extruded flaxseed-based supplement.**
M. A. Rahman*, K. V. Almeida, D. C. Reyes, E. A. Cruz, A. L. Konopoka, M. A. Arshad, and A. F. Brito, *Department of Agriculture, Nutrition, and Food System, University of New Hampshire*, *Durham, NH*.

4:45 PM 2313 **Effects of dietary lipid supplements on milk production and raw quality in dairy cows.**
M. Landry*[1,2], F. Huot[1,2], Y. Lebeuf[1,2], J. Chamberland[1,2], G. Brisson[1,2], D. E. Santschi[3], É. Paquet[1], D. E. Rico[4], P. Y. Chouinard[1,2], and R. Gervais[1,2], [1]*Université Laval*, *Québec, Canada*, [2]*Centre de recherche en sciences et technologie du lait STELA*, *Québec, Canada*, [3]*Lactanet*, *Québec, Canada*, [4]*Centre de recherche en sciences animales de Deschambault*, *Québec, Canada*.

5:00 PM 2314 **Hepatic metabolome of grazing dairy cows with or without environmental control during lactation.**
G. Cañibe*[1], M. García-Roche[1], A. Jasinsky[2], A. Casal[2], and M. Carriquiry[1], [1]*Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República*, *Montevideo, Uruguay*, [2]*Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Estación Dr. Mario A.Cassinoni, Universidad de la República*, *Paysandú, Uruguay*.

5:15 PM 2315 **Impact of heat stress and dietary lipids on plasma oxylipids in dairy cows.**
G. C. Aguiar[1,2], A. Ruiz-Gonzalez[2], R. Almeida[1], J. Gandy[3], A. Contreras[3], and D. E. Rico*[4], [1]*Universidad Federal do Parana*, *Curitiba, Parana, Brazil*, [2]*Université Laval*, *Quebec City, Quebec, Canada*, [3]*Michigan State University*, *East Lansing, MI*, [4]*CRSAD*, *Deschambault, Quebec, Canada*.

Tuesday, June 27

POSTER PRESENTATIONS

Animal Behavior and Well-Being 2

1300T **Dairy cull cows: Assessing transport characteristics between farm and auction in Québec, Canada.**
G. Després*[1], M. Puerto-Parada[1], S. Buczinski[1], J. Dubuc[1], L. Blouin[2], and M. Villettaz-Robichaud[1], [1]*Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Producteurs de Bovins du Québec*, *Longueuil, Québec, Canada*.

1301T **Benefits of tactile stimulation and environmental enrichment for the welfare of Gyrolando heifers in the weaning.**
A. C. A. R. Paz*[1], C. O. Miranda[2], J. A. Negrão[3], F. F. Simili[4], M. S. V. Salles[4], A. E. Vercesi Filho[5], L. El Faro[2], and D. P. Munari[1], [1]*Pos-Graduate Program in Animal Science–FCAV/UNESP*, *Jaboticabal, SP, Brazil*, [2]*Advanced Beef Cattle Research and Development Center–Instituto de Zootecnia*, *Sertaozinho, SP, Brazil*, [3]*University of Sao Paulo–FZEA/USP*, *Pirassununga, SP, Brazil*, [4]*Regional Research Center of Ribeirão Preto–Instituto de Zootecnia*, *Ribeirao Preto, SP, Brazil*, [5]*Genetics and Biotechnology Research and Development Center–Instituto de Zootecnia*, *Nova Odessa, SP, Brazil*.

1302T **Effects of preweaning social housing on dairy heifer social networks and behavior on pasture.**
D. Clein*, K. Burke, and E. K. Miller-Cushon, *University of Florida*, *Gainesville, FL*.

1303T **Feeding behavior of group-housed preweaned dairy calves can be used to predict disease using machine learning algorithms.**
R. Perttu*[1], M. Peiter[1], T. Bresolin[2], J. Dorea[3], and M. Endres[1], [1]*University of Minnesota*, *St. Paul, MN*, [2]*University of Illinois Urbana-Champaign*, *Urbana, IL*, [3]*University of Wisconsin Madison*, *Madison, WI*.

1304T **Effects of preweaning social housing on growth, estrus behavior, and age of onset to estrus in dairy heifers.**
E. Lindner*, T. Martins, C. Burner, and E. K. Miller-Cushon, *University of Florida*, *Gainesville, FL*.

1305T **Associations between feeding behavior and social network centrality in group-housed dairy calves.**
K. N. Gingerich*, K. Burke, F. P. Maunsell, and E. K. Miller-Cushon, *University of Florida*, *Gainesville, FL*.

1306T **Effect of preweaning social housing on development of cognition in weaned heifers.**
J. Bonney*, D. Clein, and E. K. Miller-Cushon, *University of Florida*, *Gainesville, FL*.

1307T **Effects of willow bark (*Salix*) on post-disbudding behaviors in dairy calves under organic management.**
M. Bacon*[1,2], B. Heins[2], and M. Endres[1], [1]*Department of Animal Science, University of Minnesota*, *St. Paul, MN*, [2]*West Central Research and Outreach Center, University of Minnesota*, *Morris, MN*.

1308T **Effects of pain following disbudding on cognitive performance of dairy calves.**
S. Yoo*, M. A. G. von Keyserlingk, and D. M. Weary, *The University of British Columbia*, *Canada*.

1309T **Effect of group composition on agonistic interactions received by subordinate cows: A pilot study.**
J. Krahn*, B. Foris, K. Sheng, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia*, *Vancouver, British Columbia, Canada*.

1310T **Activity behaviors and relative changes in activity patterns were associated with diarrhea status in individually housed calves.**
D. Guevara-Mann[1], D. L. Renaud[1], A. Kerr[2], M. Alhamdan[1], and M. C. Cantor*[1,3], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Grober Nutrition*, *Woodstock, Ontario, Canada*, [3]*Penn State University*, *College Park, PA*.

1311T **Dairy cows' social rank influences their drinking behavior.**
E. Nizzi*[1], C. Hurtaud[1], B. Foris[2], J. Lassalas[1], and A. Boudon[1], [1]*PEGASE, INRAE, Institut Agro*, *Saint Gilles, France*, [2]*Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*.

1312T **Effect of lameness on location preference within a pen for lactating dairy cows.**
K. R. Hefter*, J. G. Owen, A. E. Pape, S. Y. Morrison, and R. J. Grant, *The William H. Miner Agricultural Research Institute*, *Chazy, NY*.

Animal Health 2

1313T **Characterizing *Staphylococcus aureus* from mastitis cases on Maine dairy farms.**
E. Roadcap*[1], A. Lichtenwalner[2], B. Kennedy-Wade[2], G. Adjapong[2], A. Chakrawarti[1], F. Machado De Santanna[1], and J. Barlow[1], [1]*University of Vermont*, *Burlington, VT*, [2]*University of Maine*, *Orono, ME*.

1314T **Staphylococcal enterotoxins play an important role in clinical and subclinical bovine mastitis.**
S. Dantas[1], L. Takume[1], B. Rossi[1], E. Bonsaglia[1], I. Castilho[1], J. Pantoja[1], A. Fernandes Junior[1], J. Gonçalves[3], M. Santos[2], and V. Rall*[1], [1]*Universidade Estadual Paulista*, *Botucatu, Sao Paulo, Brazil*, [2]*Universidade de São Paulo*, *Pirassununga, Sao Paulo, Brazil*, [3]*Michigan State University (MSU)*, *East Lansing, MI*.

1315T **Risk factors associated with clinical mastitis in certified organic dairy herds.**
P. Munoz Boettcher*[1], A. De Vries[2], E. Miller-Cushon[2], B. J. Heins[3], V. Cabrera[4], E. Silva[4], R. A. Lynch[5], G. M. Schuenemann[6], D. Manríquez[1,7], J. Velez[8], and P. Pinedo[1], [1]*Colorado State University*, *Fort Collins, CO*, [2]*University of Florida*, *Gainesville, FL*, [3]*University of Minnesota*, *St. Paul, MN*, [4]*University of Wisconsin–Madison*, *Madison WI*, [5]*Cornell University*, *Ithaca NY*, [6]*The Ohio State University*, *Columbus OH*, [7]*National School of Veterinary Medicine of Toulouse*, *Toulouse, France*, [8]*Aurora Organic Dairy*, *Platteville, CO*.

1316T **Post-milking application of a *Lacticaseibacillus paracasei* strain on the bovine teat skin: Impact at the microbial, immune, and physiological levels.**
C. Goetz[1], L. Rault[1], J. Cuffel[1], P. Poton[2], S. Philau[2], G. Boullet[2], A. Mottin[2], J. Orinel[2], M. Boutinaud[2], and S. Even*[1], [1]*INRAE, Institut Agro Rennes-Angers, UMR 1253 STLO*, *Rennes Cedex, France*, [2]*INRAE, Institut Agro Rennes-Angers, UMR 1348 PEGASE*, *Saint-Gilles, France*.

1317T **Association between the temperature-humidity index and microorganisms isolated from milk of healthy cows and cows with mastitis in different regions of Brazil.**
B. Crippa[1], R. Morasi[1], E. Pereira[1], J. Pantoja[5], L. Juliano[5], C. Gebara[4], C. Minafra[4], F. Guimarães[5], H. Langoni[5], F. Souza[6], A. Thaler-Neto[2], M. Gonçalves[3], and N. Silva*[1], [1]*University of Campinas*, *Campinas, São Paulo, Brazil*, [2]*University of the State of Santa Catarina*, *Lages, SC, Brazil*, [3]*Federal University of Campina Grande*, *Pombal, PB, Brazil*, [4]*Federal University of Goiás*, *Goiânia, GO, Brazil*, [5]*São Paulo State University*, *Botucatu, SP, Brazil*, [6]*University of São Paulo*, *São Paulo, SP, Brazil*.

1318T **The effects of bimodal milk flow on mastitis infection in dairy cows.**
F. Masia*, F. van Mil, R. Otten, A. Gouw, and A. J. van der Kamp, *Lely International N.V*, *Maassluis, South Holland, the Netherlands*.

1319T **Intramammary liposome-toll-like receptor agonist (LTC) dose titration: Effect on differential somatic cell count.**
E. Leonard*[1], B. Crooker[2], S. Dow[3], and L. Caixeta[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *Falcon Heights, MN*, [2]*Department of Animal Science, University of Minnesota*, *Falcon Heights, MN*, [3]*Department of Clinical Sciences, Colorado State University*, *Fort Collins, CO*.

1320T **Evaluation of a phage cocktail for the treatment of *Staphylococcus aureus* bovine intramammary infections.**
C. Ster*[1], A. Larose[2], L. P. Chaumont[2], and F. Malouin[2], [1]*AAFC–Sherbrooke R&D Centre*, *Sherbrooke, QC, Canada*, [2]*Biologie, Sciences, Université de Sherbrooke*, *Sherbrooke, QC, Canada*.

1321T **Lipopeptides as a potential anti-virulence therapy to prevent bovine mastitis.**
Y. Sabino[2], K. Araujo[2], P. O'Connor[3], P. Marques[4], A. Jaiswal[5], M. Queiroz[2], M. Totola[2], L. Abreu[2], P. Cotter[3], and H. Mantovani*[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [3]*Teagasc Food Research Centre*, *Fermoy, Co. Cork, Ireland*, [4]*Universidade Federal do Triangulo Mineiro*, *Uberaba, MG Brazil*, [5]*Universidade Federal de Minas Gerais*, *Belo Horizonte, Brazil*.

1322T **Association between clinical mastitis and body condition score pattern and pregnancy at first artificial insemination.**
P. Munoz Boettcher*[1], A. De Vries[2], D. Manríquez[1,3], and P. Pinedo[1], [1]*Colorado State University*, *Fort Collins, CO*, [2]*University of Florida*, *Gainesville, FL*, [3]*School of Veterinary Medicine of Toulouse*, *Toulouse, France*.

1323T **The effect of selective dry cow therapies based on two different algorithms on udder health and lactation performance in herds not using internal teat sealant.**
D. Paiva*, P. R. Menta, L. Bielamowicz, and V. S. Machado, *Texas Tech University*, *Lubbock, TX*.

1324T **Effects of feeding *Saccharomyces cerevisiae* fermentation product on milk oxylipids prior to and during an intramammary *S. uberis* challenge.**
Q. K. Kolar*[1], K. C. Krogstad[2], V. Mavangira[1], T. H. Swartz[2], I. Yoon[3], B. J. Bradford[2], and P. L. Ruegg[1], [1]*Department of Large Animal Clinical Sciences, Michigan State University*, *East Lansing, MI*, [2]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [3]*Diamond V*, *Cedar Rapids, IA*.

1325T **Antimicrobial peptides as therapeutic alternatives against bovine mastitis pathogens.**
A. J. Moreira[1,2], A. Assumpcao[1], K. Camargo[1,3], K. Araujo[2], N. Aulik[1], and H. Mantovani*[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [3]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*.

1326T **Effects of rumen-protected niacin on inflammatory response to repeated intramammary lipopolysaccharide challenges.**
K. C. Krogstad, J. Fehn*, and B. J. Bradford, *Department of Animal Science, Michigan State University*, *East Lansing, MI*.

1327T **Renal metabonomic changes of Saanen goats exposed to different doses of aflatoxin B_1.**
D. Su, J. Peng, X. Bai, X. Wang, and H. Shi*, *Southwest Minzu University*, *Chengdu, Sichuan, China*.

1328T **The cytokine profile following an endotoxin challenge in early versus mid-lactation dairy cows.**
J. Opgenorth*, E. J. Mayorga, M. A. Abeyta, B. M. Goetz, S. Rodriguez-Jimenez, A. D. Freestone, J. L. McGill, and L. H. Baumgard, *Iowa State University*, *Ames, IA*.

1329T **Significantly lower milk production among intensively managed dairy cows with subclinical *Theileria orientalis* infection.**
H. Espiritu*[1], H. Lee[2], S. Jin[1], M. D. Aftabuzzaman[1], E. J. Valete[1], J. Pioquinto[1], Sangsuk Lee[1], and Y. Cho[1], [1]*Sunchon National University*, *Sunchon-si, Jeollanam-do, South Korea*, [2]*Mari Animal Medical Center*, *Yongin-si, Gyeonggi-do, South Korea*.

1330T **Effects of β-caryophyllene on bovine monocyte-derived macrophage proteome and phosphoproteome in response to lipopolysaccharide challenges *in vitro*.**
K. C. Krogstad[1], L. K. Mamedova*[1], G. Kra[2,3], Y. Levin[4], M. Zachut[2], and B. J. Bradford[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [2]*Department of Ruminant Science, Institute of Animal Sciences, Agriculture Research Organization Volcani Institute*, *Rishon LeZion, Israel*, [3]*Department of Animal Science, the Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University of Jerusalem*, *Rehovot, Israel*, [4]*The Nancy and Stephen Grand Israel National Center for Personalized Medicine, Weizmann Institute of Science*, *Rehovot, Israel*.

1331T **A multivalent vaccine for mastitis and Johne's disease in dairy cattle.**
D. F. Díaz Herrera*[1], C. Ster[2], P. Lacasse[2], and F. Malouin[1], [1]*Universite de Sherbrooke, Biologie, Sciences*, *Sherbrooke, QC, Canada*, [2]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*.

1332T **Evaluating tart cherry pit extracts for antioxidant and anti-inflammatory function as a feed additive using RAW 264.7 cells.**
H. L. Reisinger*[1], L. K. Mamedova[1], K. C. Krogstad[1], E. C. Alocilja[2], B. Aliakbarian[3], and B. J. Bradford[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [2]*Department of Biosystems and Agricultural Engineering, Michigan State University*, *East Lansing, MI*, [3]*The Axia Institute, Michigan State University*, *East Lansing, MI*.

1333T **Integrated metabolomics and lipidomics analysis reveals lipid metabolic disorder in NCM460 cells caused by aflatoxin B_1 and aflatoxin M_1 alone and in combination.**
X. Yang[1,2], Y. N. Gao[1,2], J. Q. Wang[1,2], and N. Zheng*[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*, [2]*Key Laboratory of Quality & Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*.

1334T **Peripheral blood mononuclear cell culture for Treg cell isolation in dairy cows.**
Q. Jiang* and J. J. Loor, *Department of Animal Sciences, University of Illinois, Urbana, IL*.

1335T **Potential regulatory role of hypoxia in mammary lactation capacity in dairy cows with different lactation persistency.**
Z. Hu*, J. Cai, J. Liu, and D. Wang, *Institute of Dairy Science, College of Animal Sciences, Zhejiang University*, *Hangzhou, Zhejiang, China*.

1336T **Antimicrobial activity of a bacterial secondary metabolite against pathogens impacting animal health.**
T. B. Gupta*, K. Subharat, S. K. Gupta, J. Singh, and G. Brightwell, *AgResearch Ltd*, *Palmerston North, New Zealand*.

1337T **Effect of systemic ceftiofur on cows diagnosed with metritis and classified as high risk for spontaneous cure using a predictive model with farm variables on metritis cure, reproduction, culling, and milk yield.**
P. R. Menta*[1], E. B. Oliveira[3], J. G. Prim[2], K. N. Galvao[2,4], F. S. Lima[3], M. A. Ballou[1], N. R. Noyes[5], and V. S. Machado[1], [1]*Department of Veterinary Sciences, Texas Tech University*, *Lubbock, TX*, [2]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, University of Florida*, *Gainesville, FL*, [3]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis, CA*, [4]*D. H. Barron Reproductive and Perinatal Biology Research Program, University of Florida*, *Gainesville, FL*, [5]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul, MN*.

1338T **Integrating genotypic and phenotypic characterization with *in vivo* efficacy for probiotic therapy of endometritis in bovine.**
P. Gohil*[1], B. Nanavati[1], V. Suthar[2], M. Joshi[1], D. B. Patil[2], and C. G. Joshi[1], [1]*Gujarat Biotechnology Research Center*, *Gandhinagar, Gujarat, India*, [2]*Kamdhenu University*, *Gandhinagar, Gujarat, India*.

1339T **Withdrawn.**

1340T **Effects of heat stress and dietary organic acid and pure botanical on hepatic transcriptome.**
V. Sáinz de la Maza-Escolà*[1,2], G. Li[1], F. Ghiseli[2], X. V. Yu[1], A. B. P. Fontoura[1], A. Javaid[1], N. S. Salandy[1], S. L. Fubini[1], J. E. Duan[1], E. Grilli[2,4], and J. W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Department of Veterinary Medical Sciences, University of Bologna*, *Bologna, Italy*, [3]*Tuskegee University*, *Tuskegee, AL*, [4]*Vetagro S.p.A*, *Reggio Emilia, Italy*.

1341T **Barn air particles as a pro-inflammatory predisposing factor for bovine respiratory disease.**
Z. Nikousefat*, A. Thotakura, and J. Caswell, *Department of Pathobiology, University of Guelph*, *Guelph, ON, Canada*.

1342T **Withdrawn.**

Breeding and Genetics 2: Genetics of Health

1343T **A comprehensive characterization of longevity and culling reasons in Holstein cattle.**
T. Souza*[1], L. F. Pinto[1], V. Cruz[1], H. Oliveira[2,3], V. Pedrosa[3,4], G. Oliveira Junior[2], F. Miglior[2,5], F. Schenkel[2], and L. F. Brito[2,3], [1]*Federal University of Bahia*, *Salvador, Bahia, Brazil*, [2]*University of Guelph*, *Guelph, Ontario, Canada*, [3]*Purdue University*, *West Lafayette, IN*, [4]*State University of Ponta Grossa*, *Ponta Grossa, Parana, Brazil*, [5]*Lactanet Canada*, *Guelph, Ontario, Canada*.

1344T **Genetic and genomic evaluation for lameness in US Holstein cattle.**
A. Sewalem*, S. Arens, L.-Y. Chang, B. Shonka-Martin, J. Nani, M. McClure, and K. Olson, *ABS Global*, *Deforest, WI*.

1345T **Genome-wise association study and functional genomic analyses for hoof lesion traits in Holstein cattle.**
L. P. B. Sousa Junior[1], L. F. B. Pinto[1], V. A. R. Cruz[1], H. R. Oliveira[2,3], V. B. Pedrosa[3,4], G. A. Oliveira Junior[2], F. Miglior[2,5], F. S. Schenkel[2], and L. F. Brito*[2,3], [1]*Federal University of Bahia*, *Salvador, BA, Brazil*, [2]*University of Guelph*, *Guelph, ON, Canada*, [3]*Purdue University*, *West Lafayette, IN*, [4]*State University of Ponta Grossa*, *Ponta Grossa, PR, Brazil*, [5]*Lactanet*, *Guelph, ON, Canada*.

1346T **Assessing genetic variants as indicators of susceptibility to digital dermatitis infection in lactating Holstein cattle.**
Z. Macon*[1], J. Waddell[1], B. Jones[1,2], K. Wellman[1], and C. Runyan[1], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M Agrilife*, *Stephenville, TX*.

1347T **Analysis of neuromuscular disorders prevalence in Holstein dairy herds in Canada: A preliminary study.**
G. Condello*[1], C. M. Rochus[1], F. S. Schenkel[1], B. J. Van Doormaal[2], F. Miglior[1,2], and C. F. Baes[1,3], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lactanet*, *Guelph, ON, Canada*, [3]*Institute of Genetics, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

1348T **Haplotype inheritance and livability of recumbent Holstein calves.**
A. Al-Khudhair*[1], P. M. VanRaden[1], D. J. Null[1], M. Neupane[1], and C. D. Dechow[2], [1]*USDA*, *Beltsville, MD*, [2]*The Pennsylvania State University*, *University Park, PA*.

1349T **Network of dysregulated miRNA-mRNA reveals candidate regulatory miRNAs in bovine mastitis caused by *Staphylococcus chromogenes*.**
F. A. Omonijo*[1,2], M. Wang[1], D. Gagné[3], M. Laterrière[3], Z. Xin[2], and E. M. Ibeagha-Awemu[1], [1]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Animal Science, McGill University*, *Ste-Anne-De-Bellevue, Quebec, Canada*, [3]*Quebec Research and Development Centre, Agriculture and Agri-Food Canada*, *Quebec, Quebec, Canada*.

1350T **Identification of genetic variants affecting postpartum hypocalcemia in Holstein cows.**
L. C. Novo*[1], F. M. Rezende[2], J. E. P. Santos[2], C. D. Nelson[2], L. Hernandez[1], B. Kirkpatrick[1], and F. Peñagaricano[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*University of Florida*, *Gainesville, FL*.

1351T **Genetic evaluation of colostrum production in a commercial Jersey dairy herd.**
M. M. Schutz*[1], B. J. Heins[2], N. Lopez-Villobos[3], and D. L. Carr[4], [1]*University of Minnesota*, *St. Paul, MN*, [2]*University of Minnesota WCROC*, *Morris, MN*, [3]*Massey University*, *Palmerston North, New Zealand*, [4]*Wilbur-Ellis Nutrition*, *Kennewick, WA*.

1352T **Determination of genome regions and metabolic processes associated with tick resistance in Charolais and Limousin cattle from French New Caledonia.**
P. Martin*[1], T. Hüe[2], J. Mante[3], A. Lescane[4], D. Boichard[1], and M. Naves[5], [1]*Université Paris-Saclay, INRAE, AgroParisTech, GABI*, *Jouy-en-Josas, France*, [2]*Institut Agronomique néo-Calédonien (IAC),* équipe *ARBOREAL*, *Païta, New Caledonia, France*, [3]*France Limousin Sélection*, *Boisseuil, France*, [4]*Unité Néo-Calédonienne de sélection et de promotion des races bovines (UPRA Bovine)*, *Païta, New Caledonia, France*, [5]*INRAE, ASSET*, *Petit-Bourg, French West Indies, France*.

1353T **Copy number variation accounts for complementary additive genetic variance of health traits in Holstein cattle.**
G. C. Ladeira*[1], P. J. Pinedo[2], J. E. P. Santos[1], W. W. Thatcher[1], and F. R. Rezende[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Colorado State University*, *Fort Collins, CO*.

Dairy Foods 2: Production, Products, and Chemistry

1354T **Physicochemical properties, antioxidant capacity and bioavailability of whey protein encapsulated coenzyme Q_{10} nanoparticles.**
Y. Sun*[1], J. Liu[1], X. Pi[1], S. Zhang[1], A. Kemp[2], and M. Guo[2], [1]*College of Food Science, Northeast Agricultural University*, *Harbin, Heilongjiang, China*, [2]*Department of Nutrition and Food Sciences, College of Agriculture and Life Sciences, University of Vermont*, *Burlington, VT*.

1355T **Occurrence of fraud, alteration and adulteration in commercial milk in the Brazilian legal Amazon region.**
J. Ribeiro Júnior*[1,2], B. Dias[1], C. Nascimento[1], L. Lino[1], Y. Rodrigues[1], L. Silva[3], C. Lobo[1,2], R. Tamanini[2], and A. Alfieri[2], [1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*, [3]*Tocantins Agricultural Defense Agency*, *Araguaína, Tocantins, Brazil*.

1356T **Camel whey protein with enhanced antioxidative and antimicrobial properties upon simulated gastro-intestinal digestion.**
H. Kamal*[1,2], [1]*University of Nottingham*, *Loughborough, United Kingdom*, [2]*United Arab Emirates University*, *Al Ain, UAE*.

1357T **A sedimentation test for determination of heat-induced aggregation in milk protein beverages.**
C. M. Smits*[1], J. A. Hargrove[1], M. A. Drake[1], and D. M. Barbano[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

1358T **Seasonal influence on buffalo milk composition.**
C. F. Viana[1], I. L. S. Gomes[1], E. H. P. Andrade[1,2], M. R. Souza[1], C. F. A. M. Penna[1], B. M. S. Souza[1], A. C. C. Lopes[1], R. S. Conrrado[1,2], T. O. Santos[1], M. O. Leite[1,2], and L. M. Fonseca*[1,2], [1]*School of Veterinary Medicine/Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Laboratory of Milk Quality Analysis/School of Veterinary Medicine/Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*.

1359T **Milk casein concentrate and serum proteins concentrate as the sources of bioactive peptides.**
M. Darewicz*, J. Borawska-Dziadkiewicz, A. Iwaniak, P. Minkiewicz, D. Mogut, M. Baranowska, K. Przybylowicz, and J. Zulewska, *University of Warmia and Mazury*, *Olsztyn, Poland*.

1360T **Developing a hybrid method for manufacturing whey protein nano-/micro-gel particles derived from a dispersion containing fibril/ribbon-shaped assemblies.**
H. Shi*[1], A. S. Patel[1], R. Bang[2], O. Velev[2], and H. Zheng[1], [1]*Department of Food, Bioprocessing and Nutrition Sciences, Southeast Dairy Foods 11 Research Center, North Carolina State University*, *Raleigh, NC*, [2]*Department of Chemical and Biomolecular Engineering, North Carolina State University*, *Raleigh, NC*.

1361T **The investigation of a rapid method for indicating powder properties based on the correlation analysis of interfacial parameters.**
H. An and H. Zheng*, *Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University*, *Raleigh, NC*.

1362T **Lysozyme activity and total antioxidant capacity in raw and pasteurized donkey milk of the Sicilian *Ragusana* breed.**
V. M. Marino, G. Belvedere, S. La Terra, and I. Schadt*, *Consorzio per la Ricerca nel Settore della Filiera Lattiero-Casearia e dell'Agroalimentare*, *Ragusa, Italy, Sicily*.

1363T **Developing scalable enzymatic manufacturing process of lactobionic acid from permeate of milk protein concentrate.**
W. Wei[1], H. Zheng*[1], and V. Yeung[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*California Polytechnic State University*, *San Luis Obispo, CA*.

1364T **Modification of butterfat to alter its crystallization pattern.**
S. Ginsburg* and R. Jiménez-Flores, *The Ohio State University*, *Columbus, OH*.

1366T **Preliminary studies of the development of a milk protein concentrate containing pre-aggregated whey proteins.**
A. Schnurr* and J. Amamcharla, *Kansas State University*, *Manhattan, KS*.

1367T **The physiochemical changes during storage of retort-sterilized dairy-based high-protein beverages.**
B. Zaitoun* and J. Amamcharla, *Kansas State University*, *Manhattan, KS*.

1368T **Immunoglobulins concentration and major solids content of bovine colostrum can be accurately determined through mid-infrared spectroscopy.**
A. Goi[1], M. De Marchi[1], G. Visentin[2], C. L. Manuelian*[3], and A. Costa[2], [1]*Department of Agronomy, Food, Natural resources, Animals and Environment, University of Padova*, *Legnaro (PD), Italy*, [2]*Department of Veterinary Medical Sciences, University of Bologna*, *Ozzano dell'Emilia (BO), Italy*, [3]*Group of Ruminant Research (G2R), Department of Animal and Food Sciences, Universitat Autònoma de Barcelona (UAB)*, *Bellaterra, Spain*.

1369T **Effect of slicing on the total coliform, *Escherichia coli* and toxigenic *Staphylococcus aureus* counts in mozzarella cheese produced in Tocantins, Brazil.**
J. Ribeiro Júnior*[1,2], D. Santos[1], Y. Rodrigues[1], B. Dias[1], E. da Silva[1], F. Nunes[1], and A. Alfieri[2], [1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*.

1370T **Development of a novel probiotic dairy product with the mixture of soy and cow's milk.**
S. Hekmat* and S. M. Fatima, *Brescia University College*, *Canada*.

1371T **Microstructure and physicochemical properties of goat milk yogurt with fucoxanthin.**
R. Attaie*, M. Nuñez de Gonzalez, S. Woldesenbet, A. Mora-Gutierrez, and Y. Jung, *Prairie View A&M University*, *Prairie View, TX*.

1372T **Effect of adding xanthan gum on low-fat probiotic yogurt functionality and microbiological quality.**
M. Hamouda*, A. Sharma, R. Joshi, and P. Salunke, *Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*.

1373T **Functional characterization of whey protein concentrates from cow and goat milk cheese whey.**
A. Syamala, M. Akter, and P. Salunke*, *Department of Dairy and Food Science, Midwest Dairy Foods Research Center, South Dakota State University*, *Brookings, SD*.

1374T **Development of a chocolate milk sensory ballot for use in the dairy industry with consumers in mind.**
A. Stelick*, R. Dando, M. Wiedmann, and N. Martin, *Department of Food Science, Cornell University*, *Ithaca, NY*.

1375T **Effect of *Lactobacillus plantarum* TD109 on the quality and cholesterol lowering properties of yogurt.**
M. Zheng, Q. Zhao, C. Man, and Y. Jiang*, *Northeast Agricultural University*, *Harbin, Heilongjiang, China*.

1376T **The protective effects of iron free lactoferrin on lipopolysaccharide-induced intestinal inflammatory injury via modulating the NF-κB/PPAR signaling pathway.**
H. Y. Wu[1,2], L. L. Fan[1,2], Y. N. Gao[1,2], J. Q. Wang[1,2], and N. Zheng*[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*, [2]*Key Laboratory of Quality & Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*.

1377T **HS-GC-IMS, HS-SPME-GC-MS combined with electronic nose and electronic tongue to analyze the flavor of raw milk in different regions of China.**
X. L. Chi[1,2], N. Yuan[1,2], N. Zheng[1,2], H. M. Liu*[1,2], and J. Q. Wang[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*, [2]*Key Laboratory of Quality & Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*.

1378T **E-nose, E-tongue combined with GC-IMS to analyze the influence of key additives during processing on the flavor of infant formula.**
X. L. Chi[1,2], N. Yuan[1,2], N. Zheng[1,2], H. M. Liu*[1,2], and J. Q. Wang[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*, [2]*Key Laboratory of Quality & Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*.

1379T **The production of an infant formula with a minimally processed route impacts its nutritional, physiological and sensorial qualities.**
A. Deglaire[1], N. Leconte[1], A. Blais[2], J. Calvez[2], C. Delteil[2], F. Blachier[2], G. Lucchi[3], K. Gourrat[3], E. Szleper[3], V. Feyen[3], G. Gesan-Guiziou[1], R. Jeantet[1], D. Dupont*[1], S. Nicklaus[3], A.-M. Davila[2], [1]*1STLO, INRAE, Institut Agro*, *Rennes, France*, [2]*PNCA, INRAE, AgroParisTech, Université Paris-Saclay*, *Paris, France*, [3]*3CSGA, AgroSup Dijon, CNRS, INRAE, Université Bourgogne Franche-Comté*, *Dijon, France*.

1380T ***In vitro* infant digestion model leads to similar conclusion as *in vivo* study: Focus on human milk and infant formula protein digestion.**
E. Charton[1,2], O. Menard[1], M.-F. Cochet[1], Y. Le Gouar[1], J. Jardin[1], G. Henry[1], J. Ossemond[1], P. Moughan[3], C. Montoya[3,4], A. Bellanger[5,6], D. Dupont*[1], I. Le Huërou-Luron[2], and A. Deglaire[1], [1]*UMR STLO, Institut Agro, INRAE*, *Rennes, France*, [2]*Institut NuMeCan, INRAE, INSERM, Univ Rennes*, *Saint Gilles, France*, [3]*Riddet Institute, Massey University*, *Palmerston North, New Zealand*, [4]*Smart Foods Innovation and Bioproducts Innovation Centre of Excellence, AgResearch Limited*, *Palmerston North, New Zealand*, [5]*CHU Rennes, Pediatrics Department*, *Rennes, France*, [6]*University of Rennes 1, Faculty of Medicine*, *Rennes, France*.

1381T **Preparation of synbiotic milk powder and its improvement on calcium absorption and bone microstructure in calcium deficient mice.**
M. Jia*[1], J. Luo[1], B. Gao[1], Y. Huangfu[1], Y. Bao[1], D. Li[1], and S. Jiang[2], [1]*Northeast Forestry University*, *Harbin, Heilongjiang Province, China*, [2]*Heilongjiang Feihe Dairy Co., Ltd*, *Beijing, China*.

1382T **Frequency of milk beta-casein gene in Holstein cows in Korea and its relationship with energy balance during early lactation period.**
E. Jeon[1], S. Cho[2], J.-K. Son[1], S. Kim[1], B. Chae[2], I. Cheon[2], H.-R. Park[3], and N.-J. Choi*[2], [1]*Dairy Science Division, National Institute of Animal Science, Rural Development Administration*, *Cheonan, Korea*, [2]*Department of Animal Science, Jeonbuk National University*, *Jeonju, Korea*, [3]*Korea Agriculture Technology Promotion Agency*, *Iksan, Korea*.

1383T **A novel biorelevant in vitro dynamic digestion simulator reproducing the biomechanics of the gastrointestinal tract.**
I. Greco, O. Menard, J. Feng, J. Lee, S. Le Feunteun, R. Jeantet, and D. Dupont*, *INRAE, Institut Agro, STLO*, *Rennes, France*.

1384T **Milk's fatty acid profile due to the inclusion of pasture in the diet of dairy cows fed with a total mixed ration.**
G. Casarotto*[1], P. Véliz[1], A. López[1], C. Bonfiglio[1], I. Vieitez[2], A. Britos[1], J. L. Repetto[1], S. Carro[1], and C. Cajarville[1], [1]*Facultad de Veterinaria, Universidad de la República*, *Montevideo, Uruguay*, [2]*Facultad de Química, Universidad de la República*, *Montevideo, Uruguay*.

1385T **Characteristic chromatographic fingerprint study of isotopes, mineral elements and flavor in milk in Ningxia province of China.**
H. Guo, D. Bu, and Lu Ma*, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

1386T **Cheese aroma perception: The link between cognitive and autonomic nervous system responses.**
J. Snow*, D. Olmos, M. Pedroza, and C. Licon, *Fresno State University*, *Fresno, CA*.

1387T **Texture survey of commercial butters and its correlation to their chemical composition.**
R. Choriego* and R. Jiménez-Flores, *The Ohio State University*, *Columbus, OH*.

1388T **Differential scanning calorimetry melting profile of butterfat in relation to spreadability.**
M. Chrusciel*, A. Relling, and R. Jiménez-Flores, *The Ohio State University*, *Columbus, OH*.

1389T **Impact of different molecular weight hyaluronic acid on the functional characteristics of process cheese products at different moisture levels.**
R. Joshi*, A. Sharma, S. Sutariya, and P. Salunke, *South Dakota State University*, *Brookings, SD*.

1390T **Effects of feeding cows a high omega-3 fatty acids diet in milk and dairy products quality.**
C. Licon*, D. Olmos, D. Hidalgo, and K. Thompson, *Fresno State University*, *Fresno, CA*.

1391T **Novel heteropolysaccharide-producing lactic acid bacteria with promising effects on the texture of model yogurts.**
C. Marchand*[1], S. Nahali[1], M.-H. Lessard[1], M. Lafantaisie[1], S. Fraud[2], D. Miller[3], S. L. Turgeon[1], and S. Labrie[1], [1]*STELA Dairy Research Center, Institute of Nutrition and Functional Foods (INAF), Department of Food Science, Université Laval*, *Quebec, Canada*, [2]*Yoplait, Vienne Technical Center*, *Vienne, France*, [3]*General Mills*, *Minneapolis, MN*.

1392T **Investigating relationship between composition and stickiness of different types of cheese slices by tack and wear measurements.**
S. B. Immadi*[1], N. Pace[1], A. Parhi[1], H. Esphari[2], and P. Sharma[1], [1]*Utah State University*, *Logan, UT*, [2]*Tillamook County Creamery Association*, *Portland, OR*.

1393T **Ice crystallization reduction strategies in ice cream: Use of cellulose-extract from agricultural biomass.**
R. Alayouni, P. Salunke, and S. Janaswamy*, *Department of Dairy and Food Science, South Dakota State University*, *Brookings, SD*.

1394T **Chlorinated water as a cause of chlorate contamination in farm bulk milk.**
L. Twomey[1,2], D. Gleeson*[1], and A. Furey[2], [1]*Teagasc Animal & Grassland Research Centre, Moorepark*, *Fermoy, Co. Cork, Ireland*, [2]*Department of Physical Sciences, Munster Technological University*, *Cork, Ireland*.

1395T **New dairy products with selected milk proteins and survival potential of bacteria *Lactobacillus acidophilus* LA-5.**
J. Kowalik*, M. Baranowska, K. Kielczewska, A. Lobacz, J. Tarapata, J. Zulewska, and B. Dec, *Department of Dairy Science and Quality Management, Faculty of Food Science, University of Warmia and Mazury*, *Olsztyn, Poland*.

1396T **Protein ingredient quality within infant formulas impacts digestion and amino acid bioavailability: A combined *in vitro* and *in vivo* approach.**
L. Chauvet[1,3], Y. Le Gouar[1], O. Ménard[1], M-F. Cochet[1], A. Brunel[1], J. Jardin[1], S. Guérin[2], R. Janvier[2], A. Cahu[2], T. Croguennec[1], M. Van Audenhaege[3], D. Dupont*[1], M. Lemaire[3], I. Le Huërou-Luron[2], A. Deglaire[1], [1]*UMR STLO, INRAE, Institut Agro-Agrocampus Ouest*, *Rennes, France*, [2]*Institut NuMeCan, INRAE, INSERM, Univ Rennes*, *Saint Gilles, France*, [3]*SODIAAL International, Centre Recherche & Innovation*, *Rennes, France*.

1397T **Withdrawn.**

1398T **Effect of the type of milk protein sources on the properties of low-fat dairy spreads.**
M. Baranowska*[1,4], J. Ziajka[1,4], J. Kowalik[1,4], B. Dec[1,4], J. Tarapata[1,4], K. Kielczewska[1,4], K. E. Przybylowicz[2,4], M. Darewicz[3,4], and J. Zulewska[1,4], [1]*Department of Dairy Science and Quality Management*, [2]*Department of Human Nutrition*, [3]*Department of Food Biochemistry*, [4]*University of Warmia and Mazury*, *Olsztyn, Poland*.

1399T **Python-based modelling of engineering and physicochemical properties for prediction of paneer quality.**
R. Kaura*[1,2] and A. Sharma[2], [1]*ICAR-National Dairy Research Institute*, *Karnal, Haryana, India*, [2]*Guru Angad Dev Veterinary and Animal Sciences University*, *Ludhiana, Punjab, India*.

1400T **Impact of seasonality on the microbiological and centesimal composition quality of bulk tank raw milk in northern Brazil.** J. Ribeiro Júnior*[1,2], F. Nunes[1,3], J. Mendonça[1,3], B. Dias[1], E. da Silva[1], Y. Rodrigues[1], K. da Silva[1], L. Rodrigues[1], and A. Al ieri[2],
[1]*Federal University of North Tocantins*, *Araguaína, Tocantins, Brazil*, [2]*National Institute of Science and Technology for the Milk Production Chain*, *Londrina, Paraná, Brazil*, [3]*Tocantins Agricultural Defense Agency*, *Palmas, Tocantins, Brazil*.

1401T **Performances of skimmed milk crossflow microfiltration: Comparison of ceramic membrane configurations.**
N. Leconte, F. Garnier-Lambrouin, G. Fouillard-Mairesse, and G. Gesan-Guiziou*, *UMR STLO, INRAE, Institut Agro Rennes-Angers, UMR STLO, INRAE, Institut Agro Rennes-Angers*, *Rennes, France*.

1402T **Digestibility of ultra-pasteurized high-protein beverages: A comparative study.**
S. Bass*, K. Cashion, S. Vink, and C. K. Yeung, *Animal Science Department, California Polytechnic State University*, *San Luis Obispo, CA*.

1403T **Functional properties and flavor characteristics of milk by dietary supplementation with jujube powder.**
C. Zhang*, J. Mei, and H. Liu, *Zhejiang University*, *Hangzhou, Zhejiang, China*.

1404T **Ultrafiltration permeates as substrates in biogas production—Sustainable dairy processing.**
J. Tarapata[1], M. Zielinski[2], M. Baranowska[1], B. Dec[1], and J. Zulewska*[1], [1]*Department of Dairy Science and Quality Management, Faculty of Food Science, University of Warmia and Mazury in Olsztyn*, *Olsztyn, Poland*, [2]*Department of Environmental Engineering, Faculty of Geoengineering, University of Warmia and Mazury in Olsztyn*, *Olsztyn, Poland*.

1405T **Effect of raw milk pH on the finished texture of yogurt.**
P. Ankcorn*[1,2], C. Dibble[1], P. Beswetherick[2], C. Coggins[2], C. C. Fagan[1], and K. Niranjan[1], [1]*University of Reading*, *Reading, England, UK*, [2]*Yeo Valley Farms (Production) Ltd*, *Blagdon, England, UK*.

1406T **Implementing environmental monitoring programs in small dairy processing facilities to control *Listeria*.**
S. Bolten*, T. Lott, R. Ralyea, A. Trmcic, A. Zuber Gianforte, N. Martin, and M. Wiedmann, *Cornell University*, *Ithaca, NY*.

1540T **Understanding impact of particle size and relative humidity on the physicochemical and functional characteristics of milk protein isolate 90.**
K. Palmer*[1], A. Parhi[1], S. Singh[1], A. Shetty[3], V. Sunkesula[2], and P. Sharma[1], [1]*Utah State University*, *Logan, UT*, [2]*Idaho Milk Products*, *Jerome, ID*, [3]*Anton Paar USA*, *Ashland, VA*.

Growth and Development 1

1407T **Effects of transition milk on growth performance and health of Holstein calves.**
C. Ostendorf*[1,2], M. H. Ghaffari[1], C. Koch[2], and H. Sauerwein[1], [1]*Institute of Animal Science, University of Bonn*, *Bonn, Germany*, [2]*Educational and Research Centre for Animal Husbandry, Hofgut Neumühle*, *Münchweiler, Germany*.

1408T **The effects of extending colostrum feeding to Holstein calves on their metabolome 21 days after their first calving.**
M. Tortadès*[1], G. Elcoso[2], A. Bach[3], and M. Terré[1], [1]*IRTA (Institut de Recerca i Tecnologia Agroalimentàries)*, *Caldes de Montbui, Barcelona, Catalonia, Spain*, [2]*Blanca from the Pyrenees*, *Els Hostalets de Tost, Lleida, Catalonia*, [3]*ICREA (Institució Catalana de Recerca i Estudis Avançats)*, *Barcelona, Catalonia*.

1409T **Evaluation of colostrum quantity, quality, and bioactive compounds from Jersey cows fed two concentrations of dietary cation-anion difference with or without nicotinic acid and its effect on calf performance.**
T. C. Stahl*, M.C. McBride, K. N. Klobucher, K. R. Johnston, T. Islam, and P. S. Erickson, *University of New Hampshire*, *Durham, NH*.

1410T **Effect of in utero choline exposure on Angus × Holstein carcass characteristics.**
W. E. Brown*[1,2], H. T. Holdorf[1], S. J. Johnson[1], S. J. Kendall[1], S. E. Green[1], and H. M. White[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Kansas State University*, *Manhattan, KS*.

1411T **Butyrate metabolite hesperetin alleviates necrotizing enterocolitis by increasing tight junction proteins via inhibiting the PI3K-Akt pathway.**
Y. Liting[1,2], G. Yanan[1,2], Y. Qianqian[1,2], W. Jiaqi[1,2], and Z. Nan*[1,2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*, [2]*Key Laboratory of Quality & Safety Control for Milk and Dairy Products of Ministry of Agriculture and Rural Affairs, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences*, *Beijing, P. R. China*.

1542T **Longitudinal histological and ultrasound analysis of bovine mammary gland development.**
A. L. Vang*, W. S. Frizzarini, T. Bresolin, T. Cunha, G. L. Menezes, G. J. M. Rosa, L. L. Hernandez, and J. R. R. Dorea, *University of Wisconsin–Madison*, *Madison, WI*.

Lactation Biology 2

1412T **Venous blood composition of subclinically inflamed and healthy mammary glands.**
C. S. Gammariello*[1], J. Hanson[1], A. E. Relling[1], G. M. Canny[1], M. Oliveira[1], A. Sipka[2], K. M. Enger[1], and B. D. Enger[1], [1]*Ohio State University*, *Wooster, OH*, [2]*Cornell University*, *Ithaca, NY*.

1413T **Characterization of fatty acids that promote lipid synthesis in bovine mammary epithelial cells.**
M.-A. Guesthier*[1,2], T. Kustova[1], P. Piantoni[2], G. Shroeder[2], and S. A. Burgos[1], [1]*Department of Animal Science, McGill University*, *St-Anne-de-Bellevue, QC Canada*, [2]*Cargill Animal Nutrition and Health, Innovation Campus*, *Elk River, MN*.

1414T **Cellular agriculture for colostrum and milk production.**
S. Purup*[1], Z. Sattari[2], J. Che[2], Y. Yue[1], R. Brødsgaard Kjærup[1], N. Aagaard Poulsen[2], S. Drud-Heydary Nielsen[2], T. Sørensen Dalgaard[1], and L. Bach Larsen[2], [1]*Aarhus University–Viborg, Dept. Animal and Veterinary Sciences*, *Tjele, Denmark*, [2]*Aarhus University, Dept. Food Science*, *Aarhus N, Denmark*.

1415T **Associations between antepartum and parturitive serum mineral concentrations with colostrum composition and component yield.**
K. S. Hare*[1], E. Croft[1], K. M. Wood[1], G. B. Penner[2], and M. A. Steele[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*University of Saskatchewan*, *Saskatoon, SK, Canada*.

1416T **The effects of stage of lactation and mastitis on peripheral blood mononuclear cell mitochondrial enzyme activity in Holsteins on 5 California commercial dairies.**
A. M. Niesen*, L. A. Jacobsen, P. Lucey, S. R. Poldervaart, T. A. Batchelder, and H. A. Rossow, *University of California–Davis*, *Davis, CA*.

Physiology and Endocrinology 2

1417T **High body condition score at dry-off does not affect cyclicity, uterine health, or embryo quality in the subsequent lactation of Holstein cows.**
T. O. Cunha*[1], P. L. J. Monteiro Jr[1], E. A. Galvan[1], W. S. Frizzarini[1], N. N. Teixeira[1], T. Valdes-Arciniega[1,2], M. Z. Toledo[3], R. D. Shaver[1], J. P. N. Martins[1,2], M. C. Wiltbank[1], and L. L. Hernandez[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin–Madison*, *Madison, WI*, [3]*Purina Animal Nutrition*, *Madison, WI*.

1418T **Differences in blood metabolites exist between feed-efficient cows differing in choline supplementation.**
M. J. Caputo*[1], S. J. Kendall[1], K. Estes[2], K. A. Weigel[1], and H. M. White[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Balchem Corp*, *New Hampton, NY*.

1419T **Colostrum quality at calving can predict embryo viability in postpartum multiparous Holstein cows.**
A. H. Souza[1], T. O. Carneiro[2], D. Langwinski[1], M. Luchesi[1], B. O. Cardoso[1], R. O. Rodrigues*[3], and R. Sartori[4], [1]*Cargill Animal Nutrition*, *Campinas, SP, Brazil*, [2]*Independent Bovine Reproductive Veterinarian*, *Brotas, SP, Brazil*, [3]*Cargill Animal Nutrition*, *Lewisburg, OH*, [4]*ESALQ, University of Sao Paulo*, *Piracicaba, SP, Brazil*.

1420T **Effect of over-conditioning around calving on the mRNA abundance of hepatic genes related to bile acid synthesis in dairy cows.**
L. Dicks*[1], M. H. Ghaffari[1], K. Schuh[2], E. Murani[3], H. Sauerwein[1], and S. Häussler[1], [1]*University of Bonn, Institute of Animal Science*, *Bonn, Germany*, [2]*University of Applied Sciences Bingen, Institute Feed Research GmbH*, *Bingen am Rhein, Germany*, [3]*Research Institute for Farm Animal Biology (FBN), Institute for Genome Biology*, *Dummerstorf, Germany*.

1421T **Changes in plasma metabolome of newborn calves: Insights during the first 12 hours of life.**
M. Hosseini Ghaffari*[1], C. S. Ostendorf[1], C. Koch[2], and H. Sauerwein[1], [1]*Institute of Animal Science, University of Bonn*, *Bonn, NRW, Germany*, [2]*Educational and Research Centre for Animal Husbandry, Hofgut Neumühle*, *Münchweiler an der Alsenz, Germany*.

1422T **Effects of zinc-hydroxychloride on ketone metabolism in heat-stressed dairy cows.**
S. Rodriguez-Jimenez*[1], E. J. Mayorga[1], M. A. Abeyta[1], B. M. Goetz[1], J. Opgenorth[1], A. D. Freestone[1], S. K. Kvidera[2], M. M. McCarthy[2], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*Selko*, *Indianapolis, IN*.

1423T **Muscle reserves in the prepartum period impact the response to pre- and postpartum intravenous glucose tolerance tests.**
K. M. Gouveia*, L. M. Beckett, T. M. Casey, and J. P. Boerman, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

1424T **Glucose responses during glucose tolerance tests in transition Holstein cows with different body condition scores and their offspring.**
M. Poczynek[1], L. S. Nogueira[1], J. H. Carneiro[1], F. C. Cardoso[2], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*University of Illinois*, *Urbana, IL*.

1543T **The association of delayed milk ejection with milking performance in Holstein dairy cows milked 3 times per day: A cohort study.**
M. O. Dahl, A. Singh*, M. E. Spellman, and M. Wieland, Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY.

Production, Management and the Environment 2

1425T **Application of whole farm modelling to compare the emissions from regenerative and conventional dairy-beef production systems.**
S. Benitz*, C. Wand, J. Ellis, and M. Steele, *University of Guelph*, *Guelph, Ontario, Canada*.

1426T **Evolution of mature size, mature production, and the relative maturity and performance during the first two lactations of DHI registered Holsteins in Quebec.**
R. A. Molano*[1,2], R. K. Moore[1], and D. E. Santschi[1], [1]*Lactanet, Canadian Network for Dairy Excellence*, *Ste-Anne-de-Bellevue, QC, Canada*, [2]*Universitié Laval*, *Quebec, QC, Canada*.

1427T **Combined effects of supplementing red algae (*Gracilaria* spp.) and lactic acid bacteria (*Lactobacillus pentosus*) on methane emissions and VFA production in vitro.**
A. Tiwari* and R. Kohn, *University of Maryland*, *College Park, MD*.

1428T **Environmental performance of organic-certified grass-fed dairies stratified by production costs.**
K. V. Almeida[1], H. M. Darby[2], S. E. Ziegler[2], S. Flack[3], D. C. Reyes*[1], and A. F. Brito[1], [1]*Department of Agriculture, Nutrition, and Food Systems, University of New Hampshire*, *Durham, NH*, [2]*University of Vermont Extension*, *Burlington, VT*, [3]*Sarah Flack Consulting*, *Enosburg Falls, VT*.

1429T **Production performance, enteric gas emissions, and their associations with genomic predicted transmitting abilities of Holstein cattle.**
N. Stepanchenko*[1], D. E. Wasson[1], S. Welchez[1], T. Silvestre[2], L. Martins[1], C. D. Dechow[1], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *State College, PA*, [2]*Kemin Industries*, *Singapore*.

1430T **Effects of wildfire-$PM_{2.5}$ on health and biomarkers of innate immunity in dairy cows.**
K. Mirkin*, A. Pace, M. Larson, B. C. Agustinho, L. De Moura Pereira, P. Rezamand, and A. L. Skibiel, *University of Idaho*, *Moscow, ID*.

1431T **What measurable environmental factors impact rumination time in dairy cows at a pen level?**
A. A. McNeil* and B. J. Bradford, *Michigan State University*, *East Lansing, MI*.

1432T **Effects of early lactation milking frequency in an automated milking system on cow performance.**
E. M. Kammann[1], N. S. Jozik[2], W. Li[3], E. A. French[3], and R. S. Pralle*[1,2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*School of Agriculture, University of Wisconsin–Platteville*, *Platteville, WI*, [3]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

1433T **Effects of alternative feeds on *in vitro* digestibility, rumen fermentation and gas production of lactating cow diets in semi-intensive Kenyan dairy systems.**
C. Arndt[1], Y. Li*[2], B. Habermann[1], C. Patino-Pinares[1], D. Korir[1], X. Sun[2], S. Yang[2], C. Kunz[2], L. Gichuki[1], and M. Niu[2], [1]*International Livestock Research Institute (ILRI)*, *Nairobi, Kenya*, [2]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*.

1434T **Changes in the dietary phosphorus of dairy cows in Idaho: A case study.**
I. A. M. A. Teixeira*[1], S. A. Santos[2], A. Leytem[3], and M. Chahine[1], [1]*University of Idaho*, *Twin Falls, ID*, [2]*Universidade Federal da Bahia*, *Salvador, BA, Brazil*, [3]*USDA-Agricultural Research Service*, *Kimberly, ID*.

1435T **Improving cull cow carcass traits and meat quality.**
N. Berdusco*, T. F. Duffield, D. F. Kelton, K. M. Wood, and D. B. Haley, *University of Guelph*, *Guelph, Ontario, Canada*.

1436T **Identifying early indicators of subclinical mastitis via Raman spectroscopy.**
A. L. Ollinger*[1] and B. W. Jones[1,2], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M AgriLife Research*, *Stephenville, TX*.

1437T **Comparison of grazing perennial ryegrass and perennial ryegrass-white clover swards for enteric methane emissions and milk production in grazing dairy cows.**
C. Dwan*[1,2], L. Shalloo[1], F. Buckley[1,2], D. Hennessy[1], H. Irish[1,2], and B. Lahart[1], [1]*Animal and Grassland Research and Innovation Centre, Teagasc, Moorepark*, *Fermoy, Co. Cork, Ireland*, [2]*School of Biological Earth and Environmental Science*, *Cork, Ireland*.

1438T **Effects of supplementing a *Bacillus*-based direct-fed microbial on performance and digestibility of lactating dairy cows.**
D. Sousa*[1], O. Queiroz[2], B. Cappellozza[2], C. Alveblad[3], and B-O. Rustas[3], [1]*Swedish University of Agricultural Sciences, Department of Animal Environment and Health*, *Skara, Sweden*, [2]*Chr. Hansen A/S*, *Hørsholm, Denmark*, [3]*Swedish University of Agricultural Sciences, Department of Animal Nutrition and Management*, *Uppsala, Sweden*.

1439T **Relationships between birth and calving season on first-lactation performance of Holstein dairy cows in the Midwestern USA.**
K. N. Brost* and J. K. Drackley, *University of Illinois*, *Urbana, IL*.

1440T **Reproduction success of dairy cows associated with early lactation milk fatty acids.**
D. Warner*[1], L. Fadul-Pacheco[1], R. Gervais[2], and D. E. Santschi[1], [1]*Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*Université Laval*, *Quebec, QC, Canada*.

1441T **Effects of combining plant-based compounds with 3-nitrooxypropanol (3-NOP, Bovaer 10) on methane emissions and lactational performance of dairy cows.**
X. Ma*[1], S. E. Räisänen[1], K. Giller[1], M. Z. Islam[1], Y. Li[1], R. Peng[1], M. Reichenbach[1], X. Sun[1], I. Müller[2], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH*, *Lindau, Zurich, Switzerland*, [2]*Department of Animal Nutrition, DSM Nutritional Products*, *Kaiseraugst, Aargau, Switzerland*.

1442T **Combined effects of 3-nitrooxypropanol (3-NOP, Bovaer 10) and whole cottonseed on production and enteric methane emissions of dairy cows.**
X. Ma*[1], S. E. Räisänen[1], T. He[1], M. Z. Islam[1], Y. Li[1], R. Peng[1], M. Reichenbach[1], X. Sun[1], K. Wang[1], S. Yang[1], Z. Zeng[1], I. Müller[2], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences*, *Lindau, Zurich, Switzerland*, [2]*Department of Animal Nutrition, DSM Nutritional Products*, *Kaiseraugst, Aargau, Switzerland*.

1443T **Identifying gram-positive and gram-negative infections via differences in Raman spectroscopy spectra.**
L. A. Martin*[1] and B. W. Jones[1,2], [1]*Tarleton State University*, *Stephenville, TX*, [2]*Texas A&M AgriLife*, *Stephenville, TX*.

1444T **Study on categorization of factors affecting smallholder dairy production in Siltie zone, southern Ethiopia, applying multivariate analysis approaches.**
B. Tolasa Itafa*[1,2], [1]*Werabe University*, *Werabe, SNNP, Ethiopia*, [2]*Jimma University*, *Jimma, Oromiya, Ethiopia*.

1445T **Exploratory comparison between cows and bulk tank free fatty acids in Quebec dairy herds.**
L. Fadul*[1], D. Kelton[2], and D. E. Santschi[1], [1]*Lactanet*, *Sainte-Anne-de-Bellevue, Quebec, Canada*, [2]*University of Guelph*, *Guelph, Ontario, Canada*.

1446T **Exploring the genetic impact on box time indicators used to rank cows in automatic milking systems.**
L. Fadul*[1], G. Bisson[1], A. Fleming[2], F. Miglior[2,3], and R. Lacroix[1], [1]*Lactanet*, *Sainte-Anne-de-Bellevue, Quebec, Canada*, [2]*Lactanet*, *Guelph, Ontario, Canada*, [3]*University of Guelph*, *Guelph, Ontario, Canada*.

1447T **Characterization of antimicrobial resistance of *Mammaliicoccus fleurettii* isolated from cattle and humans on a Vermont dairy farm.**
R. Adrian, F. Machado De Santanna, A. Chakrawarti, and J. Barlow*, *University of Vermont*, *Burlington, VT*.

1448T **Feeding increasing amounts of *Asparagopsis armata* decreases enteric methane yield in dairy cattle.**
M. Zenobi[1], E. Armand[1], R. Gimenez[1,2], M. De Leon[1], and S. M. Salloum*[1], [1]*Facultad de Ciencias Agropecuarias, Universidad Nacional de Córdoba*, *Córdoba, Argentina*, [2]*Instituto Nacional de Tecnología Agropecuaria*, *Manfredi, Córdoba, Argentina*.

1449T **Determining a practical sample size to assess heat stress using respiration rate.**
T. Da Silva*[1], K. Reuscher[1], N. Cook[1], K. Luchterhand[2], and J. Van Os[1], [1]*University of Wisconsin*, *Madison, WI*, [2]*University of Wisconsin*, *Madison, WI*, [3]*University of Wisconsin*, *Madison, WI*, [4]*Novus International Inc*, *St. Charles, MO*, [5]*University of Wisconsin*, *Madison, WI*.

1450T **Long term effect of the exposure of late pregnancy cows to heat stress on milk production of their daughters.**
P. Turiello*[1,2], C. Vissio[1,3], G. Frossasco[4,5], and A. Larriestra[1], [1]*Universidad Nacional de Rio Cuarto*, *Rio Cuarto, Cordoba, Argentina*, [2]*Instituto de Formacion e Investigacion en Nutricion Animal - IFINA*, *Rio Cuarto, Cordoba, Argentina*, [3]*IDAS CONICET UNRC*, *Rio Cuarto, Cordoba, Argentina*, [4]*Universidad Nacional de Villa Maria*, *Villa Maria, Cordoba, Argentina*, [5]*INTA*, *Rafaela, Santa Fe, Argentina*.

1451T **Motivation of advisors and dairy farmers to adopt an improved replacement program.**
F. Demateis[1], A. Larriestra[2], P. Turiello*[2,3], and C. Vissio[2,4], [1]*INTA*, *Trenque Lauquen, Buenos Aires, Argentina*, [2]*Universidad Nacional de Río Cuarto*, *Rio Cuarto, Cordoba, Argentina*, [3]*IFINA*, *Rio Cuarto, Cordoba, Argentina*, [4]*IDAS CONICET UNRC*, *Rio Cuarto, Cordoba, Argentina*.

1452T **Nitrogen losses of representative Colorado dairies and mitigation potential of selected beneficial management practices.**
A. Loudenback*[1], A. Rotz[2], S. Archibeque[1], C. Cramer[1], and J. Dillon[1], [1]*Colorado State University*, *Fort Collins, CO*, [2]*USDA ARS*, *College Station, PA*.

1453T **Comparative evaluation of bulk tank milk cultures from Quebec dairy herds.**
E. Molgat*, L. Fadul, M.-H. Castonguay, and D. Santschi, *Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*.

1454T **Associations between bulk tank milk de novo fatty acid concentration and management and nutrition parameters on Brazilian dairy farms.**
T. S. Silveira[1,2], P. C. Ribeiro[2], J. C. S. Lourenço[1], A. V. Siqueira[3], D. P. D. Lanna[4], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Associação Brasileira de Criadores de Bovinos da Raça Holandesa*, *Castro, PR, Brazil*, [3]*Polinutri Alimentos S.A*, *São Paulo, SP, Brazil*, [4]*Universidade de São Paulo*, *Piracicaba, SP, Brazil*.

Reproduction 2

1455T **Reproductive performance of Jersey heifers submitted for first insemination based on age vs. body weight.**
R. Couto Serrenho*[1], C. Record[1], G. Domagala[2], M. Thomas[1], and M. Stangaferro[1], [1]*Dairy Health and Management Services*, *Lowville, NY*, [2]*Curtimade Dairy Inc*, *Tulare, CA*.

1456T **Induction of luteinizing hormone release after gonadotropin releasing hormone delivery with the e-Synch system.**
Y. Ren[1], D. Duhatschek[2], C. C. Bartolomeu[3], A. L. Laplacette[2], M. M. Perez[2], C. Rial[2], A. L. Kerwin*[2], D. Erickson[1], and J. O. Giordano[2], [1]*Sibley School of Mechanical and Aerospace Engineering, Cornell University*, *Ithaca, NY*, [2]*Department of Animal Science*, *Ithaca, NY*, [3]*Universidade Federal Rural de Pernambuco*, *Recife, Pernambuco, Brazil*.

1457T **Factors affecting the adoption and success of AI by Bangladeshi dairy farmers.**
N. S. Juyena*, *Department of Surgery and Obstetrics, Bangladesh Agricultural University*, *Mymensingh, Bangladesh*.

1458T **Association of the age at first calving with survivability, milk yield, and fertility up to the third lactation in one herd of Holstein dairy cows in Japan.**
H. Kusaka*[1], T. Yamazaki[2], and M. Sakaguchi[1], [1]*School of Veterinary Medicine, Kitasato University*, *Towada, Aomori, Japan*, [2]*Hokkaido Agricultural Research Center, NARO*, *Sapporo, Hokkaido, Japan*.

1459T **Association of body condition loss with hepatic and ovarian function of lactating dairy cows.**
T. Wondie Alemu*[1], Y. Schuermann[1], E. Madogwe[1], A. St. Yves[1], N. Dicks[1], R. Bohre[1], V. Higginson[1], R. G. Mondadori[1,2], M. Priotto de Macedo[1], M. Taibi[1], B. Baurhoo[1,3], V. Bordignon[1], and R. Duggavathi[1], [1]*Department of Animal Science, McGill University*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*Department of Morphology, Federal University of Pelotas*, *Capão do Leão, Brazil*, [3]*Bélisle Nutrition Solutions Inc*, *Saint-Mathias-sur-Richelieu, QC, Canada*.

1460T **Association of transition cow health with pregnancy per AI and pregnancy loss in cows receiving AI using a Double-Ovsynch protocol.**
A. M. L. Madureira*[1], R. Frenkel[2], P. M. Fricke[3], W. Heuwieser[2], and S. Borchardt[2], [1]*University of Guelph*, *Ridgetown, ON, Canada*, [2]*Freie Universität Berlin, Clinic of Animal Reproduction*, *Berlin, Germany*, [3]*University of Wisconsin*, *Madison, WI*.

1461T **Effect of time and magnitude of the nadir body condition score in early lactation on fertility of Holstein cows.**
C. Hernandez-Gotelli*[1], D. Manríquez[1], J. Azocar[3], A. De Vries[2], and P. Pinedo[1], [1]*Department of Animal Sciences, Colorado State University*, *Fort Collins, CO*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [3]*DeLaval Inc*, *Madison, WI*.

1462T **Associations of transition metabolism with subsequent estrous activity.**
C. Chantel[1], G. Madureira*[1], B. Mion[1], O. Chiu[1], A. Madureira[2], T. Burnett[2], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Ridgetown Campus, University of Guelph*, *Ridgetown, ON, Canada*.

1541T **Peripartum omega-3 fatty acids affect endocannabinoid system components in granulosa cells of preovulatory follicles and in uterus of dairy cows.**
B. Mualem[1], G. Kra[1,2], J. R. Daddam[1], U. Moallem[1], and M. Zachut*[1], [1]*Agriculture Research Organization, Volcani Center*, *Rishon Lezion, Israel*, [2]*Faculty of Agriculture, the Hebrew University in Jerusalem*, *Rehovot, Israel*.

Ruminant Nutrition: Calves and Heifers 2

1463T **Medium quality colostrum enriched with colostrum powder, associated or not to transition milk: Effect on the health and performance of dairy calves.**
A. P. Silva, A. M. Cezar, A. F. Toledo, C. R. Tomaluski, M. G. Coelho, I. M. Nascimento, G. H. B. Silva, and C. M. M. Bittar*, *Dept. Animal Sciences, Luiz de Queiroz College of Agriculture, University of Sao Paulo*, *Piracicaba, SP, Brazil*.

1464T **Withdrawn.**

1465T **A rumen-protected blend of B vitamins improved the pre-weaning growth rate of Jersey female calves fed ryegrass pasture.**
R. Balogun*[1] and O. AlZahal[2], [1]*Jefo Australia Pty Ltd*, *Toowoomba, Qld, Australia*, [2]*AlZahal Innovation and Nutrition*, *Kitchener, Ontario, Canada*.

1466T **The effects of probiotic supplementation on the prevention of diarrhea in pre-weaned Holstein dairy calves.**
L. Widmer*[1], E. Meissner[2], D. Ledgerwood[3], D. Vagnoni[2], and H. Rossow[1], [1]*University of California, Davis*, *Davis, CA*, [2]*California Polytechnic University, San Luis Obispo*, *San Luis Obispo, CA*, [3]*Chr. Hansen*, *Milwaukee, WI*.

1467T **Enriching whole milk with a vitamin and mineral supplement: Effect on hemoglobin status, milk intake, and calf growth.**
A. Zupan, L. Yanch, and A. Kerr*, *Grober Nutrition Inc*, *Cambridge, Ontario, Canada*.

1468T **Performance and health of cold-stressed dairy calves fed waste milk enriched with transition milk or milk replacer.**
I. R. R. Castro[1], B. Moradi[2], S. Kargar[2], M. Kanani[2], I. F. Carrari[1], and M. I. Marcondes*[1], [1]*Department of Animal Sciences, Washington State University*, *Pullman, WA*, [2]*Department of Animal Science, School of Agriculture, Shiraz University*, *Shiraz, Fars, Iran*.

1469T **The effects of probiotic supplementation on serum metabolite concentrations in young Holstein heifers.**
E. G. Meissner*[1], H. Rossow[2], L. Widmer[2], D. Ledgerwood[3], K. Bryan[3], and D. B. Vagnoni[1], [1]*California Polytechnic State University*, *San Luis Obispo, CA*, [2]*University of California, Davis*, *Davis, CA*, [3]*Chr. Hansen*, *Milwaukee, WI*.

1470T **Serum profiles of dairy calves fed a milk replacer or whole milk at two levels of supply.**
T. Chapelain*, J. B. Daniel, J. N. Wilms, J. Martín-Tereso, and L. N. Leal, *Trouw Nutrition R&D*, *Amersfoort, the Netherlands*.

1471T **Effects of supplementing colostrum to preweaned heifers for 14 days on metabolism and gut permeability.**
H. McCarthy*[1], D. R. Renaud[1], M. Nagorske[2], and M. A. Steele[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Saskatoon Colostrum Company Ltd*, *Saskatoon, SK, Canada*.

1472T **Performance and health of calves fed texturized calf starter with oats or an oat alternative from birth to 8 weeks of age.**
E. Dufour*[1], M. Klejeski[2], B. Ziegler[1], A. Golombeski[1], and I. Salfer[3], [1]*Hubbard Feeds*, *Mankato, MN*, [2]*University of Minnesota Southern Outreach and Research Center*, *Waseca, MN*, [3]*University of Minnesota Twin Cities*, *Saint Paul, MN*.

1473T **Performance and health of calves fed milk replacer supplemented with increasing levels of choline from birth to 8 weeks of age.**
E. Dufour*[1], M. Klejeski[2], B. Ziegler[1], A. Golombeski[1], and I. Salfer[3], [1]*Hubbard Feeds*, *Mankato, MN*, [2]*University of Minnesota Southern Outreach and Research Center*, *Waseca, MN*, [3]*University of Minnesota Twin Cities*, *Saint Paul, MN*.

1474T **Fecal dry matter analysis of calves fed high solids milk replacer diets.**
M. Pister* and J. Drackley, *University of Illinois*, *Urbana, IL*.

1475T **Impact of fortifying maternal colostrum with colostrum replacers with and without fat for an initial colostrum meal on achievement of transfer of passive immunity in newborn male dairy calves.**
T. S. Dennis[2] and A. J. Geiger*[1], [1]*Zinpro Corporation*, *Eden Prairie, MN*, [2]*Cargill Animal Nutrition*, *Lewisburg, OH*.

1476T **Effects of reducing total solids in colostrum replacer on IgG absorption in newborn Holstein calves.**
A. J. Lopez*[1], H. McCarthy[1], M. Nagorske[2], D. L. Renaud[3], and M. A. Steele[1], [1]*Department of Animal Biosciences, Animal Science and Nutrition, University of Guelph*, *Guelph, Ontario, Canada*, [2]*The Saskatoon Colostrum Company Ltd*, *Saskatoon, Saskatchewan, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

Ruminant Nutrition: Carbohydrates and Lipids 2

1477T **Impact of Valopro NRJ on primiparous dairy cow's milk production.**
L. Drouet* and C. Guyvarch, *MiXscience*, *Bruz, France*.

1478T **Comparison of neutral detergent fiber methods.**
M. B. Hall*[1] and D. R. Mertens[2], [1]*U.S. Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [2]*Mertens Innovation & Research LLC*, *Belleville, WI*.

1479T **Effects of forage level and branched short-chain fatty acids on lactation performance of dairy cows.**
M. Vedovatto[1], K. F. Kalscheur[2], and J. Kraft*[1], [1]*The University of Vermont*, *Burlington, VT*, [2]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

1480T **Supplementation of rumen-protected sugar decreases blood β-hydroxy butyric acid concentration and improves reproduction in fresh lactating dairy cows.**
C. Brock*[1], V. N. Long[2], and A. Robinson[3], [1]*Berg + Schmidt GmbH & Co. KG*, *Hamburg, Germany*, [2]*Innochems*, *Gia Lai Province, Central Highlands, Vietnam*, [3]*Berg + Schmidt Asia Pte Ltd*, *Singapore*.

1481T **Interaction of digestible fiber and acetate supplementation on milk fat yield in dairy cows.**
M. Husnain*, R. Bomberger, and K. Harvatine, *The Pennsylvania State University*, *University Park, PA*.

1482T **Effect of organic solvent emulsifiers on *in vitro* rumen fermentation and gas production.**
X. Sun[1], Y. Li*[1], K. Giller[1], C. Kunz[1], M. Terranova[2], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*, [2]*Agrovet-Strickhof, ETH Zürich*, *Lindau, Switzerland*.

1483T **Relationship between pre-trial milk fat concentration and milk fat response to marine oil diets that caused milk fat depression in sheep.**
A. Della Badia[1,2], P. G. Toral*[1], G. Hervás[1], C. Matamoros[2], P. Frutos[1], and K. J. Harvatine[2], [1]*Instituto de Ganadería de Montaña (IGM), CSIC-University of León*, *Grulleros, León, Spain*, [2]*Pennsylvania State University*, *University Park, PA*.

1484T **Do dairy sheep display Δ^{13}-desaturase activity? An in vivo study using ^{13}C-labeled fatty acids.**
P. G. Toral*, P. Frutos, and G. Hervás, *Instituto de Ganadería de Montaña (IGM), CSIC-University of León*, *Grulleros, León, Spain*.

Ruminant Nutrition: General 2

1485T **Rumination is associated with transition period health indicators and performance outcomes.**
T. M. Nelson* and T. R. Overton, *Cornell University*, *Ithaca, NY*.

1486T **Supplemental branched-chain volatile fatty acids (BCVFA) interact for lactation performance by Holstein cows fed low protein diets.**
A. White*[1], J. Copelin[1], C. Lee[1], D. Kleinschmit[2], M. Socha[2], and J. Firkins[1], [1]*The Ohio State University*, *Columbus, OH*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1487T **Effect of dietary citrus pulp on milk production and milk composition in dairy cows: A meta-analysis and meta-regression.**
E. E. Corea-Guillen*[1,2], J. M. Castro-Montoya[3], A. Lizarazo[1], G. A. Flores[2], M. Benaouda[4], R. Vieyra-Alberto[5], L. Hernandez-Trapala[5], Y. D. Zamora-Raygadas[5], L. Guevara[6], and J. C. Ángeles-Hernandez[5], [1]*Programa de Maestría y Doctorado en Ciencias de la Salud y Producción Animal, Universidad Nacional Autónoma de México*, *México DF, México*, [2]*Departamento de Zootecnia, Facultad de Ciencias Agronómicas, Universidad de El Salvador*, *San Salvador City, San Salvador, El Salvador*, [3]*Programa de posgrado y educación continua, Facultad de Ciencias Agronómicas, Universidad de El Salvador*, *San Salvador City, San Salvador, El Salvador*, [4]*L'Institut Agro Dijon*, *Dijon, Bourgogne, France*, [5]*Instituto de Ciencias Agropecuarias, Universidad Autónoma del Estado de Hidalgo*, *Tulancingo, Hidalgo, México*, [6]*Universidade Estadual do Norte Fluminense*, *Campos dos Goytacazes, Río de Janeiro, Brasil*.

1488T **Feed hygiene survey of total mixed rations and fermented feeds from farms across the United States.**
F. Mazza*, M. de Jesus, J. Thompson, and A. Smith, *Arm & Hammer Animal and Food Production*, *Waukesha, WI*.

1489T **Comparison of three nutritional models on predicting dry matter intake for commercial pens of lactating dairy cows.**
L. S. Nogueira[1], M. Busanello[2], J. H. Carneiro[1], M. Poczynek[1], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Universidade Regional Integrada do Alto Uruguai e das Missões*, *Frederico Westphalen, RS, Brazil*.

1490T **Preference of corn and different corn milling co-products in lactating Jersey cows.**
K. Buse*[1], M. Jolly-Breithaupt[2], K. Herrick[2], and P. Kononoff[1], [1]*University of Nebraska–Lincoln*, *Lincoln, NE*, [2]*POET Bioproducts*, *Sioux Falls, SD*.

1491T **Enhancing net food production by using "leftover" feeds for high-producing dairy cows.**
M. Mills*, S. Naughton, J. Liesman, and M. VandeHaar, *Michigan State University*, *East Lansing, MI*.

1492T **Effect of a non-polar mycotoxin binder on milk mycotoxin concentration and milk production in commercial dairy farms, preliminary results.**
J. P. Russi*[1], O. H. Campanella[2], and A. E. Relling[2], [1]*One Idea LLC*, *Merced, CA*, [2]*The Ohio State University*, *Columbus, OH*, [3]*The Ohio State University*, *Wooster, OH*.

1493T **Evaluation of a rumen-protected methionine product using appearance of methionine in plasma in response to feeding and abomasal infusion.**
C. J. R. Jenkins[1], J. D. Stypinski[1], G. M. Fincham*[1], J. Albrecht[2], O. R. Drehmel[2], M. F. Scott[2], C. Soderholm[2], and P. J. Kononoff[1], [1]*University of Nebraska–Lincoln*, *Lincoln, NE*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

1494T **Effects of level and duration of acidogenic supplementation in the prepartum diet on the productive performance and metabolism of dairy cows.**
J. T. R. Carvalho[1], J. H. Carneiro[1], J. C. S. Lourenço[1], L. S. Nogueira[1], R. Zimpel[2], V. B. Carvalho[3], A. Vieira-Neto[4], and R. Almeida*[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*DSM*, *São Paulo, SP, Brazil*, [3]*Phibro Animal Health Corporation*, *Campinas, SP, Brazil*, [4]*Merck Animal Health*, *Colorado Springs, CO*.

1495T **Effect of feeding 25(OH)D_3 with a negative DCAD diet to non-pregnant Holstein dry cows for 84 days on calcium metabolism, vitamin D metabolites, and health.**
A. O. Oyebade*, E. D. Sharman, M. Garcia, J. D. Chapman, and B. D. Humphrey, *Phibro Animal Health*, *Teaneck, NJ*.

1496T **Different anionic salt products result in similar feed intake and performance in individually fed pre-partum cows.**
O. P. Sbaralho, C. V. de Almeida, M. S. R. Serrasqueiro, N. T. S. Grigoletto, C. S. Takiya, G. Poletti, R. G. Chesini, D. J. C. Vieira, N. P. Martins, B. M. Ceron, and F. P. Rennó*, *University of São Paulo*, *São Paulo, SP, Brazil*.

1497T **Assessment of the interaction among mycotoxins and organic molecules on the efficiency of mycotoxin binders to adsorb aflatoxin B_1 and deoxynivalenol in vitro.**
A. KIhal, M. Rodriguez*, C. Cristófol, M. Nasir, and S. Calsamiglia, *Autonomous University of Barcelona*, *Bellaterra, Barcelona, Spain*.

1498T **Dietary association of alpha-amylase and proteinate trace minerals on nutrient digestibility and performance of dairy cows.**
R. G. Chesini[1], N. T. S. Grigoletto[1], C. S. Takiya[1], M. Bugoni[1], G. G. da Silva[1], G. Poletti[1], D. J. C. Vieira[1], O. S. Sbaralho[1], N. P. Martins[1], N. T. da Silva[2], A. Koontz[2], D. Lobato[1], and F. P. Rennó*[1], [1]*University of São Paulo*, *São Paulo, SP, Brazil*, [2]*Alltech*, *Lexington, KY*.

1499T **Close-up diet calcium and dietary cation anion difference dynamics with biomarkers, health, milk yield, and reproduction.**
A. L. Kerwin*[1], W. S. Burhans[2], D. V. Nydam[3], and T. R. Overton[1], [1]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Dairy-Tech Group*, *South Albany, VT*, [3]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University*, *Ithaca, NY*.

1500T **Relationships between particle size and in situ starch disappearance of corn grain.**
E. C. Diepersloot*[1], J. P. Goeser[1,2], E. Coons[2], E. Lynch[2], J. Karlen[2], and L. F. Ferraretto[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Rock River Laboratory Inc*, *Watertown, WI*.

1501T **Live or autolyzed yeast supplementation: Effects on ruminal bacteria populations, fermentation, and urinary N excretion in dairy cows.**
G. Poletti[1], C. S. Takiya[1], O. P. Sbaralho[1], A. C. de Freitas[1], N. T. S. Grigoletto[1], R. G. Chesini[1], D. J. C. Vieira[1], P. C. Vittorazzi Jr[1], N. P. Martins[1], C. V. de Almeida[1], T. S. Acedo[2], C. Cortinhas[2], and F. P. Rennó*[1], [1]*University of São Paulo*, *Pirassununga, SP, Brazil*, [2]*DSM Produtos Nutricionais Brasil S.A*, *São Paulo, SP, Brazil*.

1502T **Effects of indigestible neutral detergent fiber dietary content on performance and feed sorting of dairy cows.**
D. J. C. Vieira, N. P. Martins, G. Poletti, R. G. Chesini, B. M. Ceron, N. T. S. Grigoletto, C. S. Takiya, N. T. da Silva, M. S. R. Serrasqueiro, and F. P. Rennó*, *University of São Paulo*, *Pirassununga, SP, Brazil*.

1503T **Supplementation of isoacids on feeding behaviors and enteric methane emissions of lactating cows fed diets at varying forage fiber levels.**
M. R. A. Redoy*[1], S. Ahmed[1], M. Bulnes[1], D. H. Kleinschmit[2], and M. E. Uddin[1], [1]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1504T **Resveratrol as a nutritional intervention to ameliorate heat stress effects on lactating dairy cattle.**
R. N. Mini Ravi*, Z. Yu, J. M. Cantet, M. S. Hasan, K. Frady, and A. G. Ríus, *The University of Tennessee*, *Knoxville, TN*.

1505T **Metabolomic study to understand changes in serum and milk metabolic in Jersey cows under heat stress.**
J. S. Eom[1,2], S. J. Lee[1,2], H. S. Kim[1,2], Y. Choi[1,2], S. Uk Jo[1,3], and S. S. Lee*[1,3], [1]*Division of Applied Life Science (BK21), Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*, [2]*Institute of Agriculture & Life Science (IALS), Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*, [3]*Institute of Agriculture and Life Science & University-Centered Labs, Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*.

Ruminant Nutrition: Gut Physiology, Fermentation, and Digestion 2

1506T **Effects of dietary supplementation of a probiotic-yeast compound blend on rumen fluid metabolome of lactating dairy cows.**
G. Taiwo[1], M. Idowu[1], S. Taylor*[1], D. P. Compart[2], M. Ballou[3], and I. Ogunade[1], [1]*West Virginia University*, *Morgantown, WV*, [2]*Texas Tech University*, *Lubbock, TX*, [3]*Papillon Agricultural Company*, *Easton, MD*.

1507T **Effects of dietary supplement consisting of ginger, lemon balm, cinnamaldehyde, inactivated yeasts and clays on microbial rumen function.**
M. Romero-Huelva[1], E. Ramos-Morales[1], P. Romero[1], H. Khelil-Arfa[2], R. Breitsma[2], A. Blanchard[2], D. Yanez-Ruiz[1], and J. W. Hickman[3], and G. Acetoze*[3], [1]*CSIC*, *Granada, Spain*, [2]*ADM International Sàrl*, *Rolle, Switzerland*, [3]*ADM Animal Nutrition Technology Center*, *Decatur, IL*.

1508T **Effects of energy-nitrogen synchronization on *in vitro* rumen fermentation of a rapidly degradable substrate.**
J. M. Arroyo[1], J. González[1], F. Diaz*[2], and M. D. Carro[1], [1]*Departamento de Producción Agraria, ETSIAAB, Universidad Politécnica de Madrid*, *Madrid, España*, [2]*Dellait Research Center*, *Brookings, SD*.

1509T **Effects of replacing alfalfa haylage with high-protein duckweed on ruminal fermentation in vitro.**
N. Stepanchenko*, D. E. Wasson, S. Welchez, L. F. Martins, R. A. Brennan, and A. N. Hristov, *The Pennsylvania State University*, *State College, PA*.

1510T **Effects of a *Bacillus*-based direct-fed microbial on in vitro gas production and fiber digestibility of commercial dairy TMR.**
K. A. Bryan*[1], P. Fantinati[2], J. C. Bodin[2], J. N. Joergensen[2], G. Copani[2], D. Vyas[3], M. Malekkhahi[3], S. Farooq[3], L. O. Lima[3], C. Nino-de-Guzman[3], B. Po[3], K. Arriola[3], and B. I. Cappellozza[2], [1]*Chr. Hansen Inc*, *Milwaukee, WI*, [2]*Chr. Hansen A/S*, *Hørsholm, Denmark*, [3]*University of Florida*, *Gainesville, FL*.

1511T **In vitro fermentation and methane generation of a dairy diet including cardoon seeds (*Cynara cardunculus*).**
M. Riahi[1], J. González[1], M. D. Carro[1], F. Díaz*[2], and J. M. Arroyo[1], [1]*Departamento de Producción Agraria, ETSIAAB, Universidad Politécnica de Madrid*, *Madrid, España*, [2]*Dellait Research Center*, *Brookings, SD*.

1512T **Effects of lactate-utilizing microorganisms on *in vitro* rumen fermentation characteristics, methane production, and microbial abundance.**
S. H. Na, K. S. Baik, S. H. Kim, A-R. Son*, M. Miguel, and S. S. Lee, *Department of Animal Science and Technology, College of Bio-industry Science, Sunchon National University*, *Suncheon, Republic of Korea*.

1513T **Effects of a *Bacillus*-based direct fed microbial on inflammation and gastrointestinal tract permeability during feed restriction in mid-lactation Holstein cows.**
B. M. Goetz*[1], M. A. Abeyta[1], S. Rodriguez-Jimenez[1], J. Opgenorth[1], A. D. Freestone[1], T. A. Flemming[1], J. L. McGill[2], S. R. Fensterseifer[3], R. P. Arias[3], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*Department of Veterinary Microbiology and Preventative Medicine, Iowa State University*, *Ames, IA*, [3]*United Animal Health Inc*, *Sheridan, IN*.

1514T **Effects of a probiotic supplement on gastrointestinal permeability and biomarkers of inflammation during feed restriction in a ruminant model.**
B. M. Goetz*[1], M. A. Abeyta[1], S. Rodriguez-Jimenez[1], J. Opgenorth[1], A. D. Freestone[1], T. A. Flemming[1], J. L. McGill[2], K. A. Bryan[3], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*Department of Veterinary Microbiology and Preventative Medicine, Iowa State University*, *Ames, IA*, [3]*Chr. Hansen Inc*, *Milwaukee, WI*.

1515T ***Bifidobacterium pseudocatenulatum* alleviates calf diarrhea.**
M. Y. Hu, W. J. Du, W. J. Si, Y. Gao, Y. F. Du, J. X. Hou, L. H. Yang, X. H. Wang, L. Xu, and Q. B. Xu*, *Huazhong Agricultural University*, *Wuhan, China*.

1516T **Effects of dietary energy level and ensiling on ruminal fermentation characteristics and greenhouse gas emissions of total mixed ratio.**
J. Y. Kim*[1], Y. H. Joo[1], S. M. Jeong[1], M. J. Seo[1], C. H. Baeg[1], B. G. Choi[2], S. S. Lee[3], P. N. Seong[3], and S. C. Kim[1], [1]*Division of Applied Life Science (BK21 Four, Institute of Agricultural and Life Science), Gyeongsang National University*, *Jinju, Gyoeongsangnam-do, South Korea*, [2]*Department of Animal Science, Gyeongsnag National University*, *Jinju, Gyoeongsangnam-do, South Korea*, [3]*Animal Nutrition and Physiology Division, National Institute of Animal Science*, *Wanju, Jeollabuk-do, South Korea*.

1517T **Relationship between ruminal microorganisms and its impact on forage fermentation parameters.**
D. C. Rosler*[1], G. V. Kozloski[2], M. P. Mezzomo[2], and C. A. Pozo[3], [1]*University of Florida*, *Gainesville, FL*, [2]*Federal University of Santa Maria*, *Santa Maria, Rio Grande do Sul, Brazil*, [3]*National University of Formosa*, *Formosa, Formosa, Argentina*.

1518T ***In vitro* ruminal fermentation of dairy diets including almond hulls.**
A. Recalde[1], M. D. Carro[1], R. Jiménez[1], S. Calero[1], B. Barrero-Domínguez[2], A. García-Sanchez[3], and T. de Evan*[1], [1]*Departamento de Producción Agraria, ETSIAAB, Universidad Politécnica de Madrid*, *Madrid, Spain*, [2]*Departamento I+D+i Dcoop S.C.A*, *Málaga, Spain*, [3]*Grupo de Prado*, *Córdoba, Spain*.

1519T **The effects of a fat-protein matrix supplement on ammonia concentration, gas production, pH, and dry matter degradation in ruminal batch and continuous cultures.**
J. Vinyard, M. Johnson*, A. C. Silva Vicente, M. Siregar, G. Salas Solis, E. Sarmikasoglou, C. Hammond, K. Alves, S. W. Ma, L. Katz, R. Lobo, S. Castillo, and A. Faciola, *University of Florida*, *Gainesville, FL*.

1520T **Effects of black cumin oil and acetate on methane production in non-lactating Jersey cows.**
S. C. Sherwood*, A. L. Carroll, S. C. Fernando, and P. J. Kononoff, *University of Nebraska–Lincoln*, *Lincoln, NE*.

1521T **Effects of red seaweed (*Gracilaria* sp.) on *in vitro* rumen fermentation and methane production.**
B. Chae[1], S.-J. Kim[2], S. Cho[1], H.-R. Park[3], I. Cheon[1], and N.-J. Choi*[1], [1]*Department of Animal Science, Jeonbuk National University*, *Jeonju, Korea*, [2]*BOSA Co., Ltd*, *Seongnam, Korea*, [3]*Korea Agriculture Technology Promotion Agency*, *Iksan, Korea*.

Ruminant Nutrition: Protein and Amino Acids 2

1522T **Lactation persistency and environmental advantage of a low-protein diet balanced for amino acids compared to a high-protein diet fed to dairy cows.**
J. Guyader*[1], I. Kok[2], M. Schilde[2], K. S. Edelmann[3], and C. Parys[1], [1]*Evonik Operations GmbH*, *Hanau, Germany*, [2]*Schothorst Feed Research*, *Lelystad, the Netherlands*, [3]*Evonik Operations GmbH*, *Isernhagen, Germany*.

1523T **Effects of level and oscillation of dietary crude protein on ruminal conditions.**
M. G. Erickson*[1], G. I. Zanton[2], and M. A. Wattiaux[1], [1]*Department of Animal & Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*USDA-Agricultural Research Service, US Dairy Forage Research Center*, *Madison, WI*.

1524T **A ^{15}N isotope technique to estimate lysine bioavailability of rumen-protected lysine.**
K. L. Clark* and C. Lee, *Department of Animal Sciences, The Ohio State University*, *Wooster, OH*.

1525T **Utilization of nitrogen fractions derived from ^{15}N-labelled faba bean in *in vitro* batch-culture.**
Þ. H. Sigurðardóttir*[1], S. E. Räisänen[1,2], A. Halmemies-Beauchet-Filleau[1], O. Pitkänen[1], A. Honkanen[1], T. Kokkonen[1], F. L. Stoddard[1], A. Simojoki[1], E. Sahlstedt[3], K. Rinne-Garmston[3], and A. Vanhatalo[1], [1]*Department of Agricultural Sciences, University of Helsinki*, *Helsinki, Finland*, [2]*Department of Environmental Systems Science, Institute of Agricultural Sciences*, *Zurich, Switzerland*, [3]*Natural Resources Institute Finland (Luke)*, *Helsinki, Finland*.

1526T **Effects of rumen-protected methionine on the plasma amino acid profile of F_1 Holstein × Gyr cows grazing intensively managed Mombaça grass.**
V. A. Oliveira*[1], J. P. A. Rezende[1], T. L. Pento[1], F. Lopes[2], S. I. Arriola-Apelo[3], and M. A. C. Danes[1], [1]*University of Lavras*, *Lavras, MG, Brazil*, [2]*Adisseo Latam*, *São Paulo, SP, Brazil*, [3]*University of Wisconsin*, *Madison, WI*.

1527T **Feeding rumen-protected methionine and calcium salts enriched in omega-3 fatty acids increase fatty acid and methionine intakes, increase plasma methionine concentrations, and alter milk fatty acid profiles in periparturient dairy cows.**
T. L. France*, K. Juarez-Leon, A. Javaid, N. D. Seneviratne, A. F. Ortega, and J. W. McFadden, *Cornell University*, *Ithaca, NY*.

1528T **Using the plasma AA dose-response method to validate metabolizable methionine of a rumen-protected methionine product.**
N. L. Whitehouse*[1], S. Q. Granese[1], J. Albrecht[2], O. R. Drehme[2], C. Soderholm[2], and M. F. Scott[2], [1]*University of New Hampshire*, *Durham, NH*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

1529T **Effects of 2-hydroxy-4-(methylthio)butanoate supplementation on productive performance of periparturient dairy cows.**
J. C. S. Lourenço*[1], W. B. Gallardo[2], A. A. Santos[3], S. L. Viechnieski[3], I. A. M. A. Teixeira[2,4], and R. Almeida[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*, [3]*Star Milk Farm*, *Céu Azul, PR, Brazil*, [4]*University of Idaho*, *Twin Falls, ID*.

1530T **Effects of replacing canola meal with extruded soybean meals on lactational performance and enteric gas emissions in dairy cows.**
S. F. Cueva*[1], L. F. Martins[1], N. Stepanchenko[1], D. E. Wasson[1], D. M. Kniffen[1], R. A. Fabin[2], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *University Park, PA*, [2]*Fabin Bros. Farms*, *Indiana, PA*.

1531T **Supplementing low crude protein diets with rumen-bypass amino acids improved nitrogen efficiency in lactating dairy cows.**
M. S. Seleem[1], W. Zhaohai[1], X. Chengqian[1], Z. Ying[1], M. D. Hanigan[2], and D. Bu*[1,3], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences (CAAS)*, *Beijing, China*, [2]*School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*, [3]*Joint Laboratory on Integrated Crop-Tree-Livestock Systems, Chinese Academy of Agricultural Sciences (CAAS), Ethiopian Institute of Agricultural Research (EIAR), and World Agroforestry Center (ICRAF)*, *Beijing, China*.

SYMPOSIA AND ORAL SESSIONS

ADSA Midwest Branch Scholar Presentations

Shaw Centre 204
9:30 AM – 12:00 PM

9:30 9001 ***ADSA Midwest Branch Scholar Award Presentation:*** **Effects of rumen-protected lysine supplementation through the transition period on placental metabolism and uterine health of Holstein cows.**
Anne Guadagnin, *University of Illinois at Urbana-Champaign, Urbana, IL.*

10:00 9002 ***ADSA Midwest Branch Scholar Award Presentation:*** **Quantifying metabolic flux into the tricarboxylic acid (TCA) cycle in bovine systems.**
Linda Beckett, *Purdue University, West Lafayette, IN*.

10:30 9003 ***ADSA Midwest Branch Scholar Award Presentation:*** **Hindgut acidosis: Is it really a big deal?**
Megan Abeyta, *Iowa State University, Ames, IA.*

11:00 9004 ***ADSA Midwest Branch Scholar Award Presentation:*** **TLR4 signaling modulates lipid mobilization in dairy cows' adipose tissues.**
Miguel Chirivi, *Michigan State University, East Lansing, MI.*

11:30 9005 ***ADSA Midwest Branch Scholar Award Presentation:*** **Amino acid transport mechanisms, one-carbon metabolism, and genome and lipidome profiles in the gastrointestinal tract of Holstein cows.**
Qianming Jiang, *University of Illinois at Urbana-Champaign, Urbana, IL.*

Animal Health 3

Chair: Angela Rowson, Vaxxinova
Shaw Centre 202
9:30 AM – 12:30 PM

9:30 AM 2400 **Supplementation with postbiotic products from *Saccharomyces cerevisiae* fermentation alters the lung transcriptome of preweaning calves given an experimental viral-bacteria coinfection.**
T. W. Maina[1], P. O. McDonald[2], B. E. R. Samuel[3], M. I. Sardi[1], I. Yoon[4], A. Rogers[1], and J. L. McGill*[3], [1]*Biotechnology R&D, Cargill*, *Minneapolis, MN*, [2]*Department of Comparative Medicine and Integrative Biology, Michigan State University*, *East Lansing, MI*, [3]*Department of Veterinary Microbiology and Preventive Medicine, Iowa State University*, *Ames, IA*, [4]*Diamond V Mills Inc*, *Cedar Rapids, IA*.

9:45 AM 2401 **Developmental adaptations of γδ T cells in blood and intestinal mucosa from birth until weaning in Holstein bull calves.**
L. R. Cangiano*[1,2], K. Lamers[2], M. F. Olmeda[2], C. Villot[3], D. C. Hodgins[4], B. A. Mallard[4], and M. A. Steele[2], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Department of Animal Biosciences, Animal Science and Nutrition, University of Guelph*, *Guelph, ON, Canada*, [3]*Lallemand Animal Nutrition*, *Blagnac, France*, [4]*Department of Pathobiology, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*.

10:00 AM 2402 **Lysophosphatidylcholine administration increases circulating lysophosphatidylcholine and haptoglobin concentrations in calves.**
B. N. Tate[1], M. M. Deys[1], P. Deme[2], N. J. Haughey[2], and J. W. McFadden*[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Johns Hopkins University School of Medicine*, *Baltimore, MD*.

10:15 AM 2403 **Serum natural antibody IgM titers in colostrum-deprived and conventionally raised neonatal dairy calves.**
T. Altvater-Hughes*[1], D. Hodgins[1], C. Bauman[2], and B. Mallard[1], [1]*Department of Pathobiology, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

10:30 AM 2404 **RNA-Seq reveals induced calves' mucosal immune response to *Cryptosporidium parvum* infection.**
A. Veshkini*[1], F. Dengler[2], L. Bachmann[1,3], W. Liermann[1], C. Helm[4], R. Ulrich[4], C. Delling[5], C. Kühn[6], and H. M. Hammon[1], [1]*Research Institute for Farm Animal Biology, Institute of Nutritional Physiology*, *Dummerstorf, Germany*, [2]*Institute of Physiology, Pathophysiology and Biophysics, University of Veterinary Medicine Vienna*, *Vienna, Austria*, [3]*Faculty of Agriculture and Food Science, University of Applied Science Neubrandenburg*, *Neubrandenburg, Germany*, [4]*Institutue for Veterinary Pathology, Leipzig University*, *Leipzig, Germany*, [5]*Institute of Veterinary Parasitology, Leipzig University*, *Leipzig, Germany*, [6]*Research Institute for Farm Animal Biology, Institute of Genome Biology*, *Dummerstorf, Germany*.

10:45 AM 2405 **Effects of transport age on hematological parameters and growth performance in dairy calves.**
G. E. Chibisa*[1], D. Konetchy[1], M. Chahine[1], G. K. Murdoch[2], and A. A. Progar[2], [1]*University of Idaho*, *Moscow, ID*, [2]*Washington State University*, *Pullman, WA*.

11:00 AM 2406 **Exploring preweaning dairy calf mortality risk factors in Ontario.**
S. G. Umaña Sedó*, C. B. Winder, and D. L. Renaud, *University of Guelph*, *Guelph, Ontario, Canada*.

11:15 AM 2407 **The effect of benchmarking reports on the health of surplus calves.**
G. Habing*[1], J. Pempek[2], D. Renaud[3], D. Wilson[3], K. Proudfoot[4], Z. England[1], N. Bello[1], and T. Cheng[1], [1]*The Ohio State University*, *Columbus, OH*, [2]*USDA-ARS Livestock Behavior Research Unit*, *West Lafayette, IN*, [3]*University of Guelph*, *Guelph, Ontario, Canada*, [4]*University of Prince Edward Island*, *Charlottetown, Prince Edward Island, Canada*.

11:30 AM 2408 **Does providing a rest period mitigate the impact of long-distance transportation on markers of energy status in surplus dairy calves?**
H. M. Goetz* and D. L. Renaud, *Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

11:45 AM 2409 **Effect of group housing of preweaning dairy calves on health and fecal shedding of antimicrobial resistant *Escherichia coli* and *Enterococcus* spp.**
M. J. Breen*[1], D. R. Williams[1], E. M. Abdelfattah[1,3], B. M. Karle[4], T. W. Lehenbauer[1,2], and S. S. Aly[1,2], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare, CA*, [2]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis, CA*, [3]*Department of Animal Hygiene, and Veterinary Management, Faculty of Veterinary Medicine, Benha University*, *Moshtohor, Qalyubia, Egypt*, [4]*Cooperative Extension, Division of Agriculture and Natural Resources, University of California, Davis*, *Orland, CA*.

12:00 PM 2410 **Seasonality of colostrum Brix values and total serum protein of newborn dairy female calves in a temperate climate.**
B. Gonçalves da Costa*, K. Sharpe Moser, M. Endres, and B. Heins, *University of Minnesota*, *Minneapolis, MN*.

12:15 PM 2411 **Social housing: Impacts on health scores and gut microbiome of dairy calves.**
B. Gonçalves da Costa*, K. Sharpe Moser, M. Endres, A. Gomez, and B. Heins, *University of Minnesota*, *Minneapolis, MN*.

Breeding and Genetics Symposium: Breeding for Resilience in Dairy Animals

Chair: Luiz Britto, Purdue University
Shaw Centre 206
9:30 AM – 12:30 PM

9:30 AM 2412 **Getting to grips with resilience: Toward large-scale phenotyping of this complex trait.**
N. C. Friggens*[1], G. Lenoir[2], and M. Ithurbide[3], [1]*INRAE*, *Palaiseau, France*, [2]*AXIOM*, *Azay-sur-Indre, France*, [3]*INRAE*, *GenPhySE, Université de Toulouse, Castanet Tolosan, France*.

10:10 AM 2413 **When, why, and how to breed for disease resilience in livestock.**
A. Doeschl-Wilson*[1], P. W. Knap[2], M. Ghaderi-Zefreh[1], and R. Pong-Wong[1], [1]*The Roslin Institute and R(D)SVS, University of Edinburgh*, *Easter Bush Estate, Scotland, UK*, [2]*Genus-PIC*, *Schleswig, Germany*.

10:50 AM **Break.**

11:00 AM 2414 **Genetics of heat tolerance in dairy cattle.**
F. Peñagaricano*, *University of Wisconsin-Madison*, *Madison, WI*.

11:40 AM 2415 **Gene editing for improved health and resiliency.**
T. Sonstegard*, *Acceligen*, *Eagan, MN*.

12:20 PM **Discussion.**

Dairy Foods Symposium: Continued Challenges in Controlling Dairy Spoilage

Chair: Taylor Oberg, Utah State University
Shaw Centre 209
9:30 AM – 12:30 PM

9:30 AM 2416 **Understanding next-generation dairy spoilage bacteria.**
T. S. Oberg*, *Utah State University*, *Logan, UT*.

10:10 AM 2417 **Sources, transmission, and tracking of sporeforming bacterial contaminants in dairy systems.**
N. Martin*, *Cornell University*, *Ithaca, NY*.

10:50 AM 2418 **Moo-deling the Dairy-verse: Using computer modeling to get more out of our testing results.**
A. Trmcic*, *Milk Quality Improvement Program, Cornell University*, *Ithaca, NY*.

11:30 AM 2419 **The application of protective cultures for yeast and mold control in fermented dairy products.**
S. Neuens*, *Chr. Hansen Inc*, *Milwaukee, WI*.

12:10 PM **Discussion.**

Dairy Foods 2: Dairy Products and Processing

Chair: Grace Lewis, University of Wisconsin–River Falls
Shaw Centre 212
9:45 AM – 12:30 PM

9:45 AM 2421 **Verifying origin claims on dairy products using stable isotope ratio analysis and random forest classification.**
R. O'Sullivan*, R. Cama-Moncunill, O. Schmidt, M. Salter-Townsend, and F. J. Monahan, *University College Dublin*, *Belfield, Dublin, Ireland*.

10:00 AM 2422 **Improved detection of antibiotic residues in near-infrared milk spectra using recursive feature elimination, principal component analysis, and machine learning clustering algorithms.**
K. Rodriguez*[1], S. LeBlanc[2], C. Baes[1,3], R. V. Ventura[4], J. Balieiro[4], and D. Tulpan[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*, [3]*Vetsuisse Faculty, Institute of Genetics, University of Bern*, *Bern, Switzerland*, [4]*Department of Nutrition and Animal Production (VNP), School of Veterinary Medicine and Animal Science (FMVZ), University of São Paulo*, *São Paulo, State of São Paulo, Brazil*.

10:15 AM 2423 **Evaluation of the biocompatibility of exopolysaccharide-producing lactic acid bacteria strains in a stirred yogurt model.**
A. Miteul*[1,2], A. Schera[1,2], M.-H. Lessard[1,2], M. Lafantaisie[1], S. Fraud[3], D. Miller[4], S. L. Turgeon[1], and S. Labrie[1,2], [1]*Department of Food Science, Institute of Nutrition and Functional Foods (INAF), STELA Dairy Research Centre, Université Laval*, *Quebec City, QC, Canada*, [2]*Laboratoire de Mycologie Alimentaire (LMA)*, *Quebec City, QC, Canada*, [3]*Yoplait General Mills–Vienne Technical Center*, *Vienne, France*, [4]*General Mills*, *Minneapolis, MN*.

10:30 AM 2424 **Modeling the meltdown behavior of ice cream.**
M. Azeem Ur Rehman Alvi and S. Martinez-Monteagudo*, *New Mexico State University*, *Las Cruces, NM*.

10:45 AM 2425 **A decision tool to determine economic feasibility of on-farm bottled milk operations.**
C. Zaring*[1], K. Jensen[2], A. Rihn[2], M. Morgan[3], and E. Eckelkamp[1], [1]*Department of Animal Science, University of Tennessee*, *Knoxville, TN*, [2]*Department of Agricultural and Resource Economics, University of Tennessee*, *Knoxville, TN*, [3]*Department of Food Science, University of Tennessee*, *Knoxville, TN*.

11:00 AM 2426 **Modulation of aerosol whipping cream microstructure by E 472b addition.**
M. Blankart* and J. Hinrichs, *Department of Soft Matter Science and Dairy Technology, University of Hohenheim*, *Stuttgart, Baden-Wuerttemberg, Germany*.

11:15 AM 2427 **The effects of whey protein isolate on the properties and biological activity of the bioaccessible fraction in camel milk yogurt, including its rheological properties and biological activity.**
M. Ayyash*, *United Arab Emirates University*, *UAE*.

11:30 AM 2428 **Impact of acoustic intensity on melting and meltdown characteristic of ice cream.**
M. Azeem Ur Rehman Alvi, J. Barrera, E. Sepulveda, and S. Martinez-Monteagudo*, *New Mexico State University*, *Las Cruces, NM*.

11:45 AM 2429 **In vitro digestion of milk proteins present in liquid milk and cheddar cheese.**
L. Ali*[1], C. White[1], R. Ward[1], K. Majumder[2], and P. Sharma[1], [1]*Utah State University*, *Logan, UT*, [2]*University of Nebraska-Lincoln*, *Lincoln, NE*.

12:00 PM 2430 **Evaluating the effect of temperature and concentration on the steady shear rheological behavior of whey protein concentrate for use as a potential feed for filament extension atomizer.**
A. Parhi[1], D. Johnson[2], and P. Sharma*[1], [1]*Utah State University*, *Logan, UT*, [2]*Palo Alto Research Center*, *Palo Alto, CA*.

12:15 PM 2431 **Perception of consumers of the relevance of milk as a source of iodine.**
C. L. Manuelian*[1,2], G. Niero[1], and M. De Marchi[1], [1]*Department of Agronomy, Food, Natural resources, Animals and Environment, University of Padova*, *Legnaro (PD), Italy*, [2]*Group of Ruminant Research (G2R), Department of Animal and Food Sciences, Universitat Autònoma de Barcelona (UAB)*, *Bellaterra, Spain*.

Extension Education Symposium: Leading Extension Programs on Dairy Farms—Tribulations, Changes, and Successes

Chair: Shannon Davidson, NC State University
Shaw Centre 208
9:30 AM – 12:30 PM

9:30 AM 2432 **Championing the science of behavioral change in dairy extension.**
N. Silva-del-Rio*, *Veterinary Medicine Teaching and Research Center*, *Tulare, CA*.

10:10 AM 2433 **Dairy food safety training: Checking the box versus improving operational efficiencies.**
C. Stevenson*, *North Carolina State University*, *Raleigh, NC*.

10:50 AM 2434 **Assessing the impact of dairy extension programs with stakeholders.**
L. Holden*, *The Pennsylvania State University*, *University Park, PA*.

11:30 AM 2435 **On-farm translational research and outreach through academic–extension–industry partnerships.**
D. Douphrate*, *Texas A&M University*, *College Station, TX*.

12:10 PM **Panel Discussion.**

Lactation Biology 1

Shaw Centre 201
9:30 AM – 12:30 PM

9:30 AM 2436 **The effect of preparation lag time on teat tissue condition and milk yield in Holstein dairy cows.**
A. Singh*, M. O. Dahl, M. E. Spellman, and M. Wieland, *Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University*, *Ithaca, NY*.

9:45 AM 2437 **Effect of prepartum dietary energy density on serum glucose, insulin and immunoglobulin G and their associations with colostrum composition in Holstein dairy cattle.**
A. J. Fischer-Tlustos*[1], V. S. Fernandez[2], D. J. Seymour[2], J. P. Cant[1], and M. A. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Trouw Nutrition Research and Development*, *Amersfoort, the Netherlands*.

10:00 AM 2438 **Regulatory roles of acetate and butyrate on regulation of lipid metabolism genes in bovine mammary epithelial cells.**
A. Haile* and K. Harvatine, *Pennsylvania State University*, *State College, PA*.

10:15 AM 2439 **Killed *Staphylococcus aureus* intramammary challenge induces subclinical mastitis and clear changes in milk composition but not milk yield.**
C. S. Gammariello*, M. Oliveira, G. M. Canny, K. M. Enger, and B. D. Enger, *The Ohio State University*, *Wooster, OH*.

10:30 AM 2440 **Effect of BlueLite and heat stress on productivity of lactating Holstein cows.**
D. Onan-Martinez*[1], C. Nelson[1], F. Saputra[1], A. Fraz[1], C. Law[1], J. Bobel[1], I. M. Toledo[1], K. Forbes[1], L. Trevician[1], Y. Wen[1], N. C. Upah[2], B. W. Kolstad[2], and G. E. Dahl[1], [1]*University of Florida*, *Gainesville, FL*, [2]*TechMix*, *Stewart, MN*.

10:45 AM 2441 **Proteome analysis exposes new insights into mammary gland adaptation to heat stress in dairy cows.**
F. Koch*[1], D. Albrecht[2], and B. Kuhla[1], [1]*Research Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*Universitiy of Greifswald*, *Greifswald, Germany*.

11:00 AM 2442 **Bovine mammary epithelial cell number and cell losses after a short period of heat stress during lactation.**
G. Perez-Hernandez*[1], L. J. Banda[2], D. Dougherty[1], M. D. Ellett[1], A. J. Lengi[1], C. L. M. Parsons[1], K. M. Daniels[1], and B. A. Corl[1], [1]*Virginia Polytechnic Institute and State University*, *Blacksburg, VA*, [2]*Lilongwe University of Agriculture and Natural Resources*, *Mwenda, Malawi*.

11:15 AM 2443 **High lactate may reduce milk synthesis via interpreting the redox system and energy metabolism in the mammary gland of high-yielding dairy cows.**
J. Feng*, J. Cai, J. Liu, and D. Wang, *Institute of Dairy Science, College of Animal Science, Zhejiang University*, *Hangzhou, China*.

11:30 AM 2444 **Evaluation of mammary gland plasma flow during dietary crude protein oscillations.**
K. Nichols*[1], R. Rauch[1,2], J. Martín-Tereso[1], J. Dijkstra[2], and J.P. Cant[3], [1]*Trouw Nutrition R&D*, *Amersfoort, the Netherlands*, [2]*Animal Nutrition Group, Wageningen University and Research*, *Wageningen, the Netherlands*, [3]*Centre for Nutrition Modelling, Department of Animal Biosciences, University of Guelph*, *Ontario, Canada*.

11:45 AM 2445 **The effects of a sustained intravenous β-hydroxybutyrate infusion in combination with a systemic immune challenge in lactating dairy cows.**
M. A. Barrientos-Blanco*[1], A. Celemin-Sarmiento[1], M. da Silva[1], C. Mercado[1], V. Sáinz de la Maza-Escolà[2,1], and J. E. Rico[1], [1]*University of Maryland*, *College Park, MD*, [2]*University of Bologna*, *Bologna, Italy*.

12:00 PM 2446 **Quarter-level milk yield variation pre- and post-separation among cow-calf contact cows.**
S. Ferneborg*[1], M. Churakov[2,3], and S. Agenäs[2,3], [1]*Norwegian University of Life Sciences*, Ås, *Norway*, [2]*Swedish University of Agricultural Sciences*, *Uppsala, Sweden*, [3]*Beijer Laboratory for Animal Science*, *Uppsala, Sweden*.

12:15 PM 2447 **Maternal heat stress abatement improves daughter's whole-body and mammary growth post-weaning through pubertal development.**
S. L. Field*[1], B. D. Davidson[1], B. Dado-Senn[1], A. D. Beard[1], K. A. Riesgraf[1], P. L. J. Monteiro[1], M. C. Wiltbank[1], G. E. Dahl[2], and J. Laporta[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*.

Production, Management and the Environment 3

Chair: Seongwon "Terry" Seo, Chungnam National University, South Korea

Shaw Centre 203

9:30 AM – 12:30 PM

9:30 AM 2448 **Evaluation of the use of beef semen on dairy operations: A survey of Idaho dairies.**
P. S. Smith*[1], J. B. Glaze Jr.[1], H. Tejeda[1], R. J. Collier[2], and M. Chahine[1], [1]*University of Idaho*, *Twin Falls, ID*, [2]*University of Idaho*, *Moscow, ID*.

9:45 AM 2449 **Survey of California dairy nutritionists on byproduct usage.**
J. Heguy*[1], E. DePeters[2], R. B. Lopes[2], and N. Silva-del-Rio[3], [1]*University of California Agriculture and Natural Resources*, *Modesto, CA*, [2]*University of California, Davis*, *Davis, CA*, [3]*University of California, Davis*, *Tulare, CA*.

10:00 AM 2450 **How benchmarking motivates improved calf care: A realistic evaluation.**
D. J. Wilson[1], S. M. Roche[1,2], J. A. Pempek[3], G. Habing[4], K. L. Proudfoot[5], and D. L. Renaud*[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Acer Consulting*, *Guelph, Ontario, Canada*, [3]*Department of Animal Sciences*, *Columbus, OH*, [4]*Department of Veterinary Preventive Medicine*, *Columbus, OH*, [5]*Department of Health Management*, *Charlottetown PE, Canada*.

10:15 AM 2451 **Effect of different dry cow vaccination schedules on immunity and performance of dairy cows.**
J. Gao*, C. Guzi Savegnago, T. N. Marins, A. M. Roper, and S. Tao, *Department of Animal and Dairy Science, University of Georgia*, *Athens, GA*.

10:30 AM 2452 **Effect of drinking water salinity on feed and water intake, rumen physiology, and milk production of lactating cows.**
I. Adi[1,2] and B.-M. Yehoshav*[1], [1]*Department of Ruminant Science, Institute of Animal Science, Agricultural Research Organization (ARO)–Volcani Center*, *Rishon Lezion, Israel*, [2]*Department of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food, and Environment, The Hebrew University of Jerusalem*, *Rehovot, Israel*.

10:45 AM 2453 **Recycled flush and lagoon water as a reservoir for antibiotic residues and resistant bacteria on California dairies.**
E. Okello*[1,2], E. Abdelfattah[1,2], P. K. Pandey[1], P. Ekong[1], T. Lehenbauer[1,2], and S. Aly[1,2], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis, CA*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare, CA*.

11:00 AM 2454 **Survey of mastitis-causing organisms in dairy bedding types from across the United States.**
J. S. Thompson*, V. G. Bretl, T. G. Rehberger, and A. H. Smith, *Arm and Hammer*, *Waukesha, WI*.

11:15 AM 2455 **Thermo-physiology and microclimate of calves in outdoor hutches with or without continuous ventilation in summer.**
G. A. Larsen*, E. M. Tabor, K. J. Reuscher, A. R. Guadagnin, B. Dado-Senn, A. Hoerl, J. R. Dorea, J. Van Os, T. Ollivett, and J. Laporta, *University of Wisconsin*, *Madison, WI*.

11:30 AM 2456 **Preparing for the future: Assessing the risk of heat stress for dairy cows under different scenarios of climate change.**
G. M. Dallago*[1], J. G. Barroso[2], R. A. Santos[2], L. S. Fonseca[2], and M. C. C. Guimarães[2], [1]*University of Manitoba*, *Winnipeg, Manitoba, Canada*, [2]*Universidade Federal dos Vales do Jequitinhonha e Mucuri*, *Diamantina, Minas Gerais, Brazil*.

11:45 AM 2457 **Rectal temperature, heart rate, respiration rate, morphometric measurements and health scores in slick and wild-type Holstein calves during the milk feeding phase.**
M. D. Torres-Rivera*, C. R. Perdomo-García, M. Ruiz-Cortés, A. Rodríguez-Cruz, and G. Ortiz-Colón, *University of Puerto Rico*, *Alfonso Valdés, Mayagüez, Puerto Rico*.

12:00 PM 2458 **Mycotoxin contamination trends in US corn silage: 2018–2022.**
P. N. Gott*, E. F. Schwandt, L. Zheng, and A. W. Levy, *DSM Nutritional Products*, *Parsippany, NJ*.

12:15 PM 2459 **Effects of autolyzed yeast supplementation on the humoral response and gut health of calves.**
K. G. Primel[1], A. C. A. Abreu[1], B. Milla[1], S. N. de Oliveira[1], H. G. Bertagnon[1], M. A. Bonato[2], and W. L. S. dos Reis*[2], [1]*UNICENTRO*, *Guarapuava, Paraná, Brazil*, [2]*ICC*, *São Paulo, São Paulo, Brazil*.

Joint Reproduction, Physiology and Endocrinology, and Ruminant Nutrition Symposium: Mechanisms Linking Transition Health, Nutrition, and Fertility of Dairy Cattle

Chair: Alvaro Garcia-Guerra, Ohio State University
Shaw Centre 213
9:30 AM – 5:00 PM

9:30 AM 2460 **Nutritional strategies to improve the health and fertility of dairy cows.**
B. J. Bradford*, *Michigan State University*, *East Lansing, MI*.

10:05 AM 2461 **Direct and indirect effects of trace mineral nutrition on health and fertility of dairy cows.**
E. S. Ribeiro*, B. Mion, L. Ogilvie, B. Van Winters, G. Madureira, and J. F. W. Sprícigo, *Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*.

10:40 AM **Break.**

10:50 AM 2462 **Impact of dry matter intake and rumen-protected amino acids during the transition period to optimize uterine health and fertility.**
F. C. Cardoso* and A. R. Guadagnin, *University of Illinois at Urbana-Champaign*, *Urbana, IL*.

11:25 AM 2463 **Effects of omega-3 fatty acid supplementation on the reproduction system in cows and bulls.**
U. Moallem*, *Department of Ruminants Science, Agriculture Research Organization, Volcani Institute*, *Rishon LeZion, Israel*.

12:00 PM **Lunch.**

1:45 PM 2464 **Reevaluating transition cow dogmas.**
L. H. Baumgard*[1], E. A. Horst[2], and S. K. Kvidera[2], [1]*Iowa State University*, *Ames, IA*, [2]*Elanco Animal Health*, *Greenfield, IN*.

2:20 PM 2465 **Consequences of uterine inflammation on oocyte quality.**
J. J. Bromfield*, *Department of Animal Sciences, University of Florida*, *Gainesville, FL*.

2:55 PM 2466 **Uterine and granulosa cell signaling via extracellular vesicles in response to non-esterified fatty acids.**
O. Bogado Pascottini*, *Department of Internal Medicine, Reproduction and Population Medicine, Faculty of Veterinary Medicine, Ghent University*, *Merelbeke, Belgium*.

3:30 PM **Ice cream break.**

4:00 PM **Panel discussion with all speakers.**

Ruminant Nutrition 4: Calves and Heifers

Chair: Marcos Marcondes, Washington State University
Shaw Centre 215
9:30 AM – 12:30 PM

9:30 AM 2467 **Hepatic metabolic flux responses to feeding milk fat, flaxseed oil, or soy oil to pre-ruminating calves.**
L. M. Beckett*[1], V. M. R. Malacco[1], K. Gouveia[1], A. Mann[1], C. Andolino[1], K. Harlow[1], N. E. Sunny[2], R. C. Neves[1], J. R. Burgess[1], J. P. Boerman[1], T. M. Casey[1], and S. S. Donkin[1,3], [1]*Purdue University*, *West Lafayette, IN*, [2]*University of Maryland*, *College Park, MD*, [3]*Oregon State University*, *Corvallis, OR*.

9:45 AM 2468 **Sodium percarbonate as a potential preservative in waste milk fed to dairy calves.**
D. J. Wilson*[1], G. M. Goodell[2], R. Dumm[3], T. Kelly[2], and M. Bethard[2], [1]*Utah State University*, *Logan, UT, USA*, [2]*The Dairy Authority*, *Greeley, CO, USA*, [3]*Dairy Tech, LLC*, *Loveland, CO, USA*.

10:00 AM 2469 **Superiority of wheat straw over alfalfa hay for young Holstein calves.**
A. Nikkhah*[1], M. Alimirzaei[2], and H. Kazemi[2], [1]*National Elites Foundation*, *Tehran, Iran*, [2]*Behroozi Dairy Co*, *Tehran, Iran*.

10:15 AM 2470 **Effect of a phytogenic compound, a functional mineral compound, and yeast cell wall extract fed in calf starter on growth and health.**
S. E. Schuling*[1], T. L. Harris[2], and D. E. Schimek[1], [1]*NutriQuest*, *Mason City, IA*, [2]*Elanco Animal Health*, *Greenfield, IN*.

10:30 AM 2471 **Evaluation of galacto-oligosaccharide for neonatal calves.**
K. Ike[1], D. Casper*[2], U. Anele[3], M. Scott[4], and W. Hansen[4], [1]*College of Science and Technology, North Carolina Agricultural and Technical State University*, *Greensboro, NC*, [2]*Casper's Calf Ranch*, *Freeport, IL*, [3]*College of Animal Sciences, North Carolina Agricultural and Technical State University*, *Greensboro, NC*, [4]*Milk Specialties Global*, *Eden Prairie, MN*.

10:45 AM 2472 **Prepartum CLA supplementation modulates dams' colostrum composition and calves' performance.**
C. L. Cardoso[1], E. Raffrenato[2,3], F. Righi[4], and G. Esposito*[2,4], [1]*Department of Production Animal, Faculty of Veterinary Science, University of Pretoria*, *Onderstepoort-Pretoria, South Africa*, [2]*Department of Animal Sciences, Stellenbosch University*, *Stellenbosch, South Africa*, [3]*Department of Comparative Biomedicine and Nutrition, University of Padova*, *Padova, Italy*, [4]*Department of Veterinary Medicine, University of Parma*, *Parma, Italy*.

11:00 AM 2473 **Zinc, copper, manganese, and iron balance in dairy calves fed a milk replacer or whole milk at two feeding allowances.**
T. Chapelain*, J. B. Daniel, J. N. Wilms, L. N. Leal, and J. Martín-Tereso, *Trouw Nutrition R&D*, *Amersfoort, the Netherlands*.

11:15 AM 2474 **Effect of the interaction of SCFA concentration and pH on health and hematology in cannulated Holstein dairy calves.**
A. Wolfe*, M. Narciso, R. Uwiera, and A. Laarman, *University of Alberta*, *Edmonton, Alberta, Canada*.

11:30 AM 2475 **Changes in microbial community and host transcriptome in the duodenum in newborn calves.**
W. Li[1], A. Larsen*[2], and B. Murphy[2], [1]*US Dairy Forage Research Center*, *Madison, WI*, [2]*Oak Ridge Institute for Science and Education*, *Oak Ridge, TN*.

11:45 AM 2476 **Impact of milk replacer feeding program on growth and efficiency of Angus × Holstein calves.**
A. Seitz*[1], M. Akins[2], and J. Sindelar[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*, [2]*USDA-ARS US Dairy Forage Research Center*, *Marshfield, WI*.

12:00 PM 2477 **Effects of ororuminal forced feeding in severely dehydrated calves.**
A. Skarbek*[1], C. E. Fitzpatrick[1], D. Wilson[1], C. Cauchy[1], M. Gorbachuck[1], H. Thom[1], L. Parrish[1], K. Heaton[1], E. Behling Kelly[2], and F. A. Leal Yepes[1], [1]*College of Veterinary Medicine, Washington State University*, *Pullman WA*, [2]*2Department of Population Medicine and Diagnostic Sciences, Cornell University*, *Ithaca, NY*.

12:15 PM 2478 **Long-term impacts of in utero heat stress on heifer feed efficiency and enteric gas emissions.**
K. A. Riesgraf*[1], M. S. Akins[2], J. Laporta[1], and K. A. Weigel[1], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*US Dairy Forage Research Center*, *Madison, WI*.

Ruminant Nutrition 5: Gut Physiology, Fermentation, and Digestion

Chair: Paola Piantoni, Cargill
Shaw Centre 205
9:30 AM – 12:30 PM

9:30 AM 2479 **Effects of a *Bacillus*-based direct-fed microbial on production and metabolism during feed restriction in mid-lactation Holstein cows.**
B. M. Goetz*[1], M. A. Abeyta[1], S. Rodriguez-Jimenez[1], J. Opgenorth[1], A. D. Freestone[1], T. A. Flemming[1], S. R. Fensterseifer[2], R. P. Arias[2], and L. H. Baumgard[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*United Animal Health Inc*, *Sheridan, IN*.

9:45 AM 2480 **The effects of supplementing cactus (*Opuntia ficus-indica*) powder on dairy calves' health and growth performance.**
P. M. Moshidi*[1], A. S. Sindane[1], S. Washaya[2], and M. C. Muya[3], [1]*University of South Africa*, *Johannesburg, South Africa*, [2]*Université Officielle de Mbujimayi*, *Kinshasa, Democratic Republic of the Congo*, [3]*Great Zimbabwe University*, *Masvingo, Zimabwe*.

10:00 AM 2481 **Effects of slow-release urea on lactation performance, plasma metabolites, rumen fermentation parameters of mid-to-late lactation cows under heat stress.**
M. Jiang*, X. Zhang, K. Wang, K. Zhan, and G. Zhao, *College of Animal Science and Technology, Yangzhou University*, *Yangzhou, Jiangsu, China*.

10:15 AM 2482 **Enteric gas emissions and rumen fermentation in dairy cows fed sucrose- or ethanol-rich diets.**
E. M. V. Hvas*[1], M. R. Weisbjerg[1], M. Hanigan[2], J. C. Saunders[2], A. L. F. Hellwing[1], and M. Larsen[1], [1]*Department of Animal and Veterinary Sciences, AU Viborg, Research Centre Foulum, Aarhus University*, *Tjele, Denmark*, [2]*Department of Dairy Science, Virginia Tech*, *Blacksburg, VA, United States*.

10:30 AM 2483 **Effect of monensin and live-cell yeast supplementation on the lactation performance, apparent total-tract digestibility, and feeding behavior of dairy cows.**
E. C. Diepersloot*, M. R. Pupo, C. Heinzen Jr., B. A. Saylor, and L. F. Ferraretto, *Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, *Madison, WI*.

10:45 AM 2484 **Effects of fibrolytic enzyme additive on in vitro rumen fermentation.**
D. Djouvinov, E. Bungenstab*, and G. Gomes, *AB Vista*, *Plantation, FL*.

11:00 AM 2485 **Effects of supplementing native rumen microbes on rumen fermentation and bacterial abundance in transition and mid-lactation Holstein cows.**
M. Bulnes*[1], J. Lefler[2], C. Marotz[2], J. Halfen[3], T. Fernandes[3], M. Embree[2], J. Osorio[3,1], and M. E. Uddin[1], [1]*Dairy and Food Science Department, South Dakota State University*, *Brookings, SD*, [2]*Native Microbials Inc*, *San Diego, CA*, [3]*School of Animal Sciences, Virginia Tech*, *Blacksburg, VA*.

11:15 AM 2486 **Metabolomic profiling of rumen fluid reveals modulation upon *Fucus* spp. dietary supplementation in dairy cows.**
M. V. Curtasu*[1], E. Chasse[1], M. Thorsteinsson[1,3], M. Battelli[2], A. Bruhn[3,4], and M. O. Nielsen[1,3], [1]*Department of Animal and Veterinary Sciences, AU-Viborg, Research Centre Foulum, Aarhus University*, *Tjele, Denmark*, [2]*Department of Agricultural and Environmental Sciences, University of Milan*, *Milan, Italy*, [3]*Center for Circular Bioeconomy, Aarhus University, Foulum*, *Tjele, Denmark*, [4]*Department of Ecoscience, Aarhus University*, *Aarhus, Denmark*.

11:30 AM 2487 **The effects of supplementing a seaweed *Asparagopsis taxiformis* on the rumen microbiome in dairy cows.**
N. Indug*[1], H. A. Stefenoni[2], M. Hennessy[1], B. Vecchiarelli[1], J. Bender[1], R. Shah[3], S. Garapati[4], C. Yarish[5], S. Welchez[2], S. E. Räisänen[2], D. Wasson[2], C. Lage[2], A. Melgar[2], A. Hristov[2], D. Pitta[1], [1]*University of Pennsylvania*, *New Boloton Center, PA*, [2]*The Pennsylvania State University*, *State College, PA*, [3]*University of Pennsylvania*, *Philadelphia, PA*, [4]*Drexel University*, *Philadelphia, PA*, [5]*University of Connecticut*, *Stamford, CT*.

11:45 AM 2488 **Effects of feeding *Bacillus subtilis* and *Clostridium beijerinckii* to Holstein cows on ruminal degradability of alfalfa haylage and corn silage.**
L. Garcia*[1], F. F. Cardoso[1], J. S. Thompson[2], M. N. De Jesus[2], A. H. Smith[2], T. G. Rehberger[2], M. R. Murphy[1], and F. C. Cardoso[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana, IL*, [2]*Arm and Hammer Animal and Food Production*, *Waukesha, WI*.

12:00 PM 2489 **Effects of feeding *Bacillus subtilis* and *Clostridium beijerinckii* on total mixed ration apparent digestibility of lactating Holstein cows.**
L. Garcia*[1], F. F. Cardoso[1], J. S. Thompson[2], M. N. De Jesus[2], A. H. Smith[2], T. G. Rehberger[2], M. R. Murphy[1], and F. C. Cardoso[1], [1]*University of Illinois at Urbana-Champaign*, *Urbana, IL*, [2]*Arm and Hammer Animal and Food Production*, *Waukesha, WI*.

12:15 PM 2490 **Adaptation of rumen bacteria to pH alters the membrane lipid composition.**
D. de Oliveira*, E. Mir, B. Barreta, and F. Batistel, *University of Florida*, *Gainesville, FL*.

ADSA Foundation Scholar Presentation

Shaw Centre 204
2:00 PM – 2:45 PM

2:00 PM 9007 ***ADSA Foundation Scholar Award Presentation (Production):* Postpartum hypocalcemia of the high-functioning dairy cow: Rethinking a historical disease.**
Jessica McArt, *Cornell University, Ithaca, NY.*

Dairy Foods: Milk Protein and Enzymes Committee Symposium: High Milk Protein Foods Innovation Opportunities

Chair: Hadi Eshpari, Tillamook
Shaw Centre 209
2:00 PM – 5:30 PM

2:00 PM 2491 **High milk protein foods, sensory and consumer insights.**
M. A. Drake*[1] and D. M. Barbano[2], [1]*North Carolina State University*, *Raleigh, NC*, [2]*Cornell University*, *Ithaca, NY*.

2:40 PM 2492 **High-protein ice cream: Processing and chemistry.**
S. VanWees, S. Rankin*, and R. Hartel, *University of Wisconsin-Madison*, *Madison, WI*.

3:20 PM **Break.**

3:50 PM 2493 **Innovations in high-protein food bars and preventing unwanted hardening.**
D. J. McMahon*, *Utah State University*, *Logan, Utah*.

4:30 PM 2494 **Muscle protein synthesis in response to dairy protein fractions, whole protein-dense foods, and resistance exercise.**
N. M. M. P. de Hart*, *The University of Utah*, *Salt Lake City, UT*.

5:10 PM **Discussion.**

Animal Behavior and Well-Being 1

Chair: Meagan King, University of Manitoba
Shaw Centre 201
2:00 PM – 5:30 PM

2:00 PM 2495 **Validation of tri-axial accelerometers for classifying feeding and postural behaviors in lactating dairy cows on pasture.**
C. Fiol*[1], V. Sellustti[1], L. Espínola[1], H. Bentancur[1], L. Alvez[1], V. Dujó[1], G. Odriozola[1], and P. Rodríguez-Bocca[2], [1]*Unidad Académica de Producción de Bovinos, Departamento de Producción Animal y Salud de los Sistemas Productivos, Facultad de Veterinaria, Universidad de la República*, *Libertad, Uruguay*, [2]*Departamento de Investigación Operativa, Instituto de Computación, Facultad de Ingeniería, Universidad de la República*, *Montevideo, Uruguay*.

2:15 PM 2496 **Impact of dystocia on behavior of dairy cattle around calving.**
S. J. Minard and N. Blackie*, *Royal Veterinary College*, *Hatfield, Hertfordshire, UK*.

2:30 PM 2497 **Milking parlor behavior, body measurements, and body condition scores of first-lactation cows raised in individual, pair, or group housing compared to dam-reared housing.**
K. Sharpe*[1] and B. Heins[1,2], [1]*West Central Research and Outreach Center*, *Morris, MN*, [2]*University of Minnesota*, *St. Paul, MN*.

2:45 PM 2498 **Agreement between welfare and health assessment evaluation protocols used during auction sale of cull dairy cows.**
M. Puerto-Parada*[1], S. Buczinski[1], J. Dubuc[1], L. Blouin[2], and M. Villettaz-Robichaud[1], [1]*Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Producteurs de bovins du Québec*, *Longueuil, Québec, Canada*.

3:00 PM 2499 **Nociceptive thresholds associated with digital dermatitis stages.**
G. Fabbri*, A. Desrochers, H. L. M. Ruel, M. Rousseau, and M. Villettaz-Robichaud, *Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*.

3:15 PM 2500 **Effect of post-transport oral electrolyte supplementation on behavior, health, and hydration in neonatal calves.**
J. Pempek[1], Z. England[2], G. Habing*[3], and A. Niehaus[4], [1]*USDA-ARS Livestock Behavior Research Unit*, *West Lafayette, IN*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*, [3]*Department of Veterinary Preventive Medicine, The Ohio State University*, *Columbus, OH*, [4]*Department of Veterinary Clinical Sciences, The Ohio State University*, *Columbus, OH*.

3:30 PM **Break.**

4:00 PM 2501 **Veterinarians' and veterinary students' attitudes toward dairy cows' experiences and the role of veterinarians in the promotion of positive welfare.**
M. W. Brunt*[1,2], D. B. Haley[1,2], S. J. LeBlanc[1,2], and D. F. Kelton[1,2], [1]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [2]*Campbell Centre for the Study of Animal Welfare, University of Guelph*, *Guelph, ON, Canada*.

4:15 PM 2502 **Effect of repeated ACTH challenge on hair cortisol, growth, and behavior in preweaned dairy calves.**
J. D. Kern*[1], J. Boerman[1], M. Erasmus[1], J. S. Johnson[2], J. Pempek[2], and M. W. Jorgensen[2], [1]*Purdue University Department of Animal Sciences*, *West Lafayette, IN*, [2]*USDA-ARS Livestock Behavior Research Unit*, *West Lafayette, IN*.

4:30 PM 2503 **Cow-calf contact rearing systems in a pasture-based dairy system: Effects on cow health.**
S. E. McPherson*[1,2], L. E. Webb[2], J. P. Murphy[1], A. M. Sinnott[1,2], K. Sugrue[1], E. A. M. Bokkers[2], and E. Kennedy[1], [1]*Teagasc, Animal and Grassland Research and Innovation Centre, Moorepark*, *Fermoy, Co. Cork, Ireland*, [2]*Animal Production Systems group, Wageningen University & Research*, *Wageningen, the Netherlands*.

4:45 PM 2504 **Taste aversion to assess hunger in dairy calves.**
D. W. Brown*[1], M. Fischer[1], S. Sigl[1], A. Clark[1], H. Olsen[1], J. H. C. Costa[2], and K. C. Creutzinger[1], [1]*University of Wisconsin-River Falls*, *River Falls, WI*, [2]*University of Kentucky*, *Lexington, KY*.

5:00 PM 2505 **Associations between environmental conditions and dairy cow location in compost-bedded pack barns.**
T. I. Gordon*[1], A. M. Wilson[1], D. B. Haley[2], G. W. Price[3], T. C. Wright[4], D. F. Kelton[2], C. Wand[4], R. J. Gordon[5], and R. Bergeron[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Engineering, Faculty of Agriculture, Dalhousie University*, *Truro, NS, Canada*, [4]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, ON, Canada*, [5]*University of Windsor*, *Windsor, ON, Canada*.

5:15 PM 2506 **Understanding the market: Value chain stakeholder attitudes to surplus dairy calf management in Australia.**
S. E. Bolton[1,2], B. Vandresen*[1], and M. A. G. von Keyserlingk[1], [1]*The University of British Columbia*, *Vancouver, British Columbia, Canada*, [2]*The University of Melbourne*, *Melbourne, Victoria, Australia*.

Joint AAVI (American Association of Veterinary Immunologists) and ADSA Animal Health Symposium: Harnessing Novel Molecular Technologies to Address Challenges in Livestock Production

Chair: Johan Osorio, Virginia Tech
Shaw Centre 206
2:00 PM – 5:30 PM

2:00 PM **Welcome.**

2:05 PM 2507 **Single-nuclei transcriptomics as a tool to address adipose tissue dysfunction in dairy cows.**
C. Strieder-Barboza*[1,2], [1]*Department of Veterinary Sciences, Davis College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*School of Veterinary Medicine, Texas Tech University*, *Amarillo, TX*.

2:45 PM 2508 **Connecting the dots: Immune status understanding using single-cell sequencing approaches.**
J. E. Wiarda*[1,2], J. M. Trachsel[1], A. L. Shircliff[1], J. B. Stasko[1], S. K. Sivasankaran[1,3], J. D. Lippolis[1], E. J. Putz[1], M. R. Ackermann[1], C. K. Tuggle[3], and C. L. Loving[1], [1]*National Animal Disease Center, ARS, USDA*, *Ames, IA*, [2]*Oak Ridge Institute of Science and Education*, *Oak Ridge, TN*, [3]*Iowa State University*, *Ames, IA*.

3:25 PM **Break.**

3:45 PM 2509 **A single-cell atlas of bovine skeletal muscle reveals mechanisms regulating intramuscular adipogenesis and fibrogenesis.**
L. Wang[1], P. Gao[1], C. Li[1], Q. Liu[1], Z. Yao[2], Y. Li[1], X. Zhang[1], J. Sun[2], C. Simintiras[1], M. Welborn[3], K. McMillin[1], S. Oprescu[4], S. Kuang[4], and X. Fu*[1], [1]*School of Animal Science, Louisiana State University Agricultural Center*, *Baton Rouge, LA*, [2]*Department of Computer Science, Old Dominion University*, *Norfolk, VA*, [3]*School of Veterinary Medicine, Louisiana State University*, *Baton Rouge, LA*, [4]*Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

4:25 PM 2510 **Multi-OMICs integration opens a new bridge to knowledge gaps in regulatory mechanisms underlying bovine mastitis.**
E. M. Ibeagha-Awemu*[1], M. Wang[1,2], M. Laterrière[3], D. Gagné[3], F. Omonijo[1], N. Yang[2], and N. Bissonnette[1], [1]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Québec, Canada*, [2]*Département des sciences animales, Université Laval*, *Québec, Québec, Canada*, [3]*Quebec Research and Development Centre, Agriculture and Agri-Food Canada*, *Québec, Québec, Canada*.

5:05 PM **Discussion.**

Breeding and Genetics 1: Breeding for the Future—Efficiency, Sustainability, and Resilience

Chair: Natascha Vukasinovic, Zoetis
Shaw Centre 215
2:00 PM – 5:30 PM

2:00 PM 2511 **Assessing genotype by temperature-humidity index interaction for milk production traits in Holsteins.**
I. L. de Campos*[1], C. Baes[1], F. Miglior[1,2], and F. Schenkel[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*Lactanet*, *Guelph, Ontario, Canada*.

2:15 PM 2512 **A five-generation study of the effect of heat stress during female ancestor pregnancy on milk production traits in Italian Simmental cattle.**
N. P. P. Macciotta*[1], L. Degano[2], D. Vicario[2], C. Dimauro[1], and A. Cesarani[1], [1]*Dipartimento di Agraria, Università di Sassari*, *Sassari, Italy*, [2]*ANAPRI*, *Udine, Italy*.

2:30 PM 2513 **Genetic associations between behavioral and feed efficiency traits in US Holstein cows.**
B. M. Nascimento*[1], L. Cavani[1], M. J. Caputo[1], M. Borchers[2], R. L. Wallace[3], H. M. White[1], F. Peñagaricano[1], and K. A. Weigel[1], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*Zoetis Inc*, *Kalamazoo, MI*, [3]*Zoetis Inc*, *McFarland, WI*.

2:45 PM 2514 **Consistency of daily dry matter intake as an indicator of resilience: Heritability estimates and associations with feed efficiency in Holstein cows.**
L. Cavani*[1], K. L. Parker Gaddis[2], R. L. Baldwin[3], J. E. P. Santos[4], J. E. Koltes[5], R. J. Tempelman[6], M. J. VandeHaar[6], H. M. White[1], F. Peñagaricano[1], and K. A. Weigel[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*, [2]*Council on Dairy Cattle Breeding*, *Bowie, MD*, [3]*Animal Genomics and Improvement Laboratory, ARS, USDA*, *Beltsville, MD*, [4]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [5]*Department of Animal Science, Iowa State University*, *Ames, IA*, [6]*Department of Animal Science, Michigan State University*, *East Lansing, MI*.

3:00 PM 2515 **Host and microbiome contributions to feed efficiency traits in Holstein cows.**
G. Martinez Boggio*[1], H. F. Monteiro[2], F. S. Lima[2], C. C. Figueiredo[3], R. S. Bisinotto[3], J. E. P. Santos[3], B. Mion[4], F. S. Schenkel[4], E. S. Ribeiro[4], K. A. Weigel[1], and F. Peñagaricano[1], [1]*University of Wisconsin-Madison*, *Madison, WI*, [2]*University of California*, *Davis, CA*, [3]*University of Florida*, *Gainesville, FL*, [4]*University of Guelph*, *Guelph, Ontario, Canada*.

3:15 PM 2516 **Residual feed intake prediction from milk spectra in Italian Simmental cattle breed.**
A. Cesarani*[1], L. Degano[2], D. Vicario[2], C. Dimauro[1], and N. Macciotta[1], [1]*Dipartimento di Agraria, University of Sassari*, *Sassari, Italy*, [2]*Associazione Nazionale Allevatori Pezzata Rossa Italiana (ANAPRI)*, *Udine, Italy*.

3:30 PM **Break.**

4:00 PM 2517 **Using milk spectral data to predict dry matter intake based on different cross-validation schemes.**
A. Yilmaz Adkinson*[1,2], M. Abouhawwash[1], K. L. Parker Gaddis[3], F. Peñagaricano[4], H. M. White[4], K. A. Weigel[4], R. Baldwin[5], J. E.P. Santos[6], M. J. VandeHaar[1], J. E. Koltes[7], and R. J. Tempelman[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [2]*Department of Animal Science, Erciyes University*, *Talas, Kayseri, Türkiye*, [3]*US Council on Dairy Cattle Breeding*, *Bowie, MD*, [4]*Department of Animal and Dairy Science, University of Wisconsin*, *Madison, WI*, [5]*Animal Genomics and Improvement Laboratory, Agricultural Research Service, USDA*, *Beltsville, MD*, [6]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [7]*Department of Animal Science, Iowa State University*, *Ames, IA*.

4:15 PM 2518 **Phenotypic variability of feed intake in Holstein heifers until 8 weeks of age.**
I. W. Haagen*, D. Ziegler, H. Chester-Jones, and B. J. Heins, *University of Minnesota*, *St. Paul, MN*.

4:30 PM 2519 **Greenhouse emissions in pure and crossbreed Danish dairy cows.**
C. I. V. Manzanilla-Pech[1], R. B. Stephansen[1], T. Villumsen[1], and J. Lassen*[2,1], [1]*Center for Quantitative Genetics and Genomics, Faculty of Science and Technology, Aarhus University*, *Aarhus, Denmark*, [2]*Viking Genetics*, *Randers, Denmark*.

4:45 PM 2520 **Withdrawn.**

5:00 PM 2521 **Correlations of methane production, intensity, and yield with residual feed intake throughout lactation in Holstein cows.**
S. Fresco*[1,2], D. Boichard[2], R. Lefebvre[2], S. Barbey[3], M. Gaborit[3], S. Fritz[1,2], and P. Martin[2], [1]*Eliance*, *Paris, France*, [2]*Université Paris-Saclay, INRAE, AgroParisTech, GABI*, *Jouy-en-Josas, France*, [3]*INRAE UE326 Domaine Expérimental du Pin*, *Exmes, France*.

5:15 PM 2522 **A comprehensive meta-analysis of heritability and genetic correlation estimates for resilience indicator and production efficiency traits in worldwide Holstein cattle.**
J. Maskal*, V. Pedrosa, H. R. de Oliveira, and L. Brito, *Purdue University*, *West Lafayette, IN*.

Dairy Foods 3: Chemistry

Chair: Jayendra Amamcharla, Kansas State University

Shaw Centre 212

2:00 PM – 5:15 PM

2:00 PM 2524 **Impact of protein and pH on sedimentation in high-protein sterilized milk.**
A. Schnell*[1], M. Molitor[2], and J. Lucey[1,2], [1]*University Of Wisconsin-Madison*, *Madison, WI*, [2]*Center for Dairy Research*, *Madison, WI*.

2:15 PM 2525 **Composition-dependent techno-functional properties of E 472b in aerosol whipping cream.**
M. Blankart*[1], J. Hinrichs[1], C. Oellig[2], and K. Schuster[2], [1]*Department of Soft Matter Science and Dairy Technology, University of Hohenheim*, *Stuttgart, Baden-Wuerttemberg, Germany*, [2]*Department of Food Chemistry and Analytical Chemistry, University of Hohenheim*, *Stuttgart, Baden-Wuerttemberg, Germany*.

2:30 PM 2526 **Ultrasound-induced changes in physicochemical, microstructural and antioxidative properties of whey protein concentrate encapsulated 3,3'-diindolylmethane nanoparticles.**
A. Khan*[1,2] and M. Guo[1,2], [1]*University of Home Economics Lahore*, *Lahore, Pakistan*, [2]*University of Vermont*, *Burlington, VT*.

2:45 PM 2527 **Verification of grass-fed milk by infrared spectroscopy and potential new biomarkers of its authenticity.**
M. Bahadi*, D. Warner, F. Labelle, A. E. France, and D. E. Santschi, *Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*.

3:00 PM 2528 **Preliminary results of the feasibility of near-infrared spectroscopy to predict ovine colostrum quality.**
S. González-Luna[1,2], E. Albanell[1], G. Caja[1], and C. L. Manuelian*[1], [1]*Ruminant Research Group (G2R), Department of Animal and Food Sciences, Universitat Autònoma de Barcelona (UAB)*, *Bellaterra, Spain*, [2]*Departamento de Ciencias Pecuarias, Facultad de Estudios Superiores Cuautitlán, Universidad Nacional Autónoma de México (UNAM)*, *Cuautitlán Izcalli, Mexico*.

3:15 PM 2529 **Designing pristine casein-based electrospun bead-free nanofibers.**
D. Sharma*, G. R. Ziegler, and F. M. Harte, *Department of Food Science, The Pennsylvania State University*, *University Park, PA*.

3:30 PM **Break.**

4:00 PM 2530 **Functional and bioactive properties of camel whey protein concentrate as influenced by spray drying and ultrasonication processing.**
S. Maqsood*, A. Thaibani, P. Mudgil, and H. Mostafa, *Food Science Department, College of Agriculture and Veterinary Medicine, United Arab Emirates University*, *Al Ain, Abu Dhabi, UAE*.

4:15 PM 2531 **Soft matter strategy for creating novel food texturizer: Electrostatic-driven gelation of Pickering emulsion stabilized by colloid whey protein assemblies.**
U. Amin* and H. Zheng, *Southeast Dairy Foods Research Center, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University*, *Raleigh, NC*.

4:30 PM 2532 **Use of an immunochromatographic method to investigate illegal addition of cheese whey to milk.**
R. S. Conrrado[1,2], I. L. S. Gomes[1], E. H. P. Andrade[1,2], M. E. R. Fortini[1], C. D. Barbosa[1], E. R. Campanha[1,3], and L. M. Fonseca*[1,2], [1]*School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Laboratory of Milk Quality Analysis-FAPEMIG APQ-02740-17, School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [3]*Federal Institute of Minas Gerais*, *Bambuí, MG, Brazil*.

4:45 PM 2533 **Use of artificial neural network to detect addition of cow milk to buffalo milk.**
C. F. Viana[1], I. L. S. Gomes[1], E. H. P. Andrade[1,2], M. R. Souza[1], C. F. A. M. Penna[1], B. M. S. Souza[1], R. S. Conrrado[1,2], E. R. Campanha[1,3], M. E. R. Fortini[1], S. V. A. Campos[4], and L. M. Fonseca*[1,2], [1]*School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [2]*Laboratory of Milk Quality Analysis, School of Veterinary Medicine, Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*, [3]*Federal Institute of Minas Gerais*, *Bambuí, MG, Brazil*, [4]*Department of Computer Sciences/Federal University of Minas Gerais*, *Belo Horizonte, MG, Brazil*.

5:00 PM 2534 **A colloidal perspective of the changes occurring to milk protein concentrates produced by membrane filtration.**
O. Coskun*, N. Raak, L. Wiking, and M. Corredig, *Aarhus University; Department of Food Science*, *Aarhus, Denmark*.

Dairy Foods 4: Microbiology

Chair: Sam Alcaine, Cornell University
Shaw Centre 202
2:00 PM – 5:30 PM

2:00 PM 2535 **Evaluation of a multi-step bioconversion process of salty whey for production of renewable products.**
C. R. Surana[1,2], E. Byrne[1], B. Barry[1,2], M. Callanan[2,3], E. W. J. van Niel[4], and O. McAuliffe*[1,3], [1]*Department of Food Biosciences, Teagasc Food Research Centre*, *Fermoy, Co. Cork, Ireland*, [2]*Department of Biological Sciences, Munster Technological University*, *Cork, Co. Cork, Ireland*, [3]*VistaMilk SFI Research Centre, Teagasc Agricultural Food Research Center*, *Fermoy, Co. Cork, Ireland*, [4]*Division of Applied Microbiology, Lund University*, *Lund, Sweden*.

2:15 PM 2536 **Evaluation of the antibacterial and antifungal activity of microorganisms isolated from artisanal cheeses against major cheese contaminants in a model cheese matrix.**
A. Commenges*[1,2], M-H. Lessard[1], F. Coucheney[2], D. Drider[2], and S. Labrie[1], [1]*Department of Food Sciences, Institute of Nutrition and Functional Foods (INAF), STELA Dairy Research Centre, Université Laval*, *Quebec City, QC, Canada*, [2]*UMR Transfrontalière BioEcoAgro No. 1158, Univ. Lille, INRAE, Univ. Liège, UPJV, YNCREA, Univ. Artois, Univ. Littoral Côte d'Opale, ICV–Institut Charles Viollette*, *Lille, France*.

2:30 PM 2537 **Correlating genomic variation of *Streptococcus thermophilus* and *Lactobacillus delbrueckii* ssp. *bulgaricus* cultures with volatile and sensory evaluation of yogurt aroma, texture, and flavor.**
M. Siddiqi* and G. LaPointe, *University of Guelph*, *Guelph, Ontario, Canada*.

2:45 PM 2538 **The microbial diversity of cheesemaking facilities contribute to the typicity of Quebec's terroir cheeses.**
T. Morvant*[1,2], M.-H. Lessard[1,2], J. Chamberland[2], and S. Labrie[1,2], [1]*Laboratoire de Mycologie Alimentaire (LMA)*, [2]*Department of Food Sciences, Institute of Nutrition and Functional Foods (INAF), STELA Dairy Research Center, Laval University*, *Quebec City, QC, Canada*.

3:00 PM 2539 **Not all *Clostridium tyrobutyricum* strains are created equal—Some have limited ability to cause late blowing defect in cheese.**
A. Trmcic*[1], L. Podrzaj[2], M. Pajor[1], S. Reichler[1], N. Martin[1], and M. Wiedmann[1], [1]*Department of Food Science, Cornell University*, *Ithaca, NY*, [2]*Institute of Food Science, Department of Food Science and Technology, University of Natural Resources and Life Sciences*, *Vienna, Austria*.

3:15 PM 2540 **Detection of bacterial pathogen residues in milk samples from mastitis-infected cattle with SERS-based biosensor.**
D. Muthukumar* and G. Shtenberg, *Agricultural Research Organization, The Volcani Institute*, *Rishon LeZion, Israel*.

3:30 PM 2541 **Evaluation of the ability of biofilm formation of methicillin-resistant non-*aureus* staphylococci (MRNAS) isolated from milk.**
B. Crippa[1], R. Morasi[1], K. Nuñez[1], J. Almeida[1], P. Valente[2], J. Maffei[1], G. Silveira[1], E. Barros[1], M. Cieza[1], E. Pereira[1], and N. Silva*[1], [1]*University of Campinas*, *Campinas, SP, Brazil*, [2]*University of Lisbon*, *Lisbon, Portugal*.

3:45 PM **Break.**

4:15 PM 2542 **Toward spore-reduced milk powders: Microwave technology to continuously heat fouling-sensitive milk products.**
B. Graf* and J. Hinrichs, *Department of Soft Matter Science and Dairy Technology, Institute of Food Science and Biotechnology, University of Hohenheim*, *Stuttgart, Baden-Wuerttemberg, Germany*.

4:30 PM 2543 **Enhancing physiological persistence of probiotic bacilli through adaptive geometrical structuring in acidic pH.**
M. Shemesh*, *Agricultural Research Organization*, *Rishon LeZion, Israel*.

4:45 PM 2544 **Development of a spectroscopy-based device for the bacterial contamination in dairy product.**
L. Roy*[1], K. Bhattacharya[1], and S. Pal[2], [1]*University of Calcutta*, *Kolkata, West Bengal, India*, [2]*S. N. Bose National Centre for Basic Sciences*, *Kolkata, West Bengal, India*.

5:00 PM 2545 **Identification of *Bacillus cereus* and *Clostridium perfringens* isolated from a milk powder processing plant.**
G. Ünlü*[1,2], A. Sindi[1], and B. Nielsen[1], [1]*University of Idaho*, *Moscow, ID*, [2]*Washington State University*, *Pullman, WA*.

5:15 PM 2546 **Withdrawn.**

Production, Management, and the Environment 4: Greenhouse Gas Emissions

Chair: Fabio Lima, University of California, Davis
Shaw Centre 203
2:00 PM – 5:30 PM

2:00 PM 2547 **Global warming potential star (GWP*) more closely represents modeled warming contributions from California dairy methane emissions.**
E. M. Pressman, C. J. McCabe*, S. Liu, and F. M. Mitloehner, *University of California, Davis*, *Davis, CA*.

2:15 PM 2548 **Air filtering as alternative approach to combat emissions from cattle facilities.**
A. Kuipers*, P. Galama, R. Maasdam, S. Spoelstra, and P. G. Koerkamp, *Wageningen University & Research*, *Wageningen, the Netherlands*.

2:30 PM 2549 **Assessment of greenhouse gas footprints on small and mid-sized U.S. dairy farms.**
L. A. Olthof*[1], K. R. Briggs[2], and B. J. Bradford[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*Dairy Management Incorporated*, *Rosemont, IL*.

2:45 PM 2550 **Investigating rumination and eating times to predict enteric methane (CH_4) emissions in dairy cows.**
A. Castaneda*[1,2], N. Indugu[1], K. Narayan[1], S. Rassler[1], J. Bender[1], T. Webb[1], B. Vecchiarelli[1], L. Baker[1], and D. Pitta[1], [1]*University of Pennsylvania, School of Veterinary Medicine*, *Kennett Square, PA*, [2]*McGill University, Department of Animal Science*, *Ste-Anne-de-Bellevue, Quebec, Canada*.

3:00 PM 2551 **Methane emissions from liquid dairy manure in Canada.**
A. VanderZaag*[1], H. Baldé[1], and C. Wagner-Riddle[2], [1]*Agriculture and Agri-Food Canada–Ottawa*, *Ottawa, Ontario, Canada*, [2]*University of Guelph*, *Guelph, Ontario, Canada*.

3:15 PM 2552 **Comparing oxygen, carbon dioxide, and methane exchanges of dairy cows measured using GreenFeed versus respiration chambers.**
A. R. Bayat*, T. Stefanski, P. Mäntysaari, and P. Huhtanen, *Animal Nutrition, Natural Resources Institute Finland (Luke)*, *Jokioinen, Finland*.

3:30 PM **Break.**

4:00 PM 2553 **Effects of long-term supplementation with *Asparagopsis taxiformis* on enteric methane emission and lactational performance of dairy cattle.**
D. E. Wasson*, S. F. Cueva, L. F. Martins, N. Stepanchencko, K. Welter, and A. N. Hristov, *The Pennsylvania State University*, *University Park, PA*.

4:15 PM 2554 **Dietary inclusion of *Fucus* species for methane mitigation in dairy cattle?**
E. Chasse*[1], M. Thorsteinsson[1,2], M. V. Curtasu[1], M. Battelli[3], A. Bruhn[2,4], and M. O. Nielsen[1,2], [1]*Department of Animal and Veterinary Sciences, Aarhus University*, *Foulum, Denmark*, [2]*Center for Circular Bioeconomy, Aarhus University*, *Foulum, Denmark*, [3]*Dipartimento di Scienze Agrarie e Ambientali–Produzione, Territorio, Agroenergia, Università degli Studi di Milano*, *Milan, Italy*, [4]*Department of Ecoscience, Aarhus University*, *Aarhus, Denmark*.

4:30 PM 2555 **Effects of a forage additive on modeled greenhouse gas emissions from silage.**
L. Krueger*, L. Koester, and D. Spangler, *Agri-King Inc*, *Fulton, IL*.

4:45 PM 2556 **Evaluation of different oat varieties and cold-pressed rapeseed cake on predicted in vivo methane production.**
P. Fant*[1], P. Huhtanen[2], J. C. C. Chagas[1], S. Krizsan[1], and M. Ramin[1], [1]*Animal Nutrition and Management, Swedish University of Agricultural Sciences*, *Umeå, Sweden*, [2]*Animal Nutrition, Production Systems Natural Resources Institute Finland (Luke)*, *Jokioinen, Finland*.

5:00 PM 2557 **Effects of dietary glycerol monolaurate supplementation on milk production and methane emissions in Holstein dairy cows: A pilot study.**
R. L. Culbertson*[1], P. Uzun[1,2], N. Seneviratne[1], A. B. P. Fontoura[1], A. N. Davis[3], and J. W. McFadden[1], [1]*Cornell University, Ithaca, NY*, [2]*Isparta University of Applied Sciences, Isparta, Türkiye*, [3]*SUNY Cortland, Cortland, NY*.

5:15 PM 2558 **Enteric methane emission and lactational performance of cows fed rapeseed cake and oats on a grass silage-based diet.**
S. E. Räisänen[1], Þ. H. Sigurðardóttir*[1], A. Halmemies-Beauchet-Filleau[1], O. Pitkänen[1], A. Vanhatalo[1], A. Sairanen[2], and T. Kokkonen[1], [1]*Department of Agricultural Sciences, University of Helsinki*, *FI-00014, Helsinki, Finland*, [2]*Natural Resources Institute Finland (Luke)*, *Halolantie 31 A, 71750 Maaninka, Finland*.

Ruminant Nutrition Symposium: Advances in Fatty Acid Nutrition

Chair: Dengpan Bu, Institute of Animal Science, Chinese Academy of Agricultural Sciences
Session sponsored by Berg+Schmidt
Shaw Centre 208
2:00 PM – 5:30 PM

2:00 PM 2559 **Best practices in fatty acid analysis.**
K. J. Harvatine*[1], T. C. Jenkins[2], and S. P. Alves[3], [1]*Penn State University*, *University Park, PA, USA*, [2]*Clemson University*, *Clemson, SC*, [3]*University of Lisbon*, *Lisbon, Portugal*.

2:40 PM 2560 **Seventy years of research on ruminal biohydrogenation. A critical review.**
P. G. Toral*, G. Hervás, and P. Frutos, *Instituto de Ganadería de Montaña (IGM), CSIC-University of León*, *Grulleros, León, Spain*.

3:20 PM **Break.**

3:50 PM 2561 **Odd- and branched-chain fatty acid metabolism: Food abundance and human physiology.**
J. T. Brenna*, *University of Texas at Austin*, *Austin, TX*.

4:30 PM 2562 **Oxylipids: Mediators of the inflammatory process from initiation to resolution.**
G. A. Contreras*, *Department of Large Animal Clinical Sciences, Michigan State University*, *East Lansing, MI*.

5:10 PM **Discussion.**

Ruminant Nutrition 6: Gut Physiology, Fermentation, and Digestion

Chair: Marcos Marcondes, Washington State University
Shaw Centre 205
2:00 PM – 5:30 PM

2:00 PM 2563 **A dynamic mechanistic model of microbial fermentation and methane production in the cow rumen.**
R. Muñoz-Tamayo*[1], S. Ahvenjärvi[2], A. R. Bayat[2], and I. Tapio[3], [1]*Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants*, *Palaiseau, France*, [2]*Animal Nutrition, Production Systems, Natural Resources Institute Finland (Luke)*, *Jokioinen, Finland*, [3]*Genomics and Breeding, Production Systems, Natural Resources Institute Finland (Luke)*, *Jokioinen, Finland*.

2:15 PM 2564 **Determining net apparent appearance and disappearance of volatile fatty acid from time-series data.**
S. Sujani, C. Gleason, B. dos Reis, and R. White*, *Virginia Tech*, *Blacksburg, VA*.

2:30 PM 2565 **Intraruminal aqueous carbon dioxide is a strong predictor of volatile fatty acid concentrations.**
K. Amirault, B. dos Reis, and R. White*, *Virginia Tech*, *Blacksburg, VA*.

2:45 PM 2566 **Modeling enteric methane emissions in heat-stressed lactating dairy cows.**
V. C. Souza*[1], L. E. Moraes[1], L. H. Baumgard[2], J. E. P. Santos[3], N. D. Mueller[4], R. P. Rhoads[5], and E. Kebreab[1], [1]*University of California*, *Davis, CA*, [2]*Iowa State University*, *Ames, IA*, [3]*University of Florida*, *Gainesville, FL*, [4]*Colorado State University*, *Fort Collins, CO*, [5]*Virginia Tech*, *Blacksburg, VA*.

3:00 PM 2567 **Assessment of hindgut microbiota and its functional shift in postpartum dairy cows with nutritional diarrhea.**
Y. Hao*[1,2], T. Ouyang[1], W. Wang[1], Y. Wang[1], Z. Cao[1], H. Yang[1], L. Guan[2], and S. Li[1], [1]*China Agricultural University*, *Beijing, China*, [2]*University of Alberta*, *Edmonton, Alberta, Canada*.

3:15 PM 2568 **Using the rumen microbiome, genomic PTA, and artificial intelligence to predict feed and milk production efficiency in dairy cows.**
H. Monteiro*[1], C. Figueiredo[2], B. Mion[3], W. Coelho Jr.[1], P. Peixoto[2], R. Bisinotto[2], J. Santos[4], F. Peñagaricano[5], E. Ribeiro[3], F. Schenkel[3], B. Weimer[1], L. Guan[6], A. Neves[7], T. Brown[1], F. Lima[1], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis, CA*, [2]*Department of Large Animal Clinical Sciences, University of Florida*, *Gainesville, FL*, [3]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [5]*Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*, [6]*Department of Agriculture, Food, and Nutrition, University of Alberta*, *Alberta, Canada*, [7]*Department of Animal Science, University of Copenhagen*, *Copenhagen, Denmark*.

3:30 PM **Break.**

4:00 PM 2569 **A multi-omics approach to characterize the role of the rumen microbiome on feed efficiency in dairy cows.**
H. Monteiro*[1], C. Figueiredo[2], B. Mion[3], W. Coelho Jr.[1], R. Bisinotto[2], M. Nehme[4], J. Santos[4], F. Peñagaricano[5], E. Ribeiro[3], F. Schenkel[3], B. Weimer[1], L. Guan[6], A. Neves[7], T. Brown[1], F. Lima[1], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis, CA*, [2]*Department of Large Animal Clinical Sciences, University of Florida*, *Gainesville, FL*, [3]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [5]*Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*, [6]*Department of Agriculture, Food, and Nutrition, University of Alberta*, *Alberta, Canada*, [7]*Department of Animal Science, University of Copenhagen*, *Copenhagen, Denmark*.

4:15 PM 2570 **Rumen bacterial cluster identification and its influence on rumen metabolites and growth performance of young goats.**
D. Wang, G. Tang, X. Lei, L. Wang, J. Yao, and Y. Cao*, *Northwest A&F University*, *Xianyang, Shaanxi, China*.

4:30 PM 2571 **Feed-efficient dairy cows show potentially more significant protozoa activity towards microorganisms in the rumen.**
W. Coelho Jr.*[1], H. Monteiro[1], C. Figueiredo[2], B. Mion[3], P. Peixoto[2], R. Bisinotto[2], M. Nehme[4], J. Santos[4], F. Penãgaricano[5], E. Ribeiro[3], F. Schenkel[3], B. Weimer[1], L. Guan[6], T. Brown[1], F. Lima[1], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis, CA*, [2]*Department of Large Animal Clinical Sciences, University of Florida*, *Gainesville, FL*, [3]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [5]*Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*, [6]*Department of Agriculture, Food, and Nutrition, University of Alberta*, *Alberta, Canada*.

4:45 PM 2572 **Comparisons of ruminal microbiome and metabolites of low- and high-producing dairy cows.**
A. D. Ravelo*[1], P. Ferm[1], Y. Guo[2], B. O. Omontese[2], C. Chen[2], N. R. Noyes[1], and L. S. Caixeta[1], [1]*Department of Veterinary Population Medicine, University of Minnesota*, *Saint Paul, MN*, [2]*Department of Food Science and Nutrition, University of Minnesota*, *Saint Paul, MN*.

5:00 PM 2573 **High bioavailability of rumen-protected choline alters the vaginal discharge microbiota in dairy cows.**
T. Marques*[1,2], H. Monteiro[1], D. Melo[1], W. Coelho Jr.[1], S. Salman[1], D. Dubey[3], F. Sun[4], K. Leao[2], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California*, *Davis, CA*, [2]*Federal Institute Goiano*, *Rio Verde, Goias, Brazil*, [3]*Kemin Europa NV*, *Herentals, Belgium*, [4]*Kemin Industries Inc*, *Des Moines, IA*.

5:15 PM 2574 **Associations between residual feed intake (RFI) and digestibility or hepatic mitochondrial respiration in Holstein cows.**
M. N. Marinho*, S. E. Wohlgemuth, M. C. Perdomo, and J. E. P. Santos, *University of Florida*, *Gainesville, FL*.

Wednesday, June 28

POSTER PRESENTATIONS

Animal Behavior and Well-Being 3

1600W **Using machine learning techniques to classify respiratory disease persistency in dairy calves.**
E. Casella[1], M. C. Cantor*[2], M. M. Woodrum Setser[1], J. H. C. Costa[1], and S. Silvestri[1], [1]*University of Kentucky*, *Lexington, KY*, [2]*Penn State University*, *College Park, PA*.

1601W **Measuring the impacts of estrus and parturition on rumen temperature and environment, milk productivity, behavior, and physiological attributes in Holstein dairy cows.**
J. S. Lee*[1], H. K. Ryu[1], Y. H. Jo[1], S. R. Lee[1], H. W. Jin[2], H. K. Ko[3], and H. G. Lee[1], [1]*Department of Animal Science and Technology, Sanghuh College of Life Sciences, Konkuk University*, *Seoul, Republic of Korea*, [2]*Dongbang S&D Co., Ltd*, *Seoul, Republic of Korea*, [3]*National Agricultural Cooperative Federation Agribusiness Group, NongHyup*, *Gyeonggi-do, Republic of Korea*.

1602W **Development of an animal-based global welfare score usable in dairy cattle breeding.**
P. Lemal*[1], M-N. Tran[2], M. Schroyen[1], and N. Gengler[1], [1]*University of Liège–GxABT*, *Gembloux, Belgium*, [2]*Association Wallonne des Eleveurs-ELEVEO*, *Ciney, Belgium*.

1603W **Feeding behavior patterns and performance in dairy calves are associated with food neophobia.**
M. Woodrum Setser*[1], H. Neave[2], and J. Costa[1], [1]*University of Kentucky*, *Lexington, KY*, [2]*Aarhus University*, *Tjele, Denmark*.

1604W **The effect of the social environment on labor duration and dystocia of dairy cows housed in group maternity pens.**
S. J. Sigl*[1], K. L. Proudfoot[2], H. M. Dann[3], P. D. Krawczel[4], and K. C. Creutzinger[1], [1]*University of Wisconsin–River Falls*, *River Falls, WI*, [2]*University of Prince Edward Island*, *PEI, Canada*, [3]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [4]*University of Helsinki*, *Helsinki, Finland*.

1605W **Precision and accuracy of a behavior monitoring collar inter-device for rumination, feeding activity and idle time of lactating dairy cows.**
J. V. R. Lovatti*[1], L. F. Garrido[2], J. F. Aires[3], K. A. Dijkinga[2], J. H. C. Costa[1], and R. R. Daros[2], [1]*Dairy Science Program, University of Kentucky*, *Lexington, KY*, [2]*Graduate Program in Animal Science, School of Life Science, Pontifícia Universidade Católica do Paraná*, *Curitiba, Paraná, Brazil*, [3]*Animal Science Department, Federal University of Rio Grande do Sul*, *Porto Alegre, Rio Grande do Sul, Brazil*.

1606W **Clinical metritis alters the behavior pattern in cows during the early postpartum.**
J. Cardoso[1], J. Halfen*[3], K. Cardoso[1], C. Brauner[1], R. Ferreira[2], and E. Schmitt[1], [1]*Federal University of Pelotas*, *Pelotas, Rio Grande do Sul, Brazil*, [2]*Santa Catarina State University*, *Chapecó, Santa Catarina, Brazil*, [3]*Virginia Tech*, *Blacksburg, VA*.

1607W **Breed differences for rumination and grazing time in lactating organic cows.**
T. Muratori*[1], B. J. Heins[2], and C. D. Dechow[1], [1]*Penn State University*, *University Park, PA*, [2]*WCROC*, *Morris, MN*.

1608W **Evaluation of time budgets and vaginal temperature of pastured Holstein cows offered shade or sprinklers.**
K. Braman*, J. Drewry, and A. Stone, *Mississippi State University*, *Starkville, MS*.

1609W **Assessing the frequency of sole ulcers according to housing system type in Québec dairy cows.**
B. Fouquette*[1], J. C. Arango Sabogal[2], A. Desrochers[1], L. Des Côteaux[1], and M. Villettaz Robichaud[1], [1]*Faculté de médecine vétérinaire, Departement of Clinical Sciences, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Faculté de médecine vétérinaire, Departement of Pathology and Microbiology, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*.

Animal Health 3

1610W **Comparison of calf morbidity, mortality, and future performance across categories of passive immunity.**
P. Crannell and A. Abuelo*, *Michigan State University*, *East Lansing, MI*.

1611W **Effects of milk-derived bioactive peptide Val-Pro-Pro on diarrhea of pre-weaning calves.**
X. Zong*, Y. Du, L. Yang, and Q. Xu, *Huazhong Agricultural University*, *Wuhan, Hubei, China*.

1612W **A therapeutic diet for foot-and-mouth disease–infected Holstein Friesian crossbred calves improves immune response by suppressing inflammation and oxidative stress.**
A. Somagond*[1], B. H. Manjunatha Patel[1], A. K. Pattanaik[2], N. Krishnaswamy[1], G. B. Manjunatha Reddy[3], G. K. Gaur[2], and J. J. Loor[4], [1]*ICAR–Indian Veterinary Research Institute*, *Bengaluru, Karnataka, India*, [2]*ICAR–Indian Veterinary Research Institute*, *Izzatnagar, Bareilly, UP, India*, [3]*ICAR–National Institute for Veterinary Epidemiology and Disease Informatics*, *Bengaluru, Karnataka, India*, [4]*University of Illinois*, *Urbana, IL*.

1613W **Barriers to recording calf data on Ontario dairy farms.**
K. Y. Edwards* and D. L. Renaud, *University of Guelph*, *Guelph, Ontario, Canada*.

1614W **Neonatal calves infected with *Cryptosporidium parvum* have impaired transporter expressions in their jejunum epithelium.**
A. Veshkini*[1], F. Dengler[2], L. Bachmann[3,1], W. Liermann[1], C. Helm[4], R. Ulrich[4], C. Delling[5], C. Kühn[6], and H. M. Hammon[1], [1]*Research Institute for Farm Animal Biology, Institute of Nutritional Physiology*, *Dummerstorf, Germany*, [2]*Institute of Physiology, Pathophysiology and Biophysics, University of Veterinary Medicine Vienna*, *Vienna, Austria*, [3]*Faculty of Agriculture and Food Science, University of Applied Science Neubrandenburg*, *Neubrandenburg, Germany*, [4]*Institutue for Veterinary Pathology, Leipzig University*, *Leipzig, Germany*, [5]*Institute of Veterinary Parasitology, Leipzig University*, *Leipzig, Germany*, [6]*Research Institute for Farm Animal Biology, Institute of Genome Biology*, *Dummerstorf, Germany*.

1615W **The respiratory infectome of dairy calves characterized by a total RNA sequencing approach.**
B. Brito[1,2], H. Golder*[3,4], and I. Lean[3,4], [1]*Elizabeth Macarthur Agricultural Institute, Department of Primary Industries*, *Menangle, NSW, Australia*, [2]*Australian Institute for Microbiology & Infection, University of Technology Sydney*, *Ultimo, NSW, Australia*, [3]*Scibus*, *Camden, NSW, Australia*, [4]*DairyUp*, *Camden, NSW, Australia*.

1616W **Untargeted metatranscriptomic methods to characterize the enteric infectome of calves with and without diarrhea.**
B. Brito[1,2], H. Golder[3,4], E. Wyrsch[2], S. Djordjevic[2], and I. Lean*[3,4], [1]*Elizabeth Macarthur Agricultural Institute, Department of Primary Industries*, *Menangle, NSW, Australia*, [2]*Australian Institute for Microbiology & Infection, University of Technology Sydney*, *Ultimo, NSW 2007, Australia*, [3]*Scibus*, *Camden, NSW, Australia*, [4]*DairyUp*, *Camden, NSW, Australia*.

1617W **Expression of virulence factors and antimicrobial resistant genes in total RNA sequenced from rectal swabs from diarrheic calves.**
B. Brito[1,2], H. Golder[3,4], E. Wyrsch[2], S. Djordjevic[2], and I. Lean*[3,4], [1]*Elizabeth Macarthur Agricultural Institute, New South Wales Department of Primary Industries*, *Menangle, NSW, Australia*, [2]*Australian Institute for Microbiology & Infection, University of Technology Sydney*, *Ultimo, NSW, Australia*, [3]*Scibus*, *Camden, NSW, Australia*, [4]*DairyUp*, *Camden, NSW, Australia*.

1618W **Withdrawn.**

1620W **Arrival risk factors associated with morbidity and mortality in veal calves in Québec, Canada.**
A. Mohamed*[1,2], D. Francoz[1,3], J. Berman[1], S. Dufour[3,4], and S. Buczinski[1,3], [1]*Département des Sciences Cliniques, Faculté de Médecine Vétérinaire, Université de Montréal*, *Saint Hyacinthe, Québec, Canada*, [2]*Department of Animal Medicine, Faculty of Veterinary Medicine, Zagazig University*, *Zagazig, Sharkia, Egypt*, [3]*Regroupement Op+Lait*, *Saint Hyacinthe, Québec, Canada*, [4]*Département de Pathologie et Microbiologie, Faculté de Médecine Vétérinaire, Université de Montréal*, *Saint Hyacinthe, Québec, Canada*.

1621W **Effects of *Cryptosporidium parvum* infection on intestinal short-chain fatty acids and free fatty acid receptor expression in neonatal calves.**
W. Liermann[1], F. Dengler[2], C. Dengler[3], L. Bachmann[1,4], R. Ulrich[5], C. Helm[5], T. Viergutz[1], M. Mielenz[1], and H. M. Hammon*[1], [1]*Research Institute for Farm Animal Biology (FBN)*, *Dummerstorf, Germany*, [2]*Institute of Physiology, Pathophysiology and Biophysics, University of Veterinary Medicine Vienna*, *Vienna, Austria*, [3]*Institute of Parasitology, Leipzig University*, *Leipzig, Germany*, [4]*Faculty of Agriculture and Food Science, University of Applied Science Neubrandenburg*, *Neubrandenburg, Germany*, [5]*Institutue of Veterinary Pathology, Leipzig University*, *Leipzig, Germany*.

1622W **Evaluation of technologies for early detection of dairy calf pneumonia.**
E. Poulin*[1], É. Charbonneau[1], S. Buczinski[2], D. E. Santschi[3], and É. R. Paquet[1], [1]*Université Laval*, *Québec, Québec, Canada*, [2]*Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [3]*Lactanet*, *Sainte-Anne-de-Bellevue, Québec, Canada*.

1623W **Distribution of navel size of newborn calves from 23 source dairies in California.**
N. Silva-del-Rio*[1], G. Jardon[2], and D. Bruno[2], [1]*Veterinary Medicine Teaching and Research Center*, *Tulare, CA*, [2]*University of California Cooperative Extension*, *Fresno, CA*.

1624W **Preweaning health of dairy heifers is associated with prepartum metabolism of dams.**
C. Van Dorp, B. Van Winters*, L. Ogilvie, B. Mion, and E. S. Ribeiro, *Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*.

1625W **Evaluating the effectiveness of a nonsteroidal anti-inflammatory drug as an early intervention strategy for neonatal calf diarrhea.**
A. Welk*[1], M. C. Cantor[1,2], H. W. Neave[3], and D. L. Renaud[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Animal Science, Penn State University*, *State College, PA*, [3]*Department of Animal and Veterinary Sciences, Aarhus University*, *Tjele, Denmark*.

1626W **Inter-rater reliability of scoring systems for abomasal lesions in Quebec veal calves.**
L. Van Driessche*[1], G. Fecteau[1], J. Arsenault[2], L. Miana[3], Y. Chorfi[4], M. Villettaz-Robichaud[1], P. Hélie[5], and S. Buczinski[1],
[1]*Department of Clinical Science, Faculty of Veterinary Medicine, University of Montreal*, *St-Hyacinthe, QC, Canada*, [2]*Department of Pathology and Microbiology, Faculty of Veterinary Medicine, Université de Montréal*, *St-Hyacinthe, QC, Canada*, [3]École *Nationale Vétérinaire de Toulouse (ENVT)*, *Occitanie, Toulouse, France*, [4]*Department of Veterinary Biomedicine, Faculty of Veterinary Medicine, Université de Montréal*, *St-Hyacinthe, QC, Canada*, [5]*Department of Pathology and Microbiology, Faculty of Veterinary Medicine, Universié de Montréal*, *St-Hyacinthe, QC, Canada*.

1627W **Ruminal pH and subacute ruminal acidosis prediction using artificial intelligence and individual Fourier transform infrared spectroscopy milk analysis.**
T. Touil*[1], F. Huot[1], S. Claveau[2], A. Bunel[2], D. Warner[3], D. Santschi[3], R. Gervais[1], and É. Paquet[1], [1]*Université Laval*, *Québec, Québec, Canada*, [2]*Agrinova*, *Alma, Québec, Canada*, [3]*Lactanet*, *Sainte-Anne-de-Bellevue, Québec, Canada*.

1628W **Provision of active ventilation to outdoor hutches during summer improves immune function of dairy calves.**
E. M. Tabor*, G. A. Larsen, S. L. Field, A. R. Guadagnin, and J. Laporta, *University of Wisconsin*, *Madison, WI*.

1629W **Evaluating machine learning algorithms to predict locomotion scoring in dairy cattle.**
R. Neupane[1], S. Paudyal*[2], A. Aryal[3], and P. Pinedo[4], [1]*Christian-Albrechts-Universität zu Kiel*, *Kiel, Germany*, [2]*Department of Animal Science, Texas A&M University*, *College Station, TX*, [3]*Department of Construction Science, Texas A&M University*, *College Station TX*, [4]*Department of Animal Science, Colorado State University*, *Fort Collins, CO*.

1631W **Evaluating the use of electrolytes or milk replacer to improve surplus dairy calf health and growth outcomes.**
A. Bajus*[1], K. C. Cruetzinger[2], M. C. Cantor[1,3], D. Kelton[1], J. Wilms[4,5], M. A. Steele[5], and D. L. Renaud[1], [1]*University of Guelph, Department of Population Medicine*, *Guelph, Ontario, Canada*, [2]*University of Wisconsin–River Falls, Department of Animal Science*, *River Falls, WI*, [3]*Penn State University, Department of Animal Science*, *University Park, PA*, [4]*Trouw Nutrition*, *Amersfoort, the Netherlands*, [5]*University of Guelph, Department of Animal Biosciences*, *Guelph, Ontario, Canada*.

1632W **Associations of maternal gestation length with colostrum quality, and calves' health and performance.**
M. Schwartz, I. Avalos Rosario*, L. Ogilvie, B. Van Winters, M. R. Carvalho, B. Mion, and E. S. Ribeiro, *Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*.

1633W **Exploring the impact of *Salmonella* Dublin in cross-bred dairy calves.**
F. C. Pharo*[1], M. Gillies[2], A. Keunen[3], and D. L. Renaud[1], [1]*University of Guelph*, *Guelph, Ontario, Canada*, [2]*University of Prince Edward Island*, *Charlottetown, Prince Edward Island, Canada*, [3]*Mapleview Agri*, *Palmerston, Ontario, Canada*.

1634W **Inter- and intra-observer reliability of various indicators used for performing a welfare and health assessment of preweaned dairy calves.**
J. Silva Ramos*[1], M. Villettaz Robichaud[1], J. Dubuc[1], D. Santschi[2], J.-P. Roy[1], G. Fecteau[1], and S. Buczinski[1], [1]*Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Lactanet*, *Sainte-Anne-de-Bellevue, Québec, Canada*.

1635W **Effects of kefir supplementation during the first 21 days of life on growth, diarrhea incidence, and antibiotic use in Holstein calves.**
C. A. Reynolds[1], C. D. Havekes[2], and S. Y. Morrison*[1], [1]*William H. Miner Agricultural Research Institute*, *Chazy, NY*, [2]*Cornell Cooperative Extension*, *Canton, NY*.

1636W **The effect of a rest period on health and growth of surplus dairy calves following long-distance transportation.**
H. M. Goetz* and D. L. Renaud, *Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

1637W **Hygiene management practices and ATP luminometry of feeding equipment in preweaned calves on dairy farms in Quebec, Canada.**
L. Van Driessche*[1], D. E. Santschi[2], É. Paquet[3], D. Renaud[4], É. Charbonneau[3], M. Steele[4], M.-L. Gauthier[5], A. Chancy[1], N. Barbeau-Grégoire[1], and S. Buczinski[1], [1]*Department of Clinical Science, Faculty of Veterinary Medicine, University of Montreal*, *St-Hyacinthe, QC, Canada*, [2]*Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*, [3]*Department of Animal Science, University of Laval*, *Quebec City, QC, Canada*, [4]*Department of Population Medicine, University of Guelph*, *Ontario, Canada*, [5]*Laboratory of Animal Health, Ministry of Agriculture, Fisheries and Food*, *St-Hyacinthe, QC, Canada*.

1638W **Antimicrobial resistance profiles of *Escherichia coli* from dairy farms participating in an antimicrobial stewardship educational program for farm employees.**
A. Garzon[1], R. Portillo[2], G. Habing[2], N. Silva-del-Rio*[3], B. Karle[4], and R. Pereira[1], [1]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis, CA*, [2]*Department of Veterinary Preventive Medicine, Ohio State University*, *Columbus, OH*, [3]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California, Davis*, *Tulare, CA*, [4]*Cooperative Extension, Division of Agriculture and Natural Resources, University of California, Davis*, *Orland, CA*.

1639W **Survey of *Salmonella* populations in cattle feed across the United States.**
M. N. de Jesus*, J. S. Thompson, and A. H. Smith, *Arm & Hammer Animal and Food Production*, *Waukesha, WI*.

1640W **A comparison of quantitative PCR designs of the IS900 target for detecting *Mycobacterium avium* ssp. *paratuberculosis* in the herd environment and in infected dairy cows.**
N. Bissonnette*[1], J. P. Brousseau[1], S. Ollier[1], A. S. Byrne[2], E. Ibeagha-Awemu[1], and K. Tahlan[2], [1]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Quebec, Canada*, [2]*Department of Biology, Memorial University of Newfoundland*, *St. John's, Newfoundland and Labrador, Canada*.

Breeding and Genetics 3: Omics, AI, and Emerging Technologies

1641W **Impact of genomic prediction of daughter pregnancy rate in two reproductive programs combining estrus detection and timed AI in dairy cows.**
D. Melo*[1], R. Bruno[2], R. Bisinotto[3], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California*, *Davis, CA*, [2]*Zoetis Inc*, *Parsippany, NJ*, [3]*Department of Large Animal Clinical Science, University of Florida*, *Gainesville, FL*.

1642W **Impact of heat stress on automated sensor estrous indicator traits in dairy cattle.**
G. R. Dodd*[1], C. M. Rochus[1], P. L. Rockett[1], F. Malchiodi[1,2], F. Miglior[1,3], F. S. Schenkel[1], R. L. A. Cerri[4], and C. F. Baes[1,5], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*The Semex Alliance*, *Guelph, ON, Canada*, [3]*Lactanet Canada*, *Guelph, ON, Canada*, [4]*Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*, [5]*Institute of Genetics, Department of Clinical Research and Veterinary Public Health, University of Bern*, *Bern, Switzerland*.

1643W **Exosome mediated microRNA expression pattern in bovine oviductal fluid derived from different cycle stages.**
B. Shimelash Abebe*[1,2], D. Tesfaye[1], S. Gebremedhn[1], K. Schellander[1], and T. Wondie Alemu[1,3], [1]*University of Bonn, Institute of Animal Science (ITW)*, *Bonn, Germany*, [2]*Gondar Agricultural Research Center*, *Gondar, Ethiopia*, [3]*McGill University, Department of Animal Science*, *Sainte-Anne-de-Bellevue, QC, Canada*.

1644W **Identification of novel mRNA isoforms and long non-coding RNA associated with pregnancy status in Holstein dairy cows.**
H. Sweett*[1,2], E. S. Ribeiro[3], S. J. LeBlanc[4], L. A. Favetta[5], S. Lam[2], F. Miglior[1,2], and A. Cánovas[2], [1]*Lactanet Canada*, *Guelph, Ontario, Canada*, [2]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*, [3]*Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*, [4]*Department of Population Medicine, Ontario Veterinary College*, *Guelph, Ontario, Canada*, [5]*Reproductive Health and Biotechnology Lab, Department of Biomedical Science, Ontario Veterinary College*, *Guelph, Ontario, Canada*.

1645W **Genome-wide mapping and characterization of simple sequence repeats in the genome sequence of the world's highest-producing dairy breed—Holstein-Friesian.**
N. Yang*[1,2], M. Wang[1,3], A. T. Vincent[1], and E. M. Ibeagha-Awemu[3], [1]*Université Laval*, *Québec, Québec, Canada*, [2]*Yangzhou University*, *Yangzhou, Jiangsu, China*, [3]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, Québec, Canada*.

1646W **Colostrum microbiome as a predictor of future milk solids production.**
S. Jewell*[1], S. Krishnamoorthy[1], A. Miles[2], and H. Huson[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Animal Genomics and Improvement Laboratory, USDA-ARS*, *Beltsville, MD*.

1647W **Genetic parameters and genome-wide association studies for mozzarella and milk production traits, lactation length, and lactation persistency in Murrah buffaloes.**
S. Lazaro*[1,2], H. Tonhati[2], H. Oliveira[1,3], A. Silva[2], D. Scalez[3], A. Nascimento[2], D. Santos[4], G. Stefani[2], I. Carvalho[2], A. Sandoval[2], and L. Brito[1], [1]*Purdue University*, *West Lafayette, IN*, [2]*College of Agricultural and Veterinary Sciences, São Paulo State University*, *Jaboticabal, SP, Brazil*, [3]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*University of New England*, *Armidale, New South Wales, Australia*.

1648W **A comparison of various machine learning techniques and cross-validation schemes to predict dry matter intake using milk spectral data.**
M. Abouhawwash*[1], A. Yilmaz Adkinson[1,7], K. L. Parker Gaddis[2], F. Peñagaricano[3], H. M. White[3], K. A. Weigel[3], R. Baldwin[4], J. E. P. Santos[5], M. J. VandeHaar[1], J. E. Koltes[6], and R. J. Tempelman[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*US Council on Dairy Cattle Breeding*, *Bowie, MD*, [3]*University of Wisconsin*, *Madison, WI*, [4]*Agricultural Research Service, USDA*, *Beltsville, MD*, [5]*University of Florida*, *Gainesville, FL*, [6]*Iowa State University*, *Ames, IA*, [7]*Erciyes University*, *Talas, Kayseri, Türkiye*.

1649W **Estimation of genetic parameters for milk mid-infrared predicted methane production in dairy cattle.**
S. Shadpour*[1], C. F. Baes[1], D. Tulpan[1], F. Miglior[1,2], and F. Schenkel[1], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Lactanet Canada*, *Guelph, Ontario, Canada*.

1650W **Milk somatic cell transcriptome characterization of high and low residual feed intake Holstein dairy cows.**
V. Asselstine*[1], F. S. Schenkel[1], S. Lam[1], F. Miglior[1,2], C. F. Baes[1,3], O. Willoughby[1], M. M. M. Muniz[1], P. Stothard[4], and A. Cánovas[1], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lactanet Canada*, *Guelph, ON, Canada*, [3]*Institute of Genetics, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*, [4]*Department of Agricultural, Food and Nutritional Science/Livestock Gentec, University of Alberta*, *Edmonton, AB, Canada*.

1651W **Diet digestibility in Holsteins estimated from fecal potentially degradable neutral detergent fiber was heritable and varied across herds and parity.**
W. Yousaf* and C. D. Dechow, *Pennsylvania State University*, *University Park, PA*.

Extension Education 1

1652W **Consumer confidence in the dairy industry is increased by knowledge of partnerships between producers, processors, and academia.**
S. Reichler[1], A. Stelick[1], S. Nasberg-Abrams[2], and N. Martin*[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Columbia High School*, *Maplewood, NJ*.

1653W **Survey of management practices on reproductive performance on South Dakota dairy farms.**
P. Villamediana* and M. Rovai, *Department of Dairy and Food Science, South Dakota State University*, *Brookings, SD*.

1654W **A summary of breeding practices on Illinois dairy farms.**
B. R. Lenkaitis*[1], D. T. Nolan[2], F. C. Cardoso[2], C. A. Hayes[3], and J. P. Hutchins[1], [1]*Department of Agricultural and Consumer Economics, University of Illinois*, *Urbana, IL*, [2]*Department of Animal Sciences, University of Illinois*, *Urbana, IL*, [3]*Department of Veterinarian Medicine, University of Illinois*, *Urbana, IL*.

1655W **Case Study: On-farm refractometer assessment of colostrum quality and passive immune transfer in dairy calves.**
M. Rovai*[1] and A. A. K. Salama[2], [1]*Department of Dairy and Food Science, South Dakota State University*, *Brookings, SD*, [2]*Group of Research in Ruminants (GR2), Department of Animal and Food Sciences, Universitat Autónoma de Barcelona*, *Bellaterra, Barcelona, Spain*.

1656W **Evaluation of Healthy Farms Healthy Agriculture (HFHA) learning modules: Knowledge and intention.**
J. M. Smith*[1], J. McDonald[2], S. Kerr[3], J. M. Rankin[4], and J. Cummings[1], [1]*University of Vermont and State Agricultural College*, *Burlington, VT*, [2]*TLC Projects, LLC*, *Neenah, WI*, [3]*Washington State University Extension*, *Mount Vernon, WA*, [4]*Montana State University*, *Bozeman, MT*.

1657W **Extension programming demonstrates that participants believe biochar would benefit agriculture and environmental sustainability.**
J. Spencer*[1], S. Crawford[2], B. Jones[1,3], J. Muir[1], J. Brady[1], P. DeLaune[1], and E. Kan[1], [1]*Texas A&M AgriLife Extension & Research*, *Stephenville, TX*, [2]*Texas A&M University*, *College Station, TX*, [3]*Tarleton State University*, *Stephenville, TX*.

Forages and Pastures 2

1658W **Effect of growth stage/cutting time and intercropping of whole plant oat with whole plant faba bean forage hay on ruminal degradation and intestinal digestion in dairy cows.**
C. Nagy, D. A. Christensen, H. (B.) Lardner, V. H. Guevara Oquendo, and P. Yu*, *Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan*, *Saskatoon, Canada*.

1659W **Raising heifers on pasture reduced heifer feed cost and improved income over feed cost in the first lactation of dairy cows.**
C. H. P. Camisa Nova*[1], K. F. Kalscheur[2], D. Jaramillo[3], and G. E. Brink[2], [1]*Animal and Dairy Science Department, University of Wisconsin–Madison*, *Madison, WI*, [2]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*, [3]*US Dairy Forage Research Center, USDA-ARS*, *Marshfield, WI*.

1660W **Effects triticale silage harvested at boot or soft-dough stages on performance of Holstein milking cows.**
M. Schultz*[1], G. Ferreira[1], J. Steger[1], K. Payne[2], W. Thomason[1], and S. Stewart[1], [1]*Virginia Tech*, *Blacksburg, VA*, [2]*Southern Piedmont Agricultural Research and Extension Center*, *Blackstone, VA*.

1661W **Organic Matter Digestibility Index (OMDI) for evaluation of corn silage quality for dairy cows.**
S. F. Cueva*[1], C. Canale[2], R. J. Grant[3], H. M. Dann[3], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *University Park, PA*, [2]*Cargill Animal Nutrition*, *Shippensburg, PA*, [3]*William H. Miner Agricultural Institute*, *Chazy, NY*.

1662W **Different forages for lactating Murciano-Granadina dairy goats.**
A. Nikkhah*[1], M. Khabbazan[2], and H. Amanlou[2], [1]*National Elites Foundation*, *Tehran, Iran*, [2]*University of Zanjan*, *Zanjan, Iran*.

1663W **Dietary neutral detergent fiber influence on fecal bacterial mass in sheep.**
R. Tacoma-Fogal*, M. L. Thonney, and D. J. Cherney, *Cornell University*, *Ithaca, NY*.

1664W **Evaluation of an in-field near infrared device for dry matter determination.**
P. Goldblatt*, N. Schlau, and K. Taysom, *Dairyland Laboratories Inc*, *Arcadia, WI*.

1665W **Occurrence of major mycotoxins in maize silage from 2022 harvest around the globe.**
I. Artavia*, A. Mueller, and U. Hofstetter, *DSM Austria GmbH*, *Getzersdorf, Austria*.

1666W **Effect of defoliation frequency around flowering time on the nutritive value of orchardgrass.**
N. Amaro[1], F. Bernardi Scheeren[2], M. Nauar[2], M. Fischer[2], M. Fernández-García[1], J. Dayuto[1], F. A. Lattanzi[2], F. Diaz*[3], and J. M. Arroyo[2], [1]*Instituto de Producción Animal de Veterinaria, Facultad de Veterinaria, Universidad de la Republica*, *Libertad, San José, Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria*, *Colonia, Uruguay*, [3]*Dellait Research Center*, *Brookings, SD*.

1667W **Ruminal fermentation, *in vitro* digestibility, gas production parameters and chemical composition of some cool season grasses.**
A. Jafari*[1], H. Behrozpour[2], H. Fazaeli[3], and R. Mohammadi[4], [1]*Assist. Professor, Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [2]*M.Sc. Student, Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [3]*Professor, Animal Science Research Institute*, *Karaj, Iran*, [4]*Associate Professor in Branch for Northwest & West region, Agricultural Biotechnology Research Institute of Iran (ABRII), Agricultural Research, Education and Extension Organization (AREEO)*, *Tabriz, Iran*.

1668W **Development of a protocol to produce low-technology hydroponic green fodder of sorghum (*Sorghum bicolor*).**
D. Redrovan*[1,4], P. Melendez[2], A. Sierra[3,4], and M. Moncada[4], [1]*Texas Tech University*, *Amarillo, TX*, [2]*City University of Hong Kong*, *Hong Kong, China*, [3]*University of Florida*, *Gainesville, FL*, [4]*Zamorano University*, *Francisco Morazan, Honduras*.

1669W ***In situ* degradability of diets with forage corn (*Zea mays*) silage and banana residues (*Musa paradisiaca*).**
I. Espinoza*[1], A. Sánchez[1], A. Barrera[1], D. Romero[1], M. Medina[1], E. Torres[1], A. García[2], C. Barba[2], and G. Alvarez[1], [1]*Universidad Técnica Estatal de Quevedo*, *Quevedo, Los Ríos, Ecuador*, [2]*Universidad de Córdoba*, *Córdoba, España*.

Growth and Development 2

1670W **Reproductive performance and milk yield in the first lactation of Holstein calves in northern Mexico fed in the pre-weaning stage with milk at 15% solids.**
E. Carrillo-Moreno*[1], E. Carrillo[2], E. Perez-Rebolloso[3], D. Carrillo-Moreno[1], M. Mellado[1], and F. G. Veliz[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Instituto Tecnológico de Torreón*, *Torreón, Coahuila, México*, [3]*Centro de Bachillerato Tecnológico Agropecuario No. 47*, *León Guzmán, Durango, México*.

1671W **Performance of the growth and development of F_1 Holstein cattle in northern Mexico fed at the pre-weaning stage with a high volume of milk at 14% solids.**
E. Carrillo-Moreno*[1], E. Carrillo[2], E. Perez-Rebolloso[1], M. Mellado[3], D. Carrillo-Moreno[1], and F. G. Veliz[1], [1]*Universidad Autónoma Agraria Antonio Narro*, *Torreón, Coahuila, México*, [2]*Instituto Tecnológico de Torreón*, *Torreón, Coahuila, México*, [3]*Centro de Bachillerato Tecnológico Agropecuario No. 47*, *León Guzmán, Durango, México*.

1672W **Variation in calf starter intake before weaning: Long-term consequences on growth and production.**
E. R. Russell*, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia*, *Vancouver, British Columbia, Canada*.

1673W **Effects of a *Megasphaera elsdenii* oral capsule on reticulorumen volatile fatty acid dynamics and papillae development in dairy-beef calves.**
G. Mazon*[1], J. M. V. Pereira[1], K. Nishihara[2], M. A. Steele[2], and J. H. C. Costa[1], [1]*University of Kentucky*, *Lexington, KY*, [2]*University of Guelph*, *Guelph, ON, Canada*.

1674W **Supplementation of tyndallized *Lactobacillus helveticus* paraprobiotic to Holstein dairy calves on health and performance around weaning.**
M. F. Olmeda*[1], L. R. Cangiano[1,3], C. Villot[2], E. Chevaux[2], B. K. McNeil[1], T. J. DeVries[1], and M. A. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lallemand Animal Nutrition*, *Blagnac, France*, [3]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

Lactation Biology 3

1675W **The effect of parity on insulin, lactoferrin and insulin-like growth factor-1 in colostrum and transition milk.**
S. L. Cartwright*[1], A. J. Fischer-Tlustos[1], K. Hare[1], M. Toradès[2], M. Terré[2], A. Aris[2], E. Garcia-Fruitós[2], and M. A. Steele[1], [1]*Department of Animal Biosciences University of Guelph*, *Guelph, Ontario, Canada*, [2]*Ruminant Production, Institute of Agrifood Research and Technology*, *Caldes de Montbui, Spain*.

1676W **Effect of palmitic, stearic, and oleic acid on lipogenic genes in bovine mammary epithelial cell culture.**
A. Haile*[1], A. Lisuzzo[2], E. Fiore[2], and K. Harvatine[1], [1]*Pennsylvania State University*, *State College, PA*, [2]*University of Padua, Viale dell'Universita*, *Padua, Italy*.

1677W **Evaluation of prepartum body condition score and its changes after calving on the milking performance, ruminal fermentation, and blood parameters in dairy cows.**
Y. Hao*[1,2], T. Ouyang[1], W. Wang[1], Y. Wang[1], Z. Cao[1], H. Yang[1], L. Guan[2], and S. Li[1], [1]*China Agricultural University*, *Beijing, China*, [2]*University of Alberta*, *Edmonton, Alberta, Canada*.

1678W **Carry-over effects of maternal late gestation heat stress on granddaughter's growth and mammary gland development.**
G. A. Larsen* and J. Laporta, *University of Wisconsin*, *Madison, WI*.

1679W **Mineral and trace mineral concentrations in colostrum, transition, and mature milk of primiparous and multiparous Holstein dairy cattle.**
K. Klein*[1], A. J. Fishcher-Tlustos[1], N. Schrier[2], J. Wilms[1,3], and J. B. Daniel[3], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Agriculture and Food Laboratory, University of Guelph*, *Guelph, Ontario, Canada*, [3]*Trouw Nutrition Research and Development*, *Amersfoort, Utrecht, the Netherlands*.

Physiology and Endocrinology 3

1680W **Differences in post-absorptive lipid metabolism may contribute to variation in feed efficiency in dairy cows.**
S. R. Naughton*[1], M. J. Vandehaar[1], H. M. White[2], and Z. Zhou[1], [1]*Department of Animal Science, Michigan State University*, *East Lansing, MI*, [2]*Department of Animal and Dairy Science, University of Wisconsin–Madison*, *Madison, WI*.

1681W **Abomasal infusion of branched-chain amino acids or branched-chain keto-acids alter liver lipid metabolism in early lactation dairy cows.**
G. Ahmad*, C. Collings, I. Bernstein, K. Gallagher, M. J. VandeHaar, and Z. Zhou, *Department of Animal Science, Michigan State University*, *East Lansing, MI*.

1682W **Supplementing *Saccharomyces cerevisiae* fermentation products improves performance, metabolism, and immune status of dairy calves.**
M. Sfulcini[1], V. Lopreiato[2], L. Cattaneo[1], F. Piccioli-Cappelli[1], A. Zontini[3], I. Yoon[4], E. Trevisi[1], and A. Minuti*[1], [1]*Department of Animal Science, Food and Nutrition (DIANA) Faculty of Agriculture, Food and Environmental Science, Università Cattolica del Sacro Cuore*, *Piacenza, Italy*, [2]*Department of Veterinary Sciences, Università di Messina*, *Messina, Italy*, [3]*Cargill Animal Nutrition and Health*, *Fiorenzuola D'Arda, Italy*, [4]*Diamond V Inc*, *Cedar Rapids, IA*.

1683W **Plasma fatty acids differ by residual feed intake group in mid-lactation cows and can improve performance of predictive models of dry matter intake.**
M. J. Caputo*[1], M. R. Borchers[2], K. A. Weigel[1], and H. M. White[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Zoetis*, *Kalamazoo, MI*.

1684W **Effect of bovine pyruvate carboxylase and phosphoenolpyruvate carboxykinase knockdown in BFH12 cells.**
S. J. Kendall*, S. M. Edwards, O. A. Pusch, and H. M. White, *University of Wisconsin–Madison*, *Madison, WI*.

1685W **Alterations to fatty acid composition in plasma and leukocytes following systemic inflammation.**
B. Van Winters*[1], G. Madureira[1], M. G. S. Santos[1], B. Mion[1], C. Van Dorp[1], D. W. L. Ma[2], N. Karrow[1], S. J. LeBlanc[3], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Human Health and Nutritional Sciences, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

1686W **Effect of time of exposure to prepartum anionic salts on peripartum serum calcium and nonesterified fatty acid concentrations.**
M. R. Sarabia*[1], A. M. Tartaglia[1], S. R. Lund[1], B. L. Culbertson[1], C. M. Leopold[1], G. R. Oetzel[2], and D. B. Vagnoni[1], [1]*California Polytechnic State University*, *San Luis Obispo, CA*, [2]*University of Wisconsin School of Veterinary Medicine*, *Madison, WI*.

1687W **Direct effects of heat stress on mitochondrial structure and energy metabolism in lactating dairy cows.**
A. S. Marquez Acevedo*, R. J. Collier, and A. L. Skibiel, *University of Idaho*, *Moscow, ID*.

Production, Management and the Environment 3

1688W **Geographic trends in automatic milking systems: A scoping review.**
T. Marques*[1,2], C. Lage[3], D. Bruno[4], M. Endres[5], F. Ferreira[1], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California*, *Davis, CA*, [2]*Federal Institute Goiano*, *Rio Verde, Goias, Brazil*, [3]*Cornell Cooperative Extension*, *Cornell University, Bath, NY*, [4]*Cooperative Extension, University of California Agriculture and Natural Resources*, *Fresno, CA*, [5]*Department of Animal Science, University of Minnesota*, *Saint Paul, MN*.

1689W **Estimation of udder emptying based on milk fat content of strip samples after milking.**
B. Jenni, O. Wellnitz, and R. M. Bruckmaier*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

1690W **Birth season affects cow longevity.**
I. M. Toledo*[1], L. Cattaneo[2], J. E. P. Santos[1], and G. E. Dahl[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Università Cattolica del Sacro Cuore*, *Milan, Italy*.

1691W **Evaluation of nutrient composition variation of grocery food waste fed to dairy cattle in Upstate New York.**
J. M. Steele, H. Hu*, and K. F. Reed, *Cornell University*, *Ithaca, NY*.

1692W **Effect of Kernza straw in forage-based diets on nitrogen balance and blood urea nitrogen in dairy heifers.**
D. M. Pizarro*[1], M. S. Akins[2], V. D. Picasso[3], and M. A. Wattiaux[1], [1]*Department of Animal & Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*USDA-ARS, US Dairy Forage Research Center*, *Marshfield, WI*, [3]*Department of Agronomy, University of Wisconsin–Madison*, *Madison, WI*.

1693W **Late-gestation heat stress alters hair length and skin morphology of granddaughters.**
B. D. Davidson*, E. T. Gonzales, G. L. Mast, and J. Laporta, *Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

1694W **Effects of total-mixed ration moisture content on its yeast, total bacteria, and clostridial population growth over time.**
L. Garcia*, K. Ortiz, K. Alexander, and F. C. Cardoso, *University of Illinois at Urbana-Champaign*, *Urbana, IL*.

1695W **Impact of feeding frequency on vaginal temperature and production outcomes of lactating dairy cattle during the summer months.**
A. M. L. Madureira, C. Mikel, P. H. Luimes, and T. A. Burnett*, *University of Guelph*, *Ridgetown, ON, Canada*.

1696W **Effect of supplementing Holstein cows with a mixture of essential oils on enteric methane production and milk production.**
C. Benchaar*[1] and F. Hassanat[2], [1]*Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre*, *Sherbrooke, QC, Canada*, [2]*Agriculture and Agri-Food Canada, Quebec Research and Development Centre*, *Quebec, QC, Canada*.

1697W **Iodoform supplementation in total mixed rations reduces enteric methane emission from dairy cows without affecting dry matter intake.**
M. Thorsteinsson*, P. Lund, M. Weisbjerg, A. L. F. Hellwing, and M. O. Nielsen, *Department of Animal and Veterinary Sciences, Aarhus University, AU-Viborg, Research Centre Foulum*, *Tjele, Denmark*.

1698W **Assessment of methane emissions with a laser methane detector in Mediterranean buffaloes in two different seasons.**
L. Lanzoni*[1], M. G. G. Chagunda[2], M. Giammarco[1], M. Chincarini[1], I. Fusaro[1], M. Podaliri[3], A. S. Atzori[4], and G. Vignola[1], [1]*Department of Veterinary Medicine, University of Teramo*, *Teramo, Italy*, [2]*Department of Animal Breeding and Husbandry in the Tropics and Subtropics, University of Hohenheim*, *Stuttgart, Germany*, [3]*Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise*, *Teramo, Italy*, [4]*Department of Agriculture, University of Sassari*, *Sassari, Italy*.

1699W **Prepartum supplementation of pasture-based dairy cows with inorganic selenium, organic selenium or rumen-protected choline does not affect lactation performance.**
F. McDermott*[1], E. Kennedy[2], S. A. Hogan[1], L. Brennan[3], and T. F. O'Callaghan[4], [1]*Teagasc Moorepark, Teagasc Food Research*, *Moorepark, Fermoy, Co. Cork, Ireland*, [2]*Teagasc Moorepark, Teagasc, Animal and Grassland Research and Innovation Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*, [3]*University College Dublin, School of Agriculture and Food Science, University College Dublin*, *Belfield, Dublin, Ireland*, [4]*University College Cork, School of Food and Nutritional Sciences, University College Cork*, *Co. Cork, Ireland*.

1700W **Effects of methanogenic inhibitors on individual methanogens in the rumen of dairy cattle.**
K. Narayan*[1], N. Indugu[1], J. Bender[1], A. Hristov[2], and D. Pitta[1], [1]*University of Pennsylvania*, *Kennett Square, PA*, [2]*The Pennsylvania State University*, *University Park, PA*.

1701W **Application of ML algorithm to identify phenotypic responses from precision livestock data.**
N. Indugu*, A. Castaneda, K. Narayan, S. Rassler, J. Bender, T. Webb, B. Vecchiarelli, and D. Pitta, *University of Pennsylvania*, *New Bolton Center, PA*.

1702W **Occurrence of mycotoxins in 2022 US corn and corn by-product feed ingredients.**
E. Schwandt, P. Gott*, L. Zheng, and A. Levy, *DSM Nutritional Products*, *Parsippany, NJ*.

1703W **Mycotoxin occurrence in total mixed rations from the US and Canada: 2019–2023.**
P. N. Gott*, E. F. Schwandt, L. Zheng, and A. W. Levy, *DSM Nutritional Products*, *Parsippany, NJ*.

1704W **Using computer vision to predict cyclicity of dairy cows during the transition period through 3D body surface images.**
R. E. P. Ferreira*[1], T. Bresolin[2], P. L. J. Monteiro[1], M. C. Wiltbank[1], and J. R. R. Dorea[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*University of Illinois Urbana-Champaign*, *Champaign, IL*.

1705W **Optimizing training sets for individual identification of dairy cows.**
R. E. P. Ferreira*, M. C. Ferris, and J. R. R. Dorea, *University of Wisconsin–Madison*, *Madison, WI*.

1706W **Factors influencing Ontario dairy producers' management and care of down dairy cattle.**
J. Brindle*, C. Winder, and D. Renaud, *Department of Population Medicine, University of Guelph*, *Guelph, Ontario, Canada*.

1707W **Effect of Holstein genotype on lying and movement activity, feed intake, and milk production.**
E. Jacobson*, W. Weber, E. Shepley, G. Cramer, B. Crooker, and I. Salfer, *University of Minnesota*, *St. Paul, MN*.

1708W **Associations of dietary, genetic, management and ambience hallmarks with a farm success index.**
J. H. Carneiro*[1], B. J. A. Villar[2], M. Poczynek[1], and R. Almeida[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Universidade Federal Rural do Rio de Janeiro*, *Seropédica, RJ, Brazil*.

1709W **Quantifying the impact of canola meal on enteric methane emissions of lactating dairy cows.**
S. E. Omale[1], E. Kebreab[2], and J. A. D. R. N. Appuhamy*[1], [1]*Department of Animal Science, Iowa State University*, *Ames, IA*, [2]*Department of Animal Science, University of California*, *Davis, CA*.

1710W **Agro-pastoralist farmers' preferences for dairy cattle breeds and their attributes in arid and semi-arid areas of Benin (West Africa).**
M. Dogari, B. I. Koura*, and B. A. Aboh, *Université Nationale d'Agriculture, Ecole de Gestion et d'Exploitation des Systèmes d'Elevage*, *Kétou, Benin*.

1711W **Development of an auto recovery system to calibrate GreenFeed.**
S. Zimmerman, M. Harrison*, M. Billars, N. Ertz, and T. Zimmerman, *C-Lock Inc*, *Rapid City, SD*.

1712W **DairyPrint model: Paving pathways for dairy farmers towards higher sustainability.**
T. Da Silva*[1] and V. Cabrera[1], [1]*University of Wisconsin*, *Madison, WI*, [2]*University of Wisconsin*, *Madison, WI*.

1713W **Effect of anti-mycotoxin feed additives on the reduction of mycotoxins in milk and urine of dairy cows fed multi-mycotoxin–contaminated diets.**
L. Fônseca[1], A. Borowsky[1], D. C. Vieira[2], G. Poletti[2], N. T. S. Grigoletto[2], N. P. Martins[2], R. Pires[1], C. Cortinhas*[3], T. Acedo[3], I. Artavia[4], F. P. Rennó[2], and C. H. Corassin[5], [1]*University of São Paulo, Luiz de Queiroz College of Agriculture*, *Piracicaba, SP, Brazil*, [2]*University of São Paulo, School of Veterinary Medicine and Animal Science*, *Pirassununga, SP, Brazil*, [3]*DSM Produtos Nutricionais Brasil S.A*, *São Paulo, SP, Brazil*, [4]*DSM Nutritional Products*, *Getzersdorf, Austria*, [5]*University of São Paulo, School of Animal Science and Food Engineering*, *Pirassununga, SP, Brazil*.

1714W **Silvopastoral systems as a heat abatement recourse for grazing dairy cows.**
M. dos Santos[1], K. De-Sousa[1,2], F. Vieira[1,2], and M. Deniz*[1,2], [1]*Grupo de Estudos em Bovinos Leiteiros, Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista*, *Botucatu, SP, Brazil*, [2]*Grupos de Estudos em Biometeorologia, Universidade Tecnológica Federal do Paraná*, *Dois Vizinhos, PR, Brazil*.

1715W **Use of sensors for the detection and genetic evaluation of heat stress in dairy cattle.**
P. Lemal*, M. Schroyen, and N. Gengler, *University of Liège–GxABT*, *Gembloux, Belgium*.

1716W **Accuracy of prediction of future milk production with an empirical Bayes method.**
A. Hanson*[1], M. Röling[2], M. Hostens[2], and A. De Vries[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Utrecht University*, *Utrecht, the Netherlands*.

Reproduction 3

1718W **Fertility of lactating Jersey cows submitted to a Double-Ovsynch protocol for timed artificial insemination or artificial insemination after a synchronized estrus based on synchrony and expression of estrus.**
M. R. Lauber* and P. M. Fricke, *University of Wisconsin–Madison*, *Madison, WI*.

1719W **Associations of early postpartum metabolic and inflammatory markers with time to onset of cyclicity in clinically healthy dairy cows.**
T. C. Bruinjé*, E. I. Morrison, and S. J. LeBlanc, *Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

1720W **Association between earlier emergence of large follicles and subsequent fertility in postpartum dairy cows.**
M. Sakaguchi*[1], T. Yamazaki[2], and H. Kusaka[1], [1]*School of Veterinary Medicine, Kitasato University*, *Towada, Aomori, Japan*, [2]*Hokkaido Agricultural Research Center, NARO*, *Sapporo, Hokkaido, Japan*.

1721W **Peripartum supplementation of omega-3 fatty acids modulates uterine proteome towards enriched metabolic and inflammatory pathways in dairy cows.**
J. R. Daddam[1], G. Kra[1,2], U. Moallem[1], H. Kamer[1], and M. Zachut*[1], [1]*Agriculture Research Organization, Volcani Center*, *Rishon LeZion, Israel*, [2]*Faculty of Agriculture, the Hebrew University*, *Jerusalem, Israel*.

1722W **Effects of prepartum acetylsalicylic acid administration on reproductive microbiome in postpartum Holstein dairy cattle.**
J. Lection*[1,2], E. Jimenez[3], P. Zarei[3], S. Bierly[2], J. Spring[3], M. Martinez[3], A. A. Barragan[3], and E. Ganda[2,4], [1]*Intercollege Graduate Degree Program in Integrative and Biomedical Physiology, The Pennsylvania State University*, *University Park, PA*, [2]*Department of Animal Science, The Pennsylvania State University*, *University Park, PA*, [3]*Department of Veterinary and Biomedical Sciences, The Pennsylvania State University*, *University Park, PA*, [4]*Microbiome Center, The Pennsylvania State University*, *University Park, PA*.

1723W **Effect of human chorionic gonadotropin on pregnancy outcomes in multiparous lactating Jersey cows receiving an IVF beef embryo after a synchronized estrus versus a synchronized ovulation.**
N. Hincapie*[1], M. R. Lauber[1], T. Valdes-Arciniega[1], P. Carvalho[1], R. Faber[2], R. Farruggio[3], and P. M. Fricke[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Reprovider LLC*, *Janesville, WI*, [3]*Jefferson Veterinary Clinic, S.C*, *Jefferson, WI*.

1724W **Effect of the interval between the last $PGF_{2\alpha}$ and GnRH on ovulatory dynamics of dairy heifers submitted to a modified 6-d synchronization protocol.**
I. M. R. Leão*, F. P. J. da Silva Junior, M. P. Zutz, T. Valdes-Arciniega, E. Anta-Galvan, and J. P. N. Martins, *University of Wisconsin–Madison*, *Madison, WI*.

1725W **Effects of supplementing sodium pyruvate on post-thaw semen evaluation in Nili-Ravi buffalo bulls.**
M. Hassan*[1], M. A. Khan[1], A. Riaz[1], A. Rehman[1], and U. Arshad[2], [1]*University of Veterinary and Animal Sciences*, *Lahore, Punjab, Pakistan*, [2]*University of Florida*, *Gainesville, FL*.

Ruminant Nutrition: Calves and Heifers 3

1726W **Effect of β-casein A1 or A2 milk on visceral adipose tissue in dairy calves.**
R. Kappes[1,2], V. Schneider[2], H. Schweizer[2], S. Nüske[2], D. A. Knob[3], A. Thaler Neto[1], and A. Scholz*[2], [1]*Centro de Ciências Agroveterinárias-Universidade do Estado de Santa Catarina*, *Lages, Santa Catarina, Brazil*, [2]*Lehr- und Versuchsgut Oberschleissheim- Ludwig-Maximilians-Universität München*, *Oberschleissheim, Bavaria, Germany*, [3]*Justus-Liebig University Giessen*, *Giessen, Hessen, Germany*.

1727W **Milk-derived bioactive peptide XPP alleviates colitis by inhibiting NF-κB and other inflammatory protein pathways and restoring intestinal flora.**
J. Hou*, X. Wang, W. Du, and Q. Xu, *Huazhong Agricultural University*, *Huazhong Agricultural University, Wuhan, Hubei, China*.

1728W **Assessment of blood and fecal oxidative stress markers in neonatal dairy calves with diarrhea.**
Z. L. Fu[1,2], Y. Yang[1,4], N. Malmuthuge[3], L. Ma[1], L. L. Guan[2], and D. P. Bu*[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, Alberta, Canada*, [3]*Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada*, *Lethbridge, Alberta, Canada*, [4]*UCD School of Agriculture and Food Science, University College Dublin*, *Belfield, Dublin, Ireland*.

1729W **Evaluation of differing interventions (including pork plasma) at the onset of neonatal calf diarrhea.**
D. W. Wood*[1], A. J. Keunen[2], B. W. Keunen[2], R. M. Blome[1], L. C. Ribeiro[2], and D. R. Renaud[3], [1]*Animix*, *Juneau, WI*, [2]*Mapleview Agri*, *Palmerston, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

1730W **Evaluation of differing interventions at the onset of neonatal calf diarrhea.**
D. W. Wood*[1], A. J. Keunen[2], B. W. Keunen[2], R. M. Blome[1], L. C. Ribeiro[1], and D. R. Renaud[3], [1]*Animix*, *Juneau, WI*, [2]*Mapleview Agri*, *Palmerston, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

1731W **Effects of time and colostrum composition on immunoglobulin G absorption in neonatal dairy-beef calves.**
J. M. V. Pereira*[1], G. Mazon[1], A. J. Geiger[2], and J. H. C. Costa[1], [1]*Dairy Science Program, University of Kentucky*, *Lexington, KY*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1732W **Relationship between serum gamma-globulin concentration and morbidity in pre-weaned dairy calves.**
N. Kobayashi*[1], K. Murayama[1], N. Nishizawa[1], M. Oba[2,3], and T. Sugino[3], [1]*Dairy Technology Research Institute, The National Federation of Dairy Co-operative Associations (ZEN-RAKU-REN)*, *Nishi-shirakawa, Fukushima, Japan*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [3]*The Research Center for Animal Science, Graduate School of Integrated Science for Life, Hiroshima University*, *Higashi-Hiroshima, Japan*.

1733W **Evaluating the utility of genomically enhanced RFI as a selection criterion to improve feed efficiency in growing Holstein heifers.**
K. O'Reilly[1], G. E. Carstens[1], J. R. Johnson*[2], N. Deeb[2], and P. Ross[2], [1]*Texas A&M University*, *College Station, TX*, [2]*STgenetics*, *Navasota, TX*.

1734W **_Saccharomyces cerevisiae boulardii_ CNCM I-1079 influence on gut permeability, intestinal microbiota, and host immune function in newborn dairy calves.**
S. Jantzi*[1], K. Nishihara[1], C. Villot[2], L. Rostoll Cangiano[1,3], and M. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lallemand SAS*, *Blagnac, France and Milwaukee, WI*, [3]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

1735W **The effect of aspirin on intestinal permeability of Holstein and Jersey heifers.**
E. Lopez Cruz, M. Carranza, and D. B. Vagnoni*, *California Polytechnic State University*, *San Luis Obispo, CA*.

1736W **Evaluation of serum concentrations of total protein and gamma-globulin as an indicator of serum immunoglobulin G concentration in dairy calves.**
K. Murayama*[1], N. Kobayashi[1], N. Nishizawa[1], M. Oba[2,3], and T. Sugino[3], [1]*Dairy Technology Research Institute, The National Federation of Dairy Co-operative Associations (ZEN-RAKU-REN)*, *Nishi-shirakawa, Fukushima, Japan*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*, [3]*The Research Center for Animal Science, Graduate School of Integrated Science for Life, Hiroshima University*, *Higashi-Hiroshima, Japan*.

1737W **Further Insights into the specificity of immunoglobulin G and protein absorption in the first 24 hours of life in newborn calves.**
A. J. Geiger*[1], F. Dick[2], K. Marshia[2], E. Lopez-Bondarchuk[2], and E. D. Testroet[2], [1]*Zinpro Corporation*, *Eden Prairie, MN*, [2]*University of Vermont*, *Burlington, VT*.

1738W **Methods to determine immunoglobulin G content of the abomasal curd of calves fed different colostrum sources.**
E. Lopez-Bondarchuk*[1], A. J. Geiger[2], and E. D. Testroet[1], [1]*University of Vermont*, *Burlington, VT*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1739W **Stability evaluation of the direct-fed microbial _Enterococcus faecium_ –669 in different feed matrixes.**
G. Copani[1], K. A. Bryan*[2], A. Segura[1], O. Queiroz[1], and B. I. Cappellozza[1], [1]*Chr. Hansen A/S*, *Hørsholm, Denmark*, [2]*Chr. Hansen Inc*, *Milwaukee, WI*.

1740W **Effects of _Enterococcus faecium_ 669 on performance and health of preweaning dairy calves.**
H. Biricik[1], F. C. Brav[1], E. Çetin[2], L. Aydin[2], P. Fantinati[3], K. Morrill*[4], D. Bereketli[3], G. Copani[3], and B. I. Cappellozza[3], [1]*Bursa Uludag University*, *Bursa, Turkiye*, [2]*Tekirdag Namik Kemal University*, *Tekirdag, Turkiye*, [3]*Chr. Hansen A/S*, *Hørsholm, Denmark*, [4]*Chr. Hansen Inc*, *Milwaukee, WI*.

Ruminant Nutrition: Carbohydrates and Lipids 3

1741W **The relation and variation of odd and branched-chain fatty acids content in rumen fluid, blood, and milk from lactating dairy cows.**
Z. Luo[1,2], A. Evans[2], and D. Bu*[1], [1]*Institute of Animal Science, State Key Laboratory of Animal Nutrition, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*School of Agriculture & Food Science, University College Dublin*, *Belfield, Dublin 4, Ireland*.

1742W **The effect of unsaturation degree of C18 fatty acids on the rumen fermentation and methane mitigation _in vitro_.**
X. Sun[1], Y. Li*[1], K. Giller[1], C. Kunz[1], X. Ma[1], R. Peng[1], M. Terranova[2], S. Yang[1], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich, Zürich, Switzerland*, [2]*AgroVet-Strickhof, ETH Zürich*, *ETH Zürich, Lindau, Switzerland*.

1743W **Effects of fatty acid supplements and lysophospholipids on nutrient digestibility in lactating cows.**
K. Park*[1], N. Porter[1], K. L. Clark[1], L. R. Rebelo[1], I. H. Kwon[2], and C. Lee[1], [1]*Department of Animal Sciences, The Ohio State University*, *Wooster, OH*, [2]*EASY BIO Inc*, *Seoul, Republic of Korea*.

1744W **Effects of medium-chain fatty acid supplementation on plasma metabolites of dairy cows in the transition period.**
G. C. Aguiar*[1], J. C. S. Lourenço[1], E. W. Carneiro[2], D. E. Rico[3], J. A. Negrão[4], and R. Almeida[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Royal Agrifirm Group*, *Curitiba, PR, Brazil*, [3]*Deschambault Animal Science Research Centre (CRSAD)*, *Deschambault, QC, Canada*, [4]*Universidade de São Paulo*, *Pirassununga, SP, Brazil*.

1745W **Replacing ground corn with liquid molasses in diets containing red clover: Effects on production performance and enteric methane emissions.**
A. L. Konopka, D. C. Reyes, M. A. Rahman*, K. V. Almeida, and A. F. Brito, *Department of Agriculture, Nutrition, and Food System, University of New Hampshire*, *Durham, NH*.

1746W **Rolling severity of reconstituted high moisture barley with variable kernel sizes and its effects on ensiling characteristics and in vitro ruminal fermentation.**
B. Lynch*, G. O. Ribeiro, T. Mutsvangwa, and G. B. Penner, *University of Saskatchewan*, *Saskatoon, SK, Canada*.

1747W **Effect of rumen-protected fat supplementation on milk fat production in grazing dairy cows.**
C. Heffernan*[1,2], T. F. O'Callaghan[2], J. A. O'Mahony[2], R. Fitzgerald[1], and M. Dineen[1], [1]*Teagasc Animal and Grassland Research and Innovation Centre, Moorepark*, *Fermoy, Co. Cork, Ireland*, [2]*University College Cork*, *Co. Cork, Ireland*.

1748W **Evaluating production effects of replacing calcium salts of fatty acids with stabilized liquid propionic acid in early lactation.**
K. Gallagher*, E. Horst, and L. Rodriguez, *Innovative Liquids, LLC*, *El Dorado Hills, CA*.

1749W **Effects of palmitic and oleic acid supplementation on milk production of dairy cows milked with an automatic milking system.**
K. Sedobara*[1], K. Shimada[2], R. Harada[2], A. Saito[2], T. Obitsu[1], and T. Sugino[1], [1]*The Research Center for Animal Science, Graduate School of Integrated Science for Life, Hiroshima University*, *Higashi-Hiroshima, Japan*, [2]*The National Federation of Dairy Co-operative Associations (ZEN-RAKU-REN)*, *Tokyo, Japan*.

Ruminant Nutrition: General 3

1750W **Sensitivity analysis of INRAtionV5 for dairy cows: One-at-a-time method.**
S. Jeon*[1], S. Lemosquet[2], T. Senga-kiesse[3], A.-C. Toulemonde[1], and P. Nozière[1], [1]*UMR Herbivores, INRAE-VetAgro Sup*, *Saint-Genès-Champanelle, Auvergne-Rhône-Alpes, France*, [2]*UMR PEGASE, INRAE-Institut Agro Rennes Angers*, *Saint-Gilles, Bretagne, France*, [3]*INRAE-Institut Agro Rennes Angers*, *Rennes, Bretagne, France*.

1751W **Effect of curing extent on ruminal in vitro gas production kinetics of red clover hay and silage across storage phases.**
D. Zamudio*, R. A. de Castro, A. P. Jimenez, M. Cardoso, J. Poblete, M. Killerby, and J. J. Romero, *University of Maine*, *Maine*.

1752W **Predicting dry matter intake of lactating Jersey cows using animal factors or diet composition.**
K. V. Almeida[1], M. Gindri[2], D. C. Reyes*[1], P. J. Kononoff[3], and A. F. Brito[1], [1]*Department of Agriculture, Nutrition, and Food Systems, University of New Hampshire*, *Durham, NH*, [2]*Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants*, *Paris, France*, [3]*Department of Animal Science, University of Nebraska–Lincoln*, *Lincoln, NE*.

1753W **Effects of yeast probiotic on milk performance, digestibility, feed efficiency, and methane emission of high-yielding dairy cows.**
N. Salah*[1], M. Briche[1], V. Nenov[1], J. Ambrose[1], P. Garnsworthy[2], and G. Mann[2], [1]*Phileo by Lesaffre*, *A business unit of S.I. Lesaffre, Marcq-en-Baroeul, France*, [2]*University of Nottingham*, *Sutton Bonington Campus, Loughborough, England*.

1754W **Effects of highly bioavailable rumen-protected choline on energy metabolism and lactation performance in dairy cows.**
T. Marques*[1,2], H. Monteiro[1], D. Melo[1], W. Coelho[1], S. Salman[1], D. Dubey[3], F. Sun[4], K. Leao[2], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California, Davis*, *Davis, CA*, [2]*Federal Institute Goiano*, *Rio Verde, Goias, Brazil*, [3]*Kemin Europa NV*, *Herentals, Belgium*, [4]*Kemin Industry Inc*, *Des Moines, IA*.

1755W **Effects of oral calcium supplementation on serum calcium and health events in mature Jersey cows.**
D. B. Vagnoni*[1], E. Coleman[2], and R. Lichdi[3], [1]*California Polytechnic State University*, *San Luis Obispo, CA*, [2]*Wickstrom Dairies*, *Hilmar, CA*, [3]*No BS Cow Products*, *Grover Beach, CA*.

1756W **Effects of microbial additives supplementation on production, digestibility, and rumination in dairy cows.**
M. Nehme Marinho*[1], M. C. Perdomo[1], B. Souza Simões[1], A. Husnain[1], U. Arshad[1], C. C. Figueiredo[3], P. M. Peixoto[1], F. Yang[2], M. Embree[2], J. G. Prim[1], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Native Microbials*, *San Diego, CA*, [3]*Washington State University*, *Pullman, WA*.

1757W **Effect of capsaicin supplementation on performance and health of dairy cows: A meta-analysis.**
D. E. Wasson*[1], L. F. Martins[1], E. H. Wall[2], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *University Park, PA*, [2]*Nutreco Exploration*, *Nutreco, the Netherlands*.

1758W **Culled fruit waste fed to dairy cows.**
L. D. Baker*, J. S. Bender, D. W. Pitta, and Z. Dou, *University of Pennsylvania Veterinary School*, *Kennett Square, PA*.

1759W **Developing an algorithm to predict intake of concentrates in dairy cows fed a partial mixed ration.**
L. F. Martins*, S. F. Cueva, N. Stepanchenko, D. E. Wasson, and A. N. Hristov, *The Pennsylvania State University*, *University Park, PA*.

1760W **Effects of increasing doses of a rumen modifier based on plant extracts on production performance of lactating dairy cows.**
P. Piantoni*[1], K. Dieho[2], J. de Jong[2], and G. Schroeder[1], [1]*Cargill Animal Nutrition and Health, Innovation Campus*, *Elk River, MN*, [2]*Cargill Animal Nutrition and Health, Global Innovation Center*, *Velddriel, the Netherlands*.

1761W **The induction of nutritional ketosis in lactating dairy cows using calcium butyrate: Effects on lactation performance and health.**
M. A. Barrientos-Blanco*, A. Celemin-Sarmiento, M. da Silva, N. Bagheri, C. Mercado, N. Galdos, and J. E. Rico, *University of Maryland*, *College Park, MD*.

1762W **The effectiveness of a negative DCAD diet on fresh cows through urine pH analyses.**
E. Prybylski*, E. O'Meara, and F. Cardoso, *University of Illinois Urbana-Champaign*, *Champaign, IL*.

1763W **Summarizing the effects of organic versus inorganic zinc in lactating dairy cows.**
M. J. Oconitrillo and J. A. D. R. N. Appuhamy*, *Department of Animal Science, Iowa State University*, *Ames, IA*.

1764W **Feeding direct-fed *Bacillus subtilis* and *Clostridium beijerinckii* affected plasma metabolites in Holstein cows.**
F. F. Cardoso*[1], L. Garcia[1], J. S. Thompson[2], M. N. de Jesus[2], A. H. Smith[2], T. G. Rehberger[2], and F. C. Cardoso[1], [1]*Department of Animal Sciences, University of Illinois*, *Urbana, IL*, [2]*Arm & Hammer Animal and Food Production*, *Waukesha, WI*.

1765W **Partitioning variance in nutrient concentrations of dry cow total mixed rations.**
K. Raver*[1], E. Lynch[1], A. Dryer[1], B. Saylor[2], L. F. Ferraretto[3], and J. P. Goeser[1,3], [1]*Rock River Laboratory, Inc*, *Watertown WI*, [2]*Arm and Hammer Animal Nutrition*, *Waukesha, WI*, [3]*University of Wisconsin–Madison*, *Madison, WI*.

1766W **Effects of supplementing a high protein corn coproduct on energy and nitrogen utilization in lactating Jersey cows fed different proportions of corn silage and alfalfa haylage.**
K. Buse*[1], M. Jolly-Breithaupt[2], K. Herrick[2], and P. Kononoff[1], [1]*University of Nebraska–Lincoln*, *Lincoln, NE*, [2]*POET Bioproducts*, *Sioux Falls, SD*.

1767W **Internal temperature and THI tolerance level of cows supplemented with *Acacia mearnsii* tannins.**
K. Cardoso[1], J. Cardoso[1], E. Malaguez[1], L. Vieira[1], J. Halfen*[2], B. Menezes[1], E. Schmitt[3], and C. Brauner[1], [1]*Department of Animal Science, Federal University of Pelotas*, *Pelotas, Rio Grande do Sul, Brazil*, [2]*Department of Dairy Science, Virginia Tech*, *Blacksburg, VA*, [3]*Department of Veterinary Clinic, Federal University of Pelotas*, *Pelotas, Rio Grande do Sul, Brazil*.

1768W **Effects of feeding *Bacillus subtilis* and *Clostridium beijerinckii* on performance of Holstein cows during the transition period and early lactation.**
F. F. Cardoso*[1], L. Garcia[1], J. S. Thompson[2], M. N. de Jesus[2], A. H. Smith[2], T. G. Rehberger[2], and F. C. Cardoso[1], [1]*University of Illinois Department of Animal Sciences*, *Urbana, IL*, [2]*Arm & Hammer Animal and Food Production*, *Waukesha, WI*.

1806W **Effect of removing Rumensin from diet on milk production efficiency.**
K. C. Dhuyvetter, D. L. Prentice, and S. K. Kvidera*, *Elanco Animal Health*, *Greenfield, IN*.

Ruminant Nutrition: Gut Physiology, Fermentation, and Digestion 3

1769W **Evaluation of blanched *Sargassum horneri* as feed source for greenhouse gas mitigation in the rumen.**
M. J. Seo*[1], S. K. Kim[2], I. K. Hwang[2], H. C. Kim[3], S. S. Lee[4], Y. H. Joo[1], S. M. Jeong[1], J. Y. Kim[1], and S. C. Kim[1], [1]*Division of Applied Life Science (BK21Four, Inst. of Agric. & Life Sci.), Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*, [2]*Aquaculture Research Division, National Institute of Fisheries Science*, *Busan, Republic of Korea*, [3]*Research and Development Planning Division, National Institute of Fisheries Science*, *Busan, Republic of Korea*, [4]*Animal Nutrition and Physiology Division, National Institute of Animal Science*, *Wanju, Jeollabuk-do, Republic of Korea*.

1770W **A first assessment of safety and metabolism of iodoform when used as a methane mitigating feed additive to dairy cattle.**
M. Rønn*, S. Purup, N. P. Nørskov, and M. O. Nielsen, *Aarhus University*, *Foulum, DK-Tjele, Denmark*.

1771W **Effects of direct fed microbials on in vitro ruminal fermentation, methane production, and ruminal microbial communities.**
E. Sarmikasoglou[1], P. Sumadong[2], G. Dagaew[2], M. L. Johnson*[1], J. R. Vinyard[1], G. K. Salas-Solis[1], M. U. Siregar[1], W. Rottman[3], and A. P. Faciola[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Khon Kaen University*, *Khon Kaen, Thailand*, [3]*Locus Agricultural Solutions*, *Solon, OH*.

1772W **Characterization of the diurnal pattern of exhaled volatile fatty acids and enteric methane emissions of dairy cows.**
M. Z. Islam*[1], S. Giannoukos[2], S. E. Räisänen[1], K. Wang[1], X. Ma[1], F. Wahl[3], R. Zenobi[2], and M. Niu[1], [1]*Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*, [2]*Department of Chemistry and Applied Biosciences, Analytical Chemistry, ETH Zürich*, *Zürich, Switzerland*, [3]*Food Microbial Systems Research Division, Agroscope*, *Bern, Switzerland*.

1773W **A proposed in vitro method for measuring methane production in ruminal batch culture.**
T. L. Catterton*, C. C. Wendel, and C. M. K. Bradley, *Purina Animal Nutrition LLC*, *Arden Hills, MN*.

1774W **Withdrawn.**

1775W ***Pinus koraiensis* cone essential oil mitigates rumen methane emission by altering the rumen microbial compositions and functions in goats.**
Y. Choi*[1,2], S. J. Lee[1,2], H. S. Kim[1,2], J. S. Eom[1,2], S. U. Jo[1,3], and S. S. Lee[1,3], [1]*Institute of Agriculture & Life Science (IALS), Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*, [2]*Institute of Agriculture and Life Science & University-Centered Labs, Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*, [3]*Division of Applied Life Science (BK21), Gyeongsang National University*, *Jinju, Gyeongsangnam-do, Republic of Korea*.

1776W **An in vitro gas production system produces more repeatable estimates of starch digestibility in ensiled corn ingredients than in vitro starch digestibility.**
J. R. Knapp*[1], N. Schlau[2], K. Taysom[2], and D. M. Taysom[2], [1]*Fox Hollow Consulting LLC*, *South Vienna, OH*, [2]*Dairyland Laboratories Inc*, *Arcadia, WI*.

1777W **Effect of chemical and enzymatic treatment of corn silage on lactation performance in dairy cattle.**
P. A. LaPierre*[1], D. Stucker[2], D. M. Barbano[1], and M. E. Van Amburgh[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Impetus, LLC*, *Clay, NY*.

1778W **Effects of zinc and manganese source on 48-hour in vitro fermentation.**
C. Peterson*[1], G. Boerboom[2], M. McCarthy[1], J. Heldt[1], K. Griswold[1], and J. Johnston[3], [1]*Selko USA*, *Indianapolis, IN*, [2]*Selko Feed Additives*, *Amersfoort, Utrecht, the Netherlands*, [3]*Fermentrics Technologies Inc*, *Arnprior, ON, Canada*.

1779W **Effects of different slow-release urea compounds on ruminal fermentation and nutrient utilization in a dual-flow continuous culture system.**
S. W. Ma*[1], J. A. Arce-Cordero[2], J. R. Vinyard[1], E. Sarmikasoglou[1], R. R. Lobo[1], M. L. Johnson[1], A. Bahman[1], G. Dagaew[3], P. Sumadong[3], M. U. Siregar[1], G. K. Salas-Solis[1], K. A. Estes[4], and A. P. Faciola[1], [1]*Department of Animal Sciences, University of Florida*, *Gainesville, FL*, [2]*Escuela de Zootecnia, Universidad de Costa Rica*, *San Jose, Costa Rica*, [3]*Department of Animal Science, Khon Kaen University*, *Khon Kaen, Thailand*, [4]*Balchem Corporation*, *Montvale, NJ*.

1780W **Microbiota changes in calves with *Cryptosporidium parvum*-associated diarrhea.**
E. Jessop*[1], D. Renaud[2], A. McMahon[3], and D. Gomez[1], [1]*Department of Clinical Studies, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Human Health and Nutritional Sciences, University of Guelph*, *Guelph, ON, Canada*.

1781W **Microbial diversity of the gastrointestinal tract of healthy and diarrheic calves before, during and at recovery from diarrhea.**
E. Jessop*[1], D. Renaud[2], A. McMahon[3], and D. Gomez[1], [1]*Department of Clinical Studies, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, ON, Canada*, [3]*Department of Human Health and Nutritional Sciences, University of Guelph*, *Guelph, ON, Canada*.

1782W **Investigating the bacterial profiles of cows differing in rumination and eating times.**
A. Castaneda*[1,2], N. Indugu[1], K. Narayan[1], S. Rassler[1], J. Bender[1], T. Webb[1], B. Vecchiarelli[1], L. Baker[1], and D. Pitta[1], [1]*School of Veterinary Medicine, University of Pennsylvania*, *Kennett Square, PA*, [2]*Department of Animal Science, McGill University*, *Ste-Anne-de-Bellevue, QC, Canada*.

1783W **Evaluation of cobalt from a glycinate premix on rumen function and vitamin B_{12} synthesis.**
E. Ramos-Morales[1], A. Belanche[1,2], P. Romero[1], E. Jimenez[1], I. Martin-Garcia[1], H. Khelil-Arfa[2], M. V. Zoom[2], A. Blanchard[2], D. R. Yanez-Ruiz[1], J. W. Hickman[3], and G. Acetoze*[3], [1]*CSIC*, *Granada, Spain*, [2]*Universidad Zaragoza*, *Zaragoza, Spain*, [3]*ADM International Sàrl*, *Rolle, Switzerland*, [4]*ADM Animal Nutrition Technology Center*, *Decatur, IL*.

1784W **Effects of thiamine supplementation on rumen fermentation and odd- and branched-chain fatty acids content in vitro.**
X. Guo[1,2], T. Zhan[1], D. Bu[1], and L. Ma*[1], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*, [2]*School of Life Science, Ningxia University*, *Yinchuan, China*.

1785W **Effects of dietary betaine supplementation and partial rumen content transplantation on rumen volatile fatty acid profile in Holstein dairy cows.**
A. Ruiz-González[2], A. Javaid*[1], C. M. Perdomo[2], D. E. Rico[2,3], and J. W. McFadden[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Université Laval*, *Québec, QC, Canada*, [3]*CRSAD*, *Deschambault, QC, Canada*.

1807W **In-situ ruminal dry matter degradability of three hydroponic fodders and corn silage in lactating Holstein cows.**
G. K. Salas-Solis*[1,2], J. A. Arce-Cordero[1,2], A.C. Silva-Vicente[1], J. R. Vinyard[1], M. U. Siregar[1], M. L. Johnson[1], E. Sarmikasoglou[1], L. M. Katz[1], S. Ranathunga[3], R. Harding[3], B. Blackett[3], and A. P. Faciola[1], [1]*Department of Animal Sciences, University of Florida, Gainesville, Florida*, [2]*Escuela de Zootecnia, Universidad de Costa Rica, Montes de Oca, San Jose, Costa Rica*, [3]*Renaissance Ag, Vineyard, Utah.*

Ruminant Nutrition: Protein and Amino Acids 3

1786W **Effects of feeding controlled-energy and high-energy diets with rumen-protected lysine and methionine prepartum on colostrum quality of Holstein cows.**
E. O'Meara*[1], D. del Olmo[2], J. Aguado[2], F. Valdez[2], J. Drackley[1], and F. Cardoso[1], [1]*University of Illinois*, *Urbana, IL*, [2]*Kemin Industries, Inc*, *Des Moines, IA*.

1787W **Effects of feeding controlled-energy and high-energy diets with rumen-protected lysine and methionine prepartum on muscle and adipose tissue depth of Holstein cows.**
E. O'Meara*[1], D. del Olmo[2], J. Aguado[2], F. Valdez[2], J. Drackley[1], and F. Cardoso[1], [1]*University of Illinois*, *Urbana, IL*, [2]*Kemin Industries, Inc*, *Des Moines, IA*.

1788W **Effect of rumen-protected methionine supplementation in a low starch diet with or without supplemental sugar on the productive performance of dairy cows.**
J. H. Carneiro*[1], L. S. Nogueira[1], F. Lopes[2], J. S. Osorio[3], and R. Almeida[1], [1]*Universidade Federal do Paraná*, *Curitiba, PR, Brazil*, [2]*Adisseo South America*, *São Paulp, SP, Brazil*, [3]*Virginia Tech*, *Blacksburg, VA*.

1789W **Effects of iso-acids and dietary protein concentration on milk production, feed intake, and blood metabolites in dairy cows.**
M. Suazo*[1], M. T. Socha[2], D. H. Kleinschmit[2], and I. J. Salfer[1], [1]*Department of Animal Science, University of Minnesota*, *Saint Paul, MN*, [2]*Zinpro Corporation*, *Eden Prairie, MN*.

1790W **Development and validation of an efficient method for hydrolysis and analysis of amino acids in ruminant feeds, tissue, and milk using isotope dilution ratio Z-HILIC coupled with LC-MS/MS triple quadrupole.**
A. F. Ortega*[1], H. Zhao[2], and M. E. Van Amburgh[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Agilent Technologies Inc*, *Wilmington, DE*.

1791W **Determination of bovine plasma amino acids and metabolites using Z-HILIC coupled with LC-MS/MS triple quadrupole.**
A. F. Ortega* and M. E. Van Amburgh, *Cornell University*, *Ithaca, NY*.

1792W **Effects of supplementing rumen-protected arginine (RPA) on health and survival of dairy cows.**
B. Souza Simoes*[1], T. Adeoti[1], M. Nehme Marinho[1], M. C. Perdomo[1], F. T. Saputra[1], U. Arshad[1], A. Husnain[1], R. Malhotra[1], Z. Sarwar[1], Y. Sugimoto[2], C. D. Nelson[1], and J. E. P. Santos[1], [1]*University of Florida*, *Gainesville, FL*, [2]*Ajinomoto Co., Inc*, *Tokyo, Japan*.

1793W **Replacing soybean meal in dairy rations with urea or rumen-protected urea.**
K. Nichols*, R. Rauch, D. J. Seymour, and J. Martín-Tereso, *Trouw Nutrition R&D*, *Amersfoort, the Netherlands*.

1794W **Assessing bacterial protein metabolism response to supplemental branched-chain volatile fatty in dual-flow cultures varying in forage and corn oil concentrations.**
K. E. Mitchell*[1,3], D. H. Kleinschmit[2], M. T. Socha[2], and J. L. Firkins[3], [1]*Elanco*, *Greenfield, IN*, [2]*Zinpro Corporation*, *Eden Prairie, MN*, [3]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*.

1795W **Effects of adding field peas to the diet of lactating dairy cows on feed intake, milk production, and rumen ammonia-nitrogen.**
J. C. Plaizier*, K. H. Ominski, and C. Yang, *University of Manitoba*, *Winnipeg, MB, Canada*.

Small Ruminants 1

1796W **Performance of ewe lambs fed stearic acid (C18:0).**
C. G. Padilha, T. R. Wiggers, R. Horstmann, R. Larsen*, and D. E. Oliveira, *Universidade do Estado de Santa Catarina*, *Lages, Santa Catarina, Brazil*.

1797W **Litter male ratio in multifetal pregnancies affects placental gene expression in ewes.**
T. Alon*[1,2], M. Ross[1], A. Rozov[1], L. Lifshitz[1], J. Shpirer[1,2], G. Kra[1], and U. Moallem[1], [1]*Department of Ruminants Science, Agriculture Research Organization, Volcani Institute*, *Rishon-LeZion, Israel*, [2]*Department of Animal Science, the Hebrew University of Jerusalem*, *Rehovot, Israel*.

1798W **Evaluation of the effect of milk recording intervals on the accuracy of an empirical model fitted to dairy sheep lactations.**
L. Guevara[1], L. S. Glória[1], E. E. Corea*[2], M. Ramírez-Zamora[3], J. A. Salinas-Martinez[3], and J. C. Angeles-Hernandez[3], [1]*Universidade Estadual do Norte Fluminense*, *Campos dos Goytacazes, Rio de Janeiro, Brazil*, [2]*Universidad Nacional Autnoma de México*, *Ciudad de México, CDMX, Mexico*, [3]*Universidad Autónoma del Estado de Hidalgo*, *Pachuca, Hidalgo, Mexico*.

1799W **Novel quality feed from a wasted resource: Measuring the nutritional value of low-glycoalkaloids potato haulm in sheep.**
J. Kilama[1], B. Izhiman[1], C. Sabastian[1], G. Ngomuo[1], Y. A. Ben-Meir[2], P. Wagali[1], H. Rabinowitch[1], and S. J. Mabjeesh*[1], [1]*The Robert H. Smith Faculty of Agriculture, Food, and Environment, The Hebrew University of Jerusalem*, *Rehovot, Israel*, [2]*Agriculture Research Organization, Volcani Center*, *Rishon LeTsiyon, Israel*.

1800W **Assessment of rumen fermentation in sheep fed babassu oil associated with sunflower oil.**
G. K. Vilela[1], G. M. Oliveira[1], H. N. Parente[1], R. M. Oliveira[1], J. Mendes[1], M. R. Santos[1], A. B. M. Lima[1], A. M. Zanine[2], T. C. S. Negreiros*[2], L. Vieira[1], P. G. B. Gomes[3], and M. O. M. Parente[2], [1]*Federal University of Maranhão*, *Chapadinha Maranhão, Brazil*, [2]*Federal University of Piauí*, *Teresina, Piauí, Brazil*, [3]*Federal University of Paraíba*, *Areia, Paraíba, Brazil*.

1801W **Ingestive behavior of goat kids fed by diets with non-forage diets.**
T. C. S. Negreiros*, A. R. S. Lopes, E. V. Dias, M. C. S. Soares, L. M. P. Gonçalves, C. E. L. Aguiar, J. M. Nascimento, J. W. R. Farias, T. C. Ferreira, M. M. Silva, D. C. Silva, M. O. M. Parente, and D. L. C. Araújo, *Federal University of Piauí*, *Teresina, Piauí, Brazil*.

1802W **Use of coffee by-product in the diet of dairy goats.**
S. Carta[1], A. Nudda*[1], F. Correddu[1], G. Battacone[1], M. Lunesu[1], E. Tsiplakou[2], and G. Pulina[1], [1]*Dipartimento di Agraria, University of Sassari*, *Sassari, Italy*, [2]*Department of Nutritional Physiology and Feeding Agricultural University of Athens*, *Athens, Greece*.

Teaching/Undergraduate and Graduate Education 1

1803W **Evaluating the impact of paper color on exam grades; an observational study.**
P. Hartoonian, S. E. Omale, and J. A. D. R. N. Appuhamy*, *Department of Animal Science, Iowa State University*, *Ames, IA*.

1804W **Student perception of hands-on activities in an introductory dairy science course do not differ by experience or background.**
W. Brown*, G. Hock, and B. Disberger, *Kansas State University*, *Manhattan, KS*.

1805W **Can Excel improve the learning of ration balancing for animal science students?**
M. Marcondes*, K. Stadler, N. Hossain, G. Leite, and I. Carrari, *Washington State University*, *Pullman, WA*.

ADSA-INRAE International Partnership Symposium: Milk—From Production to Effect on Human Health | The Latest Results of INRAE in Rennes in the PEGASE and STLO Research Units

Chair: David Everett, AgResearch
Session sponsored by Danone North America
Shaw Centre 213/215
9:30 AM – 5:15 PM

9:30 AM **Introduction to symposium (Dupont and Everett).**

9:45 AM 2600 **The structure of dairy products at different length scales drives the mechanism of digestion and the nutrient bioavailability.**
D. Dupont*[1,2], [1]*INRAE, Rennes, France*, [2]*Institut Agro, Rennes, France*.

10:15 AM 2601 **Hormonal and nutritional regulations of lactation persistency in dairy cows.**
M. Boutinaud*[1], C. Gaillard[1], L. Herve[1], F. Dessauge[1], L. Delaby[1], P. Lacasse[2], and V. Lollivier[1], [1]*INRAE, Institut Agro, PEGASE, 35590 Saint Gilles, France*, [2]*AAFC, Sherbrooke R&D Centre, Canada*.

10:45 AM 2602 **Breeding factors of dairy cows, milk lipolysis, and consequences on semi-hard cheese and fresh cream.**
C. Hurtaud*[1], L. Bernard[2], A. Thierry[3], G. Garric[3], M. Harel-Oger[3], and C. Cebo[4], [1]*PEGASE, INRAE, Institut Agro, Saint-Gilles, France*, [2]*Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores, Saint-Genes-Champanelle, France*, [3]*STLO, INRAE, Institut Agro, Rennes, France*, [4]*Université Paris-Saclay, INRAE, AgroParisTech, GABI, Jouy-en-Josas, France*.

11:15 AM **Break.**

11:45 AM 2603 **Eco-design approaches for developing sustainable processes: New opportunities for the dairy sector.**
G. Gesan-Guiziou*, *UMR STLO, INRAE, Institut Agro Rennes-Angers, UMR STLO, INRAE, Institut Agro Rennes-Angers, 35000, Rennes, France*.

12:15 PM 2604 **Variation factors of milk calcium content in dairy cows and cellular mechanisms of milk calcium secretion.**
A. Boudon*, M. Boutinaud, and C. Hurtaud, *PEGASE, INRAE, Institut Agro, 35590, Saint-Gilles, France*.

12:45 PM 2605 **Milk microbiota: Potential allies for mammary gland health.**
C. Goetz[1], L. Rault[1], M. Boutinaud[2], C. Citti[3], H. Falentin[1], J. Guinard-Flament[2], P. Germon[4], M. Mariadassou[5], D. Morgavi[6], X. Nouvel[3], Y. Le Loir[1], and S. Even*[1], [1]*STLO, INRAE, Institut Agro, Rennes, France*, [2]*PEGASE INRAE, Institut Agro, Saint Gilles, France*, [3]*IHAP, Université de Toulouse, INRAE, ENVT, Toulouse, France*, [4]*ISP, INRAE, Université de Tours, Nouzilly, France*, [5]*Université Paris-Saclay, INRAE, MaIAGE, Jouy-en-Josas, France*, [6]*Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores, Saint-Genes-Champanelle, France*.

1:15 PM **Lunch.**

2:30 PM 2606 **Interfacial self-organization in droplets of dairy protein mixes: From skin formation to powder functional properties.**
L. Lanotte*, *UMR STLO, INRAE, Institut Agro Rennes-Angers, 35000 Rennes, France*.

3:00 PM 2607 **Variations in milk lactose content and the mechanisms underlying in dairy cows.**
J. Guinard-Flament*[1], A. Hamon[1], N. Decoopman[1], M. Boutinaud[1], C. Gaillard[1], C. Hurtaud[1], M. Gelé[2], L. Mériaux[3], S. Dufour[4], H. Larroque[5], and S. Lemosquet[1], [1]*PEGASE, INRAE, Institut Agro, Saint-Gilles, France*, [2]*IDELE, Paris, France*, [3]*EILYPS, Pacé, France*, [4]*Faculty of Veterinary Medicine, Université de Montréal, Saint-Hyacinthe, QC, Canada*, [5]*GenPhySE, Université de Toulouse, INRAE, ENVT, Castanet-Tolosan, France*.

3:30 PM 2608 **How could a breakthrough innovation in cheese technology be accepted by the consumer?**
M. Harel-Oger[1], C. Martin[2], S. Marette[3], J. Chamberland[4], and G. Garric*[1], [1]*INRAE, INRAE, Institut Agro Rennes-Angers, UMR1253 STLO, Rennes, France*, [2]*INRAE, Centre des Sciences du Goût et de l'Alimentation, CNRS, INRAE, Institut Agro, Université de Bourgogne, F-21000 Dijon, France*, [3]*Université Paris Saclay, Université Paris-Saclay, INRAE, AgroParisTech, Paris-Saclay Applied Economics, 91120 Palaiseau, France*, [4]*STELA, Department of Food Sciences, STELA Dairy Research Center, Institute of Nutrition and Functional Foods (INAF), Laval University, Quebec, QC G1V 0A6, Canada*, [5]*INRAE, INRAE, Institut Agro Rennes-Angers, UMR1253 STLO, Rennes, France*.

4:00 PM **Break.**

4:15 PM **Discussion.**

Animal Health 4

Chair: Luciano Caixeta, University of Minnesota
Shaw Centre 203
9:30 AM – 12:30 PM

9:30 AM 2761 **The biosecurity basket: Using association rule learning algorithms to target recommendations more likely to be implemented by dairy farmers.**
F. Farison*[1,2], V. Régia Lima Campêlo[1,2], M.-E. Paradis[4,5], S. Buczinski[3], G. Fecteau[2,3], J.-P. Roy[2,3], P. Valdes Donoso[2,3], S. Dufour[1,2], and J. C. Arango-Sabogal[1,2], [1]*Département de pathologie et microbiologie, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Chaire de recherche de biosécurité en production laitière, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [3]*Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [4]*Association des médecins vétérinaires praticiens du Québec (AMVPQ)*, *Saint-Hyacinthe, Québec, Canada*, [5]*DSAHR Inc*, *Saint-Hyacinthe, Québec, Canada*.

9:45 AM 2609 **Evaluating the efficacy of 2 footbath concentrates to control digital dermatitis in freestall dairy cows using a noninferiority study.**
S. Ordaz*[1], E. Shepley[1], D. Doepfer[1], K. Anklam[1], G. Cramer[1], and L. Caixeta[1], [1]*University of Minnesota*, *Saint Paul, MN*, [2]*University of Wisconsin–Madison*, *Madison, WI*.

10:00 AM 2610 **Impact of a first occurrence of digital dermatitis in early lactation on culling and pregnancy in dairy cows.**
E. Shepley*[1], S. Ordaz[1], D. Döpfer[2], K. Anklam[2], L. Caixeta[1], and G. Cramer[1], [1]*University of Minnesota, Department of Veterinary Population Medicine*, *St. Paul, MN*, [2]*University of Wisconsin–Madison*, *Madison, WI*.

10:15 AM 2611 **Evaluating machine learning algorithms to use accelerometer data for identification of lameness in dairy cows.**
R. Neupane[1], S. Paudyal*[2], A. Aryal[3], and P. Pinedo[4], [1]*Christian-Albrechts-Universität zu Kiel*, *Kiel, Germany*, [2]*Department of Animal Science, Texas A&M University*, *College Station, TX*, [3]*Department of Construction Science, Texas A&M University*, *College Station, TX*, [4]*Department of Animal Science, Colorado State University*, *Fort Collins, CO*.

10:30 AM 2612 **Remote comparative lameness assessment in dairy cattle: A crowdsourcing approach.**
K. Sheng*[1], B. Foris[1], M. A. G. von Keyserlingk[1], J. Gardenier[2], C. Clark[3], and D. M. Weary[1], [1]*Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia*, *Vancouver, BC, Canada*, [2]*Australian Centre for Field Robotics, Faculty of Engineering, the University of Sydney*, *Darlington, NSW, Australia*, [3]*Livestock Production and Welfare Group, Sydney Institute of Agriculture, School of Life and Environmental Sciences, Faculty of Science, the University of Sydney*, *Camden, NSW, Australia*.

10:45 AM 2613 **Interrogating the diversity of fecal, vaginal, and postpartum endometrial microbiomes in healthy dairy cows and cows with puerperal metritis.**
T. Tasara[1], R. Whiston*[2], M. Stevens[1], J. Wabui[1], S. Chapwanya[2], and U. Bleul[3], [1]*Institute for Food Safety and Hygiene, Vetsuisse Faculty, University of Zurich*, *Zurich, Switzerland*, [2]*Ross University School of Veterinary Medicine*, *Basseterre, St. Kitts and Nevis, West Indies*, [3]*Department of Farm Animals, Clinic of Reproductive Medicine, Vetsuisse Faculty, University of Zurich*, *Zurich, Switzerland*.

11:00 AM 2614 **Predictive models for metritis cure using farm collected data and hematological variables measured at diagnosis.**
P. R. Menta*[1], E. B. Oliveira[2], J. G. Prim[3], K. N. Galvao[3,4], F. S. Lima[2], M. A. Ballou[1], N. R. Noyes[5], and V. S. Machado[1], [1]*Department of Veterinary Sciences, College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*Department of Population Health and Reproduction, School of Veterinary Medicine, University of California*, *Davis, CA*, [3]*Department of Large Animal Clinical Sciences, College of Veterinary Medicine, University of Florida*, *Gainesville, FL*, [4]*D. H. Barron Reproductive and Perinatal Biology Research Program*, *Gainesville, FL*, [5]*Department of Veterinary Population Medicine, University of Minnesota*, *St. Paul, MN*.

11:15 AM 2615 **Association between vaginal discharge scores with rumination time, activity time, a health index score, and milk yield in lactating dairy cows.**
C. Rial*[1], M. L. Stangaferro[2], M. J. Thomas[2], and J. O. Giordano[1], [1]*Deparment of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Dairy Health and Management Services*, *Lowville, NY*.

11:30 AM 2616 **Effects of systemic or intrauterine lipopolysaccharide challenge in cows at 5 or 40 days postpartum on clinical signs, uterine inflammation, feed intake, and milk yield.**
T. C. Bruinjé*, L. Cámpora, and S. J. LeBlanc, *Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*.

11:45 AM 2617 **Vaccination protocols recommended by veterinarians in Québec dairy herds.**
M. P. Morin*[1,2], J. P. Roy[3,4], M.-E. Paradis[5,6], G. Fecteau[3,4], and S. Dufour[7,2], [1]*Département de pathologie et microbiologie, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [2]*Research Chair in Biosecurity in Dairy Production, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [3]*Bovine Health Research Group, GRESABO*, *Saint-Hyacinthe, Québec, Canada*, [4]*Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, Québec, Canada*, [5]*Association des médecins vétérinaires praticiens du Québec, AMVPQ*, *Saint-Hyacinthe, Québec, Canada*, [6]*DSAHR inc*, *Saint-Hyacinthe, Québec, Canada*, [7]*Regroupement pour un lait de qualité optimale, Op+lait*, *Saint-Hyacinthe, Québec, Canada*.

12:00 PM 2618 **Evolution of the within-herd prevalence status of bovine leukosis between 2017 and 2022 in Quebec dairy herds.**
K. G. Solano-Suárez*[1,2], J. P. Roy[2,3], J. C. Arango-Sabogal[1,2], E. Molgat[4], J. Durocher[4], and S. Dufour[1,2], [1]*Université de Montréal, Faculté de médecine vétérinaire, Département de pathologie et microbiologie*, *Saint-Hyacinthe, QC, Canada*, [2]*Research Chair in biosecurity of dairy production*, *Saint-Hyacinthe, QC, Canada*, [3]*Université de Montréal, Faculté de médecine vétérinaire, Département de sciences cliniques*, *Saint-Hyacinthe, QC, Canada*, [4]*Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*.

12:15 PM 2619 **Risk factors for *Salmonella* Dublin on dairy farms in Ontario, Canada.**
K. V. Perry*[1], D. F. Kelton[1], S. Dufour[2], C. Miltenburg[3], S. G. Umana Sedo[1], and D. L. Renaud[1], [1]*Department of Population Medicine, Ontario Veterinary College, University of Guelph*, *Guelph, Ontario, Canada*, [2]*Department of Pathology and Microbiology, Faculty of Veterinary Medicine, Université de Montréal*, *Saint-Hyacinthe, Quebec, Canada*, [3]*Ontario Ministry of Agriculture, Food and Rural Affairs*, *Guelph, Ontario, Canada*.

Breeding and Genetics 2: Emerging Issues in Dairy Genetics

Chair: Eveline Ibeagha-Awemu, Agriculture and Agri-Food Canada
Shaw Centre 201
9:30 AM – 12:30 PM

9:30 AM 2620 **Development of genetic evaluations to enhance disease resistance.**
C. Lynch*[1], R. Bongers[1], F. Schenkel[1], N. van Staaveren[1], F. Miglior[1,2], D. Kelton[3], and C. Baes[1,4], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lactanet Canada*, *Guelph, ON, Canada*, [3]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [4]*Institute of Genetics, Department of Clinical Research and Veterinary Public Health, University of Bern*, *Bern, Switzerland*.

9:45 AM 2621 **Early-lactation health event frequency of cows that carried beef or Holstein-sired calves.**
B. L. Basiel*, T. L. Felix, and C. D. Dechow, *Pennsylvania State University*, *University Park, PA*.

10:00 AM 2622 **Estimation of genomic parameters for automated milk feeding behavior and bovine respiratory disease in preweaning Holstein heifers.**
J. R. Graham*, M. E. Montes, V. B. Pedrosa, J. Doucette, J. P. Boerman, and L. F. Brito, *Purdue University*, *West Lafayette, IN*.

10:15 AM 2623 **DNA methylation of first exons negatively correlate with gene expression during *Staphylococcus chromogenes* subclinical mastitis.**
M. Wang*[1,2], N. Bissonnette[1], M. Laterrière[3], D. Gagné[3], M.-A. Sirard[2], and E. M. Ibeagha-Awemu[1], [1]*Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada*, *Sherbrooke, QC, Canada*, [2]*Department of Animal Science, Laval University*, *Quebec City, QC, Canada*, [3]*Quebec Research and Development Centre, Agriculture and Agri-Food Canada*, *Quebec City, QC, Canada*.

10:30 AM 2624 **Get test-day milk yields right: What have we learned?**
X.-L. Wu*[1,2], G. R. Wiggans[1], H. D. Norman[1], H. A. Enzenauer[1], A. M. Miles[3], C. P. Van Tassell[3], R. L. Baldwin[3], S. Sievert[4], J. Mattison[4], J. Burchard[1], and J. Durr[1], [1]*Council on Dairy Cattle Breeding*, *Bowie, MD*, [2]*University of Wisconsin*, *Madison, WI*, [3]*USDA-AGIL*, *Beltsville, MD*, [4]*National DHIA*, *Verona, WI*.

10:45 AM 2625 **Genetic analysis of lactation consistency using daily milk weights in US Holsteins.**
F. L. Guinan*[1], R. H. Fourdraine[2], F. Peñagaricano[1], and K. A. Weigel[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Dairy Records Management Systems*, *Raleigh, NC*.

11:00 AM 2626 **Milk fatty acid profiles of Holstein, ProCROSS, and Grazecross cows.**
K. M. Bosley*, L. B. Hansen, and B. J. Heins, *University of Minnesota*, *St. Paul, MN*.

11:15 AM 2627 **Effect of growth of organic calves and sire-breed on milk and component yield in later life.**
W. Yousaf*[1], L. C. Hardie[2], I. W. Haagen[3], B. J. Heins[3], D. D. Fitzsimmons[4], and C. D. Dechow[1], [1]*Pennsylvania State University*, *University Park, PA*, [2]*ABS Global*, *DeForest, WI*, [3]*University of Minnesota*, *St. Paul, MN*, [4]*Alfred State College of Technology*, *Alfred, NY*.

11:30 AM 2628 **Identification of runs of homozygosity associated with male fertility in Brown Swiss cattle.**
H. A. Pacheco*[1], A. Rossoni[2], A. Cecchinato[3], and F. Peñagaricano[1], [1]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*, [2]*Italian Brown Breeders Association*, *Bussolengo, Verona, Italy*, [3]*Department of Agronomy, Food, Natural Resources, Animals and Environment, University of Padova*, *Legnaro, Padua, Italy*.

11:45 AM 2629 **Identification and validation of functional candidate genes associated with pregnancy status in Holstein dairy cows.**
S. Lam*[1], H. Sweett[2,1], E. S. Ribeiro[3], S. J. LeBlanc[4], L. Guan[5], and A. Cánovas[1], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lactanet Canada*, *Guelph, ON, Canada*, [3]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Population Medicine, Ontario Veterinary College*, *Guelph, ON, Canada*, [5]*Department of Agriculture, Food & Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

12:00 PM 2630 **Genetic ancestry and admixture of *Bos taurus* and *Bos indicus* genotypes for African dairy production systems.**
S. Gebeyehu*[1], E. S. Kim[2], T. S. Sonstegard[2], and B. J. Heins[1], [1]*University of Minnesota*, *St. Paul, MN*, [2]*Acceligen*, *Eagan, MN*.

12:15 PM 2631 **Genetic trend partitioning in dairy sheep.**
S. Antonios[1], A. Legarra[1,2], R. Pong-Wong[3], J. M. Astruc[4], S. Rodríguez-Ramilo[1], and Z. G. Vitezica*[1], [1]*INRAE GenPhySE*, *Castanet-Tolosan, France*, [2]*Council on Dairy Cattle Breeding*, *Bowie, MD*, [3]*The Roslin Institute and R(D)SVS*, *Edinburgh, UK*, [4]*Institut de l'Elevage*, *Toulouse, France*.

Extension Education 1

Chair: Shannon Davidson, NC State University
Shaw Centre 212
9:30 AM – 11:45 AM

9:30 AM 2632 **The relationship between heifer growth and cost of production.**
S. Gehrett, C. Yost, C. Becker*, and T. Beck, *Pennsylvania State University*, *University Park, PA*.

9:45 AM 2633 **Stakeholder engagement in developing the *Mooving Cows* learning tool.**
J. Van Os*[1], N. Cook[2], D. Ledesma[3], R. Cradock[4], O. Abraham[5], and M. Brauer[6], [1]*Department of Animal and Dairy Sciences, University of Wisconsin*, *Madison, WI*, [2]*Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin*, *Madison, WI*, [3]*Division of Extension, University of Wisconsin*, *Madison, WI*, [4]*University of Wisconsin Survey Center*, *Madison, WI*, [5]*Social and Administrative Sciences Division, School of Pharmacy, University of Wisconsin*, *Madison, WI*, [6]*Department of Psychology, University of Wisconsin*, *Madison, WI*.

10:00 AM 2634 **Hands-on learning to stimulate the next generation of dairy employees.**
J. A. Spencer*[1], J. Pineiro[1], R. Hagevoort[2], M. Berry[1], L. Jenschke[1], and B. Boyd[1], [1]*Texas A&M AgriLife Extension*, *Stephenville, TX*, [2]*New Mexico State University*, *Clovis, NM*.

10:15 AM 2635 **The impact of farm tours on public knowledge and perception of dairy farming.**
A. M. C. Smid*[1], H. W. Barkema[1], S. Roche[2], W. Ruiter[1], B. Traub[1], and B. A. Ventura[3], [1]*University of Calgary*, *Calgary, Alberta, Canada*, [2]*ACER Consulting*, *Guelph, Ontario, Canada*, [3]*University of Lincoln*, *Lincoln, Lincolnshire, United Kingdom*.

10:30 AM 2636 **From farmer to farmer: Case-based learning as an evidence-based approach to improving dairy cattle welfare.**
J. Saraceni*[1], D. Kelton[2], D. Renaud[1,2], D. Haley[2], T. DeVries[2], K. Barrett[3], and S. Roche[1,2], [1]*ACER Consulting*, *ACER Consulting, Guelph, ON, Canada*, [2]*The University of Guelph*, *The University of Guelph, Guelph, ON, Canada*, [3]*The Ontario Association of Bovine Practitioners*, *The Ontario Association of Bovine Practitioners, Fergus, ON, Canada*.

10:45 AM 2637 **Key performance indicators associated with housing and management characteristics of Canadian dairy herds.**
L. Solano*, D. Warner, S. Adam, and D. E. Santschi, *Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*.

11:00 AM 2638 **Bridging the research-practice gap in lameness: A multistakeholder view to inform knowledge uptake.**
L. Solano*[1], D. E. Santschi[1], A. M. Smid[2], H. Ganshorn[2], and D. Weary[3], [1]*Lactanet*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*University of Calgary*, *Calgary, Alberta, Canada*, [3]*University of British Columbia*, *Vancouver, BC, Canada*.

11:15 AM 2639 **Addressing on-farm antimicrobial drug use practices through a community of practice-based approach: A case study.**
B. Karle*[1], R. Busch[2], C. Meehan[2], and M. Smith[2], [1]*University of California Agriculture and Natural Resources*, *Orland, CA*, [2]*University of California*, *Davis, CA*.

11:30 AM 2640 **Development of a bovine continuing education program for early-career veterinarians to address clinical service shortage.**
A. Abuelo*[1] and S. Mann[2], [1]*Michigan State University*, *East Lansing, MI*, [2]*Cornell University*, *Ithaca, NY*.

Joint Growth and Development and Physiology and Endocrinology Symposium and Platform Session: From Fetus to Weaning—The Microbiome and Its Impact on Immune Development

Chair: Kimberley Morrill, Chr. Hansen
Shaw Centre 208
9:30 AM – 12:30 PM

9:30 AM 2641 **Gut-microbiome-organs system axes: The role of short-chain fatty acids and probiotics.**
S. P. Lerner*, *Chr. Hansen, Inc*, *Milwaukee, WI*.

10:20 AM 2642 **Tyndallized *Lactobacillus helveticus* supplementation improves gut structure and function in dairy calves around weaning.**
M. F. Olmeda*[1], L. R. Cangiano[1,3], C. Villot[2], E. Chevaux[2], B. K. McNeil[1], T. J. DeVries[1], and M. A. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Lallemand Animal Nutrition*, *F-31702 Blagnac, France*, [3]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

10:35 AM 2643 **Immunomodulation strategies to control respiratory disease in preweaned calves.**
J. L. McGill*, *Iowa State University*, *Ames, IA*.

11:25 AM 2644 **IgG transport kinetics and histological features in the postnatal bovine intestine are maximized during very early life.**
R. Hiltz*, D. Vine, D. R. Barreda, and A. H. Laarman, *University of Alberta*, *Edmonton, Alberta, Canada*.

11:40 AM 2645 **Early-life microbiome: Modulator of immunity and health.**
N. Malmuthuge*, *Agriculture Agri-Food Canada*, *Lethbridge, AB, Canada*.

Joint CSAS (Canadian Society of Animal Science) and ADSA Production, Management, and the Environment Symposium: Mitigation Strategies to Achieve Dairy Net Zero

Chair: Fabio Lima/Francesca Malchiodi, University of California, Davis/Semex Alliance

Shaw Centre 205

9:30 AM – 5:00 PM

9:30 AM 2646 **Towards a net zero dairy future in Canada.**
F. Jackson*, *Dairy Farmers of Canada*, *Ottawa, ON, Canada*.

10:00 AM 2647 **Could nutrition have a meaningful impact on reducing the carbon footprint of milk?**
A. N. Hristov*, *The Pennsylvania State University*, *University Park, PA*.

10:30 AM 2648 **Accelerating the discovery, regulatory approval, and adoption of feed additives that reduce enteric methane emissions from livestock.**
J. W. McFadden*, *Cornell University*, *Ithaca, NY*.

11:00 AM **Break.**

11:15 AM 2649 **The future of breeding programs: Redefining sustainability.**
C. M. Richardson*[1], J. J. Crowley[2], and P. R. Amer[2], [1]*AbacusBio International Ltd*, *Edinburgh, UK*, [2]*AbacusBio Ltd*, *Dunedin, New Zealand*.

11:45 AM 2650 **Development of genomic evaluation for methane efficiency in Canadian Holsteins.**
H. Oliveira[1,2], S. Narayana[1], A. Fleming[1], H. Sweett*[1], S. Shadpour[3], F. Malchiodi[4], J. Jamrozik[1], G. Kistemaker[1], P. Sullivan[1], F. Schenkel[3], B. Van Doormaal[1], C. Baes[3,5], and F. Miglior[1,3], [1]*Lactanet Canada*, *Guelph, ON, Canada*, [2]*Purdue University*, *West Lafayette, IN*, [3]*University of Guelph*, *Guelph, ON, Canada*, [4]*Semex*, *Guelph, ON, Canada*, [5]*University of Bern*, *Bern, Switzerland*.

12:15 PM **Lunch.**

2:00 PM 2651 ***ADSA-EAAP Speaker Exchange Presentation:*** **How to mitigate methane and ammonia emissions at the farm level with innovative approaches.**
P. J. Galama* and A. Kuipers, *Wageningen Livestock Research*, *Wageningen, Gelderland, the Netherlands*.

2:30 PM 2652 **The key role of forage and manure management to achieve net-zero targets.**
J. Gamble*, *USDA-ARS-PSRU*, *St. Paul, MN*.

3:00 PM 2653 **Embracing the challenge: Net zero and beyond.**
G. Dick*[1,2], [1]*Dicklands Farms*, *Chilliwack, BC, Canada*, [2]*Dicklands Biogas LP*, *Chilliwack, BC, Canada*.

3:30 PM **Break.**

4:00 PM **Panel - Achieving Net Zero Roundtable.**

Reproduction Platform Session: Epigenetic Impacts on the Next Generation of Dairy Cows

Chair: Anna C. Denicol, University of California Davis

Shaw Centre 206

9:30 AM – 11:45 AM

9:30 AM 2654 **Long-term transcriptomic and epigenetic effects of in vitro embryo production in dairy calves.**
M. B. Rabaglino*, *School of Agriculture and Food Science, University College Dublin*, *Belfield, Dublin, Ireland*.

10:15 AM 2655 **Associations of uterine luminal fluid composition with subsequent success of preimplantation conceptus development.**
G. Madureira*[1], B. Mion[1], J. F. W. Spricigo[1], E. Ticiani[1], M. R. Carvalho[1], J. V. Bishop[2], T. R. Hansen[2], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada*, [2]*Department of Biomedical Sciences, Colorado State University, Fort Collins, CO*.

10:30 AM **Break.**

10:45 AM 2656 **Nerve growth factor-β supplementation for in vitro fertilization and maturation media improve cleavage rates in bovine embryos.**
T. Marques*[1,2], M. Silva[1], I. Macedo[1], S. Martin-Pelaez[1], A. De La Fuente[3], S. Meyers[3], P. Dini[1], and F. Lima[1], [1]*Department of Population Health and Reproduction, University of California*, *Davis, CA*, [2]*Federal Institute Goiano*, *Rio Verde, Goias, Brazil*, [3]*Department of Anatomy, Physiology, and Cell Biology, University of California*, *Davis, CA*.

11:00 AM 2657 **Genetics causes of bovine male reduced fertility: Environment and genetics meeting in the aryl hydrocarbon receptor gene.**
R. Raz[1,2], Z. Roth[2], A. Komsky-Elbaz[2], D. Kalo[2], and M. Gershoni*[1], [1]*Institute of Animal Sciences, Agricultural Research Organization, The Volcani Center*, *Rishon LeZion, Israel*, [2]*Department of Animal Sciences, Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University*, *Rehovot, Israel*.

11:15 AM 2658 **Characterization of genomic predicted transmitting ability of females according to their reproductive efficiency as heifers and cows.**
I. Avalos-Rosario*, A. P. Silva, G. Madureira, B. Mion, M. R. Carvalho, and E. S. Ribeiro, *Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*.

11:30 AM 2659 **Long-term consequences of postpartum inflammation on ovarian biology and preimplantation conceptus development in healthy cows.**
B. Mion*[1], G. Madureira[1], J. F. W. Spricigo[1], M. R. Carvalho[1], E. Ticiani[1], O. B. Pascottini[2], F. Peñagaricano[3], S. J. LeBlanc[2], and E. S. Ribeiro[1], [1]*Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada*, [2]*Department of Population Medicine, University of Guelph, Guelph, ON, Canada*, [3]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison, Madison, WI*.

Ruminant Nutrition 7: Lipids

Chair: Jackie Boerman, Purdue University
Shaw Centre 210
9:30 AM – 12:30 PM

9:30 AM 2660 **Interaction of pretrial milk fat production and dietary fat supplementation on milk and milk fat yield in Holstein cows.**
Y. Adeniji*, R. Bomberger, and K. Harvatine, *Department of Animal Science, The Pennsylvania State University*, *University Park, PA*.

9:45 AM 2661 **Production responses to fatty acid supplementation are impacted by fatty acid profile rather than form of the supplement.**
A. M. Bales*[1], M. L. Miller[1], J. de Souza[2], and A. L. Lock[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*Perdue AgriBusiness*, *Salisbury, MD*.

10:00 AM 2662 **The short-term effect of increasing doses of palmitic and stearic acid on milk fat production in Holstein cows.**
A. N. Staffin* and K. J. Harvatine, *Penn State University*, *University Park, PA*.

10:15 AM 2663 **Effects of increasing dietary palmitic acid inclusion on production by lactating Holstein cows.**
A. M. Dickerson*[1], L. Garcia[1], F. C. Cardoso[1], J. Albrecht[2], O. R. Drehmel[2], C. Soderholm[2], W. P. Hansen[2], J. R. Loften[2], M. F. Scott[2], and J. K. Drackley[1], [1]*University of Illinois*, *Urbana, IL*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

10:30 AM 2664 **Effect of palmitic acid supplementation and a milk fat depressing diet on milk production, fatty profile, and polar metabolites.**
C. Matamoros*[1,2], F. Hao[2], A. D. Patterson[2], and K. J. Harvatine[1], [1]*Department of Animal Science, The Pennsylvania State University*, *University Park, PA*, [2]*Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University*, *University Park, PA*.

10:45 AM 2665 **Effects of oleic and palmitic acids levels in a fat supplement on milk production in lactating dairy cows.**
S. L. Burtnett*[1], J. Albrecht[2], O. R. Drehmel[2], C. Soderholm[2], M. F. Scott[2], and K. J. Harvatine[1], [1]*The Pennsylvania State University*, *University Park, PA*, [2]*Milk Specialties Global*, *Eden Prairie, MN*.

11:00 AM 2666 **Oleic acid promotes lipid accumulation and improves mitochondrial function in bovine adipocytes.**
U. Abou-Rjeileh*, A. L. Lock, and G. A. Contreras, *Michigan State University*, *East Lansing, MI*.

11:15 AM 2667 **Increasing dietary inclusion of high oleic acid soybeans increases milk production of high-producing dairy cows.**
A. M. Bales* and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

11:30 AM 2668 **High oleic soybean oil maintains milk fat, increases fat digestibility, and fat deposition of lactating dairy cows.**
S. L. Hanno*, A. M. Hurst, K. A. Weaver, A. T. Richards, M. E. Montes, and J. P. Boerman, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN, USA*.

11:45 AM 2669 **The in vitro effect of different sources of DHA on the fatty acid profile and microbiota of ruminal fluid of lactating dairy cows.**
J. Ding, T. Zhan, D. Bu, and L. Ma*, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences*, *Beijing, China*.

12:00 PM 2670 **Effects of abomasal infusion of lecithin from different sources on milk production and nutrient digestibility in lactating dairy cows.**
F. A. Gutierrez-Oviedo*, A. Richards, A. Javaid, M. You, Y. Zang, N. Seneviratne, and J. W. McFadden, *Cornell University*, *Ithaca, NY*.

12:15 PM 2671 **Mammary gland responses to altering the dietary supply of de novo and preformed fatty acids: Effects on the yield of milk and milk components.**
A. C. Benoit* and A. L. Lock, *Michigan State University*, *East Lansing, MI*.

Ruminant Nutrition 8: General

Chair: Dengpan Bu, Institute of Animal Science, Chinese Academy of Agricultural Sciences

Shaw Centre 207

9:30 AM – 12:30 PM

9:30 AM 2672 **Effect of tef *(Eragrotis)* hay inclusion in dairy cows rations on production and performances.**
P. Wagali*[1], G. Ngomuo[1], J. Kilama[1], C. Sabastian[1], Y. Saranga[2], S. Ben-Zeev[2], Y. A. Ben-Meir[3], N. Argov-Argaman[1], and S. J. Mabjeesh[1], [1]*Department of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food, and Environment. The Hebrew University of Jerusalem*, *Rehovot, Israel*, [2]*The Robert H. Smith Institute of Plant Sciences & Genetics in Agriculture, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem*, *Rehovot, Israel*, [3]*Institute of Animal Science, Agricultural Research Organizations*, *Rishon LeTsiyon, Israel*.

9:45 AM 2673 **Effects of particle size of ground corn on feeding behavior, lactation performance, and metabolic status of fresh Jersey cows.**
M. N. T. Shipandeni[1,2], G. Esposito[1,3], L. Bailoni[4], and E. Raffrenato*[1,4], [1]*Department of Animal Sciences, Stellenbosch University*, *Stellenbosch, South Africa*, [2]*Department of Animal Science, University of Namibia*, *Windhoek, Namibia*, [3]*Department of Veterinary Medicine, University of Parma*, *Parma, Italy*, [4]*Department of Comparative Biomedicine and Nutrition, University of Padova*, *Padova, Italy*.

10:00 AM 2674 **Determining factors that affect negative production responses when feeding corn dried distillers' grains in lactating dairy cows.**
K. L. Clark*, K. Park, and C. Lee, *Department of Animal Sciences, The Ohio State University*, *Wooster, OH*.

10:15 AM 2675 **Describing the distribution type of dry matter intake to predict the quantity for cow pens based on pen characteristics.**
P. Lucey* and H. Rossow, *Veterinary Medicine Teaching and Research Center, UC Davis*, *Tulare, CA*.

10:30 AM 2676 **Aragonite as a rumen buffer and calcium source for lactating dairy cows.**
L. F. Martins*, K. C. Welter, S. F. Cueva, N. Stepanchenko, D. E. Wasson, and A. N. Hristov, *The Pennsylvania State University*, *University Park, PA*.

10:45 AM 2677 **Effects of branched-chain volatile fatty acids at different levels of rumen degradable protein on milk production and nutrients digestibility in lactating cows.**
K. Park*[1], K. L. Clark[1], J. L. Firkins[2], D. H. Kleinschmit[3], M. T. Socha[3], and C. Lee[1], [1]*Department of Animal Sciences, The Ohio State University*, *Wooster, OH*, [2]*Department of Animal Sciences, The Ohio State University*, *Columbus, OH*, [3]*Zinpro Corporation*, *Eden Prairie, MN*.

11:00 AM 2678 **Changes in body measurements, blood glucose and β-hydroxybutyrate concentrations, and milk yield due to prepartum muscle reserves and branched-chain volatile fatty acid supplementation of transition dairy cattle.**
K. M. Gouveia*, L. M. Beckett, J. F. Markworth, T. M. Casey, and J. P. Boerman, *Department of Animal Sciences, Purdue University*, *West Lafayette, IN*.

11:15 AM 2679 **Derivation of the maintenance energy requirements in Jersey cows differing in body condition score (BCS).**
A. L. Carroll* and P. J. Kononoff, *University of Nebraska-Lincoln*, *Lincoln, NE*.

11:30 AM 2680 **A controlled energy diet was less inflammatory than a higher energy diet during the dry period in Holstein cows.**
J. K. Drackley*, W. C. Hornback, A. Hosseini, K. Shazad, and J. J. Loor, *University of Illinois*, *Urbana, IL*.

11:45 AM 2681 **Lactational performance and enteric methane emissions of phenotypically high and low methane emitting dairy cows fed bromoform.**
N. Stepanchenko*[1], D. E. Wasson[1], S. Welchez[1], L. F. Martins[1], D. W. Pitta[2], and A. N. Hristov[1], [1]*The Pennsylvania State University*, *State College, PA*, [2]*University of Pennsylvania*, *New Bolton Center, PA*.

12:00 PM 2682 **Predicted methane yield and mitigation potential of 3-nitrooxipropanol on typical US diets offered to dairy cows.**
E. H. Cabezas-Garcia*[1], J. M. Tricarico[2], and K. F. Reed[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Innovation Center for US Dairy*, *Rosemont, IL*.

12:15 PM 2683 **The effects of water temperature and water intake on rumen temperature of dairy cows.**
T. He, A. M. Serviento*, X. Ma, S. E. Räisänen, and M. Niu, *Department of Environmental Systems Science, Institute of Agricultural Sciences, ETH Zürich*, *Zürich, Switzerland*.

Animal Behavior and Well-Being 2

Chair: Kimberley Morrill, Chr. Hansen
Shaw Centre 206
2:00 PM – 5:30 PM

2:00 PM 2684 **Drinking water temperature preferences in crossbred dairy beef calves.**
L. Llonch*[1], S. Martí[1], X. Vergara[1], G. Prat[1], M. Vestergaard[2], and M. Devant[1], [1]*Ruminant Production Program, Institut de Recerca i Tecnologia Agroalimentàries*, *Torre Marimon, Barcelona, Spain*, [2]*Aarhus University, Department of Animal and Veterinary Sciences*, *Tjele, Denmark*.

2:15 PM 2685 **Use of accelerometer data as a proxy for assessing cow comfort on different milking machine settings.**
M. Browne*[1,2], P. S. Boloña[1], and J. Upton[1], [1]*Teagasc Animal and Grassland Research and Innovation Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*, [2]*VistaMilk SFI Research Centre*, *Moorepark, Fermoy, Co. Cork, Ireland*.

2:30 PM 2686 ***Using changes in feeding behavior patterns to find calves at risk for diarrhea*.**
M. C. Cantor*[1,2], A. Welk[1], M. M. Woodrum Setser[3], J. H. C. Costa[3], and D. L. Renaud[1], [1]*University of Guelph*, *Guelph, ON, Canada*, [2]*Penn State University*, *College Park, PA*, [3]*University of Kentucky*, *Lexington, KY*.

2:45 PM 2687 **Computer vision-based models for estimation of respiratory rate of dairy cows using contactless videos.**
M. Wang*, R. Peng, S. E. Räisänen, X. Sun, K. Wang, and M. Niu, *ETH Zurich*, *Zurich, Switzerland*.

3:00 PM 2688 **To go or not to go? Assessing anticipation for outdoor access in dairy cows.**
M. Cellier*[1], N. Aigueperse[2], and E. Vasseur[1], [1]*Department of Animal Science, McGill University*, *Sainte-Anne-de-Bellevue, QC, Canada*, [2]*Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores, Saint Genès-Champanelle, France*.

3:15 PM 2689 **Comparison of bolt penetration depth by three low-cost captive bolt devices used for on-farm cattle euthanasia.**
S. Frazer*, M. Denicourt, L. DesCôteaux, I. Masseau, and M. Rousseau, *Département de sciences cliniques, Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, QC, Canada*.

3:30 PM **Break.**

4:00 PM 2690 **Increasing fitness for transport in cull dairy cows.**
N. Berdusco*, T. F. Duffield, D. F. Kelton, K. M. Wood, and D. B. Haley, *University of Guelph*, *Guelph, ON, Canada*.

4:15 PM 2691 **Relationship between body surface temperature and shade-seeking behavior in dairy buffaloes.**
S. I. Hussain and M. Q. Shahid*, *Department of Livestock Management, University of Veterinary and Animal Sciences*, *Lahore, Pakistan*.

4:30 PM 2692 **Evaluation of time budgets and vaginal temperature of lactating Holstein cows offered a choice of shade and sprinklers on pasture.**
K. Braman*, J. Drewry, and A. Stone, *Mississippi State University*, *Starkville, MS*.

4:45 PM 2693 **Investigating the effect of feeding milk replacer or electrolytes on transported surplus dairy calf lying behavior.**
A. Bajus*[1], K. C. Cruetzinger[2], M. C. Cantor[1,3], D. Kelton[1], J. Wilms[4,5], M. A. Steele[5], and D. L. Renaud[1], [1]*University of Guelph, Department of Population Medicine*, *Guelph, ON, Canada*, [2]*University of Wisconsin–River Falls, Department of Animal Science*, *River Falls, WI*, [3]*Penn State University, Department of Animal Science*, *University Park, PA*, [4]*Trouw Nutrition*, *Amersfoort, the Netherlands*, [5]*University of Guelph, Department of Animal Biosciences*, *Guelph, ON, Canada*.

5:00 PM 2694 **Evaluating how rest periods impact calf activity following long-distance transportation.**
H. M. Goetz*[1], M. C. Cantor[2,1], and D. L. Renaud[1], [1]*Department of Population Medicine, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Animal Science, Penn State University*, *State College, PA*.

5:15 PM 2695 **Brush use monitoring using data integration and computer vision.**
N. Sadrzadeh*, B. Foris, J. Krahn, M. A. G. Von Keyserlingk, and D. M. Weary, *University of British Columbia*, *Vancouver, BC, Canada*.

Animal Health 5

Chair: Jodi L McGill, Iowa State University
Shaw Centre 201
2:00 PM – 5:30 PM

2:00 PM 2696 **Evaluation of antimicrobial combination therapy to control bovine mastitis pathogens.**
A. J. Moreira*[1,2], K. Araujo[2], K. Camargo[3,1], A. Assumpcao[1], N. Aulik[1], and H. Mantovani[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*Universidade Federal de Vicosa*, *Vicosa, MG, Brazil*, [3]*Universidade Estadual Paulista*, *Jaboticabal, SP, Brazil*.

2:15 PM 2697 **Molecular characterization of *Staphylococcus aureus* Isolates implicated in subclinical mastitis in Malaysian dairy herds.**
B. Ali*[1] and Z. Zakaria[2], [1]*Department of Biological Sciences, Sule Lamido University, Kafin-Hausa*, *Kafin-Hausa, Jigawa, Nigeria*, [2]*Department of Veterinary Microbiology and Pathology, Faculty of Veterinary Medicine, Universiti Putra, Malaysia*, *Serdang, Selangor, Malaysia*.

2:30 PM 2698 **Characterization of *Staphylococcus* isolates from subclinical mastitis cattle in the free state Province, South Africa.**
N. G. Khasapane*[1], K. Myburgh[2], Z. T.H. Khumalo[3,4], S. J. Nkhebenyane[1], and O. M. M. Thekisoe[5], [1]*Department of Life Sciences, Centre for Applied Food Sustainability and Biotechnology, Central University of Technology*, *Bloemfontein, South Africa*, [2]*2Department of Animal Sciences, Faculty of Natural and Agricultural Sciences*, *Bloemfontein, South Africa*, [3]*Department of Veterinary Tropical Diseases, Faculty of Veterinary Sciences, University of Pretoria*, *Pretoria, South Africa*, [4]*Clinvet International, Study Operations, Uitsig Road, Universitas*, *Bloemfontein, South Africa*, [5]*Unit for Environmental Sciences and Management, North West University*, *Potechsftroom, South Africa*.

2:45 PM 2699 **Using milk sensor technology for determining which cows to dry off without the need for antibiotic (selective dry cow therapy).**
R. Saltman*[1], J. Beltran[2], B. Sudarsan[2], and M. Faulkner[2], [1]*RLS Management Solutions LLC*, *Cazenovia, NY*, [2]*SomaDetect*, *Halifax, Nova Scotia, Canada*.

3:00 PM 2700 **Changes in milk exosome miRNAome in association with a *Staphylococcus aureus* intramammary infection.**
S. Ricci[1], R. Gervais[2], F. Malouin[3], G. Brisson[2], C. Ster[4], and R. Petri*[4], [1]*University of Veterinary Medicine*, *Vienna, Vienna, Austria*, [2]*Université Laval*, *Québec, Quebec, Canada*, [3]*Université de Sherbrooke*, *Sherbrooke, Quebec, Canada*, [4]*Agriculture and Agri-Food Canada SRDC*, *Sherbrooke, Quebec, Canada*.

3:15 PM 2701 **Staphylococcal intramammary infections in dairy cows: Prevalence at calving in first lactation cows and prevalence, incidence, and persistence over the dry period.**
D. Kurban*[1,2], J.-P. Roy[1,2], T. J. DeVries[2,3], P. R. F. Adkins[4], J. R. Middleton[4], G. P. Keefe[2,5], A. France[3], and S. Dufour[1,2], [1]*Faculté de médecine vétérinaire, Université de Montréal*, *Saint-Hyacinthe, QC, Canada*, [2]*Mastitis Network*, *Saint-Hyacinthe, QC, Canada*, [3]*Departement of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [4]*Department of Veterinary Medicine and Surgery, University of Missouri*, *Columbia, MO*, [5]*Department of Health Management, Atlantic Veterinary College, University of Prince Edward Island*, *Charlottetown, PE, Canada*.

3:30 PM **Break.**

4:00 PM 2702 **Identification of functional SNPs and INDELs associated with mastitis in Holstein dairy cows using whole genome sequencing and RNA-sequencing.**
V. Asselstine*[1], J. F. Medrano[2], P. Stothard[3], F. Miglior[1,4], C. F. Baes[1,5], F. S. Schenkel[1], and A. Cánovas[1], [1]*Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Animal Science, University of California - Davis*, *Davis, CA*, [3]*Department of Agricultural, Food and Nutritional Science/Livestock Gentec, University of Alberta*, *Edmonton, AB, Canada*, [4]*Lactanet Canada*, *Guelph, ON, Canada*, [5]*Institute of Genetics, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

4:15 PM 2703 **The effects of feeding CLOSTAT (*Bacillus subtilis* PB6) to lactating dairy cows in an automated milking system as measured by milk production, early lactation culling, mastitis incidence, and somatic cell count.**
M. Wieghart*[1], H. Hall[2], J. Kennon[3], J. Hackman[3], J. Lister[3], S. Trojan[4], and I. Brown-Crowder[2], [1]*All Dairy Consulting, LLC*, *Beldenville, WI*, [2]*Kemin Industries, Inc*, *Des Moines, IA*, [3]*Purina Mills, LLC*, *Grays Summit, MO*, [4]*Peak Beef Cattle Nutrition and Management Consulting, LLC*, *Casper, WY*.

4:30 PM 2705 **Management culture and mastitis on dairy farms in the United States.**
J. Kayitsinga*[1], R. Schewe[2], E. Hovingh[3], R. Martinez[1], and R. Erskine[1], [1]*Michigan State University*, *East Lansing, MI*, [2]*Syracuse University*, *Syracuse, NY*, [3]*Pennsylvania State University*, *State College, PA*.

4:45 PM 2706 **Development of a bio-economic model to study mastitis.**
T. Le Page*[1], A. Ferchiou[2], S. Dufour[1], and J. P. Roy[1], [1]*Université de Montréal*, *Saint-Hyacinthe, QC, Canada*, [2]École nationale vétérinaire de Toulouse, *Toulouse, France*.

5:00 PM 2707 **Computation of a nomogram to estimate the 60-day probability of death or culling due to severe clinical mastitis in dairy cows at first veterinary clinical evaluation.**
T. Le Page*, J. Labonté, S. Buczinski, J. Dubuc, and J. P. Roy, *Université de Montréal*, *Saint-Hyacinthe, QC, Canada*.

5:15 PM 2762 **Investigating the effect of feeding electrolytes or milk replacer on nonesterified fatty acids, β-hydroxybutyrate, and glucose concentrations in transported surplus dairy calves.**
A. Bajus*[1], K. C. Cruetzinger[2], M. C. Cantor[1,3], D. Kelton[1], J. Wilms[4,5], M. A. Steele[5], and D. L. Renaud[1], [1]*University of Guelph, Department of Population Medicine*, *Guelph, Ontario, Canada*, [2]*University of Wisconsin–River Falls*, *River Falls, WI*, [3]*Penn State University, Department of Animal Science*, *University Park, PA*, [4]*Trouw Nutrition*, *Amersfoort, the Netherlands*, [5]*University of Guelph, Department of Animal Biosciences*, *Guelph, Ontario, Canada*.

Breeding and Genetics 3: Advances in Methods for Genetic Improvement

Chair: Luiz Britto, Purdue University
Shaw Centre 203
2:00 PM – 5:30 PM

2:00 PM 2708 **Single-step genome-wide association analysis with *P*-values for large genotyped populations.**
N. G. Leite, M. Bermann, S. Tsuruta, I. Misztal, and D. Lourenco*, *University of Georgia*, *Athens, GA*.

2:15 PM 2709 **Improving the efficiency of heritability estimation with genomic information—Method R.**
M. K. Hollifield*, J. Hidalgo, F. Bussiman, D. Lourenco, and I. Misztal, *University of Georgia*, *Athens, GA*.

2:30 PM 2710 **Converting linear breeding values to probabilities for health traits in dairy cattle.**
J. Hidalgo*[1], S. Tsuruta[1], D. Gonzalez[2], G. de Oliveira[2], M. Sanchez[2], A. Kulkarni[2], C. Przybyla[2], G. Vargas[2], N. Vukasinovic[2], I. Misztal[1], and D. Lourenco[1], [1]*Department of Animal and Dairy Science, University of Georgia*, *Athens, GA*, [2]*Zoetis Genetics and Precision Animal Health*, *Kalamazoo, MI*.

2:45 PM 2711 **Approximation of reliabilities for random-regression single-step genomic best linear unbiased predictor.**
M. Bermann*[1], I. Aguilar[2], D. Lourenco[1], and I. Misztal[1], [1]*University of Georgia*, *Athens, GA*, [2]*Instituto Nacional de Investigación Agropecuaria (INIA)*, *Montevideo, Uruguay*.

3:00 PM 2713 **Utilizing relationship value (R-value) to reduce inbreeding in the Canadian dairy cattle population.**
C. O. Obari*[1], B. O. Makanjuola[1], F. S. Schenkel[1], F. Miglior[1,2], C. Maltecca[3], and C. F. Baes[1,4], [1]*Centre for Genetic Improvement of Livestock, University of Guelph*, *Guelph, ON, Canada*, [2]*Lactanet, Genetics Division*, *Guelph, ON, Canada*, [3]*Department of Animal Science, North Carolina State University*, *Raleigh, NC*, [4]*Institute of Genetics, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

3:15 PM 2712 **Improved accuracy of a dynamic programming model to optimize replacement and insemination decisions for dairy cattle.**
A. De Vries*, *University of Florida*, *Gainesville, FL*.

3:30 PM **Break.**

4:00 PM 2714 **Pedigree and genomic adjustments for single-step genomic BLUP applied to residual feed intake.**
A. Legarra*[1], M. J. Vandehaar[2], R. J. Tempelman[2], J. E. Koltes[3], H. M. White[4], K. A. Weigel[4], R. Baldwin[5], P. VanRaden[5], F. Peñagaricano[4], J. Santos[6], and K. L. Parker Gaddis[1], [1]*US Council on Dairy Cattle Breeding*, *Bowie, MD*, [2]*Michigan State University*, *East Lansing, MI*, [3]*Iowa State University*, *Ames, IA*, [4]*University of Wisconsin*, *Madison, WI*, [5]*USDA*, *Beltsville, MD*, [6]*University of Florida*, *Gainesville, FL*.

4:15 PM 2715 **Quality and value of imputing gene tests for all animals.**
J. R. OConnell*[1], P. M. VanRaden[2], and E. O. O. Ogwo[2], [1]*University of Maryland Baltimore*, *Baltimore, MD*, [2]*USDA Animal Genomics and Improvement Laboratory*, *Beltsville, MD*.

4:30 PM 2716 **Standardizing lactation yields from national data with age-parity-season-region corrections for fair comparisons across individual cows and environments.**
A. Miles*[1], P. VanRaden[1], J. Hutchison[1], G. Fok[1], and M. Schutz[2], [1]*Animal Genomics & Improvement Laboratory, Agricultural Research Service, United States Department of Agriculture*, *Beltsville, MD*, [2]*Department of Animal Science, University of Minnesota*, *St. Paul, MN*.

4:45 PM 2717 **Combined effects of milking intervals and frequencies.**
P. M. VanRaden*[1], A. M. Miles[1], X. L. Wu[2], and D. R. Noordhoff[3], [1]*USDA Animal Genomics and Improvement Lab*, *Beltsville, MD*, [2]*Council on Dairy Cattle Breeding*, *Bowie, MD*, [3]*Retired*, *Lanark, IL*.

5:00 PM 2718 **ABS Health Index's impact on commercial cow's longevity, disease incident rates, and herd economics.**
J. P. Nani, L. Chang, S. Arens, B. N. Shonka-Martin, A. Sewalem*, and M. McClure, *ABS Global*, *DeForest, WI*.

5:15 PM 2719 **Integrating foreign information into single-step evaluations in US Holsteins.**
I. Misztal*[1], A. Cesarani[3], A. Legarra[2], D. Lourenco[1], S. Tsuruta[1], M. Bermann[1], E. Nicolazzi[2], and P. VanRaden[4], [1]*University of Georgia*, *Athens, GA*, [2]*Center for Dairy Cattle Breeding*, *Bowie, MD*, [3]*University of Sassari*, *Sassari, Sardinia*, [4]*USDA*, *Beltsville, MD*.

Forages and Pastures 1

Chair: Uchenna Anele, North Carolina A&T State University
Shaw Centre 202
2:00 PM – 5:30 PM

2:00 PM 2720 **Chemical composition, ruminal fermentation, in vitro digestibility and gas production parameters of several grasses planted in greenhouse.**
A. Jafari*[1], H. Behrozpour[2], H. Fazaeli[3], and R. Mohammadi[4], [1]*Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [2]*Department of Animal Science, Yasouj University*, *Yasouj, Iran*, [3]*Animal Science Research Institute*, *Karaj, Iran*, [4]*Biotechnology Research Institute of Iran (ABRII), Agricultural Research, Education and Extension Organization (AREEO)*, *Tabriz, Iran*.

2:15 PM 2721 **Evaluation of pasture biomass from cool-season pastures in the Midwestern USA with satellite imagery, herbage mass clippings and an electronic plate meter.**
B. J. Heins*, L. Dourado Clemente, and K. T. Sharpe, *University of Minnesota*, *Morris, MN*.

2:30 PM 2722 **Agrivoltaic effects on forage biomass and forage nutritive value.**
S. L. Portner[1], B. J. Heins*[1,2], E. S. Buchanan[2], and M. H. Reese[2], [1]*Department of Animal Science, University of Minnesota*, *St. Paul, MN*, [2]*West Central Research and Outreach Center, University of Minnesota*, *Morris, MN*.

2:45 PM 2723 **Effects of wilting duration, microbial inoculation, and ensiling duration on oat silage quality.**
L. Lima*, L. Mu, F. Amaro, C. Niño-de-Guzman, S. Farooq, K. Arriola, H. Sultana, and D. Vyas, *University of Florida, Animal Science Department*, *Gainesville, FL*.

3:00 PM 2724 **Effects of curing extent on the phytoestrogen levels of red clover hay and silage across storage phases.**
D. Zamudio*[1], M. Lima[2], R. de Castro[1], A. P. Jimezez[1], M. Cardoso[1], C. Knight[1], and J. J. Romero[1], [1]*University of Maine*, *Maine*, [2]*Virginia Tech*, *Virginia*.

3:15 PM 2725 **Loss of fermentation acids in silages affected by drying temperature.**
T. de Evan*[1], E. M. V. Hvas[1], M. Larsen[1], L. Andersen[2], and M. R. Weisbjerg[1], [1]*Department of Animal and Veterinary Sciences, AU Viborg, Research Centre Foulum*, *Aarhus University, Tjele, Denmark*, [2]*KWS Scandinavia A/S*, *Vejle, Denmark*.

3:30 PM 2726 **Association between fragility and analytical parameters of various forages.**
E. Raffrenato*[1,2], G. Esposito[3,2], and L. Bailoni[1], [1]*Department of Comparative Biomedicine and Nutrition, University of Padova*, *Padova, Italy*, [2]*Department of Animal Sciences*, *Stellenbosch, South Africa*, [3]*Department of Veterinary Medicine, University of Parma*, *Parma, Italy*.

3:45 PM **Break.**

4:00 PM 2727 **Evaluation of a portable X-ray fluorescence device for a sustainable mineral nutrition in dairy herds.**
R. Balegi*, F. Penen, and S. Durosoy, *Animine*, *Annecy, France*.

4:15 PM 2728 **Lactational performance of dairy cows fed diets based on corn silage with varying organic matter digestibility.**
S. F. Cueva*, L. F. Martins, N. Stepanchenko, D. E. Wasson, G. W. Roth, and A. N. Hristov, *The Pennsylvania State University*, *University Park, PA*.

4:30 PM 2729 **Replacing conventional concentrates with sprouted barley or wheat: Effects on milk production in dairy cows.**
Y. Zang[1], A. T. Richards[1], T. D. Bellissimo[1], J. L. Judge[1], F. A. Gutierrez Oviedo[1], N. Seneviratne[1], R. Harding[2], S. Ranathunga[2], and J. W. McFadden*[1], [1]*Cornell University*, *Ithaca, NY*, [2]*Renaissance Ag LLC*, *Vineyard, UT*.

4:45 PM 2730 **Ruminal fermentation, urinary purine derivatives excretion, and enteric methane emissions in grazing dairy cows fed an extruded flaxseed-based supplement.**
M. A. Rahman*, K. V. Almeida, D. C. Reyes, E. A. Cruz, A. L. Konopoka, M. A. Arshad, and A. F. Brito, *Department of Agriculture, Nutrition, and Food System, University of New Hampshire*, *Durham, NH*.

5:00 PM 2731 **Effects of grass species on cell wall components and milk production of dairy cows.**
D. Sousa*[1], M. Murphy[2], A. Larsson[1,2], R. Hatfield[3], J. Takahashi[4], W. Richardt[5], and E. Nadeau[1], [1]*Swedish University of Agricultural Sciences, Department of Animal Environment and Health*, *Skara, Sweden*, [2]*Lantmännen Lantbruk*, *Malmö, Sweden*, [3]*US Dairy Forage Research Center*, *Madison, WI*, [4]*Swedish University of Agricultural Sciences, Department of Forest Genetics and Plant Physiology*, *Umeå, Sweden*, [5]*LKS mbH*, *Lichtenwalde, Germany*.

5:15 PM 2732 **An assessment of virtual fence technology for dairy heifer grazing.**
C. Holohan[1], F. O. Lively[1], R. K. Ogden[2], L. M. Bauman[2], H. Gümüs[3], D. M. Jaramillo[2], G. Arnott[4], R. Palme[5], and M. S. Akins*[2,6], [1]*Agri-Food & Biosciences Institute*, *Hillsborough, Co. Down, Northern Ireland*, [2]*USDA Institute for Environmentally Integrated Dairy Management*, *2615 Yellowstone Drive, Marshfield, WI*, [3]*Faculty of Veterinary Medicine, Ankara University*, *Ankara, Turkey*, [4]*School of Biological Sciences, Queens University Belfast*, *University Road, Belfast, Northern Ireland*, [5]*Department of Biomedical Sciences, University of Veterinary Medicine*, *Vienna, Austria*, [6]*Department of Animal and Dairy Sciences, University of Wisconsin–Madison*, *Madison, WI*.

Joint Growth and Development and Physiology and Endocrinology—General Orals

Shaw Centre 208
2:00 PM – 5:15 PM

2:00 PM 2733 **Cow-calf relationships of endocrine and metabolic parameters immediately after parturition in Holstein animals.**
A. L. Freihofer, R. M. Bruckmaier, and J. J. Gross*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern*, *Bern, Switzerland*.

2:15 PM 2734 **Predicting age at puberty of dairy heifers based on biometric body features extracted from 3D images during the preweaning phase.**
A. Negreiro*, A. Vang, T. Bresolin, R. E. P. Ferreira, G. J. M. Rosa, L. L. Hernandez, and J. R. R. Dorea, *University of Wisconsin–Madison*, *Madison, WI*.

2:30 PM 2735 **Computer vision-based body weight estimation in group-housed calves.**
D. Sun*[1], R. van der Tol[1], L. Webb[2], K. van Reenen[3,2], and M. Afonso[4], [1]*Agricultural Biosystems Engineering Group, Wageningen University & Research*, *Wageningen, Gelderland, the Netherlands*, [2]*Animal Production Systems Group, Wageningen University & Research*, *Wageningen, Gelderland, the Netherlands*, [3]*Livestock Research, Wageningen University & Research*, *Wageningen, Gelderland, the Netherlands*, [4]*Biometris Group, Wageningen University & Research*, *Wageningen, Gelderland, the Netherlands*.

2:45 PM 2736 **Evaluation of growth and health costs of dairy calves raised in individual, pair, or group housing compared to dairy calves raised with dams.**
K. Sharpe*[1], B. Goncalves Da Costa[2], M. Endres[2], and B. Heins[1,2], [1]*West Central Research and Outreach Center*, *Morris, MN*, [2]*University of Minnesota*, *St. Paul, MN*.

3:00 PM 2737 **Intake and growth parameters of dairy calves dosed with rumen inoculum from mature donor cows of varying milk production efficiency.**
D. J. Nelson*[1,2], K. F. Kalscheur[2], G. I. Zanton[2], M. S. Cox[1], and G. Suen[1], [1]*University of Wisconsin–Madison*, *Madison, WI*, [2]*US Dairy Forage Research Center, USDA-ARS*, *Madison, WI*.

3:15 PM 2738 **Characterization of mature body weight and heifer maturity at first conception and first calving in Quebec Holstein herds.**
R. A. Molano*[1,2], O. Brassard[1], L. Laflamme-Michaud[2], E. Charbonneau[2], and D. E. Santschi[1], [1]*Lactanet, Canadian Network for Dairy Excellence*, *Ste-Anne-de-Bellevue, QC, Canada*, [2]*Université Laval*, *Quebec, QC, Canada*.

3:30 PM **Break.**

4:00 PM 2739 ***Salmonella enterica* serovars and resistant genes in calves and maternity pens from Mexico.**
S. Barrera, S. Vázquez-Flores*, M. De Donato, and C. Lucio, *Tecnológico de Monterrey*, *Querétaro, México*.

4:15 PM 2740 **Peripheral blood mononuclear cell mitochondrial enzyme activity in calves indicates average daily gain, future lactation performance, and survival.**
A. M. Niesen* and H. A. Rossow, *University of California, Davis*, *Davis, CA*.

4:30 PM 2741 **The impact of maternal liver glutathione concentration on offspring growth performance and health during the neonatal period.**
A. Flavia Souza Lima*, G. Goncalves Begalli, M. H. Oliveira, R. Chaves Barcellos Grazziotin, J. Halfen, and J. Osorio, *School of Animal Science, Dairy Science, Virginia Tech*, *Blacksburg, VA*.

4:45 PM 2742 **Adipogenesis is modulated by depot-specific extracellular matrix microenvironment in adipose tissue of dairy cattle.**
J. F. Fiallo Diez*[1], C. G. Flesher[2], A. P. Tegeler[1], T. C. Michelotti[1], M. N. Hoque[4], B. Bhattarai[4], L. S. Florez[1], O. J. Benitez[1,3], G. Christopher[4], and C. Strieder-Barboza[1,3], [1]*Department of Veterinary Sciences, Davis College of Agricultural Sciences and Natural Resources, Texas Tech University*, *Lubbock, TX*, [2]*Department of Medicine, University of Pennsylvania*, *Philadelphia, PA*, [3]*School of Veterinary Medicine, Texas Tech University*, *Amarillo, TX*, [4]*Department of Mechanical Engineering, Texas Tech University*, *Lubbock, TX*.

5:00 PM 2744 **Cryopreservation and resuscitation of bovine duodenum tissues and enteroids cultivation methods.**
K. Nishihara*[1], K. Wood[1], L. L. Guan[2], and M. Steele[1], [1]*Department of Animal Biosciences, University of Guelph*, *Guelph, ON, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta*, *Edmonton, AB, Canada*.

Reproduction 1

Chair: Osvaldo Bogado Pascottini, Ghent University
Shaw Centre 212
2:00 PM – 5:15 PM

2:00 PM 2745 **How long is the estrous cycle of dairy cows?**
J. Denis-Robichaud*[1], A. P. Oliveira[2], M. H. C. Pereira[2], K. G. Pohler[3], R. L. A. Cerri[1], and J. L. M. Vasconcelos[2], [1]*Faculty of Land and Food Systems, University of British Columbia*, *Vancouver, BC, Canada*, [2]*Department of Animal Production, São Paulo State University*, *Botucatu, Brazil*, [3]*Department of Animal Science, Texas A&M University*, *College Station, TX*.

2:15 PM 2746 **Use of automated monitoring devices to characterize estrous cyclicity postpartum in lactating dairy cows.**
P. M. G. Peixoto, L. Factor, A. Mirzaei, R. C. Chebel, and R. S. Bisinotto*, *University of Florida*, *Gainesville, FL*.

2:30 PM 2747 **Repeatability of intensity and duration of estrous expression in lactating Holstein cattle.**
A. M. Bega*[1], T. A. Burnett[2], A. M. L. Madureira[2], J. Denis-Robichaud[1], C. Baes[3], and R. L. A. Cerri[1], [1]*University of British Columbia*, *Vancouver, BC, Canada*, [2]*University of Guelph*, *Ridgetown, ON, Canada*, [3]*University of Guelph*, *Guelph, ON, Canada*.

2:45 PM 2748 **Likelihood of conception based on health status and estrus intensity in dairy cows.**
A. De Vries*[1], P. Sharma[1], N. Bliznyuk[1], and P. Pinedo[2], [1]*University of Florida*, *Gainesville, FL*, [2]*Colorado State University*, *Fort Collins, CO*.

3:00 PM 2749 **Effect of inducing luteolysis 5 or 6 d after the first GnRH on estrous expression and fertility in a modified timed-AI program for dairy heifers.**
I. M. R. Leão*, F. P. J. da Silva Junior, M. I. Mancheno-Valarezo, T. Valdes-Arciniega, and J. P. N. Martins, *University of Wisconsin–Madison*, *Madison, WI*.

3:15 PM 2750 **Effect of doubling the dose of gonadorelin hydrochloride at the first GnRH of a CIDR Synch program on ovulation rate and pregnancies per AI in Holstein heifers.**
D. Melo*, W. Coelho, T. Marques, S. Salman, I. Macedo, T. Castro, M. Menezes, H. Monteiro, A. Conley, and F. Lima, *Department of Population Health and Reproduction, University of California*, *Davis, CA*.

3:30 PM **Break.**

4:00 PM 2751 **Effect of delaying induction of ovulation on ovarian function of lactating dairy cows synchronized with Double-Ovsynch and inseminated after detected estrus or timed AI.**
A. L. Laplacette[1], C. Rial*[1], D. Duhastchek[1], M. M. Perez[1], M. L. Stangaferro[2], M. J. Thomas[2], and J. O. Giordano[1], [1]*Department of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Dairy Health and Management Services*, *Lowville, NY*.

4:15 PM 2752 **Prepartum acetylsalicylic acid in high-priority cow groups: Effects on cow health and reproductive performance.**
E. Jimenez*[1], P. Zarei[1], J. Spring[1], M. Dailey[1], C. Zheng[1], J. Lection[2,3], M. Martinez[1], E. Hovingh[1], and A. Barragan[1], [1]*Department of Veterinary and Biomedical Sciences, Penn State University*, *University Park, PA*, [2]*Intercollege Graduate Degree Program in Integrative and Biomedical Physiology, Penn State University*, *University Park, PA*, [3]*Department of Animal Science, Penn State University*, *University Park, PA*.

4:30 PM 2754 **Efficacy of an automated technology at detecting early postpartum estrus events: Can we detect resumption of cyclicity?**
S. Borchardt[1], T. A. Burnett[2], J. L. Plenio[3], R. S. Conceição[4], R. L. A. Cerri[4], and A. M. L. Madureira*[2], [1]*Clinic of Animal Reproduction, Faculty of Veterinary Medicine*, *Berlin, Germany*, [2]*University of Guelph*, *Ridgetown, ON, Canada*, [3]*Freie Universität Berlin, Institute for Veterinary Epidemiology and Biostatistics*, *Berlin, Germany*, [4]*University of British Columbia*, *Vancouver, BC, Canada*.

4:45 PM 2755 **Development and demonstration of lateral-flow immunoassays for determination of the pregnancy and ovarian physiological status of cows.**
C. Rial*[1], I. Hussain[2], D. Erickson[2], J. Branen[3], and J. O. Giordano[1], [1]*Deparment of Animal Science, Cornell University*, *Ithaca, NY*, [2]*Sibley School of Mechanical and Aerospace Engineering, Cornell University*, *Ithaca, NY*, [3]*BioTracking, LLC*, *Moscow, ID*.

5:00 PM 2756 **Genomic analysis of virulence and antimicrobial resistance of *Escherichia coli* isolated from cows with metritis.**
A. Garzon[1], C. Basbas[1], B. Weimer[1], C. Schlesener[1], N. Silva-del-Rio[1,2], B. Karle[3], F. Lima*[1], and R. Pereira[1], [1]*Department of Population Health & Reproduction, School of Veterinary Medicine, University of California, Davis*, *Davis, CA*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California*, *Tulare, CA*, [3]*Cooperative Extension, Division of Agriculture and Natural Resources, University of California*, *Orland, CA*.

Ruminant Nutrition Symposium: Dairy Nutrition to Improve Feed Utilization—Recognizing the Contributions of ADSA Fellow Dr. Bill Weiss

Chair: Maurice Eastridge, The Ohio State University
Session sponsored by Evonik/RP Nutrients/Landus and Elanco Animal Health
Shaw Centre 207
2:00 PM – 6:00 PM

2:00 PM **Welcome remarks.**
Maurice Eastridge.

2:10 PM 2757 **How understanding variability in feedstuffs improves feeding practices.**
W. P. Weiss* and N. R. St-Pierre, *Ohio State University*, *Wooster OH*.

2:50 PM 2758 **Improvements in diet formulation and evaluation of energy for dairy cattle.**
P. J. Kononoff*, *University of Nebraska-Lincoln*, *Lincoln, NE*.

3:30 PM **Break.**

3:55 PM 2759 **Dairy nutrition to improve feed utilization—Recognizing the contributions of ADSA Fellow Dr. Bill Weiss beyond prevention of metabolic diseases: Feeding transition dairy cows for optimal performance.**
A. Tebbe*, *Purina Animal Nutrition LLC*, *Shoreview, MN*.

4:35 PM 2760 **Mineral absorption and how that impacts mineral requirements.**
J. Goff*, *Iowa State University*, *Ames, IA*.

5:15 PM **Discussions with reception to follow.**

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Numbers following names refer to abstract numbers. A number alone indicates an oral presentation; an M following the number indicates a Monday poster, a T indicates a Tuesday poster, a W indicates a Wednesday poster. Orals are listed first, followed by Monday, Tuesday, and Wednesday posters in numeric order.

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