

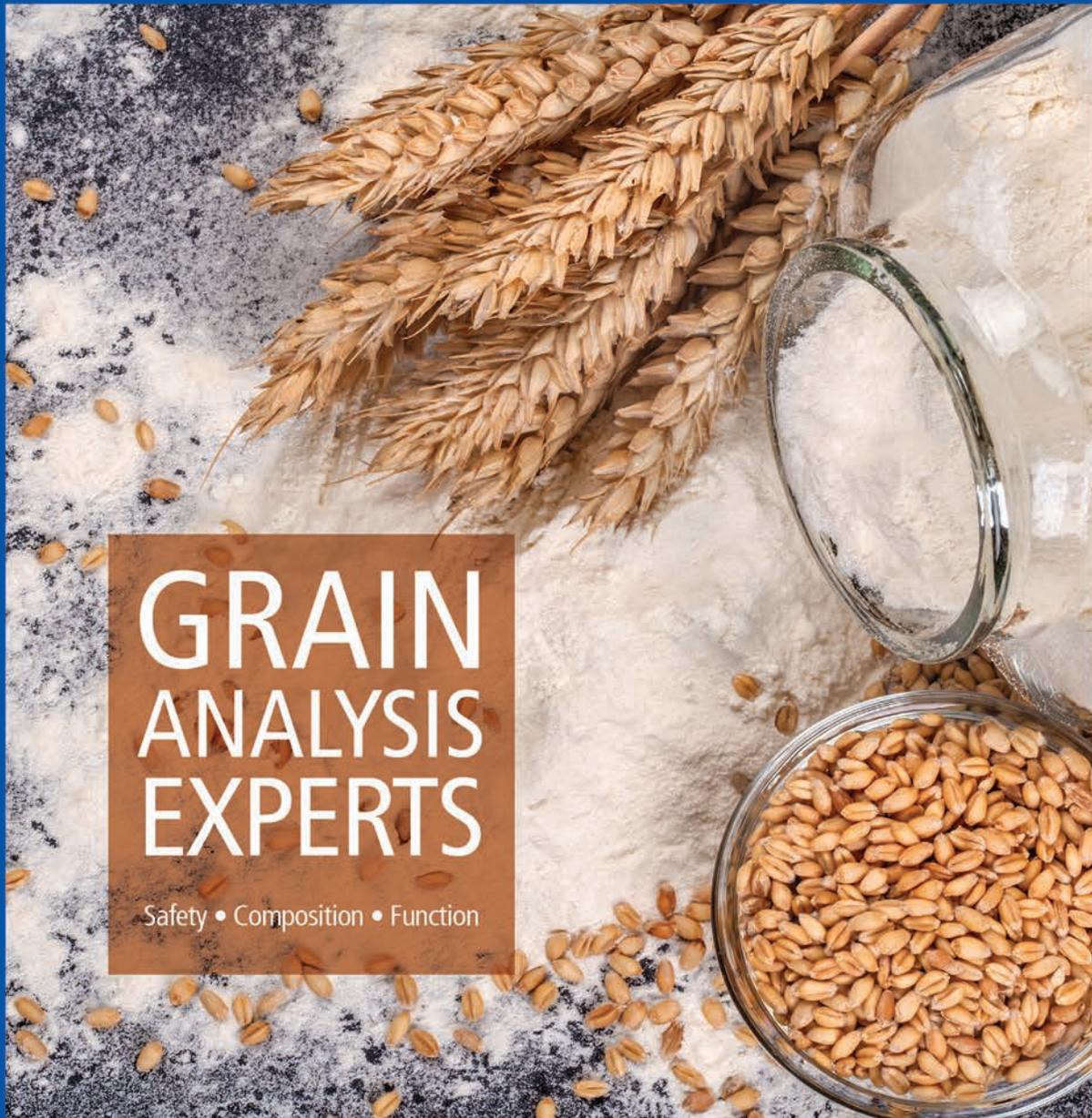
PROGRAM BOOK

& GRAINS
CEREALS 19

November 3–5, 2019 | Denver, Colorado, U.S.A.

[#cerealsgrains19](#)





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THANK YOU!

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Program Team Vice Chair: Andreia Bianchini, *University of Nebraska-Lincoln, Lincoln, NE, U.S.A.*

Program Board Liaison: Anne M. Birkett, *Kellogg Co., Battle Creek, MI, U.S.A.*

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About Cereals & Grains Association

Cereals & Grains Association is a global, nonprofit association of more than 1,400 scientists and food industry professionals working to advance the understanding and knowledge of cereal grain science and its product development applications through research, leadership, education, superior technical service, and advocacy. It provides cutting-edge research, networking opportunities, practical solutions, resourceful safeguards, and innovative technologies for advancing the grain science community.

Cereals & Grains Association is the trusted authority that fosters comprehensive food solutions worldwide.

GENERAL MEETING INFORMATION

All Cereals & Grains 19 activities take place at the Sheraton Downtown Denver Hotel. Please refer to the hotel map for meeting room locations when planning your schedule.

Get Social During the Meeting!

Keep your finger on the pulse of the meeting, follow the official #cerealsgrains19 hashtag, and engage with fellow attendees! Locate your favorite sessions, view photos, and exchange ideas with colleagues on social media. Use #cerealsgrains19 on LinkedIn, Twitter, Facebook, and Instagram to share your Cereals & Grains 19 experience with your network.



Cereals & Grains 19 at Your Fingertips!

With the Cereals & Grains 19 event app, you will receive the latest meeting updates, have access to the most detailed program content, and be able to connect with other attendees!

Here are the best features of the app:

- Search the program schedule, posters, and general information.
- Customize your schedule.
- Access session information, including full abstracts.
- Connect with other attendees—send messages and make appointments.
- Contact poster authors directly to schedule time outside regular poster hours to meet and discuss poster content.



Get the app—it's free! Available for iOS (iPhone and iPad) and Android devices. Scan the QR code to download it!

WiFi

Get online! Complimentary WiFi is available throughout the Cereals & Grains 19 meeting space. Open your network and connect to **Sheraton-Meeting Room**. Then open a new browser and, when prompted, enter the password **Brabender** and click **Connect!**

Registration Hours

Saturday, November 2	3:00 – 6:00 p.m.	Tower Plaza Lobby
Sunday, November 3	8:30 a.m. – 6:30 p.m.	Plaza Foyer
Monday, November 4	7:30 a.m. – 5:00 p.m.	Plaza Foyer
Tuesday, November 5	7:30 a.m. – 5:00 p.m.	Plaza Foyer

Speaker Kiosk

The speaker kiosk is located near the registration desk and will be open during the following times. Each speaker must upload his or her presentation at the speaker kiosk before his or her scheduled talk, according to the schedule below.

Saturday, November 2	3:00 – 6:00 p.m.	Tower Plaza Lobby
	Sunday presenters	
Sunday, November 3	8:30 a.m. – 12:00 p.m.	Plaza Foyer
	Sunday presenters	
Sunday, November 3	12:30 – 6:30 p.m.	Plaza Foyer
	Monday presenters	
Monday, November 4	7:30 a.m. – 5:00 p.m.	Plaza Foyer
	Tuesday presenters	

Photography

Photography is not permitted in the session rooms, exhibit hall, or poster sessions at any time.

Committee Meetings

Unless otherwise noted, all committee meetings are open for participation by any Cereals & Grains 19 registered attendee. Please wear your badge to all meeting functions to identify yourself as a registered attendee.

Designed for You

The Cereals & Grains 19 program is built around the overarching Global Food Systems theme—each day will be broken into subtopics related to the current and emerging issues of our members. Daily themes will discuss topics in Food Security, Innovation in the Value Chain, and Health and Wellness. Each day, attendees will find programming specific to their professional area of focus, including **Applied Research (A)**, **Fundamental-Basic Research (F)**, **Nutrition (N)**, **Processing (P)**, and **QA/QC (Q)**. You will find corresponding notations referenced next to the title of every session.



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Cereals & Grains Association is a global community of experts working to foster comprehensive food solutions worldwide.

Go to cerealsgrains.org/membership to learn more!



PROGRAM SCHEDULES

Sunday Schedule at a Glance – Food Security

9:00 – 10:00 a.m.

Various
Plaza Court 2
Governor's Square 16

- Technical Committee Meetings (*see mobile app or online program for more details*)
- Student Association Executive Committee & Advisory Board Meeting
- First-Timer Orientation

9:00 – 11:00 a.m.

Governor's Square 11

- Foundation Meeting—*by invitation*

10:00 – 11:00 a.m.

Governor's Square 10

- Approved Methods Technical Committee Meeting

10:15 – 11:45 a.m.

Various

- Division Meetings (*see mobile app or online program for more details*)

11:00 a.m. – 12:00 p.m.

Governor's Square 16

- Check Sample Committee Meeting

12:00 – 1:00 p.m.

Plaza Court 1

- Program Team Meeting—*by invitation*

1:00 – 2:15 p.m.

Plaza Ballroom – A/B/C

- **Opening Keynote: Feeding and Nourishing Nine Billion: Charting a Resilient, Evidence-Driven and Sustainable Path Forward**



Nabeeha Kazi
Humanitas Global
Washington, DC, U.S.A.

2:30 – 4:30 p.m.

SCIENTIFIC SESSIONS

Governor's Square 14

- **SYMPOSIUM:** Exploiting Natural Polyphenols to Improve Dietary Quality of Carbohydrates and Their Benefits to Health

Plaza Ballroom – A/B/C

- **SYMPOSIUM:** Glyphosate and Cereal Grains: Separating the Wheat from the Chaff

Governor's Square 15

- **SYMPOSIUM:** Nutrient Dense, Sustainable Diets: Delivering Consumer Relevant Foods from Regenerative Food Systems

Governor's Square 12

- **SYMPOSIUM:** The Puzzles of Low Falling Number in Wheat and Its Impact on End-Use Quality: An In-Depth Look at Pre-Harvest Sprouting (PHS) and Late Maturity Alpha-Amylase (LMA)

4:45 – 5:45 p.m.

SCIENTIFIC SESSIONS

Plaza Ballroom – A/B/C

- **DISCUSSION:** Food Industry Trends and Their Future Impact

Governor's Square 15

- **SYMPOSIUM:** Food Waste Along the Supply Chain: Problems and Solutions

Governor's Square 12

- **TECHNICAL SESSION:** Best Student Research Paper Competition

Governor's Square 14

- **SYMPOSIUM:** Hot Topics in Food Safety and Quality

5:45 – 7:15 p.m.

Plaza Ballroom – D/E/F

- Exhibit Hall Open with Happy Hour

Governor's Square Foyer

- Poster Viewing Hours—Food Security
Authors Present from 6:15 – 7:15 p.m.

6:00 – 6:45 p.m.

Plaza Ballroom – A/B/C

- Scientific Advisory Panel (SAP) Meeting—*by invitation*

SUNDAY SCIENTIFIC SESSIONS

A – Applied Research | **F** – Fundamental-Basic Research | **N** – Nutrition | **P** – Processing | **Q** – QA-QC

SYMPOSIUM: Exploiting Natural Polyphenols to Improve Dietary Quality of Carbohydrates and Their Benefits to Health | FNP

2:30 – 4:30 p.m. • Governor's Square 14

Organizers/Moderators: Joseph M. Awika, Texas A&M University, College Station, TX, U.S.A.; Ximena Quintero-Fuentes, PepsiCo, Flower Mound, TX, U.S.A.

Sponsoring Committee: Carbohydrate Division

- The nexus between polyphenols and dietary carbohydrate quality: towards healthier high 'carb' foods – J. M. AWIKA; Texas A&M University, College Station, TX, U.S.A.
- Improving dietary quality of carbohydrates through polymeric proanthocyanidin complexation with starch – D. B. AMOAKO; PepsiCo, Plano, TX, U.S.A.
- Phenolic interactions in whole grains: implications for starch functionality, digestion and glycemic properties – M. FERRUZZI; Plants for Human Health Institute, N.C. State University, Kannapolis, NC, U.S.A.
- Influence of phenolic compounds on the functional and sensorial quality of products made with whole sorghum – V. V. QUEIROZ; Empresa Brasileira de Pesquisa Agropecuária (Embrapa), Sete Lagoas, BRAZIL
- Effect of dietary polyphenols on intestinal amylase/glucosidases and consequences on carbohydrate digestion – B. R. HAMAKER; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

SYMPOSIUM: Glyphosate and Cereal Grains: Separating the Wheat from the Chaff | FNPQ

2:30 – 4:30 p.m. • Plaza Ballroom – A/B/C

Organizers/Moderators: Yonghui Li, Kansas State University, Manhattan, KS, U.S.A.; Sheryl Tittlemier, Grain Research Laboratory, Canadian Grain Commission, Winnipeg, MB, CANADA

Sponsoring Committee: Food Safety and Quality Division

- Glyphosate benefits, uses, and safety – W. REEVES; Bayer, St. Louis, MO, U.S.A.
- Glyphosate overview and effects on mineral nutrition of plants – S. O. DUKE; USDA-ARS, National Products Utilization Research Unit, Oxford, MS, U.S.A.
- Analysis of glyphosate residues and fate during wheat processing – S. TITTEMIER; Grain Research Laboratory, Canadian Grain Commission, Winnipeg, MB, CANADA
- Impact of pre-harvest glyphosate use on wheat protein composition – S. SIMSEK; North Dakota State University Department of Plant Science, Fargo, ND, U.S.A.
- A scientific investigation into the impact of pre-harvest glyphosate application on oat milling quality – N. AMES; Agriculture & Agri-Food Canada, Winnipeg, MB, CANADA
- Effects of glyphosate application on malting barley quality – M. S. IZYDORCZYK; Canadian Grain Commission, Grain Research Laboratory, Winnipeg, MB, CANADA

SYMPOSIUM: Nutrient Dense, Sustainable Diets: Delivering Consumer Relevant Foods from Regenerative Food Systems | AFNPQ

2:30 – 4:30 p.m. • Governor's Square 15

Organizers/Moderators: Kevin Burke Miller, General Mills, Minneapolis, MN, U.S.A.; Christopher Marinangeli, Pulse Canada, Winnipeg, MB, CANADA

Sponsoring Committee: Pulses Division

- Introduction—Sustainable diets – J. W. FINLEY; USDA, Beltsville, MD, U.S.A.
- Industry and consumers determine whether many sustainable approaches can/will be adopted – K. SOLLID; International Food Information Council, Washington, D.C., U.S.A.
- Regenerative agriculture strategies – J. ECKBERG; General Mills, Minneapolis, MN, U.S.A.
- Environmental impact and nutrition of pulse crops – C. MARINANGELI; Pulse Canada, Winnipeg, MB, CANADA
- Developing food solutions – S. ROSENE; General Mills, Minneapolis, MN, U.S.A.

SYMPOSIUM: The Puzzles of Low Falling Number in Wheat and Its Impact on End-Use Quality: An In-Depth Look at Pre-Harvest Sprouting (PHS) and Late Maturity Alpha-Amylase (LMA) | AFQ

2:30 – 4:30 p.m. • Governor's Square 12

Organizers/Moderators: Amy Hui-Mei Lin, University of Idaho, Moscow, ID, U.S.A.; Jayne E. Bock, Wheat Marketing Center, Portland, OR, U.S.A.

Sponsoring Committee: Carbohydrate Division

Co-Sponsor: Protein Division

- How much is too much? Determining the effects of elevated alpha-amylase on end-product quality of wheat based foods – M. NEWBERRY; CSIRO Agriculture and Food, Canberra, AUSTRALIA
- Field experience with two new rapid falling number tests – M. L. BASON; Perten Instruments of Australia Pty. Ltd., Macquarie Park, AUSTRALIA
- Differentiation of PHS and LMA – A. P. DERKX; School of Agriculture, Food, and Wine, The University of Adelaide, Adelaide, AUSTRALIA
- Late maturity alpha-amylase, falling number, baking quality: What do we know? – J. P. F. RAL; CSIRO Agriculture and Food, Canberra, AUSTRALIA
- The change of starch and alpha-amylase in the wheat with low falling number – A. H. M. LIN; Bi-State School of Food Science, University of Idaho, Moscow, ID, U.S.A.
- Preharvest sprouting and baking quality – C. M. COURTIN; KU Leuven, Leuven, BELGIUM

DISCUSSION: Food Industry Trends and Their Future Impact | AFNPQ

4:45 – 5:45 p.m. • Plaza Ballroom – A/B/C

- Cereals and grains global and emerging trends – M. CWIKOWSKI; All Food Consulting, BELGIUM

SYMPOSIUM: Food Waste Along the Supply Chain: Problems and Solutions | FAQNP

4:45 – 5:45 p.m. • Governor's Square 15

Organizer: Sean M. Finnie, Bay State Milling, Quincy, MA, U.S.A.

Moderators: Sean M. Finnie, Bay State Milling, Quincy, MA, U.S.A.;

Joke Putseys, DSM Food Specialties, Delft, Netherlands

Sponsor: Bay State Milling

- Food waste: The consumer perspective – B. ROE; The Ohio State University, Columbus, OH, U.S.A.
- Have your beer (and eat it too): Opportunities to do well by doing good through edible upcycling – D. KURZROCK; Regrained, San Francisco, CA, U.S.A.
- Not wasted: An international perspective – C. BAKER; Campden BRI, Gloucester, UNITED KINGDOM

SYMPOSIUM: Hot Topics in Food Safety and Quality | AQP

4:45 – 5:45 p.m. • Governor's Square 14

Organizers/Moderators: Barbara B Heidolph, Wentzville, MO, U.S.A., Jennifer S. Robinson, Bay State Milling Company, Minneapolis, MN, U.S.A., Scott Jensen, REPSO, Salina, KS, U.S.A.

Sponsoring Committee: Food Safety and Quality Division

Co-Sponsor: Milling & Baking Division

- Best Practices in Sanitary Dry Bulk Transport – R. GALLE; ADM Milling Company, Overland Park, KS, U.S.A.

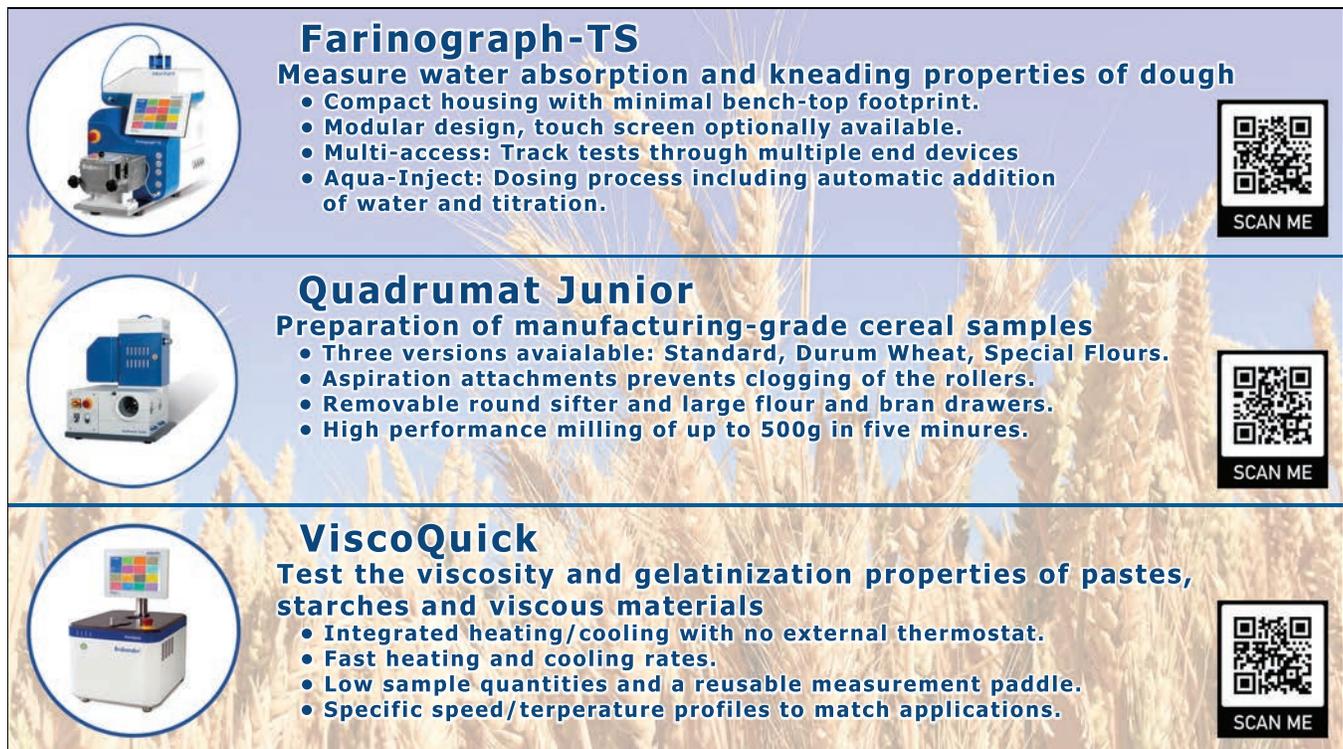
TECHNICAL SESSION: Best Student Research Paper Competition | AFNPQ

4:45 – 5:45 p.m. • Governor's Square 12

Moderators: John Mathew, Pepsico, Dallas, TX, U.S.A.; Gayathri Balakrishnan, Ocean Spray Cranberries, Inc., Lakeville, MA, U.S.A.

- Phytoglycogen (PG) to enhance the solubility and in-vitro efficiency of resveratrol – J. CHEN; Purdue University, West Lafayette, IN, U.S.A.
- Wheatscan: Unraveling the causes for wheat sensitivities – D. PRONIN; Leibniz Institute for Food Systems Biology at the Technical University of Munich, Freising, GERMANY
- A novel soluble crosslinked corn bran arabinoxylan matrix supports a shift to butyrogenic gut bacteria and forms a gel at low pH – X. ZHANG; Food Science Department, Purdue University, West Lafayette, IN, U.S.A.
- Mechanisms of 3-deoxyanthocyanin-polysaccharide interactions and effect on aqueous colloidal stability – J. F. BRANTSEN; Texas A&M University Soil and Crop Sciences, College Station, TX, U.S.A.

Engineering & Processing Division Stanley Watson Award Presentation. Advancing the Precision of Bulk Commodity Processing and Handling – C. R. HURBURGH; Iowa State University, Ames, IA, U.S.A.





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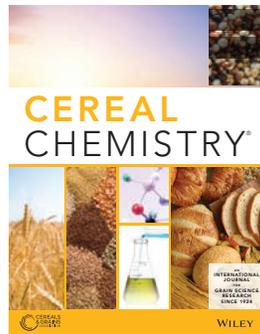
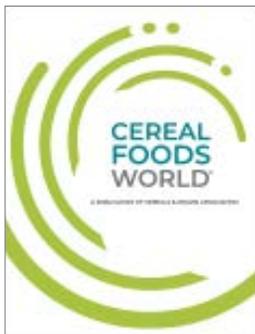
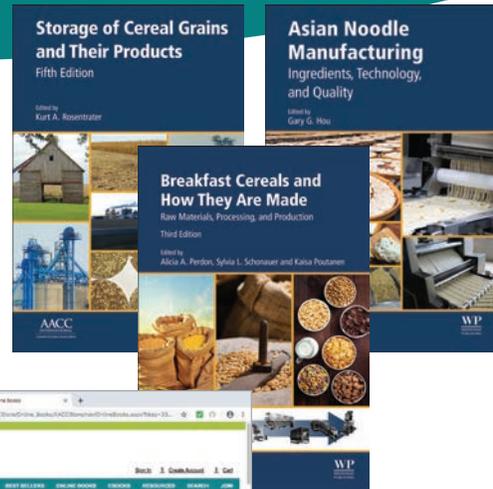
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Learn about the **Cereal Foods World** “super theme” for 2019 and 2020: Global Food Systems.

Meet with **Cereal Chemistry** Editor-in-Chief Les Copeland and Wiley representatives to find out about publishing in **Cereal Chemistry**—and how to get your first eight pages free!

The **AACC Approved Methods of Analysis, 11th Edition**, is an essential resource for grain scientists. Get a discount when your company subscribes to the methods in November!



Monday Schedule at a Glance – Innovation in the Value Chain

7:00 – 8:30 a.m.

Various
Governor's Square 16
Governor's Square 10
Plaza Court 7

- Technical Committee Meetings (*see mobile app or online program for more details*)
- NDSU Alumni Breakfast*
- KSU Alumni Breakfast*
- Protein Highway Board Meeting

8:30 – 9:45 a.m.

Plaza Ballroom – A/B/C

- **Keynote: Artificial Intelligence and the Future of Flavor and Food Innovation**



Hamed Faridi
McCormick & Company
Hunt Valley, MD, U.S.A.



Robin Lougee
IBM Research
Yorktown Heights, NY, U.S.A.

9:30 a.m. – 1:15 p.m.

Governor's Square 11

- Student Product Development Competition

10:00 a.m. – 12:00 p.m.

SCIENTIFIC SESSIONS

Governor's Square 14
Plaza Ballroom – A/B/C
Governor's Square 15
Governor's Square 12

- **SYMPOSIUM:** Is it CRISPR? Gene Edited Plants: Role and Impact on the Value Chain
- **SYMPOSIUM:** Modified Starch: Structure, Production, Utilization, and Sustainability
- **SYMPOSIUM:** Non-Traditional Functional Aggregation by Cereal Protein
- **TECHNICAL SESSION:** Germination/Sprouting and Asian Products

12:00 – 1:00 p.m.

Plaza Foyer
Plaza Ballroom – D/E/F
Plaza Court 7

- Lunch
- Dessert in the Exhibit Hall
- Nominations Committee Meeting—*by invitation*

1:00 – 3:00 p.m.

SCIENTIFIC SESSIONS

Governor's Square 14
Governor's Square 15
Plaza Ballroom – A/B/C

- **SYMPOSIUM:** Genomic Tools for End-Use Quality Traits in Cereals
- **SYMPOSIUM:** Interface Mechanisms in Baking: Leads for Innovation
- **SYMPOSIUM:** When Cereals and Grains Become “Meat”: The Transformation of Meat Alternatives
- **TECHNICAL SESSION:** Agronomics; Pasta; Processing

Governor's Square 12

3:00 – 3:30 p.m.

Booth 305/307

- Cake & Coffee Break in the Exhibit Hall—*sponsored by ICL Food Specialties*

3:30 – 5:30 p.m.

SCIENTIFIC SESSIONS

Governor's Square 14
Governor's Square 15
Plaza Ballroom – A/B/C
Governor's Square 12

- **SYMPOSIUM:** Untapped Potential: Expanding Cereal Protein Functionality
- **SYMPOSIUM:** Alternative Proteins for Nutritional and Functional Enhancement
- **SYMPOSIUM:** Cannabis, CBD in the Food Industry
- **SYMPOSIUM:** Rice Grain Quality: Breeding, Technologies, and Market Demands and Trends

5:30 – 7:00 p.m.

Plaza Ballroom – D/E/F
Governor's Square
& Plaza Foyers

- Happy Hour in the Exhibit Hall
- Poster Viewing Hours—*Innovation in the Value Chain*
Authors Present from 5:45 – 6:45 p.m.

6:00 – 9:00 p.m.

Earl's Kitchen & Bar (offsite)

- Carbohydrate Division Meeting with Reception & Dinner*

7:30 – 10:30 p.m.

Henry's Tavern (offsite)

- Student Association Meeting and Dinner

*Preregistration and ticket required to attend

MONDAY SCIENTIFIC SESSIONS

A – Applied Research | **F** – Fundamental-Basic Research | **N** – Nutrition | **P** – Processing | **Q** – QA-QC

SYMPOSIUM: Is it CRISPR? Gene Edited Plants: Role and Impact on the Value Chain | FNPQ

10:00 a.m. – 12:00 p.m. • Governor's Square 14

Organizer: Ray D. Shillito, BASF Corporation, Morrisville, NC, U.S.A.

Moderators: Ray D. Shillito, BASF Corporation, Morrisville, NC, U.S.A.; Craig F. Morris, PhD, USDA–Western Wheat Quality Lab, Pullman, WA, U.S.A.

Sponsoring Committee: Molecular Biomarkers for Grain Technical Committee

Thomas Burr Osborne Medal Award Presentation. Understanding the genetics of wheat quality – C. F. MORRIS; USDA–Western Wheat Quality Lab, Pullman, WA, U.S.A.

- Application of CRISPR gene editing in wheat – S. PEARCE; Colorado State University, Department of Soil and Crop Sciences, Fort Collins, CO, U.S.A.
- Global CRISPR/Gene editing and research tracker: Interactive database that maps regulations, new products, and NGO activities – J. ENTINE; Genetic Literacy Project, Cincinnati, OH, U.S.A.
- Can traditional or new methods differentiate gene edited grain in the supply chain? – R. D. SHILLITO; BASF Corporation, Morrisville, NC, U.S.A.

SYMPOSIUM: Modified Starch: Structure, Production, Utilization, and Sustainability | AFP

10:00 a.m. – 12:00 p.m. • Plaza Ballroom – A/B/C

Organizer: Senay Simsek, North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.

Moderators: Senay Simsek, North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.; Ali Ayoub, Archer Daniels Midland, Decatur, IL, U.S.A.

Sponsor: Archer Daniels Midland Company

Sponsoring Committee: Carbohydrate Division

- Preparation of porous starches by combining acid hydrolysis or surface gelatinization with alpha-amylase digestion – A. I. GONZALEZ; University of Arkansas, Fayetteville, AR, U.S.A.
- Introduction to modified starch: Examples, pros and cons – S. SIMSEK; North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.
- Modification patterns of substituted starches – Y. C. SHI; Kansas State University, Manhattan, KS, U.S.A.
- Modifying tuber and cereal waxy starches with radio frequency cold plasma – G. A. ANNOR; University of Minnesota, St. Paul, MN, U.S.A.
- Green technologies for starch modification – A. AYOUB; Archer Daniels Midland Co., Decatur, IL, U.S.A.
- Biodegradable starch biofilms with modified starch for utilization in biomedical industry – M. OVANDO-MARTINEZ; University of Sonora, Sonora, ND, MEXICO

SYMPOSIUM: Non-Traditional Functional Aggregation by Cereal Protein | AF

10:00 a.m. – 12:00 p.m. • Governor's Square 15

Organizers/Moderators: Lomme J. Deleu, Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM; Arno G. B. Wouters, KU Leuven, Heverlee, BELGIUM

Sponsoring Committee: Protein Division

Walter Bushuk Graduate Research Award Presentation.

S. GEISLITZ; Leibniz-Institute for Food Systems Biology at the TUM, Freising, GERMANY

- Understanding the behavior of wheat gliadin based nanoparticles upon adsorption at air-water interfaces – A. G. B. WOUTERS; KU Leuven, Heverlee, BELGIUM
- Gliadin nanoparticle formation through liquid antisolvent precipitation: A deeper look into its molecular mechanism – I. J. JOYE; University of Guelph, Guelph, ON, CANADA
- Physical properties of prolamin simple coacervates and applications in food technology – R. DE VRIES; Wageningen University & Research, Wageningen, NETHERLANDS
- Heat-induced fibrillation of wheat gluten proteins – M. MONGE MORERA; Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM

TECHNICAL SESSION: Germination/Sprouting and Asian Products | AFNPQ

10:00 a.m. – 12:00 p.m. • Governor's Square 12

Moderators: Meera Kweon, Pusan National University, Busan, SOUTH KOREA

10:00 a.m.

Controlled sprouting in wheat increases quality and consumer acceptability of whole wheat bread – M. J. GIROUX; Montana State University, Bozeman, MT, U.S.A.

10:15 a.m.

Nutritional benefits of germinated wheat – E. LEMMENS; KU Leuven, Leuven, BELGIUM

10:30 a.m.

Effects of drying temperature and relative humidity on the quality properties of Chinese dried Noodles – Y. ZHANG; Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Beijing, CHINA

10:45 a.m.

Sprouting as a bio-technological process to enhance the use of quinoa (*Chenopodium quinoa* Willd.) in cereal-based products – A. MARTI; Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY

11:00 a.m.

Antioxidant phytochemicals in peanuts and their sprouts – H. CORKE; Shanghai Jiao Tong University, Shanghai, CHINA

11:15 a.m.

Impacts of short-term germination on the chemical compositions, technological characteristics, and nutritional quality of yellow pea and faba bean flours – Y. AI; University of Saskatchewan, Saskatoon, SK, CANADA

SYMPOSIUM: Genomic Tools for End-Use Quality Traits in Cereals | AFN

1:00 – 3:00 p.m. • Governor's Square 14

Organizers: Sathya Kalambur, Frito-Lay Inc., Plano, TX, U.S.A.; Tigest Demeke, Canadian Grain Commission, Winnipeg, MB, CANADA

Moderators: Sathya Kalambur, Frito-Lay Inc., Plano, TX, U.S.A.; Sviatoslav Navrotskyi, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

Sponsor: PepsiCo

Sponsoring Committee: Molecular Biomarkers for Grain Technical Committee

- Improving wheat quality for processing and health in an international breeding program – C. GUZMAN; University of Cordoba, Cordoba, SPAIN
- Use of marker assisted selection for improvement of cereal crops – J. A. ANDERSON; University of Minnesota, St. Paul, MN, U.S.A.
- Creation and testing of wheat with improved product quality via mutagenesis – M. J. GIROUX; Montana State University, Bozeman, MT, U.S.A.
- Cells walls, their variability in grain, and their impact on grain quality, in relation with genetic and environmental aspects – L. SAULNIER; INRA, Nantes, FRANCE
- Genetic and genomic applications to improving food grade corn – C. HIRSCH; Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN, U.S.A.

SYMPOSIUM: Interface Mechanisms in Baking: Leads For Innovation | AFP

1:00 – 3:00 p.m. • Governor's Square 15

Organizers/Moderators: Lomme J. Deleu, Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM; Bram Pareyt, Puratos NV, Groot-Bijgaarden, BELGIUM

- Egg yolk lipoprotein functionality in pound cake making – L. J. DELEU; Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM
- Surface-active proteins and lipids in sponge cake batter foam – S. C. PYCARELLE; Laboratory of Food Chemistry and Biochemistry, KU Leuven, Heverlee, BELGIUM
- In-depth understanding of ingredient functionality in cake as a basis for clean label products: Bleached flour replacement in layer cake – B. PAREYT; Puratos NV, Groot-Bijgaarden, BELGIUM
- Artificial wheat dough: Opportunities for a better understanding of structure-function relationships of gluten and starch surface interactions – S. BRANDNER; Technical University of Munich, Freising, GERMANY
- The role of wheat, rye, and oat dough aqueous phase constituents in bread making – F. JANSSEN; KU Leuven, Heverlee, BELGIUM
- The role of starch during lamination, fermentation, and baking of multi-layered wheat flour pastry products – N. OOMS; KU Leuven, Leuven, BELGIUM

SYMPOSIUM: When Cereals and Grains Become "Meat": The Transformation of Meat Alternatives | ANP

1:00 – 3:00 p.m. • Plaza Ballroom – A/B/C

Moderators: Amy Alderton, Ingredion Incorporated, Englewood, CO, U.S.A.; Margarita Monge Morera, Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM

Sponsoring Committee: Protein Division

- Consumer sensory evaluation and texture profile analysis of vegetable hamburger patties with high moisture meat analogs: Peas, lentils, and faba beans – T. KIM; Department of Animal Science at Texas A&M University, College Station, TX, U.S.A.
- Market dynamics and consumer trends in meat alternatives – J. CLIFTON; Innova Market Insights, Boulder, CO, U.S.A.
- Extrusion solutions for meat alternatives – B. PLATTNER; Wenger Manufacturing Inc., Sabetha, KS
- The contribution of texturizing and protein ingredients in alternative meat products – Y. BIAN; Ingredion Inc., Englewood, CO, U.S.A.
- Product innovation in meat alternatives – A. ROSALES; Tyson Emerging Proteins, Chicago, IL, U.S.A.

TECHNICAL SESSION: Agronomics; Pasta; Processing | AFNPQ

1:00 – 3:00 p.m. • Governor's Square 12

Moderators: Jean-Philippe F. Ral, CSIRO Agriculture and Food, Canberra, AUSTRALIA; Pichmony Ek, Washington State University, Pullman, WA, U.S.A.

1:00 p.m.

Effect of drying conditions on pasting properties of rice – S. G. ACQUAAH; University of Arkansas, Fayetteville, AR, U.S.A.

1:15 p.m.

Development and evaluation of limited water soaking condition on the fortification of rice by parboiling – A. JANNASCH; University of Arkansas, Fayetteville, AR, U.S.A.

1:30 p.m.

In situ fortification of vitamin B12 in wheat bran by co-fermentation with *Propionibacterium freudenreichii* and *Lactobacillus brevis* – C. XIE; University of Helsinki, Helsinki, FINLAND

1:45 p.m.

Effect of nitrogen and sulfur fertilizations on phenolic antioxidants of hard red winter wheat varieties – W. TIAN; Kansas State University, Manhattan, KS, U.S.A.

2:00 p.m.

Optimization of de-hulling and milling of chickpeas using roller mills – R. MARTIN; Grain Science and Industry, Kansas State University, Manhattan, KS, U.S.A.

2:15 p.m.

The interrelationships of test weight, kernel size distribution, protein content, and yellow pigments and their effects on durum wheat quality – B. X. FU; Canadian Grain Commission, Winnipeg, MB, CANADA

2:30 p.m.

Agronomic and grain quality attributes of hard red winter wheat from a new, sustainable grain production platform – A. MENSE; Indigo Ag, Inc., Boston, MA, U.S.A.

2:45 p.m.

Effects of Glu-D1 and Gpc-1 on soft durum quality – A. M. KISZONAS; USDA-ARS WWQL, Pullman, WA, U.S.A.

SYMPOSIUM: Untapped Potential: Expanding Cereal Protein Functionality | AFN

3:30 – 5:30 p.m. • Governor's Square 14

Organizers: Audrey L. Girard, Texas A&M University, College Station, TX, U.S.A.; Maneka Malalgoda, University of Minnesota, St. Paul, MN, U.S.A.; Sabrina Geisslitz, Leibniz-Institute for Food Systems Biology at the TUM, Kranzberg, GERMANY

Moderators: Maneka Malalgoda, University of Minnesota, St. Paul, MN, U.S.A.; Sabrina Geisslitz, Leibniz-Institute for Food Systems Biology at the TUM, Kranzberg, GERMANY

Sponsoring Committee: Protein Division

- Waste bread recycling by utilizing tailored biotransformation – M. O. IMMONEN; University of Helsinki, Department of Food and Nutrition, Helsinki, FINLAND
- Use of a specific protease in baking and brewing – J. PUTSEYS; DSM, Delft, NETHERLANDS
- Unraveling prolamin-polyphenol interactions through fluorescence quenching experiments – I. J. JOYE; University of Guelph, Guelph, ON, CANADA
- Using polyphenol-protein complexes to alter rheology and end-use properties – A. GIRARD; Texas A&M University, College Station, TX, U.S.A.
- Effect of polyphenol-protein interactions on protein nutrition – TBA

SYMPOSIUM: Alternative Proteins for Nutritional and Functional Enhancement | AFN

3:30 – 5:30 p.m. • Governor's Square 15

Organizer: Baraem Ismail, University of Minnesota, St. Paul, MN, U.S.A.

Moderators: Baraem Ismail, University of Minnesota, St. Paul, MN, U.S.A.; Alecia M. Kiszonas, USDA-ARS WWQL, Pullman, WA, U.S.A.

Sponsoring Committee: Protein Division

- Commercialization of varietal specific plant-based protein supply chains – S. M. FINNIE; Bay State Milling, Quincy, MA, U.S.A.
- The challenges and benefits of dry yellow split pea flour inclusion – C. A. PRICE; Washington State University, Pullman, WA, U.S.A.
- Leveraging novel chickpea protein technology to drive market-based bakery and snacking product innovation – M. SPIMELLI; Nutriati, Richmond, VA, U.S.A.
- Camelina and pennycress as emerging oilseed proteins: Extraction, modification, and structural/functional characterization – B. ISMAIL; University of Minnesota, St. Paul, MN, U.S.A.
- Cricket flour, analytical tools and bread making – A. DUBAT; CHOPIN Technologies, Villeneuve la Garenne, FRANCE
- Nutritional and functional properties of wheat bran protein concentrate and its application in pasta products – N. T. TISKAM ALZUWAID; The University of New England, Armidale, AUSTRALIA

SYMPOSIUM: Cannabis, CBD in the Food Industry | APQ

3:30 – 5:30 p.m. • Plaza Ballroom – A/B/C

Organizer: Barbara B. Heidolph, Wentzville, MO, U.S.A.

Moderators: Barbara B. Heidolph, Wentzville, MO, U.S.A.; Lindsey Paige Thies, Bimbo Bakeries USA, Greenwich, CT, U.S.A.

- Benefits of Cannabis: A medical perspective – C. GERMANO; Verdant Oasis, Roslyn Heights, NY, U.S.A.
- Regulation and legislation related to cannabis, CBD, and hemp – J. J. PROCHNOW; Greenberg Traurig LLP, Denver, CO, U.S.A.
- Adventures in cannabis breeding: aiming modern science at an ancient crop – R. SHULTZ; Arcadia Biosciences Inc., Davis, CA, U.S.A.
- Solving CBD formulation and taste challenges – C. CASTLEJOHN; FONA International, Geneva, IL, U.S.A.

SYMPOSIUM: Rice Grain Quality: Breeding, Technologies, and Market Demands and Trends | AFN

3:30 – 5:30 p.m. • Governor's Square 12

Organizer: Rustico C. Bautista, Rice Tec Inc., Alvin, TX, U.S.A.

Moderators: Rustico C. Bautista, Rice Tec Inc., Alvin, TX, U.S.A.; Kathryn N. Haydon, University of Arkansas, Fayetteville, AR, U.S.A.

Sponsoring Committee: Rice Division

- Variation in physicochemical properties and nutritional quality in chalky mutants derived from indica rice 93-11 – J. BAAO; Zhejiang University, Hangzhou, CHINA.
- Variation in appearance and properties of milled rices from different regions – Y. J. WANG; Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.
- How rice varieties have evolved since the 30s in the southern U.S. – K. A. K. MOLDENHAUER; University of Arkansas, Rice Research & Extension Center, Stuttgart, AR, U.S.A.
- Gene editing of rice grain quality traits: Prospects for application and acceptance – K. L. KORTH; University of Arkansas, Fayetteville, AR, U.S.A.
- Rice global market trends and demands for grain quality – T. HARRIS; Riceland Foods, Stuttgart, AR, U.S.A.
- Research technology applications in hybrid rice breeding for grain quality – R. C. BAUTISTA; RiceTec, Inc., Alvin, TX, U.S.A.

NOTES

Tuesday Schedule at a Glance – Health and Wellness

7:00 – 8:30 a.m.

Various

● Technical Committee Meetings (see mobile app or online program for more details)

7:30 – 8:30 a.m.

Plaza Court 7

Governor's Square 16

● Professional Development Panel Meeting

● Cereal Chemistry Editorial Board Breakfast—by invitation

8:30 – 10:30 a.m.

SCIENTIFIC SESSIONS

Governor's Square 12

● **SYMPOSIUM:** A Comparative View on the Nutritional Impact of Cereal and Grains on Animal Health and Performance

Governor's Square 15

● **SYMPOSIUM:** A 360-Degree Approach: Arabinoxylans from Genes to Gut

Plaza Ballroom – A/B/C

● **SYMPOSIUM:** Have Refined, Enriched Grain Staples Been Unfairly Demonized?

Governor's Square 14

● **SYMPOSIUM:** The Impact of Food Matrix and Processing on Nutrient Bioavailability and Functionality of Food Ingredients

Governor's Square 11

● **TECHNICAL SESSION:** Health/Nutrition; Fiber; Analytical

10:00 – 11:00 a.m.

Governor's Square 16

● CFW Editorial Board Committee Meeting—by invitation

11:00 a.m. – 1:00 p.m.

SCIENTIFIC SESSIONS

Governor's Square 15

● **SYMPOSIUM:** Co-Creating a More Nutritious Food System with Biofortification

Plaza Ballroom – A/B/C

● **SYMPOSIUM:** Creating Global Consensus with the Whole Grain Initiative

Governor's Square 14

● **SYMPOSIUM:** Recent Progress in Dietary Fibers and Colonic Microbiome

Governor's Square 12

● **TECHNICAL SESSION:** Late-Breaking Science

1:00 – 2:00 p.m.

Governor's Square 16

● Approved Methods Technical Committee

1:00 – 2:15 p.m.

Plaza Foyer

● Lunch

Plaza Ballroom – D/E/F

● Dessert in Exhibit Hall

Governor's Square Foyer

● Poster Viewing Hours—Health and Wellness

Authors Present from 1:15 – 2:15 p.m.

1:15 – 2:15 p.m.

Governor's Square 11

● Division Leadership Council Meeting—by invitation

2:15 – 4:15 p.m.

SCIENTIFIC SESSIONS

Plaza Ballroom – A/B/C

● **SYMPOSIUM:** Challenges and Solutions for Making Protein Claims

Governor's Square 14

● **SYMPOSIUM:** Functionalizing Carbohydrates for Better Health: Cereals and Beyond

Governor's Square 15

● **SYMPOSIUM:** Nutrition Along the Value Chain: More Than Just a Financial Consideration

Governor's Square 12

● **TECHNICAL SESSION:** Quality

3:30 – 5:00 p.m.

Plaza Court 7

● Book Acquisitions Committee Meeting

4:30 – 5:30 p.m.

Plaza Ballroom – A/B/C

● **Closing Keynote: *The Future of Food: The Need to Adapt and Innovate***



Marc Cwikowski

Founder & Managing Director

All Food Consulting SPRL

Brussels, Belgium

5:45 – 6:45 p.m.

Plaza Court

● Program Team Meeting—by invitation

TUESDAY SCIENTIFIC SESSIONS

A – Applied Research | **F** – Fundamental-Basic Research | **N** – Nutrition | **P** – Processing | **Q** – QA-QC

SYMPOSIUM: A Comparative View on the Nutritional Impact of Cereal and Grains on Animal Health and Performance | **AFNPQ**

8:30 – 10:30 a.m. • Governor's Square 12

Organizers: Chad Paulk, Kansas State University, Manhattan, KS, U.S.A.; Kim B. Koch, Feed Center Manager, Northern Crops Institute, Fargo, ND, U.S.A.; Charles Gregory Aldrich, Kansas State University, Manhattan, KS, U.S.A.

Moderators: Chad Paulk, Kansas State University, Manhattan, KS, U.S.A.; Charles Gregory Aldrich, Kansas State University, Manhattan, KS, U.S.A.

Sponsoring Committee: Pet and Animal Food Division

Edith Christensen Award Presentation. Analytical Support of a Pet Food Business – K. S. PHILLIPS; Retired—NP Analytical Laboratories, St. Louis, MO, U.S.A.

- Practical application of cereal and grains and co-product streams across species – J. SEWELL; Land O'Lakes, Inc., Purina Animal Nutrition, Arden Hills, MN, U.S.A.
- Roll of ancient grains – What's old is new again: With emphasis on companion animal nutrition – G. DAVENPORT; ADM Animal Nutrition, Dayton, OH, U.S.A.
- Digestibility and utilization of cereal and grain proteins by animals – H. STEIN; University of Illinois, Animal Science and Industry, Urbana, IL, U.S.A.
- Processing cereals and grains to enhance starch and energy utilization – C. PAULK; Kansas State University, Manhattan, KS, U.S.A.
- Impact of protein/starch ratio on cat food palatability – P. GOZE; Diana Petfood, Elven, FRANCE
- Disentangling starch digestibility, passage rate, and fermentation effects of grain-based diets on feed intake and weight gain in pigs – M. GIDLEY; University of Queensland, St. Lucia, AUSTRALIA

SYMPOSIUM: A 360-Degree Approach: Arabinoxylans from Genes to Gut | **AFN**

8:30 – 10:30 a.m. • Governor's Square 15

Organizer: Senay Simsek, North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.

Moderators: Senay Simsek, North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.; Ana M. Magallanes Lopez, North Dakota State University, Fargo, ND, U.S.A.

Sponsoring Committee: Carbohydrate Division

- Modification of wheat bran properties through thermomechanical and acid treatment – C. ROYE; KU Leuven, Laboratory of Food Chemistry and Biochemistry, Leuven, BELGIUM
- Arabinoxylan: A versatile cereal polysaccharide – S. SIMSEK; North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.
- Degradation of arabinoxylans during mixing, fermentation, and baking – Y. NISHITSUJI; Nisshin Flour Milling, Inc., Tsukuba-City, Ibaraki, JAPAN
- Arabinoxylan and endoxylanases in the animal gastrointestinal tract – C. M. COURTIN; KU Leuven, Leuven, BELGIUM

- Structural aspects of corn arabinoxylans related to functionality – B. R. HAMAKER; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.
- Arabinoxylan actions in (models for) the digestive tract – M. GIDLEY; University of Queensland, St. Lucia, AUSTRALIA

SYMPOSIUM: Have Refined, Enriched Grain Staples Been Unfairly Demonized? | **AFNPQ**

8:30 – 10:30 a.m. • Plaza Ballroom – A/B/C

Organizer: Julie M. Jones, St. Catherine University, Minneapolis, MN, U.S.A.

Moderators: Julie M. Jones, St. Catherine University, Minneapolis, MN, U.S.A.; Elien Lemmens, KU Leuven, Leuven, BELGIUM

Sponsor: *Cereal Foods World*

- Have refined, enriched grain staples have been unfairly demonized? – J. M. JONES; St. Catherine University, Minneapolis, MN, U.S.A.
- A world without grains: Why research says no – Y. PAPANIKOLAOU; Nutritional Strategies, Paris, ON, CANADA
- How much is enough? Getting the whole grain balance right – C. J. SEAL; Newcastle University, Newcastle Upon Tyne, UNITED KINGDOM
- A breadbasket checkoff: An overview – C. COCHRAN; Grain Foods Foundation, Washington, DC, U.S.A.

SYMPOSIUM: The Impact of Food Matrix and Processing on Nutrient Bioavailability and Functionality of Food Ingredients | **AFNP**

8:30 – 10:30 a.m. • Governor's Square 14

Organizer: Jing Zhou, Ingredient Incorporated, Bridgewater, NJ, U.S.A.

Moderators: Maria Stewart, Ingredient Incorporated, Bridgewater, NJ, U.S.A.; Nand Ooms, KU Leuven, Leuven, BELGIUM

Sponsor: Ingredient Incorporated

2019 Alsberg-French Schoch Memorial Award Presentation.

A 39-year retrospective on Slade/Levine's "food polymer science" approach to the practice of industrial R&D, leading to U.S. patent estates based on fundamental starch science and technology – L. SLADE and H. LEVINE; Food Polymer Science Consultancy, Morris Plains, NJ, U.S.A.

- Another break in the wall: Plant structural integrity and nutrients digestibility – E. CAPUANO; Università di Napoli Federico II, Portici, ITALY
- Impact of processing on anti-nutritional factors in pulses – C. CHIREMBA, Saskatchewan Pulse Growers, Saskatoon, SK, CANADA
- Effects of different physical blowing agents on physical and techno-functional properties of pulse-based expanded foods and food ingredients – F. KOKSEL; Food and Human Nutrition, Winnipeg, MB, CANADA
- Use of pre-germination combined with infrared heating to improve the functional characteristics and nutritional value of lentil flours – S. LIU; University of Saskatchewan, Saskatoon, SK, CANADA

TECHNICAL SESSION: Health/Nutrition; Fiber; Analytical | ANPQ

8:30 – 10:30 a.m. • Governor's Square 11

Moderators: Anne M. Birkett, Kellogg Co., Battle Creek, MI, U.S.A.; Leigh C. R. Schmidt, Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.

8:30 a.m.

High-amylose wheat: Starch structure and in vitro digestion and fermentation. – H. LI; University of Queensland, Brisbane, AUSTRALIA

8:45 a.m.

Rapid tests to evaluate the baking potential of 25 edible dry bean powders – C. CAPPÀ; Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY

9:00 a.m.

Impact of amylose variation in Svevo durum wheat on technological properties and starch digestion and glycemic index – M. J. SISSONS; NSW Department of Primary Industries, Tamworth, AUSTRALIA

9:15 a.m.

Effects of isomaltodextrin on rheological properties of model starch gels and its application in baked products as a promising source of fiber – F. FANG; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

9:30 a.m.

Amylose and amylopectin roles in the structurally-driven formation of slowly digestible starch from fully gelatinized starch – L. ROMAN; University of Guelph, Guelph, ON, CANADA

9:45 a.m.

Effect of soluble dietary fiber extracted from barley on mixing properties, dough rheology, and water mobility – N. V. PATHIRANNEHELAGE; University of Guelph, Guelph, ON, CANADA

10:00 a.m.

Interest of choline chloride for salt reduction in bread: Structure-properties relations and societal acceptability – P. LE-BAILL; SFR-IBSM 4202, Nantes, FRANCE

10:15 a.m.

Added fiber and dietary fiber; the FDA rulings – D. T. GORDON; PIC&PC, Cathlamet, WA, U.S.A.

SYMPOSIUM: Co-Creating a More Nutritious Food System with Biofortification | FNQ

11:00 a.m. – 1:00 p.m. • Governor's Square 15

Organizer: Jenny Walton, HarvestPlus, Washington, DC, U.S.A.

Moderators: Nabeeha Kazi, Humanitas Global, Washington, DC, U.S.A.; Jenny Walton, HarvestPlus, Washington, DC, U.S.A.

- Opening remarks – N. KAZI; Humanitas Global, Washington, DC, U.S.A.
- Improving nutrition through biofortification: From crop breeding to implementation – W. PFEIFFER; HarvestPlus, Washington, DC, U.S.A.
- Nutrition evidence – V. TALEON; International Food Policy Research Institute, Washington, DC, U.S.A.
- The Professor Torbert's story: A case study from the U.S.A. – E. ROCHEFORD; NutraMaize, Lafayette, IN, U.S.A.
- Zinc retention in biofortified rice after parboiling and milling – V. TALEON; International Food Policy Research Institute, Washington, DC, U.S.A.
- Using biofortified ingredients in processed foods: The commercial opportunity – J. WALTON; HarvestPlus, Washington, DC, U.S.A.



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SYMPOSIUM: Creating Global Consensus with the Whole Grain Initiative | AFNQ

11:00 a.m. – 1:00 p.m. • Plaza Ballroom – A/B/C

Organizer: Laura M. Hansen, General Mills, Minneapolis, MN, U.S.A.

Moderators: Laura M. Hansen, General Mills, Minneapolis, MN, U.S.A.;
Michaela Pichler, ICC, Vienna, AUSTRIA

- Overview of Whole Grain Initiative – M. PICHLER; ICC, Vienna, AUSTRIA
- Global harmonization of definitions for whole grain ingredients and food products – B. TAN; Academy of State Administration of Grain, P.R. China, Beijing, CHINA
- Promoting whole grain intake through health and economics – K. MILLER; General Mills–Global Scientific and Regulatory Affairs, Minneapolis, MN, U.S.A.
- Global whole grain intake recommendations – N. M. MCKEOWN; Jean Mayer USDA HNRCA at Tufts University, Boston, MA, U.S.A.
- Seeds for sustainable health – K. RINGLING, Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN, U.S.A.
- Leveraging partnerships to amplify whole grain messaging – C. G. SLUYTER; Oldways Whole Grains Council, Boston, MA, U.S.A.

SYMPOSIUM: Recent Progress in Dietary Fibers and Colonic Microbiome | AFN

11:00 a.m. – 1:00 p.m. • Governor's Square 14

Organizers/Moderators: Yunus E. Tuncil, Ordu University, Food Engineering Department, Ordu, TURKEY; Bruce R. Hamaker, Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

Sponsoring Committee: Carbohydrate Division

- How do gut microbiota ferment starch and arabinoxylan? – M. GIDLEY; University of Queensland, St. Lucia, AUSTRALIA
- Grains as a source of microbiota accessible carbohydrates – D. ROSE; University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- Matrix cereal based dietary fibers support distinct gut bacteria, compared to soluble fibers – B. R. HAMAKER; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

TECHNICAL SESSION: Late-Breaking Science | AFNPQ

11:00 a.m. – 1:00 p.m. • Governor's Square 12

Moderators: Shintaro Pang, General Mills, Minneapolis, MN, U.S.A.;
Aiswariya Deliephan, Kansas State University, Manhattan, KS, U.S.A.

11:00 a.m.

A comparison between grain and flour characteristics of timely sown and late sown Indian bread wheat varieties – N. SINGH; GNDU Amritsar, Amritsar, INDIA

11:15 a.m.

An advanced kilning system for the processing of oat flakes – C. SCHLOSSER; Revtech Process Systems, Chicago, IL, U.S.A.

11:30 a.m.

Bioactive components and antioxidant capacities of Tibetan hullless barley cultivars – S. WANG; IFST, Chinese Academy of Agricultural Sciences, Beijing, CHINA

11:45 a.m.

Resistant starch type 2 from high amylose cereal grains and its effect on glucose and insulin homeostasis – K. HARRIS; Bay State Milling, Quincy, MA, U.S.A.

12:00 p.m.

Genome-wide association of lipase activity in wheat for quality improvement of wholegrain products – C. WEI; Laboratory of Food Biochemistry, ETH Zurich, Zurich, SWITZERLAND

12:15 p.m.

Structural characterization of starch isolates from the electrolysis treatment of barley flour – I. EKAETTE; Department of Agricultural, Food, and Nutritional Sciences, University of Alberta, Edmonton, AB, CANADA

12:30 p.m.

Asparagine content of breadmaking wheat: A potential issue for market access – M. G. SCANLON; University of Manitoba, Winnipeg, MB, CANADA

12:45 p.m.

Characterisation and stability of short chain fatty acids modified starch pickering emulsions – N. B. ABDUL HADI; Department of Food Technology, Engineering, and Nutrition, Lund University, Lund, SWEDEN

SYMPOSIUM: Challenges and Solutions for Making Protein Claims | ANQ

2:15 – 4:15 p.m. • Plaza Ballroom – A/B/C

Organizer: Paul Wehling, Medallion Labs, Minneapolis, MN, U.S.A.

Moderators: Paul Wehling, Medallion Labs, Minneapolis, MN, U.S.A.;
Serap Vatanserver, North Dakota State University, Fargo, ND, U.S.A.

Sponsoring Committee: Protein and Enzymes Methods Committee

Co-Sponsor: Protein Division

- Regulatory aspects of protein claims – R. L. VAN LAACK; Hyman, Phelps, & McNamara, P.C., Washington, DC, U.S.A.
- Claims that can be made for protein: An overview in key markets globally – K. MUSA-VELOSO; Intertek Scientific & Regulatory Consultancy, Mississauga, ON, CANADA
- Challenges and solutions for making protein claims – M. STEWART; Ingredient Incorporated, Bridgewater, NJ, U.S.A.
- Formulating with whole food sources of plant based proteins – K. HARRIS; Bay State Milling, Quincy, MA, U.S.A.
- Measuring the protein quality of ingredients and foods with a new and more ethical method of analysis – D. W. PLANK; WRSS Food & Nutrition Insights, Taylors Falls, MN, U.S.A.

SYMPOSIUM: Functionalizing Carbohydrates for Better Health: Cereals and Beyond | AFNP

2:15 – 4:15 p.m. • Governor's Square 14

Organizers: Osvaldo H. Campanella, The Ohio State University, Columbus, OH, U.S.A.; Yael Vodovotz, The Ohio State University, Columbus, OH, U.S.A.; Mario M. Martinez, University of Guelph, Guelph, ON, CANADA

Moderators: Osvaldo H. Campanella, The Ohio State University, Columbus, OH, U.S.A.; Mario M. Martinez, University of Guelph, Guelph, ON, CANADA

Sponsor: Pepsico

Sponsoring Committee: Carbohydrate Division and Nutrition Division

- When more becomes less: A tale of soluble dietary fibers and phenolics interactions – N. BORDENAVE; University of Ottawa, Ottawa, ON, CANADA
- The unexpected nutritional benefits of high shear extruded ingredients in the baking industry – M. M. MARTINEZ; University of Guelph, Guelph, ON, CANADA
- Cereal bioactives: Can they contribute to health function beyond fiber? – M. FERRUZZI; Plants for Human Health Institute, North Carolina State University, Kannapolis, NC, U.S.A.

- Optimizing the functionality of carbohydrates for health enhancement through processing – Y. VODOVOTZ; The Ohio State University, Columbus, OH, U.S.A.
- Cereal starch structures that appear to be slowly digestible – B. R. HAMAKER; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

SYMPOSIUM: Nutrition Along the Value Chain – More Than Just a Financial Consideration | AFNQ

2:15 – 4:15 p.m. • Governor’s Square 15

Organizer: Nickolas Anderson, Pepsico, St. Paul, MN, U.S.A.
Moderators: Nickolas Anderson, Pepsico, St. Paul, MN, U.S.A.; Anna M. R. Hayes, Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.
Sponsoring Committee: Nutrition Division

Young Scientist Award Presentation. Bubbles in foods and how they affect food quality – F. KOKSEL; Food and Human Nutrition, Winnipeg, MB, CANADA

- Selection in crop breeding for quality and function – L. KILGORE-NORQUEST; Nu Life Market LLC, Scott City, KS, U.S.A.
- Novel grain quality attributes, processing approaches, and functional properties – J. M. AWIKA; Texas A&M University, College Station, TX, U.S.A.
- Marketing opportunities (sustainability, whole grain, ancient grain, etc.) – S. SEXTON-BOWSER; Center for Sorghum Improvement, Kansas State University, Manhattan, KS, U.S.A.

TECHNICAL SESSION: Quality | AFNPQ

2:15 – 4:15 p.m. • Governor’s Square 12

Moderators: E.B. (Elizabeth) Russell, DuPont, Fenton, MO, U.S.A.; Brasathe Jeganathan, University of Alberta, Edmonton, AB, CANADA

- 2:15 p.m.**
Selecting a standard reference material for falling number – S. R. DELWICHE; USDA–ARS Food Quality Laboratory, Beltsville, MD, U.S.A.
- 2:30 p.m.**
The effects of radio-frequency cold plasma on dough functional properties of hard red wheat, soft wheat, and intermediate wheat grass flours – S. HELD; University of Minnesota, St. Paul, MN, U.S.A.
- 2:45 p.m.**
Nitrogen and sulfur effects on winter wheat quality – T. L. WILSON; Kansas State University, Manhattan, KS, U.S.A.
- 3:00 p.m.**
Impact of alternative irrigation practices on rice quality – S. G. ACQUAAH; University of Arkansas, Fayetteville, AR, U.S.A.
- 3:15 p.m.**
Impact of mixer geometry on gluten network structure and dough aeration – A. M. LE BAIL; GEPEA-UMR CNRS 6144, Nantes, FRANCE
- 3:30 p.m.**
Farinograph application in whole-wheat flour: Explore the influence of circulating water temperature and mixing speed on dough mixing properties in Farinograph – L. DENG; Wheat Marketing Center, Portland, OR, U.S.A.
- 3:45 p.m.**
The role of amylose and amylopectin during baking and cooling of bread containing unusual starch: A temperature-controlled 1H NMR study – M. A. NIVELLE; Laboratory of Food Chemistry and Biochemistry, KU Leuven, Leuven, BELGIUM
- 4:00 p.m.**
“Super soft” wheat kernel texture – C. F. MORRIS; USDA–Western Wheat Quality Lab, Pullman, WA, U.S.A.

CHALLENGES

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SCIENTIFIC POSTERS

Governor's Square Foyer

Poster numbers are grouped by category sections with "P" prefixes. The number refers to the abstract number in the Cereals & Grains 19 mobile app and online. Poster titles and presenting authors are listed by day and theme on the following pages. The first number of the poster corresponds with the day of the meeting it will be presented (e.g., P-1XX is Sunday, P-2XX is Monday, P-3XX is Tuesday).

Poster abstracts and full lists of authors are available online at aacnet.org/CG2019 and through the mobile app.

Taking photographs of displayed materials is strictly prohibited without permission from the author(s).

ePosters

Each poster presenter was given the option of creating an interactive poster. Full access to ePosters will be available on the app and at the ePoster kiosk for the duration of the meeting. Brief audio or video files were also submitted for some ePosters.

Poster Hours

Sunday, November 3

9:00 a.m. – 12:00 p.m.

2:15 – 2:30 p.m.

4:30 – 4:45 p.m.

5:45 – 7:15 p.m.

6:15 – 7:15 p.m.

7:15 – 7:45 p.m.

Day 1: Food Security

Poster Set-Up

Break with Posters

Break with Posters

Poster Viewing Hours

Poster Viewing with Authors Present

Poster Take-Down

Monday, November 4

8:00 a.m. – 12:00 p.m.

3:00 – 3:30 p.m.

5:30 – 7:00 p.m.

5:45 – 6:45 p.m.

7:00 – 7:30 p.m.

Day 2: Innovation in the Value Chain

Poster Set-Up

Break with Posters

Poster Viewing Hours

Poster Viewing with Authors Present

Poster Take-Down

Tuesday, November 5

8:00 – 10:00 a.m.

10:30 – 11:00 a.m.

1:00 – 2:15 p.m.

1:15 – 2:15 p.m.

2:15 – 2:45 p.m.

Day 3: Health and Wellness

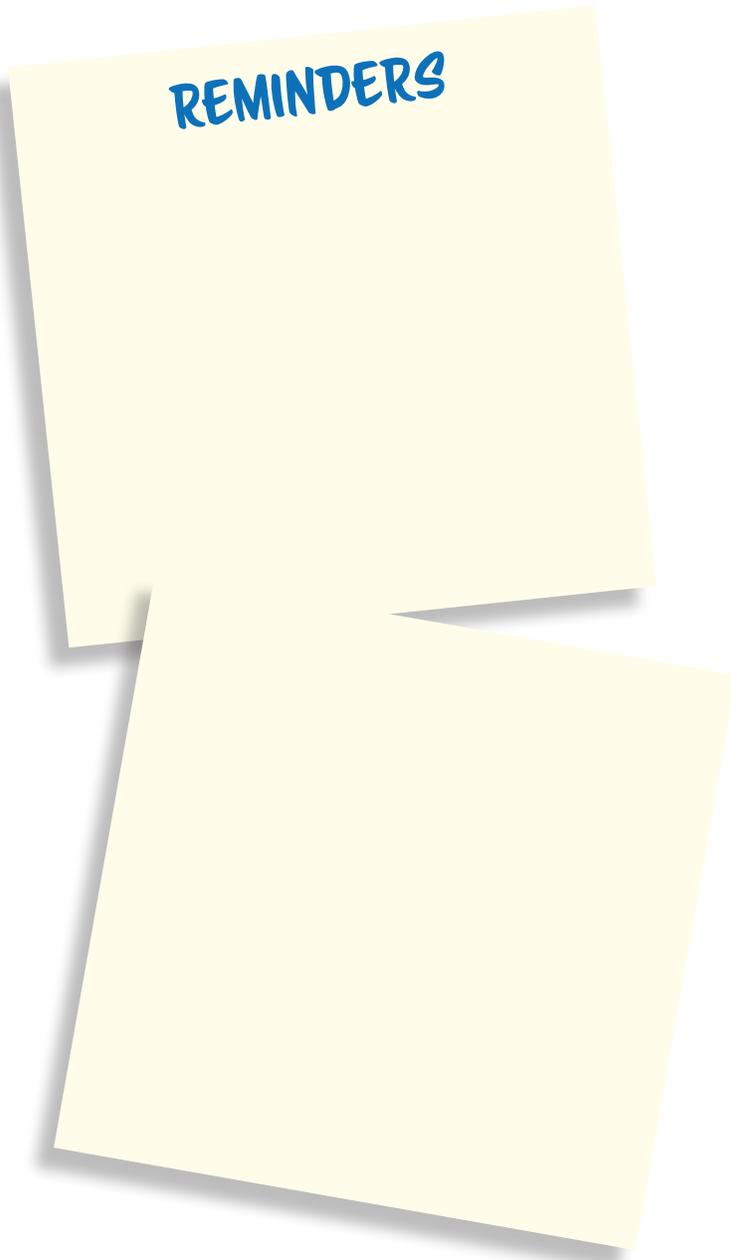
Poster Set-Up

Break with Posters

Poster Viewing Hours

Poster Viewing with Authors Present

Poster Take-Down



REMINDERS

POSTER TITLES AND AUTHORS

Food Security • Sunday, November 3

- P-101 **Assessment of genetically engineered traits in heat-treated samples using digital PCR**, T. DEMEKE; Canadian Grain Commission, Winnipeg, MB, CANADA
- P-102 **Investigation and application of surface-enhanced Raman spectroscopy (SERS) for high-throughput analysis of pesticide residues in animal and human foods**, K. LEE; Texas A&M AgriLife Research, College Station, TX, U.S.A.
- P-103 **Sensitive and specific detection of buckwheat allergenic protein Fag e 2 in heat-processed food**, Y. HARADA; Nippon Flour Mills Co., Ltd., Kanagawa, JAPAN
- P-104 **Analysis of amaranth leaves and seeds grown in Puerto Rico**, E. VIDAL TORRES; University of Puerto Rico–Mayaguez Campus Agroenvironmental Sciences, Mayaguez, PR, U.S.A.
- P-105 **Micro and macromolecule composition of quinoa leaf and grain of three genotypes grown in Puerto Rico**, E. VIDAL TORRES; University of Puerto Rico–Mayaguez Campus Agroenvironmental Sciences, Mayaguez, PR, U.S.A.
- P-106 **Simple and fast methods for the assessment of wheat grain pre-harvest sprouting**, B. BAIK; USDA–ARS CSWQRU Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.
- P-107 **Pre-harvest desiccant timing and effects on the fine chemistry of wheat starch**, M. MALALGODA; University of Minnesota, St. Paul, MN, U.S.A.
- P-108 **Effects of environmental temperature during maturation on spring wheat starch characteristics**, S. AONO; Nisshin Flour Milling Inc., Tsukuba-City, Ibaraki, JAPAN
- P-109 **Sensorial attributes and preference of extruded pearl millet (*Pennisetum glaucum*) flours**, P. TORRES AGUILAR; Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.
- P-110 **Bioprocessing of whole grain sorghum for improved sensory perception of bread**, Y. WANG; Department of Food and Nutrition Sciences, University of Helsinki, Helsinki, FINLAND
- P-111 **Effect of bioprocessing on the surface properties wheat bran and its ability to bind aflatoxin**, N. MAINA; University of Helsinki, Department of Food and Nutrition, Helsinki, FINLAND
- P-112 **Vulnerability analysis using evidence-based traceability in the grain supply chain**, R. SHARMA; Iowa State University, Ames, IA, U.S.A.
- P-113 **Effects of sodium bisulfate (SBS) and pH on survival of Shiga-toxicogenic *Escherichia coli* (STEC) during tempering of wheat**, A. DELIEPHAN; Kansas State University, Manhattan, KS, U.S.A.
- P-114 **Genetic variation affecting falling number and pre-harvest sprout in winter wheats**, M. GIROUX; Montana State University, Bozeman, MT, U.S.A.
- P-115 **Quantitative assessment of the effectiveness of intervention strategies to reduce the risk of *E. coli* O157:H7 infection due to consumption of uncooked ready-to-bake cookie dough**, A. BIANCHINI; University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- P-116 **Commercial DON test kits show cross reactivity towards other DON-like compounds**, S. TITTEMIER; Grain Research Laboratory, Canadian Grain Commission, Winnipeg, MB, CANADA
- P-117 **Financial feasibility of safer maize storage technologies for smallholder farmers in developing nations: A case study in Guatemala**, J. MENDOZA JIMENEZ; University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- P-118 **Effect of peeling on milling of hull-less barley and the nutritional quality of barley flour**, B. ZHAO; IFST, Chinese Academy of Agricultural Sciences, Beijing, CHINA

- P-120 **Modeling the environmental sustainability of naked vs. hulled oats**, V. BROVELLI; Bay State Milling, Quincy, MA, U.S.A.
- P-121 **Validation of the Reveal® Q+ for DON method for quantitative determination of deoxynivalenol in grains and grain products**, C. KRONEMEYER; Neogen Corporation, Lansing, MI, U.S.A.

Innovation in the Value Chain • Monday, November 4

- P-201 **Impact of the wheat tempering procedure (moisture content and tempering time) on the grain behavior during milling and on the flour quality: Effect of tempering time**, A. DUBAT; CHOPIN Technologies, Villeneuve la Garenne, FRANCE
- P-202 **Wheat flour solvent retention capacity: Repeatability and reproducibility performances of a new AACC standard method measurement method (56-15.01)**, A. DUBAT; CHOPIN Technologies, Villeneuve la Garenne, FRANCE
- P-203 **Rheological characterization of nixtamalized corn dough**, S. BRYAN; Unity Scientific, Lenexa, KS, U.S.A.
- P-204 **Determination of protein content in soybean meal using hyperspectral imaging**, P. DANTES; Iowa State University, Ames, IA, U.S.A.
- P-205 **Effect of different degree of rice milling on the characteristics of Chinese rice wine**, S. CAI; Hubei Academy of Agricultural Sciences, Wuhan, CHINA
- P-206 **Milling process and cultivars impact pea flour functionality and flavor profile**, H. JIANG; North Dakota State University, Fargo, ND, U.S.A.
- P-207 **Influence of carbon dioxide-argon radio frequency plasma on structural and functional properties of cereal and tuber waxy starches**, A. OKYERE; University of Minnesota, St. Paul, MN, U.S.A.
- P-208 **Effect of chemical components on porosity and mechanical properties of rice kernels**, M. OPPONG SIAW; University of Arkansas, Fayetteville, AR, U.S.A.
- P-209 **Associations of HMW-GS composition and rye translocations with dough mixing properties and sugar-snap cookie baking quality of soft winter wheat**, F. MA; USDA–ARS Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.
- P-210 **Molecular structures, amylopectin chain profile and physicochemical properties of pea starches**, Y. ZHOU; University of Minnesota, St. Paul, MN, U.S.A.
- P-211 **A dynamic module to optimize bread quality of einkorn and emmer hulled wheats**, A. JARADAT; USDA–ARS and University of Minnesota, Morris, MN, U.S.A.
- P-212 **Stable isotopes: An effective tool for wheat kernel and its products geographical origin traceability**, B. GUO; Institute of Food Science and Technology, Chinese Academy of Agri Sciences, Beijing, CHINA
- P-213 **New model to predict baking volume**, J. SCHUCKEL; GlycoSpot, Søborg-Copenhagen, DENMARK
- P-214 **A novel starch crop contains more resistant starch after cooking**, X. ZHAO; Swedish University of Agricultural Sciences (SLU), Uppsala, Uppsala, SWEDEN
- P-215 **Biochemical components of wheat grain associated with endosperm detachment from bran and flour yield**, T. JI; USDA–ARS Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.
- P-216 **Characteristics of air-classified fractions from various pea varieties**, N. WANG; Canadian Grain Commission, Winnipeg, MB, CANADA
- P-217 **Effect of polyphenols on functional and rheological properties of black bean protein isolates**, S. FERNANDO; North Dakota State University, Fargo, ND, U.S.A.

- P-218 **Individual effects of enzymes and vital wheat gluten on qualities and staling characteristics of bread made from whole grain wheat flour**, Y. LI; Kansas State University, Manhattan, KS, U.S.A.
- P-219 **Evaluation of GlutoPeak as a tool for screening North Dakota hard red spring wheat breeding lines**, K. PETERSON; North Dakota State University, Fargo, ND, U.S.A.
- P-220 **Effect of pre-harvest desiccant application on properties of β -glucan from oat groats**, A. ALAHMED; North Dakota State University, Fargo, ND, U.S.A.
- P-221 **Compositional characterization of hairless canary seed oil and starch associated lipids**, E. ABDELAAL; Agriculture & Agri-Food Canada, Guelph, ON, CANADA
- P-222 **Debranching of pea starch using pullulanase and ultrasonication synergistically to enhance slowly digestible and resistant starch**, Q. LIU; Guelph Research and Development Centre, Agriculture & Agri-Food Canada, Guelph, ON, CANADA
- P-223 **The use of nitrogen gas injection during extrusion cooking to manipulate microstructure of expanded foods**, E. CHAN; Food and Human Nutritional Sciences, University of Manitoba, Winnipeg, MB, CANADA
- P-224 **Evaluation of hard red spring wheat flours by GlutoPeak at varied speed profiles**, K. WHITNEY; North Dakota State University, Department of Plant Science, Fargo, ND, U.S.A.
- P-225 **Morphological and molecular evolution of filamentous starch granules of banana (Red Dacca) during fruit development**, E. AGAMA-ACEVEDO; CEPROBI-IPN, Yauatepec, MEXICO
- P-226 **Effect of condensed tannins on rye and barley flour functionality**, A. GIRARD; Texas A&M University, College Station, TX, U.S.A.
- P-227 **Genome-wide association study on bran friability and water retention capacity traits**, S. NAVROTSKYI; University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- P-228 **Using plant-derived ingredients as tertiary butyl hydroquinone (TBHQ) alternatives in whole-grain breakfast biscuits**, K. ROBBINS; Kemin Food Technologies, Des Moines, IA, U.S.A.
- P-229 **Developing food quality standards for distillers dried grains: Evaluating composition, quality, and safety**, P. KRISHNAN; South Dakota State University, Brookings, SD, U.S.A.
- P-230 **Starch nanoparticle formation from high amylose rice starches using ultrasonic treatment**, J. NO; Center of Food and Bioconvergence, Seoul National University, Seoul, KOREA
- P-231 **One pot preparation of rice-gels from white rice using Rapid Visco Analyzer**, J. MATSUKI; Food Research Institute, NARO, Tsukuba, Ibaraki, JAPAN
- P-232 **Comparison of molecular structures and physicochemical properties of high amylose rice starches with different crystalline types**, J. NO; Center of Food and Bioconvergence, Seoul National University, Seoul, KOREA
- P-233 **Artificial wheat dough: Opportunities for a better understanding of structure-function relationships of gluten and starch surface interactions**, S. BRANDNER; Technical University of Munich, Freising, GERMANY
- P-234 **Flavor modification: A novel approach for enhanced organoleptic property of pea flour**, S. VATANSEVER; North Dakota State University, Fargo, ND, U.S.A.
- P-235 **The effects of temperature, formulation, and packaging type on water activity shifts of extended shelf life bakery items**, M. RICHARDSON; CCDC Soldier Center, AFC, Natick, MA, U.S.A.
- P-236 **How does supercritical carbon dioxide and ethanol extraction influence the physicochemical properties of pea flour?** S. VATANSEVER; North Dakota State University, Fargo, ND, U.S.A.
- P-237 **Influence of tempering condition and mill type on whole grain flour milling in hard red spring wheat**, J. OHM; USDA-ARS, ETSARC, Cereal Crops Research Unit, Hard Spring and Durum Quality Lab, Fargo, ND, U.S.A.
- P-238 **CRISPR-mediated gene editing of lipase and lipoxigenase enzymes in rice (*Oryza sativa*) to reduce lipid oxidation and enhance storage life of brown rice**, K. HAYDON; University of Arkansas, Fayetteville, AR, U.S.A.
- P-239 **Composition and properties of black bean flour processed by excess steam jet-cooking at different pH levels**, F. FELKER; USDA-ARS-NCAUR, Peoria, IL, U.S.A.
- P-240 **Drying methods affect physicochemical and functional properties of quinoa proteins**, Y. SHEN; Kansas State University, Manhattan, KS, U.S.A.
- P-241 **Designing a vacuum dough expansion system to predict bread loaf volume**, B. RAJPUROHIT; South Dakota State University, Brookings, SD, U.S.A.
- P-242 **Progressive alterations in swelling and pasting characteristics of tapioca starch by heat-moisture treatment with different holding times and iterations**, J. LIN; MingDao University, Changhua, TAIWAN
- P-243 **Heat-moisture treated starch as an alternative to cross-linked starch**, Y. CHANG; Providence University, Taichung, TAIWAN
- P-244 **Storage stability of acetylated tapioca starch: A viscometric study**, J. LIN; MingDao University, Changhua, TAIWAN
- P-245 **Study of the components influence on noodle dough loosening**, K. NAKAMURA; Nisshin Flour Milling Inc., Tsukuba-City, Ibaraki, JAPAN
- P-246 **Influence of the quantity and quality of the additional protease on swelling of the gluten-free rice flour bread**, E. ARAKI; Institute of Crop Science, NARO (NICS), Tsukuba, Ibaraki, JAPAN
- P-247 **Pasta from pulses: Conventional extrusion or extrusion-cooking?** A. MARTI; Department of Food, Environmental, and Nutritional Sciences, University of Milan, Milan, ITALY
- P-248 **Structure, function, and evolution of starch binding domains**, B. SVENSSON; Department of Biotechnology and Biomedicine, Lyngby, DENMARK
- P-249 **A 100 g lab scale corn dry milling protocol for faster determination of coproduct yield and composition**, P. SOMAVAT; University of Texas at Rio Grande Valley, Edinburg, TX, U.S.A.
- P-250 **Impacts of flour quality and drying condition on quality of Korean style dried white-salted noodles**, M. KWEON; Pusan National University, Busan, SOUTH KOREA
- P-251 **Development of an enhanced beta (β) glucan beverage: Evaluating satiety, nutrition, and shelf stability**, P. KRISHNAN; South Dakota State University, Brookings, SD, U.S.A.
- P-252 **Exploring dry grain fractionation as a means to valorize high protein malting barley**, M. IZYDORCZYK; Canadian Grain Commission, Grain Research Laboratory, Winnipeg, MB, CANADA
- P-253 **Enzymatic modification of pulse starches to enhance the functional properties and resistant starch content**, J. LI; University of Saskatchewan, Saskatoon, SK, CANADA
- P-254 **Effects of sugars and sugar alcohols on the gelatinization temperatures of different starches (wheat, potato, and corn (dent, waxy, high amylose varieties))**, M. ALLAN; Purdue University, West Lafayette, IN, U.S.A.
- P-255 **Physicochemical and nutritional evaluation of wrinkled pea and round pea flours of different particle sizes**, Y. REN; University of Saskatchewan, Saskatoon, SK, CANADA
- P-256 **Effects of sugars and sugar alcohols on the retrogradation of wheat starch gels**, M. ALLAN; Purdue University, West Lafayette, IN, U.S.A.

- P-257 Evaluation of pasting and gelling properties of commercial flours under high heating temperatures using Rapid Visco Analyzer 4800, T. YUAN; University of Saskatchewan, Saskatoon, SK, CANADA
- P-258 Effect of amphiphilic polysaccharides on 3-deoxyanthocyanin stability in a beverage model, J. BRANTSEN; Texas A&M University, College Station, TX, U.S.A.
- P-259 Use of microwave assisted extraction to increase sorghum (*Sorghum bicolor*) polyphenolic extraction efficiency, K. DUKE; Texas A&M University, College Station, TX, U.S.A.
- P-260 Characteristics of Korean rice varieties and their potential end uses, M. PAGANI; Department of Food, Environmental, and Nutritional Sciences, University of Milan, Milan, ITALY
- P-261 Mixing dynamics of gliadins, HMW-glutenins, and LMW-glutenins analyzed by fluorescent co-localization and protein network quantification, J. BONILLA; Department of Food Science, College of Agriculture, Purdue University, West Lafayette, IN, U.S.A.
- P-262 A multi-linear regression approach for simulation of a traditional (95°C) starch pasting profile using a high altitude (91°C) heating regimen, C. HENRIKSEN; Brigham Young University-Idaho, Rexburg, ID, U.S.A.
- P-263 BRICE project: Understanding checking and breakage of biscuits and dry cereal products, P. LE-BAIL; SFR-IBSM 4202, Nantes, FRANCE
- P-264 Development of emulsifiers from pea and corn starches using octenyl succinic anhydride modification, F. CHENG; University of Saskatchewan, Saskatoon, SK, CANADA
- P-265 Preparation and textural properties of white salted noodles produced with partial substitution of cross-linked phosphorylated RS4 wheat starch for hard winter wheat flour, C. HSIEH; Kansas State University, Manhattan, KS, U.S.A.
- P-266 Behaviors of starches evaluated at high heating temperatures using a new model of Rapid Visco Analyzer—RVA 4800, Y. AI; University of Saskatchewan, Saskatoon, SK, CANADA
- P-267 Effect of fine grinding on fermentation performance and in-situ fiber conversion in dry grind ethanol process, C. KURAMBHATTI; University of Illinois, Urbana-Champaign, Urbana, IL, U.S.A.
- P-268 Rheological properties of starch nanoparticles from pea starch, H. DONG; University of Alberta, Edmonton, AB, CANADA
- P-269 Influence of particle size on the flow properties of bread flour, A. SUPRABHA RAJ; Kansas State University, Manhattan, KS, U.S.A.
- P-270 Optimizing milling performance of intermediate wheatgrass (*Thinopyrum intermedium*), a novel perennial grain, R. BHARATHI; University of Minnesota, St. Paul, MN, U.S.A.
- P-271 Significance of particle and environmental conditions on the flow properties of hard and soft wheat flours, J. RIVERA; Grain Science and Industry, Kansas State University, Manhattan, KS, U.S.A.
- P-272 Significance of tempering methods on white sorghum flour and baking properties, M. YOGANANDAN; Kansas State University, Manhattan, KS, U.S.A.
- P-273 Effects of thermal treatment, bran content, and storage on development of flavor in intermediate wheatgrass flour and tortilla, M. LUU; University of Minnesota, St. Paul, MN, U.S.A.
- P-274 Suitability of selected Australian varieties for premium yellow alkaline noodles as measured by sensory evaluation and triple cutting ring (TA-XT2iPlus), L. CATO; AEGIC, Perth, WA, AUSTRALIA
- P-275 Physicochemical properties of alkaline noodle enriched with clarified beetroot juice, Y. CHANG; Providence University, Taichung, TAIWAN
- P-276 Antioxidative and structural characteristics of corn coproduct protein hydrolysates and their applications, R. HU; Kansas State University, Manhattan, KS, U.S.A.
- P-277 Optimization of recovery of anthocyanins from colored wheat, C. KURAMBHATTI; University of Illinois, Urbana-Champaign, Urbana, IL, U.S.A.
- P-278 Physicochemical properties of Canadian high- and low-tannin faba beans (*Vicia faba* var. *minor*) with sprouting treatment, J. HAN; Food Processing Development Centre, Alberta Agriculture and Forestry, Leduc, AB, CANADA
- P-279 Distribution of octenylsuccinate substituents within a single granule of modified potato starches determined by Raman microspectroscopy, Z. SUN; Kansas State University, Manhattan, KS, U.S.A.
- P-280 Morphological and particle-size based characterization of Canadian pulses as a tool for subsequent protein enrichment, B. JEGANATHAN; University of Alberta, Edmonton, AB, CANADA
- P-281 Optimization of poly(lactic acid)/poly(butylene co-adi-pate-terephthalate)/thermoplastic starch nanocomposite films for barrier and mechanical properties, P. MANEPALLI; Kansas State University, Department of Grain Science and Industry, Manhattan, KS, U.S.A.
- P-282 Effect of nitrogen levels on the nutrient quality of corn under organic management, E. GULKIRPIK; University of Illinois, Urbana-Champaign, Urbana, IL, U.S.A.
- P-283 Production of an enzymatic extract from *Fusarium oxysporum* f. sp. *melonis* using sonicated brewers' spent grain as substrate, I. ARREOLA; CIAD, A.C., Hermosillo, MEXICO
- P-284 Investigating and comparing arabinoxylan structures in ruminant-relevant cool-season pasture grasses, G. JOYCE; University of Kentucky, Lexington, KY, U.S.A.
- P-285 Effect of the supplementation of wheat flour with coconut flours on dough rheology and physical properties of tortillas, N. HEREDIA-SANDOVAL; Research Center in Food & Development, AC, Hermosillo, Sonora, MEXICO
- P-286 Development of improved method to measure maltose value of wheat flour, T. SUYAMA; Yamazaki Baking Co., Ltd., Ichikawa, Chiba, JAPAN
- P-287 Fermentation-process monitoring of spontaneous sourdoughs made of wheat flours from different wheat-growing countries during two months of backslopping, M. OSHIRO; Laboratory of Microbial Technology, Faculty of Agriculture, Kyushu University, Fukuoka, JAPAN
- P-288 Effect of chemical oxidizers and enzymatic treatments on dough rheology, P. TOZATTI; University of Saskatchewan, Saskatoon, SK, CANADA
- P-289 Optimization of pretreatment conditions for corn germ meal to develop a model hydrothermal pretreatment process for lipid producing energy crops, Y. JIA; University of Illinois, Urbana-Champaign, Urbana, IL, U.S.A.
- P-290 Plasma activated water (PAW) and its effects on the pasting profiles of starches from different botanical sources, I. KOUGBLENOU; University of Minnesota, St. Paul, MN, U.S.A.
- P-291 Effect of egg white, sugar, and oil on gluten-free batter properties and bread quality, Y. ZHANG; Kansas State University, Manhattan, KS, U.S.A.
- P-292 Pasting and thermal properties of red and white sorghum flour produced in Kansas, C. ALDRICH; Kansas State University, Manhattan, KS, U.S.A.

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- P-302 Selection and evaluation of rice flours for gluten-free cookies, S. BRYAN; Unity Scientific, Lenexa, KS, U.S.A.
- P-303 Effect of semolina replacement with whole unripe plantain flour or commercial resistant starch on the chemical, cooking quality, and starch digestibility of pasta, L. BELLO-PEREZ; CEPROBI-IPN, Yatepec, MEXICO

- P-304 **Effects of germination conditions of brown rice in relation to flour physicochemical properties and bread qualities**, Y. WANG; University of Arkansas, Fayetteville, AR, U.S.A.
- P-305 **Influences of hydrothermal and pressure treatments of bran on the quality and sensory attributes of whole wheat steamed bread and pancakes**, F. MA; USDA-ARS Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.
- P-306 **Varietal and location effects on antioxidant potential of pinto and black beans**, A. MAGALLANES LOPEZ; North Dakota State University, Fargo, ND, U.S.A.
- P-307 **Changes of wheat phenolic antioxidants and baking properties during early-stage germination**, W. TIAN; Kansas State University, Manhattan, KS, U.S.A.
- P-308 **Enriching the nutritional values of the traditional meals in KwaZulu-Natal, South Africa by incorporating provitamin A-biofortified maize and orange sweet potatoes**, M. SIWELA; University of KwaZulu-Natal, Pietermaritzburg, SOUTH AFRICA
- P-309 **Effect of insect-sorghum meal blend on the proximate composition and protein quality of cookies**, M. SIWELA; University of KwaZulu-Natal, Pietermaritzburg, SOUTH AFRICA
- P-310 **Wheat flour as a model system to study process effects of sonic agglomeration—A new food compression technique**, A. BARRETT; CCDC Soldier Center, Natick, MA, U.S.A.
- P-311 **Effects of sorghum proanthocyanidin interactions with partially gelatinized wheat starch and potato starch on resistant starch content**, S. ALTHAWAB; Texas A&M University, College Station, TX, U.S.A.
- P-312 **Impact of the composition of selected fat blends on the texture and staling rate of brioche**, A. LE BAIL; GEPEA-UMR CNRS 6144, Nantes, FRANCE
- P-313 **Rapid analysis of sorghum grain composition using ATR-FTIR spectroscopy**, H. LIN; Center for Grain and Animal Health Research, USDA-ARS, Manhattan, KS, U.S.A.
- P-314 **The role of starch structure in the eating quality of oat-fortified wheat noodles**, T. NGUYEN; University of Queensland, Brisbane, AUSTRALIA
- P-315 **Mexican ancestral ingredients added to wheat flour produce a bread with bioactive compounds a high nutritional quality and good appearance**, A. DE LA BARCA; Research Center in Food & Development, AC, Hermosillo, Sonora, MEXICO
- P-316 **Preparation of resistant starch-enriched cooked rice product by combination of rice types and cooking methods**, J. HONG; Division of Strategic Food Research, Korea Food Research Institute, Wanju-gun, Jeollabuk-do, SOUTH KOREA
- P-317 **Using consumer sensory evaluation to compare dietary fibers in enriched breads for Ontario schools**, R. WHITE; University of Guelph, Guelph, ON, CANADA
- P-318 **Effects of cooking methods and storage conditions on the in vitro digestion rates of Chinese noodles**, B. GUO; Institute of Food Science and Technology, Chinese Academy of Agri Sciences, Beijing, CHINA
- P-319 **Effect of particle size and cooking method on navy bean starch and protein hydrolysis and raffinose family oligosaccharide extractability**, J. BYARS; USDA-ARS-NCAUR, Peoria, IL, U.S.A.
- P-320 **Processing suitability of sucrose alternatives for potential sugar reduction in muffin**, M. KWEON; Pusan National University, Busan, SOUTH KOREA
- P-321 **The effects of commercially available natural sweeteners, used as substitutes for sucrose, on wheat starch gelatinization and pasting**, T. WOODBURY; Purdue University, West Lafayette, IN, U.S.A.
- P-322 **Bomb calorimetry for measurement of calories and impact of product dehydration methods on caloric determination in military ration items**, A. WRIGHT; U.S. Army CCDC-SC, Natick, MA, U.S.A.
- P-323 **Compositional and structural factors of coat and cotyledon tissue of red kidney beans (*Phaseolus vulgaris*) from different varieties and growing locations**, L. ROMAN; University of Guelph, Guelph, ON, CANADA
- P-324 **Prediction of bioactive composition in soybeans using NIR**, M. SINGH; USDA-ARS-NCAUR, Peoria, IL, U.S.A.
- P-325 **Changes in the metabolome during in vitro fermentation of non-digestible carbohydrates from whole wheat by human gut microbiota**, T. NGUYEN; Food for Health Center, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- P-326 **The effect of boiling on the phenolic content in Canadian hullless barley varieties**, P. DRAWBRIDGE; University of Manitoba, Winnipeg, MB, CANADA
- P-327 **3-Deoxyanthocyanidins increase protein matrix formation, altering starch digestion in cereal porridges**, L. SCHMIDT; Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.
- P-328 **The effects of extended hydration time on dry expanded pet food**, E. MAICHEL; Kansas State University, Department of Grain Science and Industry, Manhattan, KS, U.S.A.
- P-329 **The effect of genotype and environment on the asparagine content of peas**, L. MALUNGA; Agriculture & Agri-Food Canada, Winnipeg, MB, CANADA
- P-330 **Understanding the physical and molecular changes in the mixtures of cellulose and corn starch during extrusion processing using FTIR**, P. EK; Washington State University, Pullman, WA, U.S.A.
- P-331 **Understanding possible gluten contamination in lentils**, N. RAMACHANDRAN; Avena Foods Limited, Portage la Prairie, Manitoba, MB, CANADA
- P-332 **Evaluating a qualitative method of determining added iron in a variety of flour matrices**, P. KRISHNAN; South Dakota State University, Brookings, SD, U.S.A.
- P-333 **Composition and interfacial properties of whole wheat dough liquor as affected by pentosanase and glucose oxidase**, L. LIU; IFST, Chinese Academy of Agricultural Sciences, Beijing, CHINA
- P-334 **Composition and foam properties of whole wheat dough liquor as affected by pentosanase and glucose oxidase**, L. LIU; IFST, Chinese Academy of Agricultural Sciences, Beijing, CHINA
- P-335 **Gama-aminobutyric acid (GABA), amino acid, polyamines, and their correlation analysis of mung bean under mild heat and relative humidity treatment**, S. ZHOU; IFST, Chinese Academy of Agricultural Sciences, Beijing, CHINA
- P-336 **Effects of red rice or buckwheat addition on nutritional and technological quality of potato-based pasta**, C. CAPPÀ; DeFENS, Università degli Studi di Milano, Milan, ITALY
- P-337 **Fortifying wheat-based foods with high amylose wheat flour to achieve fiber benefits**, K. HARRIS; Bay State Milling, Quincy, MA, U.S.A.

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EXHIBIT HALL

Exhibit Hall Hours

Sunday, November 3

11:00 a.m. – 5:00 p.m.

Exhibit Move-In

5:45 – 7:15 p.m.

Exhibit Hall Open

Happy Hour in Exhibit Hall

Monday, November 4

8:00 a.m. – 7:00 p.m.

Exhibit Hall Open

8:00 – 8:30 a.m.

Coffee in Exhibit Hall

9:45 – 10:15 a.m.

Coffee in Exhibit Hall

12:00 – 1:00 p.m.

Dessert in Exhibit Hall

3:00 – 3:30 p.m.

Cake & Coffee Break in the Exhibit Hall

(Booth 305/307)—*sponsored by ICL Food Specialties*

5:30 – 7:00 p.m.

Happy Hour in Exhibit Hall

Tuesday, November 5

8:00 a.m. – 2:15 p.m.

Exhibit Hall Open

8:00 – 8:30 a.m.

Coffee in Exhibit Hall

10:30 – 11:00 a.m.

Coffee in Exhibit Hall

1:00 – 2:15 p.m.

Dessert in Exhibit Hall

2:15 – 5:00 p.m.

Exhibit Take-Down

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2019 CEREALS & GRAINS ASSOCIATION AWARD RECIPIENTS

Congratulations to the following members, who have been selected to receive awards in honor of their significant contributions to the field of cereal grain science.

Join us on **Sunday, November 3**, during the opening general session to celebrate the accomplishments of the following members:

Cereals & Grains Association Fellows



Mike Gidley
University of
Queensland,
AUSTRALIA



Narpinder Singh
Guru Nanak Dev
University, INDIA

Alsberg-French Schoch Memorial Lectureship



Louise Slade
Food Polymer Science
Consultancy, U.S.A.



Harry Levine
Food Polymer Science
Consultancy, U.S.A.

Award lecture: Tuesday, November 5, at 8:30 a.m. – A 39-Year Retrospective on Slade/Levine’s “Food Polymer Science” Approach to the Practice of Industrial R&D, Leading to U.S. Patent Estates Based on Fundamental Starch Science and Technology

Thomas Burr Osborne Medal



Craig Morris, USDA-ARS-WWQL, U.S.A.

Award lecture: Monday, November 4, at 10:00 a.m. – Understanding the Genetics of Wheat Quality

William F. Geddes Memorial Award

The name of this recipient is not announced until the award ceremony at the opening general session.

Join us on **Monday, November 4**, during the general session to celebrate the accomplishments of the following members:

Excellence in Teaching Award



Senay Simsek
North Dakota State University, U.S.A.

Young Scientist Research Award



Filiz Koksel
University of Manitoba, CANADA

Award lecture: Tuesday, November 5, at 2:15 p.m. – Bubbles in Foods and How They Affect Food Quality

Edith A. Christensen Award for Outstanding Contributions in Analytical Methodology



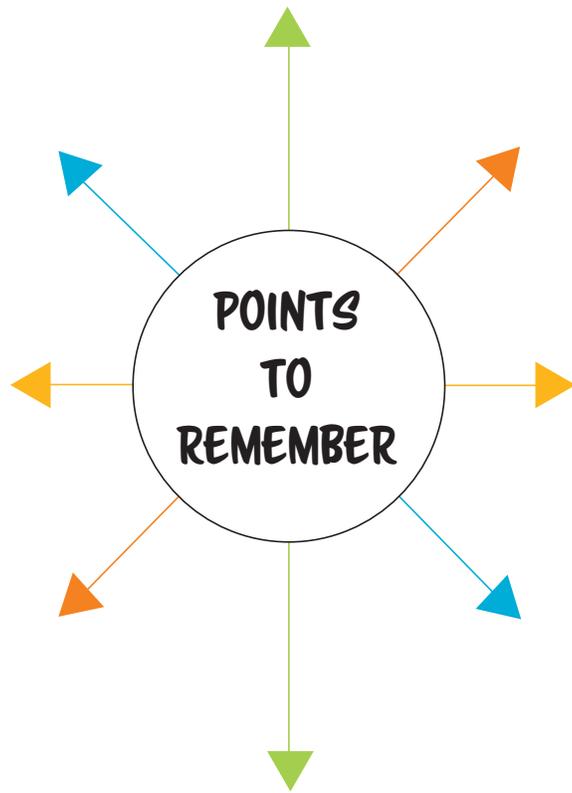
Kathryn Phillips
Retired, NP Analytical Laboratories, U.S.A.

Award lecture: Tuesday, November 5, at 8:30 a.m. – Analytical Support of a Pet Food Business



Call for Award Nominations

The Cereals & Grains Association program recognizes the outstanding service, scientific innovations, and significant accomplishments of association members. We encourage you to review the Cereals & Grains Association awards and nominate your colleagues deserving of these important recognitions. Submit nominations for the 2020 awards by January 31, 2020. Visit the Cereals & Grains Association website for more information.



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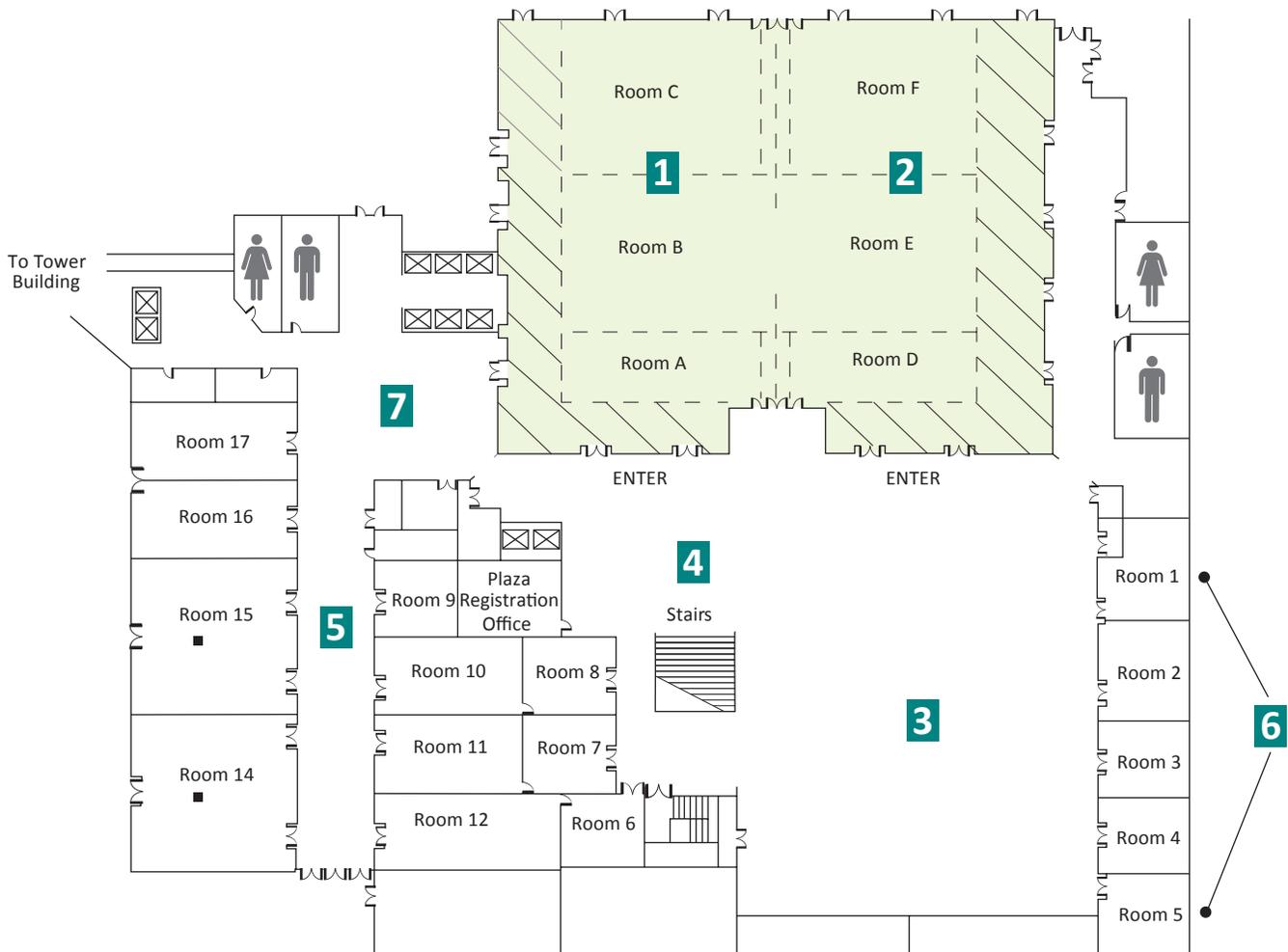
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- 2 Plaza Ballroom D/E/F
Exhibit Hall
- 3 Lunch
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