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- FT 9700 NIR analysis system for demanding applications
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- Pulse products applications – RVA and NIR

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THANK YOU!
Program Team Leaders
Program Team Chair: Sean M. Finnie, Bay State Milling, Quincy, MA, U.S.A.
Program Team Vice Chair: Andrea 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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Girish M. Ganjyal, Washington State University, Pullman, WA, U.S.A.
Meera Kweon, Pusan National University, Busan, SOUTH KOREA
Marilia Nutti, EMBRAPA, Rio de Janeiro, BRAZIL
Shintaro Pang, General Mills, Minneapolis, MN, U.S.A.
Joke A. Putseys, DSM, Delft, NETHERLANDS
Jean-Philippe F. Ral, CSIRO Agriculture and Food, Canberra, ACT, AUSTRALIA
E.B. (Elizabeth) L. Russell, DuPont, Fenton, MO, U.S.A.
Julia Schückel, GlycoSpot, Copenhagen-Soborg, DENMARK
Raymond D. Shillito, BASF LP, Morrisville, NC, U.S.A.
Sheryl Tittlemier, Canadian Grain Commission, Winnipeg, MB, CANADA
Yunus Emre Tuncil, Ordu University, Food Engineering Department, Ordu, TURKEY

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Student Representative: Anna M. R. Hayes, Purdue University, U.S.A.

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.
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
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Saturday, November 2</td>
<td>3:00 – 6:00 p.m.</td>
<td>Tower Plaza Lobby</td>
</tr>
<tr>
<td>Sunday, November 3</td>
<td>8:30 a.m. – 6:30 p.m.</td>
<td>Plaza Foyer</td>
</tr>
<tr>
<td>Monday, November 4</td>
<td>7:30 a.m. – 5:00 p.m.</td>
<td>Plaza Foyer</td>
</tr>
<tr>
<td>Tuesday, November 5</td>
<td>7:30 a.m. – 5:00 p.m.</td>
<td>Plaza Foyer</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
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<tr>
<td>Sunday, November 3</td>
<td>8:30 a.m. – 12:00 p.m.</td>
<td>Plaza Foyer</td>
</tr>
<tr>
<td>Sunday, November 4</td>
<td>12:30 – 6:30 p.m.</td>
<td>Plaza Foyer</td>
</tr>
<tr>
<td>Monday, November 5</td>
<td>7:30 a.m. – 5:00 p.m.</td>
<td>Plaza Foyer</td>
</tr>
</tbody>
</table>

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.
With over 20 years of service in the grain, milling and baking industry, Great Plains Analytical Laboratory has proven itself to be a trusted collaborator in helping our customers solve quality issues. As the leading cereal chemistry laboratory in the US, we continue to provide reliable and timely responses.

Great Plains offers a full range of services and complete quality analysis for special cereal chemistry and rheological testing as well as finished product and general food testing. Our high level of service and rapid turn-around time is well known.

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

SYMPOSIUM: Exploiting Natural Polyphenols to Improve Dietary Quality of Carbohydrates and Their Benefits to Health
SYMPOSIUM: Glyphosate and Cereal Grains: Separating the Wheat from the Chaff
SYMPOSIUM: Nutrient Dense, Sustainable Diets: Delivering Consumer Relevant Foods from Regenerative Food Systems
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
Governor’s Square 15
Governor’s Square 12
Governor’s Square 14

DISCUSSION: Food Industry Trends and Their Future Impact
SYMPOSIUM: Food Waste Along the Supply Chain: Problems and Solutions
TECHNICAL SESSION: Best Student Research Paper Competition
SYMPOSIUM: Hot Topics in Food Safety and Quality

5:45 – 7:15 p.m.
Plaza Ballroom – D/E/F
Governor’s Square Foyer

Exhibit Hall Open with Happy Hour
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


**SYMPOSIUM: Exploiting Natural Polyphenols to Improve Dietary Quality of Carbohydrates and Their Benefits to Health | FNPQ**
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. TITTLEMIER; 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


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
Sponsoring Committee: Food Safety and Quality Division
Co-Sponsor: Milling & Baking Division
•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.

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.
• Phytoglyceren (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.

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• Modular design, touch screen optionally available.
• Multi-access: Track tests through multiple end devices.
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Find out what's new in Cereals & Grains Association publications!

Visit the publications display by registration for the latest information on grain science books and journals.

Members save 30% on this year’s new titles and even more on backlist titles.

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Nearly 20 books across four series are available online. Subscribe for one low yearly price, or refer this offer to your librarian: cerealsgrains.org/subscriptions

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
Governor’s Square 12

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

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

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

• 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: 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.

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

• 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. MARTÍ; 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: Molecular Biomarkers for Grain Technical Committee | AFN
1:00 – 3:00 p.m. • Government’s Square 14


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.
- 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.

SYMPOSIUM: Interface Mechanisms in Baking: Leads for Innovation | AFP
1:00 – 3:00 p.m. • Government’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, Leuven, 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: Genomic Tools for End-Use Quality Traits in Cereals | AFN
1:00 – 3:00 p.m. • Governor’s Square 14


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: Genomic Tools for End-Use Quality Traits in Cereals

- 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.
- 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: 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.
- 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. • Government’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 freudenreicheni 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
- Solving CBD formulation and taste challenges – C. CASTLEJOHN; FONA International, Geneva, IL, U.S.A.

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.

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, Rice Research & Extension Center, Stuttgart, 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.
### Tuesday Schedule at a Glance – Health and Wellness

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>7:00 – 8:30 a.m.</td>
<td>Various</td>
<td>Technical Committee Meetings <em>(see mobile app or online program for more details)</em></td>
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<tr>
<td>7:30 – 8:30 a.m.</td>
<td>Plaza Court 7</td>
<td>Professional Development Panel Meeting</td>
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<td>Governor’s Square 16</td>
<td>Cereal Chemistry Editorial Board Breakfast — by invitation</td>
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<tr>
<td>8:30 – 10:30 a.m.</td>
<td>Governor’s Square 12</td>
<td>SYMPOSIUM: A Comparative View on the Nutritional Impact of Cereal and Grains on Animal Health and Performance</td>
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<td>Governor’s Square 15</td>
<td>SYMPOSIUM: A 360-Degree Approach: Arabinoxylans from Genes to Gut</td>
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<td>Plaza Ballroom – A/B/C</td>
<td>SYMPOSIUM: Have Refined, Enriched Grain Staples Been Unfairly Demonized?</td>
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<td>Governor’s Square 14</td>
<td>SYMPOSIUM: The Impact of Food Matrix and Processing on Nutrient Bioavailability and Functionality of Food Ingredients</td>
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<td>Governor’s Square 11</td>
<td>TECHNICAL SESSION: Health/Nutrition; Fiber; Analytical</td>
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<tr>
<td>10:00 – 11:00 a.m.</td>
<td>Governor’s Square 16</td>
<td>CFW Editorial Board Committee Meeting — by invitation</td>
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<tr>
<td>11:00 a.m. – 1:00 p.m.</td>
<td>Governor’s Square 15</td>
<td>SYMPOSIUM: Co-Creating a More Nutritious Food System with Biofortification</td>
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<td>Plaza Ballroom – A/B/C</td>
<td>SYMPOSIUM: Creating Global Consensus with the Whole Grain Initiative</td>
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<td>Governor’s Square 14</td>
<td>SYMPOSIUM: Recent Progress in Dietary Fibers and Colonic Microbiome</td>
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<td>Governor’s Square 12</td>
<td>TECHNICAL SESSION: Late-Breaking Science</td>
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<tr>
<td>1:00 – 2:00 p.m.</td>
<td>Governor’s Square 16</td>
<td>Approved Methods Technical Committee</td>
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<td>1:00 – 2:15 p.m.</td>
<td>Plaza Foyer</td>
<td>Lunch</td>
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<td>Plaza Ballroom – D/E/F</td>
<td>Dessert in Exhibit Hall</td>
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<td>Governor’s Square Foyer</td>
<td>Poster Viewing Hours — Health and Wellness Authors Present from 1:15 – 2:15 p.m.</td>
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<tr>
<td>1:15 – 2:15 p.m.</td>
<td>Governor’s Square 11</td>
<td>Division Leadership Council Meeting — by invitation</td>
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<tr>
<td>2:15 – 4:15 p.m.</td>
<td>Plaza Ballroom – A/B/C</td>
<td>SYMPOSIUM: Challenges and Solutions for Making Protein Claims</td>
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<td>Governor’s Square 14</td>
<td>SYMPOSIUM: Functionalizing Carbohydrates for Better Health: Cereals and Beyond</td>
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<td>Governor’s Square 15</td>
<td>SYMPOSIUM: Nutrition Along the Value Chain: More Than Just a Financial Consideration</td>
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<td>Governor’s Square 12</td>
<td>TECHNICAL SESSION: Quality</td>
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<td>3:30 – 5:00 p.m.</td>
<td>Plaza Court 7</td>
<td>Book Acquisitions Committee Meeting</td>
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<td>4:30 – 5:30 p.m.</td>
<td>Plaza Ballroom – A/B/C</td>
<td>Closing Keynote: <em>The Future of Food: The Need to Adapt and Innovate</em> Marc Cwikowski, Founder &amp; Managing Director, All Food Consulting SPRL, Brussels, Belgium</td>
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<td>5:45 – 6:45 p.m.</td>
<td>Plaza Court</td>
<td>Program Team Meeting — by invitation</td>
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*Marc Cwikowski*
*Founder & Managing Director*
*All Food Consulting SPRL*
*Brussels, Belgium*
TUESDAY SCIENTIFIC SESSIONS


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

Arabinoxylan and endoxylanases in the animal gastrointestinal tract – C. M. COURTIN; KU Leuven, Leuven, BELGIUM
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

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

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

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

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. CAPPA; 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-BAIL; 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.

• 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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HEALTHY INGREDIENTS
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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, PR. 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.

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. EKAEETTE; 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: 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.

SYMPOSIUM: Functionalizing Carbohydrates for Better Health: Cereals and Beyond | AFNP
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 Vatansever, North Dakota State University, Fargo, ND, U.S.A.
Sponsoring Committee: Protein and Enzymes Methods Committee
Co-Sponsor: Protein Division

- 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; Ingredion 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.

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 hulless 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.

12:15 p.m.
When more becomes less: A tale of soluble dietary fibers and phenolics interactions – N. BORDENAVE; University of Ottawa, Ottawa, ON, CANADA

12:30 p.m.
The unexpected nutritional benefits of high shear extruded ingredients in the baking industry – M. M. MARTINEZ; University of Guelph, Guelph, ON, CANADA

12:45 p.m.
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
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. ACQUAHH; 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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SOLUTIONS

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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 aaccnet.org/CG2019 and through the mobile app.

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

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**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.

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**Poster Hours**

**Sunday, November 3**

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<td>5:45 – 7:15 p.m.</td>
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**Monday, November 4**

**Day 2: Innovation in the Value Chain**

*Additional posters located in Plaza Foyer*

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**Tuesday, November 5**

**Day 3: Health and Wellness**

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<td>Evaluation of pasting and gelling properties of commercial flours under high heating temperatures using Rapid Visco Analyzer 4800</td>
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<td>Effect of amphiphilic polysaccharides on 3-deoxyanthocyanin stability in a beverage model</td>
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<td>Development of emulsifiers from pea and corn starches using octenyl succinic anhydride modification</td>
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<td>Behaviors of starches evaluated at high heating temperatures using a new model of Rapid Visco Analyzer—RVA 4800</td>
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<td>Effect of fine grinding on fermentation performance and in-situ fiber conversion in dry grind ethanol process</td>
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<td>Selection and evaluation of rice flours for gluten-free cookies</td>
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<td>P-294</td>
<td>Effect of semolina replacement with whole unripe plantain flour or commercial resistant starch on the chemical, cooking quality, and starch digestibility of pasta</td>
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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; GE-PEA-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, Wanjungun, Jeollabukdo, 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 hulless barley varieties, P. DRAWBRIEGE; University of Manitoba, Winnipeg, MB, CANADA

P-327  3-Deoxanthocyanidins 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, polymers, 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. CAPP; 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.
Solvent retention capacity (SRC) is an analytical method used to measure the contribution of the main functional flour polymers (gluten protein, starch and pentosans) to water absorption.

By automating what is typically a manual test, the SRC-CHOPIN creates optimal conditions for inter-laboratory repeatability and reproducibility. It eliminates any variables related to the operator and the material used.

The SRC-CHOPIN method has been evaluated through an international collaborative study with participants from Australia, Chile, China, India, Thailand, the United Kingdom and the United States of America. It is now officially recognized as AACC Approved Method 56-15.01 - Solvent Retention Capacity Profile - Automated Measurement.
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

CONNECTIONS I MADE
Exhibitors are listed in alphabetical order. **Bold type** indicates an advertising company.

123 \nADM/Matsutani LLC

221 \nAGRI-NEO INC

210 \nAjinomoto Health & Nutrition North America Inc.

206 \nAmerican Pulse Association

323 \nANKOM Technology

326 & 328 \nArdent Mills

118 \nAvena Foods Limited

122 \nBI Nutraceuticals

227 \nBrabender GmbH & Co. KG

327 \nBühler, Inc.

107 \nBunge

229 \nC. W. Brabender Instruments, Inc.

304 \nCarmi Flavors

130 \nC-Cell

306 \nCE Elantech

205 \nCereal Ingredients, Inc.

104 \nCgrain AB

215 \nCHOPIN Technologies

224 \nChurch & Dwight Co., Inc.

309 \nDakota Specialty Milling

222 \nDSM Food Specialties USA, Inc.

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110 \nFruitSmart, Inc.

228 \nGlycoSpot

225 \nGNT USA

216 \nGold Coast Ingredients

220 \nGrain Mills, Inc.

126 \nGreat Plains Analytical Laboratory

211 \nHealthy Food Ingredients

120 \nHolton Food Products

112 \nICC – Int’l Association for Cereal Science & Technology

305 & 307 \nICL Food Specialties

209 \nJ. Rettenmaier USA LP

111 \nLallemand Baking Solutions

311 \nMalt Products Corporation

208 \nManildra Group USA

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127 \nMilne MicroDried

308 \nNorthern Crops Institute

214 \nPacifico Moore Products, Inc.

226 \nPalsgaard, Inc.

129 \nPerkinElmer

108 \nPGP International Inc.

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114 \nRadio Frequency Co., Inc.

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314 & 316 \nTree Top, Inc.

217 \nUnity Scientific

313 \nU.S. Highbush Blueberry Council

310 \nWenger Manufacturing, Inc.

Exhibitors listed as of September 30, 2019.

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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*

**Edith A. Christensen Award for Outstanding Contributions in Analytical Methodology**

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

**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.
POINTS TO REMEMBER
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Calgary, Alberta, Canada | October 25–27

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Go to cerealsgrains.org/cg2020 for alerts on abstract and symposia submission deadlines.
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