

# CEREALS 17

October 8–11, 2017  
San Diego California, U.S.A.



#Cereals17 #AACCI2017



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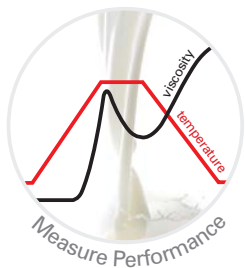


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### About AACC International



AACC International (AACCI) is dedicated to providing opportunities for exchanging knowledge in cereal grain science and advancing

innovation by facilitating collaboration, research, education, technical service, and advocacy efforts. AACCI strives to be the leading global science-based facilitator in cereal grain science and its applications by connecting science to key issues in research and product development and delivering relevant tools and resources to its members. Members of AACCI stay up-to-date and engaged on the latest advancements in cereal grain science with colleagues worldwide.

#### AACCI Headquarters

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3340 Pilot Knob Road  
St. Paul, MN 55121 U.S.A.  
Phone: +1.651.454.7250  
E-mail: [aacc@scisoc.org](mailto:aacc@scisoc.org)  
Website: [aaccnet.org](http://aaccnet.org)



# WELCOME



Lauren Brewer

A special welcome to each and every attendee, whether this is your 35th or your first meeting with the cereal grain science community. Cereals 17 is a rejuvenated meeting. The 2017 Program Team worked tirelessly to morph this meeting for the future to give presenters the opportunity to display and present their innovations and advances in cereal grain science for the next generation of experts.

San Diego is an exceptional location for our community to gather and is renowned as one of the world's most outstanding Beach Cities. With Cereals 17 being held at the Town and Country Resort & Convention Center, we are all under one roof, so expect intimate settings and ease of getting to "the place to be." Being in San Diego, expect an idyllic climate and an easy commute to beautiful beaches and world-renowned attractions.



Katharina Scherf

In building the Cereals 17 program, the 2017 Program Team has planned for attendees to experience a once-in-a-lifetime conference where you can elevate your knowledge base and explore the innovations in cereal grain science through scientific presentations and commercial exhibition. During the meeting, we are incorporating

more interactive sessions to stimulate thinking and networking.

We are offering abundant networking opportunities, like the All Division Luncheon and the Sundown San Diego Reception, providing you with the opportunity to learn alongside leading researchers and scientists, friends, and colleagues, as well as sponsors and exhibitors.

You have worked hard and given time to travel here, and we hope you take full advantage of Cereals 17. Attend as many sessions as possible, make new connections, and discover that bit of information that will expand your personal and professional knowledge.

On behalf of the 2017 Program Committee, enjoy our symphony of outstanding science, network with friends—old and new, and take time before and after the meeting to appreciate the beauty of this region and the remarkable opportunities in San Diego.

**Lauren Brewer**

*2017 Program Team Chair*

**Katharina Scherf**

*2017 Program Team Vice Chair*

## Program Team

**Program Team Chair:** Lauren Brewer, *General Mills, Minneapolis, MN, U.S.A.*

**Program Team Vice Chair:** Katharina Scherf, *Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, Germany*

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

## 2017 Team

Derrick Amoako, *Texas A&M University, College Station, TX, U.S.A.*

Dilek L. Austin, *Novozymes North America Inc., Franklinton, NC, U.S.A.*

Claudia Carter, *California Wheat Commission, Woodland, CA, U.S.A.*

Sean Finnie, *Bay State Milling, Hopkins, MN, U.S.A.*

Iris Joye, *University of Guelph, Guelph, ON, Canada*

Alecia Kiszonas, *USDA ARS, Pullman, WA, U.S.A.*

Maneka Malaloda, *North Dakota State University, Fargo, ND, U.S.A.*

Alessandra Marti, *University of Milan, Milano, Italy*

Simon Penson, *Campden BRI, Cereals and Milling, Chipping Campden, United Kingdom*

Nesli Sozer, *VTT Technical Research Centre, Espoo, Finland*

Supriya Varma, *Frito-Lay Inc., Plano, TX, U.S.A.*

Peter L. Weegels, *Sonneveld Group BV, Papendrecht, Netherlands*

Daniel Wefers, *Karlsruhe Institute of Technology, Karlsruhe, Germany*



Robert Cracknell

I am honored to welcome you to sunny San Diego, California, and Cereals 17. As AACCI moves forward in these ever-changing times, as practicing

cereal and grain scientists we need to reach forward in our careers, our companies, our network, and the organization to grow and find new ways to change—for the better.

With positive change in mind, the Program Team has taken great care to develop a meeting that provides great science and keeps you abreast of the industry. At the same time, the meeting gives you ample opportunity to meet and mingle with your peers—cereal grain science professionals who share your challenges.

While you'll find familiarity in the meeting, we hope you also find that the changes are innovative and exciting. At AACCI, you are among friends. Whether this is your 102nd annual meeting or your first, challenge yourself to learn something new, meet someone new, and do something new. It is through change and growth that we as scientists and organizations thrive.

Don't miss the chance to meet and mingle with the Board of Directors during the Tuesday night (8:30 – 9:30 p.m.) Yard Games Challenge prior to the Sundown San Diego reception. We'll be ready to talk to you about the changes that are being made for the benefit of the members and the organization, including *Cereal Foods World* and *Cereal Chemistry*; AACCI's global strategy; AACCI's rebranding; Approved Methods and Check Sample; and the 2018 London meeting.

Your 2017 Board of Directors and I look forward to connecting with you in the week ahead.

**Robert Cracknell**

*AACC International President*

# 2016–2017 AACC International Board of Directors

Get to know the AACCI Board of Directors and their work for the association during the Yard Games Challenge.  
Tuesday, October 10 • 8:30 – 9:30 p.m. • Rose Garden



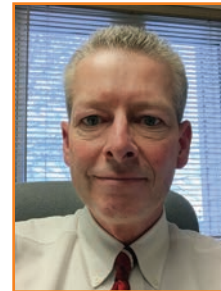
*President*  
**Robert Cracknell**  
Crackers Consulting  
Australia



*Chair of the Board*  
**Lydia Tooker Midness**  
General Mills  
U.S.A.



*President-Elect*  
**Laura M. Hansen**  
General Mills  
U.S.A.



*Treasurer*  
**Dave L. Braun**  
Firebird Artisan Mills  
U.S.A.



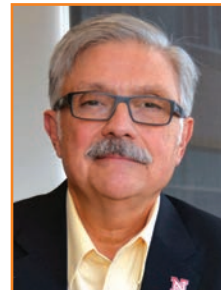
*Director*  
**Anne M. Birkett**  
Kellogg Co.  
U.S.A.



*Director*  
**Christophe M. Courtin**  
KU Leuven  
Belgium



*Director*  
**Jon M. Faubion**  
Kansas State  
University  
U.S.A.



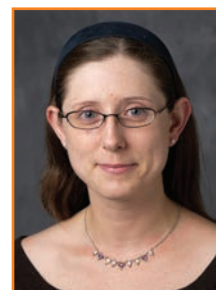
*Director*  
**Rolando A. Flores**  
New Mexico State  
University  
U.S.A.



*Director*  
**Samuel Millar**  
Warburtons Ltd.  
United Kingdom



*Director*  
**Jennifer S. Robinson**  
Bay State Milling  
Company  
U.S.A.



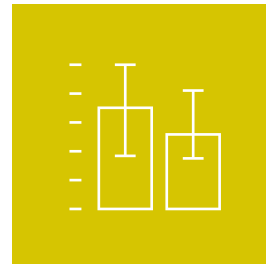
*Student Representative,  
Ex-Officio Non-Voting*  
**Leigh Schmidt**  
Purdue University  
U.S.A.



# INNOVATION FIRST. INTEGRITY ALWAYS.

## MEET EXPERT SCIENTISTS IN THE GRAIN-BASED FOODS INDUSTRY

Learn, collaborate, and innovate with the best and the brightest at this year's AACCI Meeting.



### ADVANCED SCIENCE AT YOUR SERVICE



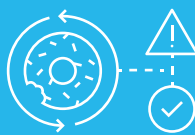
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LABELING TESTING



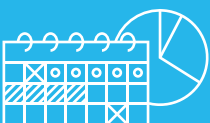
PRODUCT QUALITY  
MEASUREMENTS



PROCESS VARIABILITY  
STUDIES



FOOD SAFETY  
SUPPORT



SHELF LIFE AND PRODUCT  
PERFORMANCE DETERMINATION



PHYSICAL ATTRIBUTES AND  
FUNCTIONALITY UNDERSTANDING



Join Medallion Labs in  
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## GENERAL MEETING INFORMATION

All Cereals 17 activities will take place at the Town and Country Resort & Convention Center. Please reference the map on page 51 or in the mobile app for meeting room locations when planning your schedule. Reference the mobile app for the most current listings.

### Connect at the Meeting and All Year Long! Get Social!

Follow and join our social media groups so you can connect now and after the meeting.



On Twitter? Follow @AACCIIntl, tag us, and use #Cereals17 and #AACCI2017 throughout the meeting.



Facebook fan? Be sure to like AACCI International on Facebook.



LinkedIn more your style? Join the AACCI International Group on LinkedIn.



#### WiFi

Get Online! Free WiFi is available throughout the meeting area.

Username: AACCI Password: cereals17

### Registration Hours

Atlas Foyer

#### Sunday, October 8

8:00 a.m. – 12:00 p.m. Exhibitor registration only

12:00 – 6:30 p.m. All registration

#### Monday, October 9

7:30 a.m. – 6:30 p.m. All registration

#### Tuesday, October 10

7:30 a.m. – 5:30 p.m. All registration

#### Wednesday, October 11

7:30 – 10:30 a.m. All registration

### Speaker Kiosk Hours

Atlas Foyer

Presenters are required to upload their presentations onsite at the Speaker Kiosks during the time listed below based on their presentation day/time.

#### Sunday, October 8

9:00 a.m. – 2:00 p.m. Sunday speakers upload presentations

#### Sunday, October 8

2:00 – 7:00 p.m. Monday speakers upload presentations

#### Monday, October 9

7:30 a.m. – 5:00 p.m. Tuesday speakers upload presentations

#### Tuesday, October 10

7:30 a.m. – 5:00 p.m. Wednesday speakers upload presentations

### Exhibit and Poster Hours

Grand Hall

#### Sunday, October 8

8:00 a.m. – 12:00 p.m. Exhibitor Registration

8:00 a.m. – 3:00 p.m. Exhibit Set-Up

5:00 – 7:00 p.m. Grand Opening Solution Central Happy Hour – Exhibits Open

#### Monday, October 9

7:00 – 10:00 a.m. Poster Set-Up by Authors

10:00 – 10:20 a.m. Poster Huddles

10:00 a.m. – 6:30 p.m. Poster Viewing

4:00 – 5:00 p.m. Poster Authors Present (*even-numbered posters*)

4:00 – 6:30 p.m. Exhibits Open

4:30 – 6:10 p.m. Interactive Symposium: Advances in Optical Sorting of Cereal Grains

5:00 – 6:00 p.m. Poster Authors Present (*odd-numbered posters*)

#### Tuesday, October 10

8:00 – 8:30 a.m. Poster Huddles

8:00 a.m. – 2:30 p.m. Poster Viewing

9:30 a.m. – 12:00 p.m. Student Product Development

Competition Presentations

12:00 – 1:15 p.m. Student Product Development

Competition Samples

12:00 – 2:30 p.m. Exhibits Open

1:30 – 2:30 p.m. Interactive Symposium: Using Oral

Processing and Mouth Behavior to Drive

Development in Better Cereal-Food

Products

2:30 – 6:00 p.m. Exhibit and Poster Take-Down

### AACCI PRESS Bookstore Hours

Atlas Foyer

Sunday, October 8 4:30 – 6:30 p.m.

Monday, October 9 8:30 a.m. – 5:00 p.m.

Tuesday, October 10 8:30 a.m. – 5:00 p.m.

Wednesday, October 11 8:30 a.m. – 12:00 p.m.

### Meeting Room Space Available

A meeting room will be available for groups of 20 people or fewer.

Sign up by following the link in the Cereals 17 Mobile App or through a computer in the Registration Area.

### Photography

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

### Photo and Video Release

Photographs and video will be taken at the Cereals 17. By attending this meeting, you agree to allow AACCI's use of your photo or captured video in any AACCI publications, website, meeting, and/or association promotions.

### Committee Meetings

Unless otherwise noted, all meetings are open for any registered attendee to participate.

## DON'T MISS WHAT'S NEW

### App Ambassadors

Need help downloading or using the Cereals 17 Mobile App? Look for someone wearing a black "App Ambassador" ribbon.

### All Division Luncheon

Monday, October 9, 12:00 – 1:00 p.m. • Lion Fountain Courtyard

AACCI divisions will be represented and visible in this cohesive setting. All meeting participants are encouraged to have lunch with the division that they most associate with in their job. This collaborative and engaging environment will increase the exposure of each division and their work. Division business meetings will convene after lunch (1:00 – 2:00 p.m.).

### Poster Huddles

Monday, October 9, 10:00 – 10:20 a.m. • Grand Hall

Tuesday, October 10, 8:00 – 8:30 a.m. • Grand Hall

Poster Huddles feature select posters of additional interest, with authors offering time for a more in-depth discussion and Q&A. Four huddles will take place simultaneously in the marked "Poster Huddle" locations.

### Yard Games with Your AACCI Board of Directors— Take on the Challenge

Tuesday, October 10, 8:30 – 9:30 p.m. • Rose Garden

Board members will be present at various yard games to "challenge" the membership.

## Get to Know the AACCI Board of Directors

### Visit the Yard Game Challenge

Challenge the AACCI Board of Directors with outdoor yard games before Sundown San Diego. Learn more about the AACCI focus areas and have fun with your colleagues under the setting sun. Sink a hole-in-one and get an extra drink ticket!

**Tuesday, October 10**  
**8:30 – 9:30 p.m.**



## ▶ ALSO DON'T MISS

### Sundown San Diego Reception

Tuesday, October 10, 9:00 – 10:30 p.m. • Grand Plaza Fountain Courtyard

Join us to mix and mingle with your peers.

### AACCI Student Association Silent Auction

Sunday, October 8, 5:00 – 7:00 p.m. • Grand Hall

Make a bid to support our students!

### Timely Hot Topics

- Oats—Gluten Free, Can It Be?
- Quality Limited Shelf Life
- Pulse Product Innovation—Pathway to Future Foods
- GM Disclosure Labels on Food in the USA—Progress on Rulemaking

### Solution Central

Grand Hall

### Cereals 17 Exchange Talks

See the Cereals 17 Mobile App for scheduled times.

Come hear these short, 15-minute presentations on the Solution Central stage in the expo hall as exhibitors showcase their latest products and services.

### Student Product Development Competition

Tuesday, October 10, 9:30 a.m. – 1:15 p.m.

This competition highlights grain-based food product development skills and innovations from our up-and-coming scientists.

### Product Sampling

Tuesday, October 10, 12:00 p.m.

Join us in the Grand Hall to see and taste Arctic™ Golden Apples, the original nonbrowning apples (provided by Okanagan Specialty Fruits), and Simplot Potato Snacks provided by J.R. Simplot Company.

### Interactive Symposia

We're bringing you two hands-on, interactive learning sessions to Solution Central.

#### Monday, October 9

4:30 – 6:10 p.m. Advances in Optical Sorting of Cereal Grains

#### Tuesday, October 10

1:30 – 2:30 p.m. Using Oral Processing and Mouth Behavior to Drive Development in Better Cereal-Food Products





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# SCIENTIFIC SESSIONS AT A GLANCE

## Session Learning Formats Include:

Symposia:	Workshops:	Forum:	Technical Sessions:	Hot Topics:
Twenty-minute podium-based presentations combined with interactive elements, such as panel question-and-answer sessions.	Sessions that emphasize interactions and practical problem solving in addition to standard educational presentations.	A featured session during which ideas and views on a particular issue are exchanged over a longer period of time than a typical symposium.	A group of 15-minute talks covering new scientific insights and technological advancements in the field.	Designed to get attendees up to speed on key and/or complex topics that are affecting cereal grain science professionals and today's rapidly evolving world.

Sunday, October 8					
8:00 a.m. – 3:00 p.m.	<b>Pre-Meeting Workshop*:</b> Measurement of Polysaccharides and Enzymes in Cereal Grains and Cereal-Based Foods (Pacific Salon 2)		<b>Pre-Meeting Workshop*:</b> Chemical Leaveners: A Workshop Associated with the New Guide Book (Pacific Salon 3)		
12:00 – 3:00 p.m.	<b>Pre-Meeting Workshop*:</b> GM Disclosure in the USA: Testing for the Presence of Ingredients Is Not so Simple (Pacific Salon 1)				
3:00 – 4:40 p.m.	<b>Technical Session:</b> Understanding Starch Granular Structure and Interactions (California Room)	<b>Technical Session:</b> Industry Applications: Quality, Sustainability and Traceability (Golden West Room)	<b>Technical Session:</b> Grains for Nutrition and Digestive Health (San Diego Room)	<b>Technical Session:</b> Objective Rheology in Practical Applications (Pacific Salon 4 and 5)	
Monday, October 9					
10:20 – 12:00 p.m.	<b>Hot Topic:</b> Oats—Gluten Free, Can It Be? (Pacific Salon 4 and 5)	<b>Symposium:</b> Clean Label Formulation: Strategies and Functional Aspects (California Room)	<b>Symposium:</b> New Approaches to Cereal Protein Analysis (Golden Pacific Room)	<b>Symposium:</b> Effect of Processing on Nutritional and Rheological Properties of Pulse Crops: Benefits of 'By-Products' (San Diego Room)	
2:00 – 3:40 p.m.	<b>Hot Topic:</b> Quality Limited Shelf Life (Pacific Salon 4 and 5)	<b>Technical Session:</b> Compositional Functionality in Dough and Baking (Golden West Room)	<b>Symposium:</b> Link Between Dietary Fiber, Colonic Microbiota and Health (California Room)	<b>Symposium:</b> Moving Through the Plateau of Rice Quality with Omics Technologies (San Diego Room)	
2:00 – 4:30 p.m.	Best Student Research Paper Competition (Pacific Salon 2)				
4:30 – 6:10 p.m.	<b>Solution Central: Interactive Symposium:</b> Advances in Optical Sorting of Cereal Grains (Grand Hall)				
Tuesday, October 10					
8:30 – 10:10 a.m.	<b>Technical Session:</b> Late-Breaking Technical Session (Pacific Salon 4 and 5)	<b>Symposium:</b> Best Be Gluten-Free—Inside the Controversy (Golden Pacific Ballroom)	<b>Symposium:</b> Dietary Fiber: New Regulations, Methods, Resolving Concerns (San Diego Room)	<b>Symposium:</b> Chemical Imaging: Potential Benefit to Evaluate Production, Processing Efficiency, and Product Purity (Golden West Room)	
8:30 a.m. – 12:10 p.m.	<b>Forum:</b> Endangered Foods—Saving Your Breakfast (Town & Country Room)				
9:30 a.m. – 1:15 p.m.	Student Product Development Competition				
10:30 a.m. – 12:10 p.m.	<b>Hot Topic:</b> Pulse Product Innovation—Pathway to Future Foods (Pacific Salon 4 and 5)	<b>Technical Session:</b> Improving Quality and Safety Aspects of Wheat (runs until 12:30 p.m.) (Golden West Room)	<b>Symposium:</b> Food Selection According to Food Processing: Fabulous or Flawed? (Golden Pacific Ballroom)	<b>Symposia:</b> Enzymes in Baking and Cereal Science: A Review of Key Applications (San Diego Room)	
1:30 – 2:30 p.m.	<b>Solution Central: Interactive Symposium:</b> Using Oral Processing and Mouth Behavior to Drive Development in Better Cereal-Food Products (Grand Hall)				
2:30 – 4:10 p.m.	<b>Workshop:</b> Publishing Cereal Science (Pacific Salon 1)	<b>Hot Topic:</b> GM Disclosure Labels on Food in the USA—Progress on Rulemaking (San Diego Ballroom)	<b>Technical Session:</b> Chemical Interactions of Micro and Macro Components (Golden West Room)	<b>Symposium:</b> Game Changers in Nutrition Workshop (Golden Pacific Ballroom)	<b>Symposium:</b> Communicating Food Waste and Prevention Strategies (California Room)
Wednesday, October 11					
8:30 a.m. – 10:10 p.m.	<b>Technical Session:</b> Post Year of the Pulse: Sustainable Components and Processes (Pacific Salon 4 and 5)	<b>Technical Session:</b> Processing Transformations to Improve Cereal Product Quality (San Diego Room)	<b>Technical Session:</b> Whole Grain Applications: A Wave for the Future (California Room)	<b>Technical Session:</b> Rice: From Genes to Drying (Golden West Room)	

\* Ticketed event—additional registration fee required.

# PROGRAM SCHEDULES

## SUNDAY, OCTOBER 8

SUNDAY

8:00 a.m. – 12:00 p.m.	Registration Open ( <i>exhibitors only</i> )	Atlas Foyer
8:00 a.m. – 3:00 p.m.	Exhibit Set-Up	Grand Hall
8:00 a.m. – 3:00 p.m.	<b>Pre-Meeting Workshop*</b> : Measurement of Polysaccharides and Enzymes in Cereal Grains and Cereal-Based Foods	Pacific Salon 2
	<b>Pre-Meeting Workshop*</b> : Chemical Leaveners	Pacific Salon 3
8:00 – 10:00 a.m.	Check Sample Committee Meeting	Royal Palm 2
9:00 a.m. – 2:00 p.m.	Speaker Kiosks Open ( <i>for Sunday speakers</i> )	Atlas Foyer
9:30 – 11:00 a.m.	Book Committee Meeting	Royal Palm 3
11:00 a.m. – 12:00 p.m.	Approved Methods Technical Committee Meeting	Pacific Salon 6
11:00 a.m. – 12:30 p.m.	<i>Cereal Chemistry</i> Editorial Board Luncheon	Royal Palm 2
12:00 – 3:00 p.m.	<b>Pre-Meeting Workshop*</b> : GM Disclosure in the USA: Testing for the Presence of Ingredients Is Not so Simple	Pacific Salon 1
12:00 – 6:30 p.m.	Registration Open	Atlas Foyer
1:00 – 2:00 p.m.	2017–2018 Technical Program Planning Meeting	Royal Palm 3
1:00 – 2:00 p.m.	Nominations Committee Meeting	Royal Palm 2
1:30 – 3:00 p.m.	Student Association Executive Committee & Advisory Board Meeting	Royal Palm 4
2:00 – 7:00 p.m.	Speaker Kiosks Open ( <i>for Monday speakers</i> )	Atlas Foyer
3:00 – 4:40 p.m.	<b>Technical Session</b> : Objective Rheology in Practical Applications	Pacific Salon 4 and 5
	<b>Technical Session</b> : Grains for Nutrition and Digestive Health	San Diego Room
	<b>Technical Session</b> : Industry Applications: Quality, Sustainability and Traceability	Golden West Room
	<b>Technical Session</b> : Understanding Starch Granular Structure and Interactions	California Room
4:30 – 5:00 p.m.	First Timers' Session	Royal Palm 5 and 6
4:30 – 6:30 p.m.	AACCI PRESS Bookstore Open	Atlas Foyer
5:00 – 7:00 p.m.	AACCI Student Association Silent Auction	Grand Hall
5:00 – 7:00 p.m.	Grand Opening Solution Central Happy Hour – Exhibits Open*	Grand Hall
5:30 – 6:00 p.m.	So, You Need a New Approved Method? ( <i>see details on page 11</i> )	Cereals 17 Exchange
7:00 – 9:00 p.m.	Grain Tasting Dinner*	Tiki Hut

### Sunday Highlights

#### First Timers' Session

4:15 – 5:00 p.m. • Royal Palm 5 and 6

Attendees new to the AACCI Annual Meeting are encouraged to attend this short introduction to the meeting and the association and to meet key players in the management of both.

#### AACCI Student Association Silent Auction

5:00 – 7:00 p.m. • Grand Hall

Make a bid at the AACCI Student Association Silent Auction. Proceeds will help provide funding for student participation at the 2018 AACCI Annual Meeting in London.

#### Grand Opening Solution Central Happy Hour – Exhibits Open\*

5:00 – 7:00 p.m. • Grand Hall

Come for happy hour at Solution Central to visit exhibitors and discover the latest products and services that advance the work of our industry.

#### Grain Tasting Dinner\*

7:00 – 9:00 p.m. • Tiki Hut

Join your colleagues in a tasting menu inspired by the incredible versatility of grains. From the savory to the sweet, Town and Country Resort & Convention Center's Chef Paul and his culinary team will provide you with an immersive sensory experience. Each bite you take will highlight the broad spectrum of grain aromas, textures, and tastes. This epicurean delight is the perfect way to kick off a memorable week at Cereals 17. Limited tickets available at the Registration Desk.

### Sunday Scientific Sessions

#### SUNDAY MORNING

#### Measurement of Polysaccharides and Enzymes in Cereal Grains and Cereal-Based Foods • Pre-Meeting Workshop\*

Pacific Salon 2 • 8:00 a.m. – 3:00 p.m.

**Organizer:** Barry McCleary, Megazyme, Bray, IRELAND

**Moderator:** Ida Lazewska, Megazyme, Bray, IRELAND

**Sponsors:** Envirologix, OMIC USA Inc.

#### Chemical Leaveners: A Workshop Associated with the New Guide Book • Pre-Meeting Workshop\*

Pacific Salon 3 • 8:00 a.m. – 3:00 p.m.

**Organizer:** EB Russell, Kemin Food Technologies, Des Moines, IA, U.S.A.

**Sponsoring Committee:** Chemical Leavening Technical Committee

M. Briggs, Kudos Blends, Worcestershire, United Kingdom

R. Berube, Church & Dwight Co., Inc., Princeton, NJ, U.S.A.

S. Book, ICL Food Specialties, St. Louis, MO, U.S.A.

N. Livvix, Clabber Girl Corp., Terre Haute, IN, U.S.A.

L. Scheffers, Channahon, IL, U.S.A.

\* Ticket Required

## SUNDAY AFTERNOON

### GM Disclosure in the USA: Testing for the Presence of Ingredients Is Not so Simple • Pre-Meeting Workshop\*

Pacific Salon 1 • 12:00 p.m. – 3:00 p.m.

**Organizer:** Ray Shillito, Bayer CropScience, Durham, NC, U.S.A.

**Sponsors:** Envirologix, OMIC USA Inc.

**Sponsoring Committee:** Molecular Biomarkers for Grain

GM disclosure in the USA: Testing for the presence of ingredients is not so simple. E. P. Smith, Eurofins Genescan, New Orleans, LA, U.S.A.

Nutritional properties of wheat arabinoxylan. M. GIDLEY, The University of Queensland, Brisbane, AUSTRALIA

### Grains for Nutrition and Digestive Health • Technical Session

San Diego Room • 3:00 – 4:40 p.m.

**Moderators:** Sean M. Finnie, Bay State Milling, Quincy, MA;

Kathryn Harris, Bay State Milling Company, Quincy, MA, U.S.A.

**3:00 p.m. • O-101**

High amylose wheat: A route to healthier foods. A. REGINA, Canberra, AUSTRALIA

**3:20 p.m. • O-102**

Nutritional properties of wheat arabinoxylan. M. GIDLEY, The University of Queensland, Brisbane, AUSTRALIA

**3:40 p.m. • O-103**

Three way interactions between digestive enzymes, fibres and starch granules control digestion rate and extent. S. DHITAL, ARC Center of Excellence in Plant Cell Walls, Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, Brisbane, AUSTRALIA

**4:00 p.m. • O-104**

Optimization of wheat bran bioprocessing to improve protein solubilization and digestibility. E. ARTE, University of Helsinki, Helsinki, FINLAND

**4:20 p.m. • O-105**

Investigating the slow digesting property of pearl millet cous-cous. A. M. HAYES, Purdue University, West Lafayette, IN; Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

### Industry Applications: Quality, Sustainability and Traceability • Technical Session

Golden West Room • 3:00 – 4:40 p.m.

**Moderators:** Annette Evans, Tate and Lyle, Hoffman Estates, IL; Julia Faye Brantsen, Texas A&M University, College Station, TX, U.S.A.

#### \*Edith A. Christensen Awardee Lecture

**\*3:00 p.m. • O-201**

Measuring Gluten in Oats at Low Levels—Sampling and Testing Challenges. P. WEHLING, General Mills, Inc., Golden Valley, MN, U.S.A.

**3:20 p.m. • O-202**

An investigation assessing sustainability in bakery supply chain and consumers' opinion for purchasing sustainable baking products. V. STOJCESKA, Brunel University London, Uxbridge, Middlesex, UNITED KINGDOM

**3:40 p.m. • O-203**

Whole- and enriched-grain poultry and fish sandwich consumption can favorably impact energy and nutrients to limit in US adults. Y. PAPANIKOLAOU, Nutritional Strategies, Paris, ON, CANADA

**4:00 p.m. • O-204**

Understanding the effectiveness of clean label preservatives in shelf stability and mold inhibition. S. AGAH, Solvaira Specialties, Bell, CA, U.S.A.

**4:20 p.m. • O-205**

Review of bulk grain traceability practices and studies. R. SHARMA, Iowa State University, Ames, IA, U.S.A.

## So, You Need a New Approved Method?



Sunday • 5:30 – 6:00 p.m.  
Cereals 17 Exchange Area (Exhibit Hall)

Share your ideas and learn how to bring a method to the cereal grain community!

The AACCI *Approved Methods of Analysis* are a core part of what AACCI provides the cereal grain community, by ensuring that methods are peer-reviewed for functionality and consistency. This collection of methods remains the most respected, referred to, and relied upon source for food scientists, processors, and product developers in the field of grain science and technology. AACCI wants to know what methods, guidelines, and enhancements are currently needed. This session is an opportunity for attendees to join in the process of developing innovative new methods. All you need is your experience to participate!



### Objective Rheology in Practical Applications • Technical Session

Pacific Salon 4 and 5 • 3:00 – 4:40 p.m.

**Moderators:** Katharina Scherf, Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, GERMANY; Arno G. B. Wouters, KU Leuven, Leuven, BELGIUM

#### \*Student Research Leadership Program Awardee Lecture

\*3:00 p.m. • O-301

AACCI Pasta Firmness Collaborative Study: Results. N. T. ALZUWAI, The University of New England, Armidale, AUSTRALIA

3:20 p.m. • O-302

Controlling texture development in the sheeting of wheat flour Asian noodle doughs. M. G. SCANLON, Food Science, University of Manitoba, Winnipeg, MB, CANADA

3:40 p.m. • O-303

Ratio of A- to B-type wheat starch granules as a parameter to improve the quality of gluten-free breads: Optimizing dough viscosity and Pickering stabilization. L. ROMAN, University of Valladolid, Palencia, SPAIN

4:00 p.m. • O-304

Prediction of breadmaking performance with quinoa (*Chenopodium quinoa*) and amaranth (*Amaranthus caudatus*) flours using the Mixolab. C. H. CORNEJO HURTADO DE MENDOZA, Universidad Nacional Agraria La Molina, Lima, PERU

4:20 p.m. • O-305

Assessing the suitability of starches for high temperature processes using a high-temperature Rapid Visco Analyser. M. L. BASON, Perten Instruments of Australia Pty. Ltd., Macquarie Park, AUSTRALIA

### Understanding Starch Granular Structure and Interactions • Technical Session

California Room • 3:00 – 4:40 p.m.

**Moderators:** Mukti Singh, USDA, Peoria, IL, U.S.A.; Ana M. Magallanes Lopez, North Dakota State University, Fargo, ND, U.S.A.

#### \*Alsberg-French-Schoch Awardee Lecture

\*3:00 p.m. • O-401

Toward Understanding of Distinct Functions of Starch Biosynthetic Isozymes in Rice Endosperm and Establishing the Strategy for Manipulating the Starch Structure and Physico-chemical Properties. Y. NAKAMURA, Akita Prefectural University, Akita, JAPAN

3:20 p.m. • O-402

“Zipper model” explains intermolecular re-associations of starch molecules. M. M. MARTINEZ, Purdue University, West Lafayette, IN; Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

3:40 p.m. • O-403

Investigate the influence of weather stress on wheat starch structure characteristics related to the low falling number issue. Y. SHAO, University of Idaho and Washington State University, Moscow, ID, U.S.A.

4:00 p.m. • O-404

Combined mutations in Starch Branching Enzyme II genes increase resistant starch but affect bread-making quality in common wheat. A. SCHÖNHOFEN, University of California-Davis, Davis, CA, U.S.A.

4:20 p.m. • O-405

Single helix in V-type starch carrier determines the encapsulation capacity of ethylene. B. ZHANG, South China University of Technology, Guangzhou, CHINA

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**MONDAY, OCTOBER 9**

7:00 – 8:15 a.m.	Kansas State University Alumni Breakfast*	Pacific Salon 3
7:00 – 8:30 a.m.	<b>Technical Committee Meetings</b> Bioactive Compounds Methods Food Safety and Microbiology Molecular Biomarkers for Grain (and Pulses) Physical Testing Methods Protein and Enzyme Methods Vitamins, Minerals and Lipids	Royal Palm 3 Royal Palm 1 Royal Palm 4 Royal Palm 5 Royal Palm 2 Royal Palm 6
7:00 – 10:00 a.m.	Poster Set-Up by Authors	Grand Hall
7:30 a.m. – 5:00 p.m.	Speaker Kiosks Open ( <i>for Tuesday speakers</i> )	Atlas Foyer
7:30 a.m. – 6:30 p.m.	Registration Open	Atlas Foyer
8:30 a.m. – 5:00 p.m.	AACCI PRESS Bookstore Open	Town & Country Room
8:45 – 10:00 a.m.	Opening General Session with Keynote	Grand Hall
10:00 – 10:20 a.m.	Poster Huddles	California Room
10:00 – 10:20 a.m.	Break	Pacific Salon 4 and 5
10:00 a.m. – 6:30 p.m.	Poster Viewing	San Diego Room
10:20 a.m. – 12:00 p.m.	<b>Symposium:</b> Clean Label Formulation: Strategies and Functional Aspects <b>Hot Topic:</b> Oats—Gluten Free, Can It Be? <b>Symposium:</b> Effect of Processing on Nutritional and Rheological Properties of Pulse Crops: Benefits of ‘By-Products’ <b>Symposium:</b> New Approaches to Cereal Protein Analysis	Golden Pacific Ballroom Royal Palm 1
10:30 a.m. – 12:00 p.m.	Scientific Advisory Panel (SAP) Meeting	Lion Fountain Courtyard
12:00 – 1:00 p.m.	All Division Luncheon*	
1:00 – 2:00 p.m.	<b>Business Meetings</b> Carbohydrate Division Engineering & Processing Division Milling & Baking Division Nutrition Division Rheology Division Rice Division	Sunrise Dover Tiki Hut Esquire Stratford Towne
2:00 – 3:40 p.m.	<b>Technical Session:</b> Compositional Functionality in Dough and Baking <b>Symposium:</b> Moving Through the Plateau of Rice Quality with Omics Technologies <b>Hot Topic:</b> Quality Limited Shelf Life <b>Symposium:</b> Link Between Dietary Fiber, Colonic Microbiota and Health	Golden West Room San Diego Room Pacific Salon 4 and 5 California Room
2:00 – 4:30 p.m.	Best Student Research Paper Competition	Pacific Salon 2
2:30 – 4:00 p.m.	<i>Cereal Foods World</i> Task Force Meeting	Royal Palm 1
2:30 – 4:00 p.m.	Foods Safety, Quality, and Regulatory Committee (FSQRC) Meeting	Royal Palm 6
4:00 – 5:00 p.m.	Poster Authors Present ( <i>even-numbered posters</i> )	Grand Hall
4:00 – 6:30 p.m.	Solution Central Activities – Exhibits Open	Grand Hall
4:30 – 6:10 p.m.	<b>Interactive Symposium:</b> Advances in Optical Sorting of Cereal Grains	Grand Hall
5:00 – 6:00 p.m.	Poster Authors Present ( <i>odd-numbered posters</i> )	Grand Hall

\* Ticket Required

**MONDAY**

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## Monday Highlights

### Opening Keynote Speaker



#### EQ+IQ = The Winning Formula for Digestible Science

**Linda Eatherton**  
*Managing Director and Partner, Ketchum  
Global Food & Beverage Practice*

During the Opening General Session,  
8:45 – 10:00 a.m., in the Town &  
Country Room

Hear about new research that crystalizes the forces of change and the changed consumer to put in perspective the importance of our roles and our ability to bridge the divide and be heard. The insights will reveal the new marketing playbook that includes a new approach to sharing facts, science, and information to conversations that work and win!

#### Hot Topic: Oats—Gluten Free, Can It Be?

10:20 a.m. – 12:00 p.m. • Pacific Salon 4 and 5

Gluten-free oats continues to be a hot topic in the world of cereals. This Hot Topic will cover four topics meant to take the listener from farm to fork while providing a look at the intermediate process steps—processing, measurement, product development, and regulation.

#### Hot Topic: Quality Limited Shelf Life

2:00 – 3:40 p.m. • Pacific Salon 4 and 5

Participants will leave this Hot Topic session understanding the practical versus ideal limits to shelf life and how to apply it to the real world. Experts will lead discussions covering (i) how is shelf life measured; (ii) how is shelf life defined; and (iii) risk assessment with application to their product. Participants will gain a common language and a common understanding of shelf life and leave with a better understanding of how the knowledge gained from shelf-life studies can give them confidence in picking a code date.

#### Best Student Research Paper Competition

2:00 – 4:30 p.m. • Pacific Salon 2

Sponsored this year by the AACCI Foundation, General Mills, and Richardson Milling, this competition highlights the research conducted and presented by students and offers them an opportunity to interact with the AACCI community at an early stage in their career. Watch these top six finalists compete: Jose Bonilla, Purdue University; Ghanendra Gartaula, The University of Queensland; Shuxiang Liu, Washington State University; Shreeya Ravisankar, Texas A&M University; Claudia Vogel, German Research Center for Food Chemistry; and Thanh P. Vu, University of Massachusetts.

#### Solution Central

4:00 – 6:30 p.m. • Grand Hall

Return to the Grand Hall to continue your search for the latest products and services that advance the work of the industry. Meet with poster authors; participate in the Interactive Symposium: Advances in Optical Sorting of Cereal Grains; take in the Cereals 17 Exchange discussions; and more.

## Monday Scientific Sessions

### MONDAY MORNING

#### Clean Label Formulation: Strategies and Functional Aspects • Symposium

California Room • 10:20 a.m. – 12:00 p.m.

**Organizers:** Tom Jondiko, Solvaira Specialties, Bell, CA, U.S.A.; Dilek Austin, Novozymes NA, Franklinton, NC, U.S.A.; Joseph M. Awika, Texas A&M University, College Station, TX, U.S.A.; Alejandro J. Perez-Gonzalez, Delavau Food Partners, Piscataway, NJ, U.S.A.

**Moderators:** Dilek Austin, Novozymes NA, Franklinton, NC, U.S.A.; Joseph M. Awika, Texas A&M University, College Station, TX, U.S.A.

**Sponsoring Committee:** Carbohydrate Division

Increasing of flour stability and microbial safety through pre-milling interventions. D. Rose, A. Bianchini, J. Stratton, L. E. Sabillón Galeas, R. Poudel. University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

Effects of clean label conditioners on dough rheology. A. J.

Perez-Gonzalez, Delavau Food Partners, Piscataway, NJ, U.S.A.

Naturally enhanced gluten functionality for flat bread and specialty products processing. T. Jondiko (1), A. L. Girard (2), J. M. Awika (2), S. Agah (1). (1) Solvaira Specialties, Bell, CA, U.S.A.; (2) Texas A&M University, College Station, TX, U.S.A.

Physically modified, multi-functional flours: Development and applications. T. Shah, Ingredient Inc., Bridgewater, NJ, U.S.A.

#### Effect of Processing on Nutritional and Rheological Properties of Pulse Crops: Benefits of 'By-Products' • Symposium

San Diego Room • 10:20 a.m. – 12:00 p.m.

**Organizers:** Nagul Naguleswaran, Ingredient Incorporated, Bridgewater, NJ, U.S.A.; Matthew Nosworthy, University of Manitoba, Winnipeg, MB, CANADA; Dilek Uzunalioglu, Ingredient, Inc., Bridgewater, NJ, U.S.A.; Matthew Nosworthy, University of Manitoba, Winnipeg, MB, CANADA; Dilek Uzunalioglu, Ingredient Incorporated, Bridgewater, NJ, U.S.A.

**Moderators:** Dilek Uzunalioglu, Ingredient, Inc., Bridgewater, NJ, U.S.A.; Matthew Nosworthy, University of Manitoba, Winnipeg, MB, CANADA

**Sponsoring Committee:** Carbohydrate Division, Protein Division

An overview of pulse starch extraction technologies. R. T. Tyler, University of Saskatchewan, Saskatoon, SK, CANADA

Characterization and comparison of pulse starches with commercial starches and novel modification methods to improve the properties. Y. Ai, L. Li, T. Z. Yuan, R. Setia. University of Saskatchewan, Saskatoon, SK, CANADA

Utilizing pulse hull fiber for improving gut microbiome. W. J. Dahl, University of Florida, Gainesville, FL, U.S.A.

Structure function relationship of pulse starches and fibers and how they can be utilized in food applications. M. Tulbek, Ingredient Inc., Bridgewater, NJ, U.S.A.

Impact of extrusion conditions on nutrition and product quality of pulse crops. S. Hood-Niefer, Saskatchewan Food Industry Development Center, Saskatoon, SK, CANADA

Effect of processing on pulse protein quality. J. D. House; University of Manitoba, Winnipeg, MB, CANADA

Application of pulse starches in foods: Physicochemical and rheological aspects. J. Han, Food Processing Development Centre, Alberta Agriculture and Forestry, Leduc, AB, CANADA

**New Approaches to Cereal Protein Analysis • Symposium**

Golden Pacific Ballroom • 10:20 a.m. – 12:00 p.m.

**Organizers:** Jayne E. Bock, C.W. Brabender, Cincinnati, OH, U.S.A.; Alessandra Marti, University of Milan, Milan, ITALY**Sponsoring Committee:** AACCI Protein Division

Measuring gluten aggregation properties: A fast and reliable response to evolving demands. A. Marti, Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY

Using FTIR spectroscopy to track protein structural changes in response to processing. J. E. Bock, C.W. Brabender Instruments, Inc., Cincinnati, OH, U.S.A.; University of Guelph, Guelph, ON, CANADA

Isolation and proteomic characterization of wheat, rye and barley gluten. K. Scherf, Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, GERMANY

Of trees, vines, and the jungle: How impervious is the gluten network? F. Bonomi, Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY

**Oats—Gluten Free, Can It Be? • Hot Topic**

Pacific Salon 4 and 5 • 10:20 a.m. – 12:00 p.m.

**Organizer:** Lindsey R. Mullenbach, Grain Millers, Inc., St. Ansgar, IA, U.S.A.**Sponsor:** Medallion Labs

Gluten free regulations and gluten free claims on oats: A Canadian perspective. M. Abbott, Health Canada, Ottawa, Ontario, CANADA

Sampling the oat supply chain for gluten. P. Wehling, General Mills, Golden Valley, MN, U.S.A.

Visual examination for determining the presence of gluten containing grains in gluten-free oats. L. K. Allred, Gluten Intolerance Group of North America, Auburn, WA, U.S.A.

Check Cereals 17 Mobile App. M. Keeley, Bob's Red Mill, Portland, OR, U.S.A.

**MONDAY AFTERNOON****Link Between Dietary Fiber, Colonic Microbiota and Health • Symposium**

California Room • 2:00 – 3:40 p.m.

**Organizers:** Dilek Uzunalioglu, Ingredion Incorporated, Bridgewater, NJ, U.S.A.; Dilek Austin, Novozymes NA, Franklinton, NC, U.S.A.; Yunus E. Tuncil, Food Science Department, Purdue University, West Lafayette, IN, U.S.A.**Moderator:** Yunus E. Tuncil, Food Science Department, Purdue University, West Lafayette, IN, U.S.A.**Sponsors:** ADM, Cargill Research, General Mills Foundation, Tate & Lyle, Megazyme**Sponsoring Committee:** Carbohydrate Division

Impact of dietary fibers and whole grains on gut health. D. Rose, J. Kopf, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

Dietary fibers and maintenance of gut microbial diversity. S. R. Lindemann, Departments of Food Science and Nutrition Science, Purdue University, West Lafayette, IN, U.S.A.

Dietary fiber, evolution, and the gut microbiome. J. Walter, CAIP Chair for Nutrition, Microbes, and Gastrointestinal Health, Edmonton, AB, CANADA; Department of Biological Sciences, University of Alberta, Edmonton, AB, CANADA

Aligning dietary fiber structures to gut microbiota. Y. E. Tuncil (1), B. R. Hamaker (2). (1) Food Science Department, Purdue University, West Lafayette, IN, U.S.A.; (2) Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

**Moving Through the Plateau of Rice Quality with Omics Technologies • Symposium**

San Diego Room • 2:00 – 3:40 p.m.

**Organizers:** Jinsong Bao, Zhejiang University, Hangzhou, CHINA; Melissa Fitzgerald, University of Queensland, Brisbane, AUSTRALIA**Moderators:** Jinsong Bao, Zhejiang University, Hangzhou, CHINA; Melissa Fitzgerald, University of Queensland, Brisbane, AUSTRALIA**Sponsoring Committee:** Rice

Rediscovering the modern synthesis: Towards an integrated breeding strategy for increased genetic gains. J. Cobbs, International Rice Research Institute, Los Baños, PHILIPPINES

Check Cereals 17 Mobile App. V. D. Daygon, University of Queensland, Brisbane, AUSTRALIA

Complementary proteome and transcriptome profiling in developing grains of a notched-belly rice mutant reveals key pathways involved in chalkiness formation. Z. Liu, Nanjing Agricultural University, Nanjing, CHINA

Exploring rice grain quality with imputation-enhanced genetic resources. D. R. Wang (1), F. Agosto-Perez (2), D. Chebotarov (3), Y. Shi (2), M. Fitzgerald (4), K. McNally (3), N. Alexandrov (3), and S. McCouch (2). (1) University at Buffalo, Buffalo, NY, U.S.A.; (2) Cornell University, Ithaca, NY, U.S.A.; (3) International Rice Research Institute, Metro Manila, PHILIPPINES; (4) University of Queensland, Brisbane, AUSTRALIA

**Compositional Functionality in Dough and Baking • Technical Session**

Golden West Room • 2:00 – 3:40 p.m.

**Moderators:** Roger A. Clemens, USC School of Pharmacy, International Center for Regulatory Science, Los Angeles, CA; Maneka Malalgoda, North Dakota State University, Fargo, ND, U.S.A.**2:00 p.m. • O-501**

Influence of low-molecular-weight glutenin subunit haplotypes on dough rheology and baking quality in elite common wheat varieties. M. I. IBBA, Washington State University, Pullman, WA, U.S.A.

**2:20 p.m. • O-502**

The role of selected enzymes in baking with Australian wheat. L. CATO, Australian Export Grains Innovation Centre, Perth, WA, AUSTRALIA

**2:40 p.m. • O-503**

Reduction of FODMAP levels in wheat bread using yeast- and enzyme-based strategies. C. M. COURTIN, KU Leuven, Laboratory of Food Chemistry and Biochemistry, Leuven, BELGIUM

**3:00 p.m. • O-504**

Enzyme- and yeast-based strategies to modulate dough fermentation dynamics. N. STRUYE, KU Leuven, Laboratory of Food Chemistry and Biochemistry, Leuven, BELGIUM

**3:20 p.m. • O-505**

Wheat gluten functionality during the production of fermented pastry. N. OOMS, KU Leuven, Leuven, BELGIUM

### Quality Limited Shelf Life • Hot Topic

Pacific Salon 4 and 5 • 2:00 – 3:40 p.m.

**Organizers:** EB Russell, Kemin Food Technologies, Fenton, MO, U.S.A.; Mark Sewald, Holistic Shelf Life Solutions, Maple Grove, MN, U.S.A.

**Moderator:** EB Russell, Kemin Food Technologies, Fenton, MO, U.S.A.

**Sponsor:** Medallion Labs

Check the Cereals 17 Mobile App for session details!

### Best Student Research Paper Competition

Pacific Salon 2 • 2:00 – 4:30 p.m.

**2:00 p.m.**

Effects of thermal and mechanical treatments on the protein distribution and functional properties of wheat flour. C. VOGEL, German Research Center for Food Chemistry, Freising, GERMANY

**2:20 p.m.**

Mechanisms for strong synergistic anti-inflammatory action of cereal-pulse flavonoid combinations in Caco-2 monolayer model. S. RAVISANKAR, Texas A&M University, College Station, TX, U.S.A.

**2:40 p.m.**

Oxidative stability of lipids in crackers in relations to water activity, gluten, reducing sugars, and solid fat content. T. P. VU, University of Massachusetts, Amherst, MA, U.S.A.

**3:00 p.m.**

Development of specific antibodies against high and low molecular weight glutenins as research tools by comparative proteomics. J. C. BONILLA, Department of Food Science, College of Agriculture, Purdue University, West Lafayette, IN, U.S.A.

**3:20 p.m.**

The effect of water activity on thermal resistances of *Salmonella enterica* and *Enterococcus faecium* in wheat flour. S. LIU, Washington State University, Pullman, WA, U.S.A.

**3:40 p.m.**

An insight into the composition and properties of wheat endosperm cell walls. G. GARTAULA, ARC Center of Excellence in Plant Cell Walls, Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, Brisbane, AUSTRALIA

### Advances in Optical Sorting of Cereal Grains • Interactive Symposium

Grand Hall • 4:30 – 6:10 p.m.

**Organizers:** Stephen Delwiche, USDA ARS, Beltsville, MD, U.S.A.; Francesco Dell'Endice, QualySense AG, Glattbrugg, SWITZERLAND

**Moderator:** Stephen Delwiche, USDA ARS, Beltsville, MD, U.S.A.

**Sponsoring Committee:** Spectroscopic Methods

Francesco Dell'Endice, QualySense AG, Glattbrugg, SWITZERLAND

Karin Wehlin, BoMill, Lund, SWEDEN

Wes Shadow, Perten Instruments, Springfield, IL, U.S.A.

Darren Robey, Foss Analytical AB, Hilleroed, DENMARK



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**TUESDAY, OCTOBER 10**

7:00 – 8:30 a.m.	AACCI Past Presidents' Breakfast	Lexington
7:00 – 8:30 a.m.	<b>Technical Committee Meetings</b> Bread Baking Methods Oat and Barley Products Pasta Products Analysis Pulse and Legume Rice Milling and Quality Soft Wheat and Flour Products Spectroscopic Methods Yeast Evaluation	Royal Palm 1 Royal Palm 4 Pacific Salon 3 Royal Palm 6 Royal Palm 2 Royal Palm 3 Royal Palm 5 Lion Fountain Courtyard
7:30 a.m. – 5:00 p.m.	Speaker Kiosks Open ( <i>for Wednesday speakers</i> )	Atlas Foyer
7:30 a.m. – 5:30 p.m.	Registration Open	Atlas Foyer
8:00 – 8:30 a.m.	Poster Huddles	Grand Hall
8:00 a.m. – 2:30 p.m.	Poster Viewing	Grand Hall
8:30 – 10:10 a.m.	<b>Symposium:</b> Dietary Fiber: New Regulations, Methods, Resolving Concerns <b>Symposium:</b> Best Be Gluten-Free—Inside the Controversy <b>Technical Session:</b> Late-Breaking Technical Session <b>Symposium:</b> Chemical Imaging: Potential Benefit to Evaluate Production, Processing Efficiency, and Product Purity	San Diego Room Golden Pacific Ballroom Pacific Salon 4 and 5 Golden West Room
8:30 a.m. – 12:10 p.m.	<b>Forum:</b> Endangered Foods—Saving Your Breakfast	Town & Country Room
8:30 a.m. – 5:00 p.m.	AACCI PRESS Bookstore Open	Atlas Foyer
9:00 – 11:00 a.m.	<i>Cereal Foods World</i> Editorial Board Meeting	Lexington
9:30 a.m. – 1:15 p.m.	Student Product Development Competition	Grand Hall
10:10 – 10:30 a.m.	Break	
10:30 a.m. – 12:10 p.m.	<b>Symposium:</b> Enzymes in Baking and Cereal Science: A Review of Key Applications <b>Symposium:</b> Food Selection According to Food Processing: Fabulous or Flawed? <b>Hot Topic:</b> Pulse Product Innovation—Pathway to Future Foods <b>Technical Session:</b> Improving Quality and Safety Aspects of Wheat (runs until 12:30 p.m.)	San Diego Room Golden Pacific Ballroom Pacific Salon 4 and 5 Golden West Room
11:00 a.m. – 12:00 p.m.	Professional Development Panel Meeting	Royal Palm 1
12:00 – 2:30 p.m.	Solution Central Activities – Exhibits Open	Grand Hall
1:00 – 2:30 p.m.	AACCI-ICC Leadership Meeting	Royal Palm 3
1:30 – 2:30 p.m.	<b>Interactive Symposium:</b> Using Oral Processing and Mouth Behavior to Drive Development in Better Cereal-Food Products	Grand Hall
2:30 – 3:30 p.m.	AACCI Foundation Meeting	Royal Palm 4
2:30 – 3:30 p.m.	Division Leadership Committee (DLC) Meeting	Royal Palm 2
2:30 – 4:10 p.m.	<b>Symposium:</b> Game Changers in Nutrition Workshop <b>Hot Topic:</b> GM Disclosure Labels on Food in the USA—Progress on Rulemaking <b>Symposium:</b> Communicating Food Waste and Prevention Strategies <b>Technical Session:</b> Chemical Interactions of Micro and Macro Components <b>Workshop:</b> Publishing Cereal Science	Golden Pacific Ballroom San Diego Ballroom California Room Golden West Room Pacific Salon 1
2:30 – 6:00 p.m.	Exhibit and Poster Take-Down	Grand Hall
3:30 – 4:30 p.m.	China Strategies Task Force Meeting	Royal Palm 1
4:15 – 5:00 p.m.	Student Association Business Meeting	Royal Palm 3
4:15 – 5:15 p.m.	2018 Technical Program Planning Meeting	Royal Palm 2
5:00 – 6:00 p.m.	Speed Networking Social	Pacific Salon 3
5:00 – 6:00 p.m.	Protein Division Business Meeting	Esquire
6:00 – 9:00 p.m.	Cincinnati Section Dinner (Contact Jim Schuh)	Offsite
6:00 – 9:00 p.m.	Carbohydrate Division Networking Dinner*	Tiki Hut
8:30 – 9:30 p.m.	AACCI Board of Directors Yard Games Challenge with Membership	Rose Garden
9:00 – 10:30 p.m.	Sundown San Diego Reception*	Grand Plaza Fountain Courtyard

\* Ticket Required

**TUESDAY**



## Tuesday Highlights

### Forum: Endangered Foods—Saving Your Breakfast

8:30 a.m. – 12:10 p.m. • Town & Country Room



The Forum will review diseases that affect key crops. World-recognized experts will identify and share their thoughts on the solutions and the new technologies that are saving the time-tested components of your breakfast and other meals. The Forum will finish with a discussion around global

regulatory acceptance of the new approaches, solutions that will affect their introduction, and activities to mitigate the hurdles.

Join us in the Grand Hall after the Forum to see and taste Arctic™ Golden Apples, the original nonbrowning apples (provided by Okanagan Specialty Fruits), and Simplot Potato Snacks provided by J.R. Simplot Company.

### Hot Topic: Pulse Product Innovation—Pathway to Future Foods

8:30 – 10:10 a.m. • Pacific Salon 4 and 5

In 2016, 1,100 new pulse products were launched in North America alone. Many of these products contain pulse ingredients such as flours or protein isolates. Even so, the research and technologies supporting pulse ingredient utilization are continually being refined for optimization in end-use applications from gluten-free baking applications to meat analogues. Presenters will discuss the opportunities in the market, research needs, and how government regulation impacts the success of plant-based proteins.

### Student Product Development Competition

Solution Central

9:30 a.m. – 12:00 p.m. Presentations

12:00 – 1:15 p.m. Samples

This competition highlights grain-based food product development skills and innovations from our up-and-coming scientists. Join us on the Solution Central stage to watch teams from the Universidad del Azuay, Ecuador; University of Guelph, Canada; Kansas State University; North Dakota State University; Purdue University; Texas A&M University; and Washington State University. After their presentations, taste their products.

### Student Product Development Competition Sponsors

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General Mills

Kellogg Company

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Starquest F.O.O.D. Consulting LLC

### Hot Topic: GM Disclosure Labels on Food in the USA—Progress on Rulemaking

2:30 – 4:10 p.m. • San Diego Ballroom

USDA-AMS is tasked with developing the rules for implementing The National Bioengineered Food Disclosure Standard. The standard leaves many issues unsettled. This Hot Topic is a follow-on from the hot topic session at the 2016 annual meeting and will update participants and promote dialogue about proposed digital disclosure methods (including a report of the study that will be completed by mid-year), the definition of bioengineered food, how the law may be implemented, and procedures for continuing to provide input into the process. This Hot Topic also complements the Sunday pre-meeting workshop on methods for testing for the presence of GM products in food.

### Speed Networking Social

5:00 – 6:00 p.m. • Pacific Salon 3

Through a series of quick exchanges with multiple contacts, students and early career professionals have the chance to seek career and research guidance. Preregistration is required.

### Yard Games with Your AACCI Board of Directors—Take on the Challenge

8:30 – 9:30 p.m. • Rose Garden

Mingle with the AACCI Board of Directors in a fun, non-intimidating environment. Board members will be present at various yard games to “challenge” the membership. You’ll be able to give your feedback about AACCI, the industry, and the meeting, and you just might leave with an extra drink ticket!

### Sundown San Diego Reception

9:00 – 10:30 p.m. • Grand Plaza Fountain Courtyard

Join us to mix and mingle with your peers.



## New Format!

### Student Product Development Competition

AACCI is excited to have seven teams participate in this year’s Student Product Development Competition. This year’s competition will also take place in the Exhibit Hall. Watch team presentations and sample unique creations on **Tuesday, October 10 from 9:30 a.m. – 1:30 p.m.**





## Tuesday Scientific Sessions

### TUESDAY MORNING

#### Best Be Gluten-Free—Inside the Controversy • Symposium

Golden Pacific Ballroom • 8:30 – 10:10 a.m.

**Organizers and Moderators:** Katharina Scherf, Deutsche Forschungsanstalt für Lebensmittelchemie, Freising, GERMANY; Alessandra Marti, University of Milan, Milan, ITALY

**Sponsoring Committee:** Protein Division

**Cosponsors:** Protein Technical Committee, Enzymes Technical Committee

Gluten-free baking: Solving formulation challenges with innovative solutions. E. De La Pena, Ingredion Inc., Bridgewater, NJ, U.S.A.

Consumer/ceeliac perception of gluten-free food products. B. Mattioni (1,2), A. De Francisco (2), M. Tilley (3). (1) Universidade Federal de Santa Catarina, Florianópolis, BRAZIL; (2) Laboratory of Cereals, Food Science and Technology Department, Florianópolis, Santa Catarina, BRAZIL; (3) USDA ARS CGAHR, Manhattan, KS, U.S.A.

Novel approaches to improve the carbohydrate quality of gluten-free goods: Connection between sensory and nutritional consciousness. M. M. Martinez, Purdue University, West Lafayette, IN, U.S.A.

Gluten-free growing pains: Challenges for gluten-free validation in an expanding market. M. Downs, FARRP, Department of Food Science and Technology, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

#### Chemical Imaging: Potential Benefit to Evaluate Production, Processing Efficiency, and Product Purity • Symposium

Golden West Room • 8:30 – 10:10 a.m.

**Organizer and Moderator:** David L. Wetzel, Kansas State University, Manhattan, KS, U.S.A.

Microspectroscopic high spatial resolution mid-IR and near IR chemical imaging of cross sectional fields of view of plant and other biological materials. D. L. Wetzel, Kansas State University, Manhattan, KS, U.S.A.

Quantitative chemical imaging of individual heterogeneous flour streams and their weight combinations within a thumbnail field of view. M. D. Boatwright, Kansas State University, Manhattan, KS, U.S.A.

Ultra-high resolution drone visible and near infrared imagery and its potential for high throughput phenotyping for grain crop genetic selection. K. Price, AgPixel, LLC, Johnston, IA, U.S.A.  
Infrared spectroscopic imaging studies of medicinal plants. C. Huck, Universitat Innsbruck, Innsbruck, AUSTRIA

#### Dietary Fiber: New Regulations, Methods, Resolving Concerns • Symposium

San Diego Room • 8:30 – 10:10 a.m.

**Organizers:** David W. Plank, Medallion Labs/General Mills, Minneapolis, MN; Jonathan W. DeVries, DeVries & Associates, Coon Rapids, MN; Lisa Povolny, General Mills/Medallion Labs, Minneapolis, MN, U.S.A.

**Moderators:** Jonathan W. DeVries, DeVries & Associates, Coon Rapids, MN, U.S.A.; Lisa Povolny, General Mills/Medallion Labs, Minneapolis, MN, U.S.A.

**Sponsors:** The Food Lawyers, Medallion Labs

**Sponsoring Committees:** Dietary Fiber and Other Carbohydrates Committee, Bioactive Compounds Committee

Labeling of dietary fiber. P. Trumbo, U.S. Food and Drug Administration, College Park, MD, U.S.A.

The new U.S. dietary fiber regulations and demonstrating the physiological benefits of fiber. J. Slavin, University of Minnesota, St. Paul, MN, U.S.A.; Department of Food Science and Nutrition, St. Paul, MN, U.S.A.

New analytical methods for assisting with regulatory compliance. D. W. Plank, General Mills/Medallion Labs, Golden Valley, MN, U.S.A.

Development and validation of a rapid, Codex compliant method for measurement of total dietary fiber. B. V. McCleary, J. Cox. Megazyme, Bray, IRELAND

Dietary fiber, citizen petitions, class actions and beyond. G. C. Salmas, The Food Lawyers, Los Angeles, CA, U.S.A.

#### Late-Breaking Technical Session • Technical Session

Pacific Salon 4 and 5 • 8:30 – 10:10 a.m.

**Moderators:** Supriya Varma, PepsiCo, McKinney, TX, U.S.A.; Rui Liu, Institute of Food and Nutrition Development, Ministry of Agriculture, Beijing, CHINA

**8:30 a.m. • O-1201**

Measuring gluten—A glimpse into the controversy. M. COLGRAVE, CSIRO Agriculture and Food, Brisbane, AUSTRALIA

**8:50 a.m. • O-1202**

Complementary proteome and transcriptome profiling reveals key pathways involving in chalkiness formation. Z. LIU, Nanjing Agricultural University, Nanjing, CHINA

**9:10 a.m. • O-1203**

Improving rate of fermentation during use of adjuncts in beverage alcohol production. D. KUMAR, University of Illinois Urbana-Champaign, Urbana, IL, U.S.A.

**9:30 a.m. • O-1204**

The protective role of phytate in the oxidative degradation of cereal beta-glucans. Y. WANG, University of Helsinki, Helsinki, FINLAND

**9:50 a.m. • O-1205**

Material science and rheology based guidelines for developing healthy products high in fiber while maintaining attractive sensory properties. J. W. VAN DER KAMP, TNO Food and Nutrition, Zeist, NETHERLANDS

#### Endangered Foods—Saving Your Breakfast • Forum

Town & Country Room • 8:30 a.m. – 12:10 p.m.

**Organizers:** Lindsey R. Mullenbach, Grain Millers Inc., St. Ansgar, IA, U.S.A.; Ray Shillito, Bayer CropScience, Durham, NC, U.S.A.; E. Pearce Smith, Eurofins Genescan, New Orleans, LA, U.S.A.

**Moderator:** Ray Shillito, Bayer CropScience, Durham, NC, U.S.A.

**Sponsor:** Bayer

**Sponsoring Committee:** Biotechnology Division

**Cosponsors:** Oat Committee, Barley Committee

Plant diseases threatening some favorite breakfast foods.

T. D. Murray, Washington State University, Pullman, WA, U.S.A.  
New potato varieties for reduction of inputs and food waste. T. Rood, J.R. Simplot Company, Boise, ID, U.S.A.

Barley and oat resistance breeding: Using new tools to complement the old ones. A. Beattie, Crop Development Centre, University of Saskatchewan, Saskatoon, SK, CANADA

Citrus greening a case for the necessity of biotech. T. E. Eyrich, Southern Gardens Citrus, Clewiston, FL, U.S.A.

Banana splits from its extinction cycle. A. H. Chambers, University of Florida, Homestead, FL, U.S.A.

*continued*

Preventing food waste and improving the consumer experience—  
Nonbrowning Arctic® apples. J. Armen, Okanagan Specialty  
Fruits, Summerland, BC, CANADA  
Countering emerging threats to crops that provide breakfast. W.  
Parrott, University of Georgia, Athens, GA, U.S.A.

### Enzymes in Baking and Cereal Science: A Review of Key Applications • Symposium

San Diego Room • 10:30 a.m. – 12:10 p.m.

**Organizers:** Bram Pareyt, KU Leuven, Leuven, Belgium; Dilek Austin, Novozymes NA, Franklinton, NC, U.S.A.

**Moderators:** Bram Pareyt, KU Leuven, Leuven, Belgium; Dilek Austin, Novozymes NA, Franklinton, NC, U.S.A.

**Sponsoring Committees:** Protein Division, Carbohydrate Division

Effects of arabinoxylan hydrolyzing enzymes on rheological properties and baking quality of whole wheat flours. B. Cetiner (1), H. Koksel (2). (1) Central Research Institute for Field Crops, Ankara, TURKEY; (2) Hacettepe University, Ankara, TURKEY  
Enzymes and their impact on bread texture. E. Agache, Puratos, Groot-Bijgaarden, BELGIUM

Check Cereals 17 Mobile App. L. Kalum, Novozymes, Bagsvaerd, DENMARK

Preferential substrates for an effective *Fusarium* lipase and importance of a balanced lipid population in bread making. S. Melis (1), A. Pauly (1), B. Bodson (2), J. A. Delcour (1). (1) KU Leuven, Leuven, BELGIUM; (2) Departments of Agronomy and Bioengineering & Chemistry, University of Liege, Gembloux Agrobio Tech, Gembloux, BELGIUM

### Food Selection According to Food Processing: Fabulous or Flawed? • Symposium

Golden Pacific Ballroom • 10:30 a.m. – 12:10 p.m.

**Organizers:** Sylvia B. Rowe, SR Strategy LLC, Washington, DC, U.S.A.; Julie Miller Jones, St. Catherine University, Minneapolis, MN, U.S.A.

**Moderator:** Sylvia B. Rowe, SR Strategy LLC, Washington, DC, U.S.A.

**Sponsor:** Grains Food Foundation

Check Cereals 17 Mobile App. J. M. Jones, St. Catherine University, Minneapolis, MN, U.S.A.

Food processing promotes health and saves lives. R. A. Clemens, USC School of Pharmacy, International Center for Regulatory Science, Los Angeles, CA, U.S.A.

### Pulse Product Innovation—Pathway to Future Foods • Hot Topic

Pacific Salon 4 and 5 • 10:30 a.m. – 12:10 p.m.

**Organizers:** Jeff Rumney, USA Dry Pea & Lentil Council, Moscow, ID, U.S.A.; Jessie L. Hunter, American Pulse Association, Moscow, ID, U.S.A.

**Moderators:** Jeff Rumney, USA Dry Pea & Lentil Council, Moscow, ID, U.S.A.; Jessie L. Hunter, American Pulse Association, Moscow, ID, U.S.A.

Pulse flour milling and pulse protein isolation. C. A. Hall III, North Dakota State University, Fargo, ND, U.S.A.

The characterization of pulse protein quality. C. Marinangeli, Pulse Canada, Winnipeg, MB, CANADA

Manufacturing pulse protein flours, concentrates and isolates. J. E. Mann, Ingredion, Indianapolis, IN, U.S.A.

Power of plant derived proteins. S. Mahadevan, Hampton Creek, San Francisco, CA, U.S.A.

### Improving Quality and Safety Aspects of Wheat • Technical Session

Golden West Room • 10:30 a.m. – 12:30 p.m.

**Moderators:** Claudia Carter, California Wheat Commission, Woodland, CA; Xinyi Wei, Department of Food and Bioproduct Sciences, University of Saskatchewan, Saskatoon, SK, CANADA

#### \*Walter Bushuck Awardee Lecture

#### \*\*Young Scientist Research Awardee Lecture

#### \*10:30 a.m. • O-601

Analysis of Gliadin Proteins with LC-Mass Spectrometry. M. MALALGODA, North Dakota State University, Fargo, ND, U.S.A.

#### \*\*10:50 a.m. • O-602

EnGRAINED in Safety. A. BIANCHINI, University of Nebraska, Lincoln, NE, U.S.A.

#### 11:10 a.m. • O-603

Analysis of preharvest sprouting of wheat and the development of postharvest technologies to reduce its impact on wheat quality. H. OLAERTS, KU Leuven, Laboratory of Food Chemistry and Biochemistry, Leuven, BELGIUM

#### 11:30 a.m. • O-604

Hard, medium-hard and extraordinarily soft wheat varieties: Starch, gluten proteins and their blends characteristics. N. SINGH, Guru Nanak Dev University, Amritsar, INDIA

#### 11:50 a.m. • O-605

Technological characterization of Lebanese wheat bread new cultivars under a significant water stress. N. SAKR, Institut Polytechnique UniLaSalle, Beauvais, FRANCE

#### 12:10 p.m. • O-606

Determination of volatile compounds in heat-treated straight-grade flours from normal and waxy wheats. J. XU, Kansas State University, Manhattan, KS, U.S.A.

## TUESDAY AFTERNOON

### Using Oral Processing and Mouth Behavior to Drive Development in Better Cereal-Food Products • Interactive Symposium

Grand Hall • 1:30 – 2:30 p.m.

**Organizer:** Matthew Yurtec, Ingredion Inc., Bridgewater, NJ, U.S.A.

**Moderator:** Dilek Uzunalioglu, Ingredion, Inc., Bridgewater, NJ, U.S.A.

**Sponsoring Committee:** Rheology Division

Understand that food products are consumed differently by different groups of the population, which will have a direct impact on whether or not the product is perceived well and ultimately whether or not the product is successful. J. C. Vahalik, U&I Collaboration, Denville, NJ, U.S.A.

Concepts and methods to study oral processing of starch and cereal based foods. G. Della Valle, INRA, Versailles, FRANCE

Use concepts of oral processing and mouth-behavior into product development processes that will help drive the development of food products or ingredients that can lead to increased consumer acceptance or product success. D. Uzunalioglu, Ingredion, Inc., Bridgewater, NJ, U.S.A.

## Chemical Interactions of Micro and Macro Components • Technical Session

Golden West Room • 2:30 – 4:10 p.m.

**Moderators:** Alecia M Kiszonas, USDA-ARS WWQL, Pullman, WA; Maria Itria Ibba, Washington State University, Pullman, WA, U.S.A.

### 2:30 p.m. • O-701

Puroindolines: Impact of their presence on gluten forming proteins. C. GAJADEERA, University of Minnesota, St. Paul, MN, U.S.A.

### 2:50 p.m. • O-702

Stepwise evaluation of the potential of wheat gluten hydrolysates as foaming agents in food systems. A. G. B. WOUTERS, KU Leuven, Leuven, BELGIUM

### 3:10 p.m. • O-703

Bread modified by proline specific endoprotease: Characteristics in relation to non-celiac gluten sensitivity. N. O. CARR, DSM Biotechnology Center, Delft, NETHERLANDS

### 3:30 p.m. • O-704

Use of sourdough made with dextran enriched faba bean flour for enhancing the baking properties of wheat bread. Y. WANG, Department of Food and Environmental Sciences, University of Helsinki, Helsinki, FINLAND

### 3:50 p.m. • O-705

Effect of pseudocereals flours as raw materials on the phase separation, water and thermal properties of wheat flour doughs. S. PEREZ, Universidad Mayor de San Simon, Cochabamba, BOLIVIA; Lund University, Lund, SWEDEN

## Communicating Food Waste and Prevention Strategies • Symposium

California Room • 2:30 – 4:10 p.m.

**Organizers:** Gbenga A. Olatunde, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.; Griffiths G. Atungulu, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.

**Moderators:** Griffiths G. Atungulu, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.

Reducing post-harvest losses by grain chilling. J. Karcher, Frigor Tec Inc., Houston, TX, U.S.A.

World Food Preservation Center® LLC. C. Wilson, World Food Preservation Center® LLC, Shepherdstown, WV, U.S.A.

Postharvest loss prevention of cereals and improving the livelihood of small holder farmers. P. Kailita, ADM Institute for the Prevention of Postharvest Loss, Urbana, IL, U.S.A.

Communicating food waste and prevention strategies in an African context. W. Owino (1), K. Edoh (2), J. Ambuko (3), H. Affognon (4), C. Mutungi (5), D. Sila (2). (1) Jomo Kenyatta University, Nairobi, KENYA; (2) Food Science and Technology, Jomo Kenyatta University of Agriculture and Technology, Nairobi, KENYA; (3) Nairobi University-Kenya, Nairobi, KENYA; (4) ICRISAT, Bamako, MALI; (5) International Centre of Insect Physiology and Ecology, Nairobi, KENYA

## Game Changers in Nutrition Workshop • Symposium

Golden Pacific Ballroom • 2:30 – 4:10 p.m.

**Organizers and Moderators:** Vicky A. Solah, Curtin University, Perth, AUSTRALIA; Anne M. Birkett, Global & USA Nutrition Science, Kellogg Co., Battle Creek, MI, U.S.A.; Mary Ellen Camire, University of Maine, Orono, ME, U.S.A.

**Sponsor:** Nutrition Division

Childhood nutrition and long-term health: Is there a role for cereal grains. S. Jonnalagadda, KERRY, Beloit, WI, U.S.A.

Variation in AMY1 gene copy number: What are the implications for starch digestion and health? F. S. Atkinson (1), D. Hancock (2), P. Petocz (3), J. C. Brand-Miller (1). (1) Charles Perkins Centre & School of Life and Environmental Sciences, The University of Sydney, Camperdown, NSW, AUSTRALIA; (2) School of Life and Environmental Sciences, The University of Sydney, Camperdown, NSW, AUSTRALIA; (3) Department of Statistics, Macquarie University, North Ryde, NSW, AUSTRALIA

Dietary fiber and gut microbiota—Why this changes things. B. R. Hamaker, Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

## GM Disclosure Labels on Food in the USA—Progress on Rulemaking • Hot Topic

San Diego Ballroom • 2:30 – 4:10 p.m.

**Organizer:** Ray Shillito, Bayer CropScience, Durham, NC, U.S.A.

**Moderator:** Ray Shillito, Bayer CropScience, Durham, NC, U.S.A.

**Sponsors:** Envirologix, OMC

**Sponsoring Committee:** Molecular Biomarkers for Grain

Progress on rulemaking. C. Morris, USDA-AMS, Washington, DC, U.S.A.

Details available through mobile app. D. Mckalip, USDA-AMS, Washington, DC, U.S.A.

Is detection methodology appropriate for manufactured foods? E. P. Smith, Eurofins Genescan, New Orleans, LA, U.S.A.

## Publishing Cereal Science • Workshop

Pacific Salon 1 • 2:30 – 4:10 p.m.

**Organizers:** Les Copeland, Editor-in-Chief, *Cereal Chemistry*; Jon Faubion, Senior Editor, *Cereal Chemistry*

Publishing the findings of research is an essential professional skill for cereal scientists, yet many find this a difficult aspect of their work. Several recent trends are compounding these difficulties for researchers and are placing increased pressures on scientific journals. The digital disruption of publication, growth of open-access journals, the move toward post-publication availability of data (open data), and an increased respect for observing research ethics, inter alia, are leading scientific publication in new directions. Funding agencies and policy-makers are expressing concerns about the quality of published data and the replicability, reproducibility, and generalizability of experimental studies. Scientific rigor and clear communication are particularly important in cereal science research, which underpins public policy through its relationship to food and nutrition. This session, led by Les Copeland and Jon Faubion, Editor-in-Chief and Senior Editor, respectively, of *Cereal Chemistry*, will address many of these issues. The session will cover the basics of good papers; handling data; enhancing the prospects of success in the peer-review system; ethical considerations in preparing and submitting manuscripts; and acting as a peer reviewer. An outlook on future directions for *Cereal Chemistry* will be given as the journal enters a publishing partnership in 2018 with the commercial publishing house Wiley.



## WEDNESDAY, OCTOBER 11

7:00 – 8:15 a.m.	North Dakota State University Alumni Breakfast*	Esquire
7:00 – 8:30 a.m.	<b>Technical Committee Meetings</b> Asian Products Chemical Leavening Agents Dietary Fiber and Other Carbohydrates Experimental Milling Methods for Grain and Flour Testing Statistical Advisory	Royal Palm 4 Royal Palm 1 Royal Palm 6 Royal Palm 3 Royal Palm 2 Royal Palm 5 Atlas Foyer
7:30 – 10:30 a.m.	Registration Open	California Room
8:30 – 10:10 a.m.	<b>Technical Session:</b> Whole Grain Applications: A Wave for the Future <b>Technical Session:</b> Processing Transformations to Improve Cereal Product Quality <b>Technical Session:</b> Rice: From Genes to Drying <b>Technical Session:</b> Post Year of the Pulse: Sustainable Components and Processes	San Diego Room  Golden West Room Pacific Salon 4 and 5 Atlas Foyer
8:30 a.m. – 12:00 p.m.	AACCI PRESS Bookstore Open	
10:10 – 10:30 a.m.	Break	
10:30 a.m. – 12:00 p.m.	Closing General Session with Keynote	Town & Country Room
12:00 – 1:30 p.m.	ICC Lunch* Approved Methods Technical Committee Lunch Meeting	Royal Palm 6 Pacific Salon 6
2:00 – 5:00 p.m.	AACCI Board Meeting	Royal Palm 1
* Ticket Required		

WEDNESDAY

### Wednesday Highlights

#### Closing Keynote Speaker



#### 3D-Printed Foods: Innovations in Military Field Feeding Technology

**Lauren E. Oleksyk**  
*Team Leader, Food Engineering and Analysis Team, Combat Feeding Directorate, US Army Natick Soldier Research, Development and Engineering Center (NSRDEC)*

During the Closing General Session, 8:30 – 10:30 a.m., in the Town & Country Room

Efforts to advance 3D food printing technology for military field feeding will be presented, including the future operational concept and anticipated challenges associated with printing and characterizing food material, product perception, and potential applications in the cereal grain industry.

### THANK YOU VOLUNTEERS!

Many members are actively engaged in AACCI through their contributions on various boards, forums, divisions, and committees. AACCI volunteers tackle important issues that cover the breadth of cereal grain science as well as key policy, program, product, and societal priorities.

Special thanks to everyone who served in this capacity this year! For a comprehensive, up-to-date listing linking you to all the branches of AACCI leadership visit [aaccnet.org/membership/leadership](http://aaccnet.org/membership/leadership).



Many of these groups meet during the annual meeting and welcome new participation. View the daily schedule and plan to join in and learn more about how you can be involved!



## Wednesday Scientific Sessions

### WEDNESDAY MORNING

#### Post Year of the Pulse: Sustainable Components and Processes • Technical Session

Pacific Salon 4 and 5 • 8:30 – 10:10 a.m.

**Moderators:** Dilek Austin, Novozymes North America Inc., Wake Forest, NC; Yujie Wang, University of Helsinki, Helsinki, FINLAND

**8:30 a.m. • O-801**

Functional proteins from pulses—Effect of pulse type and processing factors. A. SAMARANAYAKA, POS Bio-Sciences, Saskatoon, SK, CANADA

**8:50 a.m. • O-802**

Effect of processing on the in vitro and in vivo protein quality of beans (*Phaseolus vulgaris*). M. NOSWORTHY, University of Manitoba, Winnipeg, MB, CANADA

**9:10 a.m. • O-803**

Polyphenol composition and bioactivities of edible beans from China. H. CORKE, Shanghai Jiao Tong University, Shanghai, CHINA

**9:30 a.m. • O-804**

Fermentation of fava bean flour by exopolysaccharides-producing lactic acid bacteria enables texture tailoring. Y. XU, University of Helsinki, Helsinki, FINLAND

**9:50 a.m. • O-805**

Structure, functionality, and digestibility of wrinkled pea starch compared with high-amylose maize starch. Y. AI, University of Saskatchewan, Saskatoon, SK, CANADA

#### Processing Transformations to Improve Cereal Product Quality • Technical Session

San Diego Room • 8:30 – 10:10 a.m.

**Moderators:** Alessandra Marti, Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY; Laura Roman, University of Valladolid, Palencia, SPAIN

**8:30 a.m. • O-901**

Preparation of water-repellent flour by calcium hydroxide treatment. J. MATSUKI, Food Research Institute, National Agriculture and Food Research Organization, Tsukuba, Ibaraki, JAPAN

**8:50 a.m. • O-902**

Pearling affects both the lipid content and composition and lipase activity levels of wheat (*Triticum aestivum* L.) roller milling fractions. N. DE BRIER, KU Leuven, Leuven, BELGIUM

**9:10 a.m. • O-903**

Development of iron and vitamin A fortified extruded food products for nutritional intervention programmes. B. SINGH, Punjab Agricultural University, Ludhiana, INDIA

**9:30 a.m. • O-904**

Scaled-up method for rapid simultaneous drying and microbial decontamination of corn using infrared heating. Z. MOHAMMADI SHAD, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.

**9:50 a.m. • O-905**

Processing of high protein cereal-legume based fortified blended foods using extrusion. S. ALAVI, Kansas State University, Department of Grain Science and Industry, Manhattan, KS, U.S.A.

#### Rice: From Genes to Drying • Technical Session

Golden West Room • 8:30 – 10:10 a.m.

**Moderators:** Vanessa M. Brovelli, Bay State Milling, Quincy, MA, U.S.A.; Yang Lan, North Dakota State University, Fargo, ND, U.S.A.

**8:30 a.m. • O-1001**

Genetic basis and structural characterization of resistant starch in rice. J. BAO, Zhejiang University, Hangzhou, CHINA

**8:50 a.m. • O-1002**

Using compositional variation and starch mobilization pattern during seed germination of rice grains to predict glycemic property. M. K. DE GUZMAN, International Rice Research Institute, Los Baños, PHILIPPINES

**9:10 a.m. • O-1003**

Impact of storage environment on growth of aflatoxigenic microbes on rice. S. A. WILSON, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.

**9:30 a.m. • O-1004**

Protein extraction from the by-product of rice milling. K. N. TRAN, The University of Queensland, Brisbane, AUSTRALIA

**9:50 a.m. • O-1005**

Drying of high moisture content parboiled rice with microwaves at 915 MHz frequency. D. L. SMITH, The University of Arkansas, Fayetteville, AR, U.S.A.

#### Whole Grain Applications: A Wave for the Future • Technical Session

California Room • 8:30 – 10:10 a.m.

**Moderators:** Niels De Brier, KU Leuven, Leuven, BELGIUM; Audrey L. Girard, Texas A&M University, College Station, TX, U.S.A.

**8:30 a.m. • O-1101**

Improved metabolic resilience with wholegrain wheat products demonstrated with a new challenge method for intervention studies—New perspectives for wholegrain health claims. J. W. VAN DER KAMP, TNO Food and Nutrition, Zeist, NETHERLANDS

**8:50 a.m. • O-1102**

Changes in enzymatic activities and functionality of whole wheat flour due to steaming of wheat kernels. R. POUDEL, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.

**9:10 a.m. • O-1103**

The effect of whole wheat and wheat milling fractions on adiposity, glucose control, and lipid metabolism in obese rats with type 2 diabetes. D. D. GALLAHER, University of Minnesota, St. Paul, MN, U.S.A.

**9:30 a.m. • O-1104**

Identification of SNPs, QTLs, and dominant markers associated with wheat flavor using genotyping-by-sequencing. A. M. KISZONAS, USDA-ARS WWQL, Pullman, WA, U.S.A.

**9:50 a.m. • O-1105**

Bioprocessing as a tool to enhance utilization of whole grain sorghum and millet. N. H. MAINA, University of Helsinki, Department of Food and Environmental Sciences, Helsinki, FINLAND

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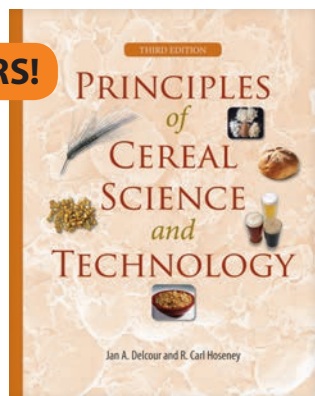
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# SCIENTIFIC POSTERS

Grand Hall

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Poster numbers are grouped by category section with a “P-“ prefix. This number refers to the abstract number on the Cereals 17 Mobile App and online (e.g., P-101, P-102). Poster titles and presenting authors are listed by category on the following pages.

Poster abstracts and full author lists are available online at [aacnet.org/meet](http://aacnet.org/meet) and through the Cereals 17 Mobile App.

## Poster Hours

### Monday, October 9

7:00 – 10:00 a.m.	Poster Set-Up by Authors
10:00 a.m. – 6:30 p.m.	Poster Viewing
4:00 – 5:00 p.m.	Poster Authors Present ( <i>even-numbered posters</i> )
5:00 – 6:00 p.m.	Poster Authors Present ( <i>odd-numbered posters</i> )

### Tuesday, October 10

8:00 a.m. – 2:30 p.m.	Poster Viewing
2:30 – 6:00 p.m.	Poster Take-Down

**NEW!**  
**DON'T MISS**

## Poster Huddles

Poster Huddles feature 20 select posters that have been identified to be of an additional interest to meeting participants. During the two moderated Poster Huddle times, authors will provide a brief time to offer a more in-depth discussion of research and findings, followed by an opportunity for audience questions. Four huddles will take place simultaneously in the marked “Poster Huddle” locations. (See map on page 37.)

## MONDAY, OCTOBER 9

10:00 – 10:20 a.m. • Grand Hall

### Poster Huddle #1

**Moderator:** Jose Orenday-Ortiz, Washington State University, Pullman, WA, U.S.A.

- 10:00 – 10:10 a.m.     **Soft wheat characteristics required for making baking powder biscuits**  
F. MA, The Ohio State University, Wooster, OH, U.S.A.
- 10:10 – 10:20 a.m.     **Effect of potassium chloride on dough physical and rheological properties, gluten microstructures, and bread characteristics**  
R. HU, Kansas State University, Manhattan, KS, U.S.A.

### Poster Huddle #2

**Moderator:** Lauren Brewer, General Mills, Minneapolis, MN, U.S.A.

- 10:00 – 10:10 a.m.     **Shear-induced ordering of amylopectin dispersions**  
F. FANG, Purdue University, West Lafayette, IN, U.S.A.
- 10:10 – 10:20 a.m.     **Elucidating mechanisms for proanthocyanidin interactions with gluten proteins**  
A. L. GIRARD, Texas A&M University, College Station, TX, U.S.A.

### Poster Huddle #3

**Moderator:** Alecia Kiszonas, USDA-ARS WWQL, Pullman, WA, U.S.A.

- 10:00 – 10:10 a.m.     **Amylose-only-based starch bioplastics**  
A. BLENNOW, University of Copenhagen, Frederiksberg C, DENMARK
- 10:10 – 10:20 a.m.     **Increasing sugar recovery in corn dry grind processing through fiber pretreatment after liquefaction**  
C. V. KURAMBHATTI, University of Illinois-Urbana Champaign, Urbana, IL, U.S.A.

### Poster Huddle #4

**Moderator:** Maneka Malalgoda, North Dakota State University, Fargo, ND, U.S.A.

- 10:00 – 10:10 a.m.     **Understanding the effect of extrusion on anti-nutritional factors and digestibility of great northern beans using a modified split plot design**  
P. GULATI, University of Nebraska, Lincoln, NE, U.S.A.
- 10:10 – 10:20 a.m.     **Biological activation of wheat for enhanced in vitro antioxidant activity, bioactive components and nutrient digestibility**  
A. SINGH, Punjab Agricultural University, Ludhiana, INDIA

*continued*

**TUESDAY, OCTOBER 10**

8:00 – 8:30 a.m. • Grand Hall

**Poster Huddle #1**

**Moderator:** Maneka Malalgoda, North Dakota State University, Fargo, ND, U.S.A.

- 8:00 – 8:10 a.m.      **Preparation, structure and digestibility of spherulites produced from debranched waxy maize starches**  
J. SHI, Kansas State University, Manhattan, KS, U.S.A.
- 8:10 – 8:20 a.m.      **The effect of the degree of modification on the emulsifying capacity of small granular starches**  
A. MAREFATI, Lund University, Lund, SWEDEN
- 8:20 – 8:30 a.m.      **Ability of the 3-deoxyanthocyanidin apigeninidin to promote protein polymerization through disulfide interchanges**  
L. R. SCHMIDT, Department of Food Science, West Lafayette, IN, U.S.A.

**Poster Huddle #2**

**Moderator:** Chandani Perera, Roquette America, Geneva, IL, U.S.A.

- 8:00 – 8:10 a.m.      **Increasing the nutritional and bioactive potential of underutilized Mexican pigmented blue maize seeds by optimizing the germination conditions**  
C. D. CHAVARÍN-MARTÍNEZ, Programa Regional de Posgrado en Biotecnología, Facultad de Ciencias Químico Biológicas, Culiacán, MEXICO
- 8:10 – 8:20 a.m.      **Experimental simulation of cross-flow rice drying: Effect of tempering approaches on milling yields**  
S. MUKHOPADHYAY, University of Arkansas, Fayetteville, AR, U.S.A.
- 8:20 – 8:30 a.m.      **Barometric pressure correction for falling number**  
S. R. DELWICHE, USDA ARS, Beltsville, MD, U.S.A.

**Poster Huddle #3**

**Moderator:** Devin Rose, University of Nebraska, Lincoln, NE, U.S.A.

- 8:00 – 8:10 a.m.      **Analysis of genetic factors influencing pre-harvest sprouting in Montana grown wheats**  
J. VETCH, Montana State University, Bozeman, MT, U.S.A.
- 8:10 – 8:20 a.m.      **Improving phenolic bioactive-linked anti-hyperglycemic functions of dark germinated barley sprouts using seed-driven elicitation strategy**  
R. RAMAKRISHNA, North Dakota State University, Fargo, ND, U.S.A.
- 8:20 – 8:30 a.m.      **Identifying differences in human gastric emptying rate and glycemic response of processed whole grain wheat meals**  
E. A. PLETSCHE, Whistler Center for Carbohydrate Research at Purdue University, West Lafayette, IN, U.S.A.

**Poster Huddle #4**

**Moderator:** Iris Joye, University of Guelph, Guelph, ON, CANADA

- 8:00 – 8:10 a.m.      **Impact of processing on anthocyanins and antioxidant capacity of bread and muffin made from purple wheat**  
E. ABDELAAL, Agriculture and Agri-Food Canada, Guelph, ON, CANADA
- 8:10 – 8:20 a.m.      **Evaluation of a vacuum dough expansion system (VDES) and a simplified flour test to predict bread loaf volume**  
B. RAJPUROHIT, South Dakota State University, Brookings, SD, U.S.A.
- 8:20 – 8:30 a.m.      **Improving intermediate wheatgrass (*Thinopyrum intermedium*) dough properties using dough conditioners at various refinement levels**  
J. DHUNGANA, University of Minnesota, St. Paul, MN, U.S.A.

## POSTER TITLES AND AUTHORS

### Wheat Quality

- P-101 **Soft winter wheat characteristics associated with pre-harvest sprouting resistance**  
T. JI, USDA ARS, Wooster, OH, U.S.A.
- P-102 **Soft wheat characteristics required for making baking powder biscuits**  
F. MA, USDA ARS CSWQRU Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.; The Ohio State University, Wooster, OH, U.S.A.
- P-103 **Delayed harvest affects semolina quality of durum wheat**  
P. CABAS-LUHMANN, North Dakota State University, Fargo, ND, U.S.A.
- P-104 **Yearly variation on quality characteristics of durum cultivars**  
S. MOAYEDI, North Dakota State University, Fargo, ND, U.S.A.
- P-105 **Mineral composition of historic durum cultivars grown in North Dakota**  
Y. LIU, North Dakota State University, Fargo, ND, U.S.A.
- P-106 **Effect of ozone treatment in wheat quality of whole grain wheat flour**  
M. ZAVARIZ DE MIRANDA, Embrapa Trigo, Passo Fundo, RS, BRAZIL
- P-107 **Effect of glyphosate on wheat quality characteristics**  
M. MALALGODA, North Dakota State University, Fargo, ND, U.S.A.
- P-108 **Understanding the inter-relationships between wheat quality, composition and dough rheology for a range of wheat cultivars**  
P. TOZATTI, Department of Food and Bioproduct Sciences, Saskatoon, SK, CANADA
- P-109 **Influence of growing region of Korean domestic wheat (cultivar Baikjung) on flour quality related to protein characteristics**  
Y. MOON, Pusan National University, Busan, SOUTH KOREA
- P-110 **Analysis on the kernel property of carbonized wheat kernel from Neolithic Age in Donghui Hill of Minle Gansu and its spread way to China**  
Y. WEI, Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences, Beijing, CHINA
- P-111 **Modeling of endosperm crush-response profile of hard red spring wheat using a single-kernel characterization system**  
J. OHM, USDA-ARS, RRVARC, Cereal Crops Research Unit, Fargo, ND, U.S.A.

### Adjusting Dough Properties

- P-201 **Improving intermediate wheatgrass (*Thinopyrum intermedium*) dough properties using dough conditioners at various refinement levels**  
J. DHUNGANA, University of Minnesota, St. Paul, MN, U.S.A.
- P-202 **Changes of molecular weight distribution of proteins during dough mixing**  
S. IWAKI, Nisshin Flour Milling Inc., Tsukuba-city, Ibaraki, JAPAN
- P-203 **Correlate salt-induced dough physical and rheological changes with gluten microstructures**  
Y. LI, Kansas State University, Manhattan, KS, U.S.A.

- P-204 **Effects of glucose oxidase and organic acids on low sodium dough handling and freezable water content produced with Harvest and Pembina CWRS wheat**  
E. HOPKINS, University of Saskatchewan, Saskatoon, SK, CANADA
- P-205 **Impact of salt reduction on the rheological properties of wheat doughs**  
I. TROOD, CHOPIN Technologies Inc., Olathe, KS, U.S.A.
- P-206 **Effect of salt (NaCl) and sodium substitution on gluten recovery and other rheological properties and bread making quality**  
Z. HERNANDEZ-ESTRADA, Oklahoma State University, Stillwater, OK, U.S.A.
- P-207 **Sodium salt functions and reduction strategies in wheat doughs and bakery products**  
Y. LI, Kansas State University, Manhattan, KS, U.S.A.
- P-208 **Effect of NaCl on water mobility and the formation of the gluten network in dough prepared from four CWRS wheat cultivars**  
N. AVRAMENKO, University of Saskatchewan, Saskatoon, SK, CANADA
- P-210 **Effect of salts from the lyotropic series on water mobility and the formation of the gluten network in dough prepared from two CWRS wheat cultivars**  
N. AVRAMENKO, University of Saskatchewan, Saskatoon, SK, CANADA
- P-211 **Effect of potassium chloride on dough physical and rheological properties, gluten microstructures, and bread characteristics**  
R. HU, Kansas State University, Manhattan, KS, U.S.A.
- P-213 **Emulsifiers effect on mixture properties and viscosity in a dough composed of whole and refined wheat flour blend**  
F. MONTENEGRO, Food Technology Institute - ITAL, Campinas, BRAZIL
- P-214 **The role of a dough hydration depletion in the in vitro starch digestibility of white bread crumb and crust**  
M. MARTINEZ, Purdue University, West Lafayette, IN, U.S.A.; Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

### Rheology

- P-301 **Relationships between Alveograph parameters and protein composition**  
D. VAZQUEZ, INIA, Colonia, URUGUAY
- P-302 **Protein enrichment of wheat flour doughs using protein hydrolysates: Farinograph properties**  
C. STEEL, University of Campinas (UNICAMP), Campinas, SP, BRAZIL
- P-303 **The Mixolab use to establish flour quality profile for cookie and cracker production in Brazil**  
M. ZAVARIZ DE MIRANDA, Embrapa Trigo, Passo Fundo, RS, BRAZIL

### Baking Quality

- P-401 **Ohmic baking—A review based on recent investigations for crustless bread production**  
A. LE BAIL, GEPEA-UMR CNRS 6144, Nantes, FRANCE
- P-402 **Does ground flaxseed affect pan bread quality?**  
S. FERNANDO, North Dakota State University, Fargo, ND, U.S.A.



- P-403 Properties and baking performance of wheat flour blends compared to 100% inherit wheat flour  
L. MO, Ardent Mills, Denver, CO, U.S.A.
- P-404 Comparison of the performance of thermally treated wheat flour during test baking low and high ratio cake formulations  
G. VERICEL, CHOPIN Technologies, Villeneuve la Garenne, FRANCE
- P-405 Impact of waiting time before baking and amount of baking powder on aeration during kneading, oven rise and final porosity of pound cake  
A. LE BAIL, GEPEA-UMR CNRS 6144, Nantes, FRANCE
- P-406 Exploring the functionality and protein structural features of commercial flour blends for different end-uses  
W. CAO, University of Guelph, Guelph, ON, CANADA

### Development and Application of Sans Gluten

- P-501 Effect of different proteins on characteristics and quality of gluten-free cakes  
M. GOMEZ PALLARES, University of Valladolid, Palencia, SPAIN
- P-502 Applicability of tamarind gum for gluten-free yellow cake and pancake  
S. ANGALET, Angalet Group International, Elmhurst, IL, U.S.A.
- P-503 Tamarind gum applications in baking for superior quality gluten-free bread baked in ERO oven  
S. ANGALET, Angalet Group International, Elmhurst, IL, U.S.A.
- P-505 Development of a gluten free bread and comparison with a commercial counterpart  
F. LABORIN, Research Center in Food & Development, AC, Hermosillo, Sonora, MEXICO
- P-506 Suitability of different proso millet varieties for production of gluten-free fresh pasta  
A. MARTI, Department of Food, Environmental and Nutritional Sciences, University of Milan, Milan, ITALY
- P-507 Gluten-free pasta: The role of blue maize flour and processing conditions on chemical and functional characteristics  
L. BELLO-PEREZ, CEPROBI-IPN, Yautepec, Morelos, MEXICO

### All About Amylose and Amylopectin

- P-601 Ultrasound treatment improving quality and permeability of normal and high-amylose rice starch  
J. HONG, Korea Food Research Institute, Seongnam-si, Gyeonggi-do, SOUTH KOREA
- P-602 Effect of ethanol and alkali concentration on physico-chemical properties of alcohol-alkali treated corn starch  
J. LIN, MingDao University, Changhua, TAIWAN
- P-603 Lamellar structure change of starches with different crystal types during gelatinization  
X. LIU, Chinese Academy of Agricultural Science, Beijing, CHINA
- P-605 New insight on cereal starch degradation: Characterisation and biotechnological approach to assess the impact of elevated alpha-amylase on end-product quality  
J. RAL, CSIRO Agriculture and Food, Canberra, AUSTRALIA
- P-606 Native-bound phenolic acids in cereal grains inhibit starch amylolysis  
J. GAO, University of Alberta, Edmonton, AB, CANADA

- P-607 The effect of the degree of modification on the emulsifying capacity of small granular starches  
A. MAREFATI, Lund University, Lund, SWEDEN
- P-608 Granule size and molecular characteristics of intermediate wheatgrass (*Thinopyrum intermedium*) starch  
J. MOGOGINTA, University of Minnesota, Twin Cities, St. Paul, MN, U.S.A.
- P-610 Shear-induced ordering of amylopectin dispersions  
F. FANG, Purdue University, West Lafayette, IN, U.S.A.; Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.
- P-611 Amylopectin fragmentation of cereal flours impacts intra- and inter-molecular starch associations during storage  
L. ROMAN, University of Valladolid, Palencia, SPAIN
- P-612 Preparation, structure and digestibility of spherulites produced from debranched waxy maize starches  
J. SHI, Kansas State University, Manhattan, KS, U.S.A.
- P-613 Cornstarch complexed with a soybean oil component imparts water resistance to paper  
F. FELKER, USDA ARS NCAUR, Peoria, IL, U.S.A.
- P-615 New structures of starch-degrading enzymes and their regulation  
B. SVENSSON, Department of Biotechnology and Biomedicine, Lyngby, DENMARK

### Polysaccharides and Fibers

- P-702 Prebiotic fibers, gut microbiome and health implications  
A. EVANS, Tate and Lyle, Hoffman Estates, IL, U.S.A.
- P-703 Structural characteristics of beta-glucan in six barley varieties differing in starch and dietary fiber composition  
E. DE ARCANGELIS, Università degli Studi del Molise, Campobasso, ITALY; Swedish University of Agricultural Sciences, Uppsala, SWEDEN
- P-704 Development of baked products of a good source of fiber with whole barley flour  
C. JIANG, Ardent Mills, Denver, CO, U.S.A.

### Proteins and Protein Hydrolyzates—Structure and Function

- P-801 Soft wheat flour chlorination: Effect on protein structural features  
J. GAYIN, University of Guelph, Guelph, ON, CANADA
- P-802 How affect the protein source on the dough rheology, quality and acceptability of enriched cookies  
M. GOMEZ PALLARES, University of Valladolid, Palencia, SPAIN
- P-803 Preparation and characterization of branched canola protein isolate  
S. LI, Guelph Research and Development Center, Agriculture and Agri-Food Canada, Guelph, ON, CANADA
- P-804 Reaction optimization, antioxidative activity evaluation, and structural characteristics of sorghum protein enzymatic hydrolysates  
S. XU, Kansas State University, Manhattan, KS, U.S.A.
- P-805 Strategies to mitigate the loss in protein digestibility upon cooking proso millet flour  
P. GULATI, University of Nebraska, Lincoln, NE, U.S.A.
- P-806 Microstructural changes in proso millet protein bodies upon cooking and digestion  
P. GULATI, University of Nebraska, Lincoln, NE, U.S.A.

- P-808 Exploring the relationship between structural and air-water interfacial properties of wheat gluten hydrolysates in a food system relevant pH range  
A. WOUTERS, KU Leuven, Leuven, BELGIUM
- P-809 Effect of the incorporation of gluten and hydrolysed gluten proteins on dough rheology and cookie quality  
A. BRAVO, University of Valladolid, Palencia, SPAIN
- P-810 The cereal prolamin fraction: An interesting matrix material for colloidal applications?  
I. JOYE, University of Guelph, Guelph, ON, CANADA
- P-811 The dynamics of gliadin nanoparticle formation through liquid antisolvent precipitation  
I. JOYE, University of Guelph, Guelph, ON, CANADA
- P-812 Glu-1Dx subunit in relation to solubility of polymeric glutenin proteins and gluten strength  
B. FU, Canadian Grain Commission, Winnipeg, MB, CANADA
- P-813 Ability of the 3-deoxyanthocyanidin apigeninidin to promote protein polymerization through disulfide interchanges  
L. SCHMIDT, Whistler Center for Carbohydrate Research, Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.
- P-814 Elucidating mechanisms for proanthocyanidin interactions with gluten proteins  
A. GIRARD, Texas A&M University, College Station, TX, U.S.A.
- P-815 Protein effects on heat transfer fouling using model thin stillage fluids  
J. YOU, University of Illinois-Urbana Champaign, Urbana, IL, U.S.A.
- P-816 Water electrolyte promoted oxidation of functional thiol groups  
K. LAUWERS, Centre for Surface Chemistry and Catalysis (COK), University of Leuven, Heverlee, BELGIUM
- P-817 Amaranth addition restitutes thiol groups of enzymatically hydrolyzed proteins of a very low reactive gluten-wheat bread  
N. HEREDIA-SANDOVAL, Research Center in Food & Development, AC, Hermosillo, Sonora, MEXICO
- P-818 Structural modifications of gluten proteins in intermediate wheatgrass (*Thinopyrum intermedium*) dough: Role of dough conditioners and refinement level  
C. GAJADEERA, University of Minnesota, St. Paul, MN, U.S.A.

### Properties and Novel Uses of Maize

- P-901 Increasing the nutritional and bioactive potential of underutilized Mexican pigmented blue maize seeds by optimizing the germination conditions  
C. CHAVARÍN-MARTÍNEZ, Programa Regional de Posgrado en Biotecnología, Facultad de Ciencias Químico Biológicas, Culiacán, MEXICO
- P-902 Influence of the physicochemical properties of maize on the quality of topos of Oaxaca in Mexico  
R. GÓNZALEZ-AMARO, El Colegio de la Frontera Sur, San Cristóbal de las Casas, MEXICO
- P-903 Effects of corn quality (composition, physical and physiologic protein properties) on dry grind ethanol concentrations  
D. RAMCHANDRAN, University of Nebraska, Lincoln, NE, U.S.A.
- P-904 Physicochemical properties of native and extruded maize flours in the presence of high percentages of animal proteins  
A. BRAVO, University of Valladolid, Palencia, SPAIN

- P-906 3D printing of maize protein by fused deposition modeling  
G. DELLA VALLE, INRA, Nantes Cedex 3, FRANCE

### Rice—From Field to Fork

- P-1001 Modification of physicochemical properties of milled rice through alkali treatment: Effect on surface proteins and starch  
M. NAWAZ, The University of Queensland, Brisbane, AUSTRALIA
- P-1003 Analyzing the microstructure evolution of rice flour samples to determine gelatinization temperatures  
M. GOULD, Formulation Inc., Worthington, OH, U.S.A.
- P-1005 Experimental simulation of cross-flow rice drying: Effect of tempering approaches on milling yields  
S. MUKHOPADHYAY, University of Arkansas, Fayetteville, AR, U.S.A.

### Oats

- P-1101 Effect of glyphosate application on oat quality and starch properties  
B. STEBBINS, North Dakota State University, Fargo, ND, U.S.A.
- P-1102 Determination of beta glucan, protein, and oil contents of oat cultivars by near infrared reflectance spectroscopy (NIRS)  
D. PAUDEL, South Dakota State University, Brookings, SD, U.S.A.

### Pseudocereals

- P-1201 Quinoa starch rheology  
F. ZHU, University of Auckland, Auckland, NEW ZEALAND
- P-1202 Optimization of extrusion process for producing functional quinoa flour with high antioxidant activity and nutritional value  
J. PERALES SÁNCHEZ, Programa de Posgrado en Ciencia y Tecnología de Alimentos, FCQB-UAS, Culiacán Rosales, Sinaloa, MEXICO; Programa Regional de Posgrado en Biotecnología, Facultad de Ciencias Químico Biológicas, Culiacán, Sinaloa, MEXICO
- P-1203 Optimized germinated chia flour with high antioxidant activity, total phenolic compounds, and protein and lipid contents  
C. CHAVARÍN-MARTÍNEZ, Programa Regional de Posgrado en Biotecnología, Facultad de Ciencias Químico Biológicas, Culiacán, MEXICO

### Pulses for Sustainable Agriculture

- P-1301 From farm to fork—An overview of glyphosate in pulse processing supply chain  
M. TULBEK, AGT Food and Ingredients Inc., Saskatoon, SK, CANADA
- P-1302 Texturization of pulse proteins—Peas, lentils, and faba beans  
T. KIM, Department of Nutrition and Food Science at Texas A&M University, College Station, TX, U.S.A.
- P-1303 The utilization of pulses in the manufacture of crumb used as a binder in a beef burger system  
J. HAN, Food Processing Development Centre, Alberta Agriculture and Forestry, Leduc, AB, CANADA

- P-1304 **Effect of germination of navy beans, pinto beans and lentils on the enzymatic activity, functional and pasting properties of whole pulse flours**  
M. SINGH, USDA, Peoria, IL, U.S.A.
- P-1305 **Effect of variety and growing location on dietary fiber and oligosaccharide contents in beans (*Phaseolus vulgaris*) grown in Manitoba**  
N. WANG, Canadian Grain Commission, Winnipeg, MB, CANADA
- P-1306 **Effects of pretreatments on seed coat separation and chemical and functional properties of black bean flour**  
S. FERNANDO, North Dakota State University, Fargo, ND, U.S.A.
- P-1307 **Edible dry bean powder chemical composition in relation to solvent retention capacities and pasting properties**  
T. ROSE, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, U.S.A.
- P-1308 **Production of resistant starch (RS3) from edible bean starches**  
C. SIMONS, Wright State University Lake Campus, Celina, OH, U.S.A.
- P-1309 **Optimization of the germination bioprocess to enhance antioxidant capacity and bioactive compounds of tepary bean**  
O. ARGÜELLES LÓPEZ, Programa de Posgrado en Ciencia y Tecnología de Alimentos, FCQB-UAS, Culiacán Rosales, Sinaloa, MEXICO
- P-1310 **Assessment of the changes in undesirable compounds of faba bean (*Vicia faba*) due to autoclaving, soaking, and germination treatments**  
X. WEI, Department of Food and Bioproduct Sciences, University of Saskatchewan, Saskatoon, SK, CANADA
- P-1311 **Faba bean ingredients in pasta—Raw materials, processing and end use quality**  
M. TULBEK, AGT Food and Ingredients Inc., Saskatoon, SK, CANADA
- P-1312 **Physicochemical properties of hammer-milled yellow split pea (*Pisum sativum* L.)**  
A. KAISER, North Dakota State University, Fargo, ND, U.S.A.
- P-1313 **Designing pea protein-polysaccharide soluble complexes for improving pea protein functionality**  
Y. LAN, North Dakota State University, Fargo, ND, U.S.A.
- P-1314 **Changes in in vitro digestibility, protein quality and levels of anti-nutritional compounds of pea protein concentrate by fermentation**  
B. CABUK, University of Saskatchewan, Saskatoon, SK, CANADA
- P-1315 **Impact of curd processing and handling on pea based tofu physical properties**  
K. DEPALMA, University of Idaho, Moscow, ID, U.S.A.
- P-1316 **Flow properties of flour obtained from hammer milled peas**  
C. HALL, North Dakota State University, Fargo, ND, U.S.A.
- P-1318 **In vitro and in vivo protein quality of processed red and green lentils (*Lens culinaris*)**  
M. NOSWORTHY, University of Manitoba, Winnipeg, MB, CANADA
- P-1319 **Effect of solid state fermentation bioprocessing on peptides profile with antioxidant activity of chickpea**  
A. GASTELUM-HERNANDEZ, Universidad Autonoma de Sinaloa, Culiacan, MEXICO
- Novel Ingredients**
- P-1401 **Using chicory root fiber to reformulate tasty biscuits with less added sugars**  
C. LIN, Sensus America, Inc., Lawrenceville, NJ, U.S.A.
- P-1402 **Bamboo shoots fiber in cookies formulations: Effects of addition and technological properties**  
M. FELISBERTO, UNICAMP/FEA, CAMPINAS, BRAZIL
- P-1403 **Physicochemical attributes of sugar-snap cookies containing black sorghum bran**  
Y. LI, Kansas State University, Manhattan, KS, U.S.A.
- P-1404 **Effect of adding young bamboo culm flour (*D. asper*) in cookies formulations**  
M. FELISBERTO, UNICAMP/FEA, CAMPINAS, BRAZIL
- P-1405 **Quality attributes of breads fortified with staghorn sumac extracts**  
S. WANG, Canadian Food & Wine Institute, Niagara-on-the-Lake, ON, CANADA
- P-1406 **Baking quality and shelf-life study of wine grape pomace fortified pan bread**  
G. HOU, Wheat Marketing Center, Portland, OR, U.S.A.
- P-1407 **Properties of tortilla prepared with yam-wheat composite flours**  
K. WHITNEY, North Dakota State University, Fargo, ND, U.S.A.
- P-1408 **Comparison of quality of Korean steamed rice cakes with addition of sorghum, proso millet, and glutinous foxtail millet**  
H. RYU, Pusan National University, Busan, SOUTH KOREA
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Y. CHANG, Providence University, Taichung, TAIWAN
- P-1410 **Effects of quinoa, kiwicha and tarwi flours on pasting and textural properties using a mixture design approach**  
R. REPO-CARRASCO-VALENCIA, Universidad Nacional Agraria La Molina, Lima, PERU
- P-1411 **Chitosan-starch film as drug vehicle**  
E. AGAMA-ACEVEDO, CEPROBI-IPN, Yautepec, Morelos, MEXICO
- P-1412 **Composition and molecular weight distribution of honey locust germ protein fractions**  
B. SMITH, University of Idaho, Moscow, ID, U.S.A.
- Clean Label**
- P-1501 **An initiative to clean label: Can we replace dough strengtheners in bread formulations**  
M. RAHMAN, North Dakota State University, Fargo, ND, U.S.A.
- P-1502 **Clean label novel starch for texture modification in food systems**  
C. PERERA, Roquette America, Geneva, IL, U.S.A.
- P-1503 **Waxy starches for clean-label food ingredients with improved cold storage stability**  
C. HSIEH, Kansas State University, Manhattan, KS, U.S.A.
- P-1504 **Effect of natural emulsifier addition on whole grain cookies: Impact on the physical, rheological and technological properties**  
E. NABESHIMA, Institute of Food Technology - ITAL, Campinas, BRAZIL



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- P-1601 Objective measurements of seeds increases sample throughput and removes human errors in seed inspection  
M. STALKER, CE Elantech Inc., Lakewood, NJ, U.S.A.
- P-1602 Mapping quantitative trait loci for a unique 'super soft' kernel trait in soft white wheat  
J. ORENDAY-ORTIZ, Washington State University, Pullman, WA, U.S.A.
- P-1603 Analysis of genetic factors influencing pre-harvest sprouting in Montana grown wheats  
J. VETCH, Montana State University, Bozeman, MT, U.S.A.

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- P-1701 Assessment of pre-spotted plates for the detection of genetically engineered canola events  
M. HOLIGROSKI, Canadian Grain Commission, Grain Research Laboratory, Winnipeg, MB, CANADA
- P-1702 Genetically modified and ancient barley for health-promoting foods  
A. BLENNOW, University of Copenhagen, Frederiksberg C, DENMARK
- P-1703 Applying proteomics to assess the safety of genetically modified crops  
M. COLGRAVE, CSIRO Agriculture and Food, Brisbane, AUSTRALIA

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- P-1801 Communicating food waste and prevention strategies in an African context  
W. OWINO, Food Science and Technology, Jomo Kenyatta University of Agriculture and Technology, Nairobi, KENYA
- P-1802 Amylose-only-based starch bioplastics  
A. BLENNOW, University of Copenhagen, Frederiksberg C, DENMARK
- P-1803 How do films made from wheat bran arabinoxylan, maize bran arabinoxylan, or dried distillers grain arabinoxylan interact with water?  
C. ANDERSON, North Dakota State University, Fargo, ND, U.S.A.

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- P-1901 Effect of drying temperature on whole-wheat pasta quality  
A. MAGALLANES LOPEZ, North Dakota State University, Fargo, ND, U.S.A.
- P-1903 Effects of waxy wheat flour blends on flour physicochemical properties and dried noodle quality  
R. LIU, Institute of Food and Nutrition Development, Ministry of Agriculture, Beijing, CHINA
- P-1904 Exploring suitability of soft red winter wheats for making Korean-style noodles  
S. JEON, Pusan National University, Busan, SOUTH KOREA
- P-1905 Consumption behavior and its influencing factors of dried noodles of Chinese residents  
R. LIU, Institute of Food and Nutrition Development, Ministry of Agriculture, Beijing, CHINA

## Sensory

- P-2001 Sensorial acceptability of extruded breakfast cereal enriched with jaboticaba (*Myrciaria cauliflora*) peel by internal preference mapping  
C. STEEL, University of Campinas (UNICAMP), Campinas, SP, BRAZIL
- P-2002 Molecular basis for rancidity in whole-grains and seeds  
L. URBAN-ALANDETE, University of Queensland, Brisbane, AUSTRALIA
- P-2003 Elaboration of bread reduced in salt and enriched in vitamin B4  
P. LE BAIL, INRA, Nantes, FRANCE
- P-2004 Pilot study: Acceptability of oat and barley recipes by older adults  
M. CAMIRE, University of Maine, Orono, ME, U.S.A.

## Cooking and Drying

- P-2101 Contribution of the cooking and drying stages on the structure of the couscous grains of durum wheat semolina  
B. BELLOCQ, INRA, Montpellier, FRANCE
- P-2102 Effect of cooking time on the firmness of cooked traditional and whole wheat spaghetti kept warm in a heated buffet server  
H. ANDO, North Dakota State University, Fargo, ND, U.S.A.
- P-2103 Effect of microwave heating on water dynamics in a wheat gluten/sucrose model system  
Y. VODOVOTZ, The Ohio State University, Columbus, OH, U.S.A.
- P-2104 Effect of tempering and infrared heating on the physicochemical and functional properties of chickpea, barley, and their blends  
T. BAI, University of Saskatchewan, Saskatoon, SK, CANADA
- P-2105 Effect of tempering and infrared heating on the anti-nutritional factors and protein quality of chickpea, barley, and their blends  
T. BAI, University of Saskatchewan, Saskatoon, SK, CANADA
- P-2106 Implications of microwave drying using a 915 MHz frequency on rice physicochemical properties  
D. SMITH, The University of Arkansas, Fayetteville, AR, U.S.A.
- P-2107 Effect of microwave energy on sorghum 3-deoxyanthocyanins and copigments  
J. BRANTSEN, Texas A&M University, College Station, TX, U.S.A.
- P-2108 Glass transition effects on milling yields in a cross-flow drying column  
S. MUKHOPADHYAY, University of Arkansas, Fayetteville, AR, U.S.A.

## Processing

- P-2201 Influence of high intensity ultrasound treatment on bioactive compounds in buckwheat and pumpkin seed cake flour  
N. CUKELJ, Faculty of Food Technology and Biotechnology, University of Zagreb, Zagreb, CROATIA
- P-2202 Effects of ultrasound in the protein extraction of *Lupinus angustifolius* seeds  
L. AGUILAR-ACOSTA, Escuela de Ingeniería y Ciencias. Tecnológico de Monterrey, Monterrey, MEXICO

- P-2203 Effect of different nixtamalization processes on acrylamide levels of deep-frying corn tortilla chips  
A. TOPETE, CINVESTAV Unidad-Querétaro, Querétaro, MEXICO
- P-2204 Increasing sugar recovery in corn dry grind processing through fiber pretreatment after liquefaction  
C. KURAMBHATTI, University of Illinois-Urbana Champaign, Urbana, IL, U.S.A.
- P-2205 Development of a laboratory scale maize flaking procedure  
C. KURAMBHATTI, University of Illinois-Urbana Champaign, Urbana, IL, U.S.A.
- P-2206 Effects of sequential pearling of wheat on the composition and functional properties of wheat bran and pearling-by-products  
M. IZYDORCZYK, Canadian Grain Commission, Grain Research Laboratory, Winnipeg, MB, CANADA
- P-2208 Enzymatic activities and functional properties of germinated wheat flour as influenced by the duration of germination and drying temperature  
R. POUDEL, University of Nebraska-Lincoln, Lincoln, NE, U.S.A.
- P-2209 Impact of mixing process parameters and mixer's geometry on mixing time and gluten network structure  
A. LE BAIL, GEPEA-UMR CNRS 6144, Nantes, FRANCE

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- P-2301 Multi-scale structural changes of pea flour melting during extrusion  
G. DELLA VALLE, INRA, Nantes Cedex 3, FRANCE
- P-2302 Viscous behavior of molten pea flour during extrusion  
G. DELLA VALLE, INRA, Nantes Cedex 3, FRANCE
- P-2303 Effects of extrusion on the nutritional characteristics of a blend of chickpea and barley flours  
M. NOSWORTHY, University of Manitoba, Winnipeg, MB, CANADA
- P-2304 Understanding the effect of extrusion on anti-nutritional factors and digestibility of great northern beans using a modified split plot design  
P. GULATI, University of Nebraska, Lincoln, NE, U.S.A.
- P-2305 Properties of extruded teff-oat composites  
J. BYARS, USDA, Peoria, IL, U.S.A.
- P-2306 Effect of processing conditions on system parameters during extrusion of blend containing food grade distillers dried grains  
P. SINGHA, South Dakota State University, Brookings, SD, U.S.A.

### Health Benefits

- P-2401 Wheat bran for colon cancer prevention: The synergy between phytochemicals and fiber  
S. SANG, North Carolina A&T State University, Kannapolis, NC, U.S.A.
- P-2402 Water extractable arabinoxylans from wheat aleurone and wheat bran exhibit antiglycemic effects  
L. MALUNGA, University of Manitoba, Winnipeg, MB, CANADA
- P-2403 Identifying differences in human gastric emptying rate and glycemic response of processed whole grain wheat meals  
E. PLETSCHE, Whistler Center for Carbohydrate Research, West Lafayette, IN, U.S.A.

- P-2404 Biological activation of wheat for enhanced in vitro antioxidant activity, bioactive components and nutrient digestibility  
A. SINGH, Punjab Agricultural University, Ludhiana, INDIA
- P-2405 Improving phenolic bioactive-linked anti-hyperglycemic functions of dark germinated barley sprouts using seed-driven elicitation strategy  
R. RAMAKRISHNA, North Dakota State University, Fargo, ND, U.S.A.
- P-2406 In-vitro starch digestibility and expected glycemic index (eGI) of intermediate wheatgrass (*Thinopyrum intermedium*)  
Y. ZHONG, University of Minnesota, Twin Cities, St. Paul, MN, U.S.A.
- P-2407 Nutritional value and bioactive compounds in Andean grains: Quinoa (*Chenopodium quinoa*), kañiwa (*Chenopodium pallidicaule*) and kiwicha (*Amaranthus caudatus*)  
R. REPO-CARRASCO-VALENCIA, Universidad Nacional Agraria La Molina, Lima, PERU
- P-2408 Expanded extruded snack produced from quality protein maize and black common bean: In vivo antihypertensive activity of phenolic compounds  
O. ARGÜELLES LÓPEZ, Programa de Posgrado en Ciencia y Tecnología de Alimentos, FCQB-UAS, Culiacán Rosales, Sinaloa, MEXICO
- P-2409 Physical form of corn bran arabinoxylan is associated with its in vitro human fecal fermentation property  
X. ZHANG, Purdue University, West Lafayette, IN, U.S.A.
- P-2412 Breakdown retardation of branched linkages in  $\alpha$ -limit dextrin by galloyl groups in phenolic compounds extend the glucose release by mammalian mucosal  $\alpha$ -glucosidase  
J. LIM, Department of Food Science, Purdue University, West Lafayette, IN, U.S.A.

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- P-2501 The effects of whole-grain wheat bread on visceral fat obesity in Japanese subjects: A randomized double-blind study  
Y. KIKUCHI, Nisshin Seifun Group Inc., Saitama, JAPAN
- P-2502 Bran characteristics influencing quality attributes of whole wheat Chinese steamed bread  
B. BAIK, USDA ARS CSWQRU Soft Wheat Quality Laboratory, Wooster, OH, U.S.A.
- P-2504 Quality comparison of whole wheat flour milled from laboratory and commercial methods  
J. SUN, Ardent Mills, Denver, CO, U.S.A.
- P-2505 Impact of processing on anthocyanins and antioxidant capacity of bread and muffin made from purple wheat  
E. ABDELAAL, Agriculture and Agri-Food Canada, Guelph, ON, CANADA

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- P-2601 Evolution of the properties of flours during storage under different temperatures  
I. TROOD, CHOPIN Technologies Inc., Olathe, KS, U.S.A.
- P-2602 Maize storage technologies: A comparative study in the western highlands of Guatemala  
A. BIANCHINI, University of Nebraska, Lincoln, NE, U.S.A.

- P-2603 **Acidulant effect on sunflower butter cookie dough's green color during refrigerated storage**  
J. ATONFAK TSOPKENG, Chapman University, Orange, CA, U.S.A.; Schmid College of Science and Technology, Orange, CA, U.S.A.
- P-2604 **Pre-harvest fungicide application timing versus stored rice quality**  
S. SHAFIEKHANI, Department of Food Science, University of Arkansas, Fayetteville, AR, U.S.A.

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- P-2703 **Provenance study of wheat by its strontium isotope ratio**  
J. UMEZAKI, Nippon Flour Mills, Tokyo, JAPAN
- P-2704 **Reduction in pathogenic load of wheat by tempering with saline organic acid solutions at different seasonal temperatures**  
A. BIANCHINI, University of Nebraska, Lincoln, NE, U.S.A.

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P. DANTES, Iowa State University, Ames, IA, U.S.A.
- P-2802 **Wheat flour solvent retention capacity: Repeatability and reproducibility performances of a new automated measurement method**  
S. BRYAN, Chopin Technologies, Olathe, KS, U.S.A.
- P-2803 **Evaluation of a vacuum dough expansion system (VDES) and a simplified flour test to predict bread loaf volume**  
B. RAJPUROHIT, South Dakota State University, Brookings, SD, U.S.A.
- P-2804 **Barometric pressure correction for falling number**  
S. DELWICHE, USDA ARS, Beltsville, MD, U.S.A.
- P-2805 **Hagberg falling number measurement: New machine versus conventional machine**  
S. BRYAN, Chopin Technologies, Olathe, KS, U.S.A.
- P-2806 **Ancient wheat varieties and toxicity to celiacs—In vitro study**  
A. DE FRANCISCO, Laboratory of Cereals, Food Science and Technology, Florianopolis SC, BRAZIL
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B. MCCLEARY, Megazyme, Bray, IRELAND
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B. MCCLEARY, Megazyme, Bray, IRELAND
- P-2809 **Folate needs to be declared as dietary folate equivalents (DFE) for nutrition labeling—A method for the required analysis in foods including cereals**  
S. BHANDARI, Merieux NutriSciences, Crete, IL, U.S.A.
- P-2810 **Field emission-canning electron microscopy (FE-SEM) as a method of screening sorghum lines with highly digestible protein mutation**  
T. TEFERRA, Texas A&M University, College Station, TX, U.S.A.
- P-2811 **Standard Raman vs. surface-enhanced Raman spectroscopy (SERS) for volatile determination in plants**  
K. LEE, Texas A&M AgriLife Research, College Station, TX, U.S.A.

- P-2812 **Microstructure investigation and its effects on moisture sorption in fried potato chips**  
A. MARTIN, Analytical Sciences, PepsiCo Global R&D, Plano, TX, U.S.A.

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- P-2901 **Characterization of chemical composition and contaminants in distillers grains as feed ingredient**  
K. LEE, Texas A&M AgriLife Research, College Station, TX, U.S.A.
- P-2902 **Increased hydration time for better quality extruded cat food**  
S. ALAVI, Kansas State University, Department of Grain Science and Industry, Manhattan, KS, U.S.A.

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A. GONZALEZ, University of Arkansas, Fayetteville, AR, U.S.A.
- P-3002 **Amyolytic activities of germinated rice from cultivars of varying amylose contents**  
A. GONZALEZ, University of Arkansas, Fayetteville, AR, U.S.A.
- P-3003 **Guaranteeing gluten free oats!**, M. LARSSON
- P-3004 **Ensuring your malting barley is really *Fusarium*-free**  
M. LARSSON, Lantmannen R&D, Stockholm, SWEDEN
- P-3005 **Accurate, multi-faceted size measurement of grain kernels!**  
M. LARSSON, Lantmannen R&D, Stockholm, SWEDEN
- P-3007 **Elution technologies ELISA method for accurately detecting gluten in oats**  
L. EMERSON-MASON, Elution Technologies, Colchester, VT, U.S.A.
- P-3008 **Indigestible pyrodextrins prepared from corn starch using of glacial acetic acid as the catalyst**  
Y. CHANG, Providence University, Taichung, TAIWAN
- P-3009 **Oats avenanthramides inhibits intestinal  $\alpha$ -glucosidase activity in-vitro**  
L. MALUNGA, Agriculture and Agri-Food Canada, Winnipeg, MB, CANADA
- P-3010 **Enhancing shelf life and flavor of whole wheat flour**  
A. SLADE, Arcadia Biosciences, Davis, CA, U.S.A.
- P-3011 **Free sugars and amino acids in fresh corn and their contribution to juice taste**  
L. NIU, Institute of Farm Product Processing, Jiangsu Academy of Agricultural Sciences, Nanjing, CHINA
- P-3012 **Impact of germination on molecular and crystalline structures of starches from brown rice, oat, sorghum, and millet**  
H. CHUNG, Chonnam National University, Gwangju, SOUTH KOREA
- P-3013 **The use of visual examination for the detection of gluten containing grains in gluten free oats and other beans, seeds, pulses and legumes**  
L. ALLRED, Gluten Intolerance Group of North America, Auburn, WA, U.S.A.
- P-3014 **Use of non-contact ultrasonic technique to assess white salted noodle texture**  
H. WANG, University of Manitoba, Winnipeg, MB, CANADA





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# EXHIBITION

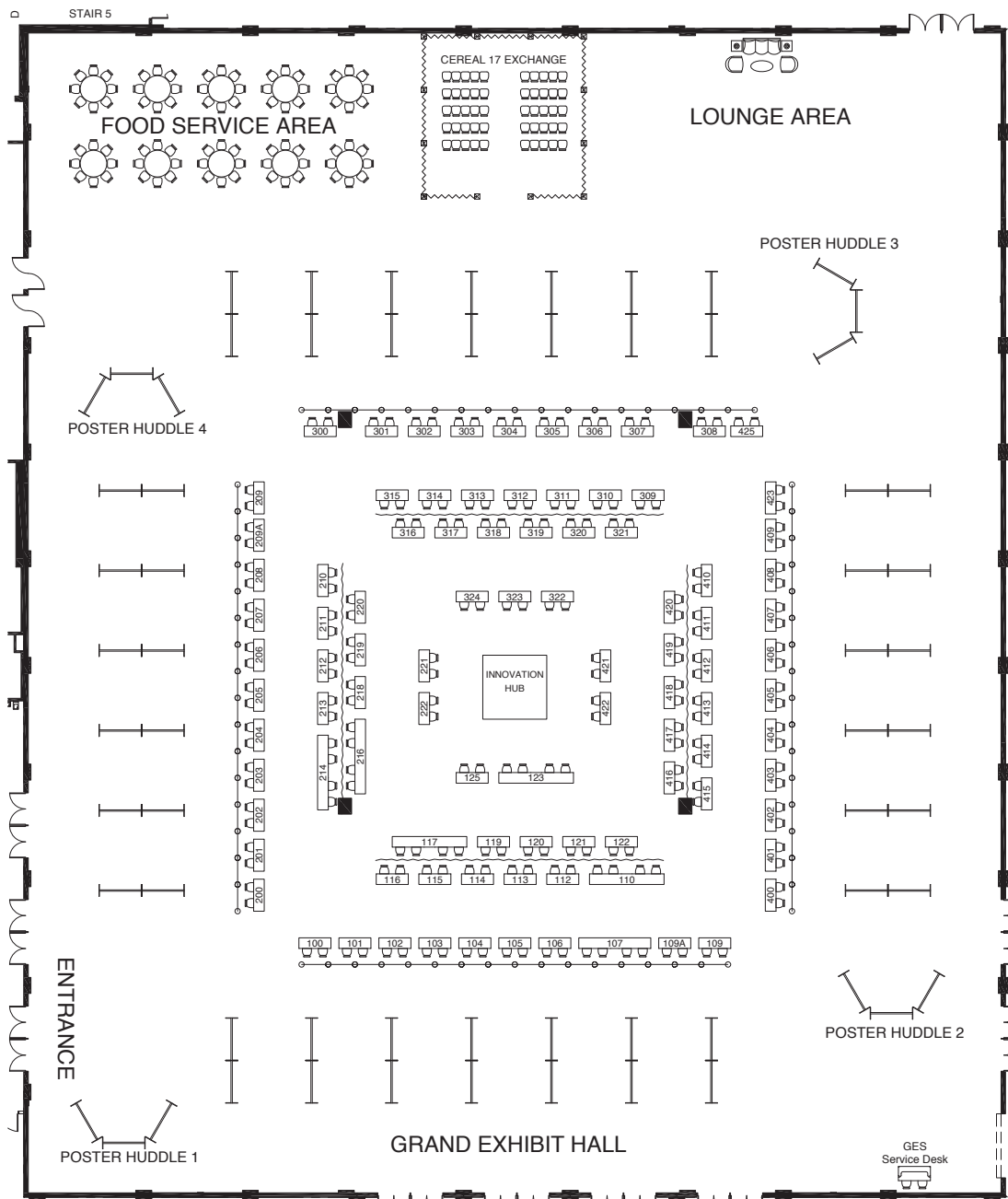
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Exhibitors that reserved space after this went to press are listed in the Cereals 17 Mobile App and the Solution Central Updates Flyer distributed in the Grand Hall. Check the Mobile App for up-to-date exhibitor descriptions.

## Exhibit and Poster Hours

### Grand Hall

Sunday, October 8	8:00 a.m. – 3:00 p.m. 5:00 – 7:00 p.m.	Exhibit Set-Up Grand Opening Solution Central Happy Hour – Exhibits Open
Monday, October 9	4:00 – 6:30 p.m.	Exhibits Open
Tuesday, October 10	12:00 – 2:30 p.m. 2:30 – 6:00 p.m.	Exhibits Open Exhibit Take-Down



EXHIBITION

## Alphabetical Listing of Exhibitor Descriptions

\* AACC International Corporate Member

### 313 A&B Ingredients

Telephone: +1.973.227.1390; Web: [www.abingredients.com](http://www.abingredients.com); E-mail: [info@abingredients.com](mailto:info@abingredients.com). A&B Ingredients promote natural clean label ingredient solutions. Specialty products include pea protein, pea fiber, clean label antimicrobials for yeast and mold control, and natural antioxidants to preserve freshness. A&B also features low sodium salts and the latest flavor enhancement technology—‘Mediterranean Umami’.

### 305 AACCI Foundation

Telephone: +1.651.454.7250; Web: [aacnet.org/membership/foundation](http://aacnet.org/membership/foundation). Invest in the future of AACCI and the grain-based foods industry! Visit the Foundation Booth in the Solution Central during exhibit hours to see this year’s talented awardees. Donate to support the future of our science!

### 321 ADM\*

Telephone: 1.844.441.3663; Web: [www.adm.com/food](http://www.adm.com/food); E-mail: [food@adm.com](mailto:food@adm.com). At ADM, our ingredients and flavors are designed to meet customer demand across virtually every segment. We offer the most extensive, innovative, and on-trend ingredient solutions and systems. Find us at booth #321 to learn more.

### 320 ADM/Matsutani LLC\*

Telephone: +1.630.250.8720; Web: [www.fibersol.com](http://www.fibersol.com); E-mail: [info@fibersol.com](mailto:info@fibersol.com). ADM/Matsutani LLC will showcase Fibersol®, the premier line of soluble dietary fiber ingredients. Fibersol offers solutions to many of today’s formulation challenges, whether formulators are seeking ways to reduce sugar and calories, meet clean label goals, or use a well-tolerated fiber to boost the fiber content of food/beverages.

### 119 Agri-Neo Inc./Neo-Pure\*

Telephone: +1.416.300.7729; Web: [www.agri-neo.com](http://www.agri-neo.com); E-mail: [info@agri-neo.com](mailto:info@agri-neo.com). Neo-Pure—Validated intervention to control pathogens and unwanted microbes on seeds, grains, and nuts, while keeping them raw, organic, and viable—just as nature intended.

### 413 AGT Food and Ingredients

Telephone: +1.306.244.5645; Web: [www.agtfoods.com](http://www.agtfoods.com); E-mail: [rd@agtfoods.com](mailto:rd@agtfoods.com). AGT Food and Ingredients is one of the largest suppliers of value-added pulses and food ingredients in the world. We provide lentils, peas, beans, and chickpeas from farmers around our 40+ facilities in the world and create value for producers, quality products for our customers, and growth for our shareholders.

### 112 AMETEK Brookfield

Telephone: +1.508.946.6200; Telephone 2: 1.800.628.8139; Web: [www.brookfieldengineering.com](http://www.brookfieldengineering.com); E-mail: [MA-MID.info@ametek.com](mailto:MA-MID.info@ametek.com). Brookfield, a unit of AMETEK, will be displaying measurement and control instrumentation in the form of viscometers, rheometers, texture analyzers, and powder flow testers. Stop by for a demo or to chat with our technical experts to discuss solutions for your most measurement challenges.

### 216 ANKOM Technology\*

Telephone: +1.315.986.8090; E-mail: [ntedesche@ankom.com](mailto:ntedesche@ankom.com). ANKOM Technology produces analytical instrumentation for food and feed testing. We are best known for introducing Filter Bag Technology, which allows high-volume, accurate analytical testing. Ask about our products: ANKOM Automated TDF Dietary Fiber Analyzer, ANKOM RF Gas Production Analyzer, ANKOM XT15 Fat Extractor, and ANKOM A2000 Fiber Analyzer.

### 117 Ardent Mills\*

Telephone: +1.719.271.5295. Ardent Mills offers the industry’s broadest range of flours, mixes, blends, and specialty products, customized to meet your needs and backed by unrivaled technical support, customer service, and the supply assurance of a coast-to-coast network.

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Telephone: +1.616.784.3111; Web: [www.bakerperkins.com](http://www.bakerperkins.com); E-mail: [bpinc@bakerperkins.com](mailto:bpinc@bakerperkins.com). Baker Perkins is a food processing equipment supplier in the cereal, granola, and bars market.

### 103 Bay State Milling Company\*

Telephone: +1.617.328.4400; Web: [www.BayStateMilling.com](http://www.BayStateMilling.com); E-mail: [infobsm@bsm.com](mailto:infobsm@bsm.com). Bay State Milling develops lasting partnerships with suppliers at the source to deliver a wide array of wholesome, nutritious plant-based specialty grains and seeds while providing full supply chain transparency and traceability. Stop by to learn more about our new and innovative products such as HealthSense™ high fiber wheat.

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### 316 BENE0 Inc.\*

Telephone: +1.973.867.2140; Web: [www.beneo.com](http://www.beneo.com); E-mail: [contact@beneo.com](mailto:contact@beneo.com). BENE0 offers functional ingredients derived from chicory roots, beet sugar, rice, and wheat. BENE0 improves a product in its nutritional (less fat/calories/sugar, added fiber, energy management, digestive health) and technological (taste and texture) characteristics. Through its expert departments (BENE0—Institute & Technology Center), BENE0 supports customers to develop more balanced and healthy foods.

### 121 Best Cooking Pulses, Inc.

Telephone: +1.204.297.6146; Telephone 2: +1.204.857.4451; Web: [www.bestcookingpulses.com](http://www.bestcookingpulses.com); E-mail: [margaret@bestcookingpulses.com](mailto:margaret@bestcookingpulses.com). Celebrating 81 years milling pulses. ‘Best’ pea hull fibers (FDA ‘intrinsic and intact’), pulse flours and grit (pea, bean, chickpea, lentil), split peas, and whole pulses. Available conventional and certified organic (26 years), BRC GFSI “AA”, CGC HACCP, and kosher certified. ‘Pulse ingredients for healthy diets and a sustainable world.’



**104 BI Nutraceuticals**

Telephone: +1.310.669.2100; Web: [www.botanicals.com](http://www.botanicals.com); E-mail: [contact@botanicals.com](mailto:contact@botanicals.com). BI manufactures and supplies hundreds of products, including botanical powders, extracts, fibers, proteins, vitamin mineral blends, and more. We ensure our products meet high quality standards with Protexx HP™ Green Steam™ sterilization, Identilok® Species Genus authentication technology, and testing methods. cGMP compliant, SQF, organic, kosher, halal, gluten-free certified.

**107 Bratney Companies**

Telephone: +1.515.270.2417; Web: [www.bratney.com](http://www.bratney.com); E-mail: [info@bratney.com](mailto:info@bratney.com). Bratney Companies, a leading equipment, design, and engineering supplier to the grain, food, and milling industries, provides the best in cleaning/sizing, sorting, milling, material-handling, dust control, and packaging. We bring innovation and value by integrating products from some of the world's foremost suppliers like Cimbria, Omas, Schule, Concetti, and BoMill.

**222 Bruker Optics**

Telephone: +1.978.439.9899; Web: [www.bruker.com/optics](http://www.bruker.com/optics); E-mail: [info.bopt.us@bruker.com](mailto:info.bopt.us@bruker.com). Cereals are the cornerstone of daily nutrition for most people around the world. Bruker offers solutions for the analysis of wheat, various flour types, and co-products based on FT-NIR spectroscopy. Ready-to-use calibration NIR packages give you results in seconds and are a highly cost-effective solution compared to conventional testing methods.

**113 Budenheim\***

Telephone: +1.614.345.2400; Web: [www.budenheim.com](http://www.budenheim.com); E-mail: [diana.baker@budenheim.com](mailto:diana.baker@budenheim.com). The world of food is a finer place with Budenheim. For more than 100 years, we've provided the best ingredients and the strictest quality control to put great and healthy food on the table every day.

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Telephone: +1.763.847.9900; Web: [www.buhlergroup.com](http://www.buhlergroup.com); E-mail: [buhler.minneapolis@buhlergroup.com](mailto:buhler.minneapolis@buhlergroup.com). Bühler specializes in the design and manufacture of food processing systems. Our market-leading extrusion and drying equipment can process a variety of products such as cereal, snacks, nuts, seeds, and fruits. We offer complete plant design and consulting from concept to installation and customer support long after hand-over.

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**110 C.W. Brabender\***

Telephone: +1.201.343.8425; Web: [www.cwbrabender.com](http://www.cwbrabender.com); E-mail: [foodsales@cwbrabender.com](mailto:foodsales@cwbrabender.com). Thank you for attending #Cereals17 and visiting the Brabender booth! All of the latest additions to our product line offer new, innovative features that will all be on full display at this year's meeting. Please feel free to come and ask questions on applications, features, and pricing.

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**307 California Natural Products\***

Telephone: +1.209.858.2525; E-mail: [john.ashby@cnp.com](mailto:john.ashby@cnp.com). CNP manufactures in the U.S.A. syrups and solids from rice and tapioca, providing natural and organic bakers and food product developers with syrups, binders, glycemic control, sugar reduction, fat & saturated fat reduction, emulsification, and shelf-life extension. OU kosher, QAI organic, SQF level III, and GIG certified gluten free.

**409 Carmi Flavors**

Telephone: +1.323.888.9240; Web: [www.carmiflavors.com](http://www.carmiflavors.com); E-mail: [sales@carmiflavors.com](mailto:sales@carmiflavors.com). Carmi Flavors manufactures a vast selection of high-quality natural, natural, artificial, and artificial flavors in liquid or powder form for the entire food and beverage industries. Our flavors are available in warehouses throughout the U.S. and Canada with no minimum order.

**114 C-Cell\***

Telephone: +01925 860 401; E-mail: [info@c-cell.info](mailto:info@c-cell.info). C-Cell is an analyser used globally to measure over 50 different quality results relating to bakery products. From internal structure and slice shape measurements, to complex bread scoring and internal feature analysis, information is categorised into: size and shape, cell numbers, cell orientation, colour.

**306 CE Elantech, Inc.**

Telephone: 1.888.232.4676; Web: [www.ceelantech.com](http://www.ceelantech.com); E-mail: [sales@ceelantech.com](mailto:sales@ceelantech.com). CE Elantech, Inc. is a full-line stocking distributor of official consumables and parts. Featured instruments are Thermo FlashSmart combustion elemental analyzer, N/Protein through CHNS/O Next Instruments, near infrared transmission, NutriScan, Seed-Count image analyzers. Navas Instruments are Thermo-gravimetric analyzers and Sample Fusion/LOI analyzers for XRF analysis.

**109 Cereal Ingredients, Inc.\***

Telephone: +1.913.727.3434; Web: [www.cerealingredients.com](http://www.cerealingredients.com). Manufacturer of Flav-R-Bites and Flav-R-Crisp at 2 BRC audited plants. Our ingredients enhance your flavor, texture, color, protein, and/or texture. CII has R&D and development labs on site, offering customized solutions. Our products are kosher and halal and have non-GMO, gluten-free, and certified organic formulas available. Stop by our table.

**214 CHOPIN Technologies\***

Telephone: +33 1 41 47 50 48; Web: [www.chopin.fr](http://www.chopin.fr); E-mail: [info@chopin.fr](mailto:info@chopin.fr). CHOPIN Technologies\*, KPM Analytics subsidiary, specializes in methods and equipment for the quality control of cereals, flours, and their derivatives. The company offers products and services to cereal industries needing to carry out analyses to satisfy operational requirements and current regulations and to meet customer specifications.

- 418 Dakota Specialty Milling, Inc.\***  
Telephone: 1.844.633.2746; Telephone 2: +1.701.282.9656; Web: www.dakotaspecialtymilling.com; E-mail: sales@dakotaspecialtymilling.com. Dakota Specialty Milling is the trusted global supplier of custom-milled whole-grain, multigrain, ancient grain, and gluten-free blends for processors of variety breads, crackers, granolas, nutrition bars, snacks, hot and RTE cereals, and donuts. We focus on creating and delivering the highest levels of quality, performance, and value.
- 300 Delavau Food Partners\***  
Telephone: 1.855.671.FOOD (3663); Web: www.DelavauFood.com; E-mail: jbaired@delavau.com. For over 150 years, Delavau has served as a premier supplier of food, pharmaceutical, and nutritional technologies. Our knowledge in calcium and enzymes combined with our specialty technologies and formulation expertise allows us to offer a smarter approach that yields food that's fresher tasting and better for you.
- 317 DSM Food Specialties USA, Inc.\***  
Telephone: +1.574.237.6974; Web: www.dsm.com/food. DSM's new range of specially formulated gluten-free baking enzymes adds to the company's portfolio and service offering and will help product developers save time and resources in creating gluten-free bread that satisfies consumer expectations.
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Telephone: +1.518.372.5155. Web: www.dsm.com; E-mail: matt.owca@dsm.com. DSM Nutritional Products is the world's premier ingredient and solutions provider for food & beverage manufacturers worldwide. Our product portfolio includes vitamins, minerals, nutritional lipids, nutraceuticals, carotenoids, and unmatched fortification expertise provided by our Fortitech premixes service.
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- 303 DuPont Nutrition & Health**  
Telephone: 1.800.255.6837; Web: www.food.dupont.com. DuPont Nutrition & Health combines in-depth knowledge of food and nutrition with current research and expert science to deliver unmatched value to the food, beverage, and dietary supplement industries.
- 401 Edlong Daily Technologies**  
Telephone: +1.847.631.6700; Web: www.edlong.com; E-mail: info@edlong.com. Experience the science and art of authentic taste. With over 100 years in business, Edlong has the broadest portfolio of dairy flavors. Our flavors provide classic cheese, butter, cream, and milk profiles in all applications while providing unique functions like mouthfeel and masking. Let's innovate together.
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- 404 Emsland Group**  
Telephone: +1.203.803.4480. The renewable raw materials potatoes and peas are the foundation of our product developments. The focus is placed on the production of native and modified starches, fibers, and proteins, as well as potato flakes and granules.
- 410 EnviroLogix Inc.\***  
Telephone: 1.866.408.4597; Telephone 2: +1.207.797.0300; Web: www.envirolgix.com; E-mail: chirst@envirolgix.com. EnviroLogix is a global leader in testing technology. Detect both mycotoxins and GMOs in grains on the reliable QuickScan™ system, and our patented DNable® technology detects pathogens and GMOs at the molecular level in minutes. Test with confidence using our fast, on-site solutions, backed by the support of industry experts.
- 125 Enzyme Development Corporation\***  
Telephone: +1.212.736.1580 x247; Web: www.EnzymeDevelopment.com; E-mail: info@EnzymeDevelopment.com. EDC has been providing a wide range of enzymes to the baking and food processing industry for over 60 years. Let's talk about how enzymes can enhance the quality of your product and optimize your production. Headquartered in New York City, with production and labs in Scranton, PA.
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- 221 FONA International**  
Telephone: +1.630.578.8600. At FONA, we know that clean is not a checkbox. It's a continuum. No matter where your product fits, we can help. FONA has been creating clean flavors for over 10 years and our seven core values drive us to foster incredible partnerships. Your challenges are our challenges. Let's talk.
- 202 Formulation Inc.**  
Telephone: +1.614.888.0023; Web: www.formulation.com; E-mail: sales@formulationusa.com. For over 20 years, Formulation has developed instrumentation that can measure and predict the stability and rheology of concentrated emulsions and dispersions. Phase separation analysis, beverage ring formation, and gelatinization studies are just a few phenomena that are easily analyzed and quantified using our line of light-scattering devices.
- 411 Fortune Biotech**  
Telephone: +1.201.786.3309; Web: www.fortunebiotech.com; E-mail: jack@fortunebiotech.com. Fortune Biotech USA strongly believes in the values produced by our professional working relationship with customers. We align our specialty products to grow with our customers' needs. We are passionate about creating possibilities through high-quality products with competitive pricing for the benefits of our customers.
- 319 FOSS\***  
Telephone: +1.952.974.9892; Web: www.fossanalytics.com; E-mail: info@fossna.com. FOSS analytical solutions provide the global standard in grade trading and calibrations based on 30 years of harvest data. We offer highly accurate solutions for all stages from farm to end product. This ensures our customers achieve the highest product consistency and profitability. Analyze protein, moisture, ash, and other parameters.

**415 Galaxy Scientific Inc.**  
Telephone: +1.603.821.9650; Web: www.galaxy-scientific.com; E-mail: nina.labonte@galaxy-scientific.com. Galaxy Scientific is specialized in the development and manufacturing of innovative high-performance portable analytical instrumentation. Engineered for field or lab use, our QuasIR™ Series combine PermaAlign™ optics technology with advanced software algorithms, providing breakthrough solutions to the most challenging point-of-need applications. FT-NIR performance boasts full spectral range and excellent wavelength stability.

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Telephone: +1.455.383.6919; Web: www.glycospot.dk; E-mail: tla@glycospot.dk. GlycoSpot is a biotechnology company specialized in the development and production of ready-to-use enzyme activity screening tools to obtain accurate information about enzymatic performance in raw materials, e.g., determination of amylase activity in flour. By using GlycoSpot technology, you can save time and money on post-processing and enzymes added.

**120 GNT USA, Inc.**  
Telephone: +1.914.524.0600; Web: www.gnt-group.com. EXBERRY® solutions are a clean-label coloring alternative for brands trying to avoid colors from artificial sources. See how colors derived solely from fruits, vegetables, and edible plants can be used to benefit your cereal application.

**302 Gold Coast Ingredients\***  
Telephone: +1.323.724.8935; Web: www.goldcoastinc.com; E-mail: info@goldcoastinc.com. Gold Coast Ingredients is a privately held and operated, wholesale flavor and color manufacturer located in Commerce, California. With us you will find organic, natural, non-GMO, allergen-free, and other flavors available as liquids, powders, powder encapsulations, emulsions, and advanced extractions. Our flavors are compatible with any product requirements.

**420 Grain Millers, Inc.\***  
Telephone: 1.800.232.6287; Telephone 2: +1.541.341.6460; Web: www.grainmillers.com; E-mail: darren.schubert@grainmillers.com. Conventional and organic oats, corn, flax, wheat, rye, triticale, barley, ancient grains, and mixes with seven manufacturing plants in North America. Certified gluten-free oat products available along with non-GMO project verified corn product and a wide range of intrinsic & intact oat fibers.

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**105 Grain Processing Corporation\***  
Telephone: +1.563.264.4265; Web: www.grainprocessing.com; E-mail: food.sales@grainprocessing.com. Quality food ingredients from Grain Processing Corporation (GPC): GPC's MALTRIN® product line offers maltodextrins and corn syrup solids, including quick-dispersing versions, and tapioca maltodextrins and tapioca syrup solids. Specialty starches include PURE-COTE® coating/film-forming starches, INSCOSITY® instant modified starches, PURE-GEL® stabilized starches, PURE-SET® thin-boiling starches, and PURE-DENT® unmodified and specialty starches.

**210 Great Plains Analytical Laboratory\***  
Telephone: +1.816.891.7337; Web: www.gpalab.com; E-mail: gstewart@gpalab.com or rkendrick@gpalab.com. Great Plains Analytical Laboratory is the leading cereal chemistry lab in the U.S. GPAL was established to serve the milling, baking, and food industries with a full-service analytical laboratory and test bakery. We are ISO 17025 accredited laboratory and all testing is performed by approved methods.

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**324 Healthy Food Ingredients (SK Food, Hesco, Suntava, Heartland Flax)\***  
Telephone: 1.844.275.3443; Telephone 2: +1.701.356.4106; Web: www.HFIfamily.com; E-mail: info@HFIfamily.com. HFI is a growing family of global specialty ingredient brands, which includes SK Food International, Hesco/Dakota Organic Products, Suntava, and Heartland Flax. Combined, we offer non-GMO, organic, certified transitional, gluten-free, and identity preserved pulses, soybeans, grains, seeds, flax, expeller oils, and our signature products Suntava Purple Corn® and AncientGrisps®.

**308 ICC – International Association for Cereal Science and Technology**  
Telephone: +43 1 7077202 0; Web: www.icc.or.at; E-mail: office@icc.or.at. ICC is an independent, internationally recognized organization of experts in the field of cereal science and technology publishing international standard methods, organizing major national and international events in the field, and promoting international cooperation, as well as a significant player in the coordination and participation in international research projects.

**100 ICL Performance Products\***  
Telephone: +1.314.983.7500; Web: www.icl-group.com. ICL Performance Products is a manufacturer of leavening acids and functional ingredients that can be used as a whole egg or egg white replacers. Stop by our tabletop to learn more about our non-aluminum heat-activated leavening acids.

**407 Inclusion Technologies**  
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**315 Ingredient Incorporated**  
Telephone: 1.800.713.0208; Web: www.ingredient.us; E-mail: salesupport@ingredient.com. Imagine creating new or improved products that set you apart in the marketplace. Rely on Ingredient's broad portfolio of ingredients and deep applications expertise to overcome your challenges in clean label, health and nutrition, and more. Work with us to offer simpler, more nutritious baked goods with ingredients consumers recognize.



- 400 Innophos, Inc.\***  
Telephone: +1.609.366.1233; Telephone 2: 1.800.631.7394; Web: www.Innophos.com; E-mail: barbara.heidolph@innophos.com. Innophos is a leading international producer of specialty ingredient solutions that deliver benefits for the food and nutrition markets. We leverage expertise in formulating and blending to help our customers offer products that are tasty, healthy, and nutritious, including a complete range of leavening and fortification ingredients for grain-based applications.
- 402 International Flavors & Fragrances Inc.**  
Telephone: +1.732.274.6532; Telephone 2: +1.732.275.4980; Web: www.iff.com; E-mail: catherine.hogan@iff.com. International Flavors & Fragrances Inc. is a leading innovator of sensorial experiences that move the world. We co-create unique products that consumers taste, smell, or feel. Our 7,400 team members take advantage of leading consumer insights, R&D, creative expertise, and customer intimacy to develop differentiated offerings for consumer products.
- 106 J. RETTENMAIER USA\***  
Telephone: +1.269.679.2340; Telephone 2: 1.877.895.4099; Web: www.jrsusa.com; E-mail: info@jrsusa.com. J. RETTENMAIER USA, LP is a dynamic global leader for developing plant-based dietary fiber ingredients that are good for you, label friendly, and contribute both nutritional and functional benefits. We are the world's largest manufacturing company for dietary fibers, colloidal celluloses, functional starch products, customized blends, and others.
- 416 Lallemand Baking Solutions\***  
Telephone: +1.514.251.3620; Web: www.lallemand.com. Lallemand Baking Solutions is the specialty baking ingredients business of Lallemand Inc., the Canadian yeast and bacteria company supplying Essential® enzyme-based dough conditioners, Fermaid® yeast-based dough relaxers, and Florapan® baking cultures and aromatic yeast, as well as customized solutions to the global baking industry. Ask us about your clean label needs.
- 314 Manildra Group USA**  
Telephone: +1.913.362.0777; Web: www.manildragroupusa.com; E-mail: bcarson@manildrausa.com. Manildra Group is the leader in vital wheat gluten, wheat starches, and specialty wheat proteins. Our GemPro wheat proteins provide the widest range of functionality available. Whether you need strength, extensibility, or solubility, GemPro proteins are the key to creating everything from clean label bakery to organic snacks and more.
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Telephone: +1.763.764.4453; Web: www.medallionlabs.com; E-mail: info@medlabs.com. Medallion Lab's chemistry and microbiology expertise include nutrition labeling, protein quality measurement, shelf-life and challenge studies, physical testing, and technical consulting.
- 421 Megazyme**  
Telephone: +353 1 2861220; Web: www.megazyme.com; E-mail: cs@megazyme.com. Megazyme is a global leader in the development, manufacture, and supply of novel test kits and reagents for the analysis of food, feed, dairy, and wine products. Our analytical kits allow accurate measurement of parameters that affect the quality and the use of plant and food products.
- 211 Mennel Milling Co.\***  
Telephone: +1.419.435.8151; Web: www.mennel.com; E-mail: sales@mennel.com. Family owned since 1886. Mennel Milling produces soft, hard, and spring wheat flours. We also offer a variety of specialty products such as SnoWhite, unchlorinated cake flour; heat-treated flours, whole wheat and stone ground flours, as well as pregelatinized flours. Let us help you grow your business!
- 419 MGP\***  
Telephone: 1.866.547.2122; Web: www.mgpingredients.com. As a leading U.S. supplier of specialty wheat proteins and starches, MGP supplies ingredients that effectively meet consumer demand for healthier foods that taste great. MGP's wheat starches, along with various specialty proteins, are non-GMO project verified. The company also provides clean label, certified organic offerings and gluten-free fiber options.
- 205 Nexira USA\***  
Telephone: +1.908.704.7487; Web: www.nexira.com; E-mail: j.rios@nexira.com. The world leader in acacia gum and manufacturer of a wide range of natural products with recognized health benefits. Founded in 1895, Nexira is the global leader in natural, organic ingredients and botanical extracts for the food, nutrition, and dietary supplement industries.
- 414 Northern Crops Institute\***  
Telephone: +1.701.231.7736; Web: www.northern-crops.com; E-mail: nci@ndsu.edu. Northern Crops Institute (NCI) is a collaborative effort among ND, MN, MT, and SD to support the promotion and market development of crops grown in this four-state region. NCI brings together customers, commodity traders, technical experts, and processors for discussion, education, and technical services.
- 218 NP Analytical Laboratories\***  
Telephone: 1.800.423.6832; Telephone 2: +1.314.982.1310; Web: www.npal.com; E-mail: npal@purina.com. NP Analytical Laboratories provides comprehensive testing of foods and ingredients for nutrients, contaminants, microbial pathogens, and quality indicators. Services include measurement of vitamins, minerals, dietary fiber, fatty acids, sugars, amino acids, preservatives, fat quality and stability, pesticides, mycotoxins, and complete nutrition labeling services. Microbial shelf-life and challenge studies also offered.

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**425 Nutraceuticals World**

Telephone: +1.201.825.2552; Telephone 2: +1.201.880.2231; Web: [www.nutraceuticalsworld.com](http://www.nutraceuticalsworld.com); E-mail: [nutraceuticals@rodmanmedia.com](mailto:nutraceuticals@rodmanmedia.com). *Nutraceuticals World*, the premier international magazine serves manufacturers of functional foods, sports and nutritional beverages, and dietary supplements, providing valuable information on ingredients sourcing, marketing trends, packaging, and manufacturing equipment. *Nutraceuticals World* is an important resource for industry executives worldwide. [Nutraceuticalsworld.com](http://Nutraceuticalsworld.com) offers exclusive online articles. [NutraceuticalsWorldNOW](http://NutraceuticalsWorldNOW.com) offers most timely industry news.

**301 OMIC USA Inc.\***

Telephone: +1.503.223.1497; Web: [www.omicusa.com](http://www.omicusa.com); E-mail: [sales.us@omicusa.com](mailto:sales.us@omicusa.com). OMIC USA, Inc. is an independent, globally recognized ISO17025-accredited analytical laboratory that offers various testing. As part of food safety, we offer the following testing: pesticide residue, mycotoxin, heavy metals, GMO, allergen, microbiological, and nutrition analysis. We work closely with trading companies to provide accurate, high-quality, and reliable grain export certificates issued in conjunction with the Japanese MAFF and Korean MFDS, of which our laboratory is accredited. OMIC USA, Inc. is represented by the best industry professionals with degrees in science from internationally recognized institutions of higher learning with B.S., M.S., and Ph.D. degrees. Our customer service is exceptional.

**417 PacMoore Products, Inc.**

Telephone: 1.866.610.2666; Web: [www.pacmoore.com](http://www.pacmoore.com); E-mail: [solutions@pacmoore.com](mailto:solutions@pacmoore.com). PacMoore offers blending, extrusion, spray drying, repackaging, and consumer packaging as a dry ingredient contract manufacturer. PacMoore's facilities in Hammond, IN, Mooresville, IN, and Gridley, IL, are BRC AA rated. Product development support for customers includes pilot equipment for all major capabilities. We process kosher, organic, gluten-free, non-GMO, and halal products.

**116 Perten Instruments AB\***

Telephone: +1.217.585.9440; Web: [www.perten.com](http://www.perten.com); E-mail: [wshadow@perten.com](mailto:wshadow@perten.com). Perten Instruments – A PerkinElmer Company – provides instruments, methods, and kits for the cereal science community. Lab & process NIR instruments for all stages of grain transformation. Rheological & functional analyzers: RVA, doughLAB, bread volume analyzer (BVM), and more. With the addition of Bioo Scientific, we provide access to food safety kits.

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Telephone: +1.217.585.9440; Web: [www.perten.com](http://www.perten.com); E-mail: [wshadow@perten.com](mailto:wshadow@perten.com). Stop by to speak with our experts, see what is new (hint, hint), and see if we can help you solve any analysis issues/needs you might have. We have solutions to test and measure moisture, protein, oil/fat, fiber, gluten, water absorption, texture, starch pasting characteristics, food safety, and much more.

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**408 PGP International, Inc.\***

Telephone: +1.402.206.7321; Web: [www.pgpint.com](http://www.pgpint.com); E-mail: [info@pgpint.com](mailto:info@pgpint.com). PGP International, Inc., an ABF Ingredients Co., headquartered in California with three manufacturing sites across the U.S.A. PGPI specializes in producing and developing a wide range of crisp rice products, protein crisps, rice breaders, functional rice flours, and rice flours and blends. PGPI has certifications through BRC, GFCO, and QAI.

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**309 QualySense AG\***

Telephone: +41 (0) 44 824 35 81; Web: [www.qualysense.com](http://www.qualysense.com); E-mail: [info@qualysense.com](mailto:info@qualysense.com). The QSorter is the most advanced high-speed single kernel analysis and sorting technology for grains, seeds, and beans. It is the first life-science robot able to combine near-infrared spectroscopy and 3D vision technology. All the analyses are nondestructive; therefore, the product can be used for further experiments or processing.

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Telephone: +1.646.452.6140; Telephone 2: +1.646.452.6143; Web: [www.inspiredbyinulin.com](http://www.inspiredbyinulin.com); E-mail: [contact@sensus.us](mailto:contact@sensus.us). Sensus America, Inc. is the leading manufacturer for chicory root fiber (inulin). Sensus is featuring Frutalose® SF75 as an all-natural, non-GMO ingredient that can be used in various applications. Frutalose® SFP is a natural solution to reduce 'added sugar' in a variety of applications.
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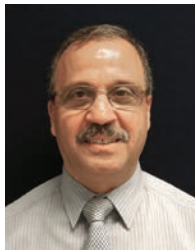
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# 2017 AACC INTERNATIONAL AWARDEES

Congratulations to AACCI's most prestigious awardees who are being recognized for their significant contributions to the field of cereal grain science. Join us on Monday, October 9, 8:45 – 10:00 a.m., in the Opening General Session to celebrate their accomplishments. Some awardees will also present an award lecture during the meeting as noted. Biographies on each of the awardees are available online at [aaccnet.org/membership/awards](http://aaccnet.org/membership/awards).

## AACC International Fellow



Elsayed Abdelaal, Agriculture and Agri-Food Canada

## Excellence in Teaching Award



Maria Abmrogina Pagani, University of Milan, Italy

## Edith A. Christensen Award for Outstanding Contributions in Analytical Methods



Paul Wehling, General Mills, U.S.A.

*His award lecture "Measuring Gluten in Oats at Low Levels—Sampling and Testing Challenges" will take place on Sunday at 3:00 p.m. during the Industry Applications: Quality, Sustainability and Traceability Technical Session in the Golden West Room.*

## Young Scientist Research Award



Andreia Bianchini, University of Nebraska, U.S.A.

*Her award lecture "EnGRAINED in Safety" will take place on Tuesday at 10:30 a.m. during the Improving Quality and Safety Aspects of Wheat Technical Session in the Golden West Room.*

## Texture Technologies Quality Research Award—Best Paper



Mike Sissons, Tamworth Agriculture Institute, Australia

*GlutoPeak: A Breeding Tool for Screening Dough Properties of Durum Wheat Semolina Cereal Chemistry November/December 2016, Volume 93, Number 6, Pages 550-556*

## Alsberg-Fresch-Schoch Award



Yasunori Nakamura, Akita Prefectural University, Japan

*His award lecture "Toward Understanding of Distinct Functions of Starch Biosynthetic Isozymes in Rice Endosperm and Establishing the Strategy for Manipulating the Starch Structure and Physicochemical Properties" will take place on Sunday at 3:00 p.m. during the Understanding Starch Granular Structure and Interactions Technical Session in the California Room.*

## Texture Technologies Quality Research Award—Best Presentation



Rita Laukemper, Technical University of Munich, Germany

*Time-Dependent Adhesion Behaviour of Dough—Relation to Surface Structure, Surface Energy and Microbial Contamination As presented at the 2016 AACC International Meeting in Savannah, Georgia.*

## William F. Geddes Memorial Award

The recipient is kept secret until unveiled during the Award Ceremony during the Opening General Session (Monday, October 9, 8:45 – 10:00 a.m.).

### Recognize the Best—Submit an AACCI Award Nomination!

The AACCI Awards program recognizes the outstanding service, scientific innovations, and significant accomplishments of our members. We encourage you to familiarize yourself with the various AACCI awards and nominate your colleagues deserving of this important recognition. Nominations are open and must be submitted on or before **January 31, 2018**. Visit [www.aaccnet.org/membership/awards](http://www.aaccnet.org/membership/awards) for full details and nomination form.



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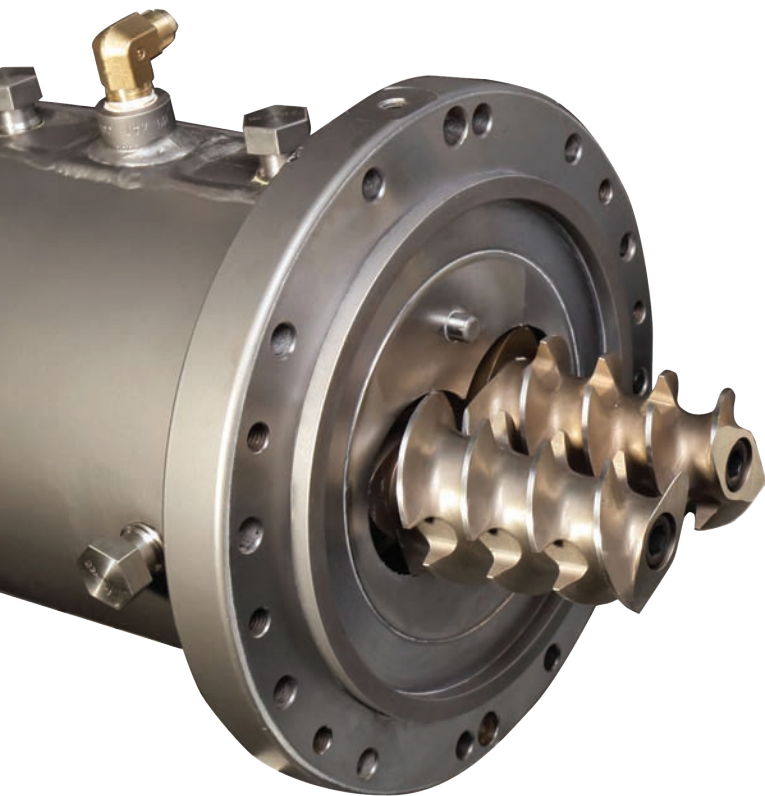


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