Program Book

2011 AACC International Annual Meeting

October 16–19

Palm Springs, California, U.S.A.

AACC INTERNATIONAL
Annual Meeting
October 16-19
Palm Springs, California
2011

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SOLUTIONS CENTRAL

Discover Answers to Your Grain Science Issues

Visit Solutions Central

What's New

Try out the latest **e-Solutions**, including e-books and mobile ready tools

Discover ***CFW Plexus***, and add it to your AACC Intl. membership

Check out the **Common Supplier Survey**

Search the new **AACC*net* Job Center** for targeted opportunities

Plus

Find answers in the **AACC INTL. PRESS books**

Ask questions about your AACC Intl. **membership**

Support the future and make a **Foundation** donation

Learn how to increase lab accuracy with the **check sample** program and **Approved Methods**

Share your **AACC Intl. pride**—pick up a member ribbon to display the number of years you've belonged

Find out about Hollywood, FL, U.S.A. and the **2012 AACC International Annual Meeting**

AACC INTERNATIONAL

Your Science. Your Association.

AACC International's 7 Key Scientific Initiatives

To increase the quality of research and satisfy the diverse needs of our members, the AACC International Annual Meeting focuses on 7 Key Scientific Initiatives. These initiatives will guide the program and provide members with relevant information, strong scientific content, and significant opportunities for disseminating research findings.

Analytical Methods & Quality

analytical methods development and changes • measuring quality of grain, ingredients, or finished foods • rheology

Biotechnology & Sustainability

conventional breeding • genetic modification • interaction effects of environment on gene expression • global climate change • reducing energy consumption • social/political/financial impacts

Cereal & Polymer Chemistry

fundamental whole cereal, starch, and protein chemistry • related polymer science approaches • chemical interactions of component parts

Engineering & Processing

physical processing of grains, pulses, and food products • fuels, industrial chemicals, and other in-process materials • more efficient engineering processes and equipment

Food Safety & Regulatory

microbes • contaminants • hazards • regulatory issues • legal challenges

Health & Nutrition

health and nutrition of cereals and pulses • social impact of health and nutrition initiatives • medical reports

Ingredients & Cost of Goods Sold

raw materials • new discoveries of novel ingredients • applications of ingredients • reduce ingredient costs

Learn more about these initiatives and how AACC International is focusing on you—visit **www.aaccnet.org**.

About AACC International

AACC International is a unique association dedicated to grains and grain science. Discover the most recent trends and research through resources only available with AACC Intl., and connect with a worldwide community of scientists, researchers, and product developers just like you. Find out more at www.aaccnet.org.

Tweet and Post Your AACC Intl. Meeting Experience!

Let others know what is happening during the AACC Intl. Annual Meeting. Tweet, using the hashtag #aacc11, about the latest trends and research or post your insights at the AACC Intl. Facebook page, where you can also create discussions, share photos, make comments, and post videos.

Welcome from the Program Chair

Deirdre Ortiz

Welcome to sunny and beautiful Palm Springs! The Annual Meeting Program Team and I are looking forward to a great meeting. We believe the program that has been created will help you revitalize your research and expand your outlook for the future.

This year's AACC International Annual Meeting program continues the blend of traditional and new formats for scientific sessions that were introduced in 2010. We have streamlined our program to make it easier for you to locate the sessions, posters, exhibits, and speakers that apply most directly to the work you do on a daily basis. In addition, this year's afternoon sessions will offer more time for audience participation and discussion of relevant topic areas in the Science Café, PosterTalk, and Hot Topic sessions.

With a wealth of Symposia and Science Cafés available to attendees, we are positive you will have a rewarding experience while you're here. The Symposia are aimed at optimal knowledge transfer through five regular 20-minute talks with room for topical questions, while the Science Cafés consist of two-hour sessions set up to combine shorter or more elaborate position talks with debate and discussion to follow. Additionally, AACC Intl. has once again focused on the 7 Key Scientific Initiatives and applied them to our program. These initiatives encompass all types of research conducted by members in academic, industrial, and government laboratories.

A special highlight for this year's meeting is the Closing Session. Connecting innovations is a concept sweeping the food industry. Bernhard van Lengerich, a leader in the industry and chief science officer at General Mills, Inc., is the closing keynote speaker at this year's event and we couldn't be more thrilled by the prospect. Top companies are counting on the collective minds of an industry, including academic and government researchers, to develop their new products and improve existing lines.

I truly believe the AACC International Annual Meeting is important to our industry because it features the highest caliber scientists meeting to present, discuss, and challenge major technical issues of the future. And we have worked hard to elevate the level of technical rigor in the topics and information presented in Symposia and other events.

I would like to express my sincere thanks to the Annual Meeting Program Team for their dedication over the past year, especially Program Team Vice Chair Art Bettge. All of their hard work has paid off and is reflected in the amazing program you are about to experience. This is your chance to share ideas with your peers and expand your horizons, and I encourage you to make the most of your time while you're here.

All the best,
Deirdre Ortiz
2011 AACC International Annual Meeting Program Chair

innovation

Innovation is more than a buzzword to us, it's one of the basic principles that our company was founded on. Our staff of scientists are dedicated to helping you build your product ideas as well as develop totally new concepts. With a state-of-the-art R&D department, proprietary blending equipment and enhanced Sanitation Program, it's easy to see that Wright is an ideal partner.

customer commitment

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value

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quality

Quality has been part of Wright's mantra for over half a century. Our certifications include Circle U Kosher, Halal, cGMP, GMA-safe and GMO-free. We have separate allergen processing facilities and adhere to strict HACCP, AIB and FDA Bioterrorism programs. In addition, we will supply a Certificate of Analysis for every order.

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Message from the AACC International President

Barry McCleary

Welcome to California! We couldn't be more thrilled that you've joined us this year.

The annual meeting is a tremendous opportunity to meet with your peers and expand your research. Whether you are in the beginning of your career or have been in the industry for years, if you're in academia or trying to build your business—this is the one place to be if you are serious about the grain science industry.

This meeting will be particularly focused on the health qualities of grain-based products. I am quite keen to attend the symposia on the role of grain-based foods in addressing the obesity epidemic and in vitro digestion models for cereals. Another highlight of the meeting is all of the networking events available to you. In an effort to bring together those interested in serving as a mentor and those who desire guidance as a protégé, there is a new Speed Mentoring Event. This event allows attendees to seek career guidance and hear about the experiences of others. In addition, there are numerous division meetings and networking lunches scheduled during this year's meeting. These are all excellent opportunities for you to connect with your peers.

The technical sessions and special events offer unlimited opportunities for the exchange of ideas and discussions that keep our science relevant. This year's meeting features more than 35 symposia and technical sessions, over 200 posters to view, and the chance to meet with more than 130 exhibitors. This truly is a global event where more than 80 universities from more than 30 countries will be represented.

You can also participate in PosterTalk and Hot Topic sessions, where you will discover the latest trends and research findings on dietary guidelines, food safety, formulations, and more. The PosterTalk sessions give poster authors the chance to quickly present the main findings of their posters with posters, and poster authors available in the room for questions. I highly recommend you join them and be a part of the discussion. And that's just the tip of the iceberg…

The biggest trends, the latest research, new products and services, and the top scientists are all represented in Palm Springs—and we thank you for joining us! I'm looking forward to a great meeting and all of the opportunities the future holds.

Barry McCleary
AACC International President

We share the same horizon

Look to us for the future of grain analysis

For 50 years, we have helped grain based businesses see their future using our grain analyzers. We offer the most technologically innovative instruments available. Stop by our table to see several new instruments. To find out more about our quality control and process monitoring solutions and for local contact information, please visit us at www.perten.com

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General Information

Registration

Main Lobby, Convention Center

Sunday, October 16	12:00 – 7:30 p.m.
Monday, October 17	7:30 a.m. – 6:30 p.m.
Tuesday, October 18	7:30 a.m. – 5:00 p.m.
Wednesday, October 19	7:30 a.m. – 2:30 p.m.

Exhibit Hall—Exhibits and Poster Hours

Oasis Hall 1– 3, Convention Center

Sunday, October 16

8:00 a.m. – 2:00 p.m.	Exhibit Set-Up
5:30 – 7:30 p.m.	Grand Opening Exhibition

Monday, October 17

7:00 – 10:00 a.m.	Poster Set-Up
10:00 a.m. – 4:00 p.m.	Poster Viewing
4:00 – 7:00 p.m.	Exhibits with Beer and Poster Viewing with Authors Present
	4:00 – 5:00 p.m. (*student poster authors present*)
	5:00 – 6:00 p.m. (*odd-numbered poster authors present*)

Tuesday, October 18

8:00 a.m. – 2:30 p.m.	Poster Viewing with Authors Present
	1:00 – 2:00 p.m. (*even-numbered poster authors present*)
12:00 – 2:15 p.m.	Lunch with the Exhibitors
2:30 – 6:00 p.m.	Exhibit and Poster Take-Down

Solutions Central

Oasis Hall 1– 3, Convention Center

Visit AACC International's Solution Central to learn about the latest offerings from the association, including *CFW Plexus*, the Common Supplier Survey, the newest books, and more.

Sunday, October 16	5:30 – 7:30 p.m.
Monday, October 17	4:00 – 7:00 p.m.
Tuesday, October 18	12:00 – 2:30 p.m.

Bookstore

California Ballroom Foyer, Renaissance

Monday, October 17	9:00 a.m. – 3:00 p.m.
Tuesday, October 18	9:00 – 11:00 a.m.
Wednesday, October 19	9:00 – 11:00 a.m.

Offsite Venues

Cereals&Europe Section Dinner
Lulu's California Bistro
200 S. Palm Canyon Drive
Palm Springs, CA 92262
760.327.5858

Student Division Social and Dinner
Matchbox Bistro
Mercado Plaza
155 S. Palm Canyon Drive
Palm Springs, CA 92262
760.778.6000

Carbohydrate Division Dinner
O'Donnell Golf Club
301 North Belardo Road
Palm Springs, CA 92262
760.325.2259

Open Meeting Rooms

A meeting room will be available at the Convention Center for groups of 18 people or less. Sign up at the Registration Desk in the Main Lobby.

Sunday, October 16	1:00 – 6:00 p.m.
Monday, October 17	7:00 a.m. – 5:00 p.m.
Tuesday, October 18	7:00 a.m. – 5:00 p.m.
Wednesday, October 19	7:00 a.m. – 5:00 p.m.

continued

Abstract Printing Stations

Abstracts will not appear in printed form at the meeting. Searchable abstracts are available at www.aaccnet.org/meetings/2011/search.asp and abstract printing stations are available in the Exhibit Hall and in the meeting room area for your convenience.

Photo Release

Photographs will be taken at the 2011 AACC International Annual Meeting. By attending this meeting, you agree to allow AACC International's use of your photo in any AACC International publications or website.

AACC*net* Job Center

Tired of searching through hundreds of random job postings to find your next opportunity? Looking through too many online résumés that don't meet your basic criteria for candidates? Your search is about to become a whole lot easier…the new AACC*net* Job Center is the latest targeted tool available for bringing job seekers and employers in the grain-based food industry and cereal science fields together. Check out this simple, targeted, and relevant tool during the meeting in Solutions Central area or at www.aaccnet.org/jobcenter.

Medical Emergencies

The nearest medical facility is:

Desert Regional Medical Center (approximately one mile from the Convention Center)
1150 N. Indian Canyon Drive
Palm Springs, CA 92262
+1.760.323.6511

Safety Procedures

- Do not travel alone – stay in groups and travel in well-lit areas.
- Remove name badges when outside the hotel and Convention Center unless you are participating in an annual meeting event.
- Do not give your room number out to anyone you do not know and avoid giving out your room number in conversations that strangers may overhear.
- Bolt your hotel room door and only open it when you know who is on the other side. (Note: Hotel personnel wear uniforms and have identification badges. If in doubt, call hotel security or the front desk to verify an employee's identity.)
- Do not leave your door ajar if you are going down the hall for ice. Someone may enter when you are not looking.
- Know where the stairs are located in case of a fire. Do not use elevators. Also, count the number of doors to the nearest exit in case you cannot see in a smoke-filled hallway.
- Valuables, airline tickets, and money should be kept in a hotel safety deposit box or in a room safe, if available.

Procedures in Case of a Fire in the Hotel

- Leave the hotel as quickly as possible. If you cannot, stay in your room and call the operator or security to let them know you are in your room.
- Put your hand on the room door to see if it is hot before opening it. If it is, do not open it quickly. Open it just a crack to see what is on the other side and be prepared to slam it quickly if necessary.
- If you leave your room, take your room key with you. Shut your room door to keep smoke out. You may have to return if the exit is blocked. Remember the way back to your room as you go to the exit in case you need to return.
- If necessary, drop to your knees to avoid smoke. Tie a wet towel around your nose and mouth to act as a smoke filter. Fold it into a triangle and put the corner in your mouth.
- Do not take the elevator when you smell smoke or if you know that there is a fire in the building.

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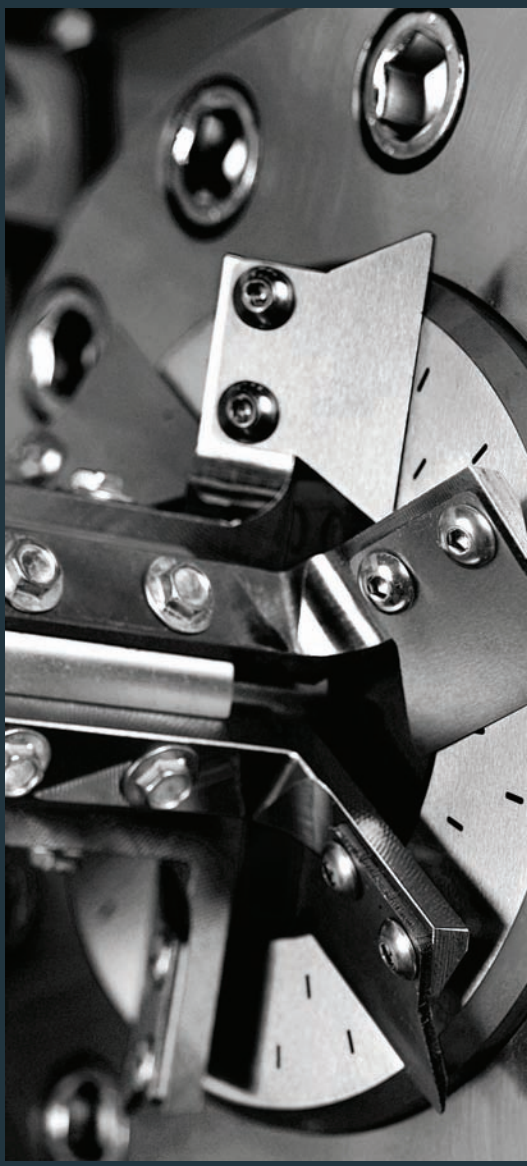

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Rejuvenate Your Research

Refresh your thinking with more scientific content to choose from and more time scheduled each day to attend the sessions. Attend **Symposia** and **Technical Sessions**, and view more than **200 posters** to see the latest trends and research findings. The 2011 scientific program continues to focus on AACC International's 7 Key Scientific Initiatives. In addition to the knowledge available through traditional Symposia and Technical Sessions, the new format, introduced in 2010, invites you to join the discussion during **Science Cafés** and **PosterTalks**. With an extra morning time slot for scientific sessions each day, you'll receive more educational content and more time for scientific dialogue with your colleagues.

Symposia and Science Cafés

Symposia and **Science Cafés** focus on multidisciplinary, cross-scientific initiative topics. They have been crafted around themes identified by the AACC International community and expanded by the program team and session organizers.

- **Symposia** are aimed at optimal knowledge transfer through regular 20-minute talks with time for topical questions.
- **Science Cafés** consist of sessions set up to combine shorter or more elaborate position talks with debate and discussion.

Technical Sessions and PosterTalks

Technical Sessions and **PosterTalks** focus on more in-depth coverage of central themes within single scientific initiatives. They are put together, after peer-review and selection, from abstracts submitted through the online abstract submission system.

- **Technical Sessions** each feature 20-minute talks covering new scientific insights and technological advancements in the field.
- **PosterTalks** consist of short talks, highlighting the main findings and take-home messages found on selected posters, followed by in-room poster viewing and discussion.

The **Symposia** and **Technical Sessions** are "swappable" sessions, allowing people to easily commute from one session to another. The **Science Cafés** and **PosterTalks** are "here to stay" sessions, where participation during a whole session is a guarantee for insightful and rewarding debate.

2011 Schedule-at-a-Glance

All meetings take place in the Renaissance Hotel (R) or the Palm Springs Convention Center (CC).

Sunday		
8:00 a.m. – 5:00 p.m.	**Short Course:** Product Development Challenges: Reducing Sodium and Increasing Fiber and Whole Grains • Santa Rosa, R	
1:00 – 4:00 p.m.	**Premeeting Workshop:** Cereal Chemists Working with Fiber • Sierra, R	
1:00 – 4:00 p.m.	**Premeeting Workshop:** Improving the Functionality and Health Attributes of Wheat • Ventura, R	
1:00 – 4:00 p.m.	**Premeeting Workshop:** Rice Quality—A Sensory Experience • Pueblo B, R	
4:00 – 5:30 p.m.	**Opening General Session and Awards Ceremony** (4:00 p.m. Reception, 4:30 p.m. General Session) • Primrose Ballroom B, CC	
5:30 – 7:30 p.m.	**Grand Opening Exhibition** • Oasis Hall 1–3, CC	
Monday		
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings** • *See page 12 for listing.*	
8:30 – 10:10 a.m.	**Symposia:** Cereal Based Inhibitors of Enzymes-Implications on Cereal Processing, Nutrition, and Agriculture • *Health & Nutrition, Ingredients & Cost of Goods Sold* • Catalina, R	**Symposia:** The Evolving World of Pasta—The Role of Non-traditional Ingredients and Processing on Finished Product Quality • I*ngredients & Cost of Goods Sold* • Mojave Learning Center, R
9:00 – 10:30 a.m.	**Special Session:** Communicating Nutrition Messages: Spheres of Influence • Sierra, R	
10:00 a.m. – 1:00 p.m.	**Student Product Development Competition** • San Jacinto, R	
10:40 a.m. – 12:20 p.m.	**Symposia:** Advances in Genetics for Quality, Functionality, and Nutrition of Wheat and Other Grains • *Cereal & Polymer Chemistry, Ingredients & Cost of Goods Sold* • Catalina, R	**Symposia:** Healthy Food Manufacturing: Process Challenges & Solutions for Salt Reduction, Fat Reduction, and Fiber Enhancement • *Engineering & Processing, Health & Nutrition* • Madera, R
12:20 – 2:00 p.m.	**Poster Viewing** and Lunch on your own • Division Lunches	
2:00 – 4:00 p.m.	**PosterTalk:** Analysis of Cereals • *Analytical Methods & Quality* • Madera, R	**PosterTalk:** BioTrek – To Boldly Go Where No Grains Have Gone Before • *Biotechnology & Sustainability* • Pasadena, R
2:00 – 4:00 p.m.	**Hot Topic:** Food Safety and Grains • *Food Safety & Regulatory* • Mojave Learning Center, R	
4:00 – 7:00 p.m.	**Beer and Poster Viewing**—student poster authors only (odd & even numbers) present 4:00 – 5:00 p.m.; odd number poster authors only present 5:00 – 6:00 p.m. • Oasis Hall 1 – 3, CC	
Open Evening	Division and Section Socials and Dinners	
Tuesday		
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings** • *See page 12 for listing.*	
8:30 – 10:10 a.m.	**Best Student Research Paper Competition** (ends at 11:00 a.m.) • Sierra, R	**Technical:** Biotechnology and Wheat • *Biotechnology & Sustainability* • Catalina, R
10:40 a.m. – 12:20 p.m.	**Technical:** Biotechnology and Sustainability • *Biotechnology & Sustainability* • Pasadena, R	**Symposia:** Lowered Microbial Grain Ingredients: Challenges and Opportunities • *Food Safety & Regulatory, Ingredients & Cost of Goods Sold* • Catalina, R
12:00 – 2:15 p.m.	**Lunch with the Exhibitors** • Oasis Hall 1–3, CC **Poster Viewing** (even-numbered poster authors present 1:00 – 2:00 p.m.)	
2:30 – 4:30 p.m.	**Science Café:** Agricultural Biotechnology: Considerations to Ensure a Sustainable Future • *Biotechnology & Sustainability* • Sierra, R	**PosterTalk:** Health and Nutrition • *Health & Nutrition* • Madera, R
2:30 – 4:30 p.m.	**Hot Topic:** The 2010 Dietary Guidelines: Translation and Application with Special Reference to Grain Based Food • Catalina, R	
2:30 – 4:30 p.m.	**Hot Topic:** Food Safety Systems: Update & RIP Session • Ventura, R	
Open Evening	Division Socials and Dinner • Foundation Event	
Wednesday		
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings** • *See page 12 for listing.*	
8:30 – 10:10 a.m.	**Technical:** Analytical Methodologies • *Analytical Methods & Quality* • Smoketree C-E, CC	**Symposia:** Recent Advances in Understanding Gluten Structure • *Cereal & Polymer Chemistry, Engineering & Processing, Ingredients & Cost of Goods Sold* • Sierra, R
10:40 a.m. – 12:20 p.m.	**Technical:** Cereals and Digestion • *Health &Nutrition* • Smoketree C-E, CC	**Technical:** Chemistry and Polymer Science • *Cereal & Polymer Chemistry* • Sierra, R
12:30 – 2:00 p.m.	Lunch on your own • ICC Lunch • Division Lunches	
2:00 – 4:00 p.m.	**Special Session:** Research from China: Cereal Functional Components Analysis and Detection • Sierra, R	**PosterTalk:** Engineering for Cereals • *Engineering & Processing* • Ventura, R
2:00 – 4:00 p.m.	**Hot Topic:** Preparing for the 2015 Dietary Guidelines: Attributes of Refined Grains, Added Fibers and Bran • Pasadena, R	
4:15 – 6:00 p.m.	**Closing Session with Keynote Speaker, Bernhard van Lengerich, and Farewell Reception** (4:15 – 4:45 p.m. reception, 4:45 – 5:45 p.m. session; 5:45 – 6:00 p.m. Farewell Reception) • Madera, R	

Technical: Food Safety • *Food Safety & Regulatory* • Madera, R	**Technical:** Ingredients and Cost of Goods Sold • *Ingredients & Cost of Goods Sold* • Pasadena, R	
Technical: Physical and Chemical Processing Impacts on Cereals • *Engineering & Processing* • Mojave Learning Center, R	**Technical:** Protein Chemistry and Polymer Science • *Cereal & Polymer Chemistry* • Pasadena, R (extended to 12:40 p.m.)	
Science Café: Carbohydrates and Colonic Health • *Cereal & Polymer Chemistry, Health & Nutrition* • Catalina, R	**Supplier Innovation Session I:** Pueblo B, R	
Technical: Fiber and Whole Grain • *Health & Nutrition* • Madera, R	**Technical:** New Technologies in Nutrition • *Health & Nutrition* • Pasadena, R	**Supplier Innovation Session II** (ends at 11:40 a.m.) • Pueblo B, R
Symposia: Protein Enrichment in Cereal Products • *Health & Nutrition* • Madera, R	**Technical:** Quality Measurements • *Analytical Methods & Quality* • Mojave Learning Center, R (extended to 12:40 p.m.)	
PosterTalk: Polymers • *Cereal & Polymer Chemistry* • Pasadena, R	**Supplier Innovation Session III** • Pueblo B, R	
Symposia: Role of Grain-Based Foods in Addressing the Obesity Epidemic • *Health & Nutrition* • Pasadena, R	**Technical:** Starch Chemistry and Polymer Science • *Cereal & Polymer Chemistry* • Mojave Learning Center, R	
Symposia: Molds and Mycotoxins in Grain-Based Food and Feed Products: Current Status and Future Challenges • *Food Safety & Regulatory* • Mojave Learning Center, R	**Symposia:** Optimizing Processing to Preserve, Create, or Enrich Bioactivity of Cereal Components • *Engineering & Processing* • Pasadena, R	
Science Café: In Vitro Digestion Models for Cereals and Cereal-Based Ingredients • *Cereal & Polymer Chemistry, Health & Nutrition* • Mojave Learning Center, R	**PosterTalk:** Ingredients Mixer • *Ingredients & Cost of Goods Sold* • Smoketree C-E, CC	

Program Highlights

Exhibits—Schedule and Events in the Exhibit Hall

Check out the new activities and prize drawings taking place this year! Connect with leading suppliers advancing the work of the industry. Exhibit times are planned to allow greater opportunities to meet with suppliers of ingredients, instruments, equipment, and services.

Sunday, October 16
5:30 – 7:30 p.m. Grand Opening Exhibition and RECEPTION

Monday, October 17
4:00 – 7:00 p.m. Exhibits with BEER and Poster Viewing (grab a beer and meet with exhibitors)

Tuesday, October 18
12:00 – 2:15 p.m. LUNCH with the Exhibitors (grab lunch and meet with exhibitors)

Speed Mentoring Event—New for 2011!

Sunday, October 16
3:30 – 4:30 p.m.

Looking to further your connections and find a mentor or protégé that matches your career path? Look no further than the Speed Mentoring Event. Like speed dating, this event will pair you with a mentor or protégé and in a series of quick exchanges will allow you to seek career and research guidance, hear about the experiences of others, and potentially find a long-term mentor/protégé match. Already a part of our 2011 Mentoring Program? Please stop by to meet and share with other individuals.

Opening General Session Reception

Sunday, October 16
4:00 – 4:30 p.m.

Opening General Session and Awards Ceremony

4:30 – 5:30 p.m.

Enjoy a reception and the kick-off to the annual meeting, get updates on what your association is doing to further the advancement of grain science, help honor AACC Intl. members who have made significant contributions to the field of grain science, and see who will win the William F. Geddes Memorial Award.

New Time! Grand Opening Exhibition

Sunday, October 16
5:30 – 7:30 p.m.

Make new acquaintances and greet old friends while you visit with more than 120 of the industry's leading suppliers during this casual and festive event. Light appetizers and beverages will be served.

Student Division Business Meeting—New this Year! Includes IP Protection Presentation

Monday, October 17
2:00 – 3:30 p.m.

Students be sure to attend the annual Student Division Business Meeting for a chance to learn about the activities of the Student Division as well as interact with your colleagues.

New this Year! To offer more value to future grain scientists, an intellectual property professional from Procter & Gamble will present "**Intellectual Property (IP) Protection: Making the Most of Your Opportunities"** from 2:30 – 3:15 p.m. Patents, trademarks, copyrights, and employee know-how are all beneficial assets to any company or university. This presentation will cover the basics of IP, include examples from the food world, and address how you can play a role in protecting valuable proprietary information. This is a session you won't want to miss! Travel award presentations will follow the speaker.

Young Professionals Event

Tuesday, October 18
4:30 – 5:30 p.m.

Calling All Young Professionals! Open to anyone 35 or younger, new to the profession, or wanting to network with this group, the Young Professionals Networking Event is a great opportunity to get to know your colleagues. Relax, chat, and network after a hard day of learning with other professionals in a fun and inviting atmosphere. This event is sponsored by the Joseph Warthesen Young Professional Endowment Fund.

Approved Methods Technical Committee Meetings

Monday, Tuesday, Wednesday

Monday, October 17

7:00 – 8:30 a.m.

Asian Products	Mesquite D, CC
Bread Baking Methods	Mesquite A, CC
Methods for Grain and Flour Testing	Mesquite E, CC
Physical Testing Methods	Mesquite F, CC
Protein and Enzyme Methods	Mesquite H, CC
Soft Wheat and Flour Products	Mesquite G, CC
Vitamins, Minerals, and Lipids	Mesquite B, CC

Tuesday, October 18

7:00 – 8:30 a.m.

Biotechnology Methods	Mesquite F, CC
Experimental Milling	Mesquite C, CC
Food Safety and Microbiology	Mesquite G, CC
Oat and Barley Products	Mesquite H, CC
Pasta Products Analysis	Mesquite E, CC
Rice Milling and Quality	Mesquite D, CC
Statistical Advisory	Mesquite A, CC

Wednesday, October 19

7:00 – 8:30 a.m.

Bioactive Compounds Methods	Mesquite F, CC
Chemical Leavening Agents	Mesquite G, CC
Dietary Fiber and Other Carbohydrates	Mesquite C, CC
Near Infrared Analysis	Mesquite E, CC
Pulse and Legume	Mesquite D, CC
Yeast Evaluation	Mesquite A, CC

Exhibits with Beer and Poster Viewing

Monday, October 17
4:00 – 7:00 p.m.

New! *Student Poster Authors Present 4:00 – 5:00 p.m.*
Poster Authors Present 5:00 – 6:00 p.m. (odd-numbered posters)

Grab a beer, iced tea, or lemonade and visit with industry suppliers at their exhibits, talk with poster authors, or visit Solutions Central.

Hot Topic Sessions

Catch the latest information at the Hot Topic sessions. Session descriptions are listed with other scientific sessions following each day's program schedule.

Monday, October 17

2:00 – 4:00 p.m.	Food Safety and Grains • Mojave Learning Center, Renaissance

Tuesday, October 18

2:30 – 4:30 p.m.	The 2010 Dietary Guidelines: Translation and Application with Special Reference to Grain Based Foods • Catalina, Renaissance
2:30 – 4:30 p.m.	Food Safety Systems: Update & RIP Session •Ventura, Renaissance

Wednesday, October 19

2:00 – 4:00 p.m.	Preparing for the 2015 Dietary Guidelines: Attributes of Refined Grains, Added Fibers and Bran • Pasadena, Renaissance

Award Presentations

Phil Williams Applied Research Award Presentation

Tuesday, October 18
8:30 a.m. • Pasadena, Renaissance

"The new cereal value chain: From seed to sewer," presented by Matthew Morell, CSIRO Food Futures Flagship, Canberra, ACT, Australia

Young Scientist Research Award Presentation

Tuesday, October 18
10:40 a.m. • Pasadena, Renaissance

"Toward understanding the genetic and molecular bases of rice quality," presented by Jinsong Bao, Zhejiang University, Hangzhou, Peoples Republic of China

Closing Session with Keynote Speaker and Farewell Reception

Wednesday, October 19
4:15 – 6:00 p.m.

"Connected Innovation—The Power of Many" featuring keynote speaker ***Bernhard van Lengerich,*** chief science officer and vice president, Technology Strategy, General Mills, Inc.

Join colleagues and friends for the Closing Session followed by great conversation and beverages.

Division and Alumni Meetings/Social Events

Network with attendees who specialize in specific subject areas, work in various geographic locations, or are fellow alumni by participating in these meetings, events, and socials. Check at the Registration Desk for availability and to purchase tickets. *Preregistration is required.* For events not taking place at the Renaissance Hotel (R) or the Convention Center (CC), see page 7 for location addresses. † *offsite location; *ticket required*

Monday, October 17

12:30 – 2:00 p.m.	Biotechnology Division Meeting and Lunch*	Mesquite E, CC
12:30 – 2:00 p.m.	Downunder Section (bring your own lunch)	Mesquite D, CC
12:30 – 2:00 p.m.	Engineering & Processing Division Meeting and Lunch*	Mesquite G, CC
12:30 – 2:00 p.m.	Milling & Baking Division Meeting and Networking Lunch*	Smoketree, CC
12:30 – 2:00 p.m.	Nutrition Division Meeting and Lunch*	Mesquite H, CC
12:30 – 2:00 p.m.	Rice Division Lunch*	Mesquite F, CC
7:00 – 10:00 p.m.	Cereals&Europe Section Dinner*	LuLu's California Bistro†
7:00 – 10:00 p.m.	Student Division Social and Dinner*	Matchbox Bistro†

Tuesday, October 18

7:00 – 8:00 a.m.	Cincinnati Section Meeting and Breakfast	Date Restaurant, R
7:00 – 8:30 a.m.	Education Division Breakfast and Business Meeting*	Chino B, R
4:30 – 5:30 p.m.	Carbohydrate Division Meeting	Smoketree, CC
4:30 – 5:30 p.m.	Protein Division Business Meeting	Mesquite D, CC
4:30 – 6:00 p.m.	Iowa State University and Friends Reception*	Hotel Pool Bar, R
5:30 – 6:30 p.m.	Protein Division Social* *(located outside Primrose Ballroom C, CC)*	Boulders Terrace, CC
6:00 – 9:00 p.m.	Carbohydrate Division Dinner*	O'Donnell Golf Club†

Wednesday, October 19

7:00 – 8:00 a.m.	Kansas State University Breakfast*	San Jacinto, R
7:00 – 8:30 a.m.	North Dakota State University Alumni and Friends Breakfast*	Pueblo B, R
12:30 – 1:30 p.m.	Rheology Division Meeting and Lunch*	Mesquite H, CC

Daily Program Schedule and Sessions

All sessions/meetings take place at the Renaissance Hotel (R), the Palm Springs Convention Center (CC), or as otherwise noted.

Saturday, October 15

8:00 a.m. – 5:00 p.m.	Board of Directors Meeting	Andreas, R
5:00 – 6:30 p.m.	Milling & Baking Division Executive Committee and Advisory Board Meeting	Snow Creek, R

Sunday, October 16

8:00 – 10:00 a.m.	Check Sample Committee Meeting	Mesquite A, CC
8:00 a.m. – 2:00 p.m.	Exhibit Set-Up	Oasis Hall 1–3, CC
8:00 a.m. – 5:00 p.m.	**Short Course** – Product Development Challenges: Reducing Sodium and Increasing Fiber and Whole Grains*	Santa Rosa, R
8:30 – 10:30 a.m.	Books Committee Meeting	San Jacinto, R
8:30 – 10:30 a.m.	Journals Committee Meeting	San Jacinto, R
8:30 – 10:30 a.m.	Online Products Committee Meeting	San Jacinto, R
10:00 a.m. – 12:00 p.m.	2012 Technical Program Planning – Team Leaders Meeting	Snow Creek, R
11:30 a.m. – 1:00 p.m.	*Cereal Chemistry* Editorial Board Luncheon	San Jacinto, R
12:00 – 7:30 p.m.	Registration Open	Main Lobby, CC
1:00 – 2:30 p.m.	Leadership Forum	Chino A/B, R
1:00 – 3:00 p.m.	C-Cell Users Group Meeting	Mesquite D, CC
1:00 – 4:00 p.m.	**Premeeting Workshop** – Cereal Chemists Working with Fiber*	Sierra, R
1:00 – 4:00 p.m.	**Premeeting Workshop** – Improving the Functionality and Health Attributes of Wheat*	Ventura, R
1:00 – 4:00 p.m.	**Premeeting Workshop** – Rice Quality—A Sensory Experience*	Pueblo B, R
2:30 – 4:00 p.m.	Approved Methods Technical Committee Chairs Meeting	Andreas, R
3:00 – 4:00 p.m.	Awards Committee Meeting	Snow Creek, R
3:30 – 4:30 p.m.	***New!*** Speed Mentoring Event	Mesquite C, CC
4:00 – 4:30 p.m.	**Opening General Session Reception**	Primrose Ballroom B, CC
4:30 – 5:30 p.m.	**Opening General Session and Awards Ceremony**	Primrose Ballroom B, CC
5:30 – 7:30 p.m.	Solutions Central Open	Oasis Hall 1–3, CC
5:30 – 7:30 p.m.	**Grand Opening Exhibition**	Oasis Hall 1–3, CC
6:00 – 7:00 p.m.	Student Division Executive Committee and University Representative Meeting	Mesquite A, CC

**ticket required*

New! Speed Mentoring Event

Looking to further your connections and find a mentor or protégé that matches your career path? Look no further than the Speed Mentoring Event. Like speed-dating, this event will pair you with a mentor or protégé for a series of quick exchanges. You can seek career and research guidance, hear about the experiences of others, and potentially find a long-term mentor/protégé match.

Time is ticking…stop by Mesquite C, CC on Sunday, October 16 from 3:30–4:30 p.m. to participate!

Premeeting Short Course

Product Development Challenges: Reducing Sodium and Increasing Fiber and Whole Grains • *Santa Rosa, R*

Organizer: Leslie Skarra, Merlin Development, Minneapolis, MN, U.S.A.

Morning Session: 8:00 – 11:30 a.m.
Functional Issues in Fiber and Whole Grain Enhancement in Grain-Based Foods

Afternoon Session: 12:30 – 5:00 p.m.
Functional Issues in Sodium Reduction in Grain-Based Foods

Reducing sodium intake and increasing fiber and whole grain consumption are two key drivers in formulating healthier products. This course will address the opportunities and challenges from a product development perspective. Issues with sodium reduction that will be covered include consumer preferences, salt replacers, leavening alternatives, flavoring strategies, culinary approaches, changes in dough functionality, and balancing options during formulation. Discussions on increasing fiber and whole grain content will cover current topics in the news, managing indigenous fiber in cereal ingredients, functionalities contributed by various fiber sources and whole grains, and formulation strategies. *Preregistration is required.*

Premeeting Workshops

Cereal Chemists Working with Fiber • Sierra, R
Organizers: Sean Finnie, Cargill Inc., Plymouth, MN, U.S.A.; Edward Souza, Bayer CropScience LP, Lincoln, NE, U.S.A.

This workshop is designed to provide a detailed overview of the evolution of fiber methods, emphasizing recent developments in methodology, definition, and labeling of dietary fiber. Discussion will include the developmental challenges in creating an approved dietary fiber method and the possible interlab variation associated with measuring fiber. The labeling and reporting of fiber is of greater importance now that the new Dietary Guidelines encourages increased consumption of foods with greater proportions of dietary fiber content. The workshop will conclude with the current labeling and reporting requirements for dietary fiber. This format will provide a more in-depth discussion than what is typically experienced at a traditional symposium.

Dietary fiber: Recent developments in the definition and methodology arenas. J. DEVRIES (1). (1) Medallion Laboratory, Minneapolis, MN, U.S.A.
Integrated method for the measurement for total dietary fiber: Development, challenges, and acceptance. B. V. MCCLEARY (1). (1) Megazyme International Ireland Limited, Bray, County Wicklow, Ireland
Measuring fiber—Statistical analysis of data. E. SOUZA (1). (1) Bayer CropScience LP, Lincoln, NE, U.S.A.
Fibers in and from grains for product development. E. ARNDT (1). (1) ConAgra Foods Inc., Omaha, NE, U.S.A.
USDA's acquisition, compilation, and dissemination of fiber values. S. GEBHARDT (1). (1) USDA–ARS, Beltsville, MD, U.S.A.

Improving the Functionality and Health Attributes of Wheat • Ventura, R
Organizer: Len Marquart, University of Minnesota, St. Paul, MN, U.S.A.
Sponsor: USDA–CSREES–NRI

This workshop will address processing methods to create functional ingredients that have greater bioavailability of some key phytochemicals in domestic grains with health benefits, as determined in cell culture and animal models. This multidisciplinary collaboration on a USDA integrated project consists of researchers in cereal chemistry, food engineering, and nutritional sciences from four academic institutions. The program will focus on the following objectives: to develop processes for production of bioactive whole grain ingredients (WGI); to evaluate the efficacy and functionality of bioactive components in WGI; to analyze the cholesterol lowering and glucose response of WGI in animal models; and to evaluate the relevance of an integrated project on stakeholders and training of graduate students.

Overview: Improving the functionality and bioactivity of wheat bran. R. RUAN (1). (1) University of Minnesota, St. Paul, MN, U.S.A.
Process development to improve functionality and bioaccessibility of wheat bran. K. PETROFSKY (1). (1) Harlan Bakeries, Indianapolis, IN, U.S.A.
Bioactive compounds and antioxidant activity of wheat bran. R. H. LIU (1). (1) Cornell University, Ithaca, NY, U.S.A.
Phenolic acid composition of processed wheat bran and metabolism. M. BUNZEL (1). (1) University of Minnesota, St. Paul, MN, U.S.A.
Health benefits of processed wheat bran in an animal model of metabolic disease. D. GALLAHER (1). (1) University of Minnesota, St. Paul, MN, U.S.A.
Future research directions. G. FULCHER (1). (1) University of Manitoba, Winnipeg, MB, Canada
Collaboration and education of graduate students and stakeholders. L. MARQUART (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

Rice Quality—A Sensory Experience • Pueblo B, R
Organizer: John K. Ashby, California Natural Products, Lathrop, CA, U.S.A.
Sponsor: Rice Division

This workshop is designed as an introduction to the sensory qualities of rice with a focus on introducing attendees to the descriptive analysis techniques and language relevant to evaluation of rice from a consumer's perspective. An introductory presentation on sensory evaluation techniques in general will be followed by an in-depth look at rice-specific sensory evaluation techniques and rice-specific descriptive analysis language. This will be followed by a presentation on the newest frontiers in evaluating taste profiles in rice and the specific markers in rice that predict these taste profiles. The session will close with a tasting of various rices illustrating various taste profiles. The Rice Division Lunch on Monday following the workshop will include tasting opportunities of more rice varieties from around the world.

An introduction to sensory evaluation. K. L. BETT-GARBER (1). (1) USDA ARS SRRC, New Orleans, LA, U.S.A.
Evaluating rice sensory quality, a descriptive analysis and predictive marker approach. J. F. MEULLENET (1), K. L. BETT-GARBER (2). (1) University of Arkansas, Fayetteville, AR, U.S.A.; (2) USDA ARS SRRC, New Orleans, LA, U.S.A.
Emerging opportunities to determine taste profiles of rice and markers to select for them. M. FITZGERALD (1). (1) International Rice Research Institute, Metro Manila, Philippines

Monday, October 17

7:00 – 8:00 a.m.	Grains for Health Foundation Breakfast Meeting*	Mesquite C, CC
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings**	
	• Asian Products	Mesquite D, CC
	• Bread Baking Methods	Mesquite A, CC
	• Methods for Grain and Flour Testing	Mesquite E, CC
	• Physical Testing Methods	Mesquite F, CC
	• Protein and Enzyme Methods	Mesquite H, CC
	• Soft Wheat and Flour Products	Mesquite G, CC
	• Vitamins, Minerals, and Lipids	Mesquite B, CC
7:00 – 8:30 a.m.	Whole Grains Working Group	Andreas, R
7:00 – 10:00 a.m.	Poster Set-Up	Oasis Hall 1–3, CC
7:30 a.m. – 6:30 p.m.	Registration Open	Main Lobby, CC
8:30 – 10:10 a.m.	**Scientific Sessions**	
	• Cereal-Based Inhibitors of Enzymes—Implications on Cereal Processing, Nutrition, and Agriculture – Symposium *(Scientific Initiatives: Health & Nutrition, Ingredients & Cost of Goods Sold)*	Catalina, R
	• The Evolving World of Pasta—The Role of Nontraditional Ingredients and Processing on Finished Product Quality – Symposium *(Scientific Initiative: Ingredients & Cost of Goods Sold)*	Mojave Learning Center, R
	• Food Safety – Technical *(Scientific Initiative: Food Safety & Regulatory)*	Madera, R
	• Ingredients and Cost of Goods Sold – Technical *(Scientific Initiative: Ingredients & Cost of Goods Sold)*	Pasadena, R
9:00 – 10:30 p.m.	**Special Session** – Communicating Nutrition Messages: Spheres of Influence	Sierra, R
9:00 a.m. – 3:00 p.m.	Bookstore Open	California Ballroom Foyer, R
10:00 a.m. – 1:00 p.m.	**Student Product Development Competition Presentations**	San Jacinto, R
10:00 a.m. – 7:00 p.m.	Poster Viewing	Oasis Hall 1–3, CC
10:40 a.m. – 12:20 p.m.	**Scientific Sessions**	
	• Advances in Genetics for Quality, Functionality, and Nutrition of Wheat and Other Grains – Symposium *(Scientific Initiatives: Cereal & Polymer Chemistry, Ingredients & Cost of Goods Sold)*	Catalina, R
	• Healthy Food Manufacturing: Process Challenges & Solutions for Salt Reduction, Fat Reduction, and Fiber Enhancement – Symposium *(Scientific Initiatives: Engineering & Processing, Health & Nutrition)*	Madera, R
	• Physical and Chemical Processing Impacts on Cereals – Technical *(Scientific Initiative: Engineering & Processing)*	Mojave Learning Center, R
	• Protein Chemistry and Polymer Science – Technical *(Scientific Initiative: Cereal & Polymer Chemistry)*	Pasadena, R
12:20 – 2:00 p.m.	Lunch Break	
12:30 – 2:00 p.m.	Biotechnology Division Meeting and Lunch*	Mesquite E, CC
12:30 – 2:00 p.m.	Downunder Section (bring your own lunch)	Mesquite D, CC
12:30 – 2:00 p.m.	Engineering & Processing Division Meeting and Lunch*	Mesquite G, CC
12:30 – 2:00 p.m.	Milling & Baking Division Meeting and Networking Lunch*	Smoketree, CC
12:30 – 2:00 p.m.	Nutrition Division Meeting and Lunch*	Mesquite H, CC
12:30 – 2:00 p.m.	Rice Division Lunch*	Mesquite F, CC
2:00 – 3:30 p.m.	Student Division Business Meeting	Santa Rosa, R
2:00 – 4:00 p.m.	**Scientific Sessions**	
	• Analysis of Cereals – PosterTalk	Madera, R
	• BioTrek—To Boldly Go Where No Grains Have Gone Before – PosterTalk	Pasadena, R
	• Carbohydrates and Colonic Health – Science Café *(Scientific Initiatives: Cereal & Polymer Chemistry, Health & Nutrition)*	Catalina, R
2:00 – 4:00 p.m.	**Hot Topic** – Food Safety and Grains	Mojave Learning Center, R
2:00 – 4:00 p.m.	**Supplier Innovation Session I,** (see p. 22)	Pueblo B, R
4:00 – 5:00 p.m.	Interest Group Meetings	Oasis Hall 1–3, CC
4:00 – 7:00 p.m.	Solutions Central Open	Oasis Hall 1–3, CC
4:00 – 7:00 p.m.	**Beer and Poster Viewing** ***Student Poster Authors Present (4:00 – 5:00 p.m.)*** ***Poster Authors Present (odd-numbered posters, 5:00 – 6:00 p.m.)***	Oasis Hall 1–3, CC
4:00 – 7:00 p.m.	**Exhibition Open**	Oasis Hall 1–3, CC
5:00 – 6:00 p.m.	Carbohydrate Division Executive Committee Meeting	Mesquite D, CC
7:00 – 10:00 p.m.	Cereals&Europe Section Dinner*	LuLu's California Bistro†
7:00 – 10:00 p.m.	Student Division Social and Dinner*	Matchbox Bistro†

**ticket required • † see page 7 for location*

Sessions – Monday Morning (8:30 – 10:10 a.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Cereal-Based Inhibitors of Enzymes—Implications on Cereal Processing, Nutrition, and Agriculture • Symposium • Catalina, R

Scientific Initiatives: Health & Nutrition, Ingredients & Cost of Goods Sold

Organizers: Sathya Kalambur, Frito Lay North America Inc., Plano, TX, U.S.A.; Girish Ganjyal, PepsiCo, Plano, TX, U.S.A.
Moderators: Supriya Varma, Frito Lay North America Inc., Plano, TX, U.S.A.; Justin French, PepsiCo, Plano, TX, U.S.A.
Financial Sponsors: Nisshin Seifun Group Inc., Megazyme International, Corn Products International, Brolite, TIC Gums, AB Mauri Bakery Ingredients, Malt Products Corp., GrainSolutions Cons. and Eng. Ltda., StarQuest F.O.O.D. Consulting LLC

There are many cereal-based and mammalian enzymes that use a variety of substrates, including carbohydrates and proteins. Examples include pectinases, amylases and xylanases, peptidases, etc. However, there are endogenous protein, polyphenolic, or other inhibitors of these enzymes present in cereals. Presence of these inhibitors has implications in the areas of cereal processing, nutrition, and agriculture.

8:30 a.m. **1-S, CFW 56:A4.** Small molecule inhibitors to dissect starch degradation during cereal germination. R. A. FIELD (1). (1) John Innes Centre, Norwich, United Kingdom

8:50 a.m. **2-S, CFW 56:A5.** Inhibitory effect of 0.19 AI inhibitor from wheat kernel on the activity and stability of porcine pancreas alpha-amylase. K. INOUYE (1), H. Oneda (2), S. Lee (2), M. Kawase (2). (1) Graduate School of Agriculture, Kyoto University, Kyoto, Japan; (2) Kyoto University, Kyoto, Japan

9:10 a.m. **3-S, CFW 56:A5.** The inhibition of alpha-glucosidase by specific lipid components in wheat bran and germ. L. LIU (1), M. Deseo (1), C. Morris (1), K. M. Winter (1), D. N. Leach (1). (1) Centre for Phytochemistry and Pharmacology, Southern Cross Plant Science, Southern Cross University, Lismore, NSW, Australia

9:30 a.m. **4-S, CFW 56:A5.** Endoxylanase inhibitors in cereals: Discovery and biochemical characterisation. J. A. DELCOUR (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium

9:50 a.m. **5-S, CFW 56:A5.** Xylanase inhibitors in cereals: Relevance for plant physiology and cereal processing. C. M. COURTIN (1), J. A. Delcour (1). (1) Laboratory of Food Chemistry and Biochemistry, Katholieke Universiteit Leuven, Leuven, Belgium

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The Evolving World of Pasta—The Role of Nontraditional Ingredients and Processing on Finished Product Quality • Symposium • Mojave Learning Center, R

Scientific Initiative: Ingredients & Cost of Goods Sold

Organizers: Elizabeth Arndt, ConAgra Foods, Inc., Omaha, NE, U.S.A.; Len Marquart, Grains for Health Foundation, St. Louis Park, MN, U.S.A.
Moderator: Anthony Reuter, University of Minnesota, St. Paul, MN, U.S.A.

Pasta is a popular grain-based staple found in many different formats, including dry boxed pastas, frozen meals, microwave-prepared main dishes, and canned soups in both retail and foodservice markets. Pasta can serve as an important vehicle for whole grains and other nutritive ingredients. Formulating pasta with nontraditional ingredients presents challenges for manufacturing, quality, regulatory compliance, consumer acceptance, and cost. This symposium will examine the effects of pasta ingredients and processing on finished product attributes and quality.

8:30 a.m. **6-S, CFW 56:A5.** Beyond wheat—Review of pasta products made with multigrains, pulses, fibers, and other ingredients. M. C. TULBEK (1). (1) Northern Crops Institute, Fargo, ND, U.S.A.

8:50 a.m. **7-S, CFW 56:A5.** The fine structure of pasta and its connection with raw material characteristics and processing conditions. M. A. PAGANI (1), A. Marti (1), S. Iametti (2). (1) DISTAM, Università degli Studi di Milano, Milan, Italy; (2) DISMA, Università degli Studi di Milano, Milan, Italy

9:10 a.m. **8-S, CFW 56:A6.** Production and processing of whole grain pasta products in relation to end-product quality. T. DICK (1), E. Arndt (1). (1) ConAgra Food Ingredients Co., Omaha, NE, U.S.A.

9:30 a.m. **9-S, CFW 56:A6.** Cooked pasta texture method evaluation. F. A. MANTHEY (1), T. Dick (2). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) ConAgra Foods, Inc., Omaha, NE, U.S.A.

9:50 a.m. **10-S, CFW 56:A6.** The changing world of pasta—Regulatory challenges for blended pasta products. D. H. HAHN (1). (1) Doherty Food Advisory, Thomasville, GA, U.S.A.

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Food Safety • Technical • Madera, R

Scientific Initiative: Food Safety & Regulatory

Moderator: Maureen C. Olewnik, AIB International, Manhattan, KS, U.S.A.

8:30 a.m. **1-O, CFW 56:A18.** Potential differences in the bran of red compared with white wheat near-isogenic lines: Impact on *Fusarium* mycotoxin levels in the grain. H. D. DAMECHARLA (1), W. A. Berzonsky (1), P. G. Krishnan (1). (1) South Dakota State University, Brookings, SD, U.S.A.

8:50 a.m. **2-O, CFW 56:A21.** Protein-based methods to quantify common wheat in spelt wheat. P. KOEHLER (1), A. Koenig (1), H. Wieser (1). (1) German Research Center for Food Chemistry, Freising, Germany

9:10 a.m. **3-O, CFW 56:A21.** Whole grain gluten-free flat breads. T. S. KAHLON (1). (1) USDA ARS WRRC, Albany, CA, U.S.A.

9:30 a.m. **4-O, CFW 56:A21.** Bread crust: An overview. A. LE-BAIL (1), S. Chevallier (1), C. Prost (1), G. Arvisenet (1), J. Grua (1), C. Rosell (2), P. Poinot (1), R. Altamirano Fortould (2), T. Dessev (3), D. Leray (4), T. Lucas (4), V. Jury (1). (1) ONIRIS-UMR CNRS GEPEA-6144, Nantes, France; (2) CSIC-IATA, Valencia, Spain; (3) University of Food Technologies, Plovdiv, Bulgaria; (4) Cemagref, Rennes, France

9:50 a.m. **5-O, CFW 56:A19.** Suitability of solvent retention capacity test methodologies for European wheat flours. A. E. DUYVEJONCK (1), B. Lagrain (1), C. M. Courtin (1), J. A. Delcour (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium

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Ingredients and Cost of Goods Sold • Technical • Pasadena, R

Scientific Initiative: Ingredients & Cost of Goods Sold

Moderators: Gary Hou, Wheat Marketing Center, Portland, OR, U.S.A.; Madhuvanti Kale, Purdue University, West Lafayette, IN, U.S.A.

8:30 a.m. **6-O, CFW 56:A16.** Addition of grain legume or pulse flours on the quality of dried Asian white salted noodles. L. BOURRE (1), S. Arntfield (1), L. Malcolmson (2). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Canadian International Grains Institute, Winnipeg, MB, Canada

8:50 a.m. **7-O, CFW 56:A16.** Influence of the particle size of pulse flours on their incorporation of into pan and pita breads. Y. Borsuk (1), S. D. ARNTFIELD (2), L. Malcolmson (3), O. Lukow (4). (1) Food Science, University of Manitoba, Winnipeg, MB, Canada; (2) University of Manitoba, Winnipeg, MB, Canada; (3) Canadian International Grains Institute, Winnipeg, MB, Canada; (4) Agriculture and Agri-Food Canada, Winnipeg, MB, Canada

9:10 a.m. **8-O, CFW 56:A20.** Effects of LAB fermentation on physical properties of oat flour and its suitability for noodle making. W. Huang (1), J. ZHONG (1). (1) Jiangnan University, Wuxi Jiangsu, Peoples Republic of China

9:30 a.m. **9-O, CFW 56:A17.** A new class of wheat offers opportunities for pasta and bakery products. J. CASPER (1), J. A. Engleson (2), C. F. Morris (3), B. Atwell (1). (1) Cargill Inc., Plymouth, MN, U.S.A.; (2) Jodi A. Engleson, LLC, Minneapolis, MN, U.S.A.; (3) USDA-ARS Western Wheat Quality Laboratory, Pullman, WA, U.S.A.

9:50 a.m. **10-O, CFW 56:A25.** Effects of glycerol on water properties and steaming performance of prefermented frozen dough. S. SHANG (1), W. Huang (1). (1) Jiangnan University, Wuxi Jiangsu, Peoples Republic of China

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Special Session – (9:00 – 10:30 a.m.) • Sierra R

Communicating Nutrition Messages: Spheres of Influence

There are many channels for communicating the benefits of consuming grain-based products. Our three unique spheres of influence to promote consumption include regulatory agencies, medical professionals, and consumers. Because the tactics for each of these are different, this session will discuss the distinct approaches and issues associated with each audience.

Working through regulatory channels to promote the consumption of breakfast cereals—An EU example. A. JESS (1). (1) CEEREAL, Berlin, Germany

Engaging the medical profession in communicating nutrition messages. J. M. JONES (1). (1) St. Catherine's University, St. Paul, MN, U.S.A.

Customizing appropriate messages for specific audiences. J. ADAMS (1). (1) Grain Foods Foundation, Ridgway, CO, U.S.A.

Student Product Development Competition

10:00 a.m. – 1:00 p.m. • San Jacinto, R

Organizer/Moderator: Yongfeng Ai, Iowa State University, Student Division PDC Chair

Sponsor: AACC Intl. Student Division

Financial Sponsors: Caravan Ingredients, Cargill Parkers Lake Food Technology Ctr., ConAgra Mills, David Michael & Co., General Mills Inc., Kellogg Co., Megazyme Intl. Ireland Ltd., Procter & Gamble, StarQuest F.O.O.D. Consulting LLC, TIC Gums Inc.

Get a glimpse of the future of the grain science industry as these young scientists show off their product development skills! This exciting competition challenges students to develop a new product containing at least one cereal product as the main ingredient. All meeting attendees are invited to view the oral and poster presentations. Come cheer on your alma mater!

10:00 a.m. **Welcome.** Yongfeng Ai, Iowa State University, Student Division PDC Chair

10:10 a.m. **Team: Texas A&M University.** Taehoon Kim, Leonnard Ojwang, Karla Siska, Yunus Tuncil
Product: Trigrano (multigrain crackers).

10:25 a.m. **Team: University of Florida.** Gayathri Balakrishnan
Product: Gluten-Free Fiber-Enriched Chia Muffin.

10:40 a.m. **Team: Kansas State University.** Marc Bianchi, Elyse Buckley, Ashley Pruett
Product: Crunchums (popsorghum ball).

10:55 a.m. **Team: University of Arkansas.** Emily Arijaje, Martha Hunt, Irene Pagana, Srinivas Rayaprolu, Patrick Rodgers, Jack Teague
Product: Bran Knew (complete breakfast muffin).

11:10 a.m. **Team: Texas A&M University.** Frederico Barros, Archana Gawde, Tom Jondiko, Victor Taleon Alban, Liyi Yang
Product: Pulcers (multigrain chips).

Sessions – Monday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Advances in Genetics for Quality, Functionality, and Nutrition of Wheat and Other Grains • Symposium • Catalina, R

Scientific Initiatives: Cereal & Polymer Chemistry, Ingredients & Cost of Goods Sold

Organizers/Moderators: Koushik Seetharaman, University of Guelph, Guelph, ON, Canada; Elizabeth Arndt, ConAgra Foods, Inc., Omaha, NE, U.S.A.

Year-to-year variability in wheat quality remains a challenge to food processors. Understanding and characterizing the influence and interaction of genetics and environment are critical to managing the quality of wheat and other grains. Open communication between the supply-chain stakeholders, from breeders to food manufacturers, is also necessary to expedite impactful advances in grain genetics. With continued increases in the variety and level of whole grains used in food products, it is also necessary to consider genetic advances that are needed for small and exotic grains. This symposium will highlight recent advances in understanding genetics in the role of quality, functionality, and nutritional value of wheat and other grains.

10:40 a.m. **11-S, CFW 56:A1.** A grain processor's perspective on the future state of genetics to impact quality, functionality, and nutrition. G. L. WEAVER (1). (1) ConAgra Mills, Omaha, NE, U.S.A.

11:00 a.m. **12-S, CFW 56:A1.** Novel genetic approaches to understanding the genetic basis of wheat and barley processing and consumer traits. M. MORELL (1). (1) CSIRO Food Futures Flagship, Canberra, Australia

11:20 a.m. **13-S, CFW 56:A1.** Candidate gene approach for wheat quality improvement. E. SOUZA (1). (1) USDA ARS, Wooster, OH, U.S.A./Bayer CropScience LP, Lincoln, NE, U.S.A.

11:40 a.m. **14-S, CFW 56:A1.** Combining genetics and biotechnology to improve wheat nutrition and processing attributes. A. BLECHL (1), W. Vensel (1), W. Hurkman (1), C. Tanaka (1), B. Beecher (1), S. Altenbach (1). (1) USDA ARS, Albany, CA, U.S.A.

12:00 p.m. **15-S, CFW 56:A2.** Genetic progress in rice quality. M. FITZGERALD (1), D. Daygon (1), M. Calingacion (1), X. Zhao (1). (1) International Rice Research Institute, Metro Manila, Philippines

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Healthy Food Manufacturing: Process Challenges & Solutions for Salt Reduction, Fat Reduction, and Fiber Enhancement • Symposium • Madera, R

Scientific Initiatives: Engineering & Processing, Health & Nutrition

Organizers: John Mathew, Frito-Lay, Inc., Plano, TX, U.S.A.; Len Marquart, University of Minnesota, St. Paul, MN, U.S.A.
Moderator: John Mathew, Frito-Lay, Inc., Plano, TX, U.S.A.
Sponsor: Engineering & Processing Division

The release of the 2010 Dietary Guidelines emphasizes greater availability of foods in the marketplace higher in dietary fiber and lower in fat, sugar, and calories. This symposium will address process challenges and potential solutions in the development/reformulation of current snack foods through salt and fat reduction and enhanced dietary fiber. Approaches will emphasize gradual ingredient modifications, taste appeal, and increased consumer availability of snacks that more closely meet dietary guidelines. The inclusion of dietary fiber and modification in ingredient contents (e.g., fat, sodium) can ultimately lead to lower caloric-dense products but with the taste appeal necessary for consumers to easily adopt.

10:40 a.m. **16-S, CFW 56:A6.** Grain-based foods in the marketplace: Opportunities for health and technical challenges. L. MARQUART (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

11:00 a.m. **17-S, CFW 56:A6.** Healthy carbohydrates for the manufacture of food and nutrition. L. OUDHUIS (1). (1) TNO, Zeist, Netherlands

11:20 a.m. **18-S, CFW 56:A7.** Potential roles for sodium during the creation of cereal products. S. E. HILL (1). (1) University of Nottingham, Loughborough Leicestershire, United Kingdom

11:40 a.m. **19-S, CFW 56:A7.** The use of starch derivatives in reduced or low-fat formulations. M. VAN DER MAAREL (1). (1) AVEBE UA, Veendam, Netherlands

12:00 p.m. **20-S, CFW 56:A6.** Enhancement of antioxidant capacity and dietary fiber profile of expanded snacks utilizing fruit and vegetable pomaces. S. ALAVI (1), E. Karkle (2), F. Giannetta (3), H. Dogan (1). (1) Department of Grain Science & Industry, Kansas State University, Manhattan, KS, U.S.A.; (2) J.R. Short Milling Company, Kankakee, IL, U.S.A.; (3) National Engineering School of Agronomy and Food Sciences (ENSAIA), Nancy, France

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Physical and Chemical Processing Impacts on Cereals • Technical • Mojave Learning Center, R

Scientific Initiative: Engineering & Processing

Moderator: Joshua Reid, Kellogg Company, Battle Creek, MI, U.S.A.

10:40 a.m. **11-O, CFW 56:A23.** Physicochemical properties of extruded washed wheat bran. G. NYOMBAIRE (1), P. K. Ng (1). (1) Michigan State University, East Lansing, MI, U.S.A.

11:00 a.m. **12-O, CFW 56:A18.** The formation of glutenin macropolymer and large glutenin structures as induced by a dough mixing-heating cycle. C. DON (1), A. Gort (2), O. LeBrun (3), A. Dubat (3). (1) Foodphysica, Driel, Netherlands; (2) Gort Bakery Consultancy, Zwijndrecht, Netherlands; (3) Chopin Technologies, Paris, France

11:20 a.m. **13-O, CFW 56:A22.** Mechanically and thermally treated functional wheat flours. M. MOSES (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

11:40 a.m. **14-O, CFW 56:A24.** Product qualities of Korean puffed rice snack (Yukwa) by using vacuum puffing machine. G. RYU (1), K. Norajit (1). (1) Kongju National University, Yesan, South Korea

12:00 p.m. **15-O, CFW 56:A17.** Retention of anthocyanins, phenolics, and antioxidant activity during blue corn extrusion. M. CAMIRE (1), B. Boss (1), M. P. Dougherty (1), B. Perkins (1), B. Kim (1). (1) University of Maine, Orono, ME, U.S.A.

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Protein Chemistry and Polymer Science • **Technical** • Pasedena, R

Scientific Initiative: Cereal & Polymer Chemistry

Moderators: Christophe Courtin, Katholieke Universiteit Leuven, Leuven, Belgium; Havva (Filiz) Koksel, University of Manitoba, Winnipeg, MB, Canada

10:40 a.m. **16-O, CFW 56:A24.** ***Protein Division Walter Bushuk Award*** – Heat-induced polymerization reactions of wheat gluten proteins. I. ROMBOUTS (1), B. Lagrain (1), K. Brijs (1), J. A. Delcour (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium

11:00 a.m. **17-O, CFW 56:A15.** Bran influences water distribution and gluten secondary structure in model dough systems. J. E. BOCK (1), S. Damodaran (1). (1) University of Wisconsin, Madison, WI, U.S.A.

11:20 a.m. **18-O, CFW 56:A22.** The effect of lipid extraction on physical and material properties of gluten. D. MURRAY (1), E. Strounina (2), J. T. Mata (3), E. P. Gilbert (3). (1) University of Queensland, St. Lucia, Australia; (2) Centre for Nutrition and Food Sciences, University of Queensland, St. Lucia, Australia; (3) Bragg Institute, ANSTO, Kirrawee, Australia

11:40 a.m. **19-O, CFW 56:A26.** Identification of protein associated with corn fiber gum and its importance to emulsification. M. P. YADAV (1), A. Nunez (1), K. B. Hicks (1). (1) USDA ARS, Eastern Regional Research Center, Wyndmoor, PA, U.S.A.

12:00 p.m. **20-O, CFW 56:A19.** High-digestibility, high-lysine (HDHL) sorghum grain contains kafirins which participate in the protein network of composite dough and bread. M. GOODALL (1), O. Campanella (1), G. Ejeta (1), B. R. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

12:20 p.m. **20a-O, CFW 56:A17.** Use of wheat bran protein hydrolysates in cereal-based food systems. I. CELUS (1), K. Brijs (1), J. A. Delcour (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium

Hot Topic, Science Café, PosterTalk Sessions Monday Afternoon

(listed in alphabetical order by title)

Session number (1-S) and **poster number (1-P)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Analysis of Cereals • **PosterTalk** • Madera, R

Scientific Initiative: Analytical Methods & Quality

2:00 – 4:00 p.m.

Moderator: Arthur D. Bettge, ADB Wheat Consulting, Moscow, ID, U.S.A.

18-P, CFW 56:A70.
New mixing technology and applications for the Farinograph. E. S. YAN (1), R. Oshikiri (2), J. Faubion (2), C. Walker (2), S. Iaquez (1), R. Thoma (1). (1) C.W. Brabender Inc., South Hackensack, NJ, U.S.A.; (2) Kansas State University, Manhattan, KS, U.S.A.

20-P, CFW 56:A49.
Investigating the ruggedness of AOAC 991.43 Total Dietary Fiber (TDF) Method using an automated dietary fiber instrument. A. R. KOMAREK (1), R. J. Komarek (1), C. L. Kelley (1). (1) ANKOM Technology, Macedon, NY, U.S.A.

25-P, CFW 56:A69.
Effects of fibre and baking conditions on digestive biscuit properties. M. B. WHITWORTH (1), A. Chau (1), L. Cicerelli (2). (1) Campden BRI, Chipping Campden, United Kingdom; (2) United Biscuits, High Wycombe, United Kingdom

26-P, CFW 56:A35.
Significance of flour particle size on sponge cake quality of soft white wheat. H. CHOI (1), T. Harris (1), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.

27-P, CFW 56:A61.
Discrimination of aroma of refined and whole wheat bread made from red and white wheat bran using an electronic nose instrument. H. SAPIRSTEIN (1), S. Siddhu (2), M. Aliani (1). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Loblaws Company Limited, Winnipeg, MB, Canada

22-P, CFW 56:A65.
Influence of shape and packing efficiency on popcorn expansion volume measurements. J. C. SWELEY (1), D. J. Rose (1), D. S. Jackson (1). (1) University of Nebraska-Lincoln, Omaha, NE, U.S.A.

23-P, CFW 56:A41.
Determination of pigment degradation power in durum wheat semolina: A simple colorimetric method. B. FU (1), L. Schlichting (1), C. Pozniak (2), A. Singh (3). (1) Canadian Grain Commission, Winnipeg, MB, Canada; (2) University of Saskatchewan, Saskatoon, SK, Canada; (3) Agriculture and Agri-Food Canada, Swift Current, SK, Canada

220-P, CFW 56:A37.
Parameters that affect pasta cooking. E. DE LA PENA (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.

46-P, CFW 56:A34.
Determination of folic acid & 5-methyl tetrahydrofolate in whole meal flours using ultra-performance liquid chromatography-tandem mass spectrometry. M. CHANDRA-

HIOE (1), M. Bucknall (2), J. Arcot (2). (1) University of New South Wales, Wahroonga, Australia; (2) University of New South Wales, Sydney, Australia

29-P, CFW 56:A32.
"New cereals" and pseudo-cereals: Rheological properties investigations. N. BOINOT (1), L. Simar (1), A. Dubat (1). (1) CHOPIN Technologies, Villeneuve-La-Garenne, France

19-P, CFW 56:A55.
Effect of resistant starch on dietary fiber content and quality of extruded RTE breakfast cereal quality. R. MILLER (1), J. Jeong (1), C. Maningat (2). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) MGP Ingredients, Inc., Atchison, KS, U.S.A.

30-P, CFW 56:A37.
Mycotoxin test kit validation for high-aflatoxin samples. S. Y. Dai (1), K. LEE (1), J. Balthrop (1), W. Li (1), T. J. Herrman (1). (1) Texas A&M University, College Station, TX, U.S.A.

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BioTrek—To Boldly Go Where No Grains Have Gone Before • PosterTalk • Pasedena, R

Scientific Initiative: Biotechnology & Sustainability
2:00 – 4:00 p.m.

Moderator: Deirdre Ortiz, Kellogg Company, Battle Creek, MI, U.S.A.

224-P, CFW 56:A40.
Interaction of rising CO_2 and soil water availability on wheat grain quality: Results from a 3-year free air CO_2 enrichment experiment. N. D. FERNANDO (1), S. Seneweera (2), M. Tausz (3), J. Panozzo (4), R. Norton (5), G. Fitzgerald (4). (1) University of Melbourne, Horsham, Australia; (2) Department of Agriculture and Food Systems, Melbourne School of Land and Environment, The University of Melbourne, Horsham, Australia; (3) Department of Forest and Ecosystem Science, Melbourne School of Land and Environment, The University of Melbourne, Creswick, Australia; (4) Department of Primary Industries, Horsham, Australia; (5) International Plant Nutrition Institute, Horsham, Australia

33-P, CFW 56:A56.
Genotype and environment effects on physical and chemical properties of wheat starch. T. N. MINH (1). (1) University of Sydney, Sydney, Australia

35-P, CFW 56:A71.
Evaluation of α-amylase accumulation and falling numbers in soft red and soft white wheat adapted to Michigan. N. YU (1), R. Laurenz (1), L. Siler (1), P. Ng (2), J. Lewis (1). (1) Wheat Breeding Program, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI, U.S.A.; (2) Cereal Science Program, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, U.S.A.

38-P, CFW 56:A27.
Antioxidant capacity of tortilla elaborated from extruded Mexican pigmented maize flour. J. AGUAYO-ROJAS (1), S. Mora-Rochin (1), S. Serna-Saldivar (2), E. Cuevas-Rodríguez (1), N. Gaxiola-Cuevas (3), C. Reyes-Moreno (1), J. Milan-Carrillo (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (2) Instituto Tecnologico de Monterrey, Campus Monterrey, Monterrey, Mexico; (3) Maestria en Ciencia y Tecnologia de Alimentos, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico

39-P, CFW 56:A56.
Evaluation of anticarcinogenic potential of tortillas produced from pigmented maizes processed by conventional nixtamalization and extrusion cooking. S. MORA-ROCHIN (1), J. Gutierrez-Uribe (2), S. Serna-Saldivar (2), M. Gúzman-Uriarte (3), P. Sánchez-Peña (1), C. Reyes-Moreno (1), J. Milán-Carrillo (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Instituto Tecnologico de Monterrey, Campus Monterrey, Monterrey, Mexico; (3) Maestria en Ciencia y Tecnologia de Alimentos, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

40-P, CFW 56:A30.
Isolation, characterization, and identification of ligninolytic bacterial strains. A. AYALA-RODRIGUEZ (1), M. Jimenez-Leyva (2), V. Olalde-Portugal (3), J. Romero-Navarro (1), C. Reyes-Moreno (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Licenciatura en Ingenieria Bioquímica, Facultad de Ciencias Quimico Biologicas, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (3) Centro de Investigación y de Estudios Avanzados, Instituto Politécnico Nacional, Unidad Irapuato, Irapuato, Gto, Culiacan Sinaloa, Mexico

127-P, CFW 56:A70.
Designing starch for better nutrition. A. C. WU (1), R. G. Gilbert (1). (1) The University of Queensland, Brisbane, QLD, Australia

36-P, CFW 56:A47.
Expression analysis of selected raffinose family oligosaccharide biosynthetic genes in developing lentil (*Lens culinaris* Medik.) seeds. U. KANNAN (1), S. Ganeshan (1), R. N. Chibbar (1). (1) University of Saskatchewan, Saskatoon, SK, Canada

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Carbohydrates and Colonic Health • Science Café • Catalina, R

Scientific Initiatives: Cereal & Polymer Chemistry, Health & Nutrition
2:00 – 4:00 p.m.

Organizers: Koushik Seetharaman, University of Guelph, Guelph, ON, Canada; Andy McPherson, Kraft Foods, Inc., Glenview, IL, U.S.A.
Moderators: Koushik Seetharaman, University of Guelph, Guelph, ON, Canada; Bruce Hamaker, Purdue University, West Lafayette, IN, U.S.A.
Sponsors: Carbohydrate Division, Nutrition Division
Financial Sponsor: Kraft Foods

The linkage between carbohydrates and colonic health is at the forefront of research and innovation in the food industry. In this session, the panel will lead the discussion on recent advances in carbohydrates as it relates to colonic health.

21-S, CFW 56:A4.
Recent advances in the area of carbohydrate function and colonic health. M. A. Guevara (1), G. C. FAHEY (1). (1) University of Illinois, Urbana, IL, U.S.A.

22-S, CFW 56:A4.
Wheat bran-derived arabinoxylan oligosaccharides: A novel soluble dietary fibre with prebiotic properties. C. M. Courtin (1), J. A. DELCOUR (1), K. Verbeke (1), W. F. Broekaert (2), F. Arnaut (3). (1) Katholieke Universiteit Leuven, Leuven, Belgium; (2) Fugeia, Heverlee, Belgium; (3) Puratos, Groot-Bijgaarden, Belgium

23-S, CFW 56:A4.
Constraints and work-arounds on the genetics of starches for beneficial colonic health. A. C. Wu (1), J. Hasjim (1), Z. A. Syahariza (1), S. Sar (1), R. G. GILBERT (1). (1) The University of Queensland, Brisbane, QLD, Australia

24-S.
Structural features of slow fermenting soluble fibers. B. R. HAMAKER (1). (1) Purdue University, West Lafayette, IN, U.S.A.

25-S, CFW 56:A4.
Carbohydrates and satiety. K. A. GREAVES (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

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Food Safety and Grains • Hot Topic • Mojave Learning Center, R
Scientific Initiative: Food Safety & Regulatory
2:00 – 4:00 p.m.

Organizer/Moderator: Elizabeth Knight, McCormick & Co. Inc., St. Louis Park, MN, U.S.A.
Sponsor: Food Safety and Microbiology Technical Committee

Food safety from the perspective of soy industry.
J. HOFFMANN (1). (1) Solae LLC, St. Louis, MO, U.S.A.

Wheat Processing and Safety of Wheat Flour. J. SHEBUSKI (1). (1) Cargill Inc., Minneapolis, MN, U.S.A.

Preventing the next recall—Predicting the future by learning from the past. S. HOOD (1). (1) General Mills, Inc., Minneapolis, MN, U.S.A.

A study on the stability of deoxynivalenol during the preparation of flour- and wheat-based food products. K. VOSS (1), M. E. Snook (1). (1) Toxicology and Mycotoxin Research Unit, ARS, USDA, Athens, GA, U.S.A.

Supplier Innovation Session I

2:00 – 4:00 p.m. • Pueblo B, R

2:00 – 2:30 p.m.
Company: Firmenich
Name of Product: Flavors
Contact Name: Nicole Derrick
Presenter Name: Riccardo Accolla
Presentation Category: Ingredients

New flavor technologies mask, enhance, and lift flavor profiles of grain products to meet health and great taste consumers' demands.

2:40 – 3:10 p.m.
Company: Kerry Ingredients & Flavours
Name of Product: Kerry Ingredients & Flavours
Contact Name: Lenitra Friend
Presenter Name: Keith Parle
Presentation Category: Ingredients

Discuss Kerry Ingredients & Flavours assortment of organic and all-natural soy protein isolate and other products.

3:20 – 3:50 p.m.
Company: Glanbia Nutritionals
Name of Product: OptiSol 5000
Contact/Presenter Name: Marilyn Stieve
Presentation Category: Ingredients

Looking to replace expensive gum systems? Try OptiSol 5000, which is an all-natural, clean label flaxseed-based hydrocolloid system.

Tuesday, October 18

7:00 – 8:00 a.m.	Cincinnati Section Meeting and Breakfast	Date Restaurant, R
7:00 – 8:00 a.m.	Past Presidents' Breakfast	Andreas, R
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings**	
	• Biotechnology Methods	Mesquite F, CC
	• Experimental Milling	Mesquite C, CC
	• Food Safety and Microbiology	Mesquite G, CC
	• Oat and Barley Products	Mesquite H, CC
	• Pasta Products Analysis	Mesquite E, CC
	• Rice Milling and Quality	Mesquite D, CC
	• Statistical Advisory	Mesquite A, CC
7:00 – 8:30 a.m.	Education Division Breakfast and Business Meeting*	Chino B, R
7:30 a.m. – 5:00 p.m.	Registration Open	Main Lobby, CC
8:00 a.m. – 2:30 p.m.	Poster Viewing	Oasis Hall 1–3, CC
8:30 – 10:10 a.m.	**Scientific Sessions**	
	• Biotechnology and Wheat – Technical *(Scientific Initiative: Biotechnology & Sustainability)*	Catalina, R
	• Fiber and Whole Grain – Technical *(Scientific Initiative: Health & Nutrition)*	Madera, R
	• New Technologies in Nutrition – *includes Phil Williams Applied Research Award Presentation – Matthew Morell* – Technical *(Scientific Initiative: Health & Nutrition)*	Pasadena, R
8:30 – 11:00 a.m.	**Best Student Research Paper Competition**	Sierra, R
8:30 – 11:40 a.m.	**Supplier Innovation Session II** (see p. 25)	Pueblo B, R
9:00 – 11:00 a.m.	Bookstore Open	California Ballroom Foyer, R
10:00 – 11:00 a.m.	Foundation Board Meeting	Snow Creek, R
10:40 a.m. – 12:20 p.m.	**Scientific Sessions**	
	• Biotechnology and Sustainability – *includes Young Scientist Research Award Presentation – Jinsong Bao* – Technical *(Scientific Initiative: Biotechnology & Sustainability)*	Pasadena, R
	• Lowered Microbial Grain Ingredients: Challenges and Opportunities – Symposium *(Scientific Initiatives: Food Safety & Regulatory, Ingredients & Cost of Goods Sold)*	Catalina, R
	• Protein Enrichment in Cereal Products – Symposium *(Scientific Initiative: Health & Nutrition)*	Madera, R
	• Quality Measurements – Technical *(Scientific Initiative: Analytical Methods & Quality)*	Mojave Learning Center, R
11:00 a.m. – 12:00 p.m.	Professional Development Panel Meeting	Mesquite D, CC
12:00 – 2:15 p.m.	Solutions Central Open	Oasis Hall 1–3, CC
12:00 – 2:15 p.m.	**Lunch with the Exhibitors and Poster Viewing** ***Poster Authors Present (even-numbered posters, 1:00 – 2:00 p.m.)***	Oasis Hall 1–3, CC
2:30 – 4:30 p.m.	**Scientific Sessions**	
	• Agricultural Biotechnology: Considerations to Ensure a Sustainable Future – Science Café *(Scientific Initiative: Biotechnology & Sustainability)*	Sierra, R
	• Health and Nutrition – PosterTalk	Madera, R
	• Polymers – PosterTalk	Pasadena, R
2:30 – 4:30 p.m.	**Hot Topic –** The 2010 Dietary Guidelines: Translation and Application with Special Reference to Grain-Based Foods	Catalina, R
2:30 – 4:30 p.m.	**Hot Topic** – Food Safety Systems: Update and RIP Session	Ventura, R
2:30 – 4:30 p.m.	**Supplier Innovation Session III** (see p. 29)	Pueblo B, R
2:30 – 6:00 p.m.	Exhibit Take-Down	Oasis Hall 1–3, CC
2:30 – 6:00 p.m.	Poster Take-Down	Oasis Hall 1–3, CC
3:30 – 5:00 p.m.	China Strategies Task Force Meeting	Snow Creek, R
4:30 – 5:30 p.m.	Carbohydrate Division Meeting	Smoketree, CC
4:30 – 5:30 p.m.	Protein Division Business Meeting	Mesquite D, CC
4:30 – 5:30 p.m.	Young Professionals Event* *(located outside Primrose Ballroom C, CC)*	Boulders Terrace, CC
4:30 – 5:30 p.m.	2012 Technical Program Planning Meeting	Mesquite C, CC
4:30 – 6:00 p.m.	Iowa State University and Friends Reception*	Hotel Pool Bar, R
5:30 – 6:30 p.m.	Protein Division Social* *(located outside Primrose Ballroom C, CC)*	Boulders Terrace, CC
6:00 – 9:00 p.m.	Carbohydrate Division Dinner*	O'Donnell Golf Club†

**ticket required • † see page 7 for location*

Sessions – Tuesday Morning (8:30 – 10:10 a.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Best Student Research Paper Competition • Symposium • Sierra, R

8:30 – 11:00 a.m. (extended time)

Organizer: AACC Intl. Professional Development Panel/Pierre Faa, Frito Lay, Inc., Plano, TX, U.S.A.
Moderators: Ximena Quintero-Fuentes, Frito-Lay, Inc., Plano, TX, U.S.A.; Angela Dodd, Cargill, Portland, OR, U.S.A.
Sponsor: Professional Development Panel
Financial Sponsors: Cargill Inc., CSM NV, DSM Food Specialties USA Inc., Frito-Lay Inc., General Mills Inc., Harlan Bakeries Inc., ICL Performance Products LP, Kellogg Company, The Kroger Co., McCormick & Co. Inc.

The objectives of this competition are to challenge students to demonstrate superior presentation skills, highlight the best research conducted and presented by students, and offer an opportunity for students to interact with the AACC International community at an early stage in their career. The competition is judged in two stages. During the first phase, university department heads nominate student members who submit an abstract and initial presentation. A jury reviews the many nominations and chooses six students to advance to the final round of competition. This session will showcase the top six finalists.

8:30 a.m. Welcome

8:35 a.m. **26-S, CFW 56:A2.** Identification of disulfide bonds in wheat gluten proteins by means of mass spectrometry/electron transfer dissociation. E. LUTZ (1), H. Wieser (1), P. Koehler (1). (1) German Research Center for Food Chemistry, Freising, Germany

9:00 a.m. **27-S, CFW 56:A3.** Arabinoxylan distribution and functionality in selected flour mill streams and effect on flour blending. D. D. RAMSEYER (1), A. D. Bettge (2), C. F. Morris (3). (1) Washington State University, Pullman, WA, U.S.A.; (2) ADB Wheat Consulting, Moscow, ID, U.S.A.; (3) USDA-ARS, Western Wheat Quality Laboratory, Pullman, WA, U.S.A.

9:25 a.m. **28-S, CFW 56:A3.** Couscous process engineering: Toward a better understanding of the contribution of the mechanical input during agglomeration. S. MANDATO (1), B. Cuq (2), T. Ruiz (3). (1) INRA, Montpellier, France; (2) SupAgro Montpellier, Montpellier, France; (3) Université Montpellier 2, Montpellier, France

9:50 a.m. **29-S, CFW 56:A3.** Understanding bran-gluten protein interactions during dough development using rheology and tomography. H. H. GAJULA (1), J. Faubion (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

10:15 a.m. **30-S, CFW 56:A3.** Slow digestion of synthesized highly branched starch-based structures at the mucosal α-glucosidase level suggest slow glucose delivery to the body. B. LEE (1), L. Yan (1), R. Phillips (1), T. Powley (1), B. R. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

10:40 a.m. **31-S, CFW 56:A3.** Anti-inflammatory properties of cowpea phenotypes with different phenolic profiles. L. O. OJWANG (1), J. M. Awika (1). (1) Texas A&M University, College Station, TX, U.S.A.

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Biotechnology and Wheat • Technical • Catalina, R

Scientific Initiative: Biotechnology & Sustainability

Moderator: Ann Blechl, USDA ARS, Albany, CA, U.S.A.

8:30 a.m. **21-O, CFW 56:A18.** Genotype and environment effects on functional properties of wheat starch. L. COPELAND (1). (1) University of Sydney, Sydney, Australia

8:50 a.m. **22-O, CFW 56:A24.** Response of wheat plants to stress as expressed by antioxidant levels in the grain. O. F. RAMOS (1), R. L. Madl (1), A. K. Fritz (1), M. Smith (1). (1) Kansas State University, Manhattan, KS, U.S.A.

9:10 a.m. **23-O, CFW 56:A19.** Creation and analysis of novel HMW-GS and puroindoline alleles. M. J. GIROUX (1), J. Zhang (1), P. Hofer (1), J. M. Martin (1). (1) Montana State University, Bozeman, MT, U.S.A.

9:30 a.m. **24-O, CFW 56:A21.** Preliminary investigation of QTLs related to antioxidant activity and quality in a hard × soft cross. T. KONGRAKSAWECH (1), A. S. Ross (1), C. J. Peterson (2). (1) Oregon State University, Corvallis, OR, U.S.A.; (2) LimaGrain Cereal Seeds LLC, Fort Collins, CO, U.S.A.

9:50 a.m. **25-O, CFW 56:A19.** A novel immature spike culture-derived variant creation strategy for mutation-mining in wheat (*Triticum aestivum* L.). S. GANESHAN (1). (1) University of Saskatchewan, Saskatoon, SK, Canada

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Fiber and Whole Grain • Technical • Madera, R

Scientific Initiative: Health & Nutrition

Moderators: Linda Schlichting Canadian Grain Commission, Winnipeg, MB, Canada; Bram Pareyt, Katholieke Universiteit Leuven, Leuven, Belgium

8:30 a.m. **26-O, CFW 56:A17.** A review on the impact of bran, cereal fiber, and whole grain intakes and risk reduction of type 2 diabetes. S. CHO (1), L. Qi (2), G. Fahey (3), D. Klurfeld (4). (1) NutraSource Inc., Clarksville, MD, U.S.A.; (2) Harvard School of Public Health, Boston, MA, U.S.A.; (3) University of Illinois, Urbana, IL, U.S.A.; (4) USDA ARS, Beltsville, MD, U.S.A.

8:50 a.m. **27-O, CFW 56:A14.** Phenolic acid composition and antioxidant capacity of high-lutein whole grain bakery products. E. M. ABDELAAL (1), I. Rabalski (1). (1) Agriculture and Agri-Food Canada, Guelph, ON, Canada

9:10 a.m. **28-O, CFW 56:A20.** Potential of alkylresorcinols in Canadian red hard and red soft wheat bran and their stability during baking. A. GUNENC (1), F. Hosseinian (1). (1) Carleton University, Ottawa, ON, Canada

9:30 a.m. **29-O, CFW 56:A25.** Viscoelastic characteristics of pig digesta are influenced by wheat arabinoxylan. K. J. SHELAT (1), T. M. Nicholson (2), M. J. Gidley (1), R. G. Gilbert (1). (1) Centre for Nutrition & Food Sciences, Queensland Alliance for Agriculture and Food Innovation, University of Queensland, Brisbane, Australia; (2) Centre for High Performance Polymers, School of Chemical Engineering, University of Queensland, Brisbane, Australia

9:50 a.m. **30-O, CFW 56:A20.** Developing barley-fortified wheat flour-based foods. G. G. HOU (1), V. Jimenez (1). (1) Wheat Marketing Center, Portland, OR, U.S.A.

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New Technologies in Nutrition • Technical • Pasedena, R
Scientific Initiative: Health & Nutrition

Moderators: Inge Celus, Katholieke Universiteit Leuven, Leuven, Belgium; S. Shea Miller, Agriculture and Agri-Food Canada, Ottawa, ON, Canada

8:30 a.m. **31-O, CFW 56:A22.** ***Phil Williams Applied Research Awardee*** – The new cereal value chain: From seed to sewer. M. K. MORELL (1). (1) CSIRO Food Futures Flagship, Canberra, ACT, Australia

9:10 a.m. **32-O, CFW 56:A16.** Phenolic distribution in wheat kernels—Chemical and physical structure for nutritional value. L. R. BREWER (1), D. Qiu (1), Y. Shi (1). (1) Kansas State University, Manhattan, KS, U.S.A.

9:30 a.m. **33-O, CFW 56:A25.** Generation of high-amylose wheat lines through tilling. A. Slade (1), D. Loeffler (1), J. Mullenberg (1), W. Skinner (1), G. Fazio (1), A. Holm (1), J. Goodstal (1), C. McGuire (1). (1) Arcadia Biosciences, Seattle, WA, U.S.A.

9:50 a.m. **34-O, CFW 56:A22.** Alkylresorcinol metabolites as biomarkers for intake of whole grain wheat and rye. M. MARKLUND (1), R. Landberg (1), P. Åman (1), A. Kamal-Eldin (1). (1) Swedish University of Agricultural Sciences, Uppsala, Sweden

Supplier Innovation Session II

8:30 – 11:40 a.m. • Pueblo B, R

8:30 – 9:00 a.m.
Company: ICL Performance Products LP
Name of Product: Salona™ Low Sodium Sea Salt
Contact/Presenter Name: Barbara Bufe Heidolph
Presentation Category: Ingredients

Salona™ Low Sodium Sea Salt is a natural mineral from the Dead Sea. Strategies for sodium reduction in baked goods as well as product properties, applications, and sensory data will be presented.

9:10 – 9:40 a.m.
Company: Palsgaard Inc.
Name of Product: Innovative Powder Emulsifiers
Contact/Presenter Name: Rosa Regaldo
Presentation Category: Ingredients

Innovative powder emulsifiers are easy to handle and can help produce leaner, cleaner, softer, and better cakes.

9:50 – 10:20 a.m.
Company: CHOPIN Technologies
Name of Product: Mixolab for Milling & Baking QC
Contact Name: Charles Loubersac d'Hotel
Presenter Names: Charles Loubersac d'Hotel and Arnaud Dubat
Presentation Category: Instruments/Equipment/Services

Solutions for consistency ensured in milling and baking industry: Chopin Technologies' customers' feedback on their use of the Mixolab.

10:30 – 11:00 a.m.
Company: Arla Food Ingredients
Name of Product: Functional Milk Proteins
Contact Name: Terese O'Neill
Presenter Name: Joachim Pedersen
Presentation Category: Ingredients

Eggs can be replaced utilizing Arla Functional Milk Proteins. Tests were run in donuts, cakes, muffins, pancakes, and waffles.

11:10 – 11:40 a.m.
Company: ANKOM Technology
Name of Product: ANKOM Automated TDF Analyzer
Contact/Presenter Name: Chris Kelley
Presentation Category: Instruments/Equipment/Services

This presentation will review and demonstrate the functionality and operation of an instrument that will automate IDF/SDF and TDF analysis following AOAC 991.43.

Sessions – Tuesday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

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Biotechnology and Sustainability • Technical • Pasedena, R
Scientific Initiative: Biotechnology & Sustainability

Moderators: Varatharajan Vamadevan, University of Guelph, Guelph, ON, Canada; Rajen S. Mehta, SunOpta Ingredients Group, Chelmsford, MA, U.S.A.

10:40 a.m. **35-O, CFW 56:A15.** ***Young Scientist Research Awardee*** – Toward understanding the genetic and molecular bases of rice quality. J. S. BAO (1). (1) Zhejiang University, Hangzhou, Zhejiang, Peoples Republic of China

11:20 a.m. **36-O, CFW 56:A24.** Assessment of DNA extraction methods for PCR testing of discontinued or unapproved biotech events in single seeds of canola, flax, and soybean. I. RATNAYAKA (1), T. Demeke (1), M. Holigrosky (1), A. Phan (1). (1) Canadian Grain Commission, Winnipeg, MB, Canada

11:40 a.m. **37-O, CFW 56:A15.** Barley starch bioengineering for high phosphate and amylose. A. BLENNOW (1), M. Carciofi (2), S. S. Shaik (1), S. L. Jensen (1), J. T. Svensson (1), P. B. Holm (2), K. H. Hebelstrup

(2). (1) University of Copenhagen, Frederiksberg C, Denmark; (2) University of Aarhus, Slagelse, Denmark

12:00 p.m. **38-O, CFW 56:A16.** Effect of water management on rice grain quality. R. BRYANT (1), M. Anders (2). (1) USDA ARS DBNRRC, Stuttgart, AR, U.S.A.; (2) University of Arkansas, Rice Research and Extension Center, Stuttgart, AR, U.S.A.

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Lowered Microbial Grain Ingredients: Challenges and Opportunities • Symposium • Catalina, R

Scientific Initiatives: Food Safety & Regulatory, Ingredients & Cost of Goods Sold

Organizer/Moderator: Elizabeth Arndt, ConAgra Foods, Inc., Omaha, NE, U.S.A.

Food safety is critical for public health and is a key issue affecting the food industry today. Wheat flour and other grain ingredients are generally sold as raw ingredients that must be further processed to reduce the risk of foodborne illness. There is a strong need for consumer education in the storage, preparation, and consumption of grain foods. Internet searches turn up numerous hits indicating that it is safe to eat uncooked wheat flour. In order to mitigate risks for consumers who eat raw or parcooked grain-based foods, processing methods can be used to eliminate pathogens that may be present in grain ingredients. This symposium will provide an overview of processing methods, impact of processing on ingredient functionality and end product quality, and supply-chain requirements for ensuring the integrity of ready-to-eat wheat flour and other grain ingredients.

10:40 a.m. **32-S, CFW 56:A8.** Microbiological profile and food safety risk of wheat flour. C. HALL (1), F. A. Manthey (1), C. Wolf-Hall (1), A. Vegi (1). (1) North Dakota State University, Fargo, ND, U.S.A.

11:00 a.m. **33-S, CFW 56:A9.** Strategies to reduce microbial load in wheat flour and the effects of processing on functional properties. A. BIANCHINI (1), D. Rose (1), R. Flores (1). (1) University of Nebraska, Lincoln, NE, U.S.A.

11:20 a.m. **35-S.** Utilizing the Food Safety Modernization Act to reduce risk and improve customer understanding of grain ingredients. L. E. REEVE (1). (1) AIB International, Manhattan, KS, U.S.A.

11:40 a.m. **36-S, CFW 56:A9.** Supply chain management for maintaining microbiological integrity of processed grain ingredients. D. AKINS-LEWENTHAL (1), B. Warren (1). (1) ConAgra Mills, Omaha, NE, U.S.A.

12:00 p.m. Discussion

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Protein Enrichment in Cereal Products • Symposium • Madera, R

Scientific Initiative: Health & Nutrition

Organizers/Moderators: Viswas Ghorpade, Kellogg Company, Battle Creek, MI, U.S.A.; Girish Ganjyal, PepsiCo, Plano, TX, U.S.A.

Sponsor: Protein Division

Financial Sponsor: Kellogg Company

The world population is growing annually by about 1.3% and the population is going to be doubled from 6.5 billion today to 13 billion in the year 2063. The challenge faced by the world's cereal scientists is to ensure protein availability in order to feed the growing world population. A discussion needs to happen on the compromise between the viability of producing less environmentally friendly animal protein and the sustainability of plant proteins to feed the population growth. This symposium will focus on the challenges and need for enriching current cereal products with plant proteins. This also covers the many industry trends on enriching the food products of tomorrow.

10:40 a.m. **37-S, CFW 56:A10.** Plant proteins—A sustainable alternative providing new opportunities. M. SCHWEIZER (1). (1) Burcon NutraScience Corp., Winnipeg, MB, Canada

11:00 a.m. **38-S, CFW 56:A10.** Adding grain protein to food products: Challenges and opportunities. E. SMITH (1). (1) General Mills, Minneapolis, MN, U.S.A.

11:20 a.m. **39-S, CFW 56:A10.** Protein enrichment in cereal products: A nutrition perspective. K. A. GREAVES (1). (1) Kellogg Company, Battle Creek, MI, U.S.A

11:40 a.m. **40-S, CFW 56:A11.** Protein in snack foods. V. VEMULAPALLI (1), M. D. Beaver (1). (1) Kraft Foods, Inc., East Hanover, NJ, U.S.A.

12:00 p.m. **41-S, CFW 56:A11.** Low-cost protein-enriched products. L. Meeks (1), R. Newth (1), M. Strahm (1), J. Strahm (1), A. SUNDERLAND (1), B. KOCH (1). (1) Grains for Hope, Sabetha, KS, U.S.A.

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Quality Measurements • Technical • Mojave Learning Center, R

Scientific Initiative: Analytical Methods & Quality

Moderators: Sean Finnie, Cargill Inc., Plymouth, MN, U.S.A.; Andrew Ross, Oregon State University, Corvallis, OR, U.S.A.

10:40 a.m. **39-O, CFW 56:A19.** Stress relaxation of wheat kernels and their relationship with milling, rheological, and bread quality of wheat. J. FIGUEROA CARDENAS (1), I. Manuel Cresencio (2), Z. Hernández Estrada (3), B. Ramírez Wong (4), R. Peña (5). (1) CINVESTAV Unidad Queretaro, Queretaro, Qro., Mexico; (2) Universidad Tecnológica de Xicotepec de Juárez, Xicotepec de Juárez, Puebla, Mexico; (3) Centro de Investigación y de Estudios Avanzados (CINVESTAV-IPN), Queretaro, Queretaro, Mexico; (4) Universidad de Sonora-Departamento de Investigación y Posgrado en Alimentos, Hermosillo, Sonora, Mexico; (5) CIMMYT, Texcoco, México, Mexico

11:00 a.m. **40-O, CFW 56:A20.** Comparison of glutenin subunit composition among North American hard wheat classes. T. M. IKEDA (1), K. Takata (1). (1) National Agricultural Research Center for Western Region, Fukuyama, Hiroshima, Japan

11:20 a.m. **41-O, CFW 56:A23.** Image-based modelling of bread firmness. M. C. POOLE (1), J. R. Bratt (1), A. Chau (1), S. P. Penson (1), M. B. Whitworth (1). (1) Campden BRI, Gloucestershire, United Kingdom

11:40 a.m. **42-O, CFW 56:A25.** Antioxidant assay development to guide the development of high-antioxidant wheat. J. SULLIVAN (1), O. Ramos (1), J. Abeykoon (1), R. Madl (1). (1) Kansas State University, Manhattan, KS, U.S.A.

12:00 p.m. **43-O, CFW 56:A22.** A new method for assessing the effect of variable gastric conditions on cereal digestion in monogastric animals. H. V. MASEY O'NEILL (1), M. C. Poole (2), S. P. Penson (2),

M. R. Bedford (1). (1) AB Vista Feed Ingredients, Marlborough, United Kingdom; (2) Campden BRI, Chipping Campden, United Kingdom

12:20 p.m. **43a-O, CFW 56:A69.** Application of chemometrics to prediction of some wheat quality factors by near-infrared spectroscopy (NIRS). P. WILLIAMS (1), P. Dardenne (2), D. W. Hopkins (3), D. B. Funk (4), D. Ryan (5), F. H. Long (6), D. Bu (7), B. Igne (8), B. Pfahringer (9). (1) PDK Projects Inc., Nanaimo, BC, Canada; (2) CRA-W, Gembloux, Belgium; (3) Consultant, Battle Creek, MI, U.S.A.; (4) USDA GIPSA, Kansas City, MO, U.S.A.; (5) Solae, St. Louis, MO, U.S.A.; (6) Spectroscopic Solutions, Randolph, NJ, U.S.A.; (7) CAMO, Woodbridge, NJ, U.S.A.; (8) Iowa State University, Ames, IA, U.S.A.; (9) University of Waikato, Hamilton, New Zealand

Hot Topic, Science Café, PosterTalk Sessions Tuesday Afternoon

(listed in alphabetical order by title)

Session number (1-S) and **poster number (1-P)** refers to the Author Index in the program book.

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The 2010 Dietary Guidelines: Translation and Application with Special Reference to Grain-Based Foods • Hot Topic • Catalina, R

Scientific Initiative: Health & Nutrition
2:30 – 4:30 p.m.

Organizers/Moderators: Satya Jonnalagadda, General Mills, Inc., Golden Valley, MN, U.S.A.; Brinda Govindarajan, McDonalds Corporation, Oak Brook, IL, U.S.A.
Sponsor: Nutrition Division
Financial Sponsors: International Fiber Corp., Bay State Milling, ADM, Cargill, Inc., ConAgra Foods, SunOpta, General Mills Bell Institute of Health and Nutrition, Grains Food Foundation, J. RETTENMAIER USA LP

The session provides an overview of the 2010 Dietary Guidelines for Americans, including their translation and application to dietary intake recommendations, identifying gaps in the literature and opportunities for future health and nutrition research. The session will also discuss the role of different food industry sectors in translation of the recommendations to enable the population to meet these guidelines, including identification of opportunities for innovation to help achieve the dietary guidelines.

2:30 p.m. **2010 Dietary Guidelines: Committee perspective.** J. SLAVIN (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

2:50 p.m. **USDA perspective on translation of the guidelines to consumers.** R. POST (1). (1) Center for Nutrition Policy and Promotion (CNPP), USDA, Alexandria, VA, U.S.A.

3:10 p.m. **Academic perspective on translation of the guidelines and future areas of health and nutrition research.** N. KEIM (1). (1) Western Human Nutrition Research Center, University of California, Davis, CA, U.S.A.

3:30 p.m. **Food-service perspective on translation of the guidelines.** B. GOVINDARAJAN (1). (1) McDonalds Corporation, Oak Brook, IL, U.S.A.

3:50 p.m. **Retail-food industry perspective on the translation of the guidelines.** K. WIEMER (1). (1) General Mills Bell Institute of Health and Nutrition, Golden Valley, MN, U.S.A.

4:10 p.m. **Discussion**

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Agricultural Biotechnology: Considerations to Ensure a Sustainable Future • Science Café • Sierra, R

Scientific Initiative: Biotechnology & Sustainability
2:30 – 4:30 p.m.

Organizers: Tandace Scholdberg, USDA-GIPSA, Kansas City, MO, U.S.A.; Brian Beecher, USDA-ARS, Pullman, WA, U.S.A.
Moderators: Tandace Scholdberg, USDA-GIPSA, Kansas City, MO, U.S.A.; Michael Giroux, Montana State University, Bozeman, MT, U.S.A.
Sponsor: Biotechnology Division

Sustainability is a multifaceted concept in agriculture that refers to the ability of a field to produce crops and to maintain productivity, while accomplishing a variety of ecological, economic, and social goals. Environmental problems associated with industrial agriculture can be addressed through sustainable agriculture and more sustainable business practices. Goals for sustainability include increasing the resource use efficiency of natural resources, reducing pressure on habitat, increasing the productivity of farmlands, and sustaining the economic viability of farm operations. Sustainability is achieved when farmers make choices that are ecologically and economically beneficial and increase the long-term efficiency of operations. By increasing yields and making pest control more effective, genetically engineered crops contribute significantly to agricultural sustainability.

42-S, CFW 56:A2.
Evaluation of novel input/output traits in soybeans. T. E. CLEMENTE (1). (1) University of Nebraska, Lincoln, NE, U.S.A.

43-S, CFW 56:A2.
Analysis of drought tolerance candidate genes in transgenic plants. R. D. ALLEN (1). (1) Oklahoma State University, Stillwater, OK, U.S.A.

44-S, CFW 56:A2.
The regulatory bottleneck for biotech crops. K. J. BRADFORD (1). (1) University of California, Davis, CA, U.S.A.

45-S, CFW 56:A2.
Regulation of agbiotech: Science shows a better way. H. I. MILLER (1). (1) Hoover Institution/Stanford University, Stanford, CA, U.S.A.

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Food Safety Systems: Update and RIP Session • Hot Topic • Ventura, R

Scientific Initiative: Food Safety & Regulatory
2:30 – 4:30 p.m.

Organizer: Barbara Heidolph, ICL Performance Products LP, Principal Applications Research Technical Service, St. Louis, MO, U.S.A.

The AACC International Food Safety Systems Task Force was formed in 2009 following the annual meeting. The task force,

a team of food safety experts and shareholders, has developed new products for the industry to facilitate food safety systems development and to streamline allocation of resources. An overview of the Supplier Survey will be provided. The GFSI Gap Analysis working group will provide a preview of the Audit Scheme Guidance Document. This group of experts met and reviewed the ISO 22000 standard line by line, providing interpretation and identifying where sharing best practices may be beneficial to the industry. The next step will be to complete this same analysis and guidance for the PAS 220. Other projects and opportunities have been identified: standard method for determining shelf life; short course on grain traceability programs; development of a supplier quality manual; guidance on environmental monitoring programs; and collaboration with other food industry organizations.

Following a brief review of new project opportunities, the session participants will break into small discussion groups for an RIP session (Review existing opportunities; Identify new opportunities; Prioritize and define next steps).

J. ROBINSON (1). (1) Bay State Milling Company, Minneapolis, MN, U.S.A.
J. LEVENHAGEN (1). (1) The Mennel Milling Company, Fostoria, OH, U.S.A.
C. HURBURGH (1). (1) Iowa Grain Quality Initiative, Iowa State University, Ames, IA, U.S.A.
G. CLAPPER (1). (1) AOCS, Urbana, IL, U.S.A.
B. HEIDOLPH (1). (1) ICL Performance Products LP, St. Louis, MO, U.S.A.

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Health and Nutrition • PosterTalk • Madera, R
Scientific Initiative: Health & Nutrition
2:30 – 4:30 p.m.

Moderator: Kris Spence, Kellogg Company, Battle Creek, MI, U.S.A.

222-P, CFW 56:A59.
Improving the quality and shelf life of whole wheat bread. I. POVLSEN (1), J. Sigel (1), M. Philipsen (1). (1) Danisco, Brabrand, Denmark

24-P, CFW 56:A71.
Influence of novel partial germination process onto nutritional and functional properties of different types of pulses. E. ZAMPROGNA ROSENFELD (1), S. Bellaio (1), D. Mane (2), M. Jacobs (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler (India) Pvt. Ltd., Bangalore, India; (3) Buhler GmbH, Braunschweig, Germany

225-P, CFW 56:A57.
Soluble fiber fortification of breakfast cereals: Enhancing nutrient density and beneficial caloric intake. L. NIBA (1). (1) National Starch, Bridgewater, NJ, U.S.A.

226-P, CFW 56:A50.
The feasibility of alkylresorcinol metabolites in urine spot samples as biomarkers of whole grain and cereal fiber intake in U.S. women. R. LANDBERG (1), M. K. Townsend (2), Q. Sun (3), D. Spiegelman (4), R. M. van Dam (5). (1) Swedish University of Agricultural Sciences, Uppsala, Sweden; (2) Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, U.S.A.; (3) Department of Nutrition, Harvard School of Public Health, Boston, MA, U.S.A.; (4) Department of Epidemiology, Harvard School of Public Health, Boston, MA, U.S.A.; (5) Department of Epidemiology, Public Health, and Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

228-P, CFW 56:A28.
Utilization of high-fibre barley fractions in tortillas to reduce glycemic response and lipogenesis. N. AMES (1), C. Taylor (2), S. Harding (2). (1) Agriculture & Agri-Food Canada, Winnipeg, MB, Canada; (2) University of Manitoba, Winnipeg, MB, Canada

218-P, CFW 56:A48.
Interactional effects of beta-glucan, starch, and protein in cooked oat flour on viscosity and in vitro bile acid binding. H. KIM (1), P. J. White (1). (1) Iowa State University, Ames, IA, U.S.A.

223-P, CFW 56:A67.
β-Glucan degradation by endogenous enzymes in wheat flour doughs with different moisture contents. A. VATANDOUST (1), S. Ragaee (1), S. Tosh (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Agriculture & Agri-Food Canada, Guelph, ON, Canada

221-P, CFW 56:A58.
Characterization of roasted quinoa. M. B. OMARY (1), C. Onwulata (2), K. A. Rosentrater (2), A. Thomas-Gahring (2), J. Nguyen (3), M. B. Medina (4), M. Singh (5), P. H. Cooke (6). (1) California State University-Los Angeles, Riverside, CA, U.S.A.; (2) USDA-ARS, Wyndmoor, PA, U.S.A.; (3) Cal Poly Pomona University, Pomona, CA, U.S.A.; (4) ARS/USDA, Wyndmoor, PA, U.S.A.; (5) USDA ARS NCAUR, Peoria, IL, U.S.A.; (6) New Mexico State University, Las Cruces, NM, U.S.A.

217-P, CFW 56:A35.
A comparison of the literature on the association between intakes of bran, cereal fiber, and whole grains and risk of adiposity measures. S. CHO (1), L. Qi (2), G. Fahey (3), D. Klurfeld (4). (1) Nutra Source Inc., Clarksville, MD, U.S.A.; (2) Harvard School of Public Health, Boston, MA, U.S.A.; (3) University of Illinois, Urbana, IL, U.S.A.; (4) USDA ARS, Beltsville, MD, U.S.A.

227-P, CFW 56:A31.
Phenolic levels and oxygen radical scavenging capacity of hybrid black rice samples. T. BETA (1), H. Zhang (1), Y. Qiu (1), Y. Shao (2), J. Bao (2). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Zhejiang University, Hangzhou, Peoples Republic of China

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Polymers • PosterTalk • Pasedena, R
Scientific Initiative: Cereal & Polymer Chemistry
2:30 – 4:30 p.m.

Moderators: Rebecca Miller, Kansas State University, Manhattan, KS, U.S.A.; Alecia Kiszonas, USDA ARS, Washington State University, Pullmsan, WA, U.S.A.

103-P, CFW 56:A44.
Relationship between starch structures in rice flour and solubility of starch molecules in water. J. HASJIM (1), E. Li (1), S. Dhital (1). (1) University of Queensland, Brisbane, Australia

104-P, CFW 56:A38.
Diffusion of alpha-amylase in starch granules. S. DHITAL (1), A. K. Shrestha (1), K. Shelat (1), M. Gidley (1). (1) Centre for Nutrition and Food Sciences, University of Queensland, St. Lucia, Brisbane, QLD, Australia

129-P, CFW 56:A72.
Effect of kernal heating treatment time on the physicochemical properties of oat flour. B. ZHANG (1), Y. Wei (1), G. Ning (2), P. Feng (3). (1) Institute of Agro-Food Science and Technology, CAAS, Beijing, Peoples Republic of China; (2) College of Food Science and Engineering, Northwest Sci-Tech University of Agriculture and Forestry, Yangling, Peoples Republic of China; (3) Grain and Oil Food College, Henan University of Technology, Zhengzhou, Peoples Republic of China

105-P, CFW 56:A70.
Correlation between molecular and intragranular structural parameters in waxy starch. T. WITT (1), J. Doutch (2), E. Gilbert (2), B. Gilbert (1). (1) University of Queensland, Brisbane, Australia; (2) Australian Nuclear Science and Technology Organisation, Sydney, Australia

62-P, CFW 56:A32.
Properties of wheat gluten as affected by high-pressure-induced deamidation. M. BRUNNBAUER (1), P. Koehler (1). (1) German Research Center for Food Chemistry, Freising, Germany

83-P, CFW 56:A57.
Amylolysis of small and large granules of triticale, wheat, and corn starches at subgelatinization temperature using granular starch-hydrolyzing enzyme. S. NAGULESWARAN (1), J. Li (1), T. Vasanthan (1), D. Bressler (1), R. Hoover (2). (1) University of Alberta, Edmonton, AB, Canada; (2) Memorial University of Newfoundland, St. John's, NF, Canada

107-P, CFW 56:A65.
Structure/function relationships of barley limit dextrinase and limit dextrinase inhibitor. B. SVENSSON (1), M. S. Moeller (2), M. Kyasaram (3), J. M. Jensen (3), M. B. Vester-Christensen (3), P. Hagglund (3), A. Henriksen (4), M. Abou Hachem (3). (1) Technical University of Denmark, Lyngby, Denmark; (2) Enzyme & Protein Chemistry, Technical University of Denmark, Lyngby, Denmark; (3) Enzyme & Protein Chemistry, Lyngby, Denmark; (4) Carlsberg Laboratory, Valby, Denmark

47-P, CFW 56:A60.
Major determinants of slow fermentation rate in alkali-extractable arabinoxylans and their hydrolyzates from corn, rice, wheat, and sorghum brans. P. RUMPAGAPORN (1), B. Reuhs (1), B. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

81-P, CFW 56:A46.
Gelatinization and retrogradation of acha (*Digitaria exilis*), iburu (*D. iburua*), and tamba (*Eleusine coracana*) starches. A. I. JIDEANI (1). (1) University of Venda, Thohoyandou, Southwest Africa

130-P, CFW 56:A50.
Trapping phenolic acid by lipophilization and complexation. P. LE BAIL (1), C. Lorentz (2), B. Pontoire (1), M. de Carvalho (1), G. Pencreac'h (2). (1) INRA, Nantes, France; (2) "Mer, Molécules, Santé" (MMS) - EA 2160 IUT de Laval - Département Génie Biologique, Laval, France

63-P, CFW 56:A35.
Molecular characterisation of gluten development during dough development: Comparison of laboratory and pilot-scale processes. G. A. Chope (1), M. C. Poole (1), J. R. Bratt (1), D. R. Buttler (1), S. Keen (1), S. P. PENSON (1). (1) Campden BRI, Glos, United Kingdom

106-P, CFW 56:A36.
Structure design of maize endosperm tissue and starch by hydrothermal and thermomechanical processing for tailored end-product properties. B. CONDE-PETIT (1), W. Boefer (1), U. Santschi (1), M. Nussbaumer (1). (1) Buhler AG, Uzwil, Switzerland

Supplier Innovation Session III

2:30 – 4:30 p.m. • Pueblo B, R

2:30 – 3:00 p.m.
Company: Perten
Name of Product: New Instrumentation & Applications
Contact Name: Wes Shadow
Presenter Names: Wes Shadow and Mark Bason
Presentation Category: Instruments/Equipment/Services

New instruments and applications: a new whole grain NIR instrument, 2nd generation grain moisture meter, and updated RVA and doughLAB applications.

3:10 – 3:40 p.m.
Company: Thermo Scientific
Name of Product: Antaris Flour and Antaris Feed and Ingredient Analyzers
Contact Name: Bez Moghadam
Presenter Names: Chris Heil and Chris Moreland
Presentation Category: Instruments/Equipment/Services

Antaris Flour and Feed and Ingredient Analyzers are precalibrated solutions for multiple component analysis for flour, feed, and ingredients.

3:50 – 4:20 p.m.
Company: Bepex International, LLC
Name of Product: Flour Functional Enhancement via Custom Thermal Process Development
Contact/Presenter Name: Peter M Koenig
Presentation Category: Instruments/Equipment/Services

Enhancing flour natural attributes, via novel continuous thermal process technology integrated with multiple unit operations, for product development.

Wednesday, October 19

7:00 – 8:00 a.m.	Kansas State University Breakfast*	San Jacinto, R
7:00 – 8:30 a.m.	**Approved Methods Technical Committee Meetings**	
	• Bioactive Compounds Methods	Mesquite F, CC
	• Chemical Leavening Agents	Mesquite G, CC
	• Dietary Fiber and Other Carbohydrates	Mesquite C, CC
	• Near Infrared Analysis	Mesquite E, CC
	• Pulse and Legume	Mesquite D, CC
	• Yeast Evaluation	Mesquite A, CC
7:00 – 8:30 a.m.	North Dakota State University Alumni and Friends Breakfast*	Pueblo B, R
7:00 – 8:30 a.m.	Scientific Advisory Panel	Andreas, R
7:30 a.m. – 2:30 p.m.	Registration Open	Main Lobby, CC
8:30 – 10:00 a.m.	Food Safety System Task Force Meeting	Snow Creek, R
8:30 – 10:10 a.m.	**Scientific Sessions**	
	• Analytical Methodologies – Technical *(Scientific Initiative: Analytical Methods & Quality)*	Smoketree C–E, CC
	• Recent Advances in Understanding Gluten Structure – Symposium *(Scientific Initiatives: Cereal & Polymer Chemistry, Engineering & Processing, Ingredients & Cost of Goods Sold)*	Sierra, R
	• Role of Grain-Based Foods in Addressing the Obesity Epidemic – Symposium *(Scientific Initiative: Health & Nutrition)*	Pasadena, R
	• Starch Chemistry and Polymer Science – Technical *(Scientific Initiative: Cereal & Polymer Chemistry)*	Mojave Learning Center, R
9:00 – 11:00 a.m.	Bookstore Open	California Ballroom Foyer, R
10:40 a.m. – 12:20 p.m.	**Scientific Sessions**	
	• Cereals and Digestion – Technical *(Scientific Initiative: Health & Nutrition)*	Smoketree C–E, CC
	• Chemistry and Polymer Science – Technical *(Scientific Initiative: Cereal & Polymer Chemistry)*	Sierra, R
	• Molds and Mycotoxins in Grain-Based Food and Feed Products: Current Status and Future Challenges – Symposium *(Scientific Initiative: Food Safety & Regulatory*	Mojave Learning Center, R
	• Optimizing Processing to Preserve, Create, or Enrich Bioactivity of Cereal Components – Symposium *(Scientific Initiative: Engineering & Processing)*	Pasadena, R
12:20 – 2:00 p.m.	Lunch Break	
12:30 – 1:30 p.m.	Rheology Division Meeting and Lunch*	Mesquite H, CC
12:30 – 2:00 p.m.	ICC Luncheon*	Smoketree A/B, CC
12:30 – 3:30 p.m.	Approved Methods Technical Committee Chairs Meeting and Lunch	Chino A, R
2:00 – 4:00 p.m.	**Scientific Sessions**	
	• Engineering for Cereals – PosterTalk	Ventura, R
	• In Vitro Digestion Models for Cereals and Cereal-Based Ingredients – Science Café *(Scientific Initiatives: Cereal & Polymer Chemistry, Health & Nutrition)*	Mojave Learning Center, R
	• Ingredients Mixer – PosterTalk	Smoketree C–E, CC
	• Research from China: Cereal Functional Components Analysis and Detection **–** Special Session	Sierra, R
2:00 – 4:00 p.m.	**Hot Topic** – Preparing for the 2015 Dietary Guidelines: Attributes of Refined Grains, Added Fibers and Bran	Pasadena, R
4:15 – 6:00 p.m.	**Closing Session with Keynote Speaker Bernhard van Lengerich, General Mills Inc, followed by a Farewell Reception**	Madera, R

**ticket required*

Closing Session Keynote Speaker

Connected Innovation: The Power of Many

Bernhard van Lengerich

At General Mills, our goal is to make consumers' lives healthier, easier, and richer. We count on new product innovation to help us continue to meet the evolving needs of those consumers. We believe that there is a great opportunity for us to enhance and accelerate our innovation efforts by teaming up with world-class innovators from outside of our company. To facilitate that effort, we created the General Mills Worldwide Innovation Network (G-WIN) to actively seek partners who can help us deliver new levels of taste, health, and convenience in our products. Connected Innovation is a powerful initiative that helps deliver a consistent stream of timely innovations to consumers, and the innovation network we have created is a global effort to accelerate the pace of innovation by dramatically increasing internal and external collaboration. Some case studies from the journey will be shared that will demonstrate tools and techniques used in Connected Innovation that have been successful. In addition, some examples of opportunities will be discussed that fully leverage the "The Power of Many".

Bernhard van Lengerich

Bernhard van Lengerich studied cereal science and biotechnology at the Technical University of Berlin, Germany. He worked at Werner & Pfleiderer in the United States and subsequently at RJR Nabisco, New Jersey, United States, as director for extrusion research; and at Buhler Corporation in Switzerland as vice president for research and development for the Food Group, where he was responsible for global R&D. In 1994, he joined General Mills Inc. and is currently chief science officer and vice president, Technology Strategy. Bernhard is the inventor of more than 70 U.S. and international patents of food products, processing, ingredients, extrusion, and microencapsulation, and he has numerous patents pending. He has published more than 50 international publications and four book chapters on food processing, systems analysis, and food extrusion. Bernhard serves as honorarium professor at the Technical University of Berlin, Germany, and as an adjunct professor at the University of Minnesota in Minneapolis, United States; he was named a fellow of the Institute of Food Technologists in 2011.

Sessions – Wednesday Morning (8:30 – 10:10 a.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Analytical Methodologies • Technical • Smoketree C – E, CC
Scientific Initiative: Analytical Methods & Quality

Moderators: Komeine K. M. Nantanga, University of Guelph, Guelph, ON, Canada; Grace H. Lai, Kellogg Company – WKKI, Battle Creek, MI, U.S.A.

8:30 a.m. **44-O, CFW 56:A18.** Hyperspectral image analysis for soft wheat milling quality. S. R. DELWICHE (1), E. Souza (2), M. Kim (2). (1) USDA ARS, Beltsville, MD, U.S.A.; (2) USDA ARS, Wooster, OH, U.S.A./Bayer CropScience LP, Lincoln, NE, U.S.A.

8:50 a.m. **45-O, CFW 56:A20.** Quantification and modeling of dough microstructure by the use of image analysis. M. JEKLE (1), T. Becker (1). (1) Technische Universität München, Freising, Germany

9:10 a.m. **46-O, CFW 56:A21.** Quantification of wheat pentosans using a phloroglucinol colorimetric assay. A. M. KISZONAS (1), C. M. Courtin (2), C. F. Morris (3). (1) USDA ARS, Pullman, WA, U.S.A.; (2) Laboratory of Food Chemistry, Katholieke Universiteit Leuven, Leuven, Belgium; (3) USDA-ARS Western Wheat Quality Laboratory, Pullman, WA, U.S.A.

9:30 a.m. **47-O, CFW 56:A23.** Preparative methods to probe the DP4+ peak in ethanol fermentation samples. R. N. PRATA (1), B. C. Vidal (1), K. Cindric (1). (1) Novozymes NA, Franklinton, NC, U.S.A.

9:50 a.m. **48-O, CFW 56:A24.** Characterization of carbohydrate DP profiles of ethanol-water soluble fraction by using maltodextrins as a model system. Y. Sang (1), Y. JIN (2), G. Lai (1), G. Zielinski (3). (1) Kellogg Company, Battle Creek, MI, U.S.A.; (2) Kellogg Co., WKKI, Battle Creek, MI, U.S.A.; (3) Covance Laboratories, Madison, WI, U.S.A.

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Recent Advances in Understanding Gluten Structure • Symposium • Sierra, R
Scientific Initiatives: Cereal & Polymer Chemistry, Engineering & Processing, Ingredients & Cost of Goods Sold

Organizers: Koushik Seetharaman, University of Guelph, Guelph, ON, Canada; Andy McPherson, Kraft Foods, Inc., Glenview, IL, U.S.A.
Moderator: Clyde Don, Foodphysica, Driel, Netherlands
Sponsors: Cereal & Polymer Chemistry, Rheology Division

Despite recent attention to gluten-free products, gluten remains a common and important component in food products around the globe. Gluten quality and functionality are critical to a number

of products. Determining quality and understanding the variables influencing the structure and function of gluten in products continue to challenge the industry from breeders to millers to ingredient and food manufacturers. This symposium will bring forth recent advances in science as it relates to gluten quality and functionality.

8:30 a.m. **46-S, CFW 56:A11.** Unfolding gluten: An overview of the current understanding of gluten structure. K. SEETHARAMAN (1), F. Bonomi (2). (1) University of Guelph, Guelph, ON, Canada; (2) DISMA – University of Milan, Milan, Italy

8:50 a.m. **47-S, CFW 56:A11.** Mapping the molecular determinants of inter-protein network formation in gluten. F. BONOMI (1), M. Marengo (1), E. Ragg (1), K. Seetharaman (2), M. Pagani (3), S. Iametti (1). (1) DISMA, University of Milan, Milan, Italy; (2) Department of Food Science, University of Guelph, Guelph, ON, Canada; (3) DISTAM, University of Milan, Milan, Italy

9:10 a.m. **48-S, CFW 56:A11.** Gluten proteins: Genetic control and modification. R. A. GRAYBOSCH (1). (1) USDA-ARS, Lincoln, NE, U.S.A.

9:30 a.m. **49-S, CFW 56:A11.** Gluten structure and celiac disease—Multidisciplinary approaches. P. KOEHLER (1). (1) German Research Center for Food Chemistry, Freising, Germany

9:50 a.m. **50-S, CFW 56:A12.** Dough as a power law gel material. M. G. SCANLON (1), V. Leroy (2), K. M. Pitura (1), J. H. Page (1). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Université Paris Diderot-Paris 7, Paris, France

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Role of Grain-Based Foods in Addressing the Obesity Epidemic • **Symposium** • Pasadena, R
Scientific Initiative: Health & Nutrition

Organizers/Moderators: Satya Jonnalagadda, General Mills, Golden Valley, MN, U.S.A.; Brinda Govindarajan, McDonald's Corporation, Oak Brook, IL, U.S.A.
Sponsor: Nutrition Division
Financial Sponsors: International Fiber Corp., Bay State Milling, ADM, Cargill, Inc., ConAgra Foods, SunOpta, General Mills Bell Institute of Health and Nutrition, Grains Food Foundation, J. RETTENMAIR USA LP, Matsutani America

The symposium will examine the evidence regarding the role of grain-based foods in weight management and identify opportunities for innovation to help combat the obesity epidemic.

8:30 a.m. **51-S, CFW 56:A12.** Grain-based foods and body weight—Overview. G. A. GAESSER (1). (1) Arizona State University, Mesa, AZ, U.S.A.

8:50 a.m. **52-S, CFW 56:A12.** Ready-to-eat cereals and breakfast: Association with healthy body weight and other indicators of healthy lifestyle. A. M. ALBERTSON (1). (1) Bell Institute of Health and Nutrition, General Mills, Inc., Minneapolis, MN, U.S.A.

9:10 a.m. **53-S, CFW 56:A12.** Whole grains and body weight. N. M. MCKEOWN (1). (1) JM USDA HNRCA at Tufts University, Boston, MA, U.S.A.

9:30 a.m. **54-S, CFW 56:A12.** Fiber and body weight. J. SLAVIN (1). (1) Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN, U.S.A.

9:50 a.m. **55-S, CFW 56:A13.** Food technology innovations to help incorporate grain-based foods into the diet. L. MARQUART (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

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Starch Chemistry and Polymer Science • **Technical** • Mojave Learning Center, R
Scientific Initiative: Cereal & Polymer Chemistry

Moderators: Annelies Duyvejonck, Katholieke Universiteit Leuven, Leuven, Belgium; Yong-Cheng Shi, Kansas State University, Manhattan, KS, U.S.A.

8:30 a.m. **49-O, CFW 56:A23.** Physicochemical properties and resistant starch formation of extrusion-cooked and drum-dried buckwheat and quinoa flours. D. J. Pauwels (1), R. SCHOENLECHNER (2), E. Berghofer (2), P. K. Ng (1). (1) Department of Food Science & Human Nutrition and Institute of International Agriculture, Michigan State University, East Lansing, MI, U.S.A.; (2) University of Natural Resources & Life Sciences, Vienna, Austria

8:50 a.m. **50-O, CFW 56:A15.** Cluster structure of amylopectin in barley *amo1* mutants. E. BERTOFT (1), A. Källman (2), K. Koch (2), R. Andersson (2), P. Åman (2). (1) University of Guelph, Guelph, ON, Canada; (2) Swedish University of Agricultural Sciences, Uppsala, Sweden

9:10 a.m. **51-O, CFW 56:A16.** Thickeners from normal and high-amylose corn starch with sodium palmitate. J. A. BYARS (1), G. F. Fanta (1), J. A. Kenar (1), F. C. Felker (1). (1) USDA ARS NCAUR, Peoria, IL, U.S.A.

9:30 a.m. **52-O, CFW 56:A26.** A polymeric perspective on mechanism of effect of acid hydrolysis on gelatinization of pea starch: Does gelatinization really happen? S. WANG (1), L. Copeland (1). (1) University of Sydney, Sydney, Australia

9:50 a.m. **53-O, CFW 56:A15.** Impact of different sodium replacers on starch re-crystallization kinetics. M. BECK (1), M. Jekle (1), T. Becker (1). (1) Technische Universität München, Freising, Germany

Sessions – Wednesday Morning (10:40 a.m. – 12:20 p.m.)

(listed in alphabetical order by title)

Session number (1-S) and **technical number (1-O)** refers to the Author Index in the program book.

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Cereals and Digestion • **Technical** • Smoketree C–E, CC
Scientific Initiative: Health & Nutrition

Moderators: Ine Rombouts, Katholieke Universiteit Leuven, Leuven, Belgium; Joshua Reid, Kellogg Company, Battle Creek, MI, U.S.A.

10:40 a.m. **54-O, CFW 56:A18.** Wheat arabinoxylans and arabinoxylan oligosaccharides show strongly different prebiotic and intestinal fermentation properties in rats. B. Damen (1), J. Verspreet (1), A. Pollet (1), W. F. Broekaert (2), J. A. Delcour (1), C. M. COURTIN (1). (1) Laboratory of Food Chemistry and Biochemistry, Katholieke Universiteit Leuven, Leuven, Belgium; (2) Fugeia, Heverlee, Belgium

11:00 a.m. **55-O, CFW 56:A20.** Interactions between cereal soluble dietary fibres and bile salts. P. Gunness (1), B. M. Flanagan (1), J. T. Mata (2), E. P. Gilbert (2), M. J. GIDLEY (1). (1) The University of Queensland, St. Lucia, Brisbane, Australia; (2) Bragg Institute, Australian Nuclear Science and Technology Organisation, Kirrawee DC, Australia

11:20 a.m. **56-O, CFW 56:A14.** Triticale bran: A novel dietary source of prebiotics and antioxidants in fermented dairy products. R. AGIL (1), F. Hosseinian (1). (1) Carleton University, Ottawa, ON, Canada

11:40 a.m. **57-O, CFW 56:A17.** Oat avenanthramides: Acute bioavailability in older adults when administered in an oat bran muffin containing high endogenous avenanthramides. F. COLLINS (1), D. L. McKay (2), O. Chen (2), J. B. Blumberg (2). (1) Eastern Cereals and Oilseeds Research Centre, Agriculture & Agri-Food Canada, Ottawa, ON, Canada; (2) Antioxidants Research Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University, Boston, MA, U.S.A.

12:00 p.m. **58-O, CFW 56:A21.** Small intestine mucosal α-glucosidases have a rate-limiting role in starch digestion. A. LIN (1), B. Nichols (2), B. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.; (2) USDA/ARS/Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, U.S.A.

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Chemistry and Polymer Science • Technical • Sierra, R

Scientific Initiative: Cereal & Polymer Chemistry

Moderators: Oscar Ramos, Kansas State University, Manhattan, KS, U.S.A.; Clyde Don, Foodphysica, Driel, Netherlands

10:40 a.m. **59-O, CFW 56:A23.** Wheat flour constituents, sugar, and fat: An overview of their impact on sugar-snap-type cookie making. B. PAREYT (1), K. Brijs (1), J. A. Delcour (1). (1) Katholieke Universiteit Leuven, Leuven, Belgium

11:00 a.m. **60-O, CFW 56:A14.** Structural complexity of A, B, D genomes of wheat (*Triticum aestivum* L.) starch. G. AHUJA (1), S. Jaiswal (1), P. Hucl (1), R. N. Chibbar (1). (1) University of Saskatchewan, Saskatoon, SK, Canada

11:20 a.m. **61-O, CFW 56:A17.** Comparing digestibility of A- and B-type crystals and providing insight on digestibility of starches. L. Cai (1), Y. SHI (1). (1) Kansas State University, Manhattan, KS, U.S.A.

11:40 a.m. **62-O, CFW 56:A26.** Structural evidence for the slowly fermented property of corn arabinoxylans at the human colonic *Bacteroides* level. H. XU (1), B. L. Reuhs (1), A. Kaur (1), E. C. Martens (2), B. R. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.; (2) University of Michigan Medical School, Ann Arbor, MI, U.S.A.

12:00 p.m. **63-O, CFW 56:A25.** Expression profiling of endosperm metabolic proteins during whole wheat kernel development. A. TAHIR (1), I. Nadaud (1), C. Chambon (1), G. Branlard (1). (1) INRA, Clermont Ferrand, France

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Molds and Mycotoxins in Grain-Based Food and Feed Products: Current Status and Future Challenges • Symposium • Mojave Learning Center, R

Scientific Initiatives: Food Safety & Regulatory

Organizers/Moderators: Dirk Maier and Lakshmikantha Channaiah, Kansas State University, Manhattan, KS, U.S.A.

Financial Sponsor: Romer Labs

Mycotoxins are secondary metabolites produced by fungi. Mycotoxins can appear in the food chain as a result of fungal infection of crops, either by being eaten directly by humans or by being used as livestock feed. The toxic effects of mycotoxins range from causing liver disorder, cancer, feed refusal, impaired reproduction, suppression of immune system, diarrhea, vomiting, and gastro-intestinal inflammation to inhibition of the biosynthesis of proteins in eukaryotic cells. Controlling molds and mycotoxins in the grain-based food supply chain is a big challenge. The current status and future challenges of molds and mycotoxins in grain-based food and feed products will be addressed in this symposium.

10:40 a.m. **56-S, CFW 56:A9.** Molds, mycotoxins, and mycotoxicoses—Current status, problems, and future needs. J. L. RICHARD (1). (1) Romer Labs, Inc., Union, MO, U.S.A.

11:20 a.m. **57-S, CFW 56:A9.** The business impact of mycotoxins. D. ORTIZ (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

11:40 a.m. **58-S, CFW 56:A9.** Strategies to reduce mycotoxin contamination in grain and grain-based food. C. WOLOSHUK (1). (1) Purdue University, West Lafayette, IN, U.S.A.

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Optimizing Processing to Preserve, Create, or Enrich Bioactivity of Cereal Components • Symposium • Pasadena, R

Scientific Initiative: Engineering & Processing

Organizers: Buddhi Lamsal, Iowa State University, Ames, IA, U.S.A.; John Mathew, Frito-Lay, Inc., Plano, TX, U.S.A.

Moderators: Buddhi Lamsal, Iowa State University, Ames, IA, U.S.A.; Ron Madl, Kansas State University, Manhattan, KS, U.S.A.

Sponsor: Engineering & Processing Division

Financial Sponsors: Rich Foods, ConAgra Foods, Buhler Milling

Creating, preserving, or enriching bioactivity of cereal components via primary and secondary processing operations will add value to the product and processing industry in general. Along with traditional milling/processing methods assisted with novel technologies, e.g., ultrasound-assisted enrichment, secondary processing (enzymes/fermentation) to produce/enrich bioactive components could be discussed. Such processing operation(s) could be tailored to achieve specific application of bioactive components. The effect of processing on bioavailability of such bioactive components will be of interest to scientists and processors alike.

10:40 a.m. **59-S, CFW 56:A9.** Overview of bioactive compounds in common cereal grains, their benefits and processing challenges. R. L. MADL (1). (1) Kansas State University, Manhattan, KS, U.S.A.

11:00 a.m. **60-S, CFW 56:A9.** Techniques to produce enriched bioactive components in cereals (wheat) with outlook on fermentation to improve bioavailability. W. VON REDING (1). (1) Buhler AG, Uzwil, Switzerland

11:20 a.m. **61-S, CFW 56:A10.** Effect of particle size on fiber and other bioactives in wheat bran and whole wheat flour. E. ARNDT (1). (1) ConAgra Foods, Inc., Omaha, NE, U.S.A.

11:40 a.m. **62-S, CFW 56:A10.** Effects of postharvest-processing conditions on endogenous amylase activities of cereal. J. Medic (1), S. Setiawan (1), Y. Ai (1), C. R. Hurburgh (1), C. Franco (2), J. JANE (1). (1) Iowa State University, Ames, IA, U.S.A.; (2) Universidade Estadual Paulista, São Paulo, Brazil

12:00 p.m. **63-S, CFW 56:A10.** Antioxidant properties of regular- and whole wheat spaghetti and LC/MS analysis of their C-glycosyl flavones and secoisolariciresinol diglucoside. T. BETA (1), R. Hirawan (1). (1) University of Manitoba, Winnipeg, MB, Canada

Hot Topic, Science Café, PosterTalk Sessions – Wednesday Afternoon

(listed in alphabetical order by title)

Session number (1-S) and **poster number (1-P)** refers to the Author Index in the program book.

***Cereal Foods World* (*CFW*) number** refers to the abstract page location within the online searchable abstract document. Affiliations are listed as provided by the organizer/presenter.

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Engineering for Cereals • PosterTalk • Ventura, R
Scientific Initiative: Engineering & Processing
2:00 – 4:00 p.m.

Moderator: Pierre Faa, Frito-Lay Inc., Plano, TX, U.S.A.

173-P, CFW 56:A64.
Characterization and acceptability of pinto, navy, and black bean extrudates. C. SIMONS (1), C. Hall (1), M. Tulbek (2). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) Northern Crops Institute, Fargo, ND, U.S.A.

174-P, CFW 56:A37.
Rheological properties of sorghum protein concentrates produced by extrusion-enzyme liquefaction. N. DE MESA-STONESTREET (1), S. Alavi (1), H. Dogan (1), J. Faubion (1). (1) Kansas State University, Manhattan, KS, U.S.A.

176-P, CFW 56:A49.
Moisture and oil uptake during processing of soy-based extruded snacks. S. KODAVALI (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.

163-P, CFW 56:A60.
Effect of commercial source on xanthan gum composition and effect on processing and cooking quality of pasta containing nontraditional ingredients. G. K. SANDHU (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.

34-P, CFW 56:A45.
Effect of corn harvest moisture on dry grind fermentation characteristics and DDGS composition. H. HUANG (1), W. Liu (1), V. Singh (1), S. R. Eckhoff (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.

37-P, CFW 56:A35.
Bioconversion of insect (*Sitophilus zeamais*), mold (*Aspergillus flavus*), and sprouted damaged maize (*Z. mays*) and sorghum (*S. bicolor* (L.) Moench) into bioethanol. C. Chuck-Hernandez (1), S. García-Lara (1), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico

190-P, CFW 56:A68.
Modifying wheat bran by microfluidization process. T. WANG (1). (1) North Carolina A&T State University, Kannapolis, NC, U.S.A.

191-P, CFW 56:A56.
Hydration kinetics and mechanical deformation properties of wheat kernels. P. A. MITCHELL (1), H. Dogan (1), R. Miller (1). (1) Kansas State University, Manhattan, KS, U.S.A.

192-P, CFW 56:A67.
Effect of the addition of three different types of resistant starch to instant noodles obtained by atmospheric and vacuum frying. M. VERNAZA LEORO (1), Y. K. Chang (1). (1) UNICAMP, Campinas, Brazil

175-P, CFW 56:A45.
Effect of maturity and frozen storage on corn wet-milling yields and starch pasting properties. H. HUANG (1), L. Xu (1), S. R. Eckhoff (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.

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In Vitro Digestion Models for Cereals and Cereal-Based Ingredients • Science Café • Mojave Learning Center, R
Scientific Initiatives: Cereal & Polymer Chemistry, Health & Nutrition
2:00 – 4:00 p.m.

Organizers: Teri Paeschke, Cargill Inc., Wayzata, MN, U.S.A.; Susann Bellmann, TNO, Zeist, Netherlands
Moderators: Susann Bellmann, TNO, Zeist, Netherlands; Terry Finocchario, National Starch and Chemical, U.S.A.; Teri Paeschke, Cargill Inc., Wayzata, MN, U.S.A.; Brinda Govindarajan, McDonald's Corp., Oak Brook, IL, U.S.A.
Sponsors: Carbohydrate Division, Nutrition Division

The availability for absorption or the behavior of cereal-based foods and ingredients can be done in vivo, using animal studies or human intervention studies. However, this is expensive, laborious, and time consuming. To minimize efforts, reduce animal experiments, and also simplify procedures, many researches use in vitro digestion models. There is a need to interexchange information about the various approaches within the used and existing in vitro digestion models. This may help to work on standardization and minimum requirements those models should fulfill to appropriately study carbohydrate digestion and the availability for absorption of associated other macro- and micronutrients. Further, exchanging research results as obtained with various in vitro methods would strengthen the discussion on their relevance and/or importance.

64-S, CFW 56:A7.
Introduction: Physiological relevant in vitro digestion models. S. C. BELLMANN (1), R. Havenaar (1), M. Minekus (1). (1) TNO, Zeist, Netherlands

65-S, CFW 56:A7.
Prospects and considerations of in vitro digestion models applied to cereal ingredients. A. AURA (1). (1) VTT Technical Research Centre of Finland, Espoo, Finland

66-S, CFW 56:A7.
How to simulate the physiological parameters of the colon using in vitro models. K. VENEMA (1). (1) TNO, Zeist, Netherlands

67-S, CFW 56:A7.
Evaluating the effect of carbohydrate matrices on the bioaccessibility of antidiabetic botanical compounds using the TNO intestinal model. D. M. RIBNICKY (1), A. Poulev (2), P. Kuhn (2), D. Roopchand (2), A. Oren (2), M. Grace (3), G. Yousef (3), M. Lila (3), R. Havenaar (4), W. T. Cefalu (5), I. Raskin (2). (1) School of Environmental and Biological Sciences, New Brunswick, NJ, U.S.A.; (2) Rutgers University, New Brunswick, NJ, U.S.A.; (3) North Carolina State University, Kannapolis, NC, U.S.A.; (4) TNO, Zeist, Netherlands; (5) Pennington Biomedical Research Center, Baton Rouge, LA, U.S.A.

68-S, CFW 56:A8.
Small intestinal mucosal αglucosidases: A missing feature of in vitro digestion models. A. LIN (1), B. Lee (1), B. Hamaker (1). (1) Whistler Center for Carbohydrate Research, Purdue University, West Lafayette, IN, U.S.A.

69-S, CFW 56:A8.
Gut feelings: How can we construct good models for human digestion? T. PAESCHKE (1). (1) Cargill, Inc., Wayzata, MN, U.S.A.

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Ingredients Mixer • PosterTalk • Smoketree C–E, CC
Scientific Initiatives: Ingredients & Cost of Goods Sold
2:00 – 4:00 p.m.

Moderator: Brian Beecher, USDA-ARS, Pullman, WA, U.S.A.

234-P, CFW 56:A57.
Functionality of whey as gluten-free bread ingredient. A. Nuria (1), B. MINARRO (1), B. Guamis (1), E. Albanell (1), M. Capellas (1). (1) Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain

236-P, CFW 56:A41.
Establishing a cause-and-effect relationship between wheat protein functionality, wheat variety, and protein extraction process. S. FREDERIX (1), V. Paltousova (1), L. Baron (1), A. Wagner (1). (1) Tereos Syral, Aalst, Belgium

241-P, CFW 56:A64.
Starch granules used for Pickering emulsions. M. SJOO (1), A. Timgren (1), M. Rayner (1). (1) Department of Food Technology, Engineering and Nutrition, Lund University, Lund, Sweden

128-P, CFW 56:A52.
Engineered "smart" starch-based biomaterial for functional food ingredient and nonfood industrial applications. Q. LIU (1), A. Chan (2). (1) Agriculture & Agri-Food Canada, Guelph, ON, Canada; (2) University of Waterloo, Waterloo, ON, Canada

82-P, CFW 56:A28.
Influence of lysophosphatidylcholine (LPC) on the gelation and functional properties of diluted wheat starch suspension. S. AH-MADI-ABHARI (1), A. Woortman (1), R. Hamer (2), L. Oudhuis (3), K. Loos (1). (1) University of Groningen, Groningen, Netherlands; (2) Wageningen University, Wageningen, Netherlands; (3) Top Institute of Food and Nutrition, Wageningen, Netherlands

235-P, CFW 56:A32.
Effect of sorghum bran particle size in gluten-free muffins. S. E. BOSWELL (1), J. Lindsay (1), C. M. McDonough (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

237-P, CFW 56:A54.
Effects of flour milling methods on the compositional, functional, and physical properties of whole and split yellow pea (*Pisum sativum*) flour. H. MASKUS (1), L. Bourré (1), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada

238-P, CFW 56:A62.
Effect of the addition of pregelatinized rice flour and modified albumin on the technological properties of fettuccini-type rice fresh pasta. G. A. Sehn (1), M. S. Fernandes (1), M. VERNAZA LEORO (1), Y. K. Chang (1), C. S. Steel (1). (1) UNICAMP, Campinas, SP, Brazil

239-P, CFW 56:A30.
Influence of fat content and maltogenic amylase addition on pound cake specific volume, firmness, and porosity parameters. N. S. Bedoya Perales (1), C. J. STEEL (1). (1) University of Campinas, Campinas, SP, Brazil

240-P, CFW 56:A53.
Application of enzymatically treated corn starch in breakfast cereal coating. C. R. LUCKETT (1), Y. Wang (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

28-P, CFW 56:A71.
Digital imaging of freefalling cereal grains for defect and damage assessment. I. YANG (1), S. R. Delwiche (2), Y. Lo (3), S. Chen (4). (1) National Science Council, Taiwan, Taipei, Taiwan; (2) USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD, U.S.A.; (3) Department of Nutrition and Food Science, University of Maryland, College Park, MD, U.S.A.; (4) Department of Bio-Industrial Mechatronics Engineering, Taipei, Taiwan

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Preparing for the 2015 Dietary Guidelines: Attributes of Refined Grains, Added Fibers and Bran • Hot Topic • Pasadena, R
Scientific Initiative: Health and Nutrition
2:00 – 4:00 p.m.

Organizer/Sponsor: ILSI North America, Technical Committee on Carbohydrates, Washington, DC, U.S.A.

The session will provide point-counterpoint presentations on the nutritional and culinary impact of refined grains, added fibers, and bran in the diet. Following presentations, attendees will be invited to explore the current scientific understanding of the nutritional and culinary value of these carbohydrate components as well as to identify science gaps and research opportunities that might inform the 2015 Dietary Guidelines deliberations.

Should Dietary Guidance endorse whole grain foods at the potential expense of bran foods? D. M. KLURFELD (1). (1) USDA Beltsville Human Nutrition Research Center, Beltsville, MD, U.S.A.

Does the currently available scientific literature support a continued recommendation for foods with added fibers? J. L. SLAVIN (1). (1) University of Minnesota, Minneapolis, MN, U.S.A.

Are there reasons to support the recommendation to allow up to half of the grain choices be enriched, refined grains? J. M. JONES (1). (1) St. Catherine's University, St. Paul, MN, U.S.A.

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Research from China: Cereal Functional Components Analysis and Detection • Special Session • Sierra, R
2:00 – 4:00 p.m.

HTS-ELISA method for screening of anti-zearalenone monoclonal antibody and detection of zearalenone in cereal from China. S.-C. PEI (1), W.-J. Lee (2). (1) College of Food and Biological Engineering, Qiqihar University, Qiqihar, Peoples Republic of China; (2) Department of Food and Nutrition, Gangneung-Wonju National University, Gangneung, Gangwon, South Korea

Characteristics of refined pulverized konjac flour by ethanol washing and ultrasonic treatment from *Amorphophallus albus*. Y.-L. WU (1), H. Chen (1), L. Ye (1). (1) Department of Food Science, Sichuan Agricultural University, Sichuan, Peoples Republic of China

Radical-scavenging activity, ACE inhibiting ability, and chemical composition of rapeseed peptide (RSP). Z. XUE (1), Y. Wang (1), X. Kou (1), J. Gao (1), H. Wang (1), W. Yu (2). (1) School of Chemical Engineering and Technology, Tianjin University, Tianjin, Peoples Republic of China; (2) Tianjin Institute of Landscape Gardening, Tianjin, Peoples Republic of China

Physicochemical and emulsifying properties of rice bran protein prepared by hydrothermal cooking combined with amylase treatment. N. Xia (1,2), X.-Q. YANG (1), J.-M. Wang (1), S.-W. Yin (1), J.-R. Qi (1), X.-L. Zhou (1). (1) College of Light Industry and Food Sciences, South China University of Technology, Guangzhou, Peoples Republic of China; (2) Department of Light Industry and Food Engineering, Guangxi University, Nanning, Peoples Republic of China

Poster Schedule and Poster Categories

Taking photographs of displayed materials is prohibited without permission from the authors. See page 37 of this program book for poster titles.

Poster abstracts are available online at http://meeting.aaccnet.org. See the box for "Find the Science You're Looking For – 2011 Searchable Abstracts Online." A PDF of poster abstracts is also available online.

Posters

Oasis Hall 1–3, Convention Center

Monday, October 17

7:00 – 10:00 a.m.	Poster Set-Up
10:00 a.m. – 7:00 p.m.	Poster Viewing
4:00 – 7:00 p.m.	Beer and Poster Viewing
4:00 – 5:00 p.m.	Student Poster Authors Present
5:00 – 6:00 p.m.	Poster Authors Present *odd-numbered posters*

Tuesday, October 18

8:00 a.m. – 2:30 p.m.	Poster Viewing
12:00 – 2:15 p.m.	Lunch with the Exhibitors and Poster Viewing
1:00 – 2:00 p.m.	Poster Authors Present *even-numbered posters*
2:30 – 6:00 p.m.	Poster Take-Down

Poster Categories

(Listed in alphabetical order by subject)

Analytical Methods – Chemistry (Posters 1–29)
Analytical Methods – Health and Microbiology (Posters 30–31)
Biotech and Sustainability (Posters 32–40)
Cereal and Polymer Chemistry – Non-Starch Carbohydrate Polymers (Posters 41–47a)
Cereal and Polymer Chemistry – Protein Chemistry and Dough Properties (Posters 48–63)
Cereal and Polymer Chemistry – Starch Physico-Chemical Properties (Posters 64–83)
Cereal and Polymer Chemistry – Starch Structures (Posters 84–107)
Cereal and Polymer Chemistry General (Posters 108–130)
Chemistry and Quality (Posters 131–142)
Engineering and Processing for Industrial Uses (Posters 143–163)
Engineering Food from Grains (Posters 164–177)
Engineering for Wheat Foods (Posters 178–192)
Food Safety (Posters 193–196)
Health and Nutrition (Posters 197–229)
Ingredients and Costs (Posters 230–241)
China Delegation (Posters follow 241)
Student Product Development (placed at end of posters starting Monday afternoon)

Poster Titles and Authors

Listed by scientific initiative and category. Affiliations are listed as provided by the organizer/presenter.

Cereal Foods World (CFW) **number** refers to the abstract page location within the online searchable abstract document.

(*) indicates a poster that is part of a **PosterTalk session**. See program schedule for PosterTalk days and times.

Analytical Methods – Chemistry

Scientific Initiative: Analytical Methods & Quality

1-P. **CFW 56:A65**
Quantifying nitrogen—EDS vs. pyrolysis. V. ST. JEOR (1). (1) Cargill Incorporated, Excelsior, MN, U.S.A.

2-P. **CFW 56:A61**
A rapid and efficient micro-scale extraction procedure for total yellow pigments in durum semolina and whole meal. L. SCHLICHTING (1), B. Fu (1). (1) Canadian Grain Commission, Winnipeg, MB, Canada

3-P. **CFW 56:A66**
Proteases activity in wheat flour and barley flour. A. K. Tyson (1), O. S. LAI (2), J. M. Risley (1). (1) University of North Carolina, Charlotte, NC, U.S.A.; (2) Snyder's-Lance Inc., Charlotte, NC, U.S.A.

4-P. **CFW 56:A45**
Using lateral flow devices for semi-quantitative analysis of GMOs. D. HOUCHINS (1). (1) Romer Labs Inc., Union, MO, U.S.A.

5-P. **CFW 56:A59**
Advanced single object grain quality assessment by image analysis. D. ROBEY (1), R. Pradon (1), B. Büchmann (1). (1) FOSS Analytical, Höganäs, Sweden

6-P. **CFW 56:A60**
Characterization of waxy isogenic lines starch using asymmetric flow field-flow fractionation. L. RHAZI (1), B. Gerard (2), T. Aussenac (3). (1) Institut Polytechnique LaSalle Beauvais, Beauvais, France; (2) INRA CF, Clermont-Ferrand, France; (3) Institut Lasalle Beauvais, Beauvais, France

7-P. **CFW 56:A61**
Determination of oligosaccharide concentration by HPLC using an ion-exchange column with a refractive index detector. Y. Sang (1), Y. JIN (1), G. Lai (1). (1) Kellogg Company, Battle Creek, MI, U.S.A.

8-P. **CFW 56:A51**
Single lab validation of resistant starch assay by AOAC 2002.02 and in vitro digestion of some starch materials under the same conditions. Y. J. Liu (1), Y. JIN (1), G. Lai (1), Y. Sang (2). (1) Kellogg Company, Battle Creek, MI, U.S.A.; (2) Covance Laboratories, Battle Creek, MI, U.S.A.

9-P. **CFW 56:A61**
Analysis of volatile and nonvolatile content and composition of refined and whole wheat bread made from red and white wheat bran by GC-MS. H. SAPIRSTEIN (1), S. Siddhu (2), M. Aliani (1). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Loblaws Company Limited, Winnipeg, MB, Canada

10-P. **CFW 56:A50**
Characterization of rheological properties of U.S. hard white wheat flours using the Mixolab, Glutomatic System, and the Kieffer dough extensibility rig. P. G. KRISHNAN (1), J. R. Darly (2), K. D. Glover (1). (1) South Dakota State University, Brookings, SD, U.S.A.; (2) Wheat Quality Lab, South Dakota State University, Brookings, SD, U.S.A.

11-P. **CFW 56:A40**
Near infrared refectance spectroscopy in the prediction of chemical characteristics of Brazilian soybean. D. S. FERREIRA (1), J. A. Pallone (1), R. J. Poppi (1). (1) State University of Campinas, Campinas, Brazil

12-P. **CFW 56:A63**
The assessment of water mobility in soy-based bread dough by magnetic resonance imaging (MRI). A. SIMMONS (1), A. Abduljalil (1), Y. Vodovotz (1). (1) Ohio State University, Columbus, OH, U.S.A.

13-P. **CFW 56:A66**
Development and validation of a methodology to determine different ferulic acid populations in cereal products. S. VAIDYANATHAN (1), M. Bunzel (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

14-P. **CFW 56:A54**
Structural analyses of starches using partially methylated alditol acetate method. B. A. MANION (1), E. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

15-P. **CFW 56:A70**
In-house validation of a microbiological method to determine natural occurring folates in cereals and cereal products. P. Wurbs (1), E. Berghofer (1), S. SIEBENHANDL-EHN (1). (1) University of Natural Resources & Life Sciences, Vienna, Austria

16-P. **CFW 56:A61**
Fully stable 13C-labeled internal standards for mycotoxin analysis. A. Schiessl (1), C. Brewe (2), D. HOUCHINS (2), M. Prinster (2). (1) Romer Labs Division Holding GmbH, Tulln, Austria; (2) Romer Labs Inc., Union, MO, U.S.A.

17-P. **CFW 56:A43**
Validation of on-site rapid methods for food allergen management. E. Halbmayr-Jech (1), J. Coutts (2), A. Rogers (2), R. Fielder (2), E. WELKER (3), D. Houchins (3). (1) Romer Labs Division Holding GmbH, Tulln, Austria; (2) Romer Labs UK Ltd., Abergele, United Kingdom; (3) Romer Labs Inc., Union, MO, U.S.A.

***18-P.** **CFW 56:A70**
New mixing technology and applications for the Farinograph. E. S. YAN (1), R. Oshikiri (2), J. Faubion (2), C. Walker (2), S. Iaquez (1), R. Thoma (1). (1) C.W. Brabender Inc., South Hackensack, NJ, U.S.A.; (2) Kansas State University, Manhattan, KS, U.S.A.

***19-P.** **CFW 56:A55**
Effect of resistant starch on dietary fiber content and quality of extruded RTE breakfast cereal quality. R. MILLER (1), J. Jeong (1), C. Maningat (2). (1) Kansas State University, Manhattan, KS, U.S.A.; (2) MGP Ingredients, Inc., Atchison, KS, U.S.A.

***20-P.** **CFW 56:A49**
Investigating the ruggedness of AOAC 991.43 Total Dietary Fiber (TDF) Method using an automated dietary

fiber instrument. A. R. KOMAREK (1), R. J. Komarek (1), C. L. Kelley (1). (1) ANKOM Technology, Macedon, NY, U.S.A.

21-P. WITHDRAWN

***22-P.** **CFW 56:A65**
Influence of shape and packing efficiency on popcorn expansion volume measurements. J. C. SWELEY (1), D. J. Rose (1), D. S. Jackson (1). (1) University of Nebraska-Lincoln, Omaha, NE, U.S.A.

***23-P.** **CFW 56:A41**
Determination of pigment degradation power in durum wheat semolina: A simple colorimetric method. B. FU (1), L. Schlichting (1), C. Pozniak (2), A. Singh (3). (1) Canadian Grain Commission, Winnipeg, MB, Canada; (2) University of Saskatchewan, Saskatoon, SK, Canada; (3) Agriculture and Agri-Food Canada, Swift Current, SK, Canada

***24-P.** **CFW 56:A71**
Influence of novel partial germination process onto nutritional and functional properties of different types of pulses. E. ZAMPROGNA ROSENFELD (1), S. Bellaio (1), D. Mane (2), M. Jacobs (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler (India) Pvt. Ltd., Bangalore, India; (3) Buhler GmbH, Braunschweig, Germany

***25-P.** **CFW 56:A69**
Effects of fibre and baking conditions on digestive biscuit properties. M. B. WHITWORTH (1), A. Chau (1), L. Cicerelli (2). (1) Campden BRI, Chipping Campden, United Kingdom; (2) United Biscuits, High Wycombe, United Kingdom

***26-P.** **CFW 56:A35**
Significance of flour particle size on sponge cake quality of soft white wheat. H. CHOI (1), T. Harris (1), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.

***27-P.** **CFW 56:A61**
Discrimination of aroma of refined and whole wheat bread made from red and white wheat bran using an electronic nose instrument. H. SAPIRSTEIN (1), S. Siddhu (2), M. Aliani (1). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Loblaws Company Limited, Winnipeg, MB, Canada

***28-P.** **CFW 56:A71**
Digital imaging of freefalling cereal grains for defect and damage assessment. I. YANG (1), S. R. Delwiche (2), Y. Lo (3), S. Chen (4). (1) National Science Council, Taiwan, Taipei, Taiwan; (2) USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD, U.S.A.; (3) Department of Nutrition and Food Science, University of Maryland, College Park, MD, U.S.A.; (4) Department of Bio-Industrial Mechatronics Engineering, Taipei, Taiwan

***29-P.** **CFW 56:A32**
"New cereals" and pseudo-cereals: Rheological properties investigations. N. BOINOT (1), L. Simar (1), A. Dubat (1). (1) CHOPIN Technologies, Villeneuve-La-Garenne, France

Analytical Methods – Health and Microbiology

Scientific Initiative: Analytical Methods & Quality

***30-P.** **CFW 56:A37**
Mycotoxin test kit validation for high-aflatoxin samples. S. Y. Dai (1), K. LEE (1), J. Balthrop (1), W. Li (1), T. J. Herrman (1). (1) Texas A&M University, College Station, TX, U.S.A.

31-P. **CFW 56:A38**
Dietary fiber-updating the AACC Official Methods in line with CODEX Alimentarius definition adoption. J. W. DEVRIES (1). (1) Medallion Laboratories, General Mills Inc., Minneapolis, MN, U.S.A.

Biotech and Sustainability

Scientific Initiative: Biotechnology & Sustainability

32-P. **CFW 56:A50**
Effects of acid and base catalytic pretreatments on releasing fermentable sugars from rice bran under autoclaving condition. H. LEE (1), J. Kim (1), S. Yoo (1). (1) Department of Food Science & Technology and Carbohydrate Bioproduct Research Center, Sejong University, Seoul, South Korea

***33-P.** **CFW 56:A56.**
Genotype and environment effects on physical and chemical properties of wheat starch. T. N. MINH (1). (1) University of Sydney, Sydney, Australia

***34-P.** **CFW 56:A45**
Effect of corn harvest moisture on dry grind fermentation characteristics and DDGS composition. H. HUANG (1), W. Liu (1), V. Singh (1), S. R. Eckhoff (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.

***35-P.** **CFW 56:A71**
Evaluation of αamylase accumulation and falling numbers in soft red and soft white wheat adapted to Michigan. N. YU (1), R. Laurenz (1), L. Siler (1), P. Ng (2), J. Lewis (1). (1) Wheat Breeding Program, Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI, U.S.A.; (2) Cereal Science Program, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, U.S.A.

***36-P.** **CFW 56:A47**
Expression analysis of selected raffinose family oligosaccharide biosynthetic genes in developing lentil (*Lens culinaris* Medik.) seeds. U. KANNAN (1), S. Ganeshan (1), R. N. Chibbar (1). (1) University of Saskatchewan, Saskatoon, SK, Canada

***37-P.** **CFW 56:A35**
Bioconversion of insect (*Sitophilus zeamais*), mold (*Aspergillus flavus*), and sprouted damaged maize (*Z. mays*) and sorghum (*S. bicolor* (L.) Moench) into bioethanol. C. Chuck-Hernandez (1), S. García-Lara (1), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico

***38-P.** **CFW 56:A27**
Antioxidant capacity of tortilla elaborated from extruded Mexican pigmented maize flour. J. AGUAYO-ROJAS (1), S. Mora-Rochin (1), S. Serna-Saldivar (2), E. Cuevas-Rodríguez (1), N. Gaxiola-Cuevas (3), C. Reyes-Moreno (1), J. Milan-Carrillo (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad

Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (2) Instituto Tecnologico de Monterrey, Campus Monterrey, Monterrey, Mexico; (3) Maestria en Ciencia y Tecnologia de Alimentos, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico

***39-P. CFW 56:A56**
Evaluation of anticarcinogenic potential of tortillas produced from pigmented maizes processed by conventional nixtamalization and extrusion cooking. S. MORA-ROCHIN (1), J. Gutierrez-Uribe (2), S. Serna-Saldivar (2), M. Gúzman-Uriarte (3), P. Sánchez-Peña (1), C. Reyes-Moreno (1), J. Milán-Carrillo (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Instituto Tecnologico de Monterrey, Campus Monterrey, Monterrey, Mexico; (3) Maestria en Ciencia y Tecnologia de Alimentos, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

***40-P. CFW 56:A30**
Isolation, characterization, and identification of ligninolytic bacterial strains. A. AYALA-RODRIGUEZ (1), M. Jimenez-Leyva (2), V. Olalde-Portugal (3), J. Romero-Navarro (1), C. Reyes-Moreno (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico; (2) Licenciatura en Ingenieria Bioquímica, Facultad de Ciencias Quimico Biologicas, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (3) Centro de Investigación y de Estudios Avanzados, Instituto Politécnico Nacional, Unidad Irapuato, Irapuato, Gto, Culiacan Sinaloa, Mexico

Cereal and Polymer Chemistry – Non-Starch Carbohydrate Polymers

Scientific Initiative: Cereal & Polymer Chemistry

41-P. CFW 56:A58
Qualitative portrayal of nonstarch polysaccharides extracted from spring wheats. I. PASHA (1), F. Saeed (1), F. M. Anjum (1). (1) National Institute of Food Science & Technology, University of Agriculture, Faisalabad, Punjab, Pakistan

42-P. CFW 56:A55
Transglucosidase immobilized to polymer beads via covalent attachment for isomaltooligosaccharide production. M. MENDIS (1), S. Simsek (1). (1) North Dakota State University, Fargo, ND, U.S.A.

43-P. CFW 56:A48
Preparation of aqueous ceramide nano-dispersions by complex formation with dextrin. H. KIM (1), S. Lim (1), J. Lee (1), J. Lim (2). (1) Korea University, Seoul, South Korea; (2) Korea Polytechnic University, Seoul, South Korea

44-P. CFW 56:A63
Antioxidant properties of pea hull fibre in wheat bread. A. L. SHUM (1), M. G. Scanlon (1), R. E. Aluko (1), C. C. Udenigwe (1). (1) University of Manitoba, Winnipeg, MB, Canada

45-P. CFW 56:A46
Conformation and aggregation of cereal arabinoxylans in water. M. S. KALE (1), C. Yang (2), O. H. Campanella (1), B. R. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.; (2) Jiangnan University, Wuxi, Peoples Republic of China

***46-P. CFW 56:A34.**
Determination of folic acid & 5-methyl tetrahydrofolate in whole meal flours using ultra-performance liquid chromatography-tandem mass spectrometry. M. CHANDRA-HIOE (1), M. Bucknall (2), J. Arcot (2). (1) University of New South Wales, Wahroonga, Australia; (2) University of New South Wales, Sydney, Australia

***47-P. CFW 56:A60**
Major determinants of slow fermentation rate in alkali-extractable arabinoxylans and their hydrolyzates from corn, rice, wheat, and sorghum brans. P. RUMPAGAPORN (1), B. Reuhs (1), B. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

47a-P. CFW 56:A72
Measurement of beta-glucan viscosity using Rapid Visco Analyzer (RVA). T. H. GAMER (1), S. M. Tosh (1). (1) Agriculture and Agri-Food Canada, Guelph, ON, Canada

Cereal and Polymer Chemistry – Protein Chemistry and Dough Properties

Scientific Initiative: Cereal & Polymer Chemistry

48-P. CFW 56:A37
Identification of extensibility parameters influencing dough strain hardening index and extensional stiffness. J. Y. DARLY (1), P. G. Krishnan (1), K. D. Glover (1). (1) South Dakota State University, Brookings, SD, U.S.A.

49-P. CFW 56:A46
Difference in gluten aggregation kinetics in flours with similar protein content. S. JAZAERI (1), G. Kaur Chandi (1), S. Ragaee (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

50-P. CFW 56:A70
Gluten-free breadmaking using sorghum flour and carob flour. M. XUE (1), L. Liu (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

51-P. CFW 56:A55
Effect of gliadin-to-glutenin ratio on gluten aggregation. J. P. MELNYK (1), J. Dreisoerner (2), M. Marcone (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Brabender GmbH and Co. KG, Duisburg, Germany

52-P. CFW 56:A41
Encapsulation and release properties of rice proteins. M. GAMBOA (1), B. B. Patel (1), G. Montes (1), H. Singh (1). (1) California State University, Los Angeles, CA, U.S.A.

53-P. CFW 56:A40
Comparison of the secondary structural changes in zein and gliadin with addition of high-molecular-weight subunits of glutenin (HMW-GS). M. FEVZIOGLU (1), B. R. Hamaker (1), O. H. Campanella (1). (1) Purdue University, West Lafayette, IN, U.S.A.

54-P. CFW 56:A31
Thermomechanical properties of flour doughs affected by protein composition and mixing conditions. Q. BIAN (1), Y. Zhang (1), M. Khamis (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

55-P. CFW 56:A59
Extract of *Cephalaria syriaca* is a powerful agent to strengthen wheat dough. M. RAHIMI (1), O. Campanella (1), B. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

56-P. **CFW 56:A49**
Investigating the gas content of dough with changes in dough strength. H. KOKSEL (1), M. Scanlon (1), A. Strybulevych (1), J. Page (1). (1) University of Manitoba, Winnipeg, MB, Canada

57-P. **CFW 56:A63**
Effect of trehalose on fermentation, proteins, and volume of French-type bread prepared with frozen dough. M. I. SILVAS-GARCIA (1), B. Ramirez-Wong (1), P. I. Torres-Chavez (1), E. Magaña-Barajas (2), M. G. Salazar-Garcia (1), G. A. Lopez-Ahumada (3). (1) Universidad de Sonora, Hermosillo, Sonora, Mexico; (2) Instituto Tecnológico de Sonora, Cd. Obregón, Sonora, Mexico; (3) Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

58-P. **CFW 56:A53**
Effect of the xylanase enzyme on the viscoelasticity and polymeric proteins in frozen dough and on loaf volume of French-type bread. E. MAGAÑA-BARAJAS (1), B. Ramirez-Wong (2), P. I. Torres-Chavez (2), D. I. Sanchez-Machado (1), J. Lopez-Cervantes (1). (1) Instituto Tecnologico de Sonora, Ciudad Obregón, Sonora, Mexico; (2) Universidad de Sonora, Hermosillo, Sonora, Mexico

59-P. **CFW 56:A55**
Gliadin solubility and baking properties of dough of hard and soft wheat flours with microbial transglutaminase. C. MEDINA-RODRIGUEZ (1), P. Torres (1). (1) Universidad de Sonora, Hermosillo, Sonora, Mexico

60-P. **CFW 56:A69**
Effect of genotype and environment on the refrigerated dough quality and arabinoxylan content of hard red spring wheat. K. WHITNEY (1), J. Ohm (2), M. Mergoum (1), S. Simsek (1). (1) North Dakota State University, Department of Plant Sciences, Fargo, ND, U.S.A.; (2) USDA-ARS Wheat Quality Lab, Fargo, ND, U.S.A.

61-P. **CFW 56:A42**
Evaluation of refrigerated and frozen pasta made from freshly extruded macaroni and from dried macaroni. G. GRACIA-GONZALEZ (1), K. Fei Bong (1), F. A. Manthey (1), S. Simsek (1). (1) North Dakota State University, Fargo, ND, U.S.A.

***62-P.** **CFW 56:A32**
Properties of wheat gluten as affected by high-pressure-induced deamidation. M. BRUNNBAUER (1), P. Koehler (1). (1) German Research Center for Food Chemistry, Freising, Germany

***63-P.** **CFW 56:A35**
Molecular characterisation of gluten development during dough development: Comparison of laboratory and pilot-scale processes. G. A. Chope (1), M. C. Poole (1), J. R. Bratt (1), D. R. Buttler (1), S. Keen (1), S. P. PENSON (1). (1) Campden BRI, Glos, United Kingdom

Cereal and Polymer Chemistry – Starch Physio-Chemical Properties

Scientific Initiative: Cereal & Polymer Chemistry

64-P. **CFW 56:A52**
Relationship between bran particle size and bran starch of milled soft wheat grown in Michigan. Y. LIU (1), P. K. Ng (1), J. Lewis (2), E. J. Souza (3). (1) Department of Food Sciences and Human Nutrition, Michigan State University, East Lansing, MI, U.S.A.; (2) Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI, U.S.A.; (3) Soft Wheat Quality Research, USDA-ARS, Wooster, OH, U.S.A./Bayer CropScience LP, Lincoln, NE, U.S.A.

65-P. **CFW 56:A43**
Effect of phenolic compounds on starch hydrolysis by pancreatic amylase. I. GUZAR (1), S. Ragaee (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

66-P. **CFW 56:A27**
Effect of salts on starch pasting properties in semolina and pasta and on pasta processing and cooking parameters. M. ABEYRATNE (1), M. Dobrydina (1), F. A. Manthey (1), S. Simsek (1). (1) North Dakota State University, Fargo, ND, U.S.A.

67-P. **CFW 56:A48**
Low-digestible rice starch: Preparation by using hydrothermal and amylosucrase treatments and structural characterization. J. H. Kim (1), M. A. KIM (1), T. W. Moon (1). (1) Seoul National University, Seoul, South Korea

68-P. **CFW 56:A51**
Effects of heat treatments and storage on the physicochemical properties of oat starch. J. LEUTSCHER (1), Y. Ai (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.

69-P. **CFW 56:A30**
Effect of sorghum phenolic extracts on starch pasting, thermal, and digestive properties. F. BARROS (1), B. Geera (1), J. Awika (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

70-P. **CFW 56:A71**
Characterization of waxy corn starch for ethanol production. H. YANGCHENG (1), H. Jiang (1), J. Medic (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.

71-P. **CFW 56:A31**
Solubilization of hydrophobic compounds in a soft nanocomplex from starch, protein, and lipid. D. BHOPATKAR (1), O. H. Campanella (1), B. R. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.

72-P. **CFW 56:A44**
Investigation of molecular reaction patterns among amylose and amylopectin branch chains within a model reaction system. J. HONG (1), K. C. Huber (1). (1) University of Idaho, Moscow, ID, U.S.A.

73-P. **CFW 56:A28**
In vitro starch digestibility of kodo millet (*Paspalum scrobiculatum*) as affected by protein-starch-lipid interactions. G. A. ANNOR (1), K. Seetharaman (1), E. Bertoft (1), M. F. Marcone (1). (1) University of Guelph, Guelph, ON, Canada

74-P. **CFW 56:A47**
The effect of kernel maturity on the thermal properties of sorghum starch. R. C. KAUFMAN (1), J. Wilson (2), Y. Shi (3). (1) USDA ARS GMPRC, Manhattan, KS, U.S.A.; (2) USDA ARS CGAHR, Manhattan, KS, U.S.A.; (3) Kansas State University, Manhattan, KS, U.S.A.

75-P. **CFW 56:A39**
Improvement of physical and mechanical properties of durum wheat (*T. durum*) starch films through hydrolysis and cross-linking. J. ESPINOZA-ACOSTA (1), P. Torres (1), B. Ramírez-Wong (2), B. Montaño-Leyva (1). (1)

Universidad de Sonora, Hermosillo, Sonora, Mexico; (2) Universidad de Sonora-Departamento de Investigación y Posgrado en Alimentos, Hermosillo, Sonora, Mexico

76-P. CFW 56:A69
Effect of osmotic pressure and simultaneous heat-moisture and phosphorylation treatment on structure and physicochemical properties of five starches. C. R. WANG (1), P. Liao (1), W. Su (1), C. Huang (2). (1) Providence University, Shalu, Taiwan Republic of China; (2) Asia University, Wufong, Taiwan

77-P. CFW 56:A45
Resistant starch content and estimated glycemic index of starches from different varieties and modification. C. HUANG (1), P. Liao (2), C. Wang (2). (1) Asia University, Wefong, Taiwan; (2) Providence University, Shalu, Taiwan

78-P. CFW 56:A57
Effect of growing environment of soft wheat on amylose content and its relationship with cookie and sponge cake quality and solvent retention capacity. Z. NISHIO (1), Y. Miyazaki (2), M. Seki (3), M. Ito (1), T. Tabiki (1), K. Nagasawa (1), H. Yamauchi (1), H. Miura (2). (1) National Agricultural Research Center for Hokkaido Region, Memuro, Japan; (2) Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan; (3) National Institute of Crop Science, Tsukuba, Japan

79-P. CFW 56:A57
The effect of alpha-amylases and xylanases in the bread dough. K. MOTOMATSU (1), K. Hayakawa (1), K. Hasegawa (1). (1) Nisshin Flour Milling Inc., Tsukuba, Ibaraki, Japan

80-P. CFW 56:A49
Preparation of starch granules with enhanced load-carrying capacity by citric acid treatment. J. KIM (1), K. C. Huber (1). (1) University of Idaho, Moscow, ID, U.S.A.

***81-P. CFW 56:A46**
Gelatinization and retrogradation of acha (*Digitaria exilis*), iburu (*D. iburua*), and tamba (*Eleusine coracana*) starches A. I. JIDEANI (1). (1) University of Venda, Thohoyandou, Southwest Africa

***82-P. CFW 56:A28**
Influence of lysophosphatidylcholine (LPC) on the gelation and functional properties of diluted wheat starch suspension. S. AHMADI-ABHARI (1), A. Woortman (1), R. Hamer (2), L. Oudhuis (3), K. Loos (1). (1) University of Groningen, Groningen, Netherlands; (2) Wageningen University, Wageningen, Netherlands; (3) Top Institute of Food and Nutrition, Wageningen, Netherlands

***83-P. CFW 56:A57**
Amylolysis of small and large granules of triticale, wheat, and corn starches at subgelatinization temperature using granular starch-hydrolyzing enzyme. S. NAGULESWARAN (1), J. Li (1), T. Vasanthan (1), D. Bressler (1), R. Hoover (2). (1) University of Alberta, Edmonton, AB, Canada; (2) Memorial University of Newfoundland, St. John's, NF, Canada

Cereal and Polymer Chemistry – Starch Structures

Scientific Initiative: Cereal & Polymer Chemistry

84-P. CFW 56:A51
Effects of high growing temperature on starch structure in sorghum grains. E. LI (1), J. Hasjim (1), V. Singh (1), M. Tizzotti (1), I. D. Godwin (1), R. G. Gilbert (1). (1) University of Queensland, Brisbane, Australia

85-P. CFW 56:A33
Macromolecular and rheological properties of Italian waxy wheat. R. Caramanico (1), P. Vaccino (1), G. BOTTEGA (2), A. Barbiroli (3), S. Iametti (3), M. Pagani (4). (1) CRA-SCV, Sant'Angelo Lodigiano, Italy; (2) DISTAM - Universita degli Studi di Milano, Milano, Italy; (3) DISMA - University of Milan, Milan, Italy; (4) DISTAM - University of Milan, Milan, Italy

86-P. CFW 56:A49
Retrogradation kinetics of conventionally and UHP-assisted cross-linked corn starch with STMP/STPP. S. KIM (1). (1) Kyung Hee University, Yongin, South Korea

87-P. CFW 56:A48
Effects of enzymatic chain elongation on the characteristics of rice starches with varied amylose contents. J. KEE (1), H. Kim (2), B. Kim (1), S. Yoo (1). (1) Department of Food Science & Technology and Carbohydrate Bioproduct Research Center, Sejong University, Seoul, South Korea; (2) Department of Food Science and Biotechnology, Andong National University, Andong, South Korea

88-P. CFW 56:A47
C-chain distribution in barley amylopectin clusters. A. KÄLLMAN (1), E. Bertoft (2), K. Koch (1), R. Andersson (1), P. Åman (1). (1) Swedish University of Agricultural Sciences, Uppsala, Sweden; (2) University of Guelph, Guelph, ON, Canada

89-P. CFW 56:A67
The impact of internal unit chain structure of amylopectin on thermal properties of starches. V. VAMADEVAN (1), E. Bertoft (1), K. Seetharaman (2). (1) University of Guelph, Guelph, ON, Canada; (2) Department of Food Science, University of Guelph, Guelph, ON, Canada

90-P. CFW 56:A45
Effect of granule surface/channel protein removal on granular and molecular reactivity of corn and wheat starches under nonswelling conditions. C. HSIEH (1), K. C. Huber (1). (1) University of Idaho, Moscow, ID, U.S.A.

91-P. CFW 56:A30
Formation of amylose-lipid complex in starches treated with isoamylase and beta-amylase. E. O. ARIJAJE (1), Y. Wang (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

92-P. CFW 56:A68
Lamellae structure of developing wheat starch granules. R. N. WADUGE (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

93-P. CFW 56:A67
Segmental mobility of polymers in hydrothermally treated maize starches varying in amylose content. V. VAMADEVAN (1), S. Ragaee (1), R. Hoover (2), E. Bertoft (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Memorial University of Newfoundland, St. John's, NF, Canada

94-P. **CFW 56:A44**
Effects of milling processes on starch digestibility of rice flours. J. HASJIM (1), E. Li (1), Z. Syahariza (1), S. Dhital (1). (1) University of Queensland, Brisbane, Australia

95-P. **CFW 56:A39**
Comparison of microwave processing and excess steam jet cooking for spherulite production from starch:palmitic acid inclusion complexes. F. C. FELKER (1), J. A. Kenar (1), G. F. Fanta (1), J. A. Byars (1). (1) USDA ARS NCAUR, Peoria, IL, U.S.A.

96-P. **CFW 56:A43**
Prediction of rice noodle quality through the rice gel properties. H. Han (1), B. KOH (1), S. Choi (1). (1) Department of Food and Nutrition, Keimyung University, Daegu, South Korea

97-P. **CFW 56:A31**
Relationship between the number of channels in starch granules and their derivatization using rapidly reacting reagents. J. N. BEMILLER (1), Z. Sui (1). (1) Purdue University, West Lafayette, IN, U.S.A.

98-P. **CFW 56:A52**
The synergistic effects of amylose and phosphorus on rheological, thermal, and nutritional properties of potato starch and gel. Q. LIU (1). (1) Agriculture & Agri-Food Canada, Guelph, ON, Canada

99-P. **CFW 56:A52**
Structure and properties of thermoplastic potato starch film cross-linked by UV irradiation. Q. LIU (1). (1) Agriculture & Agri-Food Canada, Guelph, ON, Canada

100-P. **CFW 56:A68**
New insights into distribution of amylose in pea starch. S. WANG (1), J. Blazek (2), E. Gilbert (2), L. Copeland (1). (1) University of Sydney, Sydney, Australia; (2) Bragg Institute, ANSTO, Sydney, Australia

101-P. **CFW 56:A36**
Physicochemical properties of native and heat-moisture-treated potato and amaranth starch mixtures. H. CORKE (1), A. Gunaratne (2). (1) University of Hong Kong, Hong Kong; (2) Sabaragamuwa University, Belihuloya, Sri Lanka

102-P. **CFW 56:A60**
Effect of annealing on the acid susceptibility of different starches. T. Rocha (1), J. Jane (2), C. FRANCO (1). (1) Sao Paulo State University, Sao Jose do Rio Preto, Brazil; (2) Iowa State University, Ames, IA, U.S.A.

*__103-P.__ **CFW 56:A44**
Relationship between starch structures in rice flour and solubility of starch molecules in water. J. HASJIM (1), E. Li (1), S. Dhital (1). (1) University of Queensland, Brisbane, Australia

*__104-P.__ **CFW 56:A38**
Diffusion of dextran probes in starch granules. S. DHITAL (1), A. K. Shrestha (1), K. Shelat (1), M. Gidley (1). (1) Centre for Nutrition and Food Sciences, University of Queensland, St. Lucia, Brisbane, QLD, Australia

*__105-P.__ **CFW 56:A70**
Correlation between molecular and intragranular structural parameters in waxy starch. T. WITT (1), J. Doutch (2), E. Gilbert (2), B. Gilbert (1). (1) University of Queensland, Brisbane, Australia; (2) Australian Nuclear Science and Technology Organisation, Sydney, Australia

*__106-P.__ **CFW 56:A36**
Structure design of maize endosperm tissue and starch by hydrothermal and thermomechanical processing for tailored end-product properties. B. CONDE-PETIT (1), W. Boefer (1), U. Santschi (1), M. Nussbaumer (1). (1) Buhler AG, Uzwil, Switzerland

*__107-P.__ **CFW 56:A65**
Structure/function relationships of barley limit dextrinase and limit dextrinase inhibitor. B. SVENSSON (1), M. S. Moeller (2), M. Kyasaram (3), J. M. Jensen (3), M. B. Vester-Christensen (3), P. Hagglund (3), A. Henriksen (4), M. Abou Hachem (3). (1) Technical University of Denmark, Lyngby, Denmark; (2) Enzyme & Protein Chemistry, Technical University of Denmark, Lyngby, Denmark; (3) Enzyme & Protein Chemistry, Lyngby, Denmark; (4) Carlsberg Laboratory, Valby, Denmark

Cereal and Polymer Chemistry General

Scientific Initiative: Cereal & Polymer Chemistry

108-P. **CFW 56:A27**
Vitreous and floury maize kernels: Physicals characteristics and starch biosynthesis. E. AGAMA-ACEVEDO (1), E. Juarez-Garcia (1), S. L. Rodriguez-Ambriz (1). (1) CEPROBI-IPN, Yautepec, Morelos, Mexico

109-P. **CFW 56:A31**
Chemical composition and antioxidant capacity of tortilla made with the blend quality protein maize and black bean. L. A. BELLO-PEREZ (1), E. M. Grajales-Garcia (1), P. Osorio-Diaz (1). (1) CEPROBI-IPN, Yautepec, Morelos, Mexico

110-P. **CFW 56:A70**
The effect of cover cropping systems and nitrogen fertilization on sorghum grain characteristics. J. D. WILSON (1), R. C. Kaufman (1), S. R. Bean (1), D. R. Presley (2). (1) USDA ARS CGAHR, Manhattan, KS, U.S.A.; (2) Kansas State University, Manhattan, KS, U.S.A.

111-P. **CFW 56:A53**
Grain quality evaluation of NERICA rice varieties. J. T. MANFUL (1), I. Dieng (2), M. A. Fitzgerald (3). (1) Food Research Institute, Accra, Ghana; (2) Africa Rice Center, Cotonou, Benin; (3) International Rice Research Institute, Los Banos, Philippines

112-P. **CFW 56:A63**
Quality characteristics of rice flours and gluten-free cupcakes from high-yielding rice varieties in Korea. M. SHIN (1), S. Park (1). (1) Chonnam National University, Gwangju, South Korea

113-P. **CFW 56:A50**
Quality protein maize in Africa: Is it still quality protein under small-scale farmer, low-input conditions? M. T. LABUSCHAGNE (1), A. van Biljon (1), O. Elago (1). (1) University of the Free State, Bloemfontein, Republic of South Africa

114-P. **CFW 56:A59**
Mechanisms of stabilizing fibre-enriched dairy products. N. REPIN (1), M. Scanlon (1), G. Fulcher (1). (1) University of Manitoba, Department of Food Science, Winnipeg, MB, Canada

115-P. **CFW 56:A60**
Effect of nitrogen fertilization, water stress, and cultivar on the phenomenon “yellow berry” in bread

wheat (*Triticum aestivum*). F. RODRIGUEZ (1), B. Ramirez (1), P. Torres (2), A. Alvarez (3), G. Barco (4), R. Bedoy (5). (1) Departamento de Investigación y Posgrado en Alimentos, Universidad de Sonora, Hermosillo, Mexico; (2) Departamento de Investigacion y Posgrado en Alimentos, Hermosillo, Sonora, Mexico; (3) Departamento de Agricultura y Ganaderia, Universidad de Sonora, Hermosillo, Sonora, Mexico; (4) Departamento de Investigacion y Posgrado en Alimentos, Universidad de Sonora, Hermosillo, Sonora, Mexico; (5) Universidad de Sonora, Hermosillo, Sonora, Mexico

116-P. **CFW 56:A28**
Microstructure and protein composition of marama bean. E. O. AMONSOU (1), J. R. Taylor (1), A. Minnaar (1). (1) Department of Food Science, University of Pretoria, Hatfield, Republic of South Africa

117-P. **CFW 56:A39**
Dietary fiber improvement of pasta products using dehydrated *Opuntia* flour. M. FALCON-VILLA (1), J. M. Barrón-Hoyos (1), A. L. Romero-Baranzini (1) (1) Universidad de Sonora, Hermosillo, Sonora, Mexico

118-P. **CFW 56:A38**
Changes in durum wheat kernel composition and appearance during grain filling. M. DOBRYDINA (1), S. Dash (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.

119-P. **CFW 56:A42**
Physicals characteristics of mixtures of flour wheat and flour ataulfo mangoe. N. GUEMES-VERA (1), S. Soto Simental (1), M. Reyes Santamaría (1), J. González Avalos (1), A. Hernández Fuentes (1). (1) Universidad Autónoma del Estado de Hidalgo, Tulancingo, Hidalgo, Mexico

120-P. **CFW 56:A56**
Condensed tannin content is not correlated with in vitro starch digestibility of cooked grain sorghum (*Sorghum bicolor* (L.) Moench) flour. N. L. MKANDAWIRE (1), D. J. Rose (1), C. L. Weller (1), D. S. Jackson (1). (1) University of Nebraska, Lincoln, NE, U.S.A.

121-P. **CFW 56:A52**
Functionality of kamut and millet flours in macro wire cut cookie systems. C. W. Lok (1), N. Y. Jie (1), A. GOLDSTEIN (2), G. K. Chandi (2), L. K. Yee (1), K. Seetharaman (2). (1) Department of Chemical and Life Sciences, Singapore Polytechnic Institute, Singapore; (2) Department of Food Science, University of Guelph, Guelph, ON, Canada

122-P. **CFW 56:A58**
Functional and nutritional characteristics of wheat grown in organic, no-till, and conventional cropping systems. E. PARK (1), P. Fuerst (1), P. Miller (2), S. Machado (3), I. Burke (1), B. Baik (1). (1) Washington State University, Pullman, WA, U.S.A.; (2) Montana State University, Bozeman, MT, U.S.A.; (3) Oregon State University, Pendleton, OR, U.S.A.

123-P. **CFW 56:A66**
Antioxidant active anthocyanins in Blue Wheat (UC66049 *Triticum aestivum*). C. E. TYL (1), G. Karadas (1), R. R. Kyllo (1), M. Bunzel (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

124-P. **CFW 56:A65**
Effect of extrusion on breakfast cereal from special sorghums containing phytochemicals. V. TALEON ALBAN (1), M. Asif (1), C. A. Mack (1), M. N. Riaz (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

125-P. **CFW 56:A38**
Characterizing the phytochemical contents and volatile profiles of some selected Ontario red and white wheat varieties. S. DHILLON (1). (1) University of Guelph, Guelph, ON, Canada

126-P. **CFW 56:A38**
Improved wheat grain color classification based on detailed spectral analysis. S. DHILLON (1). (1) University of Guelph, Guelph, ON, Canada

*__127-P.__ **CFW 56:A70**
Designing starch for better nutrition. A. C. WU (1), R. G. Gilbert (1). (1) The University of Queensland, Brisbane, QLD, Australia

*__128-P.__ **CFW 56:A52**
Engineered "smart" starch-based biomaterial for functional food ingredient and nonfood industrial applications. Q. LIU (1), A. Chan (2). (1) Agriculture & Agri-Food Canada, Guelph, ON, Canada; (2) University of Waterloo, Waterloo, ON, Canada

*__129-P.__ **CFW 56:A72**
Effect of kernal heating treatment time on the physicochemical properties of oat flour. B. ZHANG (1), Y. Wei (1), G. Ning (2), P. Feng (3). (1) Institute of Agro-Food Science and Technology, CAAS, Beijing, Peoples Republic of China; (2) College of Food Science and Engineering, Northwest Sci-Tech University of Agriculture and Forestry, Yangling, Peoples Republic of China; (3) Grain and Oil Food College, Henan University of Technology, Zhengzhou, Peoples Republic of China

*__130-P.__ **CFW 56:A50**
Trapping phenolic acid by lipophilization and complexation. P. LE BAIL (1), C. Lorentz (2), B. Pontoire (1), M. de Carvalho (1), G. Pencreac'h (2). (1) INRA, Nantes, France; (2) "Mer, Molécules, Santé" (MMS) - EA 2160 IUT de Laval - Département Génie Biologique, Laval, France

Chemistry and Quality

Scientific Initiative: Analytical Methods & Quality

131-P. **CFW 56:A41**
Influence of glutenins on stress relaxation of wheat kernels and the relation to sedimentation and rheological properties. J. Figueroa Cardenas (1), Z. HERNÁNDEZ ESTRADA (1), P. Rayas-Duarte (2), R. Peña (3). (1) CINVESTAV Unidad Queretaro, Queretaro, Qro., Mexico; (2) Robert M. Kerr Food & Agricultural Products Center, Oklahoma State University, Stillwater, OK, U.S.A.; (3) CIMMYT, Texcoco, Mexico

132-P. **CFW 56:A68**
A comparative study of physicochemical properties in mature and immature seeds of yellow pea. N. WANG (1), N. Woodbeck (1), R. Toews (1), G. Castonguay (1). (1) Canadian Grain Commission, Winnipeg, MB, Canada

133-P. WITHDRAWN

134-P. **CFW 56:A33**
Impact of functional native starch characteristics on storage stability of formulated food products. L. Carr (1), L. Drew (1), Y. Pena (1), C. Stokes (1), Y. DAR (1). (1) National Starch, Bridgewater, NJ, U.S.A.

135-P. **CFW 56:A63**
The effect of pea hull fibre particle size and addition level on wheat bread quality. A. L. SHUM (1), M. G. Scanlon (1), N. M. Edwards (2), E. D. Lysenko (2), D. M. Frost

(2). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Canadian Grain Commission, Winnipeg, MB, Canada

136-P. CFW 56:A34
Investigating the impact of enzymes and heat treatments on quantification of folate in fortified wheat flour. M. CHANDRA-HIOE (1), M. Bucknall (2), J. Arcot (2). (1) University of New South Wales, Wahroonga, Australia; (2) University of New South Wales, Sydney, Australia

137-P. CFW 56:A36
Effects of processing on material properties of gluten-free cakes. C. CHURCHILL (1), R. Anderson (1), J. De los Reyes (1), W. Dong (1), T. Faltens (1), H. Singh (1). (1) California State Polytechnic University, Pomona, San Bernardino, CA, U.S.A.

138-P. CFW 56:A59
Higher quality whole grain pasta products: Challenges and opportunities. A. J. REUTER (1), R. Rosen (1), L. Marquart (2), E. Arndt (3). (1) University of Minnesota, St. Paul, MN, U.S.A.; (2) Grains for Health Foundation, St. Louis Park, MN, U.S.A.; (3) ConAgra Foods, Inc., Omaha, NE, U.S.A.

139-P. CFW 56:A34
Relationships between simple grain quality parameters for the estimation of sorghum and maize hardness. C. CHIREMBA (1), T. Beta (2), L. Rooney (3), J. Taylor (1). (1) University of Pretoria, Pretoria, Republic of South Africa; (2) University of Manitoba, Winnipeg, MB, Canada; (3) Texas A&M University, College Station, TX, U.S.A.

140-P. CFW 56:A68
Atomic force microscopic imaging of the surface of developing wheat starch granules. R. N. WADUGE (1), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada

141-P. CFW 56:A29
Starch damage influence on the production of corn flour measured by an amperometric method. G. Arambula (1), M. Trejo (2), G. ZACARIAS (2), E. Gutierrez (1), A. Felix (2). (1) Centro de Investigacion y de Estudios Avanzados (Cinvestav), Queretaro, Mexico; (2) Granotec Mexico, El Marques, Mexico

142-P. CFW 56:A54
Protein changes in three wheat cultivars with the yellow berry disorder. A. Matus-Barba (1), P. TORRES (1), B. Ramírez Wong (2), G. A. Lopez-Ahumada (3). (1) Universidad de Sonora, Hermosillo, Sonora, Mexico; (2) Universidad de Sonora-Departamento de Investigación y Posgrado en Alimentos, Hermosillo, Sonora, Mexico; (3) Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

Engineering and Processing for Industrial Uses

Scientific Initiative: Engineering & Processing

143-P. CFW 56:A58
Effects of rough rice drying conditions and exposure durations on bran removal. G. ONDIER (1), T. Siebenmorgen (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

144-P. CFW 56:A35
Development of drug delivery system (DDS) and nutrient delivery system (NDS) using starch. S. CHOI (1). (1) Kyung Hee University, YongIn, Gyuing-Gi, South Korea

145-P. CFW 56:A45
Glass transition and retrogradation of conventionally and UHP-assisted cross-linked corn starches with $POCl_3$. S. HONG (1). (1) Kyung Hee University, YongIn, Gyung-ki, South Korea

146-P. CFW 56:A53
Influence of microwave irradiation on αglucan and fiber content of barley. P. LÓPEZ PEREA (1), J. Figueroa Cardenas (2). (1) PROPAC, Facultad de Química, Universidad Autónoma de Querétaro, Centro Universitario s/n. Querétaro, Mexico; (2) CINVESTAV Unidad Queretaro, Queretaro, Qro., Mexico

147-P. CFW 56:A48
Contamination issues in continuous fermentation for ethanol production. E. KHULLAR (1), A. D. Kent (1), T. D. Leathers (2), K. M. Bishoff (2), K. D. Rausch (1), M. E. Tumbleson (1), V. Singh (1). (1) University of Illinois, Urbana-Champaign, IL, U.S.A.; (2) National Center for Agricultural Utilization Research, ARS, USDA, Peoria, IL, U.S.A.

148-P. CFW 56:A46
Processing performance capabilities of an experimental parboiling unit. M. B. HUNT (1), T. J. Siebenmorgen (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

149-P. CFW 56:A47
Statistical analysis and kinetics of folic acid fortification in rice during the parboiling process. K. KAM (1), J. Arcot (1), S. Adesina (1). (1) University of New South Wales, Sydney, Australia

150-P. CFW 56:A34
Use of tropical maize for bioethanol production. M. CHEN (1), P. Kaur (1), F. E. Below (1), M. Vincent (1), V. Singh (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.

151-P. CFW 56:A62
Evaluation of vital gluten addition, moisture content, and extrusion temperature in the production of a meat extender through thermoplastic extrusion. M. SCHMIELE (1), Y. K. Chang (1), T. L. Araújo (1). (1) State University of Campinas - UNICAMP, Campinas, SP, Brazil

152-P. CFW 56:A66
White corn hybrids as a source for starch production. M. URIARTE (1), S. Mora (1), S. Eckhoff (2), C. Reyes Moreno (1), J. Milán Carrillo (1). (1) Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (2) Agricultural Engineering Sciences Building, Urbana, IL, U.S.A.

153-P. CFW 56:A66
Evaluation of wet milling performance of commercial yellow corn hybrids and relations with grain physical and chemical properties. M. URIARTE (1), E. Cuevas (1), S. Eckhoff (2), J. Milán Carrillo (1), C. Reyes Moreno (1). (1) Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico; (2) Agricultural Engineering Sciences Building, Champaign, Urbana, IL, U.S.A.

154-P. CFW 56:A62
Rice pasta with soy protein isolate, modified albumin, and pregelatinized rice flour. M. SCHMIELE (1), P. M. Ishida (1), L. Z. Jaekel (1), Y. K. Chang (1), C. J. Steel (1). (1) State University of Campinas - UNICAMP, Campinas, SP, Brazil

155-P. CFW 56:A66
Nutritional and textural properties of doughs and breads produced from oat flour and oat bran flour. U. TIWARI

(1), E. Cummins (1), N. Brunton (2), C. O'Donnell (1), E. Gallagher (2). (1) University College Dublin, Dublin, Ireland; (2) Ashtown Food Research Centre, Dublin, Ireland

156-P. CFW 56:A51
Effects of acid concentration and temperature on characteristics of pyrodextrins. J. Lin (1), Y. Wu (2), S. Chen (2), Y. CHANG (2). (1) MingDao University, Chunghua, Taiwan Republic of China; (2) Providence University, Taichung, Taiwan Republic of China

157-P. CFW 56:A51
Effect of starch on rheological properties of carrageenan dispersions. J. LIN (1), C. Liang (2), C. Lin (2), Y. Chang (2). (1) MingDao University, Changhua, Taiwan Republic of China; (2) Providence University, Taichung, Taiwan Republic of China

158-P. CFW 56:A62
A novel liquefaction enzyme for single pH corn to ethanol process. V. SHARMA (1). (1) Genencor International Inc., Cedar Rapids, IA, U.S.A.

159-P. CFW 56:A30
Novel process based on partial germination to enhance milling yield and nutritional properties of pulses. S. BELLAIO (1), E. Zamprogna Rosenfeld (1), D. Mane (2), M. Jacobs (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler (India) Pvt. Ltd., Bangalore, India; (3) Buhler GmbH, Braunschweig, Germany

160-P. CFW 56:A37
Fermentation of distillers dried grains with solubles by microorganisms and cellulase production. B. Dahal (1), N. Chikthimmah (1), B. Ristow (1), B. LAMSAL (2). (1) University of Wisconsin-Stout, Menomonie, WI, U.S.A.; (2) Iowa State University, Ames, IA, U.S.A.

161-P. CFW 56:A59
Effect of thermoplastic extrusion of maize on the efficiency of bioethanol production of high-gravity worts fermented with *Zymomonas mobilis*. M. Peralta-Contreras (1), E. Aguilar-Zamarripa (1), E. Perez-Carrillo (1), S. O. SERNA-SALDIVAR (1). (1) ITESM, Monterrey, Mexico

162-P. WITHDRAWN

***163-P. CFW 56:A60.**
Effect of commercial source on xanthan gum composition and effect on processing and cooking quality of pasta containing nontraditional ingredients. G. K. SANDHU (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A.

Engineering Food from Grains

Scientific Initiative: Engineering & Processing

164-P. CFW 56:A43
Functional properties of germinated Yakkong (*Rhynchosia nulubilis*) flour and its application in rice cookies. J. Han (1), J. Han (1), B. HWANG (1). (1) Sangmyung University, Seoul, South Korea

165-P. CFW 56:A43
Rice varieties in relation to rice bread. H. Han (1), B. KOH (1), J. Cho (2). (1) Department of Food and Nutrition, Keimyung University, Daegu, South Korea; (2) Department of Functional Crop, National Institute of Crop Science, Milyang, South Korea

166-P. CFW 56:A40
Development of a textured extruded product using soy protein isolate and whole grain quinoa (*Chenopodium quinoa* Willd.) flour. D. S. FERREIRA (1), J. C. Rocha (1), L. B. Parada (1), Y. K. Chang (1). (1) State University of Campinas, Campinas, Brazil

167-P. CFW 56:A32
Effect of the degree of milling on the energy required to cook rice. M. A. BILLIRIS (1), T. J. Siebenmorgen (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

168-P. CFW 56:A33
Processing attributes of oat flour and white salted noodle quality. L. CATO (1), V. Solah (2). (1) Department of Agriculture and Food WA, South Perth, Australia; (2) Curtin University, Perth, Australia

169-P. CFW 56:A64
Effects of additives on yellow pea gluten-free pasta processing parameters and products quality. C. SIMONS (1), T. Jeradechachai (2), F. A. Manthey (1), C. Hall (1). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) Northern Crops Institute, Fargo, ND, U.S.A.

170-P. CFW 56:A46
Textural changes of gluten-free pastas during cooking and cooking quality evaluation. A. R. ISLAS-RUBIO (1), A. M. Calderón de la Barca (1), F. Cabrera-Chavez (1), S. Iametti (2), F. Bonomi (2), M. A. Pagani (3), A. Cota-Gastelum (4), R. Caramanico (5), A. Marti (3). (1) CIAD, A.C., Hermosillo, Sonora, Mexico; (2) DiSMA, Università degli Studi di Milano, Milano, Italy; (3) DiSTAM, Università degli Studi di Milano, Milano, Italy; (4) DIPA, Universidad de Sonora, Hermosillo, Sonora, Mexico; (5) CRA-SCV, S. Angelo Logigiano, Italy

171-P. CFW 56:A38
An investigation into the use of millet, sorghum, maize, and wheat in development of muesli with higher dietary fibre content. H. Duduyemi (1), V. STOJCESKA (1), A. Plunkett (1). (1) Manchester Metropolitan University, Manchester, United Kingdom

172-P. CFW 56:A39
Development of a highly nutritional and nutraceutical product from an optimized mixture of extruded maize and bean flours. J. R. Espinoza-Moreno (1), R. Gutierrez-Dorado (1), A. MONTOYA-RODRIGUEZ (1), J. Milán-Carrillo (1), S. Mora-Rochín (1), L. M. Sánchez-Magaña (1), A. Valdez-Ortiz (1), J. A. López-Valenzuela (1), C. Reyes-Moreno (1). (1) Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico

***173-P. CFW 56:A64**
Characterization and acceptability of pinto, navy, and black bean extrudates. C. SIMONS (1), C. Hall (1), M. Tulbek (2). (1) North Dakota State University, Fargo, ND, U.S.A.; (2) Northern Crops Institute, Fargo, ND, U.S.A.

***174-P. CFW 56:A37**
Rheological properties of sorghum protein concentrates produced by extrusion-enzyme liquefaction. N. DE MESA-STONESTREET (1), S. Alavi (1), H. Dogan (1), J. Faubion (1). (1) Kansas State University, Manhattan, KS, U.S.A.

***175-P. CFW 56:A45**
Effect of maturity and frozen storage on corn wet-milling yields and starch pasting properties. H. HUANG (1), L. Xu (1), S. R. Eckhoff (1). (1) University of Illinois at Urbana-Champaign, Urbana, IL, U.S.A.

*176-P. **CFW 56:A49**
Moisture and oil uptake during processing of soy-based extruded snacks. S. KODAVALI (1), S. Alavi (1). (1) Kansas State University, Manhattan, KS, U.S.A.

177-P. **CFW 56:A55**
Nutraceutical beverage elaborated from mixture of flours of extruded maize and chickpea. J. Milan-Carrillo (1), J. ROCHIN-MEDINA (1), R. Gutierrez-Dorado (1), E. Cuevas-Rodriguez (1), S. Mora-Rochín (1), C. Reyes-Moreno (1). (1) Programa Regional para el Doctorado en Biotecnologia, Universidad Autonoma de Sinaloa, Culiacan Sinaloa, Mexico

Engineering for Wheat Foods

Scientific Initiative: Engineering & Processing

178-P. **CFW 56:A62**
Mechanism of deterioration of bread baked with frozen dough. M. SEGUCHI (1). (1) Kobe Women's University, Suma-Ku Kobe, Japan

179-P. **CFW 56:A63**
Rheological properties of bran-enriched steamed bread. S. SHIAU (1), M. Wu (1), Y. Chang (2). (1) Tajen University, Pingtung, Taiwan; (2) Providence University, Taichung, Taiwan

180-P. **CFW 56:A29**
Properties of pasta for noodles, made with wheat semolina and taro flour. G. ARAMBULA-VILLA (1), J. A. Jiménez-Juárez (2), Y. G. Morales-Diaz (2), G. A. Sanchez-Chavarria (2), E. Gutiérrez-Arias (1). (1) CINVESTAV-IPN Queretaro, Queretaro, Qro., Mexico; (2) Instituto Tecnologico Superior de la Región Sierra, Teapa, Tabasco, Mexico

181-P. **CFW 56:A29**
Features of spaghetti pasta, made with wheat semolina and banana flour. G. ARAMBULA VILLA (1), J. A. Jiménez-Juárez (2), C. R. Vazquez-Vazquez (2), A. Lopez-García (2), E. Gutierrez-Arias (1). (1) CINVESTAV-IPN Queretaro, Queretaro, Qro., Mexico; (2) Instituto Tecnologico Superior de la Región Sierra, Teapa, Tabasco, Mexico

182-P. **CFW 56:A58**
Effects of heat treatment on the tyrosinase activity in wheat and color stability of noodles. H. OKUSU (1). (1) Nippon Flour Mills Co. Ltd., Kanagawa, Japan

183-P. **CFW 56:A72**
Effects of wheat flour quality and making process on cooking losses of Chinese white noodle. B. ZHANG (1), Y. Wei (1), W. Li (2). (1) Institute of Agro-Food Science and Technology of CAAS, Beijing, Peoples Republic of China; (2) Food Science Institute of Sichuan Agriculture University, Ya'an, Peoples Republic of China

184-P. **CFW 56:A29**
Evaluation of organic wheat bread quality. D. ARDUZLAR (1), M. Boyacioglu (2), D. Boyacioglu (1). (1) Istanbul Technical University, Food Engineering Department, Istanbul, Turkey; (2) Cereal Foods Institute, Doruk Group, Istanbul, Turkey

185-P. **CFW 56:A29**
Mixing and pasting characteristics of flaxseed meal-wheat flour mixture. D. ARDUZLAR (1), M. Boyacioglu (2), H. Dogan (3). (1) Istanbul Technical University, Food Engineering Department, Istanbul, Turkey; (2) Cereal Foods Institute, Doruk Group, Istanbul, Turkey; (3) Kansas State University, Department of Grain Science and Industry, Manhattan, KS, U.S.A.

186-P. **CFW 56:A36**
Development and quality evaluation of whole wheat saltine crackers. A. CHUNG (1), G. G. Hou (2), B. Lee (2). (1) China Grain Product Research and Development Institute, Taipei, Taiwan Republic of China; (2) Wheat Marketing Center, Portland, OR, U.S.A.

187-P. **CFW 56:A62**
Formulation of additives to retard the discoloration of white salted raw noodles. L. SHAN (1), G. G. Hou (2), B. Lee (2). (1) State Key Laboratory of Food Science and Technology, School of Food Science and Technology, Jiangnan University, Wuxi, Jiangsu Province, Peoples Republic of China; (2) Wheat Marketing Center, Portland, OR, U.S.A.

188-P. **CFW 56:A68**
Characterization of physicochemical changes in cookies baked in a commercial oven. S. B. WALKER (1), K. Seetharaman (1), A. Goldstein (1). (1) University of Guelph, Guelph, ON, Canada

189-P. **CFW 56:A33**
Wheat flour tortillas prepared with a zero trans fat, based in palm stearin and high-oleic safflower oil. N. BUITIMEA-CANTUA (1), M. G. Salazar-Garcia (1). (1) Universidad de Sonora, Hermosillo, Sonora, Mexico

*190-P. **CFW 56:A68**
Modifying wheat bran by microfluidization process. T. WANG (1). (1) North Carolina A&T State University, Kannapolis, NC, U.S.A.

*191-P. **CFW 56:A56**
Hydration kinetics and mechanical deformation properties of wheat kernels. P. A. MITCHELL (1), H. Dogan (1), R. Miller (1). (1) Kansas State University, Manhattan, KS, U.S.A.

*192-P. **CFW 56:A67**
Effect of the addition of three different types of resistant starch to instant noodles obtained by atmospheric and vacuum frying. M. VERNAZA LEORO (1), Y. K. Chang (1). (1) UNICAMP, Campinas, Brazil

Food Safety

Scientific Initiative: Food Safety & Regulatory

193-P. **CFW 56:A32**
The occurrence of ochratoxin A in soy protein infant formulas and protein powders. K. K. BOND (1), J. L. Brunkhorst (1), R. J. Malone (1), H. L. Henderson (1), K. M. Renkemeyer (1). (1) Trilogy Analytical Laboratory, Washington, MO, U.S.A.

194-P. **CFW 56:A32**
Determination of deoxynivalenol and zearalenone in single kernels from a highly contaminated corn sample. K. K. BOND (1), R. J. Malone (1), B. R. Malone (1). (1) Trilogy Analytical Laboratory, Washington, MO, U.S.A.

195-P. **CFW 56:A64**
Developing RP-HPLC method for detection of peanut allergens. H. SINGH (1), P. Malave (1), G. B. Montes (1). (1) California State University, Los Angeles, CA, U.S.A.

196-P. **CFW 56:A51**
Aflatoxin risk management in Texas: Comparative analysis of testing variability by multiple agencies. K. Lee (1), T. J. HERRMAN (1). (1) Texas A&M University, College Station, TX, U.S.A.

Health and Nutrition

Scientific Initiative: Health & Nutrition

197-P. CFW 56:A35
A comparison of the literature on the association between intakes of bran, cereal fiber, and whole grains and risk and biomarkers of heart disease. S. CHO (1), L. Qi (2), G. Fahey (3), D. Klurfeld (4). (1) Nutra Source Inc., Clarksville, MD, U.S.A.; (2) Harvard School of Public Health, Boston, MA, U.S.A.; (3) University of Illinois, Urbana, IL, U.S.A.; (4) USDA ARS, Beltsville, MD, U.S.A.

198-P. CFW 56:A42
Pasta products supplemented with raw and fermented-cooked flours of *Vigna sinensis* and *Phaseolus vulgaris*. M. F. GRANITO (1), A. Torres (1), J. Frias (2), C. Vidal-Valverde (2). (1) Simon Bolivar University, Baruta, Venezuela; (2) Instituto de Fermentaciones Industriales, Madrid, Spain

199-P. CFW 56:A64
Fortification of wheat flour with corn bran in baked products. M. SINGH (1), S. X. Liu (1), S. Vaughn (1). (1) USDA ARS NCAUR, Peoria, IL, U.S.A.

200-P. CFW 56:A33
Nutritional and textural properties of amaranthus-enriched rice-based pasta. F. CABRERA-CHAVEZ (1), A. Marti (2), S. Iametti (1), M. Pagani (3), M. Lucisano (3), M. Marengo (1), A. Calderon de la Barca (4), F. Bonomi (1). (1) DISMA - University of Milan, Milan, Italy; (2) Universita degli Studi di Milano, Milano, Italy; (3) DISTAM - University of Milan, Milan, Italy; (4) Centro de Investigacion en Alimentacion y Desarrollo, Hermosillo, Mexico

201-P. CFW 56:A71
A new family of healthy, safe, and convenient food products based on partial germination of pulses. E. ZAMPROGNA ROSENFELD (1), S. Bellaio (1), D. Mane (2), M. Jacobs (3). (1) Buhler AG, Uzwil, Switzerland; (2) Buhler (India) Pvt. Ltd., Bangalore, India; (3) Buhler GmbH, Braunschweig, Germany

202-P. CFW 56:A47
Correlation between phenolic compounds and antioxidant activity in brown rice before and after parboiling. F. Kawassaki (1), A. S. Mikaro (1), I. L. Massaretto (1), J. A. Noldin (2), U. M. MARQUEZ (1). (1) University of São Paulo, Faculty of Pharmaceutical Sciences, São Paulo, Brazil; (2) Agronomic Institute EPAGRI, Itajaí, Brazil

203-P. CFW 56:A34
Phenolic acids and sensory properties of whole grain products. C. Challacombe (1), E. M. Abdelaal (2), K. SEETHARAMAN (1), L. Duizer (1). (1) University of Guelph, Guelph, ON, Canada; (2) Agriculture & Agri-Food Canada, Guelph, ON, Canada

204-P. CFW 56:A54
Phenolic compounds in raw and cooked rice (*Oryza sativa* L.*)* and their inhibitory effect on the activity of angiotensin I-converting enzyme. I. L. Massaretto (1), F. Kawassaki (1), J. A. Noldin (2), U. M. MARQUEZ (1). (1) University of São Paulo, Faculty of Pharmaceutical Sciences, São Paulo, Brazil; (2) Agronomic Institute EPAGRI, Itajaí, Brazil

205-P. CFW 56:A39
Folate content of commercially produced corn and wheat tortillas purchased from retail outlets in the western United States. E. Engstrom (1), D. Haight (1), S. Pang (1), J. S. Chapman (2), M. L. DUNN (1). (1) Brigham Young University, Provo, UT, U.S.A.; (2) DairiConcepts LP, Springfield, MO, U.S.A.

206-P. CFW 56:A52
Effect of chia seed meal on baking quality of cakes. S. LIU (1), M. Singh (2). (1) USDA ARS NCAUR, Peoria, IL, U.S.A.; (2) USDA ARS NCAUR Functional Foods Research Unit, Peoria, IL, U.S.A.

207-P. CFW 56:A42
Inulin and rice starch technology in reduced-fat laminated dough. A. GILLILAND (1). (1) Beneo, Inc., Morris Plains, NJ, U.S.A.

208-P. CFW 56:A41
Suitability of pulse flours in extruded products. P. J. FROHLICH (1), A. Bellido (1), G. Boux (1), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada

209-P. CFW 56:A28
In vivo digestibility of amylose-stearic acid complex in rats. Y. AI (1), Y. Zhao (1), D. Birt (1), T. Wang (1), J. Jane (1). (1) Iowa State University, Ames, IA, U.S.A.

210-P. CFW 56:A42
Effect of the addition of fiber of seeds of guava (*Psidium guajava*) in doughs of wheat flour. N. GUEMES-VERA (1), A. Bernardino-Nicanor (2), M. Reyes-Santamaria (3), S. Soto-Simental (3), A. Hernandez-Fuentes (3), J. Hernández-Chavez (4). (1) Universidad Autonoma del Estado de Hidalgo, Tulancingo, Hidalgo, Mexico; (2) Instituto Tecnologico de Celaya, Celaya-Guanajuato, Mexico; (3) Instituto de Ciencias Agropecuarias de la UAEH, Tulancingo, Hidalgo, Mexico; (4) Instituto Tecnologico de Sonora, Cd. Obregon Sonora, Mexico

211-P. CFW 56:A47
Effects of variable rate fermenting fibers on luminal and mucosa-associated microbiota in different segments of the large intestine. A. KAUR (1), B. Martin (1), P. Gillevet (2), J. Patterson (1), A. Keshavarzian (3), B. Hamaker (1). (1) Purdue University, West Lafayette, IN, U.S.A.; (2) George Mason University, West Lafayette, IN, U.S.A.; (3) Rush University Medical Center, Chicago, IL, U.S.A.

212-P. CFW 56:A41
Associating *Vigna unguiculata* phenotypes with composition of bioactive compounds. A. GAWDE (1), B. B. Singh (1), J. Ehlers (2), J. M. Awika (3). (1) Department of Soil & Crop Sciences, Texas A&M University, College Station, TX, U.S.A.; (2) Department of Soil & Crop Sciences, University of California, Riverside, CA, U.S.A.; (3) Texas A&M University, College Station, TX, U.S.A.

213-P. CFW 56:A44
Antimutagenic activity of desi chickpea (*Cicer arietinum* L.) cultivars grown in northwest of México. M. HEIRAS PALAZUELOS (1), M. Cano Campos (2), F. Delgado Vargas (2), J. Milán Carrillo (2), J. Garzón Tiznado (2), C. Reyes Moreno (2). (1) Universidad Autonoma de Sinaba, Culiacan, Sinaloa, Mexico; (2) Universidad Autonoma de Sinaloa, Culiacán, Sinaloa, Mexico

214-P. CFW 56:A44
Effect of processing on the antioxidant activity of genotypes of chickpea (*Cicer arietinum* L.) desi. M. Heiras Palazuelos (1), D. DOMINGUEZ ARISPURO (2), M. Cano Campos (2), F. Delgado Vargas (2), S. Mora Rochin (2), J. Milán Carrillo (2), C. Reyes Moreno

(2), J. Garzón Tiznado (2). (1) Universidad Autonoma de Sinaba, Culiacan, Sinaloa, Mexico; (2) Universidad Autonoma de Sinaloa, Culiacán, Sinaloa, Mexico

215-P. CFW 56:A56
Effect of extrusion on antioxidant capacity of two varieties of amaranth (*Amaranthus hypocondriacus*). A. MONTOYA-RODRÍGUEZ (1), C. Reyes-Moreno (1), R. Gutiérrez-Dorado (1), S. Mora-Rochín (1), J. Milán-Carrillo (1). (1) Universidad Autonoma de Sinaloa, Culiacan, Mexico

216-P. CFW 56:A42
Improving the functionality and bioactivity in wheat bran. M. GUO (1). (1) University of Minnesota, St. Paul, MN, U.S.A.

***217-P. CFW 56:A35**
A comparison of the literature on the association between intakes of bran, cereal fiber, and whole grains and risk of adiposity measures. S. CHO (1), L. Qi (2), G. Fahey (3), D. Klurfeld (4). (1) Nutra Source Inc., Clarksville, MD, U.S.A.; (2) Harvard School of Public Health, Boston, MA, U.S.A.; (3) University of Illinois, Urbana, IL, U.S.A.; (4) USDA ARS, Beltsville, MD, U.S.A.

***218-P. CFW 56:A48**
Interactional effects of beta-glucan, starch, and protein in cooked oat flour on viscosity and in vitro bile acid binding. H. KIM (1), P. J. White (1). (1) Iowa State University, Ames, IA, U.S.A.

219-P. WITHDRAWN

***220-P. CFW 56:A37**
Parameters that affect pasta cooking. E. DE LA PENA (1), F. A. Manthey (1). (1) North Dakota State University, Fargo, ND, U.S.A. (1) North Dakota State University, Fargo, ND, U.S.A.

***221-P. CFW 56:A58**
Characterization of roasted quinoa. M. B. OMARY (1), C. Onwulata (2), K. A. Rosentrater (2), A. Thomas-Gahring (2), J. Nguyen (3), M. B. Medina (4), M. Singh (5), P. H. Cooke (6). (1) California State University-Los Angeles, Riverside, CA, U.S.A.; (2) USDA-ARS, Wyndmoor, PA, U.S.A.; (3) Cal Poly Pomona University, Pomona, CA, U.S.A.; (4) ARS/USDA, Wyndmoor, PA, U.S.A.; (5) USDA ARS NCAUR, Peoria, IL, U.S.A.; (6) New Mexico State University, Las Cruces, NM, U.S.A.

***222-P. CFW 56:A59**
Improving the quality and shelf life of whole wheat bread. I. POVLSEN (1), J. Sigel (1), M. Philipsen (1). (1) Danisco, Brabrand, Denmark

***223-P. CFW 56:A67**
β-Glucan degradation by endogenous enzymes in wheat flour doughs with different moisture contents. A. VATANDOUST (1), S. Ragaee (1), S. Tosh (2), K. Seetharaman (1). (1) University of Guelph, Guelph, ON, Canada; (2) Agriculture & Agri-Food Canada, Guelph, ON, Canada

***224-P. CFW 56:A40**
Interaction of rising CO_2 and soil water availability on wheat grain quality: Results from a 3-year free air CO_2 enrichment experiment. N. D. FERNANDO (1), S. Seneweera (2), M. Tausz (3), J. Panozzo (4), R. Norton (5), G. Fitzgerald (4). (1) University of Melbourne, Horsham, Australia; (2) Department of Agriculture and Food Systems, Melbourne School of Land and Environment, The University of Melbourne, Horsham, Australia; (3) Department of Forest and Ecosystem Science, Melbourne School of Land and Environment, The University of Melbourne, Creswick, Australia; (4) Department of Primary Industries, Horsham, Australia; (5) International Plant Nutrition Institute, Horsham, Australia

***225-P. CFW 56:A57**
Soluble fiber fortification of breakfast cereals: Enhancing nutrient density and beneficial caloric intake. L. NIBA (1). (1) National Starch, Bridgewater, NJ, U.S.A.

***226-P. CFW 56:A50**
The feasibility of alkylresorcinol metabolites in urine spot samples as biomarkers of whole grain and cereal fiber intake in U.S. women. R. LANDBERG (1), M. K. Townsend (2), Q. Sun (3), D. Spiegelman (4), R. M. van Dam (5). (1) Swedish University of Agricultural Sciences, Uppsala, Sweden; (2) Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, U.S.A.; (3) Department of Nutrition, Harvard School of Public Health, Boston, MA, U.S.A.; (4) Department of Epidemiology, Harvard School of Public Health, Boston, MA, U.S.A.; (5) Department of Epidemiology, Public Health, and Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

***227-P. CFW 56:A31**
Phenolic levels and oxygen radical scavenging capacity of hybrid black rice samples. T. BETA (1), H. Zhang (1), Y. Qiu (1), Y. Shao (2), J. Bao (2). (1) University of Manitoba, Winnipeg, MB, Canada; (2) Zhejiang University, Hangzhou, Peoples Republic of China

***228-P. CFW 56:A28**
Utilization of high-fibre barley fractions in tortillas to reduce glycemic response and lipogenesis. N. AMES (1), C. Taylor (2), S. Harding (2). (1) Agriculture & Agri-Food Canada, Winnipeg, MB, Canada; (2) University of Manitoba, Winnipeg, MB, Canada

229-P. CFW 56:A28
Validating the health benefits of barley foods: Effect of processing on physiological properties of beta-glucan in test foods. N. AMES (1), S. Tosh (2). (1) Agriculture & Agri-Food Canada, Winnipeg, MB, Canada; (2) Agriculture & Agri-Food Canada, Guelph, ON, Canada

Ingredients and Costs

Scientific Initiative: Ingredients & Cost of Goods Sold

230-P. CFW 56:A54
Effect of the addition of different fat blends formulated using an artificial neural network on the rheological properties of wheat flour. A. L. Marangoni (1), D. Barrera-Arellano (1), C. J. STEEL (1). (1) University of Campinas, Campinas, SP, Brazil

231-P. CFW 56:A65
Functional properties of flour from European lymegrass (*Leymus arenarius*). M. SJOO (1). (1) Department of Food Technology, Engineering and Nutrition, Lund University, Lund, Sweden

232-P. CFW 56:A36
Evaluation of whey protein and fiber on the physical properties of high-ratio cakes. S. CROPPER (1), K. Probst (1), J. Faubion (1), H. Dogan (1). (1) Kansas State University, Manhattan, KS, U.S.A.

233-P. CFW 56:A65
Development of consumer acceptable new gluten-free tortilla: Nutritionally balanced with good sensorial characteristics. V. STOJCESKA (1), A. Cardwell (1), H. Stout (1), N. Brooks (1). (1) Manchester Metropolitan University, Manchester, United Kingdom

*__234-P. CFW 56:A57__
Functionality of whey as gluten-free bread ingredient. A. Nuria (1), B. MINARRO (1), B. Guamis (1), E. Albanell (1), M. Capellas (1). (1) Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain

*__235-P. CFW 56:A32__
Effect of sorghum bran particle size in gluten-free muffins. S. E. BOSWELL (1), J. Lindsay (1), C. M. McDonough (1), L. W. Rooney (1). (1) Texas A&M University, College Station, TX, U.S.A.

*__236-P. CFW 56:A41__
Establishing a cause-and-effect relationship between wheat protein functionality, wheat variety, and protein extraction process. S. FREDERIX (1), V. Paltousova (1), L. Baron (1), A. Wagner (1). (1) Tereos Syral, Aalst, Belgium

*__237-P. CFW 56:A54__
Effects of flour milling methods on the compositional, functional, and physical properties of whole and split yellow pea (*Pisum sativum*) flour. H. MASKUS (1), L. Bourré (1), L. Malcolmson (1). (1) Canadian International Grains Institute, Winnipeg, MB, Canada

*__238-P. CFW 56:A62__
Effect of the addition of pregelatinized rice flour and modified albumin on the technological properties of fettuccini-type rice fresh pasta. G. A. Sehn (1), M. S. Fernandes (1), M. VERNAZA LEORO (1), Y. K. Chang (1), C. S. Steel (1). (1) UNICAMP, Campinas, SP, Brazil

*__239-P. CFW 56:A30__
Influence of fat content and maltogenic amylase addition on pound cake specific volume, firmness, and porosity parameters. N. S. Bedoya Perales (1), C. J. STEEL (1). (1) University of Campinas, Campinas, SP, Brazil

*__240-P. CFW 56:A53__
Application of enzymatically treated corn starch in breakfast cereal coating. C. R. LUCKETT (1), Y. Wang (1). (1) University of Arkansas, Fayetteville, AR, U.S.A.

*__241-P. CFW 56:A64__
Starch granules used for Pickering emulsions. M. SJOO (1), A. Timgren (1), M. Rayner (1). (1) Department of Food Technology, Engineering and Nutrition, Lund University, Lund, Sweden

China Delegation Posters

Screening of nutritive whole grains with high antioxidant activity by in vitro simulated digestion. L. Gong (1), Y. Zhang (1). (1) Department of Food Science and Nutrition, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, Zhejiang Province, Peoples Republic of China

Separation of starch-protein agglomerates from broken rice by microfluidization treatment and amylase. Q. Gong (1), N. Xia (1,2), X.-Q. Yang (1). (1) College of Light Industry and Food Sciences, South China University of Technology, Guangzhou, Peoples Republic of China; (2) Department of Light Industry and Food Engineering, Guangxi University, Nanning, Peoples Republic of China

Techniques optimization of combined enzymatic hydrolysis on brewers' spent grain from Novozymes. Z. Li (1), J. Yan (1), G. Quan (1), C. Ding (1). (1) School of Chemical and Biological Engineering, Yancheng Institute of Technology, Jiangsu Yancheng,

Comparison study of the *japonica* restorer line m119 with high protein content on protein components and microstructure. F. Wang (1), Y. Ding (1), Z. Hua (1). (1) College of Food Engineering and Biotechnology, Tianjin University of Science & Technology, Tianjin, Peoples Republic of China

Characterization of odor-active compounds of various cherry wines by GC-MS and GC-O and their correlation with sensory attributes. Z. Xiao (1), R. Zhou (1), Y. Niu (1). (1) School of Perfume and Aroma Technology, Shanghai Institute of Technology, Shanghai, Peoples Republic of China

Stereoisomeric separation of whiskey lactone by packed column supercritical CO_2 fluid chromatography. J. Xie (1), H. Han (1), H. Zeng (1), L. Sun (1), B. Sun (1). (1) Beijing Key Laboratory of Flavor Chemistry, Beijing Technology and Business University, Beijing, Peoples Republic of China

Volatiles analysis on slurry of salted wild Chinese chive flowers by solvent-assisted flavor evaporation and gas chromatography-mass spectrometry. M.-Y. Yang (1), F.-P. Zheng (1), Y. Duan (1), J.-C. Xie (1,2), M.-Q. Huang (1,2), T.-L. Ren (1), B.-G. Sun (1,2). (1) Beijing Key Laboratory of Flavor Chemistry, Beijing Technology and Business University, Beijing, Peoples Republic of China; (2) Beijing Higher Institution Engineering Research Center of Food Additives and Ingredients, Beijing Technology and Business University, Beijing, Peoples Republic of China

Study on flour and flour-based product colors of wheat *Wx* near-isogenic lines in two different genetic backgrounds. X. Zhang (1), T.-D. Bie (1), S.-H. Cheng (1). (1) Lixiahe Region Institute of Agricultural Sciences/Yangzhou Sub-center of National Wheat Improvement, Yangzhou

Total antioxidant capacity and content of phenolic compounds in Tibetan hull-less barley (*Hordeum vulgare* L.) by polishing method. Y. Zhang (1), L. Gong (1), L. Wu (1), X. Wu (1). (1) Department of Food Science and Nutrition, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, Zhejiang Province, Peoples Republic of China

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2011 AACC International Awardees

Congratulations to the following members selected to receive AACC International awards in honor of their significant contributions to the field of grain science. You are invited to the Opening General Session and Awards Ceremony on October 16, 2011, to celebrate their accomplishments. Lecture times for the individual awards are noted below.

AACC International Fellows

The AACC International Board of Directors established a Fellows Program in 1985 to honor association members who have made distinguished contributions to the field of cereal science and technology in research, industrial achievement, leadership, education, administration, communication, or regulatory affairs. Anyone who has been a member for at least 10 years and made such a contribution is eligible.

Hamed Faridi is vice president of Research & Development and a corporate officer of McCormick & Company, Inc. He leads a global team of scientists and technicians responsible for research, product development, and technical services to support the company's business plans worldwide. Faridi is responsible for the McCormick Science Institute (MSI), which was created to advance knowledge of the health benefits of culinary spices and herbs. Prior to joining McCormick & Company in 1997, he served on the faculty of Washington State University and held R&D executive positions at Nabisco (now a unit of Kraft). Faridi has edited and authored six books and more than 70 articles on food science and technology. He has served on several boards of professional and trade associations in the United States and Europe and has acted in an advisory capacity to the food science departments of Texas A&M, University of Illinois, Rutgers University, and Louisiana State University. Faridi is the past president of AACC International and of the Flavor & Extract Manufacturers Association (FEMA) and currently serves on the Board of Governors of FEMA. He is a member of the Board of Directors of St. Joseph Medical Center in Towson, Maryland, United States, as well as the Tai Sophia Institute for the Healing Arts in Laurel, Maryland.

Gary Fulcher is professor and head, Department of Food Science, University of Manitoba, in Winnipeg, Manitoba, Canada. Following 12 years as research scientist and research coordinator for grains and oilseeds in Agriculture & Agri-Food Canada, from 1989 to 2005, Fulcher was the inaugural holder of the General Mills Chair in Cereal Chemistry and Technology in the Department of Food Science and Nutrition, University of Minnesota, St. Paul, Minnesota, United States. He is a member of a number of scientific organizations, including AACC International, American Chemical Society, American Association for the Advancement of Science, Institute of Food Technologists, and Canadian Institute of Food Science and Technology, among several others. He has published a substantial number of refereed papers, book chapters, patents, reviews, and critical reports, and he is a fellow of the American College of Nutrition. He is also the recipient of the AACC International Northwest Section William F. Geddes Memorial Lectureship and of a Lifetime Achievement Award from the American Oil Chemists Society. Fulcher's research is focused primarily on structure/function relationships in foods and biological systems. His primary teaching responsibilities focus on food product development.

Edith A. Christensen Award for Outstanding Contributions in Analytical Methodology

Established in 2005, this award and $1,500 honorarium recognizes scientific and technical contributions that have advanced the grain science field. Recipients of the award have demonstrated excellence through their contributions to the development of new analytical technologies, the application of new analytical technologies to cereal grain products, and/or the application of existing analytical technologies to solving detection and measurement problems in the field of grain science. They have also demonstrated leadership in methods activity within AACC International.

Janette Gelroth currently serves as lab manager for the Analytical Services Laboratory at AIB International in Manhattan, Kansas, United States, where she performs flour and ingredient testing and food allergen analyses. Prior to this position, she worked with Gur Ranhotra at AIB investigating the nutritional value of grain-based products. She received her B.A. degree in chemistry from Bethany College, Lindsborg, Kansas, and her M.S. degree in chemistry from Kansas State University, Manhattan, Kansas. Gelroth joined AACC in 1979 and soon after became involved in its Technical Committees. As cochair of the Minerals and Trace Elements Committee, she coordinated collaborative studies that led to the development of two AACC International methods, and she has participated as a collaborator for a number of other studies. She was actively involved in the methods review process leading to publication of both the 9th and 10th editions of the *AACC International Approved Methods of Analysis*. Additional committees on which she has served include Dietary Fiber and Other Carbohydrates; Methods for Grain and Flour Testing; Oils, Sugars, and Other Ingredients; Biotechnology Methods; Ingredient Quality; and Check Sample. As a 22-year member or *ex-officio* member of the Approved Methods Committee, she served under five AACC Intl. Approved Methods Committee chairs.

Excellence in Teaching Award

The AACC International Excellence in Teaching Award is presented to a member and teacher who has made significant contributions through teaching in the broad field of cereal science and technology. The award consists of a $1,500 honorarium and plaque.

Jon Faubion is the Charles Singleton professor of baking science in the Department of Grain Science, Kansas State University. Over his 30+ year career, he has had the sole or shared responsibility for teaching nine different cereal or food science courses at Texas A&M University, the University of Minnesota, and Kansas State University. He is the author or coauthor of 82 refereed journal articles and nine book chapters and has advised or coadvised 38 M.S. and Ph.D. students. In addition to teaching and directing research, he serves as graduate research director and undergraduate scholarship chair for the department. He is a senior editor of *Cereal Chemistry*, an associate editor of the *Journal of the Science of Food and Agriculture*, and currently a member of AACC International's Professional Development Panel and Publications Panel. He is a past recipient of both the AACC International Northwest Section William F. Geddes Memorial Lectureship and the AACC International Rheology Division George W. Scott Blair Award. Prior to rejoining the department faculty in 2005, he directed the Applied Technology and Sensory Science Groups for the research and development arm of The Schwan Food Company.

William F. Geddes Memorial Award

The William F. Geddes Memorial Award was created in 1961 to honor the zeal and unselfish industry of an individual member and emphasize the importance of his or her contributions to the work of the association. Geddes served the association long and unselfishly as president (1938–1939), vice president (1937–1938), editor-in-chief of Cereal Chemistry *(1943–1961), active member, and committee member. Over the long span of his association with AACC International, Geddes influenced the organization in many ways, contributing to its work and progress, increasing its usefulness to its members, and boosting its reputation in the fields of fundamental and applied cereal science.*

2010 Recipient: Barbara B. Heidolph, ICL Performance Products LP

2011 Recipient: *The name of the recipient is kept secret until unveiled during the Awards Ceremony.*

Phil Williams Applied Research Award

Established in 2005, the AACC International Phil Williams Applied Research Award is presented to an individual or team for their significant body of distinguished contributions to the application of science in the cereals area. The award consists of a $2,000 honorarium and a plaque. Recipients of the Phil Williams Applied Research Award are also accorded the status of AACC International fellow for their contributions leading to this award. Awardees will have the opportunity to present a lecture during an annual meeting of the association.

Matthew Morell became theme leader of future grains, grain-based foods and feed, in the Food Futures Flagship in 2006 to lead in the development of novel high-value grains and oilseeds. Morell brings to his role extensive expertise in grains and starch research together with a breadth of experience and knowledge of the Australian and international grain food industries. Morell leads the research team investigating the application of genetics to create differentiated grain, food, and aquaculture products. Morell grew up amidst wheat production in Wagga Wagga, NSW, Australia. After three years of post-doctoral work in the United States, Morell moved to the Australian National University, where he worked on understanding fundamental processes involved in the conversion of carbon dioxide into sugars during photosynthesis. In 1994, he returned to research on starch biosynthesis in wheat, in projects cofunded by the Cooperative Research Centre (CRC) for Plant Science and industrial partners. In 1997, he joined CSIRO Plant Industry to continue this research and headed to the Division's Cereal Quality Improvement research program. Morell's work has led to publication in high-impact journals, patents, a spin-off company, and a number of research alliance projects with major industry partners.

This year's award lecture, "The new cereal value chain: From seed to sewer," will take place on Tuesday, October 18 at 8:30 a.m. during the New Technologies in Nutrition Session in Pasedena, R.

Young Scientist Research Award

Established in 2006, the AACC International Young Scientist Research Award is presented to an individual for outstanding contributions in basic and applied research to cereal science with the expectation that contributions will continue. This award recognizes research relevant to the broad aims and interests of AACC International. Awardees must not be older than 40 years by June 1 of the year the award is given. The recipient will receive a $1,000 honorarium and a plaque and will be encouraged to present a lecture at the AACC International meeting of the year in which the award is given.

Jinsong Bao joined AACC International in 2006. He is currently a professor in the Institute of Nuclear Agricultural Sciences at Zhejiang University, Hangzhou, China. He received his B.S. (1993) and M.S. (1996) degrees in horticulture from Zhejiang Agricultural University and his Ph.D. degree in biophysics from Zhejiang University in 1999. His research interests are in molecular genetics of rice quality, more specifically in the areas of starch quality, nutritional quality, genetic mapping, and molecular breeding. His current research projects are new markers for the SSIIa gene and their relation to gelatinization temperature, candidate gene mapping for rice quality and yield, and molecular breeding of new rice high in nutraceutical properties and health benefits. He has published more than 50 peer-reviewed research articles and three book chapters in these areas and has received two professional awards for his achievements in the genetic study and molecular improvement of rice quality from Zhejiang Provincial Government. He has traveled and worked extensively in Hong Kong and the United States. He teaches undergraduate and graduate courses in mutational genetics and in developmental biology in plants. He is a member of the Editorial Board of the *Chinese Journal of Nuclear Agricultural Science*.

This year's award lecture, "Toward understanding the genetic and molecular bases of rice quality," will take place on Tuesday, October 18 at 10:40 a.m. during the Biotechnology and Sustainability Session in Pasedena, R.

Nominate Your Colleagues for 2012 AACC International Awards

The call is now being made for 2012 AACC Intl. award nominations to be presented in Hollywood, Florida at the 2012 AACC Intl. Annual Meeting. Nominations must be submitted on or before January 1, 2012. Make sure to review the full list of the awards being given on AACC*net*, as well as complete instructions and guidelines for submitting an award nomination along with lists of previous winner. Contact Linda Schmitt at lschmitt@scisoc.org with questions.

Analytical Accuracy Awards for 2010 Announced

Winners of AACC International's Analytical Accuracy Awards, based on 2010 check sample results, have been announced. This is the 12th such set of awards to be made since the AACC Intl. Check Sample Committee approved it 13 years ago. Winners have received certificates suitable for posting and will be listed in the AACC Intl. Annual Meeting program.

All subscribers to the various AACC Intl. Check Sample series that include a proficiency testing option are eligible provided they have met the requirements for submission of results for the year involved. For each series, the award is made to the laboratory submitting the most accurate analyses. The statistical procedures used to select awardees are the same as those used to evaluate proficiency for other purposes. Awards are based primarily on the required analyses in each series. Analyses that are optional for proficiency test purposes are included, if they improve the score, to encourage subscribers to include the results of optional analyses in their reports.

Series included in the 2010 awards are those shown in the list of awardees. Other AACC Intl. Check Sample series for which the proficiency testing option is not now available may be added later as the number of subscribers and coefficient of variation of results warrant.

Formal entry for award competition is not necessary—all check sample subscribers to a given series are automatically eligible and entered provided they have submitted the required results on all samples for the award year. However, the same considerations apply to the Analytical Accuracy Awards as to other achievement awards. Because there can be only one winner in any category and consideration is limited to those who have subscribed for the full year and submitted all required results, the results speak only to the performance of the awardees' analyst or laboratory and not to that of many others who may be equally qualified.

Check sample subscribers or others who would like more information about the AACC Intl. Check Sample and Proficiency Testing Service are invited to visit www.aaccnet.org/checksample.

Series A—Hard Wheat Flour, Monthly
Bay State Milling Company, Mooresville, NC, U.S.A.

Series B—Hard Wheat Flour, Bimonthly
Kerry Flour Mills Ltd., Samutprakarn, Thailand

Series C—Soft Wheat Flour
Nisshin Flour Mfg., Tokyo, Japan

Series D—Feed Analyses
Analytical Feed and Food Laboratories, Fresno, CA, U.S.A.

Series DF—Dietary Fiber
Silliker Inc., Chicago Heights, IL, U.S.A.

Series HL and HS—Farinograph
AIB International, Manhattan, KS, U.S.A.

Series I—Amylograph
Canadian International Grains Institute, Winnipeg, MB, Canada

Series J—Mixograph
South African Grain Laboratory, Pretoria, South Africa

Series K—Fat and Fatty Acids
Covance Laboratories, Madison, WI, U.S.A.

Series MBA—Microbiological Analyses (Including Pathogens)
Covance Laboratories, Madison, WI, U.S.A.

Series MBB—Microbiological Analyses
Sara Lee, Tarboro, NC, U.S.A.

Series SA—HPLC Sugar Analysis
Land O'Lakes Inc., St. Paul, MN, U.S.A.

Series VMP—Vitamin Analyses
Silliker Canada Co., Markham, ON, Canada

Series VMP—Mineral Analyses
Covance Laboratories, Madison, WI, U.S.A.

Series VMP—Proximate and Vitamin Analyses
General Mills, Minneapolis, MN, U.S.A.

Series VMP—Proximate and Mineral Analyses
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Volunteers—Making a Difference

Volunteering to serve on an AACC International committee provides opportunities to gain skills and experience as well as the chance to give something back to the grains community. If you are interested in serving on a committee, please contact Linda Schmitt at lschmitt@scisoc.org or at +1.651.994.3828 or visit www.aaccnet.org. AACC International thanks the following volunteers who served on AACC International's committees; your dedication is deeply appreciated!

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2011 Annual Meeting Technical Program Planning Committee: Chair: Deirdre Ortiz. **Vice Chair:** Art Bettge. **Scientific Initiative Track Chairs:** Elizabeth Arndt, Sean Finnie, Brinda Govindarajan, Dirk Maier, John Mathew, Koushik Seetharaman, Baninder Sroan.

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Edith A. Christensen Award: Chair: Phil Williams. **Members:** Jonathan DeVries, Charles Gaines, Barry McCleary.

Excellence in Teaching Award: Chair: James BeMiller. **Members:** Dilek Austin, Hamit Koksel, Steven Mulvaney, Debi E. Rogers.

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Geddes Memorial Award: Chair: William Atwell. **Members:** Filip Arnaut, Stuart Craig, Steven Nelson.

Nomination: Chair: James Dexter. **Members:** Bernie Bruinsma, Mary Ellen Camire, Ravi Chibbar, Gerard Downey, Hamed Faridi, Ellen Gay, David Mauro, Craig Morris, Perry K.W. Ng. **Staff:** Susan Kohn, Linda Schmitt.

Osborne Medal Award: Chair: David Lineback. **Members:** Peter Koehler, Peter Shewry, Louise Slade.

Phil Williams Applied Research Award: Chair: David Lineback. **Members:** Peter Koehler, Peter Shewry, Louise Slade.

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Young Scientist Research Award: Chair: Samuel Millar. **Members:** Christophe Courtin, Chunjian Lin, Kaisa Poutanen, Mukti Singh.

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***Cereal Foods World*: Executive Editor:** Jody Grider. **Managing Editor:** Jordana Anker.

Technical Committees

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Check Sample: Chair: John MacDonald. **Members:** Deann Akins-Lewenthal, Andreia Bianchini, Rangan Chinnaswamy, Janette Gelroth, Stephanie Kochan, Tom McKamey, Wayne Moore, Terry Nelsen, David Nelson, Terry Selleck. **Ex-officio:** Rodney Booth, Anne Bridges, Gina Clapper.

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Experimental Milling: Chair: Polamreddy V. Reddy. **Members:** Scott Baker, Nelly Boinot, Richard Chen, Arnaud Dubat, James Elkins, Diane Gannon, Bon Lee, Chunjian Lin, Ron Lindgren, Mariano Loza, Yufeng Mao, Gerhard Pickelmann, James Schuh, Thorne Seese.

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Oat and Barley Products: Chair: Nancy Ames. **Members:** Elsayed Abdelaal, William Bonner, F. William Collins, Jonathan DeVries, Douglas Doehlert, D. Scott Dumler, Ruedi Duss, Christine Fastnaught, Kelly Henderson, Alan Koechner, Padmanaban Krishnan, William Liska, Barry McCleary, Kristin Nelson, Clarence Newman, Hannu Salovaara, Susan Tosh, Francis Webster, Shyh-Jaung Yen.

continued

Pasta Products Analysis: Chair: Michael Sissons. **Member:** Clara Fares, Bin Fu, Ann Heider, Hamit Koksel, Frank Manthey, Hideki Okusu, Linda Schlichting, Elaine Sopiwnyk.

Physical Testing Methods: Chair: Elaine Sopiwnyk. **Members:** Bo Allvin, Scott Baker, Mark Bason, Johan Bjurenvall, Nelly Boinot, Stanley Cauvain, Rangan Chinnaswamy, Paul Cliffe, Clyde Don, Arnaud Dubat, Barbara Heidolph, Salvatore Iaquez, Mark Ingelin, Wayne Moore, Micahel Pate, Jan Perten, Debi Rogers, Paolo Santangelo, Rich Thoma.

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2010: B. McCleary

** Decease*

Note: Presidential terms run from annual meeting to annual meeting. Year listed is year term began.

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- New technical tools to support industry standards will be available.
- AACC*net* will transform with a complete makeover—putting science at the forefront and becoming your portal to key grain science information.

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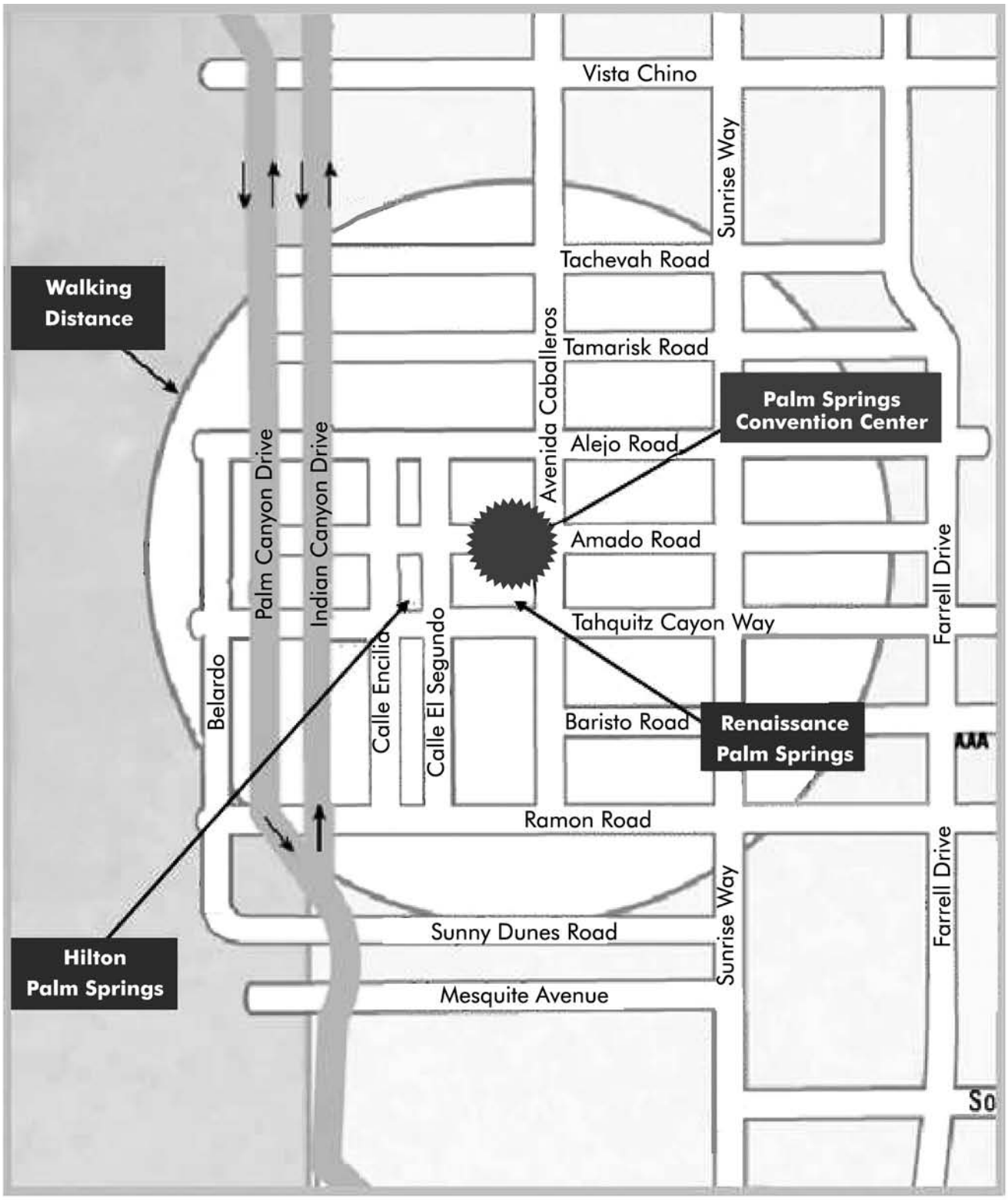

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Palm Springs, CA 92262

Renaissance Palm Springs Hotel
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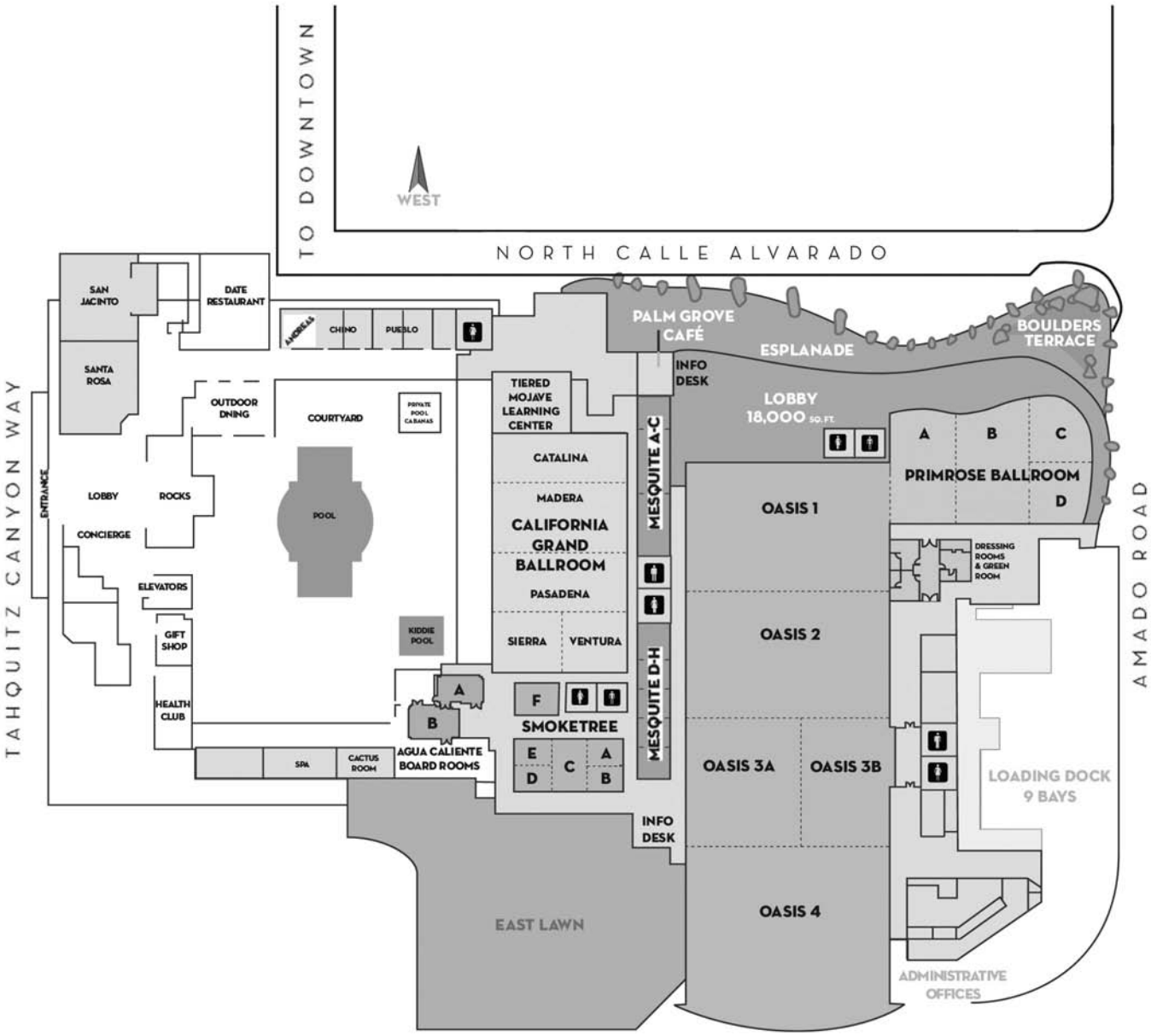
Palm Springs, CA 92262

Hilton Palm Springs
400 East Tahquitz Canyon Way
Palm Springs, CA 92262

Renaissance and Palm Springs Convention Center Meeting Space



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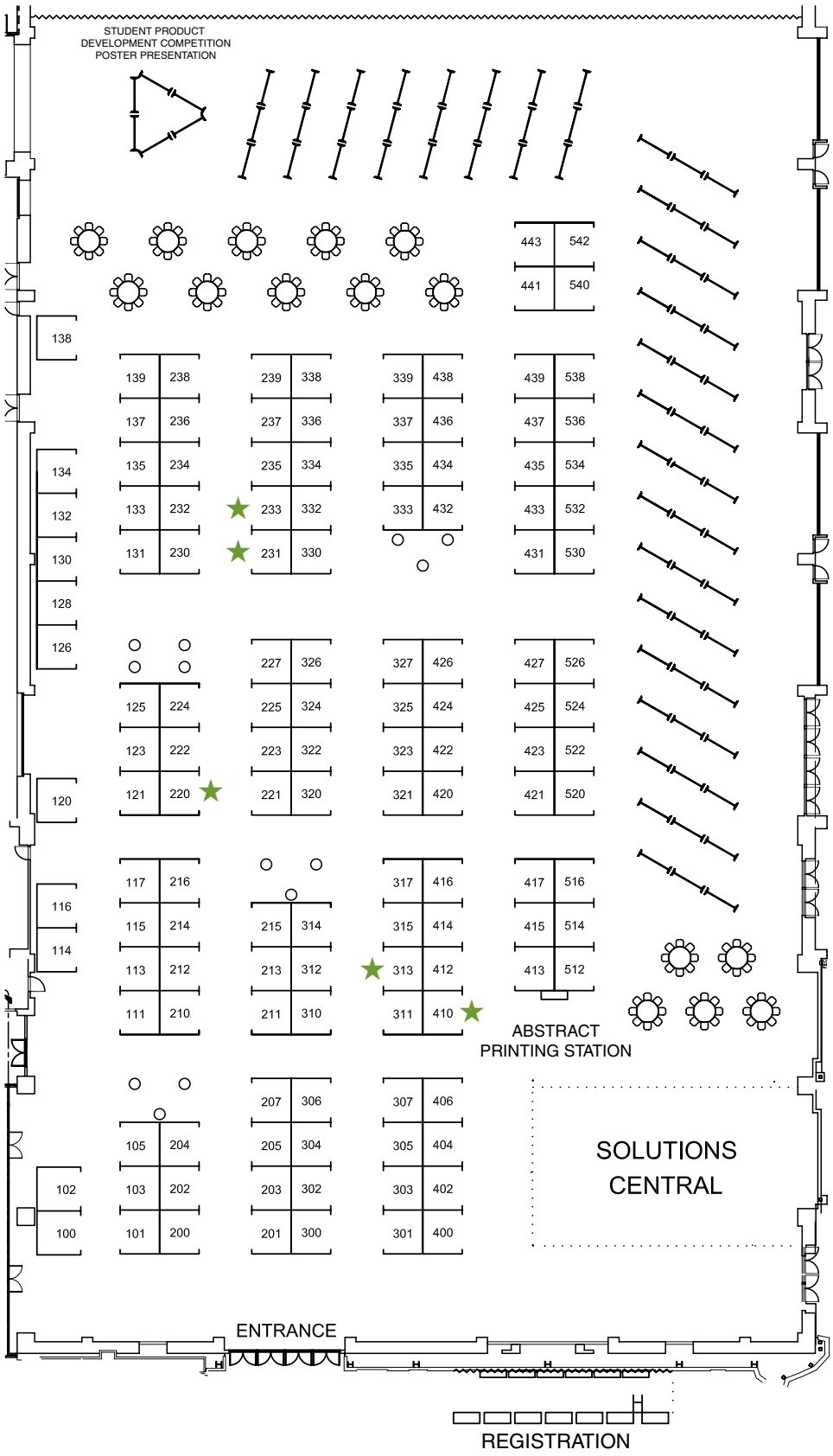
EXHIBITION

Palm Springs Convention Center • Exhibit Hall Floor Plan



Stop by these booths for exhibit-sponsored prize drawings on Monday and Tuesday!

Must be present to win.

★ Prize drawing booth

313	Arla Foods
233	FONA
410	Megazyme
220	MGP Ingredients
231	Palsgaard

2011 AACC International Annual Meeting Exhibition

Visit the 2011 Annual Meeting Exhibition to discover the latest projects and services that advance the work of the industry.

To help you plan your time with the exhibitors and find your desired products and services, please use the following descriptions supplied directly from the exhibiting company. Exhibitors reserving space after this section had gone to press are listed in your Program Addendum.

Exhibit Hours

Sunday, October 16	5:30 – 7:30 p.m.	Grand Opening Exhibition
Monday, October 17	4:00 – 7:00 p.m.	Exhibits with Beer and Poster Viewing
Tuesday, October 18	12:00 – 2:15 p.m.	Lunch with the Exhibitors amd Poster Viewing

* AACC International Corporate Member
† Participant in Supplier Innovation Session

Alphabetical Listing of Exhibitors

131* **AB Mauri**, 1350 Timberlake Manor Pkwy., Chesterfield, MO 63017, U.S.A.; Telephone: +1.314.392.0800; Fax: +1.314.392.0865; Web: www.abmf.com. AB Mauri Fleischmann's, a global leader in yeast and bakery ingredient products, offers an extensive line of quality yeast and bakery ingredients, including dough improvers, leaveners, tablets, mold inhibitors, vinegars and acidulants, syrups and malts, and specialty products.

207* **ADM**, 4666 E Faries Pkwy., Decatur, IL 62526, U.S.A.; Telephone: +1.217.424.5200; Web: www.adm.com. ADM connects the harvest to the home and provides the food industry with high-quality ingredients–made from corn, oilseeds, wheat, and cocoa–and unparalleled technical assistance. Our lecithins, flours, specialty milled products, specialty baking products, dry sweeteners, wheat glutens, isolates, and starches are ideal for a variety of food applications.

205* **ADM/Matsutani, LLC**, 500 Park Blvd., Suite 1240, Itasca, IL 60143, U.S.A.; Telephone: +1.630.250.8720; Fax: +1.630.250.8725; Web: www.fibersol2.com. Fibersol-2, digestion-resistant maltodextrin, is source of high fiber (90% min. DSB) with beneficial physiological properties supported by plentiful studies. It increases fiber content and nutritional value of virtually any food without adding taste. And its rapid dispersion, high solubility, and stability make it easy to incorporate into any formulation.

333* **AIB International**, P.O. Box 3999, 1213 Bakers Way, Manhattan, KS 66505-3999, U.S.A.; Telephone: +1.785.437.4750 or 1.800.633.5137; Fax: +1.785.537.1493; Web: www.aibonline.org. AIB International can solve your real-world problems. Consulting for production and quality issues. Ingredient testing. Formula optimization for maximum performance. Product development or improvement. Commercial feasibility assessments. Audits of ingredient and finished-product quality. In-plant audits of processes and product quality. Assistance with commercial start-ups. One-of-a-kind Baking Science and Technology Course.

307*† **ANKOM Technology**, 2052 O'Neil Road, Macedon, NY 14502, U.S.A.; Telephone: +1.315.986.8090; Fax: +1.315.986.8091; Web: www.ankom.com. ANKOM Technology manufactures and markets analytical instrumentation for the food and feed industries. ANKOM presents the automated ANKOM (TDF) dietary fiber analyzer. Shipments to the United States begin late December 2011. International sales began during the first quarter 2010. Talk to us about fat extraction, yeast activity, and dough-rising measurements as well.

313*† ◊ **Arla Foods Ingredients**, 645 Martinsville Road, Basking Ridge, NJ 07920-0624, U.S.A.; Telephone: +1.908.604.8551; Fax: +1.908.604.9310; Web: www.arlafoodsingredients.com. AFI provides natural dairy protein solutions for all bakery applications, including egg alternatives, NFDM replacement, nutritional improvements, cost optimization, and price stability. Technical support is available from benchtop to production. Successfully used in cakes, muffins, cookies, donuts, waffles/pancake,s and many other bakery applications. New solutions for gluten-free applications are also available.

115* **Baker Perkins Inc.**, 3223 Kraft Avenue SE, Grand Rapids, MI 49512-2027, U.S.A.; Telephone: +1.616.784.3111; Fax: +1.616.784.0973; Web: www.bakerperkinsgroup.com. Baker Perkins supplies unit machines and complete systems for virtually every kind of breakfast cereal, as well as for the snack, cookie, cracker, and other grain-based food industries. Proven process technology is fully supported by an Innovation Centre for new product development and a full range of aftermarket services.

114*† ◊ **Bepex International, LLC**, 333 NE Taft Street, Minneapolis, MN 55413, U.S.A.; Telephone: +1.612.331.4370; Fax: +1.612.624.1444; Web: www.bepex.com. For more than 100 years, Bepex has provided custom-designed systems, industrial process equipment, and process development services. With unique expertise in thermal processing, fine milling, agglomeration, and fine-particle coating technologies, we support the whole grains, fiber inclusion, and natural product functionality requirements demanded by today's cereal industry.

336 **Best Cooking Pulses, Inc.**, 124 10th Street, N.E., Portage la Prairie, MB, R1N 1B5, Canada; Telephone: +1.204.857.4451; Fax: +1.204.239.6835; Web: www.bestcookingpulses.com. Family-owned Canadian agrifoods company active in the international pulse trade since 1936. Uses proprietary technology to mill varietal-specific Best pulse flours (whole/split pea, chickpea, lentil), pea fiber, and roasted split peas. Gluten free (<5 ppm), natural, organic, kosher, sustainable world.

120* **BIPEA**, 6 - 14 avenue Louis Roche, Gennevilliers 92230, France; Telephone: +00.33.1.47.33.54.60; Fax: +00.33.1.47.86.92.59; Web: www.bipea.org. Founded in 1970 by the cereal industry, Bipea is the first French organizer of interlaboratory comparisons to be accredited. Participation to our proficiency-testing schemes is open to both private and public laboratories. Creator of homogeneous samples, we evaluate the performance of laboratories thanks to an in-house statistical treatment. Nowadays, our nonprofit organization has more than 1,220 laboratories in 62 different countries.

311 **Blue Diamond Growers**, 1802 C Street, Sacramento, CA 95812, U.S.A.; Telephone: +1.916.442.0771; Fax: +1.916.446.8422; Web: www.bluediamond.com. Blue Diamond Growers, established in 1910, is the world's largest processor and marketer of almonds. The Blue Diamond brand is known for quality and service in more than 90 countries. Our industrial products include in-shell, brown, and manufactured almonds—in a variety of forms for applications across confectionery, bakery, dairy, and snacking.

201* **Brabender® GmbH & Co. KG**, Kulturstr. 51-55, Duisburg 47055, Germany; Telephone: +49(0)203.7788.0; Fax: +49(0)203.7788.102; Web: www.brabender.com. Brabender® GmbH is the worldwide leading manufacturer of instrumentation for testing physical properties and quality of materials utilized in the food industry. From sample preparation and R&D to evaluation, quality control, and production, Brabender® GmbH is…where quality is measured.

431* **Briess Malt & Ingredients Company**, 625 South Irish Road, P.O. Box 229, Chilton, WI 53014, U.S.A.; Telephone: +1.920.849.7711; Fax: +1.920.849.4277; Web: www.Briess.com. Made in the United States, all-natural value-added ingredients from Briess improve a wide range of foods while helping achieve clean labels and natural, healthy label claims. Ingredient categories include malt extracts, brown and tapioca syrups, cocoa replacers, precooked grains, roasted grains, and malted barley flours and grits. Organic available.

117 **Brolite Products**, 1900 S. Park Avenue, Streamwood, IL 60107, U.S.A.; Telephone: +1.630.830.0340; Fax: +1.630.830.0356; Web: www.bakewithbrolite.com. Since its founding in 1928, Brolite Products has been supplying the baking industry with quality functional ingredients. Brolite offers a unique blend of old-world skill and cutting-edge technology. Let Brolite offer you solutions, whether you need dough improvers, grain blends, sours and cultured products, specialty items, or bases and concentrates.

222* **Brookfield Engineering Laboratories, Inc.**, 11 Commerce Blvd., Middleboro, MA 02346, U.S.A.; Telephone: +1.508.946.6200; Fax: +1.508.946.6262; Web: www.brookfieldengineering.com. Brookfield is the world's leading manufacturer of viscometers for laboratory and online process measurement and control. Brookfield also offers solutions for both texture analysis and powder flow applications in the form of our low-cost CT3 texture analyzer and PFT powder flow tester.

103 **Bruker Optics**, 19 Fortune Drive, Billerica, MA 01821, U.S.A.; Telephone: +1.978.439.9899; Fax: +1.978.667.3954; Web: www.brukeroptics.com. Bruker's TD-NMR analyzers and near infrared (NIR) spectrometers can be used for the research and development and quality and process control of grains. Determine multiple parameters using our nondestructive and rapid spectroscopy techniques; without using any consumables. www.bruker.com/foodquality.

520 **Buhler Inc.**, 13105 12th Avenue N., Plymouth, MN 55441, U.S.A.; Telephone: +1.763.847.9900; Fax: +1.763.847.9911; Web: www.buhlergroup.com. Buhler is your global technology partner for the food industry. We are a market leader in technologies for grain milling, grain handling, brewing/malting, color sorting, chocolate/cocoa and nuts, pasta, extrusion systems, and nanotechnology. With 150 years of grain-processing experience, we have the knowledge to be your solution provider.

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404* **Bunge Milling**, 11720 Borman Drive, St. Louis, MO 63146-1000, U.S.A.; Telephone: 1.800.528.4633; Fax: +1.314.292.2333; Web: www.bungenorthamerica.com. Bunge Milling, the leading corn dry miller in the world, offers unparalleled value, quality, and service. As part of Bunge North America, a leading agribusiness company, Bunge Milling has access to vast resources and expertise in processing, logistics, commodity markets, and risk management tools. It is our commitment to innovation and our collaborative partnerships with the food and beverage manufactures of America's favorite brands that are the hallmarks of our success.

402 **Bunge Oils**, 725 North Kinzie Avenue, Bradley, IL 60915, U.S.A.; Telephone: +1.314.292.2000; Web: www.bungenorthamerica.com. Bunge Oils transforms commodity oils into value-added food ingredients for restaurants, bakeries, and food producers. Bunge Oils' products are sold in markets that reach consumers everywhere, every day.

320* **Butter Buds Food Ingredients**, 2330 Chicory Road, Racine, WI 53403, U.S.A.; Telephone: 1.800.426.1119; Fax: +1.262.598.9999; Web: www.bbuds.com. We use proprietary enzyme modification technology to "unlock" the potent flavor elements in butter, cream, cheese, and other flavorful fats, delivering highly concentrated natural flavor in convenient powdered, paste, and liquid form. These natural dairy concentrates are used at extremely low applications levels, easy to use and stable in price. They allow the production of better tasting, more economical, healthier foods with very clean label statements. Organic

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300* **C.W. Brabender® Instruments, Inc.**, 50 E. Wesley Street, South Hackensack, NJ 07606, U.S.A.; Telephone: +1.201.343.8425; Fax: +1.201.343.0608; Web: www.cwbrabender.com. For more than 88 years C.W. Brabender® Instruments, Inc., has been the leading manufacturer of instrumentation designed for testing physical properties and quality of various materials utilized within the food industry. For sample preparation and R&D to evaluation, quality control, and production, C.W. Brabender® is…where quality is measured.

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412* **Calibre Control International Ltd.**, Asher Court, Lyncastle Way, Appleton, Warrington WA4 4ST, United Kingdom; Telephone: +44.1925.860401; Fax: +44.1925.860402; Web: www.calibrecontrol.com. Calibre will be demonstrating the popular C-Cell instrument for image analysis of cellular structures in baked products. C-Cell is now widely used in test baking and ingredient evaluation for bread and other baked products, providing transfer of objective information within the industry. Newer advanced models are now used for extruded products and confectionery.

512* **California Natural Products**, P.O. Box 1219, Lathrop, CA 95330, U.S.A.; Telephone: +1.209.858.2525; Web: www.cnp.com. Rice syrups and solids, natural and organic. RiCevia™ natural and "made with organic". High sweetness, glycemic control rice syrups, and Bake-Trim®—the natural rice syrup solid dough conditioner, emulsifier, and fat replacer. GFSI compliant (SQF level 3), Gluten-free certified by GFCO.

338* **The Canadian International Grains Institute (CIGI)**. CIGI delivers customized educational programs and applied research to customers worldwide. Based in Winnipeg, Canada, CIGI is a centre of excellence dedicated to creating value to Canada's field crops. Visit our booth to learn about our work on pulse flour milling and the use of pulse ingredients in foods.

321* **Caremoli USA, Inc.**, 23959 580th Avenue, Ames, IA 50010, U.S.A.; Telephone: +1.515.233.1255; Fax: +1.515.233.2933; Web: www.caremoligroup.com. Manufacturer of cooked and stabilized grains and legumes, in whole kernel, grits, and flour formats. Manufacturer of applications-specific ingredient blends designed for your product's functional, nutritional, and sensory goals. Manufacturer of top-quality guar gum and psyllium. Supplier of tara and locust bean gums and various fibers.

238 **Carmi Flavor & Fragrance Co., Inc.**, 6030 Scott Way, Commerce, CA 90040, U.S.A.; Telephone: +1.323.888.9240 or 1.800.421.9647; Fax: +1.323.888.9339; Web: www.carmiflavors.com. Carmi Flavor & Fragrance manufactures a full line of high-quality flavors for the entire food and beverage industries. Flavors are available in natural, artificial, natural/artificial, and organic from our facilities throughout North America, and we also have no required minimum orders. For more information, call 1.877.888.5949.

526* **Cereal Ingredients, Inc.**, 4720 S. 13th Street, Leavenworth, KS 66048, U.S.A.; Telephone: +1.913.727.3434; Fax: +1.913.727.3681; Web: www.cerealingredients.com. Cereal Ingredients produces food particulates that add flavor, texture, and color to baked goods and ready-to-eat cereals, as well as preblended mixes to create added flavor and swirl effects in bread products. CII's newest product line, Nutri-Bites®, consists of particles with special nutritional qualities such as extra levels of fiber, protein, vitamins, or minerals.

332 **Charm Sciences, Inc.**, 659 Andover Street, Lawrence, MA 01844, U.S.A.; Telephone: +1.978.687.9200; Fax: +1.978.687.9216; Web: www.charm.com.

111*† ɑCHOPIN Technologies, 20 Avenue Marcellin Berthelot, Villeneuve-la-Garenne 92390, France; Telephone: +33141475079; Fax: +33141210710; Web: www.chopin.fr. CHOPIN Technologies methods and equipment for the quality control of grains, flours, and derivatives: test milling, moisture content, NIR analysis, starch damage, dough behavior during mixing, proofing, and heating. Accompanying services: training, calibration development, adaptation of protocols, and specific studies.

432* **Church & Dwight Co., Inc.**, 469 North Harrison Street, Princeton, NJ 08540, U.S.A.; Telephone: 1.800.631.5591; Web: www.churchdwight.com. Church & Dwight is the manufacturer of Arm & Hammer® brand sodium bicarbonate, ammonium bicarbonate, and potassium bicarbonate. Church & Dwight caters to the food industry, offering only the highest-quality bicarbonates for your end use—our special blends offer unsurpassed performance and innovation.

400* **CII Laboratory Services**, 10835 NW Ambassador Drive, Kansas City, MO 64153, U.S.A.; Telephone: +1.303.774.8262; Fax: +1.303.774.7545; Web: www.ciilab.com. The leading cereal chemistry laboratory in the United States is an ISO 9001 certified laboratory providing extensive services dedicated to the grain, milling, and baking industries. As a full-service food laboratory, CII also provides other extensive analytical capabilities that include microbiology, chromatography, mycotoxin testing, foreign material, and nutritional testing.

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204 **Clextral Inc.**, 14450 Carlson Circle, Tampa, FL 33626, U.S.A.; Telephone: +1.813.854.4434; Fax: +1.813.855.2269; Web: www.clextral.com. Clextral manufactures twin screw extruders, dryers, and complete production lines for snacks, cereals, ingredients (precooked flours, encapsulated flavors, soy/rice crisps, etc.), instant baby foods/drink mixes, meat analogs, premium petfood/treats, and many other extruded products. Many value-added products can also be made, including healthy products made from whole grains, legumes, and fruits and vegetables, and bicolor and coextruded products to name a few. The range of extruders includes small-scale pilot extruders for R&D to full-scale production models. Clextral also has a pilot plant facility with extruders and food scientists to assist in confidential new product development and testing.

325* **Colloides Naturels, Inc.**, 15 Somerset Street, Somerville, NJ 08876, U.S.A.;Telephone: +1.908.707.9400; Fax: +1.908.707.9405; Web: www.cniworld.com. Colloides Naturels, Inc. is the U.S. subsidiary of Colloides Naturels International, the world's leading manufacturer of acacia gum. CN focuses on development of the nutritional aspects of gum acacia as a native soluble fiber source through their Fibregum™ and Equacia™ product line.

227* **CornProducts U.S.**, 5 Westbrook Corporate Center, Westchester, IL 60154, U.S.A.; Telephone: +1.708.551.2536; Fax: +1.708.551.2780; Web: www.cornproductsus.com.

425 **CPM Century Extrusion**, 2412 W. Aeor Park Court, Traverse City, MI 49686, U.S.A.; Telephone: +1.231.947.6400; Fax: +1.231.947.8400; Web: www.cpmroskamp.com. CPM Century Extrusion manufactures high-performance screws, shafts, barrels, and accessories for more than 25 brands of twin screw extruders, including Coperion, APV, Buhler, and Clextral. We are your partner in productivity.

427 **CPM Wolverine Proctor**, 251 Gibraltar Road, Horsham, PA 19044, U.S.A.; Telephone: +1.215.443.5200; Fax: +1.215.443.5206; Web: www.wolverineproctor.com. Ultra sanitary design SCF III dryer. Our complete line of energy-efficient equipment includes dryers, coolers, impingement ovens (jet tube or parajet nozzle), Jetzone fluid bed dryers/puffers/toasters, shredding mills, flaking mills, and batch cookers. Our Tech Center offers continuous and batch testing for a wide range of products.

324* **Dakota Specialty Milling Inc.**, 4014 15th Avenue NW, Fargo, ND 58102, U.S.A.; Telephone: +1.701.282.9656 or 1.877.282.9743; Fax: +1.701.282.9743; Web: www.dakotaspecialtymilling.com. Dakota Specialty Milling is a manufacturer and supplier of multigrain and whole-grain blends. The company partners with bakers as a trusted supplier for America's leading brands of variety breads, cereals, crackers, snack foods, donuts, and granola. Products include custom whole-grain blends, specialty flours (including multigrain), batter blends, granolas, and oven-toasted ingredients.

303* **Danisco USA Inc.**, Four New Century Pkwy., New Century, KS 66031, U.S.A.; Telephone: +1.913.764.8100; Fax: +1.913.764.8239; Web: www.danisco.com. With a rich and innovative portfolio, Danisco is a world leader in food ingredients, enzymes, and bio-based solutions. Using nature's own materials, science, and the knowledge of our 6,800 people, we design and deliver sustainable ingredient solutions that meet market demand for healthier and safer products to a growing global population. Headquartered in Denmark and operating from more than 80 locations, our key focus is to become our customers' first choice and a truly market-driven global business particularly in the areas of food, health, energy, and chemicals. In May 2011, DuPont acquired Danisco, forming a global leadership position in nutrition and health and industrial biosciences.

322* **David Michael & Co.**, 10801 Decatur Road, Philadelphia, PA 19154, U.S.A. Telephone: 1.800.DM.FLAVORS; Web: www.dmflavors.com. Hit Your Flavor Target Faster.® David Michael & Co. is a leading manufacturer of flavors, stabilizers, and natural colors for the food industry, with more than 100 years of experience serving clients worldwide. Well known for vanilla, we offer much more, including total product development assistance. Whatever your application may be, hit your flavor target faster with David Michael.

406 **Domino Specialty Ingredients**, One N. Clematis Street, West Palm Beach, FL 33401-5551, U.S.A.; Telephone: +1.561.336.5150; Fax: +1.561.336.5158; Web: www.dominospecialtyingredients.com. Domino Specialty Ingredients, a leading manufacturer producing high-quality certified organic and natural sugar, malt, molasses, honey and honey granules, rice, rice syrup, rice bran, rice flour, rice maltodextrins, specialty sugars, and pharmaceutical products. We are proud offer Florida Crystals® certified Carbonfree® evaporated cane juice and Golden Granulated™ products.

312* **DSM Food Specialties USA, Inc.**, 3502 North Olive Road, South Bend, IN 46628, U.S.A.; Telephone: +1.574.232.5000; Web: www.dsm.com. DSM—Bright Science. Brighter Living.™ DSM is a global science-based company active in health, nutrition, and materials. DSM provides a broad portfolio of baking enzymes, including brand names such as BakeZyme®, Panamore™, CakeZyme®, and PreventAse®. Its products contribute to the success of the world's favorite baking, dairy, processed food, fruit juice, alcoholic beverage, and functional food brands. More information can be found at www.dsm.com.

203 **Elementar Americas, Inc.**, 520 Fellowship Road, Suite D-408, Mt. Laurel, NJ 08054, U.S.A.; Telephone: +1.856.787.0022; Fax: +1.856.787.0055; Web: www.chnos.com. Elementar Americas offers the rapid N cube for accurate automated protein determination via Dumas combustion method. Dumas is safer, faster, and less expensive than Kjeldahl. Key features: small footprint, large sample size, stable calibration, 4-minute analysis time, low-maintenance design, flexible Windows-based software, no-stacking 60-position carousel, 10-year furnace warranty, and excellent service.

339* **ENRECO, Inc.**, 5703 County Road U, Newton, WI 53063, U.S.A.; Telephone: +1.920.550.4061; Fax: +1.920.726.4223; Web: www.enreco.com. Founded in 1987, ENRECO provides whole-grain, non-GMO flaxseed flours and other ingredients for food and nutritional products industries. ENRECO developed innovative processing systems to triple-clean their product and proprietary stabalization technologies allowing a two-year shelf life, guaranteed. It maintains superior AIB certification, offers organic and nonorganic products, and is certified kosher.

121 **EnviroLogix Inc.**, 500 Riverside Industrial Pkwy., Portland, ME 04103, U.S.A.; Telephone: +1.207.797.0300 or 1.866.408.4597; Fax: +1.207.797.7533; Web: www.envirologix.com. EnviroLogix is a leading provider of rapid, on-site test kits for the detection of mycotoxins and GMOs in raw materials. Our tests are simple to use and are fully quantified in QuickScan, a PC-based reader system that offers instantaneous data storage and retrieval for analysis.

202* **Enzyme Development**, 360 West 31st Street, Suite 1102, New York, NY 10001-2727, U.S.A.; Telephone: +1.212.736.1580; Fax: +1.212.279.0056; Web: www.enzymedevelopment.com. Enzymes for food-processing applications, brewing, and baking, including shelf-life extension, flavor production, nutritional supplements, low-lactose products, animal feeds, and many other applications.

221* **Eurofins Scientific, Inc.**, 2315 N. Causeway Blvd., Suite 200, Metairie, LA 70001, U.S.A.; Telephone: +1.504.297.4330; Fax: +1.504.297.4335; Web: www.eurofinsus.com. Eurofins Scientific is an independent, international, multidisciplined laboratory group staffed by world-recognized scientists, technicians, and support staff. With more than 150 laboratories worldwide, Eurofins forms a bioanalytical company with an unrivaled range of analytical capabilities for clients in the food, feed, petfood, animal health, plant health, nutraceutical, grain, and seed industries.

302 **Farmer Direct Foods, Inc.**, 511 Commercial Street, P.O. Box 326, Atchison, KS 66002-0326, U.S.A.; Telephone: +1.913.367.4422; Fax +1.913.367.4443; Web: www.farmerdirectfoods.com. Whole grain flours; Identity Assured® genuine stoneground whole wheat flours and brans (clean and heavy) from hard white or hard red wheats. High extraction Handcrafters® flour.

433 **Fiberstar Inc.**, 713 St. Croix Street, River Falls, WI 54022, U.S.A.; Telephone: +1.715.425.7550; Fax: +1.715.425.7572; Website: www.citri-fi.com. Citri-fi® ingredients are used by food manufacturers to improve quality, profit margins, ingredient declarations, and nutrition. Citri-fi accomplishes these objectives by tightly binding free and added moisture, inhibiting evaporative loss and moisture migration, and partially replacing oil, fat, and eggs. Citri-fi is all-natural, nonallergenic, GRAS, non-GMO, and gluten free.

304† α **Firmenich Inc.**, P.O. Box 5880, Princeton, NJ 08543, U.S.A.; Telephone: +1.609.452.1000; Web: www.firmenich.com. Firmenich, a leader in supplying flavors for the bakery and cereal industries, offers a diverse range of flavors that include bake-stable encapsulates and indulgent sweet.

234 **FMC Corporation**, FMC BioPolymer Division, 1735 Market Street, Philadelphia, PA 19103, U.S.A.; Telephone: 1.800.526.3649; Fax: +1.215.299.5809; Web: www.fmcbiopolymer.com. FMC is the world's leading producer of alginate, carrageenan, and cellulose gel. Built upon more than 65 years of experience and know-how, FMC's portfolio of well-established ingredients deliver precise texture, structure, and stability. Looking for solutions to your most challenging bakery projects? Look to FMC for know-how that works.

233* **FONA International Inc.**, 1900 Averill Road, Geneva, IL 60134, U.S.A.; Telephone: +1.630.578.8600; Web: www.fona.com. FONA International creates and manufactures flavors for some of the largest food, beverage, and nutraceutical companies in the world through its state-of-the-art, 33-acre campus in Geneva, IL. FONA has established a reputation as the forward-thinking, independent solution provider in the very competitive flavor industry.

223* **Fortitech, Inc.**, 2105 Technology Drive, Schenectady, NY 12308, U.S.A.; Telephone: +1.518.372.5155; Fax: +1.518.372.5599; Web: www.fortitech.com. Fortitech is the world leader in the development of custom nutrient premixes for the food, beverage, and pharmaceutical industries. Fortitech premixes integrate functional ingredients from a comprehensive selection of vitamins, minerals, amino acids, nucleotides, and nutraceuticals. Fortitech has facilities in the United States, Europe, Asia Pacific, South America, and Mexico. For more information, visit www.fortitech.com.

315* **FOSS North America**, 8091 Wallace Road, Eden Prairie, MN 55344, U.S.A.; Telephone: 1.800.547.6275 or +1.952.974.9892; Fax: +1.952.974.9823; Web: www.foss.us. FOSS offers highly accurate, easy-to-use solutions for all stages of grain analysis—on-farm, grain receival, in the lab, and at the production line. FOSS instruments are rugged and reliable—rapidly and simultaneously analyzing protein, moisture, ash, and other parameters in whole grains, ground samples, flour, and oils.

224 **Gamay**, 2770 South 171st Street, New Berlin, WI 53151, U.S.A.; Telephone: +1.262.789.5104; Fax: +1.262.789.5149; Web: www.gamayflavors.com. Gamay is a top North American supplier in technology-based dairy flavors solutions for the food and beverage industries. Areas of core competence include flavor creations for natural and process cheeses, butter and cheese flavors for snack and bakery applications, as well as premier diary flavors for custom-designed food application.

421*† **Glanbia Nutritionals**, 5951 McKee Road, Suite 201, Fitchburg, WI 53719, U.S.A.; Telephone: 1.800.336.2183; Fax: +1.608.316.8504; Web: www.glanbianutritionals.com. Glanbia Nutritionals, North America's largest, most-advanced processor of flaxseed ingredients, is showcasing OptiSol 5000 series, a low-cost ingredient to replace gums (guar, xanthan, etc.) in baked goods, including breads, tortillas, and sheeted doughs. It is an all-natural ingredient that is high in ALA omega 3.

423* α **Glanbia Nutritionals**, 5927 Geiger Court, Carlsbad, CA 92008, U.S.A.; Telephone: +1.760.438.0089; Fax: +1.760.438.0336; Web: www.glanbia.com. Glanbia Nutritionals provides food, beverage, nutritional supplement, and personal care manufacturers with a complete line of vitamins, amino acids, colors, and specialty nutritional ingredients. Our customized micronutrient blends provide cost-effective solutions while utilizing the highest quality raw ingredients. Built on our reputation of service and quality, we deliver formulation and ingredient expertise that our customers have come to count on…with the shortest lead times in the industry.

426* **GNT USA**, 660 White Plains Road, Tarrytown, NY 10591, U.S.A.; Telephone: +1.914.524.0600; Fax: +1.914.524.0681; Web: www.gntusa.com. GNT USA, Inc. manufactures EXBERRY® natural food colorings and Nutri*food*® fruit and vegetable extracts. EXBERRY® natural colors are standardized for their color hue and intensity. Nutri*food*® products are standardized extracts of fruits and vegetables that offer consistent levels of phytochemicals. All products are made from fruits and vegetables, using only water and physical processing.

Products are GMO free, allergen free, and kosher and come in liquid and powder form.

126* **Gold Coast Ingredients, Inc.**, 2429 Yates Avenue, Commerce, CA 90040, U.S.A.; Telephone: +1.323.724.8935; Fax: +1.323.724.9354; Web: www.goldcoastinc.com. Gold Coast Ingredients is a full-service manufacturer of flavors and colors for the food industry. We offer a wide range of natural, natural and artificial, and artificial flavors in liquid, powder, and spray-dried forms. Kosher and organic certified flavors are available. Custom flavor and color formulations are our specialty, as well as heat-stable flavors for specific needs of the baking and grain-based food industry. Gold Coast Ingredients is committed to bringing you the finest flavors and food products at a fair value delivered with service that is unsurpassed in promptness, courtesy, and consistency.

420* **Grain Millers, Inc.**, 10400 Viking Drive, Suite 301, Eden Prairie, MN 55344, U.S.A.; Telephone: 1.800.232.6287 or +1.952.829.8821; Fax: +1.952.829.8819; Web: www.grainmillers.com. Specialty millers of conventional and organic oats, corn, wheat, barley, rye, flax, soybeans, and more. Products can be produced in the form of flakes, flour, steel-cut, whole grains, pearled grains, brans, and meals. Processor of natural oat fiber and stabilized wheat germ/bran blends, custom grain blends, and private label packaging. Five operations throughout North America allow Grain Millers to meet your specialty grain-based ingredients requirements.

See our ad on the back of the exhibition tab.

417* **Grain Processing Corporation (GPC)**, 1600 Oregon Street, Muscatine, IA 52761, U.S.A.; Telephone: +1.563.264.4265; Fax: +1.563.264.4289; Web: www.grainprocessing.com. Quality ingredients for the food industry from GPC: MALTRIN® maltodextrins and corn syrup solids, MALTRIN QD® (quick dispersing) maltodextrins and corn syrup solids, PURE-COTE® binding/coating starches, INSCOSITY® cold-water swelling starches, PURE-DENT® PFP and specialty starches, PURE-SET® thin-boiling starches, PURE-GEL® stabilized starches, and TruBran® corn bran.

436 **Grains for Hope**, 658 220th Street, Fairview, KS 66425, U.S.A.; Telephone: +1.785.284.2155 or +1.785.285.1261; Fax: +1.785.285.2600; Web: www.grainsforhope.com. Grains for Hope produces extruded, micronutrient-enhanced fortified grain-like products to bring nutritious food to malnourished populations. A 501 c-3 not-for-profit foundation, local, national, and international food experts work with high school students in Sabetha, KS, to send food to Mozambique and other populations in need around the world.

213* **Hesco, Inc./Dakota Organic Products**, 500 19th Street SW, Watertown, SD 57201, U.S.A.; Telephone: 1.800.243.7264; Fax: +1.605.884.1133; Web: www.hesco-inc.com. Hesco, Inc./Dakota Organic Products specializes in cereal grains grown in the heart of the United States grain belt and Canada. With our strategically located plants in South Dakota and Nebraska, our mission is to provide high-quality, super-clean organic and conventional grain and grain-related products for the food industry.

135 **ICC – International Association for Cereal Science and Technology**, Marxergasse 2, Vienna 1030, Austria; Telephone: +43170772020; Fax: +43170772040; Web: www.icc.or.at. ICC is the pre-eminent international association in the field of cereal science and technology, committed to international cooperation through the dissemination of knowledge, conducting research, and developing standard methods that contribute to improved food quality, food safety, and food security for the health and well-being of all people.

301*† ◪ **ICL Performance Products LP**, 622 Emerson Road, Suite 500, St. Louis, MO 63141, U.S.A.; Telephone: +1.314.983.7940 or 1.800.244.6169; Fax: +1.314.918.0617; Web: www.icl-perfproductslp.com. ICL is featuring Levona™ Brio and Levona™ Opus, calcium-rich, zero-sodium leavening agents. Levona™ has controlled release for convenient, "better-for-you" baked goods. Cal-Sistent™, a new choice in calcium fortification, is engineered to be a fine powder with a narrow particle size distribution. Cal-Sistent™ provides fortification without impact on sensory characteristics. ICL offers a complete line of phosphates and acids for leavening, shelf life, and dough conditioning of grain-based products.

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139* **InfraReady Products (1998) Ltd.**, 1438 Fletcher Road, Saskatoon, SK S7M 5T2, Canada; Telephone: 1.800.510.1828; Fax: +1.306.242.4213; Web: www.infrareadyproducts.com. "The Good We Get From Grain." InfraReady is an innovative ingredient manufacturer, providing cereal grains, oil seeds, and legumes to food processors around the world. InfraReady's precooking step improves water absorption, reduces microbial and enzymatic activity, and enhances flavour and texture. We can custom design a product for any application and are halal, kosher, AIB, and organically certified.

216* **Innophos, Inc.**, 259 Prospect Plains Road, Bldg. A, Cranbury, NJ 08512, U.S.A.; Telephone: +1.609.495.2495; Fax: +1.609.860.0245; Web: www.innophos.com. Reduce the Sodium–Keep the Taste. Our challenge is to reduce sodium content without changing product characteristics such as flavor, texture, and appearance. Innophos provides solutions with a broad range of phosphates for reduced-sodium applications in the baking, meat, and dairy industries. Discover CAL-RISE®, a unique nonsodium calcium-based slow-acting leavening agent for healthy baking.

326 **International Flavors & Fragrances Inc.**, 150 Docks Corner Road, Dayon, NJ 08810, U.S.A.; Telephone: +1.732.329.4600; Fax: +1.732.329.5635; Web: www.iff.com. IFF is a leading creator of flavors and fragrances used in a wide variety of consumer products and packaged goods, including fine fragrance and detergents, as well as beverages and baked goods. The company leverages its competitive advantages of brand and consumer understanding combined with its focus on R&D and innovation to provide customers with differentiated product offerings.

200 **International Fiber Corp.**, 50 Bridge Street, North Tonawanda, NY 14120, U.S.A.; Telephone: +1.716.693.4040; Fax: +1.716.693.3528; Web: www.ifcfiber.com. IFC is at the forefront of the national initiative to reduce obesity in America through the addition of insoluble fiber. You have always known IFC to provide the functional fiber ingredients you need but you may not be aware that insoluble fiber can reduce calories as well. We can help you meet your goal—and the nation's—of reducing calories in your products. Visit www.reducecalorieswithfiber.com.

232 **Isomass Scientific Inc.**, 5700 1st Street S.W., #140, Calgary, AB T2H 3A9, Canada; Telephone: +1.403.255.6631 or 1.800.363.7823; Fax: +1.403.255.6958;, Web: www.isomass.com. Isomass Scientific Inc. is the authorized agent for Elemental Microanalysis Ltd. (EML) in Canada and the United States. EML manufactures quality consumables and parts for all manufacturers of nitrogen/protein analyzers and elemental analyzers used for CHNOS analysis. In 2011, Isomass Scientific Inc. is celebrating 30 years of being in business providing quality instruments, parts, and consumables to satisfied customers in Canada and the United States.

102* **J. RETTENMAIER USA LP**, 16369 US 131 Highway, Schoolcraft, MI 49087, U.S.A.; Telephone: +1.269.679.2340; Fax: +1.269.679.2364; Web: www.jrsusa.com. J. RETTENMAIER VITACEL® functional, label-friendly, dietary fibers contribute nutritional benefits, e.g., increased satiety and calorie reduction, to a variety of fiber-enriched food and beverage applications and technologically advanced food products. Products: VITACEL® powdered cellulose, oat, wheat, potato, pea, sugarcane, apple, and orange fibers, and microcrystalline cellulose.

538† ►**Kerry Ingredients & Flavours**, 3400 Millington Road, Beloit, WI 53511, U.S.A.; Telephone: +1.608.363.1200; Web: www.kerry.com. Kerry Ingredients & Flavours develops, manufactures, and delivers technology-based ingredients, flavors, and integrated solutions for the food and beverage industries. We are one of the leading and most technologically advance manufacturers and innovators of application-specific ingredients in the world—working in partnership with food manufacturing and foodservice companies.

134 **Kudos Blends Ltd.**, Unit 5, Old Station Business Park, Cleobury Mortimer, Kidderminster DY14 8SY, United Kingdom; Telephone: +44 01299 271 333; Fax: +44 01299 271 999; Web: www.kudosblends.com. Kudos Blends provides bakers with technically driven raising agents that optimize the quality, texture, taste, and shelf life of baked products. Combining chemistry with baking, we have developed KUDOS™ potassium bicarbonate, a patented raising agent that reduces the salt content of baked products by up to 50%.

210 **Lab Synergy**, 374 Pulaski Hgwy., Goshen, NY 10924, U.S.A.; Telephone: +1.845.258.1200; Fax: +1.845.258.1208; Web: www.labsynergy.com. Lab Synergy is an exclusive provider of laboratory instrumentation specializing in assisting cereal grain manufacturers with their qualitative and quantitative measurements. With our instrumentation, we can quantify and characterize a variety of constituents that are present in the cereal grains "near" line. Protein content, fat and oil content, total salt and acidity, starch damage, and flour rheology are just a few of the components that we can monitor. Please drop by our booth and ask for an on-site presentation.

516* **Lallemand Baking Solutions**, 5494 Notre-Dame Est., Montreal, QC H1N 2C4, Canada; Telephone: +1.514.251.3620 or +1.514.251.3610; Fax: +1.514.255.6861; Web: www.lallemand.com. Lallemand Baking Solutions is the specialty baking ingredients business of Lallemand, the Canadian yeast and bacteria company supplying Essential® enzyme-based dough conditioners, Fermaid® yeast-based dough relaxers, and Florapan™ cultures to the global baking industry. Also offering BÖCKER ready-to-use cultured flours in North America. Let Lallemand design a baking solution for you.

237* **Malt Products Corp.**, 88 Market Street, Saddle Brook, NJ 07663, U.S.A.; Telephone: 1.800.526.0180; Fax: +1.201.845.0028; Web: www.maltproducts.com. Grainulose® cereal-based sweeteners, rice, oat, rye, wheat, and malt are on display. Whole grain products benefit from their use. Flavor, color, fermentable carbohydrates, and sweetness are provided. Also offered are molasses, tapioca syrup, and invert and specialty sweetener blends.

337 **Manildra Milling Corp.**, 4210 Shawnee Mission Pkwy., Suite 312A, Shawnee Mission, KS 66205, U.S.A.; Telephone: +1.913.3692.0777; Fax: +1.913.362.0052; Web: www.manildrausa.com. Manildra Milling Corp. has earned a worldwide reputation as the leader in vital wheat gluten and wheat starches. This status has been achieved by delivering timely and personal service to all our customers. This consistency of service and product excellence has brought us our success and stands as a singular commitment to our customers that we strive for their satisfaction every time.

137 **Mane, Inc.**, 999 Tech Drive, Cincinnati, OH 45150, U.S.A.; Telephone: +1.513.248.9876; Fax: +1.513.248.8808;, Web: www.mane.com.

416* **McCormick & Co.**, 204 Wight Avenue, Hunt Valley, MD 21031, U.S.A.; Telephone: +1.952.345.0378; Web: www.mccormick.com. McCormick will be demonstrating their Create It Center process. Also, stop in to learn more about the new McCormick Science Institute. There will also be product sampling of new flavor and topical seasoning for cereal-based snacks.

100 **Medallion Labs/General Mills**, 9000 Plymouth Avenue N., Golden Valley, MN 55427, U.S.A.; Telephone: 1.800.245.5615; Fax: +1.763.764.4040; Website: www.medallionlabs.com. Medallion Labs, a division of General Mills, provides analytical testing for the food industry. Since 1974, we have served thousands of clients, earning us a reputation for quality, reliability, and flexibility. Medallion's areas of expertise include dietary fiber as well as other specialty fiber testing, nutritional labeling, food safety, shelf life studies, and microbiology.

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410* **Megazyme International**, Bray Business Park, Bray, County Wicklow, Ireland; Telephone: +353.1.2861220;Fax: +353.1.2861264; Web: www.megazyme.com. Megazyme is a leading manufacturer of test kits and reagents for the food, feed, fermentation, dairy, and wine industries. These kits are used in analytical laboratories worldwide for health and nutritional labelling purposes. Our total dietary fibre, total starch, fructan, and beta-glucan assay kits are world standards.

See our ad on the back of the recognition tab.

317 **The Mennel Milling Company**, P.O. Box 806, Fostoria, OH 44830, U.S.A.; Telephone: 1.800.688.8151; Fax: +1.419.436.5151; Web: www.mennel.com. The Mennel Milling Company with five flour mills is one of the leading soft wheat milliers in the country and specializes in custom milling to customer needs. In addition, two of the five mills produce hard and spring wheat flours. Mennel also produces a line of heat treated flour products. Mills are located in Fostoria and Bucyrus, OH; Dowagiac, MI; Roanoke, VA; and Mt. Olive, IL.

435* **Merlin Development Inc.**, 181 Cheshire Lane, Suite 500, Plymouth, MN 55441, U.S.A.; Telephone: +1.763.475.0224; Fax: +1.763.475.1626; Web: www.merlindevelopment.com. Merlin Development provides contract R&D services to the food and beverage industries. Merlin provides creative and science-based solutions to deliver new or improved products to meet your consumer's expectations. Our extensive experience in product development, processing, and packaging can resolve your unique challenges from prototype development through start-ups.

220 **MGP Ingredients, Inc.**, 100 Commercial Street, P.O. Box 130, Atchison, KS 66002-0130, U.S.A.; Telephone: 1.866.547.2122: Fax: +1.913.360.5717; Web: www.mgpingredients.com. MGP Ingredients, Inc. provides a host of specialty wheat proteins and starches, including dietary fiber, for use in bakery and prepared foods, as well as protein isolates for protein enrichment and an extensive line of starches that aid in the formulation of low-sodium foods.

422 **Mother Murphy's Laboratories**, 2826 South Elm Street, Greensboro, NC 27406, U.S.A.; Telephone: +1.336.273.1737; Fax: +1.336.273.0858. Mother Murphy's Laboratories, founded in 1946, is a flavor manufacturer offering thousands of flavors and extracts to a host of industries, including the cereal and grain business. From granola and whole-grain breads to the latest fruit and spice combinations in today's cereals, we're here to provide you with quality products in rapid time that meet and exceed your every expectation.

439* **National Mfg. Cereal Chemistry Equipment**, 535 J Street, Lincoln, NE 68508, U.S.A.; Telephone: +1.402.475.3400; Fax: +1.402.742.2232; Web: www.national-mfg.com. Since 1939, National Mfg. has been supplying analysis equipment to the food science and production industry worldwide. Equipment items include the Risograph, Mixograph, 10- to 200-g dough mixers, fermentation cabinets, several models of test baking ovens, a set of small dough sheeting rolls, and a three-roll molder suitable for pup loaves. This year, National Mfg. is happy to introduce the Insectograph and three-row color sorter to the product list.

225 **National Starch Food Innovation**, 10 Finderne Avenue, Bridgewater, NJ 08807, U.S.A.; Telephone: 1.866.961.6285; Web: www.foodinnovation.com. National Starch Food Innovation is a leading global supplier of nature-based functional and nutritional ingredient solutions to the food and beverage industries. The company has a strong focus on delivering innovation to meet market and consumer trends in wholesome and natural, texture, nutrition, wellness, and vitality. Extensive, award-winning product range, market knowledge, and technical expertise makes National Starch Food Innovation a partner of choice for the next generation of food producers.

123 **Northern Crops Institute**, North Dakota State University, NDSU Dept. 7400, P.O. Box 6050, Fargo, ND 58108-6050, U.S.A.; Telephone: +1.701.231.6538; Fax: +1.701.231.7235; Web: www.northern-crops.com. Northern Crops Institute (NCI) provides education and technical services to the food industry that assist in expanding domestic and international markets for northern-grown U.S. crops. NCI specializes in baking, crop quality, pilot-scale extrusion, pilot-scale milling, feed manufacturing, and pilot-scale pasta manufacturing in a confidential atmosphere.

128* **NP Analytical Laboratories**, Checkerboard Square, St. Louis, MO 63164, U.S.A.; Telephone: 1.800.423.6832 or +1.314.982.1310; Fax: +1.314.982.1078; Web: www.npal.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 are also offered.

236 ***Nutraceuticals World***, 70 Hilltop Road, Suite 3000, Ramsey, NJ 07446, U.S.A.; Telephone: +1.201.825.2552; Fax: +1.201.825.0553; Web: www.nutraceuticalsworld.com. *Nutraceuticals World* is the premier magazine serving the global dietary supplement, functional food, nutritional beverage, and sports nutrition industries. By providing valuable information on ingredient sourcing, marketing trends, new product launches, packaging, manufacturing equipment, and industry trends, *Nutraceuticals World* is an important resource for industry executives worldwide. Our weekly E-Newsletter *Nutraceuticals World NOW* offers exclusive online articles. Visit www.nutaceuticalsworld.com for the most timely industry news and subscription information.

536* **Oat Ingredients, LLC**, 4368 Park Court, Boulder, CO 80301-3964, U.S.A.; Telephone: +1.303.818.1117; Fax: +1.413.385.9391; Web: www.oatingredients.com and www.OatWell.com. Import, sales, and distribution of OatWell® oat bran, oat flour, and oat oil ingredients. OatWell® high-fiber brans to 28% soluble fiber—beta-glucan and 50%+ TDF. Applications for FDA heart health claims, weight management, low-GI, and digestive health. All natural, non-GMO oat bran and oats-based ingredients.

212 **Omega Protein**, 2105 City West Blvd., Suite 500, Houston, TX 77042, U.S.A.; Telephone: +1.713.623.0060; Fax: +1.713.940.6111; Web: www.omegapure.com. OmegaPure® products are rich in long-chain omega-3 fatty acids (EPA and DHA) made from menhaden, a sustainable resource harvested in U.S. waters. We offer innovative delivery systems for fortifying food products, including OmegaPure® high-stability oils, Custom Ingredients' OmegaBits (bakery inclusions), and Meadowpure® UltraGrad™ fish oil and flax blend.

434* **OMIC USA Inc.**, 3344 NW Industrial Street, Portland, OR 97210, U.S.A.; Telephone: +1.503.223.1497; Fax: +1.503.223.9436; Web: www.omicusa.com. Globally recognized ISO17025 accredited GMO testing lab that also specializes in PCR-based microanalysis, rice variety identification, and food allergen testing. We offer accuracy, high quality, reliability, and competitive pricing with rapid turnaround times. Headquartered in Portland, OR, OMIC USA Inc. has provided unparalleled independent laboratory services to the world's food processing and agricultural industries for more than 50 years.

130 **Oregon Freeze Dry, Inc.**, P.O. Box 1048, Albany, OR 97322, U.S.A.; Telephone: +1.541.967.6528; Fax: +1.541.812.6601; Web: www.ofd.com. The Food Division of Oregon Freeze Dry is the largest diversified food freeze dryer in the world. We have the capability to run many food products simultaneously because of our batch systems and variety of wet processing and dry packaging rooms. Some of our strengths are having the ability to dry large amounts of food products and in our capability to run USDA-inspected meat and poultry products.

235 **Oxford Instruments America**, 300 Baker Avenue, Suite 150, Concord, MA 01742, U.S.A.; Telephone: +1.978.369.9933; Fax: +1.978.369.8287; Web: www.oxford-instruments.com. Oxford Instruments Magnetic Resonance Group develops and manufactures cost-effective instrumentation for quality assurance. Since the 1960s, Oxford Instruments' low-field benchtop NMR has been the fastest and easiest technique available for accurately determining oil content of cereal grains, oilseeds, animal feed, and other foods using reliable, nondestructive methods.

231*† ◊ **Palsgaard Inc.**, 55 Madison Avenue, Suite 400, Morristown, NJ 07960, U.S.A.; Telephone: +1.973.285.3299; Fax: +1.973.538.0503; Web: www.palsgaard.com. Palsgaard is a specialist in manufacturing emulsifiers, stabilizers, and other specialized ingredients for application in the bakery, dairy, chocolate, ice cream, margarine, and fine food sectors. With pilot plants within these areas, Palsgaard offers comprehensive customer support, making the step between initial ideas and production as small as possible.

239 **Penford Food Ingredients Co.**, 7094 S. Revere Pkwy., Centennial, CO 80112, U.S.A.; Telephone: +1.303.649.1900; Web: www.penfordfoods.com. Penford Food Ingredients is a premier carbohydrate company providing the processed food and nutraceutical industries with unmodified and modified potato, corn, tapioca, waxy maize, and rice specialty starches, dextrin, resistant starch, and pet treats. It is the leader in ingredient system technology for coatings, meats, dairy, confectionery, bakery, soups/sauces/gravies, and gluten-free applications.

413* **Perten Instruments AB**, P.O. Box 5101, SE-141 05 Kungens Kurva, Sweden; Telephone: +46.8.880.990; Fax: +46.8.881.210; Web: www.perten.com. New! Second-generation, high-frequency grain moisture meter—the AM5200 and the New! IM9500 NIT whole grain analyzer. Stop by to see live demonstrations on these exciting new instruments.

See our ad on page 6.

415*† ◊ **Perten Instruments, Inc.**, 6444 S. 6th Street Road, Springfield, IL 62712, U.S.A.; Telephone: +1.217.585.9440; Fax: +1.217.585.9441; Web: www.perten.com. Instrumentation for analysis and process monitoring from R&D to finished foods. Perten Instruments provides analyzers to help you meet the functionality and nutritional requirements of your products. Stop by to discuss on-line analysis, NIR, RVA, dough rheology, gluten analysis, enzyme characterization, and much more.

323* **PGP International, Inc.**, 351 Hanson Way, P.O. Box 2060, Woodland, CA 95776, U.S.A.; Telephone: +1.530.662.5056 or 1.800.333.0110; Fax:+1.530.662.6074; Web: www.pgpint.com. PGP International, Inc. is a leading supplier and innovative manufacturer of grain and dairy-based ingredients to the food and nutritional industries. Primary ingredients in the PGP International portfolio include extruded particulates; flours and blends; Nutri Sperse®, a line of nutritional beverage bases; PAC functional ingredients; whey concentrates; isolates and hydrolysates; and lactose.

113 **Prayon Inc.**, P.O. Box 1473, Augusta, GA 30903-1473, U.S.A.; Telephone: 1.800.477.2966; Fax: +1.706.798.0015; Web: www.prayon.com. For a complete range of phosphate products, including MCPM, DCP, TCP, SAPP-28, SAPP-40, and SAPP-43, for baking and cereal applications, contact Prayon Inc., at Food@PrayonInc.com. Prayon also offers phosphoric acid and a full range of calcium, potassium, and sodium phosphates for other applications extenders.

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214* **QualiTech, Inc.**, 318 Lake Hazeltine Drive, Chaska, MN 55318, U.S.A.; Telephone: +1.952.448.5151; Fax: +1.952.448.3603; Web: www.qualitechco.com. QualiTech has been providing innovative nutrition solutions for more than 40 years. We're passionate about developing creative solutions—inclusions and particulates—that offer great flavor, texture, function, and visual appeal to your proprietary products. They also serve as delivery systems for unique ingredients such as omega-3s, fiber, fruit content, nutraceuticals, and proteins.

532* **R-Biopharm, Inc.**, 7950 Old US 27 S., Marshall, MI 49068, U.S.A.; Telephone: +1.269.789.3033; Fax: +1.269.789.3070; Web: www.r-biopharm.com. R-Biopharm is a leading developer of test solutions for food and feed analysis. R-Biopharm test kits offer high precision and accuracy, key requirements where consumer health is at risk. The use of R-Biopharm tests to screen for mycotoxins, hormones, antibiotics, genetically modified material, specified risk material, allergens, and pathogens is fast, reliable, and above all, cost effective. R-Biopharm recently released the first test kit on the market for the detection of gluten fragments in beer, syrup, and starch.

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530 **Trilogy Lab**, 870 Vossbrink Drive, Washington, MO 63090, U.S.A.; Telephone: +1.636.239.1521; Fax: +1.636.239.1531; Web: www.trilogylab.com.

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