2010 Highlights

Grain Brains in Action
Keeping AACC International highly relevant when the members’ world is changing so rapidly is a major challenge, but together we are doing it! If you attended the annual meeting in Savannah you could feel the upbeat momentum and enthusiasm. We are trying new ventures, taking some risks, and trying new things. These bullet points will give you a quick overview:

- The 2010 Annual Meeting is getting great reviews:
  - “best program in years”
  - “sessions were all well attended, great science”
  - “the smaller city venue and meeting facility worked for us”
  - “international contributions to the program were outstanding”
  - “the special interest sessions and science cafés were well done”
  - “great interaction and dialogue in the hallways”

- Building on AACC International’s focus on science—advancing grain science worldwide
  - The Scientific Advisory Panel has created and prioritized a list of more than 100 issues
  - The Approved Methods of Analysis have gone online, are updated in real-time, and we are adding additional support resources
  - Technical committees have substantial agendas and are working year around
  - New model for planning the annual technical program is working well
  - First online books to be available in first quarter of 2011
  - First AACC Intl. “Regulatory Summit” to be held in February 2011
  - AACC Intl. played an integral part in the creation of the Coalition for Sustainable Agricultural Workforce
  - Educational offerings are increasing through short courses and workshops
  - Academic partnership program now established and activities expanding
  - Developing new activities for student participation
  - Significant changes to build on success of Cereal Chemistry

- Building financial health for the future
  - Concentrating on investment in several high-value programs to increase revenue
  - Creation of a real-time dashboard for leaders to monitor key indicators and progress
  - Focusing on fewer priorities, but with more resources
  - Growing the core membership from academia, industry, and government
  - Initiated a corporate partnership program bringing greater value to companies from AACC Intl.

- Global initiatives
  - Developing a new structure and partnership with the European section of AACC Intl.
  - Building the first section in China
  - Finding new delivery mechanisms to allow access and participation from anywhere in the world

The level of energy and activity is way up! If you are not involved now or want to do more, we welcome your participation. Please also consider inviting some of your colleagues to join AACC Intl. This organization works because members give of their expertise and we all benefit. All of this helps AACC Intl. continue to play a unique scientific role in the food industry.
During the fiscal year ending March 31, 2010, the Finance Committee, Board of Directors, staff, and I continued to look for ways to reduce costs while enhancing member value and increasing revenue. For the year, Operating Revenues exceeded Operating Expenses by a $211,000 net profit. This was $187,000 better than budgeted and $428,000 better than the prior year. Operating revenues of $2.3 million were $251,000 under budget but $157,000 better than the prior year. Operating expenses of $2.1 million were $476,000 under budget and $310,000 less than the prior year.

This net income from operations does not include unrealized gains on investments of $118,000 for the year ending March 31, 2010.

During this past year, AACC Intl. has invested in several new and exciting areas, including the AACC Intl. Approved Methods of Analysis Online, Corporate Partnerships, Academic Partnerships, the Cereal Science Knowledge Database, and short courses, all for the improvement of sharing quality cereal information globally.

The online AACC International Approved Methods of Analysis was launched in July 2009 and allows access to our methods electronically. The methods have been enhanced with video clips, calculators, and other tools.

AACC Intl. is continuing to work on a Corporate Partnership Program. The goal of this program is to develop a set of benefits and services from the company’s point of view. We call it a partnership because the company can customize their benefits package from a series of products and services or a portfolio of optional benefits.

Academic Partnerships will nicely complement the Corporate Partnership Program and align with our increased focus on science. The goal is to build stronger relationships and increase communications among university departments.

Our membership continues to provide access to information in the traditional manners as well. We are revitalizing various short courses around our 7 Scientific Initiatives and publishing several new books.

This has been an exciting year for me as your treasurer. I would like to thank the members of my Finance Committee for their hard work this past year: Khalil Khan, Barry McCleary, and Maureen Olewnik.
Growing Our Global Community

Grain Brains Unite!

You’ve always known you’re a little different. You get excited about rice, wheat, oats, rye, and corn. Flour fascinates you. You are definitely a Grain Brain—and AACC International is where you belong!

Together, AACC Intl. members make up a unique community. Your membership gives you the opportunity to share research, discuss trends, and make important connections worldwide. As collaboration and transparency become increasingly important, the relationships you make within AACC Intl. will only become more vital. AACC Intl. is the one place that understands and appreciates your unique needs, and offers you the opportunity to meet with and learn from other top scientists.

The term “Grain Brains” highlights the passion that ties us together—our passion for grains. Whether you just started working with grains and need to learn as much as possible, or have been intrigued with grains for life, AACC Intl. is definitely where you belong. We’re glad you get more excited about what’s in your bread than what’s on it. We’re more than happy to feed your obsession with articles on gluten-free dough and extrusion processes. This is your community, a community of “Grain Brains”!

The Next Generation of Cereal Scientists Meet in Budapest for Annual Workshop

The 9th European Young Scientists and Technologists Workshop (9EYCSTW), offered by the AACC International C&E Section, took place in Budapest, Hungary, May 25–27, 2010. The workshop, organized by the Budapest University of Technology and Economics and the Agricultural Research Institute of Hungarian Academy of Sciences, was held over three days. This year, 52 participants representing more than 15 nationalities attended the workshop. At the workshop, all lectures and posters demonstrated the high-quality science in the next cereal science generation. This year, as a benefit of the good work, and also as encouragement, the best lecture and the best poster, judged by an independent commission, were awarded with a prize. The Best Presentation Award went to Anita Hirte (T. I. Food and Nutrition, Wageningen, and the Laboratory of Food Chemistry, Wageningen University). The Best Poster Award went to Jibin He (Rothamsted Research at Oxford Brooks University).

The increasing number of participating scientists, as well the diversity of the nations, was proof that EYCSTW was even more successful this year. Workshop participants were able to learn a lot about presented topics and were given the chance to create networks with other scientists, research groups, and also with the industry. Read the full report on the meeting, published in the September-October issue of Cereal Foods World.

Working to Strengthen Relationships with Global Scientific Community, China

AACC International wishes to strengthen its relationship in China with those interested in cereal and grain science research and industry; for example, in cooperative activities that will help individual scientists interact. To achieve this overall objective, a task force led by Bob Cracknell was asked to investigate, develop, and recommend strategies that will help build relationships between AACC Intl. and the various cereal and grain science sectors in China.

During the past year, the task force organized the Cereals: Challenges in the Oriental World Hot Topic Session during the 2010 Annual Meeting. The cereal foods industry plays a critical role in this booming oriental market and significant changes have taken place in the past decade in China, Japan, Korea, etc., in production technology, consumption patterns, and market trends. The session showed how the application of underpinning science and technology is used to understand the contribution of new ingredients and processing methods in the industrialization, standardization, and optimization of quality for a range of traditional food products in this challenging oriental world.

AACC Intl. also participated in the Sixth Food Science International Symposium held August 5–11, 2010, in Beijing, China. Cracknell and President Barry McCleary represented AACC Intl. at the meeting.

New to Your Career? Want to Attend the Annual Meeting?

The AACC International Cecil F. Pinney Travel Award was created to ensure those early in their career could attend the annual meeting to network and access the best research. This award includes meeting registration, a $750 travel grant, and more.

Watch for more information coming soon.
Moving Our Science Forward: Division and Section Updates

The Biotechnology Division organized a Scientific Café session with speakers discussing bioengineering for human health. The following were posted on the AACC Intl. Technical Committee website: a summary of results for the fall 2009 USDA-GIPSA proficiency program, fluorometric DNA quantification essay, and a CTAB extraction method of generating purified DNA from maize and soy flour.

The Carbohydrate Division awarded the 2009 Carbohydrate Division/Megazyme Award to Falguni Chauhan and Xinyu Shen (first place), Ji-Young Lee (second place), and Kinnari Shelat (third place).

The Education Division will be identifying and prioritizing formal activities and projects for the upcoming year. As part of this effort, Jon Faubion participated in the academic partnership meeting held during the 2010 Annual Meeting.

The Engineering and Processing Division named James D. Wideman as the 2010 Stanley Watson Awardee for his outstanding service to the corn wet milling industry. Wideman was a process engineer and director (international engineering) at A. E. Staley Manufacturing and the president and owner of Maize Associates, Inc. This award is being conferred posthumously to Wideman, who passed away on May 1, 2005.

The Milling and Baking Division held its 2010 Spring Technical Conference in Fort Worth, TX, U.S.A., May 5–7. Bill Atwell received the 2010 John Halverson Award, and Debi Rogers received the 2010 Myron T. Bastian Award for her outstanding support and dedication to the division.

The Protein Division has formed a subcommittee to specifically handle the Walter Bushuk Graduate Research Award nomination process for 2010 and onward. The committee includes Perry Ng, George Lookhart, and Bin Fu.

The Rheology Division had great success with their Structure and Rheology of Cereal-Based Foods Short Course held April 28–29, 2010, at Ghent University, Belgium. During the Rheology Division luncheon, the award for the 2009 Isydore Hlynka Best Student Oral Paper was presented to Bram Pareyt, Leuven University, and the 2009 Best Student Poster Award was given to Madhuvanti Kale, Purdue University.

The Student Division will organize a Young Cereal Chemists Meeting in early 2011 at Kansas State University. Furthermore, an AACC Intl. Student Division group was created on Facebook in order to promote AACC Intl. and attract new student members.

The Canadian Prairie Section held several meetings throughout the year. The University of Manitoba Food Science Product Development Team, consisting of Chenxin Zhao, Huiqin Wang, and Shanleigh Thomson, won second prize at the 2009 AACC Intl. Student Product Development Competition. The University of Manitoba’s team was the only one made up of all undergraduates. The Guinness World Record for the largest bowl of oatmeal porridge was set in Winnipeg in 2010 at the “Agriculture in the City” expo at the Forks Marketplace. This achievement was coordinated by Nancy Adams of Agriculture and Agrifood Canada with the help of members at Viterra Foods (formerly Can Oat Milling).

The C&E Section held its 9th European Young Cereal Scientists and Technologists Workshops (EYCSTW) in Budapest, Hungary, in April and May 2010. Both were highly successful. The 10th EYCSTW will be held in Helsinki, Finland, in May 2011. The C&E Student Award for Best Oral Presentation and Poster were awarded to Anita Hirte, Wageningen University, and Jibin Hu, Oxford Brooks University. The third C&E Spring Meeting will be held April 11–13, 2011, in Freising, Germany.

The Cincinnati Section held their annual meeting in Wooster, OH, U.S.A., in conjunction with the Soft Wheat Quality Laboratory Research Review. The section has continued their check sample service, and awards were handed out at the spring meeting. A $500 student travel award went to Neil Yu from Michigan State University for his research into soft wheat. The next annual meeting will be in Wooster, on March 8, 2011. The section also plans to give another student travel award to a student who submits a poster on Eastern soft wheat.

The Downunder Section this past year ran the Annual Australian Cereal Chemistry Conference, but this coming year that responsibility will rest with the Australian Grain Science Association. Deputy Chair Anne Bridges is putting together a one-day workshop entitled “Wheat and other cereals—quality attributes—for today and the next five to twenty years.” This will be run at a convenient time and place in the coming months.

The Northern California Section handed out awards for outstanding cereal/food science projects at the March 24–25, 2010, San Francisco Bay Area Science Fair. Students received a certificate and check from the section, and a nutrition book donated by AACC Intl. was given to their school library. The section held numerous meetings throughout the year.

The Northwest Section held numerous meetings throughout the year. The section’s William F. Geddes Memorial Lectureship award was presented to Christophe Courtin. The 36th Annual IFT Suppliers’ Expo and AACC Intl. Lunch was held on October 28, 2010. Speaker Kevin Ryan, General Mills, presented “The future is here: Understanding the future of food by looking to the past. The “Hands-On Event,” December 2, 2010, was held at the University of Minnesota.

The Pacific Northwest Section presented a student travel award to Daniel Ramseyer, a graduate student from the Food Science Department at Washington State University, to attend the 2010 Annual Meeting in Savannah. The section will meet in conjunction with the Wheat Quality Council in Seattle, WA, U.S.A., on January 28, 2011.

The Pioneer Section held a joint meeting with the IAOM-Wheat State District in December 2009. The next joint meeting with the IAOM-Wheat State District was in December 2010.
Grain Brains Gathered for One of the Best AACC International Meetings in Years!

The 2010 AACC International Annual Meeting was a great success by many measures, with more than 1,200 attendees and guests from 37 countries, 74 universities, and 328 companies worldwide. New and innovative session formats drew attendees and speakers into the conversation and facilitated discussion among representatives from industry, academia, and government. Increased attendance at many of the division meetings, including more than 140 people at the Milling and Baking Division Lunch and 115 at the Carbohydrate Division Dinner, as well as several significant updates to the technical program helped to energize attendees and speakers throughout the week.

Attendees were able to attend three scientific sessions per day (replacing two per day as in previous years), with Technical Sessions and Symposia at each of the two morning sessions and new Science Cafés, Hot Topic Sessions, and PosterTalks in the afternoons. In addition, the beautiful and historic city of Savannah, GA, U.S.A., served as a great backdrop and a new travel destination for many attendees.

AACC International Heads to Savannah

Attendees enjoyed a complimentary beverage in the exhibit hall during the Beer and Poster Viewing Session on Monday.

The Exhibit Hall was packed during Lunch with the Exhibitors on Tuesday.

Science Cafés and PosterTalks: New Interactive Session Formats for 2010

The 2010 Program Planning Team, led by Christophe Courtin of Katholieke Universiteit Leuven in Belgium, made several significant changes to the program this year. In planning the 2010 scientific program, Courtin and his team looked for ways to build more room for scientific debate and discussion.

Two new session formats, Science Cafés and PosterTalks, were added to the program alongside traditional Symposia and Technical Sessions. Science Cafés were a twist on the traditional Symposia with more time added for questions and discussion among the presenters and fellow attendees. PosterTalks gave poster authors the opportunity to present the main findings of their posters, followed by in-room poster viewing. Attendees at these sessions viewed several presentations on related posters and then met with the authors to further discuss findings and ask questions. These new session formats were a welcome change, judging by the well-attended sessions and participation in the discussions.
Premeeting Short Courses and Workshops Help Attendees Keep Their Competitive Edge

This year’s courses, Sugars: The Not-So-Simple Story and Enzymes in Grain-Based Products, each brought together a variety of speakers to discuss new initiatives, technological advances, market trends, and more. According to one attendee from the sugars course, “I learned a lot at the class. I also met so many people who I would have not met had I not attended…It was great for networking and for rejuvenating the mind.”

Two premeeting workshops, Healthy Grains: Implications of the Rheology of Digestive Processes and Green Technology and the Carbon Footprint, took place on Sunday, and offered attendees the chance to hear from experts in the field on two of today’s most interesting and relevant topics.

Three Hot Topic Sessions Spark Debate and Answer Questions

On Monday, Cereals: Challenges in the Oriental World, brought attention to impending market growth in many Asian countries and the challenges that the mainstream food industry will face in providing nutritional and appealing options to this region, from instant noodles to steamed breads to rice-based products.

Tuesday’s session, Forecast for the U.S. Regulatory Climate: A Gathering Storm of Enforcement, Regulation, and Legislation for Foods, brought together many experts in the areas of regulation and legislation for foods, Difficult issues, such as traceability from farm to fork in wheat and other grains, new 2010 dietary guidelines and their impact on processing and marketing, new technology and standards for gluten free, and key developments in marketing, including the front-of-package nutrition labeling initiative, recent FDA warning letters, and investigation of industry food marketing to children/youth, were explored. See pages 268–276 in this issue for a full report.

Robert Welch of the University of Ulster spoke on whole grain health benefits at the meeting’s first Science Café session, entitled Whole Grains Unraveled.

Maureen Olewnik of AIB International gave an update on food safety regulations and their progress through U.S. Congress at the Forecast for the U.S. Regulatory Climate Hot Topic Session.

At the PosterTalks, poster authors presented the main findings of their posters, then stayed at their posters afterward to answer questions.

Sixty attendees at Sunday’s premeeting workshop, Health Grains: Implications of the Rheology of Digestive Processes, listened carefully as experts in the field presented their industry insight and research.
On Wednesday, Salt and Sodium: Looking for My Long Lost Shaker of Salt…Replacer: Flavor, Function, Future proved to be a hotly debated and interesting topic for discussion among grain scientists with varying opinions on the health and nutritional impacts of salt and sodium in our diets. Though the research on this topic is not easily interpreted, speakers from Frito-Lay, General Mills Inc., TNO Quality of Life, the Natural Marketing Institute, and more, presented their findings regarding physiology, regulatory standards, implications for food manufacturers, and potential substitutes for salt in processed food.

First place ($2,550) went to Granoté Sorghum Tisane, from Kansas State University. The BETA Fruit Bar, from the University of Manitoba, took second place ($1,700). Third place ($850) went to à bloc, from the University of Arkansas. Iowa State University’s Prozea Chewing Gum took fourth place, and Cornell University’s Tamarangles took fifth place. All finalist teams were given a travel award of $300.


Closing Session Keynote Speaker Margaret Bath Inspires the Cereal Processing Industry to Do More for Consumers

A special highlight for this year was the Closing Session with Keynote Speaker Margaret Bath of Kellogg Company. Bath is not only a longtime member of AACC Intl. and a former board member but also a very important member of the scientific community and a key industry representative. In her presentation, entitled Challenges Facing the Cereal Processing Industry and How Cereal Science Can Improve the Lives of the World’s Consumers, she discussed the relationship between diet and health, as well as consumer trends and the importance of providing nutritional options at the supermarket. While stressing the critical role of whole grains and the enhanced importance of fiber in the diet, she also realistically addressed issues that face the food processing industry, including consumer belief versus reality and the importance of making nutritional food that still tastes good.

During the Closing Session, 2010 AACC International President Khalil Khan officially passed the gavel to incoming 2011 President Barry McCleary.

Innovations Abound at the 2010 Product Development Competition

A grain-based tea—yes, the beverage—was the big winner at the AACC International Student Division Product Development Competition this year. Other innovative products included delicious fruit and energy bars and a corn-based, probiotic-filled gum. Held during the annual meeting in Savannah, GA, U.S.A., the competition featured teams presenting their new products that incorporated at least one major cereal ingredient. Thirteen teams originally entered the competition. After the first round of judging, which required a report complete with product description, rational/target market, and processing/packaging description, five teams were selected to compete at the meeting.

Many interesting and controversial questions and discussions took place during the Salt and Sodium Hot Topic Session.
2010 AACC International Exhibitors

Listed in alphabetical order:

AACC International was pleased to welcome more than 130 exhibitors from around the world to the 2010 AACC International Annual Meeting. For more information on these exhibitors, including company descriptions and contact information, visit http://meeting.aaccnet.org.

*AACC International Corporate Member

Carl Zeiss MicroImaging LLC
Carmi Flavor & Fragrance Co., Inc.
CE Elantech, Inc.
Cereal Ingredients, Inc.*
CEREX AG
CHOPIN Technologies*
Church and Dwight Co., Inc.*
CII Laboratory Services*
Clextral Inc.
Colloides Naturels, Inc.*
CornProducts U.S.
CPM Wolverine Proctor
Dakota Specialty Milling Inc.*
Danisco USA Inc.*
David Michael & Co.*
Domino Specialty Ingredients
DSM Food Specialties USA, Inc.
Elementar Americas, Inc.
EnviroLogix Inc.
Enzyme Development*
Eurofins Scientific, Inc.*
Farmer Direct Foods, Inc.
Fiberstar Inc.
Firmenich Inc.*
FONA International Inc.*
Fortitech, Inc.
FOSS North America*
Gamay
Givaudan
Glanbia Nutritional*
GNT USA, Inc.
Gold Coast Ingredients, Inc.*
Golden Peanut Co.
Grain Millers, Inc.*
Grain Processing Corporation (GPC)*
Grains for Hope
Granotec North America
Hesco, Inc./Dakota Organic Products*
ICC - International Association for Cereal Science and Technology
ICL Performance Products LP*
Innophos, Inc.*
International Flavor and Fragrance J. RETTENMAIER USA LP*
Lab Synergy
Lallemand Baking Solutions*
Malt Products Corp.*
ADM/Matsutani, LLC*
Manildra Milling Corp.
McCormick & Co.*
Medallion Labs/General Mills*
Megazyme International*
The Mennel Milling Company*
Merlin Development Inc.*
MGP Ingredients
Mid America Food Sales Ltd.*
Mother Murphy’s Laboratories
National Mfg. Cereal Chemistry Equipment
National Starch Food Innovation
Navas Instruments*
Northern Crops Institute
NP Analytical Laboratories*
Nutraceuticals World
Oat Ingredients, LLC*
Omega Protein
Oxford Instruments America
Palsgaard Inc.*
Penfold Food Ingredients Co.*
Perten Instruments AB*
Perten Instruments, Inc.*
PGP International, Inc.*
Pharmline, Inc.
Prayon Inc.
Primera Foods
Quali Tech, Inc.*
R-Biopharm, Inc.*
Research Products Co.*
RIBUS, Inc.
Riviana Foods Inc.*
Roha Colors USA*
Romer Labs, Inc.
Roquette America, Inc.
rtch Laboratories
Sensient Flavors LLC
Sensient Food Colors*
Siemer Specialty Ingredients
Solbar USA
Sosland Publishing
SPEX SamplePrep LLC*
SunOpta Ingredients Group*
Suzanne’s Specialties, Inc.
Sweetener Supply Corporation / Ridgetal Fibers
Symrise Inc.*
Target Flavors, Incorporated
Tate & Lyle*
Texture Technologies Corp.*
TexVol Instruments AB*
Thermo Scientific
Thymly Products Inc.
TIC Gums*
Valley Fig Growers
Watson Inc.
Wenger Manufacturing, Inc.*
The Wright Group*

More than 130 of the industry’s top suppliers at the Exhibition.

21st Century Grain Processing*
ADM
AHD International, LLC
AIB International*
ANKOM Technology*
Arla Foods Ingredients*
Baker Perkins Inc.*
BENE0-Orafti*
BIPEA
Blue Diamond Growers
Blue Planet Foods*
Brabender GmbH & Co. KG*
Briess Malt & Ingredients Company*
Brookfield Engineering Laboratories, Inc.*
Bruker Optics*
Buhler Inc.*
Bunge Milling*
Bunge Oils*
Butter Buds Food Ingredients*
C.W. Brabender Instruments, Inc.*
Calibre Control International Ltd.*
California Natural Products*
California Raisin Marketing Board*
Canadian Food Barley, The Canadian International Grains Institute (CIGI)*
Can-Oat Milling, a Division of Viterra Inc.
Caravan Ingredients*
Caremoli USA, Inc.*
AACC International Offers Valuable Continuing Education Opportunities

AACC International Short Courses offer attendees the opportunity for small classroom learning direct from experts in industry, academia, and government. They cover highly technical information that you can take directly back to your work, as well as broader, conceptual information concerning health, wellness, nutrition, and other critical issues in our field. Short course offerings in 2010 included Food Extrusion in Peterborough-West, England; Formulating to Attain Health and Wellness Initiatives in Phoenix, AZ, U.S.A.; and two pre-annual meeting short courses, Sugars: The Not-So-Simple Story and Enzymes in Grain-Based Products, in Savannah, GA, U.S.A.

Food Extrusion is a perennially popular course for AACC Intl. and continues to draw speakers and attendees at the top of their field. Product and process development personnel, design engineers, and/or plant/manufacturing engineers interested in learning more should consider attending this course when it is offered again March 14–16, 2011, in Tampa, FL, U.S.A.

Formulating to Attain Health and Wellness Initiatives, held March 16–18, was a new course for 2010 and focused on formulating baked products with added health benefits. Health and wellness will continue to be key market drivers for consumers and this course explored a number of health and wellness platforms and consumer trends. Look for this course to be offered again in September 2011.

Pre-annual meeting short courses are typically held the Saturday prior to the annual meeting and usually offer one full day of presentations and discussion. They are an excellent way to make the most out of your time traveling to the annual meeting and provide a great networking opportunity in addition to learning opportunities. The Sugars: The Not-So-Simple Story course covered market trends, regulatory implications, functionality of sweeteners, nonnutritive sweeteners, sensory implications, health aspects, and formulating low-sugar, grain-based products. Enzymes in Grain-Based Products focused on the current state of technology and new concepts in enzymatic processing of grains.

In addition to offering several short courses throughout the year, the Continuing Education Program expanded this year by offering a corporate in-house training program. These courses provide technical and applied training for staff in an efficient, cost-effective manner by bringing the experts to your company.

AACC Intl. is committed to offering short courses and other continuing education opportunities that meet your needs and answer your questions. Upcoming 2011 short courses include a U.S. Regulatory Summit in Washington, DC, in February 2011; Breakfast Cereals, February 28 through March 2, in St. Gallen, Switzerland; and Food Extrusion, March 14–16, in Tampa, FL, U.S.A. Courses on Technology of Batters and Breadings, as well as Chemical Leavening, are being planned for early April.

Keep the Competitive Edge

Attend AACC International Short Courses

Visit the Continuing Education Center at www.aaccnet.org.

- **U.S. Regulatory Summit**
  - February 3, 2011
  - Washington, DC, U.S.A.

- **Breakfast Cereals**
  - February 28–March 2, 2011
  - St. Gallen, Switzerland

- **Food Extrusion**
  - March 14–16, 2011
  - Tampa, Florida, U.S.A.

- **Technology of Batters and Breadings**
  - April 4–5, 2011
  - Phoenix, Arizona, U.S.A.

- **Chemical Leavening**
  - April 6–8, 2011
  - Phoenix, Arizona, U.S.A.
New Books from AACC International PRESS

During the past year, AACC Intl. PRESS has published two new titles important to those interested in grains and health and the production of nutritionally improved products.

**HEALTHGRAIN Methods—Analysis of Bioactive Components in Small Grain Cereals** is a new book that meets the need for providing substantive scientific support for the relationship between grains and health. The explosion of interest around the health benefits of whole grains has led to a new focus on the bioactive components of cereals, including their location and physiological effects. Grains are an important source of minerals (notably selenium, iron, and zinc) and vitamins, such as folate. These nutrients are often degraded or removed by the milling or polishing of the grain to provide refined products. Measurements of these components require methodologies for analysis that must be accurate and reproducible and provide adequate samples to allow wide screening. This timely book provides the current knowledge and key methods for more than a dozen specific bioactive components in small grains. The work of the 47 prominent international food scientists presented in this comprehensive volume is the direct result of the European Union’s Framework 6 HEALTHGRAIN program that focuses on the role of whole grain cereals in reducing the risk of metabolic syndrome-related diseases. The development of routine analytical methods for this group of essential phytochemical and dietary fiber components will help food companies improve the health benefits of their products as well as their abilities to measure the bioactive ingredients in cereal-based foods.

**Oats: Chemistry and Technology, Second Edition** is the first major update of this topic in 21 years. Renowned contributing editors Francis H. Webster and Peter J. Wood have gathered an elite group of internationally recognized experts. This new edition addresses all aspects of oat chemistry, oat processing, nutrition, and plant genetics. It reflects the considerable changes in the science and food uses of oats that have occurred during the last two decades. Each chapter presents an in-depth review of a specific research area complete with an extensive bibliography. The book provides an important summary of oat nutritional research and associated health claims that have been granted in recognition of the nutritional benefits associated with oat consumption. The individual chapters on component chemistry and functionality provide an excellent resource for product developers in their quest to design new, healthy, oat-based food products. The chapters on oat molecular biology and oat breeding coupled with the extensive works on oat nutrition provide direction to researchers interested in developing oats with enhanced nutrition. This book was recently released in October 2010 at the annual meeting in Savannah and is completely revised with a new larger format and color throughout. **Oats: Chemistry and Technology, Second Edition** is the only up-to-date review of oat chemistry and technology. It will be a valuable resource for food science professionals, including nutritionists, cereal chemists, plant biochemists, plant breeders, molecular biologists, grain millers, and product development and research scientists.

Top Ten in 2010—Must-Read Papers Published in *Cereal Chemistry* This Year

Each year, *Cereal Chemistry* publishes the hottest research in grain science. Below are the top 10 must-read articles published in 2010, representing the most highly viewed articles by our readers.

- Variability in Fine Structures of Noncellulosic Cell Wall Polysaccharides from Cereal Grains: Potential Importance in Human Health and Nutrition
- Oat and Rye β-Glucan: Properties and Function
- Characterization of a Novel Resistant-Starch and Its Effects on Postprandial Plasma-Glucose and Insulin Responses
- Whole Grains and Digestive Health
- Cereal Carbohydrates and Colon Health
- Regulatory Aspects of Whole Grain and Whole Grain Foods: Definitions and Labeling
- Physicochemical and Rheological Analysis of Flour Mill Streams
- Whole Grains and Health, Evidence from Observational and Intervention Studies
- Grains for Health: A Look to the Past and Insights into the Future
- Biofortification of Durum Wheat with Zinc and Iron

*Cereal Chemistry*’s readership continues to grow. Interested in publishing in *Cereal Chemistry*? Visit [http://cerealchemistry.aaccnet.org](http://cerealchemistry.aaccnet.org) and click on “Author Instructions” to learn how.

AACC Intl. Members Open Doors for the Next Generation

Now in its sixth year, the AACC Intl. Mentoring Program continues to open doors for the next generation of grain scientists. More than 40 members signed up to be part of the 2010 Mentoring Program, sponsored by the Professional Development

AACC Intl. member and mentor Bill Anwell addressing meeting attendees interested in the Mentoring Program.
An Update on AACC Intl. Technical Committees

New Guidelines Method for NIR Is Approved and Enhancement also Coming from NIR Group

The Near Infrared Analysis Technical Committee finalized an enhancement spreadsheet program that will accompany its newest approved method on assessment of performance of an existing calibration. During its annual meeting in Savannah, the committee discussed ongoing work in revising its “guidelines” method, with the intention of harmonizing it with a corresponding official method of AOCS. Work for the coming year includes the creation of an enhancement (interview-based) computer program to accompany the “guidelines” method and tentative plans to conduct a workshop on NIR theory and operation at a future AACC International event. The new method is described in this issue on page 293 and was approved by the Approved Methods Technical Committee in November, according to Stephen Delwiche, chair of the committee.

Chittick Method Tutorial, CO2 Density Table, and New Particle Size Determination Technique to Come

The Chemical Leavening Agents Technical Committee has nearly completed an updated CO2 density table, showing the modern equipment calculations. A PowerPoint presentation enhancement is being developed to show how to use the Chittick method. The committee is also working on the establishment of a technique to determine particle size in leavening agents as determined by weight or volume. All of these activities will help aid both suppliers and manufacturers, said committee chair, E. B. Russell.

Four Labs Lined Up for Pre-Collaborative Study on New Gluten Test Method

During the past year, the Protein Methods Technical Committee has focused on the Collaborative Study of Gluten ELISA. R-Biopharm will supply test kits that utilize the R5 antibody. Two formats: Sandwich ELISA requires 2 epitopes and intact protein competitive ELISA useful for hydrolyzed protein. Test samples have been made using the well-defined gluten-containing material. Various test materials have been prepared, from non-heat-treated to heavily heat-treated and degrees of hydrolysis. A pre-collaborative test will be performed by four laboratories, according to Clyde Don, chair of the committee.


A draft of a new method that uses the Chopin CD1 experimental mill is at review. Enhancements for approved experimental methods 26-21.02, 26-30.02, and 26-31.01 are being considered, too, according to Venkat Reddy, chair of the Experimental Milling Technical Committee. “We are also drafting an experimental milling method using three rolls and a sifter (walking flow method).”

The Statistical Advisory Technical Committee Is Recruiting New Members after Successful Savannah Science Café

The Statistical Advisory Technical Committee (SATC) hosted a science café at the 2010 Savannah meeting. The audience participation format worked well with excellent interaction in an informal session. “We are actively recruiting members and stress that you don’t have to be a statistician to join our group,” said Deb Palmquist, chair of the SATC. “Help us do the important work of reviewing stats for method collabs and plan the next biennial statistics symposium.” We are also working to link the collaborative study analysis spreadsheet to the Approved Methods Committees website.

Six New Videos Coming from Physical Testing, Call for doughLAB Users.

The Physical Testing Methods Technical Committee has been busy reviewing six video enhancements (Alveograph, Amylograph, Consistograph, Extensograph, Farinograph, and SDmatic) for the AACC Intl. Approved Methods of Analysis Online. The SDmatic video was approved and is available for viewing in Approved Method 76-33.01, and the Alveograph video will be published soon. After the videos are revised and approved they will be added to their respective methods online. The committee is also planning a collaborative study on the doughLAB. Any users of this instrument who are interested in participating in the collaborative study should contact committee chair, Elaine Sopiwnyk (esopiwnyk@cigi.ca).

Statistics may be defined as ‘a body of methods for making wise decisions in the face of uncertainty.’” – W. A. Wallis

Newest Approved Methods Committee Taking a Healthy Approach to Method Development

The Bioactive Compounds Methods Technical Committee is currently working on two methods, namely total carotenoids content (TCC) and bile acids binding (BAB) for screening grain
foods and ingredients for health potential. A mini collab study on TCC has been completed, and the statistical results look promising. A regular collab study employing 12 labs will be underway soon. For the BAB method, a mini collab study is being planned. In addition, the committee has several working groups with a number of assignments to identify priorities in developing methods for phenolics and antioxidants in grains, and to develop a standard definition for bioactive compounds. For more information or to join the committee, please contact Elsayed Abdelaal (abdelalaal@agr.gc.ca), chair of the committee.

New Enhancement Added to Method 44-17.01—Cooked Pulses Method Coming Soon

The Pulse and Legume Technical Committee has completed a preliminary collaborative study on a new method for measuring firmness of cooked pulses. In addition, a calculator has been added to the online version of AACC Intl. Method 44-17.01 as an enhancement. The committee plans to begin a full collaborative study on measuring firmness of cooked pulses and prepare an enhancement for this method, according to committee chair Ning Wang.

Many Grain and Flour Methods Are Getting Committee's Attention

The Methods for Grain and Flour Testing Technical Committee is reviewing the methods for ash to clarify the wording on time and temperature. “We are also preparing guidelines for estimating grinding effects on moisture and are reviewing guidelines for N conversion factors to protein,” according to Terry Nelsen, committee chair. “Our committee is evaluating spreadsheet calculators for key methods and observing a U.K. collaborative study on a “Tristimulus Method for Color in Flour, Semolina, and Similar Products.”” In Savannah, the committee voted to archive AACC Intl. Method 46-10, a Kjeldahl method using a mercury-based catalyst. Archived methods are available within the 11th edition online, but not in the active contents.


The Approved Methods Technical Committee has obtained an official approval letter from the Japanese authority to allow AACC Intl. to adopt the udon noodle method guideline. The committee is reformatting the method to meet the AACC Intl. method format and style and if approved the guideline will be available in early 2011. Co-Chairs Larisa Cato and Gary Hou also report that a noodle firmness pre-collaborative study by 10 labs is complete and results are being analyzed. The plan is to organize a formal noodle firmness collaborative to develop an official AACC Intl. noodle firmness method. Eight noodle samples will be sent out for testing. The Asian Products Technical Committee will also produce a video in collaboration with Marc Johnson, Texture Technologies Corp., to show specific noodle firmness measurement procedures. This will be part of a method enhancement. This collaborative is expected to be completed by October 2011.

Folic Acid Study, Added EDTA-Iron Next Up for Vitamin, Minerals, and Lipids Technical Committee

A collaborative study on added folic acid measurement by HPLC will commence shortly. We are looking for additional labs to participate. We will send out a set of samples with analytical protocol, data recording spread sheet, and practice sample. We hope to complete this by early February. Please contact Padu Krishnan (padmanaban.krishnan@sdsstate.edu) to participate in the collab. An in-house study of the measurement of added EDTA-Iron (spectrophotometric) in flour blends is being explored.

SRC Enhancements and Methods on Soft Wheat Tech Committee Agenda

Solvent Retention Capacity (SRC) will be the first video enhancement from the Soft Wheat and Flour Products Technical Committee. Meera Kweon is also preparing a spreadsheet for SRC calculation which will be posted to the 11th edition after review. Applicability of flour methods to whole grain is being considered and was discussed in Savannah. Once the definition for “whole grain” is established, a path forward will be determined. The new Pancake method collaborative will be conducted early in 2011. Oxidative gelation, used to predict thickening potential of flours, is under final refinement, and will be submitted for consideration in 2011.

Biotech Group Is Looking at q-PCR Method Enhancements

The Biotechnology Methods Technical Committee has identified enhancements related to q-PCR experimentation and analysis. The value of developing interlaboratory collaborations for the detection of biotechnology-derived grains is being considered. The Biotechnology Methods Technical Committee is interested in cross-collaboration with the other AACC Intl. Approved Methods Committees.

C-Cell Analysis Guidelines Targeted by Bread Baking Committee

The Bread Baking Methods Technical Committee is in the development stage of a collaborative among laboratories that have C-Cell instruments. The goal is to produce guidelines for users who want to obtain maximum accurate results. The committee is checking the published research and literature to determine what parameters labs are currently using in their C-Cell Analyses. The committee will discuss this study with the C-Cell developer in preparation of a collaborative round of testing with as many labs as possible, reports Helen Allen, co-chair.

Another New Dietary Fiber Method Coming in 2011

A collaborative study of the method to quantitate dietary fiber per the CODEX definition as insoluble and soluble fractions and total dietary fiber is nearly complete and, if approved, will appear in the 11th edition online in 2011. The AACC Intl. definition of dietary fiber adopted in 2000 was a groundbreaking effort that ultimately led to the key components of the definition adopted by CODEX Alimentarius in 2009. The Dietary Fiber and Other Carbohydrates Committee will retain the AACC Intl. definition. Both definitions include resistant oligosaccharides (dp = 3 through dp = 9), although the CODEX definition potentially allows them to be excluded as an option via a footnote. The committee unanimously agreed that AACC Intl. supports and promotes the inclusion of these important dietary fiber components. The committee determined that there is no scientific or analytical basis for their exclusion.
Moving Forward with 7 Key Scientific Initiatives

AACC International began its focus on 7 Key Scientific Initiatives in 2009, helping to shape the association’s offering and ensuring the research and training available from AACC Intl. is relevant to your work. This new focus on these chosen initiatives has helped AACC Intl. return to the core of its mission—advancing grain science worldwide.

The initiatives have indeed guided the association in its offerings. The 2009 and 2010 annual meetings were centered around these seven initiatives, helping the association concentrate on evolving those areas, while assisting attendees identify sessions within their areas of interest. Articles have appeared in CFW and research has been published in Cereal Chemistry to specifically address these 7 Key Scientific Initiatives. Smaller meetings held by divisions have centered on the initiatives, and committees and the new interest groups have been aligned to the 7 Key Scientific Initiatives. By embracing what is the core of AACC Intl., both the association and the science are being advanced.

What Piques Your Interest?

In 2010, AACC Intl. worked diligently to form new Interest Groups that will focus on specialized subjects relevant to the association’s mission. The Food Safety, Gluten-Free, and Mapping Quality of Small Grains Interest Groups met during the 2010 Annual Meeting. The Mapping Quality of Small Grains Interest Group aims to connect researchers who are engaged in mapping end-use quality traits in wheat and facilitate the sharing of information and strategies for population development, phenotyping, marker development, and marker-trait validation. Contact Craig Morris (morrisc@wsu.edu) to participate.

New Aleurone Definition Approved

The AACC International Aleurone Task Force, the scientific review committee—charged with developing an aleurone definition using sound science as a guide and specifying the composition, processing, and benefits of aleurone—proposed a preliminary definition of aleurone for review by the full membership and the global scientific community. Feedback on the proposed definition was collected and reviewed, and based on these recent comments, the definition was amended by the task force. The AACC Intl. Board of Directors then reviewed and approved the final definition in July 2010. The new definition can be found in the September-October issue of Cereal Foods World.

WGWG Aims to Define “Whole Grain,” Address Detractors

The Whole Grains Working Group (WGWG) was created to address issues that arise regarding whole grains that require the scientific expertise that AACC Intl. can provide. Findings will be provided to the AACC Intl. membership and member companies, regulatory bodies worldwide, health-promotion organizations, and others who would find such information valuable. The group is working with its global members, companies, and government agencies to achieve, wherever possible, international harmonization.

Lead by Julie Miller Jones, the WGWG will be considering a definition of whole grain foods in the coming year. They hope to first define the term “whole grain” from a global perspective and then recommend to FDA how nutrient detractors should be addressed.

In addition to the WGWG, subgroups representing the various grains have been recently formed to answer the following questions in the upcoming year: 1) What is the relative proportion of the bran, germ, and endosperm in each of the whole grains?; and 2) What is an acceptable range for recombination?

There are currently subgroups for corn, oats and barley, rice, rye, and wheat.
New Task Force on Digestibility Indices Formed

In response to a growing interest in this particular area, AACC Intl. has formed a new task force to tackle digestibility indices. Topics such as glycemic index and glycemic load arouse considerable passion in many excellent scientists, both for and against. The immediate job of this Task Force is to formulate an agreed list of questions on which people might disagree and which should be able to be answered by scientific means. Interested parties recently met at the AACC International Annual Meeting in Savannah. Updates on the work of the task force will be published on AACCnet and in news capsules as it becomes available.

Scientific Advisory Panel Develops List of Issues Pertinent to the Cereal Industry

The charter of the Scientific Advisory Panel (SAP) is to identify and monitor scientific and public interest issues facing cereal and cereal-related industries worldwide, make recommendations to the Board of Directors or other panels concerning any response by AACC Intl., and otherwise strengthen the scientific stature of the association. During the past year, SAP took a considerable amount of time to build its database of issues facing our industry. They conducted a survey of the membership and developed a list of 113 trends. They prioritized this list of issues and provided the top 20 list to the board for action during the May 2010 midyear meeting. From there, the board set about creating actions based on the recommendations. These actions ranged from publishing an article in Cereal Foods World to holding an annual meeting hot topic session to developing a task force to further investigate actions.

During the coming year, SAP once again plans to survey the membership regarding trends facing our industry but also intends to broaden input from partner organizations. Additionally, they plan on soliciting feedback from our regional sections. As a global organization, individual trends may need to be ranked with a higher priority for certain regions based on the conditions/circumstances of that area. SAP will also be conversing more with the organization’s divisions and technical committees to develop and prioritize this list of issues.

AACC Intl. Supports Traceability, Submits Comments to FDA

AACC Intl. submitted comments in response to FDA’s request for input on Product Tracing Systems for Food and Feed. AACC International’s March 2010 letter supports traceability and explains why it is more complex to trace back grains than other food groups. The letter is posted online at www.aaccnet.org/news/FDA2009N0523.pdf.
2010 AACC International Awards

Congratulations to the following members who were selected to receive AACC International awards in honor of their significant contributions to the field of grain science.

The William F. Geddes Memorial Award, one of the association’s most esteemed awards, was created in 1961 to honor the zeal and selfless industry of an individual member and emphasize the importance of his or her contributions to the work of the society. 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. This year, Barbara Heidolph was named the recipient of this prestigious award. Heidolph, a long-time member of AACC Intl., serves as technical service principal with ICL Performance Products LP in St. Louis, MO, U.S.A. She has more than 30 years of experience and has conducted research with bakery, beverage, dairy, and meat applications of food phosphate products. In her current position, she provides technical support to customers, conducts application research, and identifies growth opportunities related to the baking segment.

John MacDonald was named the recipient of the Edith Christensen Award for Outstanding Contributions in Analytical Methods. The award 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. MacDonald is manager of organic analysis at NP Analytical Laboratories in St. Louis, MO, U.S.A., where he has spent the past 36 years applying gas chromatography, mass spectrometry, liquid chromatography, and spectroscopy to the determination of nutrients and contaminants in foods, feeds, and ingredients.

This year, the Young Scientist Research Award went to Sajid Alavi. The award, presented to an individual for outstanding contributions in basic and applied research to cereal science with the expectation that contributions will continue, recognizes research relevant to the broad aims and interests of AACC Intl. Alavi is associate professor in the Department of Grain Science and Industry at Kansas State University. Alavi’s research interests are in food engineering and more specifically in the areas of extrusion processing of food and feed materials, rheology, food microstructure imaging, structure-texture relationships, and value-added uses of biological materials and residues.

Curtis Weller received the association’s Excellence in Teaching Award for significant contributions through teaching in the broad field of cereal science and technology. Weller is a professor at the University of Nebraska-Lincoln (UNL) with teaching and research appointments in the Department of Biological Systems Engineering and the Department of Food Science and Technology. He also serves as coordinator of the academic programs and as an undergraduate advisor in the Department of Biological Systems Engineering.

Established in 2005, the AACC International 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. Recipients of the award are also accorded the status of AACC Intl. fellow for their contributions leading to this award. The 2010 Applied Research Award went to Larry Johnson. Johnson was appointed director of the Center for Crops Utilization Research at Iowa State University in 1985. He has provided state and national leadership in adding value to and finding new uses for corn and soybeans. He was also recently appointed director of the BioCentury Research Farm, an integrated research and demonstration facility dedicated to biomass production and processing for biofuels and bio-based products. This year, AACC Intl. renamed the Applied Research Award, the Phil Williams Applied Research Award.

Perry K. W. Ng and David Wetzel were named AACC Intl. fellows in recognition of their outstanding contributions to cereal science and technology. The award honors achievements in research, industry, leadership, education, administration, communication, or regulatory affairs. Ng, an AACC Intl. member for more than 25 years, joined the faculty of Michigan State University in 1992 to initiate a Cereal Science Program in the Department of Food Science & Human Nutrition (FSHN). In 2008, he was invited to join the Institute of International Agriculture at MSU in addition to his appointment in FSHN. Wetzel has published research from the Kansas State University (KSU) Microbeam Molecular Spectroscopy Laboratory, established by Wetzel, which has attracted worldwide attention. Wetzel designed and built a new type of NIR instrument. NIR analyses from his lab enabled KSU wheat breeders to achieve a 2.5% increase in wheat protein content. At present, he is working with his two sons who are medical doctors, using microspectroscopy to assess heart health.
Best Student Research Paper Competition Winners Announced

The AACC Intl. Professional Development Panel hosted the Best Student Research Paper Competition at the 2010 Annual Meeting. The competition challenges students to demonstrate superior presentation skills, encourages students to present their research work at the annual meeting, highlights the best research conducted and presented by students, and offers an opportunity for students to interact with the AACC Intl. community at an early stage in their careers. The competition was judged in two stages. Based on an initial review of nomination forms, abstracts, and initial presentations and the judges’ scores, six students were chosen to participate in the competition in Savannah. Winning first place was George Ondier, University of Arkansas. Jung Sun Hong, University of Idaho, won second place and third place went to Reetta Kivelä, University of Helsinki. Other finalists included Ieva Alauonie, Manchester Metropolitan University; Nisha Aravind, University of New England; and Hongxin Jiang, Iowa State University.

Recipients of New AACC Intl. Foundation Cecil F. Pinney Award Named

In 2010, Bhimalingeswarappa Geera and Maria Omary were named the first-ever recipients of the AACC Intl. Foundation’s new Cecil F. Pinney Travel Award. This award was created to honor, support, and recognize AACC Intl. members who are new in their professional careers and who will become the next generation of leaders in the field of grain science and technology. Each recipient received $750 to attend the 2010 Annual Meeting, free division membership, and complimentary registration to the annual meeting.

Congratualtions, AACC International Foundation Awardees

Since its inception in 1989, the AACC International Foundation has focused on providing undergraduate scholarships and graduate fellowships to students excelling in studies relevant to grain-based food science and technology. The AACC Intl. Scholarship & Fellowship Committee named a total of seven graduate and two undergraduate scholarship awardees in 2010, all funded through the AACC Intl. Foundation.
Travel Grants Awarded to 79 Students in 2010

This year, the following 79 students received Manhattan Section Student Travel Fund Awards for 2010. These recipients, from 33 universities and 12 countries, represent the future of AACC International. Congratulations to the student awardees and thank you to all who made a financial contribution to this fund.

Cornell University (U.S.A.)
Casto Unson

Institut National de la Recherche Agronomique, INRA, Nantes (France)
Magali Wagner

Iowa State University (U.S.A.)
Joshua Carter
Babu Chinnasamy
Hongxin Jiang
Krista McCarty
Jelena Medic
Pradeep Suriya Narayanan

Jiangnan University (China)
Liqun Huang
Ruoshi Liu
Jingjing Wan

Kansas State University (U.S.A.)
Anikka Ahmed
Yanjie Bai
Sunil Bansal
Lauren Brewer
Khushal Brijwani
Liming Cai
Hyma Gajula
Daniela Nath de Olivera
Oscar Ramos
Gabriela Rattin
Shifeng Ruan
Radhia Shukri
Shuping Yan

Katholieke Universiteit Leuven (Belgium)
Ine Rombouts

Korea University (Korea)
Hee-Young Kim
Xing Zhou

Manchester Metropolitan University (United Kingdom)
Ieva Alaunty

Memorial University of Newfoundland (Canada)
Varatharajan Vamaevan

Michigan State University (U.S.A.)
Neil Yu

National Taiwan University (Taiwan)
Wen-Yang Huang
Yu-Ping Huang

North Dakota State University (U.S.A.)
Wesam AbuHammad
Maribel Ovando-Martinez
Harkanwal Sandhu
Kristin Whitney

Ohio State University (U.S.A.)
Pauline Ie
Amber Simmons

Purdue University (U.S.A.)
Madhuvanti Kale
Pinthip Rumpagaporn
Haidi Xu

South Dakota State University (U.S.A.)
Julie Darly

Texas A&M University (U.S.A.)
Muhammad Asif
Frederico Barros
Tom Jondiko
Luz Eliana Pinella
Liyi Yang

The University of New England (Australia)
Nisha Aravind

Università degli Studi di Milano (Italy)
Alessandra Marti

Université de Nantes (France)
Aamir Shehzad

University of Alberta (Canada)
Sabaratnam Naguleswaran

University of Arkansas (U.S.A.)
Maria Alejandra Billiris
Chelsey Castrodale
Martha Hunt
Curtis Luckett
George Ondier

University of Georgia (U.S.A.)
Kathryn Acosta
Suxuan Xu

University of Guelph (Canada)
Carolyn Challcombe
Falguni Chauhan
Avi Goldstein
John Melnyk
Komeine Nantanga
Azadeh Vatandoust
Renuka Waduge

University of Helsinki (Finland)
Reetta Kivelä

University of Idaho (U.S.A.)
Jung Sun Hong

University of Illinois at Urbana-Champaign (U.S.A.)
Prabhjot Kaur
Esha Khullar

University of Manitoba (Canada)
Tara Ayotte
Lisa Humiski
Joel Lamoureux

University of Minnesota (U.S.A.)
Catrin Tyl

University of Queensland (Australia)
Sushil Dhital

University of Saskatchewan (Canada)
Geetika Ahuja

University of Turku (Finland)
Ritva Repo-Carrasco-Valencia

Wageningen University (The Netherlands)
Mariafe Calingacion

Washington State University (U.S.A.)
Hyunwook Choi
Daniel Ramseyer