106th AOCS Annual Meeting and Industry Showcases

May 3–6, 2015
Rosen Shingle Creek | Orlando, Florida, USA

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Welcome to Orlando!

And, welcome to the new “campus format” for this meeting! This year you will experience a unique structure and I want to encourage you to take advantage of all that this new version offers.

The three campuses, representing the AOCS interest areas, provide an innovative conference format designed to give attendees with similar interests more opportunities to network, collaborate, and learn. These are the reasons we are all here at this essential meeting for our industries, right?

Each campus features concurrent technical sessions, an Industry Showcase, poster presentations, and networking breaks. Campuses are conveniently located near each other, and follow the same schedule, allowing attendees to freely move among them. The Industry Showcases, a new and integral part of the campus environment, houses Showcase Partners providing business solutions specific to the interest areas of each campus.

Many networking events are planned within the campuses for interaction and socialization with your peers, but also be sure to join us for the President's Welcome Reception and the Lawn Party, both casual receptions to be held outside so we can enjoy the pleasant climate of this destination.

So, take advantage of all that this irreplaceable face-to-face meeting has to offer to help you expand your knowledge, enhance your professional growth, and enrich your social networking connections.

I look forward to seeing you “on campus” and hope you enjoy Orlando!

Best regards,

MANFRED TRAUTMANN
Annual Meeting General Chair
Managing Director
WeylChem AG, Switzerland

Society of Cosmetic Chemists (SCC)

AOCS is pleased to welcome the Society of Cosmetic Chemists to Rosen Shingle Creek for our 106th AOCS Annual Meeting and Industry Showcases. AOCS and the SCC recognize the importance of sharing technology, information, and analytical methods in the development of cosmetics and personal care products; and providing new avenues for professional development for members of both societies.

AOCS and the SCC have organized three joint sessions for the Annual Meeting to address topics common to both groups, including Lipid Oils and Skin Health, Surfactants: Cosmetic Science, and Strategies in Advanced Utilization of Proteins and Peptides. Information on these sessions may be found on pages 62, 48, and 60.

AOCS looks forward to establishing a tradition of collaboration with the SCC as our industries expand globally.
AOCS—Over a Century of Service to the Fats and Oils Industries

Recognizing the need to standardize methodology and to foster new techniques, nine analytical chemists founded the American Oil Chemists’ Society (AOCS) in 1909. This meeting continues the traditions developed in the Society’s first century and is the launching point for new initiatives and technologies to foster increased growth for the industry over the next century.

**AOCS Mission**

AOCS advances the science and technology of oils, fats, surfactants, and related materials, enriching the lives of people everywhere.
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- Contribute instant feedback

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Need assistance? Stop by **The App** Help Desk at the Butler Room.

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**Activate your profile and you could win an iPad Air!**

To qualify for the iPad Air drawing, your attendee profile must be activated by 9:00 am (Eastern) on Tuesday, May 5 and feature either your photo or short biography. The winner will be announced during the Awards Plenary and Business Meeting on Tuesday, beginning at 11:00 am in Gatlin C. **You must be present to win.**

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**Connect with AOCS!**

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**AOCS Association Exchange**

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Japan Oil Chemists’ Society (JOCS)
China Cleaning Industry Association (CCIA)

We encourage other organizations to explore the many opportunities to partner with AOCS.

For more information visit: aocs.org/AssociationExchange
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web  www.siwaco.com
WELCOME TO CAMPUS!

AOCS is pleased to welcome you to campus—our new conference format focused on networking and all-day, productive interaction between Industry Showcase Partners, speakers, poster authors, and attendees. Beginning this year, and occurring every odd-numbered year hereafter, AOCS will utilize the campus format to provide our meeting attendees more opportunities to network, collaborate, and learn from others with similar interests.

This year’s meeting contains three distinct campuses: Felix Paquin, Frank Smalley, and David Wesson. Each campus will adhere to the same daily schedule, allowing attendees to move easily among them to make the most of their Annual Meeting experience.

Industry Showcases

As the backbone of the campus format, the Industry Showcases feature international partners who provide business solutions specific to the interest areas of each campus.

Networking Breaks

The campus schedule includes two daily networking breaks, providing ideal time for attendees to connect with colleagues, network with speakers, meet with the Industry Showcase Partners, and view posters.

Poster Author Sessions

Five of the networking breaks will serve as poster author sessions:
- Even-numbered posters have authors present during the Monday mid-morning and Tuesday afternoon breaks.
- Odd-numbered posters have authors present during the Monday afternoon and Tuesday mid-morning breaks.
- All authors are also encouraged to be present during the Wednesday mid-morning break.

Campuses are divided by interest areas:

Felix Paquin Campus
- Agricultural Microscopy Division (AM)
- Phospholipid Division (PHO)
- Surfactants and Detergents Division (S&D)
- Society of Cosmetic Chemists (SCC)

Detailed information on the Felix Paquin Campus begins on page 45.

David Wesson Campus
- Biotechnology Division (BIO)
- Industrial Oil Products Division (IOP)
- Processing Division (PRO)
- Protein and Co-Products Division (PCP)

Detailed information on the David Wesson Campus begins on page 55.

Frank Smalley Campus
- Analytical Division (ANA)
- Edible Applications Technology Division (EAT)
- Health and Nutrition Division (H&N)
- Lipid Oxidation and Quality Division (LOQ)

Detailed information on the Frank Smalley Campus begins on page 27.
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Thank You!

AOCS greatly appreciates the generous contributions from the following organizations. Without their support, the success of the 106th AOCS Annual Meeting and Industry Showcases would not be possible.

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**Schedule Overview**

All events listed below are included in full registration. For a complete listing of all activities by day, please see the Program-at-a-Glance brochure or use The App.

### Sunday, May 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am–7:00 pm</td>
<td>Speaker Ready Room</td>
<td>Boardroom</td>
</tr>
<tr>
<td>9:00 am–5:00 pm</td>
<td>Committee Meetings</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>10:00 am–7:00 pm</td>
<td>Registration</td>
<td>Gatlin Foyer</td>
</tr>
<tr>
<td>4:45–5:30 pm</td>
<td>Student CIG Meet-and-Greet</td>
<td>St. John’s 28</td>
</tr>
<tr>
<td>5:00–7:30 pm</td>
<td>Bookstore</td>
<td>Career Center</td>
</tr>
<tr>
<td></td>
<td>inform</td>
<td>connect</td>
</tr>
<tr>
<td>5:30–7:00 pm</td>
<td>President’s Welcome Reception</td>
<td>Butler</td>
</tr>
<tr>
<td>7:00–8:00 pm</td>
<td>Young Professionals’ CIG Reception</td>
<td>Osceola Courtyard</td>
</tr>
</tbody>
</table>

### Monday, May 4

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am–6:00 pm</td>
<td>Campuses</td>
<td>Industry Showcases</td>
</tr>
<tr>
<td>7:00 am–5:00 pm</td>
<td>Committee Meetings</td>
<td>See Program-at-a-Glance</td>
</tr>
<tr>
<td>7:00 am–6:00 pm</td>
<td>Registration</td>
<td>Gatlin Foyer</td>
</tr>
<tr>
<td>7:00 am–7:00 pm</td>
<td>Speaker Ready Room</td>
<td>Boardroom</td>
</tr>
<tr>
<td>7:20–8:20 am</td>
<td>Early Risers Coffee</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>8:15–11:20 am</td>
<td>Hot Topics Symposia</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>9:00 am–6:00 pm</td>
<td>Bookstore</td>
<td>Career Center</td>
</tr>
<tr>
<td></td>
<td>inform</td>
<td>connect</td>
</tr>
<tr>
<td>9:40–10:20 am</td>
<td>Networking Break and Poster Author Session</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>12:00–1:15 pm</td>
<td>Career Fair</td>
<td>Conway</td>
</tr>
<tr>
<td>1:15–5:00 pm</td>
<td>Technical Sessions</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>2:40–3:20 pm</td>
<td>Networking Break and Poster Author Session</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>5:00–6:00 pm</td>
<td>Career Fair</td>
<td>Conway</td>
</tr>
<tr>
<td>6:00–10:00 pm</td>
<td>Pointe Orlando Shuttles</td>
<td>Transportation Lobby</td>
</tr>
</tbody>
</table>

### Tuesday, May 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am–6:00 pm</td>
<td>Campuses</td>
<td>Industry Showcases</td>
</tr>
<tr>
<td>7:00 am–6:00 pm</td>
<td>Committee Meetings</td>
<td>See Program-at-a-Glance</td>
</tr>
<tr>
<td>7:00 am–8:00 am</td>
<td>Early Risers Coffee</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>7:00 am–6:00 pm</td>
<td>Registration</td>
<td>Gatlin Foyer</td>
</tr>
<tr>
<td>7:00 am–7:00 pm</td>
<td>Speaker Ready Room</td>
<td>Boardroom</td>
</tr>
<tr>
<td>7:55–11:00 am</td>
<td>Technical Sessions</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>9:00 am–6:00 pm</td>
<td>Bookstore</td>
<td>Career Center</td>
</tr>
<tr>
<td></td>
<td>inform</td>
<td>connect</td>
</tr>
<tr>
<td>9:00 am–4:00 pm</td>
<td>Silent Auction.</td>
<td>Butler Balcony</td>
</tr>
<tr>
<td>9:20–10:00 am</td>
<td>Networking Break and Poster Author Session</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>11:00 am–12:45 pm</td>
<td>Awards Plenary and Business Meeting</td>
<td>Gatlin C</td>
</tr>
<tr>
<td>2:15–6:00 pm</td>
<td>Technical Sessions</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>3:40–4:20 pm</td>
<td>Networking Break and Poster Author Session</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>6:00–7:30 pm</td>
<td>Lawn Party.</td>
<td>Recreation Lawn and Patio</td>
</tr>
</tbody>
</table>

### Wednesday, May 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am–5:00 pm</td>
<td>Campuses</td>
<td>Industry Showcases.</td>
</tr>
<tr>
<td>7:00–8:00 am</td>
<td>Early Risers Coffee</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>7:00 am–3:40 pm</td>
<td>Poster Viewing.</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>7:00 am–4:00 pm</td>
<td>Registration</td>
<td>Gatlin Foyer</td>
</tr>
<tr>
<td>7:00 am–2:00 pm</td>
<td>Speaker Ready Room</td>
<td>Boardroom</td>
</tr>
<tr>
<td>7:30 am–5:00 pm</td>
<td>Committee Meetings</td>
<td>See Program-at-a-Glance</td>
</tr>
<tr>
<td>7:55 am–12:00 pm</td>
<td>Technical Sessions.</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>9:00 am–4:00 pm</td>
<td>Bookstore</td>
<td>Career Center</td>
</tr>
<tr>
<td></td>
<td>inform</td>
<td>connect</td>
</tr>
<tr>
<td>9:40–10:20 am</td>
<td>Networking Break and Poster Author Session</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>1:55–5:00 pm</td>
<td>Technical Sessions</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
<tr>
<td>3:20–3:40 pm</td>
<td>Networking break</td>
<td>Gatlin B, D, &amp; Panzacola</td>
</tr>
</tbody>
</table>
Networking Events

Sunday, May 3

Student Common Interest Group Meet-and-Greet
4:45–5:30 pm | St. John’s 28
Meet fellow students in a relaxed environment, build relationships within five minutes, and learn how to make the most of your conference experience. Feedback on this event has been very positive—we encourage you to take part! At the conclusion, we will attend the President’s Welcome Reception. Open to all student attendees and those interested in networking with this group.

President’s Welcome Reception
5:30–7:00 pm | Butler
Reconnect with colleagues, network with new business contacts, and meet with the Industry Showcase Partners during this outdoor reception featuring a variety of hors d’oeuvres and beverages.

This event is included in the registration fee for all full registrants and Short Course registrants.

Young Professionals’ Common Interest Group Reception
7:00–8:00 pm | Osceola Courtyard
Attending the AOCS Annual Meeting is an investment in your career and your industry knowledge. Make the most of your Annual Meeting experience and start developing important professional connections now! This evening networking event is open to those new to the profession and all interested in networking with this group.

Monday, May 4

Career Fair
12:00–1:15 pm and 5:00–6:00 pm | Conway
An extension of our Career Center, the Career Fair is the perfect place to search for the ideal employee or career opportunity! Attend the Career Fair to discover potential employment openings, make industry contacts, and improve your networking skills.

Tuesday, May 5

Lawn Party
6:00–7:30 pm | Recreation Lawn and Patio
Develop important connections with other industry professionals from around the world in a friendly, casual environment. Kick off your shoes, roll up your sleeves, and enjoy playing sand volleyball, badminton, croquet, bocce ball, and bag toss. Hors d’oeuvres and beverages will be served so come and join the fun!

This event is included in the registration fee for all full and Tuesday-only registrants.

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Division Events

Divisions provide a forum for individuals with similar interests to exchange ideas, develop programs and meetings, and publish related materials. Participation in Division functions is open to all, and anyone interested is encouraged to attend.

Incoming Division Leadership Orientation
Executive Steering Committee Orientation: Chairpersons, Vice Chairpersons, and Secretary-Treasurers
Sunday, May 3, 9:30–11:00 am | St. John’s 24

All Division Executive Steering Committees
Sunday, May 3, 1:30–3:00 pm | Gatlin E-1

Division Council
Sunday, May 3, 3:00–4:00 pm | Gatlin E-1

Session Chair Orientation
Sunday, May 3, 4:00-4:30 pm | Gatlin E-1
Take this opportunity to meet with your fellow Session Chairs and Division Vice Chairs for a brief presentation about onsite Session Chair responsibilities. Details on The App, instructions for obtaining attendee feedback, and session room equipment will also be discussed. AOCS staff and an audio visual technician will be available to answer any questions.

2016 Annual Meeting Program Roundtable
All meeting attendees are invited to attend roundtable discussions and assist in developing the technical program for the 2016 AOCS Annual Meeting. AOCS and the Annual Meeting Program Committee greatly value your input! Roundtable meeting times are listed below. Division membership is not required.

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<thead>
<tr>
<th>Division</th>
<th>Roundtables</th>
<th>Networking Event(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Microscopy</td>
<td>Monday, May 4 5:00–6:00 pm</td>
<td>Luncheon: Tuesday, May 5 • 12:45–2:15 pm • St. John’s 29</td>
</tr>
<tr>
<td></td>
<td>Gatlin E-1</td>
<td></td>
</tr>
<tr>
<td>Analytical</td>
<td>Tuesday, May 5 5:40–6:00 pm</td>
<td>Luncheon: Monday, May 4 • 11:30 am–1:15 pm • Suwannee 18</td>
</tr>
<tr>
<td></td>
<td>Panzacola H-4</td>
<td>Speaker: Charlotta Turner, Lund University, Sweden</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Towards Green and Sustainable Analytical Chemistry</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>Tuesday, May 5 12:45–1:45 pm</td>
<td>Dinner: Tuesday, May 5 • 7:30–9:00 pm • Suwannee 15</td>
</tr>
<tr>
<td></td>
<td>Gatlin A-1</td>
<td>Speaker: Richard V. Tyson, Orange County Extension, University of Florida, USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sustainable Agricultural Opportunities for Local Food Systems: Hydroponics and Aquaponics</td>
</tr>
<tr>
<td>Edible Applications Technology</td>
<td>Monday, May 4 7:30–8:15 am</td>
<td>Reception/Dinner: Monday, May 4 • 6:30–8:30 pm • Suwannee 16</td>
</tr>
<tr>
<td></td>
<td>Panzacola H-3</td>
<td>Speaker: David A. Pink, St. Francis Xavier University, Canada</td>
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<td>Modelling 2015—The Year of the Shear</td>
</tr>
<tr>
<td>Health and Nutrition</td>
<td>Tuesday, May 5 12:45–1:45 pm</td>
<td>Dinner: Tuesday, May 5 • 7:30–9:00 pm • Suwannee 17</td>
</tr>
<tr>
<td></td>
<td>Panzacola H-2</td>
<td>Speaker: Carol J. Lammi-Keefe, Louisiana State University, USA</td>
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<tr>
<td></td>
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<td>Looking Backwards—More than a Quarter of a Century at the ‘Bench’</td>
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<tr>
<td>Industrial Oil Products</td>
<td>Monday, May 4 5:00–6:00 pm</td>
<td>Luncheon: Tuesday, May 5 • 12:45–2:15 pm • Suwannee 18</td>
</tr>
<tr>
<td></td>
<td>Gatlin A-2</td>
<td>Speaker: Nestor U. Soriano Jr., NALCO Champion</td>
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<tr>
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<td>Green Meets Black: Plant Oil-based Fuel Additives</td>
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<tr>
<td>Lipid Oxidation and Quality</td>
<td>Monday, May 4 5:00–6:00 pm</td>
<td>Luncheon: Tuesday, May 5 • 12:45–2:15 pm • Suwannee 17</td>
</tr>
<tr>
<td></td>
<td>Gatlin H-1</td>
<td>Speaker: To be announced.</td>
</tr>
<tr>
<td>Phospholipid</td>
<td>Tuesday, May 5 12:45–1:45 pm</td>
<td>Reception/Dinner: Monday, May 4 • 7:00–9:00 pm • Suwannee 17</td>
</tr>
<tr>
<td></td>
<td>Gatlin E-2</td>
<td>Speaker: Sampath Parthasarathy, University of Central Florida, USA</td>
</tr>
<tr>
<td>Processing</td>
<td>Wednesday, May 6 7:00–7:55 am</td>
<td>Hospitality: Monday, May 4 and Tuesday, May 5 • 7:00–9:00 pm • Suite</td>
</tr>
<tr>
<td></td>
<td>Gatlin A-3</td>
<td>Luncheon: Tuesday, May 5 • 12:45–2:15 pm • Suwannee 16</td>
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<td></td>
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<td>Speaker: Marc J. Kellens, Desmet Ballestra Group SA, Belgium</td>
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<td></td>
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<td>Oils and Fats Processing: Past, Present, and Future</td>
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<tr>
<td>Protein and Co-Products</td>
<td>Monday, May 4 11:45 am–1:00 pm</td>
<td>Dinner: Tuesday, May 5 • 7:30–9:00 pm • Suwannee 14</td>
</tr>
<tr>
<td></td>
<td>Gatlin A-4</td>
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</tr>
<tr>
<td>Surfactants and Detergents</td>
<td>Monday, May 4 5:00–6:00 pm</td>
<td>Networking Reception: Monday, May 4 • 6:00–7:30 pm • Suwannee 15</td>
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<tr>
<td></td>
<td>Gatlin E-4</td>
<td>Luncheon: Tuesday, May 5 • 12:45–2:15 pm • Suwannee 14</td>
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<tr>
<td></td>
<td></td>
<td>Speaker: Charles E. Hammond, CESI Chemical, USA</td>
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<tr>
<td></td>
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<td>The Art of Formulation to Dynamic Fluid Engineering</td>
</tr>
</tbody>
</table>
We create chemistry that makes beginnings love ends.

From the beginning as natural oils and fats to the end-use market, BASF enables the oleochemical value chain with a wide range of catalysts and adsorbents for:

- Hydrogenation of oils, fats, and fatty acids
- Production of fatty alcohols and fatty amines
- Adsorbent purification of fats and oils
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Visit BASF during AOCS in 321 Wesson Campus.

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We create chemistry
Section Events

Sections provide a mechanism for AOCS members and others residing in a specific geographic region to meet together regularly to discuss common interests. Section activities include short courses, conferences, and annual meetings. Anyone interested is encouraged to attend any Section event.

Monday, May 4

**Canadian Section Luncheon**
11:30 am–1:15 pm  |  Suwannee 17

**Section Council**
3:00–4:00 pm  |  St. John’s 27

**European Section Gathering** *(cash bar)*
5:00–6:00 pm  |  Headwaters Lounge

Tuesday, May 5

**Asian Section Leadership Team Meeting**
7:00–7:55 am  |  St. John’s 27

**Latin American Section Luncheon**
12:45–2:15 pm  |  Suwannee 19

Common Interest Group (CIG) Events

The Common Interest Groups (CIG) offer not only professional and mentoring activities, but also allows for the discussion and exchange of ideas for those involved within the groups. Anyone interested is encouraged to attend the meetings listed below or networking events on page 11.

Students

**Let’s Go As a Group to the Lawn Party!**
Tuesday, May 5, 5:30 pm  |  Hotel Lobby
We will meet by the birdcage in the main hotel lobby prior to the Lawn Party to form teams for the games. Come and enjoy the evening with your fellow students!

**Business Meeting and Mentoring Luncheon**
Wednesday, May 6, 12:00–1:45 pm  |  Sandlake
Meet your leadership team and your mentors, our long-time AOCS members. During the meeting, the leadership team will discuss a variety of programs and projects designed to enhance student participation in AOCS. Don’t miss this opportunity to develop your professional network with established AOCS members and other students. Open to students and mentors only.

This is a ticketed event. If you have not registered to attend this event, but would like to, please see the Registration Desk.

Sponsored by:

Young Professionals

**Mentoring**
Sunday, May 3, 4:00–5:00 pm  |  St. John’s 24
Meet your leadership team and mentors, our knowledgeable AOCS members in an informal, relaxed environment. Established professionals will mix and mingle with Young Professionals that are interested in mentoring opportunities. This is your time to seek career advice from those who have led the industry and served our community.

**Business Meeting**
Tuesday, May 5, 5:00–6:00 pm  |  St. John’s 25
This meeting will set priorities for the next year’s activities and may include discussion of technical sessions as well as other education and meeting opportunities. This is an open meeting and your time to help lead and direct future programs the group will organize.

Professional Educators

**Business Meeting**
Tuesday, May 5, 4:00–5:00 pm  |  St. John’s 27
This meeting will set priorities for the next year’s activities and may include discussion of technical sessions as well as other education and teaching opportunities.

Young Professionals’ and Professional Educators’ Common Interest Group (CIG) Session

**SS 3: The Challenges and Rewards of the Mentoring Relationship in Academia and Industry**
Monday, May 4  |  8:15–11:20 am  |  Gatlin E-2
See page 24 for more information on this session.
from best to better up to perfect

We do rolls for all your needs of flaking, cracking and sizing up to 800 mm in Diameter and 2,200 mm in length 12 tons single piece.
Everything AOCS! | Butler

Visit us here for all things AOCS! Browse through our numerous books, support AOCS students by bidding in the Foundation’s Silent Auction, take your souvenir photo, set up your inform|connect profile, have all your questions answered, and more!

AOCS Career Center
This service is free of charge to all meeting attendees. You are welcome to leave copies of résumés or job descriptions in the holders on the bulletin boards and take copies of items of interest. Be sure to take advantage of the Career Fair as well—find more information with the Networking Events on page 11.

inform|connect
Get connected! Let us help you complete your profile. You’ll receive a free souvenir photo for doing so!

AOCS Press Bookstore
Stop by the AOCS Press bookstore to browse our newest products and play Plinko to win prizes! Receive special meeting-only pricing on books, including a deeply discounted clearance selection. Take your books home with you, or have them shipped for free!

20th Annual Student CIG Silent Auction

Presented by the AOCS Foundation
This popular event begins at 5:00 pm on Sunday and ends at 4:00 pm on Tuesday. Now in its 20th year, the Silent Auction not only raises money for the outstanding AOCS Foundation student initiatives, but also generates friendly competition for the variety of creative items that are donated. Support AOCS’ student programs—stop by and make a bid!

Free Wi-Fi

Sponsored by

Complimentary wireless internet is available in each campus. To access, select the network noted below and enter the username and password. The password is case-sensitive.

Network: AOCS
Username: dsmpurifyne
Password: higheryield

Information Services
For all things AOCS
New from AOCS Press

Polar Lipids
Biology, Chemistry, and Technology
Edited by Moghis U. Ahmad and Xuebing Xu
Polar Lipids is a valuable reference resource providing thorough and comprehensive coverage of the application and utilization of polar lipids in food and nutrition, and health and disease. Chapters cover chemistry and chemical synthesis, biosynthesis and biological effects, functional and nutritional properties, applications, processing technologies, and future trends of a variety of polar lipids—including glycolipids, ether lipids, phenol lipids, serine phospholipids, omega-3 phospholipids, rice lecithin, palm lecithin, sunflower lecithin, sugar- and protein-based lipids, lysophospholipids, and more.

Sunflower
Chemistry, Production, Processing, and Utilization
AOCS Monograph Series on Oilseeds, Volume 7
Edited by Enrique Martinez-Force, Nurhan Turgut Dunford, and Joaquin J. Salas
This comprehensive reference book delivers key information on all aspects of sunflower. With over 20 chapters, this book provides an extensive review of the latest developments in sunflower genetics, breeding, processing, quality, and utilization, including food, energy and industrial bio-product applications. World-renowned experts in this field review US and international practices, production, and processing aspects of sunflower.

Olive and Olive Oil
Bioactive Constituents
Edited by Dimitrios Boskou
The market is flooded with products posing as elixirs, supplements, functional foods, and olive oil alternatives containing phenols obtained from multiple olive sources. This technically-oriented book will be of value to nutritionists and researchers in the biosciences. It unravels the body of science pertaining to olive minor constituents in relation to new chemical knowledge, technological innovations, and novel methods of recovery, parallel to toxicology, pharmacology, efficacy, doses, claims, and regulation.

Find these titles and more at the AOCS Press Bookstore in Butler!
Play Plinko and win prizes!
www.aocs.org/store
General Information

Registration

Registrars provide meeting materials and offer assistance.

Meeting Registration List is available on The App or online at: AnnualMeeting.aocs.org/AM15Resources

Lost and Found items may be turned in at the Registration Desk; also please check here for any lost items.

Be Green! Donate Your Meeting Materials if you don’t want to take them home. Materials returned to the Registration Desk will be donated to local organizations.

Name Badges

Name badges are color-coded to indicate registration status:
- Full Registrations . . . . . . . . . . . . . . . . . . . . . . . . . . . . Blue
- Monday Only . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Blue
- Tuesday Only . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Green
- Wednesday Only . . . . . . . . . . . . . . . . . . . . . . . . . . . . Purple
- Session Only . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Red

- Only registrants that have a badge with a color stripe are allowed to attend sessions.
- Badge checkers are stationed at the doors to all sessions, and only those registrants with the correct badges are admitted.
- If you are not a full registrant, but would like to upgrade, please see the Registration Desk.

Emergency Contacts

We encourage all attendees to please provide emergency contact information to AOCS by completing the reverse side of your name badge. This will help AOCS staff or medical personnel in case of an emergency situation during the meeting. Attendees should also login to the AOCS website, select ‘Emergency Contacts’ in the communication section, and add information to your AOCS record. This information will only be used in an emergency situation. If you do not recall your login details, please see the registrars at the Registration Desk.

Event Tickets

Keep your tickets with you as many AOCS events require tickets to be admitted. Tickets fit inside your name badge holder for easy access.

If you pre-registered, your tickets are in your registration envelope along with your name badge. If you registered on site, you received your tickets with your other meeting materials.

Presentation Information

Abstracts

Search and print abstracts for any of the presentations from the stations located in the Campuses. Abstracts are also available on The App or online at: AnnualMeeting.aocs.org/AM15Resources

Copies of Papers

Many of the papers presented during the meeting will appear in AOCS Press publications or other journals in the future. However, it is impossible to know whether or when a specific paper will be published. If you would like a copy of an individual presentation, please contact the author directly.

Presentation Ownership

Presentations at the meeting were prepared by and are the sole property of each presenter. Speakers have been given the AOCS guidelines for developing effective presentations and it is their responsibility to follow these guidelines.

Publication of Papers

AOCS encourages speakers to submit their work to AOCS for publication in Inform, JAOCS, Lipids, or the Journal of Surfactants and Detergents (JSD). Speakers who wish to publish their paper in JAOCS, Lipids, or JSD should visit the AOCS Press website at http://bit.ly/publishwithaocs for more details. To submit a magazine article based on your paper to Inform, contact Kathy Heine, Managing Editor, at kheine@aocs.org.

Speaker Ready Room | Boardroom

Laptop computers and an audio-visual technician are available.

<table>
<thead>
<tr>
<th>Date</th>
<th>Room Open</th>
<th>Technician Present</th>
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<tr>
<td>Sunday, May 3</td>
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<td>Monday, May 4</td>
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<td>Wednesday, May 6</td>
<td>7:00 am–2:00 pm</td>
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Miscellaneous Information

Mobile Phones

Please turn off your mobile phone (or set it to vibrate) during sessions.

Photography and Recording Policy

No video recording, tape recording, or still photography is allowed, except by registered media in the session rooms.

Video or still photography of Industry Showcase Partners display or posters is not allowed, unless permission is granted by the Partner or poster author.

Smoking Policy

Smoking is prohibited at all AOCS functions.

Fire-safety Precautions/Protection of Valuables

Please take a moment to familiarize yourself with fire-safety precautions that are posted in your hotel guest room. For your safety, double-lock the door when you are in your room, lock any connecting doors from your side, and make sure to lock your door when you leave your room. Hotels have limited liability regarding theft of personal property from hotel rooms, so please store extra cash or other valuables in a safe deposit box provided by the hotel.

AOCS Gives Back to Orlando

Don’t forget to drop off your new toy or book in the designated boxes located by the AOCS Registration area. Cash donations are also accepted at the AOCS Registration desk. All items will be donated to the Arnold Palmer Children’s Hospital. All donations should be made by 1:00 pm on Wednesday.
MIDI, Inc.’s Sherlock® Software, which has been trusted for over 25 years to quickly and accurately identify fatty acids, now includes additional industry-focused compounds from edible oils. Our proprietary software offers rapid automated analysis from GC, GC-MS, and HPLC, saving time and costs while providing accurate results you can be sure of.

### Automated Analysis:
- Fatty Acids, including Omega-3s, Cis/Trans, PUFAs
- TAGs & Tocols
- Sterols & Triterpenes

### Benefits of Sherlock Software:
- System Suitability Monitoring
- Accurate & Automated Peak Naming
- Repeatable and Reproducible Results
- Adulteration Detection Under 10%

Visit us at AOCS 106th Annual Meeting
Frank Smalley Campus, Location 117
The AOCS Foundation is proud to again organize the Silent Auction, sponsored by the Student Common Interest Group (SCIG).

- Proceeds support student programs
- Bid generously on as many items as you like
- Auction starts on **Sunday at 5:00 pm**
- Bidding ends on **Tuesday at 4:00 pm**

**Visit the Silent Auction, located in Butler, beginning Sunday and place your bids.**

A special thank you to all companies, universities, and individuals who are helping to support the AOCS Foundation by donating their products and services, as well as bidding.

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Bunge Canada
Bunge NA
Chelsey Castruch
Church & Dwight
Connols
CPM Roskamp Champion
Crown Iron Works
Doreen Berning
Frito-Lay
GEA Westfalia Separator
Gloria Cook
Hershey
Inform Magazine
Jeff & Claire Newman
Johnson & Johnson
Mondélez
NDSU
Nicole Philyaw
Novozymes
Nu-Chek Prep
optek-Danulat, Inc.
Patrick & Annette Donnelly
Randy Weselake
Richardson Oilseed Limited
Sigma Aldrich
Surface Chemists of Florida
University of Tennessee
Young Living

(As of April 1, 2015)
Rosen Shingle Creek

9939 Universal Blvd., Orlando, FL 32819
Tel: +1 407 996-9939
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LOWER LEVEL MEETING ROOMS
- Awards Plenary and Business Meeting
- Campuses
- Everything AOCS!
- Hot Topics Symposia

UPPER LEVEL MEETING ROOMS
- Committee Rooms
- Meal Events
- Silent Auction
- Special Sessions

Pointe Orlando Shuttles

Pointe Orlando Shuttles
Monday, May 4  |  6:00–10:00 pm  |  Transportation Lobby

Enjoy a night out! Seating on the complimentary shuttles is available on a first-come, first-served basis to all AOCS Annual Meeting attendees, with proof of meeting name badge.

Shuttles will operate between Rosen Shingle Creek and Pointe Orlando on a stop-and-go continuous schedule, with the final pick-up at Pointe Orlando at 9:45 pm.
Monday, May 4
8:15–11:00 am  |  Panzacola H-1

HT 1: Saturated Fat in the Diet: Where Do Formulators Go From Here?

Organizers: Carol J. Lammi-Keefe, Louisiana State University, USA; and Neil Widlak, Consultant, USA

For decades, the food industry has put considerable effort into formulating and developing foods that are low in total fat and saturated fat. US dietary guidelines recommend that people limit their consumption of saturated fat to reduce the risk of coronary heart disease. However, recent science-based evidence questions the association between saturated fats and coronary heart disease. Because of these questions, food formulators and researchers wonder if reducing total dietary fat in general, and saturated fat in particular, should still be a priority.

To examine current thinking on dietary fats, three prominent researchers will review and discuss the most recent epidemiological and clinical evidence.

8:15 Opening Remarks.
8:20 Evolving Evidence on the Role of Dietary Saturated Fat Intake and Heart Disease Prevention. Peter J. Huth, PJH Nutrition Science, LLC, USA.
8:40 Saturated Fat and Risk of Heart Disease: Optimizing Types of Fat Rather Than Reducing Total Fat. Frank Hu, Harvard School of Public Health, USA.
9:10 Where Are We With Diet and Heart Disease Prevention? Ernst Schaefer, Tufts University, USA.
9:40 Networking Break.
10:20 Moderated Panel Q & A.

8:15–10:40 am  |  Gatlin E-1

HT 2: Outlook on Healthy Oils: New Policies, Functions, and Innovations

Organizer: Patricia Kearney, PMK Associates, Inc., USA

The applications landscape for healthier oils is changing rapidly and it is vital for product developers to understand the drivers shaping the future marketplace. Fats and oils comprise about one third of our daily calories and expectations are growing that products will be able to optimize functionality, both in the human body and in the product. Emerging science on specific fatty acids is showing new health benefits while new generation oils and processes are making product improvements possible that will comply with upcoming regulatory requirements on trans and saturated fats and labeling issues. In addition, both scientists and non-scientists need to understand the larger implications of the science report for the 2015 US Dietary Guidelines that will address larger scope issues, such as the sustainability of the world’s food supply as well as nutrition.

8:15 Opening Remarks.
8:25 A New Nutritional View of Fatty Acids. Peter J.H. Jones, University of Manitoba, Canada.
9:40 Networking Break.
10:20 Outlook on New Dietary Guidelines and Regulatory Policy. Barbara Schneeman, University of California Davis, USA.
10:45 Innovation Provides the Pathway to Sustainability. David Dzisiak, Dow AgroSciences, USA.
11:10 Moderated Panel Q & A.
French oilseed processing equipment and systems

The industry standard

French understands the importance equipment reliability has on oilseed preparation system performance. Our proprietary line of precisely engineered and durable Cracking Mills, Flaking Mills, Conditioners and Screw Presses have a worldwide reputation for years of dependable operation.

Since 1900, we have supplied thousands of pieces of long lasting oilseed preparation equipment and successful complete oilseed equipment systems for nearly all commercial oilseeds food and industrial uses. Our process solutions meet and exceed industry standards of high quality crude oil, meal and oil extraction efficiencies.

Looking to develop or improve your process? Utilize French’s Innovation Center by conducting performance trials on your seed. Our team of experienced engineers will work with you to test a variety of processing elements and methods to achieve your optimal oil recovery while reducing heat degradation of the crude oil and cake. Confidentiality agreements are available.

Let us share with you the benefits of becoming Your Partner in Processing.

Visit us in the Wesson campus, poster location #316

French Oil Mill Machinery Co.
Piqua, Ohio, U.S.A. - 937-773-3420
www.frenchoil.com/oilseed-equipment
**Sunday, May 3**
1:00–3:00 pm | Suwannee 13

**SS 1: Statistical Design of Experiments Training for AOCS Journal Editors, Reviewers, and Authors**

Organizer: Richard W. Hartel, JAOCS Editor-in-Chief, University of Wisconsin-Madison, USA

Statistical Design of Experiments (DOE) is used frequently in research papers that are submitted to AOCS journals. This session is intended to provide a basic level of understanding of DOE concepts so that all parties will have a better idea of good design and analysis practices. After defining the key aspects of designs and the resultant analyses, examples of DOE in several papers will be discussed. This will lead into a broader discussion of what may be expected from authors when these methods are used in future submissions to the journals.

1:00 Statistical Design of Experiments. Frank Rossi, Kraft Foods, USA.

**Monday, May 4**
8:10–11:00 am | Gatlin A-2

**Lipids 50th Volume Symposium**

**SS 2: Lipid-binding Proteins: Fatty Acid Metabolism, Trafficking, and Signaling from Gut to Brain**

Organizer: Eric J. Murphy, Lipids Editor-in-Chief, University of North Dakota, USA

The 50th Volume of Lipids begins with the January 2015 issue. To celebrate this important landmark, AOCS is hosting a symposium focusing on the role of fatty acid binding proteins and other lipid binding proteins on fatty acid trafficking and signaling, with an emphasis on overall lipid metabolism.

Publishing Sponsor: Springer

8:10 Role of Fatty Acid Binding Proteins in Intestinal Lipid Absorption. Judy Storch, Rutgers University, USA.
9:00 Role of Liver Fatty Acid Binding Protein in Gene Expression and NASH. Friedhelm Schroeder, Texas A&M University, USA.
9:40 Networking Break.
10:20 Lipid-binding Proteins in the Brain: Role in Lipid Trafficking and Downstream Role in Neurodegenerative Diseases. Eric J. Murphy, Lipids Editor-in-Chief, University of North Dakota, USA.

8:15–11:20 am | Gatlin E-2

**Young Professionals’ and Professional Educators’ Common Interest Group (CIG) Session**

**SS 3: The Challenges and Rewards of the Mentoring Relationship in Academia and Industry**

Organizers: Douglas G. Hayes, University of Tennessee, USA; and Utkarsh M. Shah, Hershey Co., USA

This session will highlight the mentoring partnership in academia and industry from the mentor and mentee points-of-view. Attendees will learn about how to mentor, how to find a mentor, and the values generated by both groups.

8:15 Welcome and Announcements.
8:20 The Role of an Academic Mentor. Michael Eskin, University of Manitoba, Canada.
8:45 Finding a Good Mentor: Transition into the Academic Life. Nuria Acevedo, Iowa State University, USA.
9:40 Networking Break.
10:20 Fundamentals of Being Mentored. Chelsey Castrodale, Archer Daniels Midland Co., USA.
10:50 Panel Discussion.

11:20 am–12:00 pm | Gatlin E-2

The AOCS Journal Editors-in-Chief Present:

**SS 4: Enhance Your Career—Become a Reviewer**

Organizer: Janet Brown, AOCS Press, USA

This brief but informative session will highlight the importance of becoming a peer reviewer as a young professional, what constitutes a good review, and how to use reviewing to enhance your career.

11:20 Top 10 Reasons to Become a Peer Reviewer. George A. Smith, Journal of Surfactants and Detergents Editor-in-Chief, Huntsman Performance Group, USA.
11:30 What Constitutes a Good Review? Richard W. Hartel, JAOCS Editor-in-Chief, University of Wisconsin-Madison, USA.
11:45 How Peer Review Advances Your Career Trajectory. Eric J. Murphy, Lipids Editor-in-Chief, University of North Dakota, USA.

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Get The App

http://www.eventmobi.com/aocs/

The App is sponsored by DSM
**Tuesday, May 5**
11:00 am–12:45 pm | Gatlin C

**SS 5: Awards Plenary and Business Meeting**

Join us as we recognize the achievements of our members and learn what Society leaders are planning for the year ahead. AOCS President Steven Hill and AOCS Vice President Manfred Trautmann are each delivering a brief address, Society and Scientific awards are presented, and routine AOCS business will be conducted.

The Supelco/Nicholas Pelick–AOCS Research Award lecture, along with the Stephen S. Chang Award lecture, are presented as part of the session.

Biographies of Society and Scientific award winners begin on page 70.

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**Wednesday, May 6**
12:00–2:00 pm | Conway

**SS 6: Understanding Olive Oil: The Romance and the Reality**

Organizers: Extra Virgin Alliance and AOCS

Trained olive oil sensory experts will present an introduction to official olive oil tasting protocol, leading to a tasting of six olive oils, including top award-winners from around the world.

This is a ticketed event. If you have not registered to attend this event, but would like to, please see the Registration Desk.

**AOCS and Olive Oil Testing: Supporting a Developing Industry.** Richard Cantrill, Chief Science Officer and Technical Director, AOCS, USA.


**The Complete Picture: Chemical and Sensory Analysis of Olive Oil.** Leandro Ravetti, Technical Director, Modern Olives, Australia.

**Selling Quality: Adventures in the Olive Oil Marketplace.** David Neuman, CEO, Gaea North America, USA.

**Delicious and Nutritious: Olive Oil and Food at the American Table.** Alexandra Kicenik Devarenne, Industry Consultant, Co-Founder, Extra Virgin Alliance, USA.

**Definitions and Descriptions: Standards of Identity for Food.** Kristie Laurvick, Senior Scientific Liaison Food Standards, US Pharmacopeia, USA.
Bruker’s FT-NIR systems cover every phase of edible oil production and their use in finished products:

- Composition analysis of the incoming oil seeds
- Quality control of finished oils and blends
- Degradation analysis of frying oils and fats
- Composition and quality parameters in dressings, sauces and condiments
- Pre-calibrated FT-NIR systems for fast start-up and return on investment

Contact us for more details www.bruker.com/optics
Frank Smalley Campus

Panzacola

Named after Frank Smalley, an AOCS co-founder, founder of the Laboratory Proficiency Program (LPP), and the Society’s president in 1913, this campus houses the technical sessions, poster presentations, and Industry Showcase Partners pertaining to these interest areas:

- Analytical Division
- Edible Applications Technology Division
- Health and Nutrition Division
- Lipid Oxidation and Quality Division

Division events for the interest areas of this campus may be found on page 12.

Industry Showcase Partners

(As of March 15, 2015)

Agilent Technologies
Bruker
Carlson Consulting Engineers, LLC
DuPont Nutrition & Health
FOSS North America
Kalsec
Lovibond Tintometer
Malaysian Palm Oil Board
MIDI, Inc.
Myande Group
Myer’s Vacuum
PMI-Technology Sdn Bhd
ProSimTechs LLC
QUALISOY
SPX Flow Technology
Stratas Foods–RDI Center
Thermo Fisher Scientific, Inc.
Waters Corporation

Campus Schedule

Monday, May 4
7:00 am–6:00 pm . . . . . . . Industry Showcase and Poster Viewing
7:20–8:20 am . . . . . . . . . . Early Risers Coffee
7:30–8:15 am . . . . . . . . . . Edible Applications Technology Division Roundtable
8:15–11:20 am . . . . . . . . . Hot Topics Symposia
9:40–10:20 am . . . . . . . . . Networking Break and Poster Author Session
1:15–5:00 pm . . . . . . . . . . Technical Sessions
2:40–3:20 pm . . . . . . . . . . Networking Break and Poster Author Session
5:00–6:00 pm . . . . . . . . . . Lipid Oxidation and Quality Division Roundtable
5:00–6:00 pm . . . . . . . . . . Process Contaminants Expert Panel

Tuesday, May 5
7:00–8:00 am . . . . . . . . . . Early Risers Coffee
7:00 am–6:00 pm . . . . . . . Industry Showcase and Poster Viewing
7:55–11:00 am . . . . . . . . . Technical Sessions
9:20–10:00 am . . . . . . . . . Networking Break and Poster Author Session
12:45–1:45 pm . . . . . . . . . Health and Nutrition Division Roundtable
2:15–6:00 pm . . . . . . . . . . Technical Sessions
3:40–4:20 pm . . . . . . . . . . Networking Break and Poster Author Session
5:40–6:00 pm . . . . . . . . . . Analytical Division Roundtable

Wednesday, May 6
7:00–8:00 am . . . . . . . . . . Early Risers Coffee
7:00 am–5:00 pm . . . . . . . Industry Showcase and Poster Viewing
7:00 am–3:40 pm . . . . . . . Poster Viewing
7:55 am–12:00 pm . . . . . . Technical Sessions
9:40–10:20 am . . . . . . . . . Networking Break and Poster Author Session
1:55–5:00 pm . . . . . . . . . . Technical Sessions
3:20–3:40 pm . . . . . . . . . . Networking Break

See Program-at-a-Glance brochure or The App for complete meeting schedule.

The AOCS Laboratory Proficiency Program (LPP), formerly the Smalley Check Sample Program, is the world’s most extensive and respected collaborative proficiency testing program for oil- and fat-related commodities, oilseeds, oilseed meals, and edible fats. More than 500 chemists participate to verify their lab’s quality control. Participants use AOCS, or similar, methods for sample analysis and then compare their results with a large cross-section of other laboratories using the same methods and samples.

A full listing of the Laboratory Proficiency Program winners may be found on pages 74–76.

Poster Author Sessions

- Even-numbered posters have authors present during the Monday mid-morning and Tuesday afternoon breaks.
- Odd-numbered posters have authors present during the Monday afternoon and Tuesday mid-morning breaks.
- All authors are also encouraged to be present during the Wednesday mid-morning break.

A complete list of poster presentations for this campus is available on The App, or beginning on page 37.
Oral Presentations

- The presenter is the first author or otherwise indicated with an asterisk (*).
- Access and print abstracts at the computer stations located in Gatlin B, D, & Panzacola
- Abstracts also available on The App or online at: AnnualMeeting.accs.org/AM15Resources

Monday Afternoon

ANA 1: Trace Contaminants

Chairs: J.D. Pinkston, Kellogg Co., USA; and K. Hrnčirík, Unilever R&D, The Netherlands

Panzacola H-4

1:15 Introduction.
1:20 Key Achievements and Challenges on the 3-MCPD Issue
1:40 Determination of MCDP Esters and Glycidyl Esters in Processed Food.
   T. Wenzl, V. Samaras, A. Giri, Z. Zelinkova, L. Karasek, and G. Buttinger, Institute for Reference Materials and Measurements,
   Belgium.
2:00 Liquid Chromatography Tandem Mass Spectrometry (LC-MS/
   MS) Detection of Glycidyl Esters and MCDP Esters in Infant Formula.
   and Drug Administration, USA.
2:20 A Rapid Indirect Method for Simultaneous Determinations of
   2-/3-MCDP Esters and Glycidyl Esters in Foods.
2:40 Networking Break and Poster Author Session

EAT 1: Delivery and Dispersed Systems

Chairs: D. Rousseau, Ryerson University, Canada; and S. Ghosh, University of Saskatchewan, Canada

Panzacola H-3

1:15 Introduction.
1:20 Microbial Cells as Colloidal Particles: Pickering Oil-in-Water
   Emulsions Stabilized by Bacteria and Yeast.
   H. Firoozmand and H. Firoozmand, Biochemistry Research
   & Development Center Co., Ltd., China.
1:40 Formation of Edible Filled Hydrogels by Spontaneous
   Emulsification.
   J. Komaiko (Ralph Potts Memorial Fellowship Award Winner)
   and D.J. McClements, University of Massachusetts
   Amherst, USA.
2:00 Crystallization of Fats to Control Emulsion Structure for the
   Manufacture of Bakery Systems.
   F. Davoli*, D. Karleskind, S. Metin, and P. Smith*.
   *Cargill, Belgium, †Cargill, USA.

2:20 CLA-rich Eggs in Mayonnaise: Emulsion Stability and
   Rheological Properties.
   S. Shinn and A. Proctor, University of Arkansas, USA.
2:40 Networking Break and Poster Author Session
3:20 Antioxidant Potential of Some Turkish Olives and Their
   Corresponding Extra Virgin Olive Oils in Bulk Oil and Oil-in-
   Water Emulsions.
   T.M. Keceli, University of Cukurova, Turkey.
3:40 Oil Diffusivity Through Solid Fat Crystal Networks.
   N.L. Green and D. Rousseau, Ryerson University, Canada.
4:00 Effects of Emulsifiers on Crystallization Behavior of Palm-based
   Blend and Emulsified Systems.
   H. Zhang, C. Chen, Y. Bi, and X. Xu, Wilmar (Shanghai)
   Biotechnology R&D Center, China, †Henan
   University of Technology, China.
4:20 Effect of Water Content and Interfacial Stabilizer on the
   Rheological Behavior of a Crystal Network-stabilized Water-in-
   Oil Emulsion.
   R.R. Rafanan and D. Rousseau, Ryerson University, Canada.
4:40 Effect of Oil Concentration, Droplet Size, and Storage Time on
   the Gelation Behavior of Nanoemulsions.
   V. Erramreddy and S. Ghoth, University of Saskatchewan, Canada.

Edible Applications Technology (EAT) Annual Meeting

Program Roundtable will begin at 7:30 am in Panzacola H-3.
Planning for 2016 programs; everyone is welcome to attend.

H&N 1: Lipids and Lipid Mediators Throughout the Lifespan

This session is sponsored in part by DSM and Johnson & Johnson
Chairs: C.J. Lammi-Keefe, Louisiana State University, USA; and A.P.
Kitson, University of Toronto, Canada

Panzacola H-2

1:15 Introduction.
1:20 Impact of Dietary n-3 PUFA Deficiency on Neuroimmune
   Interactions in the Developing Brain: Relevance for Behavioral
   Impairment.
   A. Nadjar, C. Madore, C. Boujo-Bosch, A. Thomazeau, C.
   Lacabanne, Q. Leyrolle, C. Joffre, and S. Layé, NutriNeuro, France.
2:00 Effect of Oxidized Oil Consumption on Biomarkers of
   Atherosclerosis in LDLr Knockout Mice.
   M.S. Nogueira, M.C. Kessuane, B. Cogliati, and I.A. Castro,
   University of São Paulo, Brazil.
2:20 A Possible Relation of Serum Fucocoxanthin Levels and
   Glucose Metabolism in Japanese Adults: Rumoi Fucocoxanthin
   Intervention Study 1.
   N. Mikami, M. Hosokawa, M. Abe, K. Miyashita, H. Sohma
   and Y. Kokai, Sapporo Medical University
   School of Medicine, Japan, †Hokkaido University, Japan.
2:40 Networking Break and Poster Author Session.
3:20 GPS2 at the Crossroad of Lipid Metabolism and Inflammation in
   Mouse Adipose Tissue.
   C. Cederquist, C. Lentucci, H. Johnson, M.
   Cardamone, and V. Perisit, Boston University, USA.
4:00 Examining Temporal Changes in Docosahexaenoic Acid Status
   During Pregnancy Using Lipidomics and Transcriptomics.
   A. Chailil, A.P. Kitson, J. Aristizabal Henao, K. Marks, J.
   Elzinga, F. Badoud, D. Mutch, K. Stark, and D.J. McClements,
   University of Saskatchewan, Canada, †University of Guelph, Canada.
4:20 Maintaining Brain PUFA Concentrations: Uptake Mechanisms
   and Rapid Metabolism.
   R.P. Batinet, University of Toronto, Canada.
LOQ 1a: Evaluation of Lipid Oxidation: Sensory
Chairs: A. Bedford, Bunge Oils, Inc., USA; and M. Peitz, Archer Daniels Midland Co., USA
Panzacola H-1
1:15 Introduction.
1:20 What to Consider when Screening Panelists. B.C. Bolton, Product Dynamics, a Division of RQA, Inc., USA.
1:40 Key Components Essential to a Production Quality Sensory Program. S. Perry, Archer Daniels Midland Co., USA.
1:00 The Value of a Sensory Quality Program to Nutritional Consumer Products. M. Godbout, Abbott Nutrition, USA.

LOQ 1b: Evaluation of Lipid Oxidation: Markers
Chairs: P. Smith, Cargill, Belgium; and H.S. Hwang, USDA, ARS, NCAUR, USA
Panzacola H-1
3:15 Introduction.
3:40 NMR Spectroscopy for Assessment of Lipid Oxidation During Frying. H.S. Hwang, USDA, ARS, NCAUR, USA.
4:20 Oil Oxidation in Frying: A Refined Oxidation Model for Diverse Applications. P. Smith1, A. Menzel1, and S. Smith2, 1Cargill, Belgium, 2Cargill, USA.
4:40 Do Free Fatty Acids Promote Lipid Oxidation? H.K. Abaidoo-Ayin, P. Jadhav, and S. Lumor, Delaware State University, USA.

Tuesday Morning
ANA 2: Advanced Separation of Lipids/Multidimensional Techniques
Chairs: W.C. Byrdwell, USDA, ARS, BHNRC, FCMDL, USA; and P. Delmonte, US Food and Drug Administration, USA
Panzacola H-4
7:55 Introduction.
8:00 The Updated Bottom-up Solution: Using Critical Ratios for Triacylglycerol Structural Analysis by Mass Spectrometry. W.C. Byrdwell, USDA, ARS, BHNRC, FCMDL, USA.
8:20 Potentiality of the GC×GC Technique for Quality and Authenticity Assessment of Olive Oil. G. Purcaro2,3, L. Mondello1,3, and L. Conté1, 1University of Messina, Italy, 2University of Udine, Italy, 3Chromaleont s.r.l., Italy.
8:40 Multidimensional Gas Chromatographic Techniques Applied to the Analysis of Lipids from Marine Species of the Mediterranean Sea. R. Costa1, A. Alberga1, M. Oteri1, M. Piparo1, G. Purcaro2, P. Dugo1,2, and L. Mondello1,2, 1University of Messina, Italy, 2University Campus Bio-Medico of Rome, Italy, 3Chromaleont s.r.l., Italy.
9:00 Monodimensional Gas Chromatographic Separation of Fatty Acid Methyl Esters from a Two Dimensional Perspective. P. Delmonte, US Food and Drug Administration, USA.
9:20 Networking Break and Poster Author Session.
10:00 LC-GC-FID Technique as a Powerful Tool for Olive Oil Analysis. T. Küchler1, H. Boysen1, M. Nestola2, and P. Tablack2, 1Eurofins Analytik GmbH, Germany, 2Axel Semrau GmbH & Co. KG, Germany.
10:20 Evaluation of Fully Comprehensive and Selective Comprehensive Two-dimensional Liquid Chromatography for the High Resolution Separation of Triacylglycerols. D. Stoll1 and P. Delmonte1, 1Gustavus Adolphus College, USA, 2US Food and Drug Administration, USA.
10:40 Supercritical Fluid Chromatography Utilizing a Quadrupole Time of Flight Mass Spectrometer (SFC QTOF) for the Evaluation of Lipids and Non-polar Molecules. M. Evenson and J. Godbey, Dow AgroScience, USA.

Remember to drop off your new toy or book at the AOCS Registration area. Don’t forget to pack a toy? Don’t worry. Cash donations are accepted too. All items will be donated to the Arnold Palmer Children’s Hospital.
EAT 2: Functional Fats with Reduced Saturated Fats
Chairs: N. Widlak, Consultant, USA; and A. Bedford, Bunge Oils, Inc., USA.
Panazacla H-3
7:55 Introduction.
8:00 High Oleic Soybean Oil: Effects of Substituting High Oleic Oils for Other Fats and Oils on Cardiovascular Disease Risk Factors: A Systematic Review. P.J. Huth1, V.L. Fulgoni, III1, and B. Larson2, 1P.JH Nutritional Science, LLC, USA, 2Nutrition Impact, USA, 3JG Consulting Services, LLC, USA.
8:20 Oleogel in Dairy: Processed Cheese Product. H. Huang, J.W. Harper, and F. Maleky, Ohio State University, USA.
8:40 Key Physical and Microstructural Properties Underlying Roll-in Shortening Functionality. B.A. Macias-Rodriguez and A.G. Marangoni, University of Guelph, Canada.
9:00 Synergistic Enhancement of Ethylcellulose Oleogels for Fat Replacement. A.J. Gravelle, M. Davidovich-Pinhas, S. Barbut, and A.G. Marangoni2, University of Guelph, Canada.
9:20 Networking Break and Poster Author Session.
10:20 Commercial Factors for Considering Alternative Fats. N. Widlak, Consultant, USA.

H&N 2: Evaluating Lipids in Human Trials
This session is sponsored in part by PepsiCo
Chairs: M.A. Belury, Ohio State University, USA; and S. Raatz, USDA, ARS, USA.
Panazacla H-2
7:55 Introduction.
8:00 Planning Clinical Trials with Oils. P.J.H. Jones, University of Manitoba, Canada.
8:40 Conducting Randomized Clinical Trials with Dietary Oils: Issues for Design and Interpretation. M.A. Belury, Ohio State University, USA.
9:00 Total Dietary Fat and n-3 Fatty Acids Intake Modify Plasma Phospholipid Fatty Acids, Desaturase Activity Indices, and Urinary Prostaglandin E. S. Raatz1,2, 1USDA, ARS, USA, 2University of Minnesota, USA.
9:20 Networking Break and Poster Author Session.
10:00 Testing a Mixture of Fats and Oils for Use as a Placebo in Clinical Trials. T. Orchard, M.A. Belury, R. Cole, R. Andridge, X. Pan, J. Lester, A. Logan, L. Yee, and M. Lustberg, Ohio State University, USA.
10:40 Understanding Patterns of Incorporation of Fatty Acids in Humans. P.C. Calder, University of Southampton, UK.

LOQ 2: Stabilization Strategies of Omega-3 Fortified Foods
Chairs: N. Yang, Kalsec, USA; and F. Shahidi, Memorial University of Newfoundland, Canada.
Panazacla H-1
7:55 Introduction.
8:00 Stability and Stabilization of Omega-3 Oils and Foods. F. Shahidi, Memorial University of Newfoundland, Canada.
8:20 Formation and Stabilization of Nanoemulsion-based Delivery Systems for Omega-3 Fatty Acids. R. Walker1, E.A. Decker2, and D.J. McClements1,2, 1University of Massachusetts Amherst, USA, 2King Abdulaziz University, Saudi Arabia.
8:40 Improved Stabilization Using Natural Antioxidants in Omega-3 Oils and Omega-3 Enriched Foods. C. Tian, J. McKeague, A. Uhlir, and P. VanAlstyne, Kalsec, USA.
9:00 Antioxidant Activity of Sesamol and Gamma-oryzanol Towards Fish Oils. M. Fhaner1, H.S. Hwang4, J.K. Winkler-Moser1, E.L. Bakota1, and S.K. Liu, USDA, ARS, NCAUR, USA, 2University of Michigan-Flint, USA.
9:20 Networking Break and Poster Author Session.
10:00 Stabilization Strategies for Omega-3 PUFA Enriched Foods. C. Jacobsen, Technical University of Denmark, Denmark.
10:20 Seaweed Extracts to Inhibit Lipid Oxidation in Fish-oil-enriched Mayonnaise. P.J. Honold1, D.B. Larsen2, H.G. Kristinsson3, R. Jonsdottir4, and C. Jacobsen5, 1Technical University of Denmark, Denmark, 2Matis olf, Iceland.

Awards Plenary and Business Meeting
Gatlin C
11:00–12:45
The session recognizes our Society award winners; in particular, the Stephen S. Chang Award and Supelco/Nicholas Pelick-AOCS Research Award lectures. AOCOS President Steven Hill and AOCOS Vice President Manfred Trautman are each delivering a brief address along with reports from the AOCS Foundation and Society headquarters.

Tuesday Afternoon
ANA 3: Olive Oil Analysis
Chairs: R.J. Mailer, Australian Oils Research, Australia; and M. Woodman, Agilent Technologies Inc., USA.
Panazacla H-4
2:15 Introduction.
2:20 Changes in Chemical Composition of Virgin Olive Oil Under Different Cooking Conditions. S. Wang1, D. Flynn1, X. Li1, and M. Flynn2, 1University of California Davis, USA, 2Miriam Hospital and Brown University, USA.
2:40 Plasticizers as Process Contaminants: A Challenge for Food Oils. Preliminary Studies on DEHP in Olive Oil. P. Miller1 and C. Guillaume1, 1Australian Olive Association, Australia, 2Modern Olives Laboratory Services, Australia.
3:00 Pyropheophytins and Diacylglycerols as Indicators of Extra Virgin Olive Oil Freshness, Quality, and Authenticity. L. Ravetti, C. Guillaume, N. Ruiz, and D. Zaparenkov, Modern Olives, Australia.
3:20 The Effect of Storage Conditions on Olive Oil Quality. J.G. Aytoun1, R.J. Mailer1, and K.G. Graham1, 1Wagga Wagga Agricultural Institute, Australia, 2Australian Oils Research, Australia.
3:40 Networking Break and Poster Author Session.

5:00  Fatty Acid Alkyl Esters in Extra Virgin Olive Oil: An Evolving Parameter. R.B. Gómez-Coca, M.C. Pérez-Camino, and W. Moreda*, Instituto de la Grasa (CSIC), Spain.

Analytical (ANA) Annual Meeting Program Roundtable will begin at 5:40 pm in Panzacola H-4. Planning for 2016 programs; everyone is welcome to attend.

ANA 3.1/IOP 3: Algal and Other Non-traditional Oils Characterization
Chairs: L.M.L. Laurens, National Renewable Energy Laboratory, USA; and B.W.K. Diehl, Spectral Service AG, Germany
Gatlin A-2

2:15 Introduction.
2:20 Radiant Energy vs. Organic Carbon: Algal Lipid Profile Diversity in Relation to Cultivation and Conversion Parameters. B.A. Black¹, E. Christensen¹, T. Dong¹, T. Schaub², and L.M.L. Laurens¹, ¹National Renewable Energy Laboratory, USA, ²New Mexico State University, USA.

2:40 Analysis of Marine Dietary Supplement Using NMR Spectroscopy. E. Hatzakis, Pennsylvania State University, USA.

3:00 Molecular Gels Based on Stratum Corneum Lipids. M.A. Rogers (AOCS Young Scientist Research Award Winner), University of Guelph, Canada.


2:15 Introduction.
2:20 Water Binding Capacity of Rice Bran Wax as an Organogelator. E. Cramer, D. Heldman, and F. Maleky, Ohio State University, USA.

2:40 Complex Mixture Analysis by FT-ICR Mass Spectrometry for Microalgal Biofuel Applications. T. Schaub¹, N. Sudasinghe¹, J. Jarvis¹, A. Nag¹, L.M.L. Laurens¹, E. Christensen¹, and K. Dadamudi¹, ¹New Mexico State University, USA, ²National Renewable Energy Laboratory, USA.

2:40 A Simple Method for the Isolation of Fucoxanthin from Brown Algae and Its Antioxidant Activity in 5% Fish Oil-in-Water Emulsion. S.F. Koduvayur Habeebullah¹, S. Alagarsamy², and C. Jacobsen²*, ¹National Food Institute (DTU FOOD), Denmark, ²Fisheries College and Research Institute, India.

5:20 Aggregation Characteristics of Rhamnolipid Biosurfactants and Their Synthetic Variants. R.J. Eismin, R. Palos-Pacheco, C.S. Coss, R. Pott, R.M. Maier, and J.E. Pemberton, University of Arizona, USA.


EAT 3: Structuring Edible Oils—The Future of Lipid Gels
Chairs: M.A. Rogers, University of Guelph, Canada; and J. Komaiko, University of Massachusetts Amherst, USA
Panzacola H-3

2:15 Introduction.
2:20 Molecular Gels Based on Stratum Corneum Lipids. M.A. Rogers (AOCS Young Scientist Research Award Winner), University of Guelph, Canada.


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3:20 Closing in on the Ability to Predict New Food Grade Gelators. 
Y. Lan¹ and M.A. Rogers², ¹Rutgers University, USA, ²University of Guelph, Canada.

3:40 Networking Break and Poster Author Session.


4:40 Organogelators as Fat Replacement in Cream Cheese Products. 
M. Limbaugh, W.J. Harper, and F. Maleky, Ohio State University, USA.

5:00 The Effects of Shear and Cooling Rate on the Oil Binding Capacity of Wax Oleogels. A.I.E. Blake and A.G. Marangoni, University of Guelph, Canada.

**H&N 3: Classes of Saturated Fatty Acids and Health Implications**

This session is sponsored in part by Johnson & Johnson, Nestlé S.A., and The Beef Checkoff

Chairs: F. Dionisi, Nestlé, Switzerland; and E.A. Decker, University of Massachusetts Amherst, USA

Panzacola H-2

2:15 Introduction.


2:40 Dairy Foods, Dairy Fat, and Cardiometabolic Outcomes. D. Mozaffarian, Tufts University, USA.

3:00 Reevaluating Effects of Dietary Saturated Fats on Human Health. 
Fatty Acid Profile or Food Factors Induced by Processing? J.T. Brenna and K.S.D. Kothapalli, Cornell University, USA.

3:20 Health Effects of Dietary Stearic Acid Compared with Other Saturated, Unsaturated, and trans Fatty Acids. J.E. Hunter², J. Zhang², and P.M. Kris-Etherton³, ¹Xavier University, USA, ²Wake Forest University, USA, ³Pennsylvania State University, USA.

3:40 Networking Break and Poster Author Session.

4:20 Saturated Fatty Acids and Inflammation. P.C. Calder (Ralph Holman Lifetime Achievement Award Winner), University of Southampton, UK.

4:40 Considerations for Using Food Ingredients Containing Saturated Fats from a Food Ingredient Manufacturing Perspective. B. Flickinger, Archer Daniels Midland Co., USA.

5:00 Roundtable Discussion.

**H&N 3.1/BIO 3: Biomodifications, Biomechanisms, and Biosafety**

This session is sponsored in part by DuPont Nutrition & Health, Johnson & Johnson, and Oilseeds & Bioscience Consulting

Chairs: M. Picklo, USDA, ARS, USA; and R.F. Wilson, Oilseeds & Bioscience Consulting, USA

Gatlin A-1

Joint session: For details, see BIO 3/H&N 3.1 on page 58.

**LOQ 3a: Challenges in the Commercialization of New Antioxidants**

Chairs: S. Bis, Kemin Industries Inc., USA; J.K. Winkler-Moser, USDA, ARS, NCAUR, USA; and R. Nahas, Kalsec, USA

Panzacola H-1

2:15 Introduction.

2:20 *Removing the Weeds*—The Challenges in Commercializing Natural Plant Extracts. R. Nahas, Kalsec, USA.

2:40 Plants: ‘Factories’ for Renewable Ingredients. S. Wei and S. Nayak, Kemin Personal Care, USA.

3:00 Challenges and Opportunities: Commercialization Potential of Newer Antioxidants. U. Thiyamm-Hollandér¹, M. Eskim², and C. Rempel³, ¹University of Manitoba, Canada, ²Canola Council of Canada, Canada.

3:20 GRAS: The FEMA Flavor Perspective. S. Taylor², ³Verto Solutions, USA, ²FEMA Expert Panel, USA.

**LOQ 3b: Novel Antioxidative Strategies**

Chairs: W. Indrasena, DSM Nutritional Products, Canada; and K. Miyashita, Hokkaido University, Japan

Panzacola H-1

4:15 Introduction.

4:20 Preventive Effect of Sphingoid Base on Volatile Compound Formation in Fish Oil Oxidation. 
M. Uemura¹, A. Suzuki-Iwashima², M. Shioté³, M. Hosokawa³, and K. Miyashita⁴, ¹Hokkaido University, Japan, ²Megmilk Snow Brand Co., Ltd., Japan.


5:00 Preparation of Powdered Fish Oil for Nutraceutical Purposes. 
M. Nakagawa and T. Miyazawa, Tohoku University, Japan.

5:20 Impact of Phosphatidyethanolamine on the Antioxidant Activity of α-tocopherol and Trolox in Bulk Oil. 
L. Cui, D.J. McClements, and E.A. Decker, University of Massachusetts Amherst, USA.

5:40 Antioxidant Activity and Sensory Assessment of a Rosmarinic Acid-enriched Extract of Salvia Officinalis. 
E.J. Bakota, J.K. Winkler-Moser, M. Berhow, F.J. Eller, and S. Vaughn, USDA, ARS, NCAUR, USA.

**Wednesday Morning**

**ANA 4a: Advanced Data Analysis**

Chairs: T. Haines, Archer Daniels Midland Co., USA; and S. Seegers, Bunge Oils, Inc., USA

Panzacola H-4

7:55 Introduction.

8:00 Automated Fatty Acid Analysis of Edible Oils. G. Jackoway and M. Sasser, MIDI, Inc., USA.


8:40 Purdie Assay: A Novel, Facile, and Cheap Assay for a Wide Array of Applications in Lipid, Terpene, and Estrogen Analyses. 
G. Dumancas¹, M. Muriuki², N. Purdie², and R. Purdie², ¹Oklahoma Baptist University, USA, ²Oklahoma State University, USA.

9:00 Application of Chemometric Analysis to the Rapid Screening of Extra Virgin Olive Oils for Authenticity: Evaluation of the Performance of a Handheld NIR Device. 
S.R. Karunathilaka¹, H. Azizian¹, J.K.G. Kramer¹, and M.M. Mossoba¹, ¹US Food and Drug Administration, USA; ²NIR Technologies, Canada; ³Agriculture and Agri-Food Canada, Canada.
ANA 4b: Rapid Methods
Authors: B. Musselman, IonSense, USA; and H. Adams, Archer Daniels Midland Co., USA
Panzacola H-4
11:00 Calibration of a Fluorescence-based Sensor and Non-invasive Rapid Method for Detecting Anti-oxidants and Maturation in Tobacco Leaf. E. Bargiacchi1, M. Campor, A. Romani2, and S. Miele3, 1Consortium INSTM, Italy, 2University of Firenze, Italy.
11:40 Statistical Modeling of Data from Intact Triglycerides and Their Degradation Products for Rapid Assessment of Milk Quality and Authenticity. B. Musselman1, R. Goguen1, C. Hart2, and J. Lapointe3, 1IonSense, Inc., USA, 2Boston University Forensics, USA.

EAT 4: trans Lipids: Solutions and Regulation
Authors: V.P. Jain, Bunge North America, Inc., USA; and M. Wilson, LipoLogic Consultancy LLC, USA.
Panzacola H-3
7:55 Introduction.
8:00 Consequences of the PHO GRAS Removal on Industry. D.K. Strayer, Bunge North America, Inc., USA.
8:20 Effect of Different Oil Base on Puff Pastry Margarine Properties. X. Mao, Z. Zhang, Y. Li, X. Yang, Y. Zhang, and P. Hu, Wilmar (Shanghai) Biotechnology Research & Development Center Co., Ltd., China.
8:40 trans Fats Solution: Novel Approach Using Palm Oil. N.L. Habi Mat Dian1,2, M. Mat Sahri1, L. Oi Ming2, and T. Chin Ping2, 1Malaysian Palm Oil Board, Malaysia, 2Universiti Putra Malaysia, Malaysia.
9:00 Oil Stabilization in Peanut Butter Using Food Grade Polymers in Order to Replace Hydrogenated Vegetable Oil. R. Tanti, S. Barbut, and A.G. Marangoni, University of Guelph, Canada.
9:40 Networking Break and Poster Author Session.
10:20 trans/PH Fat—Challenges and Approaches to Eliminate It. G. Yang and G. Cherian, Kellogg NA, USA.
10:40 Palm Oil as a Versatile Alternative to Partially Hydrogenated Vegetable Oil. G.P. McNeill, IOI Loders Croklaan, USA.
11:00 The Role Soybean Oil Has Played in Low trans Solutions. M. Peitz, ADM Oils, USA.
11:20 Enrichment of Yogurt with Stearidonic Acid Soybean Oil in Complex Coacervates Modified for Enhanced Stability. E.A. Ifeduba (Edible Applications Technology Division Student Award of Excellence Winner) and C.C. Akoh, University of Georgia, USA.
11:40 Conjugated Linoleic Acid (CLA): 30-year Research. Y. Park (Timothy L. Mounts Award Winner), University of Massachusetts Amherst, USA.

EAT 4.1/AM 2: Imaging Fat Crystal Networks at Different Length Scales
Authors: G. Sekosan, Bunge North America, Inc., USA; and K. Koch, North Dakota State University, USA
Gatlin E-1
Joint session: For details, see AM 2/EAT 4.1 on page 48.

H&N 4: Vitamin D: Basic, Clinical, and Translational Research
Authors: H.A. Durham, University of California, Los Angeles, and Pennington Biomedical Research Center, USA; and M.L. Drewery, Louisiana State University, USA.
Panzacola H-2
See Program Addendum for session details.

LOQ 4a: Effects of Functional Ingredients on Shelf Life
Authors: M. Hu, DuPont Nutrition & Health, USA; and C. Jacobsen, Technical University of Denmark, Denmark
Panzacola H-1
7:55 Introduction.
8:00 Functional Properties of Esterified Phenolic Compounds. C. Grajeda-Iglesias1, E. Salas2, L. Muñoz Castellanos3, B.M. Ruesgas-Ramón4, M.L. Suárez-Quiroz5, O. González-Ríos6, P. Villeneuve7, and M.C. Figueroa-Espinoza8, 1Montpellier SupAgro, France, 2Universidad Autónoma de Chihuahua, Mexico, 3UNIDA, Mexico, 4CIRAD, France.
9:00 Oxidative Status and Effect of Raw Materials on Lipid Oxidation in Skin Care Products. B.R. Thomsen1, G. Hyldig1, R. Taylor2, J. Gregory3, P. Binkhorn2, and C. Jacobsen1, 1Technical University of Denmark, Denmark, 2Galox Smith Kline, UK.
9:20 Fate of Annatto Tocotrienols During Frying and Effect on Quality and Stability of Tortilla Chips. J.K. Winkler-Moser and E.L. Bakota, USDA, ARS, NCAUR, USA.
LOQ 4b: Lipid Oxidation in Low-moisture Foods and Emulsions

Chairs: S. Zhou, Mallett & Company, Inc., USA; and R. Zahr, Caldic Canada Inc., Canada

Panzacola H-1

10:15 Introduction.
10:40 Ascorbic Acid: Oxygen Scavenging Properties and Its Effect on Lipid Oxidation in Oil-in-Water Emulsion System. S. Ulustalı1,2, D.J. McClements3, and E.A. Decker4, 1Inonu University, Turkey, 2University of Massachusetts Amherst, USA.
11:00 Antioxidant Activity of Corn and Dry Distiller’s Grain Extracts in Chips. J. Kallenbach, B. Cobb, S. Pryor, and C. Hall, North Dakota State University, USA.
11:20 Localization and Efficacy of Antioxidants in Emulsion-based Delivery Systems. L. Cheong1, Y. Wang1,2, X. Wang2, and T. Yang3, 1Wilmar (Shanghai) Biotechnology R&D Center, China, 2Jiangnan University, China.
11:40 Applications of Lipid Soluble Catechins in Food Emulsions and Frying Oil. L. Ban, J. Randall, and W.D. Schroeder, Kemin Food Technologies, USA.

Wednesday Afternoon

ANA 5a: Advances in trans Fat Analysis

Chairs: S.D. Bhandari, Silliker, Inc., USA; and M.M. Mossoba, US Food and Drug Administration, USA

Panzacola H-4

1:55 Introduction.
2:00 Advances in the Analysis of trans EPA and DHA in Fish Oil Supplements. C.T. Stigley, US Food and Drug Administration, USA.
2:20 Analysis of trans Fat by GC, Silver Ion TLC-GC, and Silver Ion-HPLC. C. Cruz-Hernandez, Nestlé Research Center, Switzerland.
2:40 Portable Infrared Sensors for Determination of trans-fat Content in Food Products. L.E. Rodriguez-Saona and M. Plans Pujolras, Ohio State University, USA.
3:00 Analysis of trans-fatty Acids in Human Plasma, Serum, and Red Blood Cells by Isotope Dilution GC-MS Using Negative Chemical Ionization. H.C. Kuiper, N. Wei, S.L. McGunigale, N. Ahuja, T. Frame, and H.W. Vesper, Centers for Disease Control and Prevention, USA.

ANA 5b: Sample Pretreatment/Handling

Chairs: K. Persons, Eurofins Scientific Inc., USA; and M. Evenson, Dow AgroSciences, USA

Panzacola H-4

3:35 Introduction.
4:00 Oxidative Stability of Cashew Nut (Anacardium occidentale) Oil. M.C. Azih, Ambrose Ali University, Nigeria.
4:40 A Method for Isolation and Lipid Characterization of Chicken Yolk Vitelline Membranes. S. Shinn, R. Liyanage, J. Lay, E. Martin, and A. Proctor, University of Arkansas, USA.

EAT 5: Confectionary Fats and Oils

Chairs: K. Sato, Hiroshima University, Japan; and A.G. Marangoni, University of Guelph, Canada

Panzacola H-3

1:55 Introduction.
2:00 Effects of Thermal Treatments on the Polymorphic Behavior of Confectionery Fats: From Pure Components to End Products. L. Bayés-García1, T. Calvet1, M.A. Cuevas-Diarte1, E. Revira2, K. Sato3, and S. Ueno4, 1University of Barcelona, Spain, 2Enric Revira S.L., Spain, 3Hiroshima University, Japan.
3:00 Quantifying Aggregation of Triacylglycerol Systems, in situ from Angstroms to Micrometers in One Shot. F. Peyronel1 (Honored Student and The Peter and Clare Kalustian Award Winner), A.G. Marangoni1, and D.A. Pink2, 1University of Guelph, Canada, 2St. Francis Xavier University, Canada.
3:20 Networking Break.
3:40 Dynamic of Mass Transportation Inside Structured Lipid Systems. F. Maleky, Ohio State University, USA.
4:00 Enzymatic Acidolysis Synthesis of Cocoa Butter Improver and Its Application Evaluation. Z. Meng, X. Wang, and Y. Liu, Jiangnan University, China.
4:20 Boundaries of the Memory Effect in Pure Triacylglycerols. Y. Wang1, O. Qatami1,2, and G. Mazzanti1,2, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada.
4:40 Thermodynamic and Polymorphic Study on Phase Behavior of Ternary Mixture of SOS/SSO/OSO for Application to Confectionery Fats. S. Watanabe1, K. Shiozaki1, M. Mogashi2, M. Sato2, and K. Sato3, 1Oil and Fat Development Department, Japan, 2Chocolate Development Department, Japan, 3Hiroshima University, Japan.

EAT 5.1/S&D 5.1: Emulsions and Foams

Chairs: T. Tokle, Kalsec, USA; and E.J. Acosta, University of Toronto, Canada

Gatlin E-5

1:55 Introduction.
2:00 Enhancing the Bioavailability of Lipophilic Nutraceuticals in Fruits and Vegetables: Excipient Food Design. D.J. McClements1,2, 1University of Massachusetts Amherst, USA, 2King Abdulaziz University, Saudi Arabia.
2:40 Beverage Emulsions. Y. Fang, PepsiCo Research and Development, USA.
3:00 Emulsions Stabilized by Edible Colloidal Particles. C.C. Berton-Carabin and K. Schroën, Wageningen University, The Netherlands.
3:20 Networking Break.
4:00 Transport of Self-emulsifying Systems Through Unsaturated Porous Media. A. Stammiti and E.J. Acosta*, University of Toronto, Canada.
4:20 Methods to Predict Emulsion Formation and Stability: A Map to the Land of Emulsions. E.J. Acosta, University of Toronto, Canada.
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H&N 5: General Health and Nutrition
Chair: M. Torres-Gonzalez, Dairy Research Institute, USA.

Panzacola H-2
1:55 Introduction.
2:00 Cosolubilization of DHA and Curcumin as Synergistic Nutraceuticals as Anti-inflammation Nutraceuticals. N. Garti, K. Ozlevski, and A. Aserin, Hebrew University of Jerusalem, Israel.
2:40 Stabilization Activity and Rancidity Inhibition of Phenolic Compounds from Oregano (O. Vulgare), Rosemary (R. Oficinalis), and Lemon Grass (C. Citratus). N.R. Navarro, Nueva Ecija University of Science and Technology, Philippines.
3:00 Physical and Oxidative Stability of Fish Oil-in-Water Emulsions Stabilized with Fish Protein Hydrolysates. P.J. Garcia Moreno1, A. Guadix1, E.M. Guadix1, and C. Jacobsen2, 1University of Granada, Spain, 2Technical University of Denmark, Denmark.
3:20 Networking Break.
3:40 Fatty Acids Pattern in Feeds and Plasma of Canadian Preterm Infants. Z. Hossain, D. MacKay, and J. Friel, University of Manitoba, Canada.
4:00 Enhance Intestinal Lymphatic Transport of Lipophilic Bioactive Food Components by Nanoemulsion Delivery System. M. Yao1, D.J. McClements2, and H. Xiao, 1University of Massachusetts Amherst, USA, 2King Abdulaziz University, Saudi Arabia.

H&N 5.1/BIO 5.1/SCC: Lipid Oils and Skin Health
This session is sponsored in part by Johnson & Johnson

Gatlin E-2
Joint session: For details, see BIO 5.1/H&N 5.1/SCC on page 62.

LOQ 5a: General Lipid Oxidation and Quality
Chairs: C. Hall, North Dakota State University, USA; and U. Nienaber, Kraft Foods, USA

Panzacola H-1
1:55 Introduction.
2:00 Novel Phosphated Mono- and Di-glycerides that Promote Enhanced Oxidative Stability in Edible Oils. S. Kelkar, J. Wang, and C. Fouts, Vantage Specialty Chemicals, USA.
2:20 Impact of Association Colloids on Lipid Oxidation in TAG and Fatty Acid Ethyl Ester. R. Homma1, D.J. McClements2, and E.A. Decker3, 1Kao Corp., Japan, 2University of Massachusetts Amherst, USA.
2:40 Effect of Triglyceride Fatty Acid Composition on Conjugated Linoleic Acid Rich Soy Oil Oxidation. S. Lele and A. Proctor, University of Arkansas, USA.

LOQ 5b: trans Fat Alternatives: Sources, Chemistry, and Oxidative Stability
Chairs: S.P.J.N. Senanayake, DuPont Nutrition & Health, USA; and S. Knowlton, DuPont Co., USA

Panzacola H-1
3:35 Introduction.
3:40 Functionality Studies on High-oleic Soybean Oil. J.J. Tuinstra1 and F.J. Flider1, 1Stratas Foods, LLC, USA, 2QUALISOY, USA.
4:00 Impact of Oil Type on Oxidative Shelf Stability of Food Products. A. Syed, Dow AgroSciences, USA.
4:20 Maximize Shelf Life of Your Fried and Baked Products. M.K. Gupta, MG Edible Oil Consulting, USA.
4:40 The Development and Current State of High Oleic Soybean Oil. S. Knowlton, DuPont Co., USA.
ANA-P: Analytical Poster Session
Chair: T. Mason West, Bunge Oils, Inc., USA

1. Simultaneous Determination of Cholesterol and Monounsaturated/Polynsaturated Fatty Acids Using a Novel Assay, Clustering Algorithms, and Genetic Algorithm Partial Least Squares. G. Dumancas1, M. Muriuki2, N. Purdie3, and R. Purdie4, 1Oklahoma Baptist University, USA, 2Oklahoma State University, USA.

2. Drying Seeds High in Polynsaturated Fatty Acids Can Lead to Erroneous Results When Drying to Constant Weight. M.M. Al-Amery, S. Patel, M. Ma, M. Sanches, T. Phillips, P. Armstrong, and D. Hildebrand, University of Kentucky, USA.

3. Development of a Rheo-NMR+XRD System Prototype for the Advanced Photon Source Synchrotron. G. Mazzanti1,2, S. Weigand3,4, J. Rix1, X. Deng1, Y. Wang1, P.K. Batchu1, A.W. Alkhudair1, R. Liu1, O. Qatami1,2, L. Lin1, and T. Jia1, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada, 3Argonne National Laboratory, USA, 4Advanced Photon Source, USA.

4. A Wireless Communication Contact Closure System for Four Mass Spectrometers and Two Liquid Chromatographs in Parallel (LC2/MS4). W.C. Byrdwell, USDA, ARS, BHNRC, FCMDL, USA.

5. Diversity of Enzyme/Substrate Ratios and Duration of Exposure Time are Related to Variability of Hydrolysis of Lipoprotein Oxo-PtdCho by Secretory Phospholipases A2 (sPLA2s). A. Kuksis and W. Puzzanus, University of Toronto, Canada.

6. Interactions Between Food Gums and Soy Flour. T.W. Hou1,2, H. W. Pruzanski, University of Toronto, Canada.

7. Hydroperoxide Bearing 13-hydroperoxy-9,11-octadecadienoic Acid Using Chiral Stationary Phase HPLC. J. Ito1,2, S. Kato1, K. Nakagawa1, T. Naga2, and T. Miyazawa1, 1Tohoku University, Japan, 2Takushima Foods Industry Co., Japan.


10. Lipid Fraction Extracted from Centranthus ruber Seed Contains Conjugated Linolenic Acid. T. Homna, Y. Banno, and T. Takayanagi, Tokyo University of Technology, Japan.


12. Chemical Characterization of Monovarietal Avocado Oils. G.D. Fernandes1, R.B. Gómez-Coca1, M.C. Pérez-Camino1, W. Moreda2, and D. Barrera-Arellano1, 1University of Campinas, Brazil, 2Instituto de la Grasa–CSIC, Spain.

13. Compositional Effects on Fat Crystallization within Confectionery Systems. R. West and D. Rousseau, Ryerson University, Canada.


15. Improved Sinigrin Analysis. D. Yuan1, Y.Y. Shim1,2, K. Ratanaparyanutch1, V. Meda1, and M.J.T. Reaney1,2,3, 1University of Saskatchewan, Canada, 2Prairie Tide Chemicals Inc., Canada, 3Jinan University, China.


17. Determination of Bile Acids in Piglet Bile by Solid Phase Extraction and Liquid Chromatography–electrospray Tandem Mass Spectrometry. S. Salivo1, M. Piparo1, R. Costa2, P.O. Tranchida1, P. Dugo3, and L. Mondello1,2, 1University of Messina, Italy, 2University Campus Bio-Medico of Rome, Italy.

18. Chemical Characterization of Chia (Salvia hispanica) Seed Oils. M. Beccaria1, F. Rigano1, M. Oteri1, G. Bartolomeo1, V. Musarra1, G. Tripodo1,2, D. Sciarrone1, R. Costa2,3, P. Dugo3,2, G. Purcaro1, and L. Mondello1,2, 1University of Messina, Italy, 2University Campus Bio-Medico of Rome, Italy.

19. Detailed Characterization of the Unsaponifiable Fraction of Milk and Human Plasma Lipids by Using Enhanced Peak Capacity Chromatography and High-resolution Mass Spectrometry. S. Salivo1, M. Piparo1, R. Costa2, P.O. Tranchida1, P. Dugo3, and L. Mondello1,2, 1University of Messina, Italy, 2University Campus Bio-Medico of Rome, Italy.

20. Determination of the Triacylglycerol Fraction in Fish Oil by Comprehensive Liquid Chromatography Techniques with the Support of Gas Chromatography and Mass Spectrometry. R. Costa1, M. Beccaria1, F. Cacciola1, M. Oteri1, F. Franchina1, G. Purcaro2, P. Dugo3,2, and L. Mondello1,2, 1University of Messina, Italy, 2University Campus Bio-Medico of Rome, Italy, 3Chromaleont s.r.l., Italy.

21. Improvement in MOAH Quantification in Edible Oils: Retention of Olefins by Using a Novel Liquid-liquid Gas Chromatography (LC-LC-GC) Method. M. Zoccali1, L. Bâp2, G. Purcaro3,4, D. Sciarrone1, P.O. Tranchida1, and L. Mondello1,2, 1University of Messina, Italy, 2Chromaleont s.r.l., Italy.

22. Development of a NanoLC-ESI-MS Method for the Characterization of the Free Fatty Acid Fraction in Mussels. R. Rigano1, A. Albergano1, M. Beccaria1, S. Salivo1, D. Sciarrone1, G. Purcaro2,3, P.O. Tranchida1, and L. Mondello1,2, 1University of Messina, Italy, 2Chromaleont s.r.l., Italy.

23. Reliability of the ΔECN42 Limit and Global Method for Olive Oil Purity Assessment Using Different Analytical Approach. G. Purcaro2,3, M. Beccaria1, M. Oteri1, A. Marra1, D. Mangravit1, L. Conte2, and L. Mondello1,3, 1University of Messina, Italy, 2University of Udine, Italy, 3Chromaleont s.r.l., Italy.


25. Distribution of Lauric Acid Between Hexane and an Ionic Liquid. A.W. Alkhudair1,2, S.M. Budge1, J.A.C. Clyburne2, and G. Mazzanti1,2, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada, 3St. Mary’s University, Canada.
1. Effect of Aqueous Phase Composition on Particle Size and Stability of Sunflower Oil/Sodium Caseinate Nanoemulsions. J.M. Montes de Oca Avalos1, R.J. Candra1, and M.L. Herrera1*, 1Instituto de Tecnología en Polímeros y Nanotecnología, Argentina, 2Instituto de Investigación e Ingeniería Ambiental, Argentina.


4. Submicron Emulsions Designed to Stabilize Blueberry Extract in Foods. K. Latore1, P. Cabral2, and A. Medrano3*, Universidad de la República (Udelar), Uruguay, 2Nuclear Research Center, Uruguay.

5. Changes in Lipid Substances in Rice During Grain Development. N.H. Kim1, J. Kwak2, J.Y. Baik1, M. Yoon2, J. Lee2, S.W. Yoon1, and I.H. Kim1, Korea University, Republic of Korea, 2Rural Development Administration, Republic of Korea.


11. Effect of Aqueous Phase Composition on the Physicochemical Stability of Chia O/W Emulsions. L.M. Juli1, V.Y. Ixtaina1, J.R. Wagner2, S.M. Nolasco2, and M.C. Tomás3*, 1Centro de Investigación y Desarrollo en Criotecnología de Alimentos (CIDCA) (CONICET La Plata-UNLP), Argentina, 2Universidad Nacional del Centro de la Pcia. de Bs. As., Argentina, 3Universidad Nacional de Quilmes (UNQ), Argentina.

12. Effects of High Pressure Treatment on Structure and Physical Properties of Fat Blends of Fully Hydrogenated Soybean Oil. M. Zulkurnain, F. Maleky, and B. Balasubramaniam, Ohio State University, USA.

13. In vitro Digestion of Interesterified Stearic Acid-rich Blends: Compositional and Physical Property Investigations During Digestion. S.H. Thilakarathna1, M.A. Rogers2, Y. Lan3, S. Huynh1, and A.J. Wright1*, 1University of Guelph, Canada, 2Rutgers University, USA, 3King Abdullah University of Science and Technology, Saudi Arabia.

14. The Effects of Applepase and Pectin on the in vitro Digestive Stability, Digestibility, and Bioaccessibility of a DHA-rich Algal Oil Emulsion. X. Lin and A.J. Wright, University of Guelph, Canada.

15. Physical and Oxidative Stability of Fish Oil Nanoemulsions Produced by Spontaneous Emulsification. R. Walker1, E.A. Decker2,3, and D.J. McClements1,2, 1University of Massachusetts Amherst, USA, 2King Abdullah University, Saudi Arabia.
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33. Development of Functional Beverages from Blends of Hibiscus sabdariffa Extract and Selected Fruit Juices for Optimal Antioxidant Properties. O.M. Ogundele1, O.O. Awolu1, A.A. Badejo2, T.N. Fagbenmi1,2, and I.D. Nwachukwu2, 1Federal University of Technology, Nigeria, 2University of Manitoba, Canada.

34. Effect of the Stearic Sucrose Ester S-170 on Physical Properties of High Stearic High Oleic Sunflower Oil Stearins. J.A. Rincon-Cardona1,2, R.J. Candal2, and M.L. Herrera1, 1Instituto de Tecnologia en Polímeros y Nanotecnologia, Argentina, 2Instituto de Investigacion e Ingenieria Ambiental, Argentina.

35. Cocoa Butter Alternative from Rice Bran Oil by Enzymatic Acidolysis. P. Kosiyamant, G. Pandel, W. Tungjaroenchai, and C.C. Akoh3, 1University of Georgia, USA, 2King Mongut’s Institute of Technology, Thailand.

36. CLA-rich Soy Oil Shortening Production and Characterization. S.E. Mayfield1, A. Patel1, A. Proctor1, K. Dewettinck1, and D. Van de Walle1, 1University of Arkansas, USA, 2University of Gent, Belgium.

37. Cyanogenic Glicysides and Secosolcarilicosin Diglucoside in Flaxseed Meal Fortified Gluten-free Bread. R. Boonen1,2, J. Liu3, Y.Y. Shim1,3, C.M. Olivia4, and M.J.T. Reaney1,2,3, 1Prairie Tide University, The Netherlands, 2University of Saskatchewan, Canada, 3Jinan University, China.

H&N-P: Health and Nutrition Poster Session

1. Inhibition of in vitro acetylcholinesterase Activity by Hemp Seed Protein Hydrolysates. S.A. Malomo (Honored Student Award Winner and Health and Nutrition Division Student Excellence Award Winner) and R.E. Aluko, 1University of Manitoba, Canada.

2. Effects of Life-long Diets of Common Unsaturated Fatty Acids from Vegetable Oils on Lifespan and Oxidation in a Caenorhabditis Elegans Model. B. Fang1, F. Ren2, Y. Wang3, and X. Zhou4, 1Academy of State Administration of Grain, China, 2China Agriculture University, 3University of Arkansas, USA.


4. Risk Factors for Age-related Macular Degeneration Appear Early in Life Among Female College-aged Students. A.V. Gaitán1, A. Ocampo2, C. Childhood3, M.L. Drewery, R. Pinkston3, C.J. Lammie-Keefe4,3, and H.A. Durham5,6, 1University of Georgia, USA, 2Pennington Biomedical Research Center, USA, 3Louisiana State University AgCenter, USA, 4California State University, Los Angeles, USA.

5. Conjugated Linoleic Acid Increases Voluntary Activity and Muscle Mass via Mitochondrial Biogenesis in Adult Onset Inactivity-induced Obese Mice. Y. Kim1, D.J. Good2, and Y. Park3, 1University of Massachusetts Amherst, USA, 2Virginia Polytechnic Institute and State University, USA.

6. The Evaluation of Soybean β-cyclocitinin on Glucose Metabolism in Wistar Rats by Oral 13C-glucose Administration. N. Inoue, A. Funayama, and I. Ikeda, 1Tohoku University, Japan.


8. Effects of Consuming Thermally Oxidized Soybean Oil on Tryptophan-kynurenic Metabolism Pathway. L. Wang, D. Yao, G. Shuron, and C. Chen*, 1University of Minnesota, USA.


10. Characteristic Distribution of Metabolites in Orzya sativa Rice. N. Zaima1, Y. Yoshimura2, Y. Kawamura1, and T. Moriyama3, 1Kinki University, Japan, 2Okayama Prefectural University, Japan, 3Kyoto Women’s University, Japan.

11. Formation of Filled Hydrogel Beads: Impact of Emulsion Structure on Retention Behaviour. B. Zeeb1, A.H. Sabet2, J. Weiss3, and D.J. McClements4, 1University of Hohenheim, Germany, 2University of Massachusetts Amherst, USA.


14. Effects of Green Algae Feeding on Mouse Lipidome. Y. Ma, W. Zhou, R. Ruan, G. Shuron, and C. Chen*, 1University of Minnesota, USA.


LOQ-P: Lipid Oxidation and Quality Poster Session

Chair: X. Pan, DuPont Health & Nutrition, USA

1. Production of Omega-3 Rich Fish Oil from By-products of Danish Trout. P.J. Honold, M.L. Nouard, and C. Jacobsen, 1Technical University of Denmark, Denmark.

2. Effect of Different Wall Materials on the Physicochemical Properties of Spray-dried Microencapsulated Chia Oil. U. Us Medina1, V.Y. Ixtaina1, L.M. Julio2, J.R. Wagner2, S.M. Nolasco3, and M.C. Tomás4, 1Centro de Investigación y Desarrollo en Criotecología de Alimentos (CIDCA) (CONICET La Plata-UNLP), Argentina, 2Universidad Nacional de Quilmes (UNQ), Argentina, 3Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCyBA), Argentina, 4Universidad Autonoma de Yucatán (UADY), Mexico.

3. Unsaturated Lipids-facilitated Lymphatic Transport of Lipophilic Bioactive Component: Oxidized vs. Unoxidized. M. Yao1, F. Kitamura2, D.J. McClements1,2, and H. Xiao3, 1University of Massachusetts Amherst, USA, 2Tokyo University of Marine Science and Technology, Japan, 3King Abdulaziz University, Saudi Arabia.

5. Antioxidant Activity and Synergistic Interaction Between *Caralluma fimbriata* and *Rosmarinus officinalis* Extracts in 80% Mayonnaise. L. Månsson and T. Isak, DuPont Nutrition and BioSciences Aps, Denmark.

6. Role of the Medium in the Inhibited Oxidation of Lipid Membranes Models. S. Lednev1, A. Strick2, and E. Pliss3, *P.G. Demidov Yaroslavl State University, Russia, 2Russian Academy of Sciences, Russia.

7. Chain Oxidation of Methyl Linoleate as Kinetic Model of Lipid Peroxidation: A Role of Nitroxyl Radicals in Establishing the Mechanism of Process. E. Pliss1, A. Rusakov2, R. Pliss3*, and D. Loshadkin4, *P.G. Demidov Yaroslavl State University, Russia, 2Yaroslavl State Technical University, Russia.

8. Nitroxyl Radicals as a Inhibitors of Oxidation of Methyl Linoleate in Micelles. I. Tikhonov1, L. Borodin2, E. Pliss3, and V. Sen4, *Russian Academy of Sciences, Russia, 2P.G. Demidov Yaroslavl State University, Russia.


11. Characterizing the Kinetics of Individual Triglycerides and Lipid Oxidation Products in Frying Oils via Mass Spectrometry-based Chemometric Analysis. L. Wang, A. Csallany, and C. Chen*, University of Minnesota, USA.

12. Unusual Kinetic Isotope Effects of Deuterium Reinforced Polyunsaturated Fatty Acids in Tocopherol-mediated Free Radical Chain Oxidations. C. Lamberson1, L. Xu1, J.R. Montenegro-Burke1, H. Muchalski1, V. Shmanai2, A. Bekish3, J. McLean1, C. Clarke2, M. Shcelpinov1, and N. Porter1, *Vanderbilt University, USA, 2University of California, Los Angeles, USA, 3Retrotope, Inc., USA, 4National Academy of Sciences of Belarus, Belarus.


14. The Unsaturated Fatty Acid Composition of Vegetable Oil Affects Odor Production Formed During Heating. S. Koishi1, S. Nakajima1, and Y. Endo2, *Tsuno Food Industrial Co., Ltd., Japan, 2Tokyo University of Technology, Japan.


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Felix Paquin Campus
Gatlin D

Named after Felix Paquin, AOCS co-founder and the Society’s first president in 1909 and 1910, this campus houses the technical sessions, poster presentations, and Industry Showcase Partners pertaining to these interest areas:

- Agricultural Microscopy Division
- Phospholipid Division
- Surfactants and Detergents Division
- Society of Cosmetic Chemists

Division events for the interest areas and allied organization of this campus may be found on page 12.

Industry Showcase Partners
(As of March 15, 2015)

- Air Products & Chemicals
- Akzo Nobel Surface Chemistry
- Alfa Laval Inc.
- American Emu Association
- AOCS
- ASAGA
- Buss ChemTech AG
- Chemspeed Technologies AG
- Euro Fed Lipid
- Fenix Process Technologies Pvt. Ltd.
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- Oils & Fats International
- Paramount Minerals and Chemicals
- Revolymer
- SIWACO GmbH
- Society of Cosmetic Chemists
- Surface Chemists of Florida, Inc.
- TMC Industries, Inc.
- Wacker Chemical Corporation
- Yenar A.S.

Poster Author Sessions

- Even-numbered posters have authors present during the Monday mid-morning and Tuesday afternoon breaks.
- Odd-numbered posters have authors present during the Monday afternoon and Tuesday mid-morning breaks.
- All authors are also encouraged to be present during the Wednesday mid-morning break.

A complete list of poster presentations for this campus is available on The App, or beginning on page 51.

Campus Schedule

Monday, May 4
7:00 am–6:00 pm . . . . . . . . . . . Industry Showcase and Poster Viewing
7:20–8:20 am . . . . . . . . . . . . . . Early Risers Coffee
8:15 am–12:00 pm . . . . . . . . . . Hot Topics Symposia and Special Sessions
9:40–10:20 am . . . . . . . . . . . . Networking Break and Poster Author Session
1:15–5:00 pm . . . . . . . . . . . . Technical Sessions
2:40–3:20 pm . . . . . . . . . . . . Networking Break and Poster Author Session
5:00–6:00 pm . . . . . . . . . . . Surfactants and Detergents Division Roundtable

Tuesday, May 5
7:00–8:00 am . . . . . . . . . . . . Early Risers Coffee
7:00 am–6:00 pm . . . . . . . . . . . Industry Showcase and Poster Viewing
7:55–11:00 am . . . . . . . . . . . . Technical Sessions
9:20–10:00 am . . . . . . . . . . . Networking Break and Poster Author Session
12:45–1:45 pm . . . . . . . . . . . Phospholipid Division Roundtable
2:15–6:00 pm . . . . . . . . . . . Technical Sessions
3:40–4:20 pm . . . . . . . . . . . Networking Break and Poster Author Session

Wednesday, May 6
7:00–8:00 am . . . . . . . . . . . Early Risers Coffee
7:00 am–5:00 pm . . . . . . . . . . . Industry Showcase
7:00 am–3:40 pm . . . . . . . . . . Poster Viewing
7:55 am–12:00 pm . . . . . . . . . . Technical Sessions
9:40–10:20 am . . . . . . . . . . . Networking Break and Poster Author Session
1:55–5:00 pm . . . . . . . . . . . . Technical Sessions
3:20–3:40 pm . . . . . . . . . . . Networking Break

See Program-at-a-Glance brochure or The App for complete meeting schedule.

AOCS welcomes the Society of Cosmetic Chemists to the Felix Paquin Campus for their sessions, to be held in Gatlin E-3.

In addition, AOCS and SCC have partnered on three joint sessions for the AOCS Annual Meeting to address topics common to both groups, including Lipid Oils and Skin Health, Surfactants: Cosmetic Science, and Strategies in Advanced Utilization of Proteins and Peptides.

Information on these sessions may be found on pages 62, 48, and 60.
Oral Presentations

- The presenter is the first author or otherwise indicated with an asterisk (*).
- Access and print abstracts at the computer stations located in Gatlin B, D, & Panzacola
- Abstracts also available on The App or online at: AnnualMeeting.aocs.org/AM15Resources

Monday Afternoon

AM 1: Imaging and Structure
Chair: K. Koch, North Dakota State University, USA
Gatlin E-1
1:15 Introduction.
1:40 Effect of Temperature on the Wide Angle X-ray Diffraction of Nanocrystalline Triglycerides. X. Deng¹, S. Yao¹, and G. Mazzanti²*, ¹Dalhousie University, Canada, ²Institute for Research in Materials, Canada.
2:20 Development of Eco-friendly Packaging Film Using Protein Isolates. A.V. Patel¹, T.M. Panchal¹, M. Thomas¹, J.V. Patel¹, and A. Gupta², ¹Institute of Science and Technology for Advanced Studies and Research, India, ²N.V. Patel College of Pure and Applied Sciences, India.
2:40 Networking Break and Poster Author Session.
3:20 Tween Emulsifiers Affect the Stability and Crystallization Behaviour of Partially Crystalline Oil-in-Water Emulsions. G.T. Fuller¹, T. Considine¹, M. Golding², A. MacGibbon¹, L. Matia-Merino³, ¹Fonterra Co-operative Group Limited, New Zealand, ²Massey University, New Zealand.

Agricultural Microscopy (AM) Annual Meeting Program
Roundtable will begin at 5:00 pm in Gatlin E-1. Planning for 2016 programs; everyone is welcome to attend.

PHO 1: General Phospholipid
Chair: M. Rebmann, Perimondo, USA
Gatlin E-2
1:15 Introduction.
1:40 Effect of Phospholipid and Other Factors on Free Radicals Escape in Hydroperoxide Decomposition Catalyzed by Acetylcholine. O.T. Kasaikina, D.A. Krugovov, and E.A. Mengele, Russian Academy of Sciences, Russia.
2:00 Influence of Curcumin-loaded Chitosan Liposome on MCF7 Cytotoxicity. M. Hasan¹, E. Arab-Tehrany¹, M. Barberi-Heyob¹, C. Kahn², M. Linder²*, and E. Jabbari³, ¹Université de Lorraine, France, ²IFSTTAR, France, ³University of South Carolina, USA.
2:40 Networking Break and Poster Author Session.

S&D 1: Surfactants: Industrial Applications
Chairs: P.T. Sharko, Shell Global Solutions Inc., USA; and B.P. Grady, University of Oklahoma, USA
Gatlin E-4
1:15 Introduction.
1:20 Effect of Acid Modification of Soy Glycinin on its Interfacial and Emulsifying Properties. C. Abirached¹, P. Moyna¹, M. Añón², and L. Panizzolo³, ¹Universidad de la República, Uruguay, ²Universidad Nacional de La Plata, Argentina.
1:40 Optimization Methods on Surfactant Mixture to Quickly Improve the Formulation Performance in Chemical EOR. J.L. Salager and A.M. Forgiarini, University of the Andes, Venezuela.
2:00 Effect of Intrinsic and Extrinsic Factors on the Stability of the α-gel Phase of a GMS-water System. F.C. Wang and A.G. Marangoni, University of Guelph, Canada.
2:20 Synergistic Effect Between Silica Nano Particles and Non-ionic Surfactants on Oil Recovery from Condensed Corn Distillers Solubles (CCDS). L. Fang, T. Wang, and B.P. Lamsal, Iowa State University, USA.
2:40 Networking Break and Poster Author Session.
3:40 Unique Rheology Modifiers for Home and Personal Care Applications. J. Shulman, A. Keenan, and J. Hayes, Dow Chemical Co., USA.
4:00 Microbial Biosurfactants: Closing the Gap in the Innovation Chain. S.L.K.W. Roelants¹,², L. Van Renterghem¹, R. Gheys¹, H. Moens², B. Everaert², I. VanBogaert³, B. Vanlerberghe², and W. Soetaert¹,², ¹University of Ghent, Belgium, ²Bio Base Europe Pilot Plant, Belgium.
4:40 Ultra-long Chain Fatty Acid Sugar Alcohol Monoesters: A Novel Component of Protein Isolates. A. King, D. Spen, and G. Uhrig, Performance Chemicals, USA.

Surfactants and Detergents (S&D) Annual Meeting Program
Roundtable will begin at 5:00 pm in Gatlin E-4. Planning for 2016 programs; everyone is welcome to attend.

S&D 1.1: Surfactants in Energy
This session is sponsored in part by Ultimate EOR Services, LLC
Chairs: S. Natali, Halliburton, USA; and U.P. Weerasooriya, University of Texas, USA
Gatlin E-5
1:15 Introduction.
2:00 The Potential Application of Sulfolinate- and Carboxylate-based Surfactants in Steam Foam EOR. T. Nguyen and G. Trahan, Sasol Performance Chemicals, USA.
Tuesday Morning

PHO 2: Nutrition and Analytics of Phospholipids
Chair: B.W.K. Diehl, Spectral Service AG, Germany
Gatlin E-2

7:55 Introduction.
8:00 Sunflower Lecithin and Individual (Single) Essential Phospholipids. S. Shulga and I. Glukh, National Academy of Sciences of Ukraine, Ukraine.
8:20 Emulsifying Properties of Hydrolyzed and Low HLB Modified Sunflower Lecithin Mixtures. D.M. Cabezas1, B.W.K. Diehl1, and M.C. Tomás3, 1Universidad Nacional de Quilmes, Argentina, 2Spectral Service AG, Germany, 3Universidad Nacional de La Plata, Argentina.
8:40 Detection of Additives and Contaminations of Sunflower Lecithin with Soy Bean Lecithin. B.W.K. Diehl1 and K. Rizos2, 1Spectral Service AG, Germany, 2Genetic ID (Europe) GmbH, Germany.

9:00 Networking Break and Poster Author Session.
9:20 Lecitase Ultra-catalyzed Hydrolysis of Soy Phosphatidylcholine to Prepare LPC and L-a-GPC. B.H. Kim, Chung-Ang University, Republic of Korea.
10:40 Determination of Phospholipids in Olive Oil Using Multinuclear NMR Spectroscopy. E. Hatzakis, Pennsylvania State University, USA.

Phospholipid (PHO) Annual Meeting Program Roundtable will begin at 12:45 pm in Gatlin E-2. Planning for 2016 programs; everyone is welcome to attend.

S&D 2: New Product Forms and Use Innovations
Chairs: D.S. Stott, Church & Dwight Co., Inc., USA; and T. Graham, Rivertop Renewables, USA
Gatlin E-4

7:55 Introduction.
8:00 A Novel Naturally Derived Hydrophilization Polymer that Provides Multiple Benefits in Hard Surface Cleaners. J. Kiplinger, F. Lambert, K. Karagianni, and C. Orizet, Solvay USA, Inc., USA.
8:20 Overcoming Performance Perturbations of Amylases in Heavy Duty Liquid (HDL) Laundry Detergents. K. Harris and E. Dodge*, DuPont Industrial Biosciences, USA.
8:40 Achieving Laundry Cleaning Performance in Lower Wash Temperatures. A. Taneja, BASF Corp., USA.
9:00 Cleaning by Hydrophilic-hydrophobic Surface Modification. A. Nagy1, M. Hisamoto1, D. Kuppert2, and J. Peggau2, 1Evonik Corp., USA, 2Evonik Industries AG, Germany.

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S&D 2.1/SCC: Surfactants: Cosmetic Science
This session is sponsored in part by Colonial Chemical, Inc.
Chairs: M.S. Vethamuthu, Ashland Specialty Ingredients, USA; and D. Abbeduto, Society of Cosmetic Chemists/Colonial Chemical, Inc., USA
Gatlin E-5
7:55 Introduction.
8:00 Surfactants and Human Skin: Perspectives from 40 Years of Skin Science Research. R.R. Wickett, University of Cincinnati, USA.
9:00 The Effectiveness of Natural Oils in Cosmetic, Beauty, and Personal Care Products. G.R. Watkins and G.A. Smith, Huntsman Performance Products, USA.
9:20 Networking Break and Poster Author Session.
10:00 Surfactants in Personal Care Applications: Challenges and Recent Trends. M.S. Vethamuthu, Ashland Specialty Ingredients, USA.
10:20 Optimized Microemulsion Systems with Low Surfactant and Salt Concentration for Detergency of Vegetable Oils at Low Bath Temperature. C. Attaphong, J.F. Scamehorn, and D.A. Sabatini*, University of Oklahoma, USA.
10:40 Formulated Solutions for Hair Repair. S. O’Connor, C. Lepilleur, and M. Ruffing, Lubrizol Advanced Materials, USA.

Tuesday Afternoon
S&D 3: Tools of the Trade: Measurement and Characterization
Chairs: T. Zander, Henkel, USA; and E. Theiner, Air Products & Chemicals Inc., USA
Gatlin E-4
2:15 Introduction.
2:20 Emulsion and Suspension Characterization: Is There Possibly a Direct, Better, and Faster Way? D. Dinar, LUM Americas, USA.
3:00 Instrumental Methods for a Reliable Assessment of Fabric Surface Appearance. T.J. Burns, Novozymes North America, Inc., USA.
3:40 Networking Break and Poster Author Session.
4:20 The Use of Small-angle Scattering to Determine Surfactant Micelle Structure. B.P. Grady, University of Oklahoma, USA.
5:00 Characterization of Sodium Lauryl Sulfate Foams. R. Sanedrin, KRUSS, USA.

S&D 3.1: Additives for High Efficacy
Chairs: A.C. Lee, Novozymes North America Inc., USA; and S. Raders, Church & Dwight Co., Inc., USA
Gatlin E-5
2:15 Introduction.
2:40 Narrow Range Ethoxylates versus Standard Alcohol Ethoxylates in the I&I Industry. H. Byrne, G.A. Smith, and P. Weaver, Huntsman Performance Products, USA.
3:00 Ester Quats for Low Active, High Viscosity Dispersions. D. Murphy, C. Gariepy, C. Matache, D. Darudgio, and L. Zaporowski, Stepan Co., USA.
3:40 Networking Break and Poster Author Session.
4:20 Formulations and Guidelines Using Lactic Acid as Biocidal Active for Detergent Applications. P. Stuut*, E. Lansdaai**, and R. Wietting†, Corbion, The Netherlands; ©Corbion, USA.
4:40 Hydrophilic Encapsulation of Multi-walled Carbon Nanotubes. S. Hanumantsetty, E. O’Reear, and D. Resasco, University of Oklahoma, USA.
5:00 A New Protease Inhibitor Alternative to Stabilize Protease in Liquid Detergents. V.M. Casella, Novozymes North America, Inc., USA.

Wednesday Morning
AM 2/EAT 4.1: Imaging Fat Crystal Networks at Different Length Scales
Chairs: K. Koch, North Dakota State University, USA; and G. Sekosan, Bunge North America, Inc., USA
Gatlin E-1
7:55 Introduction.
8:00 Crystallographic Behavior of Molecular Compound in the Binary System of 1,3-dioleoyl-2-palmitoyl-sn-glycerol and 1,3-dipalmitoyl-2-oleoyl-sn-glycerol. K. Nakaniishi†, Y. Mikiya†, T. Ishiguro†, M. Sato†, and S. Ueno†, Miyoshi Oil & Fat Co., Ltd., Japan; ‡Japan Synchrotron Radiation Research Institute, Japan; ‡Hiroshima University, Japan.
8:20 Unpredictable Binary Systems of Triacylglycerols. P.K. Batchu1,2, P.D. Wentzell1, and G. Mazzanti*1,2, 1St. Francis Xavier University, Canada, 2Institute for Research in Materials, Canada.
8:40 The Effects of Emulsifiers on the Formation and Morphology of Crystal Spheroids. T. Tran, A. Lim, and D. Rousseau, Ryerson University, Canada.
9:00 Semi-empirical Treatment of Anomalous Moisture Transport into Sheared Lipids Using Magnetic Resonance Imaging. S. Paluri, M. Shavezipour, A. Abduljalil, D. Heldman, and F. Maleky, Ohio State University, USA.
9:20 Modelling the Effects of Shear on Solid Fats Aggregation in Edible Oils. B. Townsend1, B. Quinn1, A. MacDonald1, T. Gordon1, C. Hanna2, A.G. Marangoni3, and D.A. Pink1, 1University of Guelph, Canada; 2St. Francis Xavier University, Canada; 3OneZero Software, Canada, 4Boise State University, USA.
9:40 Networking Break and Poster Author Session.
10:20 Self-organizing Aggregation in Complex Edible Oils. D.A. Pink1,2, B. Quinn1, F. Peyronel1, and A.G. Marangoni3, 1St. Francis Xavier University, Canada, 2University of Guelph, Canada.
10:40 Effect of High Intensity Ultrasound on the Crystallization Behavior of Palm Oil in a Flow Cell. Y. Ye and S. Martini*, Utah State University, USA.
11:00 Colloidal Inorganic Particle-based Edible Oleogels and Bigels. A. Patel, B. Mankoc, and K. Dewettinck, Ghent University, Belgium.
11:20 Thermodynamic Estimates of Solid Fat Content. L. Rong1,2, A.G. Marangoni2, and G. Mazzanti*1,2, 1Dalhousie University, Canada, 2University of Guelph, Canada, 3Institute for Research in Materials, Canada.
11:40 Refined Concepts on the Structures of Liquid Triacylglycerols. G. Mazzanti1,2, L. Lin1, R. Sanderson1,2, O. Qatami1,2, and D.A. Pink3, 1Dalhousie University, Canada, 2Institute for Research in Materials, Canada, 3St. Francis Xavier University, Canada.

S&D 4/BIO 4: Biobased Surfactants/Detergents
Chairs: G.A. Smith, Huntsman Performance Products, USA; R.M. Maier, University of Arizona, USA; D.K.Y. Solaiman, USDA, ARS, ERRC, USA; and D.G. Hayes, University of Tennessee, USA
Gatlin A-1
Joint session: For details, see BIO 4/S&D 4 on page 60.

S&D 4.1: General Surfactants and Detergents
Chairs: G. Dado, Stepan Co., USA; and R. Zehr, Church & Dwight Co., Inc., USA
Gatlin E-4
7:55 Introduction.
8:00 Reference Framework to Measure the Characteristic Curvature (Cc) of Alkyl Ethoxylate Nonionic Surfactants. S. Zarate Muñoz (Surfactants and Detergents Division Student Award Winner), F. Texeira, K. Myint, J. Minchom, and E.J. Acosta, University of Toronto, Canada.
8:20 Are Bicontinuous Microemulsions Uniform in Their Structure and Composition? D.G. Hayes1, R. Ye1, S.V. Pingali2, and V. Urban2, 1University of Tennessee, USA, 2Oak Ridge National Lab., USA.
8:40 Alkyl Propoxylyte Ethoxylate Sulfate Extended Surfactants: The Effect of Functional Groups on Characteristic Curvature. T. Nguyen and G. Trahan, Sasol Performance Chemicals, USA.
9:00 Properties and Applications of High Mole Ethoxylates. T. Weemes, Sasol Performance Chemicals, USA.
9:20 The Hydrophilic Lipophilic Difference (HLD) and the Cloud Point Phenomena. S. Zarate Muñoz and E.J. Acosta, University of Toronto, Canada.
9:40 Networking Break and Poster Author Session.
10:40 Synthesis of Sugar-fatty Acid Ester Surfactants and Their Emulsion Properties. K. Ren and B.P. Lamsal, Iowa State University, USA.

11:00 Properties and Applications of Low Molecular Weight Ethoxylates. T. Weemes, Sasol Performance Chemicals, USA.

Wednesday Afternoon

S&D 5: Surfactant Manufacturing, Processing, and Sustainability
Chairs: M.J. Williams, Air Products & Chemicals Inc., USA; and J.E. Pemberton, University of Arizona, USA
Gatlin E-4
1:55 Introduction.
2:00 “Wash and Go” Approach: Chemical Modification of Biopolymers for Green Surfactants. C. Stevens, E. Delbeke, S. Mincke, and K. Van Geem, Ghent University, Belgium.
2:40 Phase Behavior Study of Sugar-based Surfactants α-glucoside, β-glucoside, α-maltoside and β-maltoside, and Their Applications in Enhanced Oil Recovery (EOR). Y. Wu and F. Fournier, Kemira, USA.
3:20 Networking Break.
4:20 Choline-based Surfactants. W. Kunz, University of Regensburg, Germany.

S&D 5.1/EAT 5.1: Emulsions and Foams
Chairs: E.J. Acosta, University of Toronto, Canada; and T. Tokle, Kalsec, USA
Gatlin E-5
Joint session: For details, see EAT 5.1/S&D 5.1 on page 34.

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PHO-P: Phospholipid Poster Session

Chair: B. Sebree, Archer Daniels Midland Co., USA

1. Synthesis and Characterization of New Carbohydrate-lipid Conjugates for Drug Targeting. M.U. Ahmad¹, S.M. Ali¹, A. Ahmad¹, S. Sheikh¹, P. Chen², and I. Ahmad¹, ¹Jina Pharmaceuticals, Inc., USA, ²Nia Life Sciences, USA.

2. Individual Phosphatidylcholine Species Analysis by RP-HPLC-ELSD for Determination of Polyenylphosphatidylcholine in Lecithins. W.J. Lee and N.W. Su, National Taiwan University, Taiwan.

3. LC-MS/MS Analysis of Choline/Ethanolamine Plasmalogens via Promotion of Alkali Metal Adduct Formation. Y. Otoki, K. Nakagawa, S. Kato, and T. Miyazawa, Tohoku University, Japan.

S&D-P: Surfactants and Detergents Poster Session

Chair: M. Wint, Amway Corp., USA


2. Biodegradation and Toxicity of Synthetic and Natural Mononharnolipids. F. Tian, D.E. Hogan, J.E. Pemberton, and R.M. Maier, University of Arizona, USA.

3. Enhancement of Heavy Oil Biodegradation by Double-chain Cleavable Surfactants Bearing Sucrose. D. Ono¹, Y. Nishida², T. Numata², M. Minamitani², S. Kawano¹, H. Sato¹, M. Shizuma¹, and A. Masuyama², ¹Osaka Municipal Technical Research Institute, Japan, ²Osaka Institute of Technology, Japan.


7. Activity of Mannanase Detergent Enzyme in Relation to Mixed Micelle Formation of Linear Alkyl Benzene Sulfonate with Linear Ethoxylated Alcohol. J.D. Seyfert¹,², F. Pala¹, and J. Evans², ¹Battelle, USA, ²University of Massachusetts, USA.

8. The Evolution of Builder and Polymer Systems in Dishwashing Detergents Commercialized in North America and Europe. F. Pala, J.D. Seyfert, and C. Usher, Battelle, USA.


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Industry Showcase Partner Directory
(As of February 25, 2015)

**Air Products & Chemicals**
www.airproducts.com

Air Products’ portfolio of non-ionic and cationic surfactants provide effective detergenty, foaming, and other characteristics that can bridge various forms of cleaning, from degreasing under harsh conditions to gentle skin cleansing. With a range that spans from basic alcoholethoxylates to specialty amine-based surfactants, we aim to provide the market with solutions that drive desired outcomes.

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**American Emu Association**
www.aea-emu.org

The American Emu Association (AEA) represents an alternative agricultural industry that is dedicated to producing high quality, beneficial products. One of these products is all natural pure emu oil. This omega rich oil is sought after by consumers and cosmetic companies alike.

**ASAGA**
www.asaga.org.ar

ASAGA, the Argentine Fats and Oils Association, brings together experts, professionals, specialists, researchers, institutions, and companies from Argentina with an interest in the science and technology of edible fats, oils, and byproducts.

**Buss ChemTech AG**
www.buss-ct.com

Buss Chem Tech delivers innovative, reliable, and safe process design solutions for catalyzed gas/liquid reactions to oleochemical companies around the globe. Our wide ranging know-how and process development resources have been the key to success at over one hundred oleochemical plants. BCT will provide the scope of supply that fits your particular needs.

**Euro Fed Lipid**
www.eurofedlipid.org

Euro Fed Lipid is a federation of 13 scientific associations concerned with lipids, fats, and oils. The federation represents 2,000 individuals and companies. Its mission is the furthering of lipid science and technology, and the cooperation and exchange of ideas between scientists and technologists at a European level. The activities of Euro Fed Lipid include the organization of international congresses at varying venues, by the co-organization of the fair “oils+fats”, and the publishing of the “European Journal of Lipid Science and Technology”.

**Fenix Process Technologies Pvt. Ltd.**
www.fenix.in

Fenix offers process technologies for edible oil refinery and biodiesel production. We supply all equipment and components for those industries and for the distillation process. The customer’s satisfaction of running a trouble-free plant is ensured. Our design provides efficient and cost-effective plants and equipment. We guarantee process performance efficiency.

**GKD-USA, Inc.**
www.gkdusa.com

Since 1925, GKD has enjoyed a reputation for precision weaving and extensive knowledge of industrial filtration processes. Our filter media, woven on our innovative, state-of-the-art looms, allows us to produce the highest quality and most robust filter cloth available. The same quality standards apply to the design and fabrication of our NeverLeak™ Industrial series of filter leaves for pre-coat pressure filtration. Our newest NeverLeak is designed to eliminate tubular-framed riveted leaves.

**Graham Corporation**
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Graham Corporation, as a global designer and manufacturer with world-renowned engineering expertise in vacuum and heat transfer technology, supplies custom engineered steam ejectors, liquid ring vacuum pumps, vacuum systems, condensers, plate heat exchangers, and freeze condensation systems, as well as other products, to many industries worldwide. Graham has built a reputation for top-quality, reliable products, and high standards of customer service.

**Grosper-Dalian Gaochang Machinery Manufacturing Co., Ltd.**
www.grosper.net

Grosper, Dalian Gaochang Machinery Manufacturing Co., Ltd., established in 1997, is a professional edible oil and food equipment manufacturer in Dalian, China. In 2008, the first 500T/D flaking mill was put on the market, and we obtained over 20 national patents. At the same time, we began to develop different markets, such as feed industry (steamed corn flaking project), food industry (oat flaking project), and chemical industry (tri-roll mill), etc.

**Italmatch USA Corp.**
www.italmatch.it

Italmatch is one of the world’s largest producers of phosphonates and the manufacturer of Dequest products worldwide. Customers around the world rely on our high quality products for applications in a variety of markets such as pharmaceuticals, hygiene, industrial and household cleaning, and water treatment. Italmatch also produces green polymers for applications such as laundry, autodish, hard surface, oilfield, pulp paper, and other industries.

**LCI Corporation**
www.lcicorp.com

LCI Corporation pioneered thin-film evaporation’s (TFE’s) application for lecithin drying (soy and sunflower seed) with many installations worldwide, including the growing South American market. TFE’s short residence time and turbulent film provide low-moisture levels while preserving good color. LCI technologies are also used for glycerin recovery in biodiesel applications.

**LEEM Filtration**
www.lemfiltration.com

Representatives from this company will be available at the Wesson Campus. See page 68 for company description.
Lubrizol Corporation
www.lubrizol.com
Lubrizol develops, manufactures, and markets specialty chemicals for personal care and home care. Our innovative ingredients and additives modify physical properties, enhance functional performance, and deliver aesthetic benefits. Lubrizol’s mission in Home Care is to deliver solutions that enhance the cleaning, care, and protection of fabrics, surfaces, and dishes.

MAHLE Industrial Filtration
www.mahle-industry.com
MAHLE Industrial Filtration products are known internationally for their superior quality, high efficiency, and value. MAHLE products provide filtration solutions for industrial liquid, edible oil applications, biofuels, chemicals, petrochemicals, and water. MAHLE brand products include Amafilter, Nowata, and ProGuard, which provide a wide range of expertise in highly engineered and custom-designed pressure filter vessels in a variety of materials, which gives us the edge in designing the filter system that meets your exacting demands.

MIDI Inc.
www.midi-inc.com
Representatives from this company will be available at the Smalley Campus. See page 42 for company description.

Novozymes (Household Care)
www.novozymes.com
Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries, we create tomorrow’s industrial biosolutions, improving our customers’ businesses, and the use of our planet’s resources.

Oils & Fats International/Quartz Business Media
www.quartzltd.com
The OFI portfolio comprises conferences, exhibitions, websites, and the industry-leading Oils & Fats International magazine. Targeting decision-makers, buyers, and influencers, OFI is committed to helping companies in the oils and fats industry run sustainable enterprises by supplying them with the latest news, features, and trends concerning all aspects of the supply chain, whether they concern prices, regulations, feedstocks, processing, refining, trading, or technology, or in specialist areas such as biofuels, biotechnology, renewable materials, and transport.

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Surface Chemists of Florida, Inc.
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SCF, Inc. is a research and development laboratory with over 40 years of experience in product development and problem solving in technologies where surface and polymer chemistry are the basic sciences. In addition to its research and development activity, SCF sells specialty chemicals for a range of applications under the SURTECH trade name. Many of the products are developed or formulated in cooperation with its customers and address their needs specifically and effectively.

TMC Industries, Inc.
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With over 30 years of distillation experience, TMC Industries is an industry leader in toll distillation using thin film molecular distillation and multi-plate fractionation as an intermediate or final step in the processing of vitamin E, fatty acids, dimer acids, citrus oils, omega-3s, and specialty chemicals. We concentrate, purify, deodorize, separate, decolorize, and fractionate nutraceuticals, cosmeceuticals, flavors, fragrances, waxes, and oils. 30,000 sq. ft. facility with pilot and production scale processing available. GMP, Kosher, and Organic.

Yenar A.S.
www.yenar.com.tr
As Yenar A.S., we are one of the world’s leading producers of centrifugal cast iron rolls for flour and oil mill industry. We are currently producing 13,000 Rolls/annum for the main machine manufacturers and also for the aftermarket. Our production range varies from 150 mm to 800 mm in diameter and up to 2,500 mm in length. The rolls are produced according to the machine manufacturers design and fully finished or rough machined according to the customer request. We have a capacity to corrugate (Flute) rolls up to 2,500 mm length and 700 mm in Diameter. The smooth rolls are sand blasted.
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David Wesson Campus
Gatlin B

Named after David Wesson, AOCS co-founder and the Society’s president in 1911, this campus houses the technical sessions, poster presentations, and Industry Showcase Partners pertaining to these interest areas:

- Biotechnology Division
- Industrial Oil Products Division
- Processing Division
- Protein and Co-Products Division

Division events for the interest areas of this campus may be found on page 12.

Industry Showcase Partners
(As of March 15, 2015)

<table>
<thead>
<tr>
<th>Company</th>
<th>Division/Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF Engineering, Inc.</td>
<td>GEA Westfalia Separator</td>
</tr>
<tr>
<td>Anderson International Corp.</td>
<td>GIG Karasek-Incon Process</td>
</tr>
<tr>
<td>Artisan Industries</td>
<td>Systems</td>
</tr>
<tr>
<td>BASF Corporation</td>
<td>HF Press+LipidTech</td>
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<tr>
<td>Bühler</td>
<td>LEEM Filtration</td>
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<tr>
<td>CPM Roskamp Champion/CPM SKET</td>
<td>MIDI Inc.</td>
</tr>
<tr>
<td>Crown Iron Works Company</td>
<td>Novozymes (Oils &amp; Fats)</td>
</tr>
<tr>
<td>Desmet Balleistra North America</td>
<td>Oil-Dri Corporation of America</td>
</tr>
<tr>
<td>DSM</td>
<td>optek-Danulat, Inc.</td>
</tr>
<tr>
<td>French Oil Mill Machinery Co.</td>
<td>Pattyn North America Inc.</td>
</tr>
<tr>
<td>GEA Process Engineering Inc.</td>
<td>Solex Thermal Science Inc.</td>
</tr>
<tr>
<td></td>
<td>Solutions 4 Manufacturing</td>
</tr>
</tbody>
</table>

Poster Author Sessions

- Even-numbered posters have authors present during the Monday mid-morning and Tuesday afternoon breaks.
- Odd-numbered posters have authors present during the Monday afternoon and Tuesday mid-morning breaks.
- All authors are also encouraged to be present during the Wednesday mid-morning break.

A complete list of poster presentations for this campus is available on The App, or beginning on page 64.

Campus Schedule

**Monday, May 4**

7:00 am–6:00 pm . . . . . . . . . . Industry Showcase and Poster Viewing
7:20–8:20 am . . . . . . . . . . . . Early Risers Coffee
8:10–11:20 am . . . . . . . . . . . . Hot Topics Symposia and Special Sessions
9:40–10:20 am . . . . . . . . . . . . Networking Break and Poster Author Session
11:45 am–1:00 pm . . . . . . . . . . Protein and Co-Products Division Roundtable
1:15–5:00 pm . . . . . . . . . . . . Technical Sessions
2:40–3:20 pm . . . . . . . . . . . . Networking Break and Poster Author Session
5:00–6:00 pm . . . . . . . . . . . Biotechnology Division Poster Oral Presentations
5:00–6:00 pm . . . . . . . . . . . Industrial Oil Products Division Roundtable

*Monday breaks are sponsored by Oil-Dri*

**Tuesday, May 5**

7:00–8:00 am . . . . . . . . . . Early Risers Coffee
7:00 am–6:00 pm . . . . . . . . . . Industry Showcase and Poster Viewing
7:55–11:00 am . . . . . . . . . . . . Technical Sessions
9:20–10:00 am . . . . . . . . . . . . Networking Break and Poster Author Session
12:45–1:45 pm . . . . . . . . . . . . Biotechnology Division Roundtable
2:15–6:00 pm . . . . . . . . . . . . Technical Sessions
3:40–4:20 pm . . . . . . . . . . . . Networking Break and Poster Author Session

*Tuesday morning break is sponsored by Solex Thermal Science*

**Wednesday, May 6**

7:00–8:00 am . . . . . . . . . . Early Risers Coffee
7:00 am–5:00 pm . . . . . . . . . . Industry Showcase
7:00 am–3:40 pm . . . . . . . . . . Poster Viewing
7:00–7:55 am . . . . . . . . . . . . Processing Division Roundtable
7:55 am–12:00 pm . . . . . . . . . . Technical Sessions
9:40–10:20 am . . . . . . . . . . . . Networking Break and Poster Author Session
1:55–5:00 pm . . . . . . . . . . . . Technical Sessions
3:20–3:40 pm . . . . . . . . . . . . Networking Break

See Program-at-a-Glance brochure or The App for complete meeting schedule.

At the 1921 AOCS Annual Meeting, a new logo featuring two crossed Kjeldahl flasks below a small Soxhlet flask was debuted as the Society’s official logo. This logo design, created by David Wesson, is still used today.
Oral Presentations

- The presenter is the first author or otherwise indicated with an asterisk (*).
- Access and print abstracts at the computer stations located in Gatlin B, D, & Panzacola
- Abstracts also available on The App or online at: AnnualMeeting.accs.org/AM15Resources

Monday Afternoon

**BIO 1: Biocatalysis I**

This session is sponsored in part by Nissin OilliO Group, Ltd. and Malaysian Palm Oil Board

Chair: C.T. Hou, USDA, ARS, NCAUR, USA; and J. Ogawa, Kyoto University, Japan

Gatlin A-1

1:15 Introduction.

1:20 Characterization of *Brassica napus* Diacylglycerol Acyltransferase 1 and the Enzyme’s N-terminal Region.  
K.M.P. Caldo, R. Panigrahi, M.S. Greer, G. Chen, M.J. Lemiux, and R.J. Weselake*, University of Alberta, Canada.

1:40 Transgenic Oil Palm: Evaluation of Various Methods, Target Tissue, and Selection Agents.  

2:00 Optimum Conditions for the Production of Soy Polyoils and Diacylglycerol from Soybean Oil by *Acinetobacter haemolyticus* A01-35 NRRL B-59985.  
C.T. Hou and K. Ray, USDA, ARS, NCAUR, USA.

2:20 Gut Microbial Polysaturated Fatty Acid Saturation Metabolism Generating Bio-active Hydroxy, Oxo, and Conjugated Fatty Acid Derivatives.  
J. Ogawa*, S. Kishino, T. Sugawara, S. Tanabe, and T. Kawada*, Kyoto University, Japan;  
H. Shimizu University, Japan.

2:40 Networking Break and Poster Author Session.

3:20 Various Rare Polysaturated Fatty Acid Productions by *Mortierella alpina* Breeding.  
A. Ando*, T. Okuda, H. Kikukawa, E. Sakuradani, J. Shima, J. Ogawa*, and S. Shimizu*, Kyoto University, Japan;  
University of Tokushima, Japan;  
Ryukoku University, Japan;  
KUO Gakuken University, Japan.

3:40 Enzymatic Synthesis of Tyrosol-based Phenolipids: Characterization and Antioxidant Activities.  
G. Pande and C.C. Akoh*, University of Georgia, USA.

4:00 Novel Marine Carotenoids and Their Functions.  
M. Hoosakawa, N. Takatani, T. Sawabe, and K. Miyashita, Hokkaido University, Japan.

4:20 Selective Antibacterial Activity of Palmotolic Acid Useful for Possible Prevention of Atopic Dermatitis.  
Kinki University, Japan.

4:40 Production of Diacylglycerols by Glycerolysis of Soybean Oil Catalyzed by an Immobilized Lipoase in a Bubble Column Reactor.  
Y. Wang, X. Yang, N. Zhang, and Y. Teng, Jinan University, China.

**IOP 1a: New Uses of Glycerin**

Chair: X.P. Ye, University of Tennessee, USA; and D. Ploch, CIRAD, France

Gatlin A-2

1:15 Introduction.

1:20 Heterogeneous Catalysis for Liquid Phase Upgrading of Glycerol: Tackling Two Main Issues Towards Industrialization.  
Institut Universitaire de France, France;  
National Institute of Advanced Industrial Science and Technology (AIST), Japan;  
Wroclaw University of Environmental and Life Sciences, Poland;  
Cracow University of Technology, Poland.

2:00 Bioconversion into Oil from Glycerol by Oleaginous Yeast.  
University of Yamana, Japan.

2:20 Industrial Pathway to Bio-based MPG: The BASF Glycerol to 1,2-Propanediol Process.  
M. Paul*, A. Thornton*, and B. Houston*, BASF SE, Germany;  
BASF Corp., USA.

**IOP 1b: Lubricants, Polymers, and Additives**

Chair: Z.S. Liu, USDA, ARS, NCAUR, USA; and Z.S. Petrovic, Pittsburg State University, USA

Gatlin A-2

3:15 Introduction.

3:20 Biobased Interpenetrating Polymer Networks (IPN) Derived from Silylated Soybean Oil and Polysiloxane.  
D. Graiver, S. Dewsathale, and R. Narayan, Michigan State University, USA.

3:40 A Self-crosslinking Thermosetting Monomer with Both Epoxy and Anhydride Groups Derived from Tung Oil Fatty Acids: Synthesis and Properties.  
USDA, ARS, NCAUR, USA;  
Washington State University, USA.

4:00 High Functionality Biobased Polyls for Rigid Polyurethane Foams.  
M. Ionescu*, D. Radojcic*, X. Wan*, Z.S. Petrovic*, and T. Upshaw*, Pittsburg State University, USA;  
Chevron Phillips Chemical Co., USA.

4:20 Structure and Properties of Vegetable Oil Polyls for Polyurethanes.  
Z.S. Petrovic, Pittsburg State University, USA.

4:40 Non-traditional Vegetable Oil: A Potential Source for Green Lubricants.  
T.M. Panchal, A.V. Patel, M. Thomas, and J.V. Patel, Institute of Science and Technology for Advanced Studies and Research, India.

Industrial Oil Products (IOP) Annual Meeting Program Roundtable will begin at 5:00 pm in Gatlin A-2. Planning for 2016 programs; everyone is welcome to attend.

**PRO 1: Leadership**

Chair: M.J. Boyer, Agribusiness and Water Technology, USA; and G. Mitchell, Process Plus LLC, USA

Gatlin A-3

1:15 Introduction.

1:20 Manufacturing and Business Development Based Upon Dr. Kazuo Inamori’s Management Business Philosophy.  
R. Heistand, Il, Southcoast Container Services, USA.

1:40 Safety Leadership.  
M.A. Snow, Bunge Ltd., USA.

2:00 Leadership in the Food Industry—An R&D Perspective.  
S. Hill, Kraft Foods, USA.

2:20 Leadership in Manufacturing and Operations.  
B. Minor, CHS, Inc., USA.

2:40 Networking Break and Poster Author Session.

3:20 Leadership in Environmental Management and Sustainability.  
M.J. Boyer, Agribusiness and Water Technology, Inc., USA.

3:40 Roundtable Discussion.
PCP 1: Analysis and Characterization of Protein and Protein Hydrolysates for Utilization: Relevance and Caveats of the Methods

This session is sponsored in part by DuPont Nutrition & Health

Chairs: P. Kerr, Solae LLC, USA; C.C. Udenigwe, Dalhousie University, Canada; and E. Krul, Solae LLC, USA

Gatlin A-4

1:15 Introduction.

1:20 Mass Spectrometry of Proteome and Biomarkers for Food and Agricultural Applications. S. Chen1, J. Parker1, K. Balmant1, M. Zhu1, T. Zhang1, T. Ma1, M.J. Yoo1, J. Sheffield2, and N. Taylor2,
1University of Florida, USA, 2Danforth Center, USA.

2:00 Using Synchrotron-based Infrared Microspectroscopy for Plant-based Feed and Food Protein and Nutrition Study. P. Yu,
University of Saskatchewan, Canada.

2:40 Networking Break and Poster Author Session.

3:20 Transport of Food Derived Peptides Important in Heart and Mental Health Across the Blood Brain Barrier: A New Model.
M. Hayes1 and T.E. Lea2, 1Teagasc Food Research Centre, Ireland, 2University of Life Sciences NMBU, Norway.

3:40 Digestibility and Allergenicity of Processed Legume Proteins by a Dynamic in vitro Digestion System. L. L'Hocine, M. Pitre,
Y. Arcand, I. Mainville, and A. Achouri, Agriculture and Agri-Food Canada, Canada.

4:00 Storage Stability of Food Protein Hydrolysates. Q. Rao1, T.P.
Labuza2, and J. Zhao1, 1Florida State University, USA, 2University of Minnesota, USA.

Tuesday Morning

BIO 2: Biocatalysis II

This session is sponsored in part by Nisshin OilliO Group, Ltd. and Malaysian Palm Oil Board

Chairs: C.T. Hou, USDA, ARS, NCAUR, USA; and L.K. Ju, University of Akron, USA

Gatlin A-1

7:55 Introduction.

8:00 Reforming of Sucrose Fatty Acid Esters by Lipase Reactions. Y.
Nishiyama, T. Albara, H. Uehara, and Y. Ueda, Nisshin OilliO Group,
Ltd., Japan.

8:20 Effects of Particle Size of Sucrose Suspensions and Pre-
incubation of Enzymes on Lipase-catalyzed Synthesis of
Sucrose Oleic Acid Esters. R. Ye1, D.G. Hayes**, and R.M. Burton2,
1University of Tennessee, USA, 2*MARC-IV Consulting, Inc., USA.

8:40 Economic Model for the Glucose/Oleic Acid-based Synthesis of
Sophorolipids and Some Potential New Applications for These
Glycolipid Surfactants. R.D. Ashby, D.K.Y. Solaiman, and L.S. Liu,
USDA, ARS, ERRC, USA.

9:00 Genetically Engineered Rhamnolipid-producing Organism for
Glycerol Utilization. D.K.Y. Solaiman and R.D. Ashby, USDA, ARS,
ERRC, USA.

9:20 Networking Break and Poster Author Session.

10:00 Waste Oil/Grease Conversion and Biodiesel Feedstock
Production by Phagotrophic Algae. C. Li, J. Kohl, S. Xiao, M.
Hosseini, Z. Lin, N. Vongpanish, and L.K. Ju*, University of Akron,
USA.

10:20 An Innovative Technology for Synthesis of Biodiesel Using
Defatted Rice Bran as a Biocatalyst. I.H. Kim and N. Choi, Korea
University, Republic of Korea.

10:40 Applicability of a Novel Enzymatic Method to the Analysis of
Positional FA Distribution in Milk Fat. Y. Watanabe1, R. Horii, Y.

often times, coming up with the great idea
is the easy part...

Surface Chemists of Florida

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Please come visit us at booth 221 and attend our paper on Soil Release Technology at the S&D Session Wednesday

Biotechnology (BIO) Annual Meeting Program Roundtable will begin at 12:45 pm in Gatlin A-1. Planning for 2016 programs; everyone is welcome to attend.

BIO 2.1/IOP 2/PRO 2: Alternative Fuels and Enzymatic Biodiesel
Chairs: H.C. Holm, Novozymes A/S, Denmark; R.M. Burton, Novozymes, USA; G. Knothe, USDA, ARS, NCAUR, USA; and S. Lewis, Solenis, USA
Gatlin A-2
7:55 Introduction.
8:00 Development of Enzymatic Catalyzed Fat-splitting Processes. A. Rancke-Madsen, P.M. Nielsen, and H.C. Holm, Novozymes A/S, Denmark.
8:20 Evaluation of Glycerol Carbonate Production and Its Cosynthesis in Enzymatic Biodiesel Production. R.M. Burton1 and J. Greenstein2; 1MARC-IV Consulting, Inc., USA, 2North Carolina State University, USA.
9:00 Continuous Enzymatic Biodiesel Processing. B. Chrabas, Vessel Fuel, LLC, USA.
9:20 Networking Break and Poster Author Session.
10:00 Cold Flow Properties of Fatty Acid Methyl Esters: Additives versus Diluents. R.D. Dunn, USDA, ARS, NCAUR, USA.
10:20 Fuel Quality Sensors for Characterization of Biofuels and Determination of Their Aging Degree. J. Krahl, M. Eskiner, and Z. Fan, Coburg University of Applied Sciences and Arts, Germany.
10:40 Three Approaches to Fuels from Fatty Compounds. G. Knothe, K.M. Doll, B.R. Moser, and R.E. Murray, USDA, ARS, NCAUR, USA.

PCP 2: Biocatalysts in Processing of Proteins and Co-Products
This session is sponsored in part by DuPont Nutrition & Health
Chairs: B.P. Lamsal, Iowa State University, USA; N. Shah, DuPont Health & Nutrition, USA; and R. Green, POS BioSciences, Canada
Gatlin A-4
7:55 Introduction.
8:00 Enzymatic Protein Hydrolysates: From Improved Food Protein Functionality to Bioactive Peptides. R.E. Aluko, University of Manitoba, Canada.
8:20 Fractionation of Rapeseed from Oil Extraction to Minor Products. S. Hruschka, GEA Westfalia Separator Group GmbH, Germany.
8:40 Proteins and Bioactive Peptides Produced from Hard to Cook Common Bean Improved Markers Related to Diabetes. E. De Mejía1, M. Oseguera2, and S. Amaya3, 1University of Illinois, USA, 2University of Queretaro, Mexico.
9:00 Effects of Co-Products of Enzyme-assisted Aqueous Extraction of Soybeans on Ethanol Production in Corn Fermentation. J.K. Sekhon1, K. Rosentrater1, T. Wang1, L. Johnson1, and S. Jung2, 1Iowa State University, USA, 2California Polytechnic State University, USA.
9:20 Networking Break and Poster Author Session.
10:00 Technoeconomic Analysis of Bioethanol and Co-Product Production from Triticale Feedstocks in Western Canada. E.K. Mupondwa1, X. Li1, J.P.D. Wanasundara1, and L. Tabi2, 1Agriculture and Agri-Food Canada, Canada, 2University of Saskatchewan, Canada.

Tuesday Afternoon

BIO 3/H&N 3.1: Biomodifications, Biomechanisms, and Biosafety
This session is sponsored in part by DuPont Nutrition & Health, Johnson & Johnson, and Oilseeds & Bioscience Consulting
Chairs: R.F. Wilson, Oilseeds & Bioscience Consulting, USA; and M. Picklo, USDA, ARS, USA
Gatlin A-1
2:15 Introduction.
2:20 Dietary Seed Oil Effects on Kidney Oxylipins Reveal Surprising Effects of Fatty Acids. H. Aukema1,2, 1University of Manitoba, Canada, 2Canadian Centre for Agri-Food Research in Health and Medicine, Canada.
3:00 In vivo and in vitro Evidence for Biochemical Coupling of Reactions Catalyzed by Lysophosphatidylcholine Acyltransferase and Diacylglycerol Acyltransferase. X. Pan1, S. Stymne2, J. Zou3, X. Qiu3, G. Chen3, M. Kazachkov1, I. Lager1, M.S. Greer4, and R.J. Weselake1, 1University of Alberta, Canada, 2Swedish University of Agricultural Sciences, Sweden, 3National Research Council Canada, Canada, 4University of Saskatchewan, Canada.
3:20 Preparation of High-purity DHA from Microalgae Oil in a Packed Bed Reactor via Two Step Lipase-catalyzed Esterification. E.J. Lee1, D.S. No2, M.W. Lee2, and I.H. Kim1, 1Korea University, Republic of Korea, 2Ishimwells, Republic of Korea.
3:40 Networking Break and Poster Author Session.
Stop by the Butler Room and let us:

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IOP 3/ANA 3.1: Algal and Other Non-traditional Oils Characterization
Chairs: L.M.L. Laurens, National Renewable Energy Laboratory, USA; and B.W.K. Diehl, Spectral Service AG, Germany
Gatlin A-2
Joint session: For details, see ANA 3.1/IOP 3 on page 31.

PRO 3: New Technology
Chairs: S. Gregory, DSM Food Specialties, USA; and W. Younggreen, Alfa Laval, Inc., USA
Gatlin A-3

2:15 Introduction.
2:20 Technology in Development—Continuous Yield Improvements.
E. Ventrici, Molinos Río de La Plata S.A., Argentina.
2:40 Latest Developments in Physical Refining of Seed Oils.
W. Younggreen, Alfa Laval Inc., USA.
3:00 Solutions for Handling Enzymatic Degumming By-products.
M. Shindelar, M. Dasari, and A. Mafhuz, Feed Energy Co., USA.
S. Gregory, DSM Food Specialties, USA.
3:40 Networking Break and Poster Author Session.
H.C. Holm, Novozymes A/S, Denmark.
4:40 Oil Yield Calculation from Enzymatic Degumming Process.
D. Walsh, DSM Food Specialties, USA.
5:00 Enzymatic Gums Deoiling: A Flexible Process for Increasing Oil Yield.
W. De Greyt, Desmet Ballestra Group SA, Belgium.
M.C. Usseglio1,2, National University of La Plata, Argentina, 2ProSimTechs LLC, USA.

PCP 3/SCC: Strategies in Advanced Utilization of Proteins and Peptides
This session is sponsored in part by DuPont Nutrition & Health
Chairs: H.R. Ibrahim, Kagoshima University, Japan; H. Kumagai, Nihon University, Japan; Z. He, USDA, ARS, SRRC, USA; and P. Romanowski, Society of Cosmetic Chemists/Element 44 Inc., USA
Gatlin A-4

2:15 Introduction.
2:20 Development of a Protein-rich, Novel Fermented Milk/Cereal Product as a Delivery Vehicle for Micronutrients and Bioactive Compounds.
N.M. O’Brien and T.P. O’Connor, University College Cork, Ireland.
2:40 Proteomic Analysis of Eggshell Membranes.
M.T. Hincke and T. Ahmed, University of Ottawa, Canada.
3:00 Impact of Dietary β-conglycinin on Adiposity and Insulin Sensitivity in Obese and Type 2 Diabetic Rodents.
K. Koba1, K. Kawabeta1, T. Noda1, N. Tateiwa1, S. TAMARU1, and M. Sugano2, 1University of Nagasaki, Japan, 2Kyushu University, Japan.
3:20 Occurrences of Food-derived and Endogenous Pro-hyp in Blood and Tissue and Their Function to Fibroblast.
K. Sato, Kyoto University, Japan.
3:40 Networking Break and Poster Author Session.
T. Matsui, Kyushu University, Japan.
4:40 Appetite Suppressing Peptides Derived from Soybean Involvement of Enteroenocrine System.
H. Hara, S. Nakajima, and T. Hira, Hokkaido University, Japan.
5:00 Bioactive Peptides from Goat Milk with New Promises for Skin Health.
H.R. Ibrahim, Kagoshima University, Japan.
5:20 Protein and Peptide Use and Effectiveness in Topical Cosmetic Applications.
P. Romanowski, Element 44 Inc., USA.

Wednesday Morning

BIO 4/S&D 4: Biobased Surfactants/Detergents
Chairs: D.K.Y. Solaiman, USDA, ARS, ERRC, USA; D.G. Hayes, University of Tennessee, USA; G.A. Smith, Huntsman Performance Products, USA; and R.M. Maier, University of Arizona, USA
Gatlin A-1

7:55 Introduction.
8:00 Surfactants Based on Algae Oil.
G.A. Smith and H. Byrne, Huntsman Performance Products, USA.
R. Ye1, D.G. Hayes2, R.M. Burton2, A. Liu2, and Y. Wang1, 1University of Tennessee, USA, 2MARC-IV Consulting, Inc., USA.
8:40 A New and Cost-effective Biosynthetic Process for Hydroxylated PUFA’s by the Yeast Starmerella bombicola: Opportunities for Bio-medical Research.
I.N.A. Van Bogaert1, G. Zhang2, B. Hammock3, and W. Soetaert2, 1Ghent University, Belgium, 2Bruce Hammock Lab, USA.
9:00 Production of Biosurfactants Using Bacillus subtilis on Pretreated Biomass Hydrolysates in 5-L Bioreactor.
R. Sharma, W.J. Colonna, and B.P. Lamsal, Iowa State University, USA.
9:20 Challenges to Realizing the Commercial Potential for Biosurfactants.
R.M. Maier, University of Arizona, USA.
9:40 Networking Break and Poster Author Session.
10:20 Tailoring Rhamnolipid Biosurfactant Properties Through Production by Chemical Synthesis.
J.E. Pemberton, R. Palos-Pacheco, C.S. Coss, and R. Poll, University of Arizona, USA.
10:40 Scaling Up Rhamnolipid Production: Comparison of Flask,

Processing (PRO) Annual Meeting Program Roundtable will be held Wednesday at 7:00 am in Gatlin A-3. Planning for 2016 programs; everyone is welcome to attend.
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Wesson Campus | Oral Presentations

IOP 4: Catalysis

Chairs: A. Zwijnenburg, Johnson Matthey, Germany; and T.J. Benson, Lamar University, USA

Gatlin A-2

7:55 Introduction.

8:00 Sustainable Diesters from Methyl 10-Undecenoate—Hydroesterification Catalyst Recycling in Thermomorphic Solvent Systems (TMS). T. Gaide, A. Behr, and A.J. Vorholt, Technische Universität Dortmund, Germany.

8:20 Combination of Homo- and Heterogeneous Catalysis in Miniplant Scale: New Process forSynthesis of Saturated Branched Oleo Derivatives. J. Haßelberg (Industrial Oil Products Division Student Award Winner), A. Behr, C. Weiser, and J.B. Bially, Technische Universität Dortmund, Germany.

8:40 Formation of Furan Fatty Alkyl Esters from Their Bis-epoxide Fatty Esters. G.B. Bantchev, K. Doll, G. Biressaw, and K. Vermillion, USDA, ARS, NCAUR, USA.

9:00 Kinetic Modeling of Single-cell Oil Production Using Pulp and Paper Wastewater Under Substrate Inhibition Condition for Biodiesel Production. M. AmirSadeghi1, S. Shields-Menard1, T. French1, R. Hernandez2, M. Green2, and B. Sukhbaatar1, ‘Mississippi State University, USA, 2University of Louisiana at Lafayette, USA.

9:20 Influence of Thermal and Enzymatic Treatments of Rapeseed Meal on Canolol Production and Its Conversion into Potential Polymer Precursors. E.C. Zago1, C. Aouf2, F. Fine3, P. Carré4, J. Lecomte1, and P. Villeneuve1, 1CIRAD, UMR IATE, France, 2INRA, UMR SPO, France, 3CETIOM, France.

9:40 Networking Break and Poster Author Session.

10:20 Next Generation Vegetable Oil Structuring Agents: A Nanotechnology Approach in Food Materials/Processing. G. John and J. Silverman, City College of New York, USA.

10:40 Modified Natural Oils with New Fatty Acid Traits for Industrial Lubricant Applications. J. Cafmeyer and D. Garbark, Battelle Memorial Institute, USA.


11:20 The Enzymatic Synthesis of Water-soluble Esters Made from Analogues of Iminodiacetic Acid and Solketal. V.T. Wyatt and K. Jones, USDA, USA.


PRO 4a: Innovative Solutions

Chairs: A. Subieta, Desmet Ballestra North American, Inc., USA; and J. Willits, Desmet Ballestra North American, Inc., USA

Gatlin A-3

7:55 Introduction.

8:00 A Safe, Profitable, and Sustainable Method for Disposal of Spent Bleaching Earth. N.J. Smallwood, The Core Team, USA.

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8:20 Novel Methods to Improve Oil Recoveries from Canola and Sunflower. P. Adu-Peasah, S. Wensing, M. Robinson, P. Nelson, and T. Patterson, Dow AgroSciences, USA.
8:40 How to Reduce 10% on the Steam Consumption in Oil Seed Crushing Plants. A. Demarco, Desmet Ballestra, Argentina.
9:20 Evaluating Vacuum Systems for Planned Upgrades in New Plant. C. Braungart, Graham Manufacturing, USA.

**PRO 4b: Industry Update**

*Chairs: A. Subieta, Desmet Ballestra North American, Inc., USA; and J. Willits, Desmet Ballestra North American, Inc., USA*

**Gatlin A-3**

10:15 Introduction.
10:20 FDA FSMA Preventive Controls for Animal Food—Understanding What Processors Need to Do. D. Smith, Projects Inc., USA.

**PCP 4: New Processes, Emerging Sources, Alternative Proteins**

*This session is sponsored in part by DuPont Nutrition & Health*

*Chairs: K. Liu, USDA, ARS, USA; H. Wang, Iowa State University, USA; and L. Jiang, Northeast Agricultural University, China*

**Gatlin A-4**

7:55 Introduction.
8:00 Canola Protein Nanoparticles: Preparation by Cold Gelation and Application in Delivery of Bioactive Compounds. J. Wu and A. Akbari, University of Alberta, Canada.
8:20 Recovering Canola Protein and Other Products. J.P.D. Wanagasundara, T. McIntosh, and E.K. Mupondwa, Agriculture and Agri-Food Canada, Canada.
9:00 An Environmental Friendly Method for Extraction of Soybean Oil and Protein. X. Sui1,2, B. Qi1, Z. Wang1, Y. Li1, and L. Jiang1, 1Northeast Agricultural University, China, 2National University of Singapore, Singapore.
9:20 Surfactant-based Corn Oil Extraction Aids for the Dry-grind Ethanol Process. S. Lewis, Solenis, USA.
9:40 Networking Break and Poster Author Session.
10:20 A Comparison of Distillers Corn Oil and Distillers Milo Oil for Biofuels and Animal Feed Applications. R.A. Moreau (Alton E. Bailey Award Winner), USDA, ARS, ERRC, USA.
10:40 Characterization of Condensed Distillers Solubles and Its Fractions for Composition of Main Nutrients, Minerals, and Amino Acids. K. Liu, USDA, ARS, USA.
11:00 Utilization of Co-Products Derived from the Corn Milling Industry in Poultry and Swine. B. Kerr1 and G. Shurson2, 1USDA, ARS, NLAE, USA, 2University of Minnesota, USA.
11:40 Lipid Producing Sugarcane: Feedstock for Biodiesel Production. H. Huang, S. Long, and V. Singh*, University of Illinois at Urbana-Champaign, USA.

**Wednesday Afternoon**

**BIO 5: General Biotechnology**

*Chairs: R.D. Ashby, USDA, ARS, ERRC, USA; and B.P. Lamals, Iowa State University, USA*

**Gatlin A-1**

1:55 Introduction.
2:00 Milk Fat Triacylglycerol Profile Differentiation Between DGAT1 AA and KK Genotype: Effect of Fat Supplementation. D.A. Tzompa-Sosa, H. Bovenhuis, A.M. van Vuuren, and H.J.F. van Valenberg, Wageningen University, The Netherlands.
2:20 Natural Products Produced from Bioethanol Stillage. K. Ratanapanyanuch1, Y.Y. Shim1,2, M. Haakensen2, and M.J.T. Reaney1,3,4, 1University of Saskatchewan, Canada, 2Prairie Tide Chemicals Inc., Canada, 3Contango Strategies Ltd., Canada, 4Jinan University, China.
2:40 Enzymatic Synthesis of High Oleic Oil Based Structured Lipid Containing Palmitic and Capric Acid Suitable for a Human Milk Fat Substitute. C. Alvarez and C.C. Akoh, University of Georgia, USA.
3:00 In situ Self-catalyzed Transesterification for Production of Biodiesel from Rice Bran. N. Choi, D.S. No, and I.H. Kim, Korea University, Republic of Korea.
3:20 Networking Break.
3:40 Application of IPA-water-oil, IPA-methanol-oil, and IPA-water-salt Ternary Phase Diagrams in Biodiesel Production from Mustard Seed. S. Sinichi and L. Diosady, University of Toronto, Canada.
4:00 Novel Linoleic Acid Δ12 Hydratase from Lactobacillus acidoph- ilus Useful for 13-hydroxy Fatty Acid Production. S. Kishino, A. Hirata, and J. Ogawa, Kyoto University, Japan.
4:20 The Biochemistry of Two Microalgae with Potential as n-3 PUFA Producers. J.L. Harwood1, I.A. Guschina1 and K.J. Flynn2, 1Cardiff University, UK, 2Swansea University, UK.
4:40 Preparation of Stearidonic Acid-rich Triglyceride via Two-step Lipase-catalyzed Esterification. N.H. Kim, J.Y. Baik, and I.H. Kim, Korea University, Republic of Korea.

**BIO 5.1/H&N 5.1/SCC: Lipid Oils and Skin Health**

*This session is sponsored in part by Johnson & Johnson*

*Chairs: T.A. McKeon, USDA, ARS, WRRC, USA; K. Mahmood, Johnson & Johnson Consumer, USA; and K. Dobos, Society of Cosmetic Chemists/Sun Chemical Corp., USA*

**Gatlin E-2**

1:55 Introduction.
2:00 The Role of Lipids in Skin Physiology. A. Pappas, Johnson & Johnson, USA.
2:40 New Insights into the Role of Polysaturated Fatty Acids in Skin Physiology and Pathology. H. Gallagher, I.A. Guschina, D. Ramji, and J.L. Harwood*, Cardiff University, UK.
3:00 Biosynthesis and Skin Health Applications of Antimicrobial Glycolipids. D.K.Y. Solaiman and R.D. Ashby, USDA, ARS, ERRC, USA.
3:20 Networking Break.
3:40 Meadowfoam (Limnanthes alba) Natural Products Inhibit Matrix Metalloproteinases in Human Keratinocytes: Relevance to Skin Health. C.L. Miranda, R.L. Reed, A.K. Indra, and J.F. Stevens*, Oregon State University, USA.
4:00 Cosmetic Applications of Castor Oil and Its Derivatives. T.A. McKeon and X. He, USDA, ARS, WRRC, USA.
4:20 Effect of Harvest Time on Olive and Olive Oil Properties During Ripening for Gernik and Adana Topagi Olives. T.M. Keceli, University of Cukurova, Turkey.
IOP 5: Oleochemicals and Biorefineries
Chairs: D. Root, AURI, USA; and S. Ren, University of Tennessee, USA
Gatlin A-2
1:55 Introduction.
2:40 Novel Eutectic Solvents for Generation of Multiple Products from Low-grade Palm Oil. A. Hayyan* (Honored Student and The Manuchehr Eijadi Award Winner), M.A. Hashim1, M. Hayyan1, and M.E.S. Mirghani2, 1University of Malaya, Malaysia, 2International Islamic University Malaysia, Malaysia.
3:00 Composition and Fuel Properties of Hydrocarbons Prepared via Tandem Isomerization-decarboxylation of Oleic Acid. B.R. Moser, K.M. Doll, G. Knothe, and R.E. Murray, USDA, ARS, NCAUR, USA.
3:20 Networking Break.

PRO 5: General Processing
Chairs: M.S. Alam, Texas A&M University, USA; and R. Clough, Texas A&M University, USA
Gatlin A-3
1:55 Introduction.
2:00 Effect of High Intensity Ultrasound on Crystallization Behavior of High Stearic High Oleic Sunflower Oil Soft Stearin. J. Rincón-Cardona1, L. Agudelo-Laverde1, M.L. Herrera2, and S. Martini**, 1Utah State University, USA, 2Universidad Nacional de San Martin, Argentina, 3Instituto de Tecnología de Polímeros y Nanotecnología, Argentina.
2:20 Mechanical Pressing of Tiger Nut Oil: Effect of High Pressure Processing and Enzymatic Pre-treatment on Oil Recovery and Quality. O. Ezeh, K. Niranjan, and M.H. Gordon, University of Reading, UK.
2:40 Supercritical Carbon Dioxide Extraction of n-3 LC-PUFA Oil from Nannochloropsis by Optimization of Process Parameters Using Response Surface Methodology. C. Bruneel1, K. Goiris1, C. Dejonghe1, L. Baldyuck1, S. Bijttebier2, L. De Cooman1, and I. Foubert1, 1KULeuven Kulak, Belgium, 2KULeuven Campus Gent, Belgium, 3VITO, Belgium.
3:00 The Effects of Oilseeds Tg and Phospholipids Polymorphism on Mechanically Pressed Raw Oil Phospholipids Content and Expeller Oil Expression Efficiency: The Cryo-press Process. M.F. Novaes and N.J. Hewitt, University of Ulster, UK.
3:20 Networking Break.
4:00 Industrial Studies of Contaminants Removal by Oil Refining. X. Pages, M. Gaud, C. Segalen, J. Buchoux, and M. Gouban, ITERG, France.
4:40 Recovering Usable Energy From Low Value Industrial Sources. A. Ward and M. Berkshire*, Process Plus LLC, USA.

PCP 5: Proteins and Peptides in Nutraceuticals: Functionality and Applications
Chairs: N.S. Hettiarachchy, University of Arkansas, USA; R.E. Aluko, University of Manitoba, Canada; and J.P.D. Wanasundara, Agriculture and Agri-Food Canada, Canada
Gatlin A-4
1:55 Introduction.
2:00 Characterization of Functional Protein in Rice. H. Kumagai1, S. Ina1, A. Hase1, T. Ando1, M. Akao1, and H. Kumagai2, 1Nihon University, Japan, 2Kyoritsu Women’s University, Japan.
2:20 Physicochemical Properties and Angiotensin-I Converting Enzyme Inhibitory Activity of Soy Protein Hydrolysates from a Non-genetically Modified Cultivar. O. Nguyen, N.S. Hettiarachchy*, S. Rayaprolu, S. Kumar, S. Jayanthi, and P. Chen, University of Arkansas, USA.
3:00 Physical, Chemical, and Structural Changes of WPI Induced by Maillard Reaction with Pectin in Dry State. P.X. Qi1 and Y. Xiao1,2, 1USDA, ARS, ERRC, USA, 2Zhejiang Academy of Agricultural Sciences, China.
3:20 Networking Break.
3:40 Purified Single Peptides from Soybeans Show Inhibitory Activity Against Human Blood and Colon Cancer Cells. S. Rayaprolu, N.S. Hettiarachch1, and P. Chen, University of Arkansas, USA.
4:00 Nutraceutical Applications of Peptide Aggregates in Plastein. C.C. Udenigwe, Dalhousie University, Canada.
4:40 Antioxidant Effects of a Hemp Seed Protein Hydrolysate During Long-term Oral Administration to Spontaneously Hypertensive Rats. R.E. Aluko, University of Manitoba, Canada.
5:00 Kinetics of the Inhibition of Renin and Angiotensin-I-converting Enzyme by Cod (Gadus morhua) Protein-derived Peptides and Their Hypotensive Effects in Spontaneously Hypertensive Rats. A.T. Giri1,3, I.D. Nwachukwu1, F.M. Hasan4, T.N. Fagbemi1,5, T.A. Gill1,4, and R.E. Aluko1,2, 1University of Manitoba, Canada, 2Richardson Centre for Functional Foods and Nutraceuticals, Canada, 3University of Agriculture, Nigeria, 4Federal University of Technology, Canada, 5Dalhousie University, Canada.
David Wesson Campus Posters

- The presenter is the first author or otherwise indicated with an asterisk (*).
- Access and print abstracts at the computer stations located in Gatlin B, D, & Panzacola
- Abstracts also available on The App or online at: AnnualMeeting.aocs.org/AM15Resources

BIO-P: Biotechnology Poster Session

Chairs: B.H. Kim, Chung-Ang University, Republic of Korea; and J. Ogawa, Kyoto University, Japan

The Biotechnology Division will enable up to eight presenter posters to present a brief talk on their research results during a special Oral Poster Session in room Gatlin A-1 on Monday, May 4. Presentation details are in the Program Addendum.


2. Microbial Production of Biofuel from Saccharified Plant Biomass by Pentose Assimilating Thraustochytrids. A. Matsuda1, H. Nagatomo1, A. Fujimoto1, Y. Taoka1, T. Matsuoka2, Y. Izumi3, and M. Hayashi3, University of Miyazaki, Japan, 3Biomaterial in Tokyo, Japan.


5. Investigating the Anaerobic Peroxidase Activity of Soybean 15-lipoxygenase with LC-PUFAs. E.P. Dobson, C.J. Barrow, and J.L. Adcock, Deakin University, Australia.


7. Substrate Selectivity of Novozym 435 in the Esterification of Glycerol with an Equimolar Mixture of Linoleic, Conjugated Linoleic, and Pinolenic Acids. H. Woo1, I.H. Kim2, H.D. Choi3, I.W. Choi1, and B.H. Kim1, Chung-Ang University, Republic of Korea, 2Korea University, Republic of Korea, 3Korea Food Research Institute, Republic of Korea.

8. Preparation of Highly Purified Pinolenic Acid from Pine Nut Oil via Three-step Lipase-catalysed Esterification. H.J. Kim1, T.T. Zhao1, D.S. No1, C.T. Kim2, and I.H. Kim1, Korea University, Republic of Korea, 2Korea Food Research Institute, Republic of Korea.

9. Dietary Effects of Conjugated Linoleic Triacylglycerols on Body Fat Accumulation and Blood Lipids in High-fat Diet-induced Obese Mice. H. Woo1, M.Y. Chung2, I.H. Kim1, H.D. Choi3, I.W. Choi1, and B.H. Kim1, Chung-Ang University, Republic of Korea, 2Korea Food Research Institute, Republic of Korea, 3Korea University, Republic of Korea.


11. A Process for Recovering Genistein 7-O-phosphate, a Water Soluble Alternative of Genistein, from Fermentation Broth. W.Y. Lo and N.W. Su, National Taiwan University, Taiwan.


15. Essential Fatty Acids from Microalgae for Food Application. A. Matos1, R. Feller1, E. Moecke1, J. Oliveira1, A. Junior1, R. Derner1, and E. Santana1, Federal University of Santa Catarina, Brazil, 2South University of Santa Catarina, Brazil.


17. Enzymatic Glycerolysis Under Supercritical CO2 Conditions for Producing a Diacylglycerol (DAG)-enriched Oil. N. Vafaei1,2, M.G. Scanlon1, P.J.H. Jones1,2, C.B. Rempe1,3, and N.A.M. Eskin1, Canada, 2University of Manitoba, Canada, 3Richardson Center for Functional Food and Nutraceuticals, Canada. 4Canola Council of Canada, Canada.


IOP-P: Industrial Oil Products Poster Session

Chair: R. Wang, CVC Thermoset Specialties-Emerald Performance Materials, USA


2. On the Properties of Biofuels Derived from Different Oils Synthesized with Various Alcohols. C.C. Cardoso1, V.G. Celante1, E.V.R. Castro2, and V.M.D. Pasa3, Universidade Federal Rural de Pernambuco, Brazil, 2Ciência e Tecnologia do Espírito Santo, Brazil, 3Universidade Federal do Espírito Santo, Brazil, Universidade Federal de Minas Gerais, Brazil.

3. Making Biodiesel from Waste Feedstocks. M. Lu, Q. Tu, and J.Y. Liu, University of Cincinnati, USA.

4. Methyl Lactate Production from Glycerol with Methanol and Carbon Dioxide Using Solid Base Catalysts. S. Ren and X.P. Ye, University of Tennessee Knoxville, USA.

5. Production of Acrolein and Acrylic Acid from Glycerol in Carbon Dioxide Media. X.P. Ye, B. Zou, and S. Ren, University of Tennessee, USA.


9. Physical and Chemical Characterization of 1,8-Cineole for Use as a Fuel in Compression Ignition Engines. R.L. Maglinao, K. Richardson, and J. Windy Boy, Montana State University–Northern, USA.
10. Polyepoxide Cardanol Glycidyl Ether Used as Reactive Diluent for Epoxy Resin. J. Chen¹, X. Nie¹, Z.S. Liu², Z. Mi³, and Y. Zhou¹, ¹Chinese Academy of Forestry, China, ²USDA, ARS, NCAUR, USA.

PRO-P: Processing Poster Session
Chair: N.T. Dunford, Oklahoma State University, USA
1. Biodiesel Production from Acid and Saturated Frying Oil, Using Corona Discharge Plasma Technology. A. Leal Vieira Cubas¹, M. Medeiros Machado¹, E.H. Siegel Moecke², and C.R. Silva de Carvalho Pinto¹, ¹Universidade Federal de Santa Catarina, Brazil, ²Universidade do Sul de Santa Catarina, Brazil.
2. A New Industry Model for Predicting Oil Yield in Enzymatically Assisted Degumming of Vegetable Oil. S. Konradt, AB Enzymes GmbH, Germany.
3. Cedarwood Oil in Water Formulations for Pressure-treating Wood. F.J. Eller, USDA, ARS, NCAUR, USA.
4. Adsorptive Performance of Bleaching Clays in Soybean Oils Based on Adsorption of Chlorophyll Analogs and Deodorized Oil Color. D. Brooks and A. Litin, Oil-Dri Corp. of America, USA.
5. Extraction of Omega-3-rich Oil from camelina sativa Seed Using Supercritical Carbon Dioxide. H.D. Belayneh, O.N. Ciftci, and R.L. Wehling, University of Nebraska-Lincoln, USA.
6. Hydroprime® Modular Plants Provide Low Cost, Reliable Hydrogen. G. Shahani¹, K. Finley¹, N. Onelli², S. Parente¹, and L. Lyda¹, ¹Linde Engineering North America, USA, ²Linde Gas North America, USA.
8. Alternative Bio-based Solvents to n-Hexane for the Extraction of Rapeseed Oil: Theoretical COSMO-RS Simulations and Experimental Substitution Investigation from Laboratory to Pilot Plant Scale. A.G. Sicaire¹, M. Abert-Vian¹, F. Fine**, F. Joffre¹, P. Carre¹, and F. Chemat¹, ¹Université d’Avignon et des Pays de Vaucluse, France, ²CETIO, France, ³ITERG, France, ⁴CREOL, France, ⁵SAIPOL, France.
10. Environmental Life Cycle Assessment of Rapeseed Production in France within a Public LCI-database of Agricultural Products. S. Dauguet¹, F. Flenet¹, F. Fine**, V. Colomb¹, and P. Koch¹, ¹CETIO, France, ²ADEME, France, ³Koch Consulting, Switzerland.
12. Evaluation of Ethanol and 2-Propanol for Rapeseed Oil Extraction. A. Quinsac¹, P. Carre², and F. Fine**, ¹CETIO, France, ²CREOL, France.

PCP-P: Protein and Co-Products Poster Session
This session is sponsored in part by DuPont Nutrition & Health Chairs: M.P. Hojilla-Evangelista, USDA, ARS, NCAUR, USA; K.A. Campbell, DuPont Nutrition & Health, USA; and P.X. Qi, USDA, ARS, ERRC, USA
1. Comparative NMR Investigation of Cottonseed Protein Isolate and Soy Protein Isolate. Z. He¹, J. Zhong², and H. Cheng¹, ¹USDA, ARS, SRRC, USA, ²InterTek Analytical Services, USA.
2. Proteins and Blood Flocculate Lignin. G.J. Piazza¹, J.H. Lora², and R.A. Garcia¹, ¹USDA, ARS, ERRC, BOAC, USA, ²GreenValue Enterprises LLC, USA.

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In addition, as a full-year LPP participant you are eligible to apply for the Approved Chemists’ program. AOCS Approved Chemists are in high demand, and are highly regarded throughout the industry. Use your status as an AOCS Approved Chemist to promote your technical expertise and attract new business—sign up today!
3. Comparison of the Adhesive Properties of Sequentially Extracted Water- and Alkali-soluble Fractions of Cottonseed Protein. Z. He and D. Chapital, USDA, ARS, SRRC, USA.

4. Kinetics of Enzyme Inhibition and Blood Pressure Lowering Effects of Salmon (Salmo salar) Protein-derived Peptides in vitro and in Spontaneously Hypertensive Rats. I.D. Nwachukwu1, A.T. Girgih1, and R.E. Aluko1,2, 1University of Manitoba, Canada, 2Richardson Centre for Functional Foods and Nutraceuticals, Canada.

5. Cutaneous Permeability of Deamidated and/or Hydrolyzed Wheat Gliadin. N. Matsukaze1, R. Abe1, M. Aka0, H. Kumagai1, and H. Kumagai2, 1Nihon University, Japan, 2Kyoritsu Women's University, Japan.

6. Proteins of Camelina sativa (L.) Crantz Oilseed—Investigation of Protein Types and Their Structure. S. Perera1,2, T. McIntosh1, R. Tyler1, and J.P.D. Wanasundara1,2, 1Agriculture and Agri-Food Canada, Canada, 2University of Saskatchewan, Canada.


8. Simultaneous Adsorption of Sodium Caseinate and Pea Protein Isolate at the Oil Droplet Surface of Nanoemulsions. M. Yerramilli and S. Ghosh, University of Saskatchewan, Canada.


11. Foaming Characteristics of Lentil Legumin-like Protein as Affected by pH Relationship with Molecular Structure, Shear, and Dilatational Rheology. M. Jarpa-Parra1, F. Bamdad1, Z. Tian1, H. Zeng1, J. Han1, and L. Chen1, 1University of Alberta, Canada, 2Alberta Agriculture and Rural Development, Canada.


14. Effect of Graphene Oxide Preparation Conditions on Functionality of Canola Protein—Graphene Oxide Hybrid Wood Adhesive. N.P. Bandara (Honored Student Award Winner), Y. Esparza, and J. Wu, University of Alberta, Canada.


16. Intermolecular Interaction and Formation of Coacervates of Bovine Serum Albumin with Flaxseed (Linum usitatissimum L.) Gum. J. Liu1, Y.Y. Shim1,2, Y. Wang1, and M.J.T. Reaney1,2, 1University of Saskatchewan, Canada, 2Prairie Tide Chemicals Inc., Canada.

17. Conversion of Canola Meal into a High Protein Feed Additive by Submerged and Solid-state Fungal Incubation Processes. J.R. Croot1, M. Berhow2, B. Karki3, K. Muthukumarappan1, and W.R. Gibbons1, 1South Dakota State University, USA, 2USDA, ARS, NCAUR, USA.

18. Flaxseed Orbitude Antibodies. P.D. Jadhav1, Y.Y. Shim1,2, and M.J.T. Reaney1,2, 1University of Saskatchewan, Canada, 2Prairie Tide Chemicals Inc., Canada.

industry showcase partners directory

(As of February 25, 2015)

ADF Engineering, Inc.
www.adfengineering.com
ADF Engineering is a leading provider of process engineering solutions for the food, feed, biofuel, and bioscience industries. We offer process, structural, piping, electrical engineering, and project management services at four strategic US locations. ADF provides cost-effective engineering solutions for our clients, including many Fortune 500 companies. The ADF team of talented engineers uses cutting edge engineering tools for process modeling and design. We offer expertise in oilseeds processing, surfactants, fatty acids, and biodiesel.

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Anderson International Corporation is a world leader in manufacturing and installing modern vegetable oil processing machinery and systems beginning in 1888. Anderson not only leads in continuous mechanical extraction for “green” oils, through our invented Expeller® presses, but also manufactures the most energy-efficient and productive expander machinery for the preparation of low- and high-oil-content seeds for solvent extraction.

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Artisan Industries has helped the world’s leading food processors improve and create products through our innovative separation solutions. Our 75 years of separation expertise with thin-film evaporation and stripping technologies can be applied to concentrating, drying, desolvantizing, and deodorizing heat-sensitive and viscous foods, nutraceuticals, and edible oils. Don’t forget to stop at our booth and learn about our experience in the biodiesel industry, specifically our glycerin-refining and fatty-acid stripping processes.

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BASF’s Catalysts Division is the world’s leading supplier of environmental and process catalysts, while offering exceptional expertise in the development of technologies that protect the air, produce the fuels that power our world, and ensure efficient production of a wide variety of chemicals, plastics, and other products. By leveraging our industry-leading R&D platforms, passion for innovation, and deep knowledge of precious and base metals, we develop unique, proprietary catalyst, and adsorbent solutions that drive customer success.

Bühler
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Bühler provides a complete line of oilseed processing equipment, including ship unloading, precleaning, conveying, storage, oilseed preparation (low- and high-protein meal), large-capacity cracking and flaking mills, extraction meal grinding, pelletizing, and meal-bagging. We provide solutions for you no matter what your requirements are: upgrading your existing plant, automation engineering and controls, engineering, or single machines. Bühler: Innovations for a better world.

CPM Roskamp Champion/CPM SKET
www.cpm.net / www.cpm-sket.de
CPM is the world’s leading supplier of equipment to the animal feed and oilseed processing industries. We also serve the corn wet milling, pet food, ethanol, and wood industries and are the world leader in pelleting, particle size reduction equipment, and automation. CPM SKET supplies turnkey oilseed processing plants and individual equipment to process a wide variety of oilseeds into edible oil or for technical purpose by means of the relevant process-stages preparation, pre- or full-pressing, refining, biodiesel, and glycerin distillation.

Crown Iron Works Company
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Crown Iron Works provides complete design and supply services for vegetable and specialty oils processing worldwide. Specializing in corn fractionation, preparation, extraction, refining, biodiesel, and oleochemical technology, we have worked to develop advanced processing technology to improve your bottom line.

Our engineered approach to reliable system design makes life easier for processing professionals who desire increased capacity, lower steam/utility usage, and improved finished-product quality.

Desmet Ballestra North America
www.desmetballestra.com
Desmet Ballestra is the global solution provider for the edible oils and fats, surfactants, detergents, oleochemicals, biodiesel, and glycerin industries. In the oils and fats sector, it has a full range of process equipment and services, including seed preparation equipment, mechanical and solvent extraction, oil processing, and fat modification. Recent innovations are in screw pressing, desolvatizing, distillation deodorization, fractionation, interesterification, dry-ice condensing, MES, and biodiesel.

DSM
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Royal DSM N.V. is a global science-based company active in health, nutrition, and materials. By connecting its unique competences in Life Sciences and Materials Sciences, DSM is driving economic prosperity, environmental progress, and social advances to create sustainable value for all stakeholders. DSM delivers innovative solutions that nourish, protect, and improve performance in global markets. DSM’s Purifine® enzymes are specific solutions for oilseed crushing & refining. Purifine® enzymes increase oil yields and thereby provide a higher profit and a better process.

French Oil Mill Machinery Co.
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French® custom designs, manufactures, and supports processing equipment, full-press extraction, and preparation systems for the extraction of vegetable oil from oil-bearing seeds and nuts for food and industrial uses, including biodiesel and other fuels. Our durable equipment has an average life span of over 50 years, and
operates with maximum productivity and lower processing costs per ton. French’s process solutions meet and exceed industry standards of high-quality crude oil, meal, and oil-extraction efficiencies.

**GEA Process Engineering Inc.**
www.wsus.com

GEA Process Engineering Inc. features the advanced GEA Atlas Dry Condensing Systems for low-pressure vapor removal. Advantages include low energy consumption where energy usage is only 10–20%, compared to steam ejectors; reduced pollution because the carried-over products are contained in the condensed water, enabling an easy separation, and very low water consumption.

**GEA Westfalia Separator**
www.wsus.com

GEA Westfalia Separator, a division of GEA Mechanical Equipment US, Inc., designs and manufactures centrifuges and decanters for the fats and oils industry, including edible oil, biodiesel, oleochemical, and soap processing. Separators and decanters are used in edible oils for clarification, degumming, caustic refining, and winterization; in biodiesel for glycerin separation and water washing; in oleochemicals for glycerin, monoglyceride, sweet water, and other separation and clarification applications; and for soap production.

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Specialty essential oils and other molecular distillation plants with modular systems using technology developed in InCon’s Toll Plant. We have technology kernels around high vacuum distillation, molecular distillation, wiped film, and short path evaporation. Our proprietary processes concentrate Omega-3 fish oil beyond 90%, continuously process to 98% glycerol monostearate, and concentrate Vitamin E and tocopherols.

**HF Press+LipidTech**
www hf press lipidtech com

HF Press+LipidTech (HF PLT) is a division of the Hamburg/Germany based HF Group. The product portfolio of HF PLT ranges from individual machines up to complete systems for oilseed preparation, oilseed pressing, and crude oil refining. HF PLT presses are also used in rendering plants and for special applications in the dewatering sector.

**LEEM Filtration**
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LEEM Filtration is a diversified manufacturer of custom filtration products including pressure leaf filters, filter leaves, underdrains, lateral systems and wedge wire screens. We manufacture North American Hercules filters, as well as our new LEEM VLD series filters which are designed specifically for oilseed, animal fat, and biodiesel applications. We have engineers and manufactures representatives available to our customers throughout the US, Canada, and Central and South America.

**MIDI Inc.**
www.midi-inc.com

Representatives from this company will be available at the Smalley Campus. See page 42 for company description.

**Novozymes (Oils & Fats)**
www.novozymes.com

Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries, we create tomorrow’s industrial biosolutions, improving our customers’ businesses, and the use of our planet’s resources.

**Oil-Dri Corporation of America**

Oil-Dri Corporation of America offers a full spectrum of specialty adsorbents, including Pure-Flo®, Pure-Flo® Supreme, and Perform® bleaching clays for the purification of fats, oils, and oleochemicals. Oil-Dri’s Select® products filter out impurities in conjunction with or in place of water-wash treatment. With a full line of innovative and highly effective bleaching products, Oil-Dri delivers product quality, cost effectiveness, and technical support to edible oil and biodiesel producers around the world.

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**Pattyn North America Inc.**
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Pattyn Packing Lines has more than 35 years of extensive experience in complete bulk semi-liquid packaging lines. We guarantee the very best handling, weigh filling, and packing of your oils and fats into lined boxes, tins, drums, or pails. Our subsidiary office, Pattyn North America, Inc. in Wisconsin, offers you local support and services from the project design and project management to the installation and after-sales service.

**Solex Thermal Science Inc.**

Solex Thermal Science Inc. specializes in the science of heating, cooling, and drying bulk solids. Solex technology is engineered specifically for drying free flowing bulk solid materials such as oilseeds and grains. This ultra-efficient technology operates with efficiencies of greater than 90%, and can also utilize waste heat as the heat source for pre-heating and conditioning oilseeds and grains, making it one of the most efficient technologies available for oilseed drying.

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Solutions 4 Manufacturing offers complete plants and used equipment for the oilseed and biofuels/biodiesel industries. We can handle any size project, with services including engineering consulting and asset/plant liquidation. With 40+ years technical experience, we can put together a solution for you. We will buy your idle equipment and plants.
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AOCS Award Winners

AOCS honors those individuals and teams who have taken the industry to the next level, who have advanced the quality and depth of the profession, and who have leveraged their knowledge for the benefit of the Society.

AOCS congratulates each of the 2014-2015 award recipients. For information on award lecture schedules, please visit The App or the Campus presentation pages.

Society Awards

Presented at the Awards Plenary and Business Meeting
Tuesday, May 5 | 11:00 am–12:45 pm | Gatlin C

Award of Merit

Nurhan T. Dunford, Professor, Oklahoma State University, USA, has contributed to the success of the Society through a decade of committee work. She has devoted much of her time within the Processing Division, having served on the leadership team as Chairperson, Vice Chairperson, Secretary/Treasurer, and award committees. She has also been very active with Society meetings by helping to organize sessions for the world conferences on oilseed processing (2006, 2011). And in 2012, she was General Chairperson of the 103rd AOCS Annual Meeting and Expo held in Long Beach, California, USA. Currently, Nurhan is volunteering her time with AOCS Press by contributing book chapters and being Editor of the soon-to-be-published sunflower oil book.

As stated in her nomination letter, “(Nurhan) quietly volunteered her time and talents to keep AOCS at the forefront of fats, oil, and lipids.” Her long and dedicated service to our Society is noted with this award recognition.

AOCS Fellows

Recognizes: Veteran AOCS members whose achievement in science entitle them to exceptional recognition, or who have rendered unusually important service to the Society or to the profession, are eligible for Fellow membership status.

Timothy G. Kemper, Global Technical Director, Solvent Extraction for the global Desmet Ballestra Group is considered an authority on oilseed processing and solvent extraction. He is recognized in the oilseed crushing industry for designing some of the largest and most efficient solvent extraction plants in the world. He holds nine US patents in oilseed crushing. The full scope of this work has enabled significant technical and commercial advances in oilseed extraction, and is documented in authoritative contributions to industry standard references, such as “Baileys Industrial Oil and Fat Products” (6th edition).

Tim has been an AOCS member for 27 years and remained active in committee work, Processing Division leadership, and the Governing Board as President (2013), Vice President (2012), Treasurer (2008-2011), and Member-at-Large (2006-2007). Tim represents the highest ideals of professional leadership, scientific knowledge, and fellowship.

Alejandro G. Marangoni, Professor and Tier I Canada Research Chair Food, Health and Aging, University of Guelph, Canada primarily works on the physical properties of foods, particularly fat crystallization and structure. He is co-editor in chief of Current Opinion in Food Science. His recent discovery of edible oleogels structured by a cellulose derivative has attracted attention worldwide. In the same period, his group discovered, characterized and simulated the nanoscale structural level of fats. He has published over 300 refereed research articles, 51 book chapters, 12 books, and 14 issued patents. Alex previously received the Chang Award (IFT 2014, AOCS 2013), Supelco/Nicholas Pelick – AOCS Research Award (2014), and was honored as one of the 10 most influential Hispanic Canadians in 2012.

Alex has been an AOCS member for 22 years. He has contributed to AOCS as a Governing Board Member-at-Large, organizer of short courses, program development for many Divisions, in addition to serving as book editor for AOCS Press.

Deland J. Myers, Professor of Cereal and Food Science, North Dakota State University, USA, is well known as an expert in cereal and soy proteins. Deland’s study of the physiochemical, structural, and functional properties and application of cereal and food proteins in food systems began in product development at Pillsbury Co. His work at Iowa State University to develop soy protein adhesives for wood products resulted in two patents and several companies now applying key aspects of the technology in their adhesive formulations. These activities have helped promote new arenas for cereal and oilseed products through advances in protein processing technology.

Deland has been an AOCS member for 25 years, and contributed to the Society as Annual Meeting Session Chair, Protein and Co-Products Division leadership, and Technical Chair for the 100th anniversary of the Society. Deland also served as the Governing Board President (2012), Vice President (2011), Member-at-Large (2005-2010), and recently accepted chair responsibility for the AOCS Foundation.
Steve has been an AOCS member for 36 years. He is currently Chairperson and Charter Member of the Asian Section, and past Chairperson of the Biotechnology Division. He served as President of the Korean Society of Food Science and Technology (KoSFoST) in 2012, as President of the Korea Food Research Institute (2011-2013), while remaining active in International Society of Biocatalysis and Agricultural Biotechnology (ISB). He received the Order of Science and Technology Merit from the President of Korea in 2012, Fellow (ISB), 2011, AOCS 1999).

**Stephen S. Chang Award**

Recognizes: A scientist, technologist, or engineer who has conducted distinguished basic research that has been used by industry for the improvement or development of products related to lipids.

Award: Jade horse and $1,500 honorarium.

*Endowed by:* The late Stephen S. Chang and his wife, Lucy D. Chang.

**Uwe T. Bornscheuer**

Professor, University of Greifswald, Germany

Uwe Bornscheuer's research focuses on the use of enzymes for applications in organic synthesis and lipid modification by using rational design tools for protein engineering and directed evolution. He is a leading scientist in the lipase-catalyzed synthesis and transformation of structured triglycerides (sTAG). One particular finding of note is the improvement of the Betapol synthesis combined with industrial application.

As stated in a nomination letter, he brought “ideas about how enzymes could be adapted and applied in the field of oils and fats chemistry to improve processes or modify functionality.” Detailed in another letter, “…this well trained chemist has not only adopted but become world-class proficient in the use of molecular biology, directed mutagenesis, and crystallographic structure information to improve enzymes for use as applied catalysts.”

Gary has written over 370 publications, proceedings, abstracts, and book chapters/books. He has presented over 160 papers at national and international meetings, edited eight books, and made revisions to Bailey’s Industrial Oil and Fat Products (4th, 5th, 6th Edition). He has received numerous awards, including the A. Richard Baldwin Distinguished Service Award (AOCS, 2011), Doctor of Science Honorary (UIUC, 2011), Tanner Lecture (IFT, 2011), Herbert J. Dutton award, (AOCS, 2011), Distinguished Alumna Award (ICC, 2011), AOCS Processing Distinguished Service (2010), EuroFedLipid Technology (EFL, 2009), AOCS Award of Merit (AOCS, 2008), Stephen S. Chang award (AOCS, 2012: IFT, 2003), Outstanding Achievement Award (USB, 2007), Alton E. Bailey Award (AOCS, 1999), and is a Fellow within several societies (IFT 2013, RSC 2012, ACS 2011, AOCS 1999).

**Gary R. List**

Consultant, retired US Department of Agriculture, USA

Gary List is an outstanding researcher in lipids whose career spans over 50 years. His research covered many crucial areas in lipid science, including analytical methods, processing of oils-seeds, lecithin, hydrogenation, physical refining, and interesterification. As one nomination letter states, “He has had a hand in at least some aspects of virtually every one of the major improvements in edible oil technology in the last four decades, from finding trans fat alternatives to developing tailored oils from genetically modified crops.” Moreover, his work at the US Department of Agriculture in the area of edible oil chemistry is the foundation upon which much of the modern knowledge of the stability and flavor of oils is based.
**Awards**

**AOCS Young Scientist Research Award**

Award lecture given in EAT 3 | Tuesday | Panzacola H-3

**Recognizes:** A young scientist who has made a significant and substantial research contribution in one of the areas represented by the Divisions of AOCS.

**Award:** Plaque, $1,000 honorarium, and $1,500 travel stipend.

**Sponsored by:** Prof. Dr. Vijai K.S. Shukla and the International Food Science Centre A/S in Denmark.

Michael A. Rogers, Associate Professor, University of Guelph, Canada

Michael Rogers’ research emphasis is on molecular gels, self-assembly of nano-fibers, nanotechnology focusing on delivery of bioactives, and on the biophysics of digestion. He held faculty positions at Rutgers University, USA, and University of Saskatchewan, Canada; and he has held the role of Center Director for the Gastrointestinal Physiology Center at New Jersey’s Institute of Food, Nutrition & Health, USA, where he was awarded the inaugural Directors Award for Scientific Excellence. Mike has published 50 peer-reviewed manuscripts and has two patents pertaining to organogels, one as an edible fat replacer and the other as a mechanism to clean up oil spill using castor seed oil xerogels. He is currently an Associate Editor for the Journal of Food Biophysics and the International Journal of Food Science and Gastronomy.

As stated in his nomination letters, “Mike has demonstrated an enviable ability to dissect small bodies of data and find connections between large ones. His correlations of solvent properties and comparative analyses of various treatments of them in the literature are truly hallmarks of an excellent scientist.” And as another discussed, “His bottom up approach to understanding self-assembly in oils has led to quantifiable tools to help predict whether a molecule will self-assemble into aggregates capable of solidifying oil making edible oleogels.” His work on molecular gels is impressive and has the potential for profound influences on edible oil molecular gels as trans and saturated fat replacers. Along with his research on molecular gels, he is advancing into new avenues of research focusing on lipid digestibility and the effect of food form.

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**2015 Award Sponsors**

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Nicholas Pelick  
Milton Rosen  
Vijai K.S. Shukla  
Supelco, Inc.  
Thomas H. Smouse and Family
Division/Section Awards

Analytical

Herbert Dutton
Charlotte Turner, Lund University, Sweden
ANA Luncheon, Monday, Suwannee 18

Biotechnology

Student Awards
For results, refer to program addendum.

Edible Applications Technology

Outstanding Achievement Award
David A. Pink, St. Francis Xavier University, Canada
EAT Dinner, Monday, Suwannee 16

Timothy L. Mounts Award
Yeonhwa Park, University of Massachusetts Amherst, USA
EAT 4, Wednesday, Panzacola H-3

Student Award of Excellence
Ebenezer A. Ifeduba, University of Georgia, USA
EAT 4, Wednesday, Panzacola H-3

Health and Nutrition

Ralph Holman Lifetime Achievement Award
Philip C. Calder, University of Southampton, UK
H&N 3, Tuesday, Panzacola H-2

Student Excellence Award
Sunday A. Malomo, University of Manitoba, Canada
H&N Poster, Smalley Campus

Industrial Oil Products

ACI/NBB Glycerine Innovation Research Award
Franck Dumeignil, University Lille 1 of Science & Technology, France
IOP 1a, Monday, Gatlin A-2

Student Award
Jennifer Haßelberg, Technische Universität, Germany
IOP 4, Wednesday, Gatlin A-2

Processing

Distinguished Service Award
Marc J. Kelliens, Desmet Ballestra Group SA, Belgium
PRO Luncheon, Tuesday, Suwannee 16

Surface and Detergents

Samuel Rosen Memorial Award
Charles E. Hammond, CESI Chemical, USA
S&D Luncheon, Tuesday, Suwannee 14

Student Award
Silvia E. Zarate Muñoz, University of Toronto, Canada
S&D 4.1, Wednesday, Gatlin E-4

USA Section

Alton E. Bailey Award
Robert A. Moreau, US Department of Agriculture, USA
PCP 4, Wednesday, Gatlin A-4

Hans Kaunitz Award
Bicheng Wu, University of Massachusetts Amherst, USA
EAT 3, Tuesday, Panzacola H-3

Student Awards

AOCS Foundation

Thomas H. Smouse Fellowship Award
Bicheng Wu, University of Massachusetts Amherst, USA
EAT 3, Tuesday, Panzacola H-3

Honored Students
Nandika P. Bandara, University of Alberta, Canada
PCP Poster, Wesson Campus
Adeeb Hayyan, University of Malaya, Malaysia (Manuchehr Eijadi Award)
IOP 5, Wednesday, Gatlin A-2
Sunday A. Malomo, University of Manitoba, Canada
H&N Poster, Smalley Campus
Fernanda Peyronel, University of Guelph, Canada (Peter and Clare Kalustian Award)
EAT 5, Wednesday, Panzacola H-3

Ralph H. Potts Memorial Fellowship Award
Jennifer Komaiko, University of Massachusetts Amherst, USA
EAT 1, Monday, Panzacola H-3

Best Paper Awards

ADM/Protein and Co-Products Division Best Paper
Chemistry/Nutrition
Lipid Co-oxidation of Proteins: One Size Does Not Fit All (Inform 25:134-139)
Karen M. Schaich
PCP Dinner, Tuesday, Suwannee 14

Engineering/Technology
Physicochemical Properties
Improvement of Soy Protein Using Divalent Ions During a Two-step Fractionation Process (JAOCs 91:1235-1245)
Na-Na Wu, Er-Li Zheng, Bin Tan, Zi Teng, Xiao-Quan Yang, and Zhi-Ming Gao
PCP Dinner, Tuesday, Suwannee 14

Edwin Frankel Award in Lipid Oxidation and Quality
For results, refer to program addendum.
LOQ Luncheon, Tuesday, Suwannee 17

ACI Distinguished Paper
Jean-Louis Salager, Lisbeth Manchego, Laura Márquez, Johnny Bullión, and Ana Forgiarini
S&D Luncheon, Tuesday, Suwannee 14

Laboratory Proficiency Program Awards
The world’s most extensive and respected collaborative proficiency program for oil- and-fat-related commodities, oilseeds, oilseed meals, and edible fats. A full listing of the Laboratory Proficiency Program winners are available on pages 74–76.

Smalley Award for Oilseed Meal Analysis
Trevor Meredith, CHS Israel, Israel
### Congratulations to the winners of the 2013–2014 AOCS LPP Winners

<table>
<thead>
<tr>
<th>Category</th>
<th>First Place</th>
<th>Honorable Mention</th>
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<tbody>
<tr>
<td><strong>Aflatoxin in Almonds</strong></td>
<td>John Reuther, Sarah Ruiz, Sean Holleran</td>
<td>Edwin de Klerk, A. Verwey-Oosterhout</td>
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<td><strong>First Place</strong></td>
<td>Eurofins Central Analytical Labs New Orleans LA 70122 USA</td>
<td>Oosterhout 4906 CX The Netherlands</td>
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<td><strong>Honorable Mention</strong></td>
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<td><strong>Aflatoxin in Corn Meal</strong></td>
<td>Cindy McCormick</td>
<td>Brownfield Lab Analytical Team JLA Intl Brownfield TX 79316 USA</td>
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<td><strong>First Place</strong></td>
<td>Office of the Texas State Chemist College Station TX 77843 USA</td>
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<td><strong>Honorable Mention</strong></td>
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<td>JLA Argentina SA General Cabrero Cordoba X 5809 BAS Argentina</td>
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<td><strong>Aflatoxin in Peanut Paste</strong></td>
<td>Michelle Willet</td>
<td>JLA Dalmacio Velez Analytical Team JLA USA Ashburn GA 31714 USA</td>
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<td><strong>Test Kit</strong></td>
<td>NCD&amp;A&amp;CS Food &amp; Drug Protection Raleigh NC 27607 USA</td>
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<td><strong>First Place</strong></td>
<td>De Leon Lab Analytical Team JLA USA De Leon TX 76444 USA</td>
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<tr>
<td><strong>Honorable Mention</strong></td>
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<td>Dennis Hogan SDK Laboratories Hutchinson KS 67501 USA</td>
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<tr>
<td><strong>Aflatoxin in Cottonseed</strong></td>
<td>Michelle Willet</td>
<td>Dawson Lab Analytical Team JLA USA Dawson GA 39842 USA</td>
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<td><strong>First Place</strong></td>
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<td>Dawson GA 39842 USA</td>
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<td><strong>Aflatoxin in Peanut Butter</strong></td>
<td>Mike Miller USA JLA USA</td>
<td>Ashburn GA 31714 USA</td>
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<td>USDA AMS S&amp;T Science</td>
<td>Ashburn Lab Analytical Team JLA USA Dawson GA 39842 USA</td>
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<td><strong>Aflatoxin in Peanut Paste</strong></td>
<td>Simone Staiger Eurofins W&amp;J Contaminants GmbH Hamburg 21079 Germany</td>
<td>Eurofins W&amp;J Contaminants GmbH Hamburg 21079 Germany</td>
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<tr>
<td><strong>First Place</strong></td>
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<tr>
<td><strong>Honorable Mention</strong></td>
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</tbody>
</table>

**Edible Fat**

| First Place | James Houghton AAK Louisville KY 40208 USA | |
| **Honorable Mention** | Travis Patterson Ag Processing Hastings Hastings NE 68901 USA | |
| **Fish Meal** | Pete Cartwright N J Feed Lab Inc. Trenton NJ 08638 USA | |

**Goed Nutraceutical Oils**

| First Place | Tammy Hughes ADM Red Wing 409 Red Wing MN 55066 USA | |
| **Honorable Mention** | Oilseed Lab Canadian Grain Commission Winnipeg MB R3C 3G7 Canada | |

**Gas Chromatography**

| First Place | Owensboro Grain Edible Oils Owensboro KY 42303-3301 USA | |
| **Honorable Mention** | Hajar Musa Malaysian Palm Oil Board B.B. Bangi Selangor 43650 Malaysia | |

**Cholesterol**

| First Place | Kraig Kunde DFA of California/Yuba City Yuba City CA 95991 USA | |
| **Honorable Mention** | Marion Smith Canadian Food Inspection Agency Ottawa ON K1A 0C6 Canada | |

**Chelmnd 86-200**

| First Place | Jerry Buttell Ag Processing Hastings Hastings NE 68901 USA | |
| **Second Place** | Michael O’Lirez Office of the Texas State Chemist College Station TX 77843 USA | |

**Feed Microscopy**

| First Place | Yuan-Te Fu NCD&A&CS Food & Drug Protection Raleigh NC 27607 USA | |
| **Honorable Mention** | Sharon Smith Canadian Food Inspection Agency Ottawa ON K1A 0C6 Canada | |

**Gas Chromatography**

| First Place | Linda Mentere Office of the Texas State Chemist College Station TX 77843 USA | |
| **Second Place** | Shop or Less Hamilton on L8N 3K7 Canada | |

**Fumonisin in Corn**

| First Place | Tracie McClure Ag Processing Hastings Hastings NE 68901 USA | |
| **Honorable Mention** | Jerry Buttell Ag Processing Hastings Hastings NE 68901 USA | |

**Gas Chromatography**

| First Place | Linda S McLaren Loders Croklaan Richmond CA 94804 USA | |
| **Honorable Mention** | Janis Mclaren Loders Croklaan Channahon IL 60410 USA | |

**Goed Nutraceutical Oils**

| First Place | Otellia Robertson Omega Protein Inc. Reedville VA 22539 USA | |
| **Honorable Mention** | Angie Johnson POS Bio-Sciences Saskatoon SK S7N 2R4 Canada | |
2014 AOCS Laboratory Proficiency Program

Mixed Seed Canola
First Place
Paul Thionville, Boyce Butler, Andre Thionville, Kristopher Williams
Thionville Laboratories, Inc.
New Orleans LA 70123
USA

Honorable Mention
Ardin Backous, Anders Thomesen, Keith Persons, Kent Karjsens
Eurofins Scientific
Des Moines IA 50321-3157
USA

Mixed Seed Safflower
First Place
Paul Thionville, Boyce Butler, Andre Thionville, Kristopher Williams
Thionville Laboratories, Inc.
New Orleans LA 70123
USA

Honorable Mention
Paul Thionville, Boyce Butler, Andre Thionville, Kristopher Williams
Thionville Laboratories, Inc.
New Orleans LA 70123
USA

Mixed Seed Sunflower
First Place
Oilseed Lab
Canadian Grain Commission
Winnipeg MB R3C 3G7
Canada

Honorable Mention
Philip Bastjens
Oleodist NV
Antwerp B 2660
Belgium

NIOP Fats and Oils
First Place
Renato M. Ramos
Admiral Testing Services
Luling LA 70070
USA

Honorable Mention
Philip Bastjens
Oleodist NV
Antwerp B 2660
Belgium

Nutritional Labeling
First Place
Thomas P. Mawhinney
University of Missouri–Columbia
Columbia MO 65211
USA

Honorable Mention
NP Analytical Laboratories
Nestle Purina Pet Care
St. Louis MO 63164
USA

Oilsed Meal
First Place
Trevor Meredith
CHS Israel
Ashdod 77121
Israel

Honorable Mention
Ardin Backous, Anders Thomesen, Keith Persons, Kent Karjsens
Eurofins Scientific
Des Moines IA 50321-3157
USA

Oilsed Meal 100% Moisture
First Place
Foong Ming Kuh
SGS North America Agricultural Div
Deer Park TX 77536
USA

Honorable Mention
Oilseed Lab
Canadian Grain Commission
Winnipeg MB R3C 3G7
Canada

Honorable Mention
Gabriela Celino
SGS do Brasil
Santos Sao Paulo 11095-510
Brasil

Honorable Mention
Pete Cartwright
N J Feed Lab Inc.
Trenton NJ 08638
USA

Oilseed Meal 100% Crude Fiber
First Place
Frank Hahn
Hahn Laboratories Inc.
Columbia SC 29201
USA

Honorable Mention
Mike White, Brian Eskridge
ATC Scientific
N Little Rock AR 72114
USA

Honorable Mention
Frank Tenent, Edgar Tenent
K-Testing Lab Inc.
Memphis TN 38116
USA

Oilseed Meal 100% Nitrogen 4d-90
First Place
Sandy Holloway
InterTek
Memphis TN 38113
USA

Honorable Mention
Gordon Whitbeck, John Dillard
Whitbeck Laboratories Inc.
Springdale AR 72764
USA

Honorable Mention
Brad Newton Beavers, Jennie Stewart
Carolina Analytical Services
Bear Creek NC 27207
USA

Oilsed Meal 100% Nitrogen 4e-03
First Place
Frank Tenent, Edgar Tenent
K-Testing Lab Inc.
Memphis TN 38116
USA

Honorable Mention
Mike White, Brian Eskridge
ATC Scientific
N Little Rock AR 72114
USA

Honorable Mention
Ardin Backous, Anders Thomesen, Keith Persons, Kent Karjsens
Eurofins Scientific
Des Moines IA 50321-3157
USA

Honorable Mention
Pete Cartwright
N J Feed Lab Inc.
Trenton NJ 08638
USA

Oilsed Meal 100% Oil
First Place
Sandy Harrison
Illinois Crop Improvement Assn.
Champaign IL 61822
USA

Honorable Mention
Mumtaz Haider
Inspectorate America Corp.
Webster TX 11598-1514
Canada

Honorable Mention
Melinda Graham
Hartsville Oil Mill
Darlington SC 29540-1027
USA

Honorable Mention
John Reuther, Eric de Ronde
Eurofins Central Analytical Labs
New Orleans LA 70122
USA

Honorable Mention
Tuyen Mai
Intertek Agri Services
St. Rose LA 70087
USA

Olives Oil Part A
First Place
Maria Garzon
Pompeian Inc.
Baltimore MD 21224
USA

Honorable Mention
Emmanuel Salivaras
Multichrom Lab
Peristeri Attika 12131
Greece

Honorable Mention
Vasilis Demopoulos
Kalamata Olive Oil Taste Laboratory
Kalamata Messinia 24100
Greece

Honorable Mention
Claudia Guillaume
Modern Olives Laboratory Services
Lara VIC 3212
Australia

Palm Oil
First Place
Montasser A. Mohamed
IFFCO Egypt
Suez 204
Egypt

Honorable Mention
Putha Adam
IOI Loders Croklaan Oils Sdn Bhd
Pasir Gudang Johor 81707
Malaysia

Honorable Mention
Low Thing
Southern Edible Oils Sdn Bhd
Klang Selangor 42200
Malaysia

Continues on page 76.
Palm Oil Without SFC
First Place
Montasser A. Mohamed
FFCCO Egypt
Suez 204
Egypt
Honorable Mention
T. H. Goh
PT Musim Mas
Medan N Sumatra 2041
Indonesia

Solid Fat by NMR
First Place
Bill Zubrinic
Bunge Canada
Hamilton ON L8N 3K7
Canada
Honorable Mention
Phil Fontenot
Ventura Foods Louana Div
Okeechobee LA 70570
USA

Soybean Oil
First Place
Renato M. Ramos
Admiral Testing Services
Luling LA 70070
USA
Honorable Mention
Cathy Sun
Amy Shen Branka Kraljevic
SGS Canada
Burnaby BC V5A 4W4
Canada

Soybeans
First Place
Mumtaz Haider
Inspectorate America Corp.
Webster TX 11598-1514
USA
Honorable Mention
Jose Garcia
National Beef Packing Company
Liberal KS 67901
USA

Trace Metals
First Place
John Reuther, Marvin Boyd, William House
Eurofins Central Analytical Labs
New Orleans LA 70122
USA

Unground Soybean Meal
First Place
Arin Backous, Anders
Thomsen, Keith Persons, Kent Karjens
Eurofins Scientific
Des Moines IA 50321-3157
USA
Honorable Mention
Renato M. Ramos
Admiral Testing Services
Luling LA 70070
USA

Vegetable Oil Color Only
First Place
Melanie Greer
Dallas Group
Jeffersonville IN 47130
USA

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The American Oil Chemists’ Society (the “Society”) intends to strictly comply with the antitrust laws of the United States, all state governments, and any other relevant governing authority (the “Antitrust Laws”), and in furtherance of this intention, proclaims the following Antitrust Policy:
I. The Society shall not be used in a manner which violates the Antitrust Laws, and members of the Society, in their capacity as representatives of the Society, shall not tolerate, encourage or participate in any activity which could reasonably be expected to result in a violation of the Antitrust Laws.

II. This policy shall apply to all membership, board, committee and other meetings of the Society, and all events attended by individual members of the Society in their capacity as representatives of the Society.

III. The Society recognizes that the Antitrust Laws may include certain activities between industry participants unlawful, and the Society expressly prohibits such activities at any event the Society holds or sponsors, or any meeting of the Society at any event in which such member participates as a representative of the Society.

C. Discussion of these and other prohibited matters, including the following:
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2. Costs;
3. Terms or conditions of sales;
4. Quote decisions;
5. Discounts;
6. Product or service offerings; or
7. Production or sales volume, capacity or plans.

IV. In the course of any event in which activities or discussion threatens to border on a prohibited matter, any member, officer, director, employee or representative of the Society present at such event in such capacity shall request that the activity or discussion be terminated immediately, and if such termination does not immediately occur, such person shall seek recordation of the problem if appropriate, shall cease all participation in the event, and shall report the matter to the Society at the earliest possible opportunity.

V. A copy of this Antitrust Policy shall be given at least annually to each officer, director, member, representative, or employee of the Society, or any other party participating in the Society, and the Antitrust Policy shall be readily available at all membership meetings.
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