PROGRAM

2019 AOCS Annual Meeting & Expo

May 5–8 America's Center Convention Complex | St. Louis, Missouri, USA

The ultimate collaboration of industry, academia and government, embracing the full spectrum of oil science, from field to product.

Get the app! See page 6 for details.

Join the conversation!

@AOCS #AOCS2019

We team up with the most demanding Oils & Fats processors in the world

COMPLETE PREPARATION PLANTS

Innovative proprietary Technologies based on the experience of

- 220+ Preparation Plants
- 3,000+ Rosedowns Presses

COMPLETE EXTRACTION PLANTS

Reliable and unmatched Technologies based on the experience of

- 900+ Extractors
- 900+ Desolventiser Toasters (Dryer Coolers)
- 700+ Distillations & Solvent Recovery Sections

COMPLETE REFINING PLANTS

State-of-the-Art refining Technologies based on the experience of

- 700+ Oil pretreatment Processes
- 900+ Bleaching Processes
- 1,400 + Deodorizing Processes

COMPLETE FAT MODIFICATION PLANTS

High performance Technologies based on the experience of :

- 100+ Full Hydrogenation Processes
- 80+ Interesterification Processes
- 400+ Fractionation Processes

Desmet Ballestra designed and delivered the largest extraction plant in the world, operating at 20,000 TPD with unmatched efficiency.

Oils & Fats

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Science behind Technology

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KEMIN
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non-GMO
simple
made with real...
no added sugar
free from allergens
no artificial colors
clean label
PHO free
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It's a whole
NEW WORLD
of label claims.
WE'LL HELP YOU REACH YOUR DESTINATION
With our formulation expertise and extensive portfolio of shelf-life solutions, you can achieve 'claimability' with label claims that are genuine without sacrificing shelf life. When reformulating for your desired claims, don't remove...replace! Rely on the experts at Kemin to help you meet all your color, flavor and microbial stability requirements. Our Customer Laboratory Services prove and test our work, so you can be confident that your products stay fresher, safer, longer—with all the sensory appeal consumers demand.
Visit Kemin at the AOCS Annual Meeting - Booth #208
kemin.com/WORLDOFCLAIMS

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We are proud to be a partner in success stories of our clients

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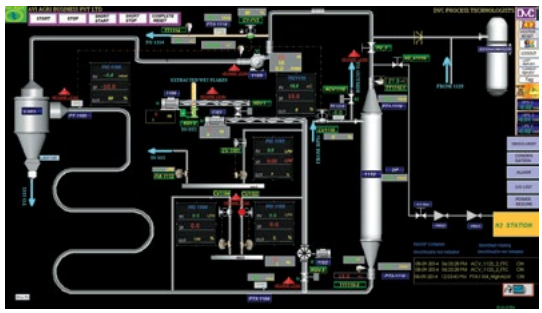
Design, Manufacture, Supply,
Install, Commission & After Sales

165 Global References
45+ Lecithin Plants
50+ Green Field Projects



Edible Oil Refining
- Degumming & Neutralization
- Bleaching
- Dewaxing / Winterization
- Deodorization

By-Product Processing
- Gums Drying (Lecithin)
- Soapstock Splitting (Acid Oil)

Seed Crushing
- Flash Desolventization (Soya White Flakes)
- Soapstock Desolventization

Fat Modification
- Fractionation
- Interesterification
- Hydrogenation

Biodiesel Production

Pilot Plant
Skid Mounted Plants

Customer Services
- Technical Audits
- Existing Plant Upgrade to improve
  - Efficiencies
  - Quality
  - Yield
  - Capacity
- Automation
- Products & Spares

DVC Process Technologists

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E-mail : sales@dvcprocesstech.com, info@dvcprocesstech.com
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Welcome to the 2019 AOCS Annual Meeting & Expo!

The program committee has done an excellent job preparing a technical program that addresses the wide range of critical issues facing our industries. As the title of the Opening Celebration on Sunday says, the Annual Meeting is the "gateway to the future of our industry." Over the next four days, you will have multiple opportunities in sessions and at the Expo to learn about the latest and upcoming research in our industries and connect with scientists, engineers and business professionals bringing solutions to technical and business challenges to life.

The meeting is also a time when you can discover how AOCS is a gateway to helping you develop your career and to becoming more involved in the Society. Take advantage of the many networking events sponsored by our Divisions and Common Interest Groups (CIGs), as well as the committee meetings that help guide the direction and work of AOCS, such as developing the meeting program, managing three peer-reviewed journals, planning CIG events and webinars, and convening expert technical panels.

See page 4 to learn how you can get involved and enhance your career!

Though AOCS is one big family, our Divisions and CIGs provide smaller communities relevant to specific technical interests and career stages. For many of us who have been involved in AOCS for years, these smaller communities were our first step to becoming leaders in the Society. These communities also provided learning and connections that helped us grow into leaders in the industry. I encourage you to attend the networking events, lunches, dinners or business meetings hosted by the Divisions and CIGs.

One important change this year is the way some awards are recognized. All our scientific awards now headline a technical session. In addition, a coffee break after the award winner's presentation will give you a chance to meet and talk with the winner. Learn more about these changes in our Awards Section (see page 23).

All of this is only possible with the hard work and commitment of our volunteers. To celebrate their work, as well as the contributions of our members, we are hosting a Member and Volunteer Appreciation Luncheon on Wednesday afternoon. Members, I hope you will stay after sessions conclude to help us recognize the work of our colleagues as an AOCS community. For those who aren't members, I hope you will join us to learn what the AOCS family is all about — it is open to everyone.

Best regards,

RICK THEINER
Program Committee Chair
Evonik, USA

Share your Annual Meeting experience!

@AOCS #AOCS2019

COMPLIMENTARY WI-FI
Network SSID: desmet
Password: ballestra

CONTENTS

How to get involved at the A

The ultimate collaboration of industry, academia and government.



Connect with colleagues. Grow in your career.

AOCS has the resources and networking to support your career growth. Here's how you can get involved or find the resources you need at the meeting to make that next step in your career.

Connect with like-minded attendees

- Enjoy the Young Professional Reception on Sunday evening ▶▶▶ *page 14*
- Learn valuable lessons from AOCS leaders at Speed Mentoring on Monday afternoon. ▶▶▶ *page 14*

Connect with AOCS members in your interest area

- Meet new colleagues at the Division flags at the President's Reception ▶▶▶ *page 14*
- Make connections at a Division networking event. ▶▶▶ *page 17*

Expand your career opportunities

Attend Monday's Career Management Special Session. ▶▶▶ *page 35*

Professional portraits offered each morning from 7– 8 a.m. at @home in the Expo Hall

Nominate a colleague for an AOCS award

Visit @home to submit a nomination for 2020 Scientific and Society Awards

Contribute to AOCS publications or become a reviewer

Meet with the editors of our three peer-reviewed journals at the We ❤ Reviewers Reception on Sunday. ▶▶▶ *page 14*

These are only a few of the ways to get involved or learn more about how AOCS advances the science and technology of fats, oils, proteins, surfactants and related materials.

Find all committee meetings on pages 20 and 22.

OCS Annual Meeting & Expo

embracing the full spectrum of oil science, from field to product.

Have a voice in next year's meeting.

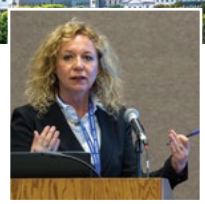
2020 AOCS Annual Meeting & Expo

April 26–29
Montréal, Québec, Canada

How can you get started?

Attend one of the 2020 Technical Session Development Meetings.
▶▶▶ *page 17*

How can you get involved?



- Chair a technical session
- Propose a featured session
- Present your research

Find out more at annualmeeting.aocs.org/2020

Get technical.

AOCS needs your technical expertise! Learn how technical committees and expert panels work. Join us at one of these meetings.

Laboratory Proficiency Program Committee

Reviews proficiency program details and suggests changes or new series.
Sunday, May 5 | 11 a.m.–Noon | Room 362

Olive Oil Expert Panel

Advises and directs AOCS' technical activities and services related to olive oil.
Saturday, May 4 | 4–5 p.m. | Room 103

Process Contaminants Expert Panel

Discusses AOCS projects and general developments related to the analysis and mitigation of processing contaminants in edible oils.
Wednesday, May 8 | 2:30–3:30 p.m. | Room 104

Uniform Methods Committee Subcommittee Roundtable

Discusses Uniform Methods Committee and Uniform Methods Committee subcommittee projects and proposals.
Sunday, May 5 | 1–3 p.m. | Room 370

Need a broad overview of AOCS Technical Services? The AOCS Technical Team will present a Featured Session on Monday morning. ▶▶▶ *page 38*

MEETING INFOR

Abstracts
Abstracts are published as submitted. Search and print abstracts from the computer stations located in room 200. Abstracts are also available online at AnnualMeeting.aocs.org/2019Resources or on the app through May 31, 2019.

Complimentary Luggage Storage
You can store luggage on Wednesday, May 8, from 7 a.m.–7 p.m. in room 106. Luggage not picked up by 7 p.m. will be turned over to America's Center security.

Computer Lab
Check email, print abstracts and finalize presentations in room 200. The lab is open Sunday from 10 a.m.–5 p.m., Monday and Tuesday from 7 a.m.–5 p.m., and Wednesday from 7–11 a.m.

Look for your photo on the @AOCS wall!

Event Tickets
If you pre-registered, your tickets are in your registration envelope. Keep your tickets with you, as many AOCS events require tickets to be admitted.

Lost and Found
Items may be turned in or recovered at the Registration Desk.

Mobile Phones, Photography, and Recording
Please turn off your mobile phone (or set it to vibrate) during sessions. No video recording, tape recording or still photography is allowed in the session rooms, except by registered media. Video or still photography of exhibitors or posters is not allowed, unless permission is granted by the exhibitor or poster author.

Name Badges
Sponsored by KEMIN

Presentations
Presentations at the meeting were prepared by and are the sole property of each presenter. Speakers have been given

THE APP AND WIFI

SPONSORED BY Oils & Fats Oleochemicals desmet ballestra

Complimentary wi-fi is available throughout the meeting space.

Network SSID: desmet | Password: ballestra

With the app, you can:
- Build your meeting schedule
- Search presentations and abstracts
- View exhibitor and sponsor profiles
- Receive meeting alerts
- Connect with other attendees

How to Access:
Step 1: In your device's app store, download the free *CrowdCompass AttendeeHub* app.

Step 2: In the *CrowdCompass AttendeeHub*, search for **AOCS**.

Step 3 Select the listing for the **2019 AOCS Annual Meeting & Expo** to open the app.

Need assistance? Stop by @home in Hall 1.

the AOCS guidelines for developing effective presentations and it is their responsibility to follow these guidelines.

Presentations will be available to AOCS members in the AOCS Premium Content Library. Visit www.informconnect.org/JoinAOCS for details.

Program Changes

Changes made after the printing of the Annual Meeting Program can be found on the app.

Additional Opportunities to Publish your Research with AOCS

AOCS encourages speakers to submit their work to AOCS for further publication opportunities.

- Speakers who wish to publish their paper in the *Journal of the American Oil Chemists' Society* (*JAOCS*), *Lipids*, or *Journal of Surfactants and Detergents* (*JSD*) should visit www.aocs.org/journals or contact Janet Brown at janet.brown@aocs.org for more details.
- To submit a magazine article based on your paper to *INFORM*, contact Kathy Heine, Managing Editor, at kathy.heine@aocs.org.
- To present an AOCS webinar, please visit bit.ly/AOCSwebinarproposal or email Amy Garren at amy.garren@aocs.org.

Registration List

The Annual Meeting registration list is available online at AnnualMeeting.aocs.org/2019Resources through May 31, 2019. The list includes registrants who have opted in to receive 3rd party contact. This list is for one-on-one networking and shall not be copied, photocopied, reproduced or entered into a computer database.

Safety

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.

Smoking Policy

Smoking is prohibited at all AOCS functions.

Social Media

Share your Annual Meeting experience online! Tag **@AOCS** and **#AOCS2019** to join the conversation.

Your home away from home at the Annual Meeting!

Sunday, May 5 | 5:30–7 p.m.
Monday, May 6 | 7:00 a.m.–6:30 p.m.
Tuesday, May 7 | 7:00 a.m.–6:30 p.m.
Wednesday, May 8 | 7:00 a.m.–1 p.m.

What can I do @home?

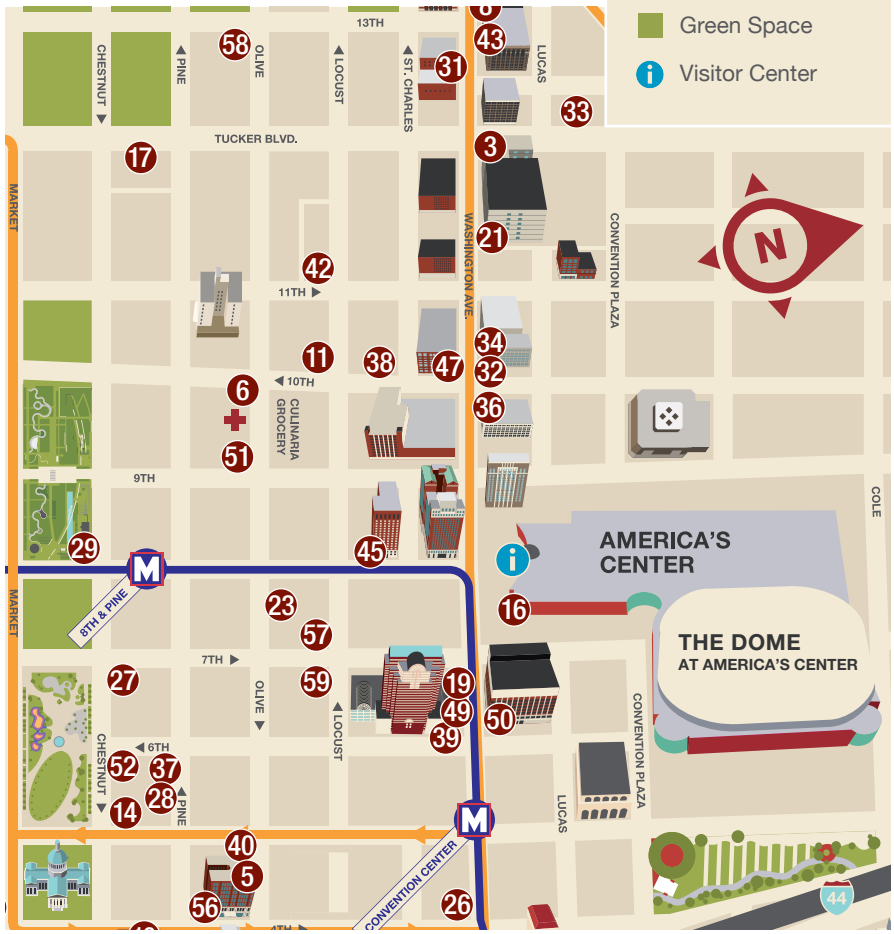
- Take a fun photo with photobooth props or an *INFORM* magazine "Scientist of the Year" photo in front of the green screen.
  Sponsored by Cargill
- Submit your demographics form to be entered to win US $500
- Take a break and catch up with colleagues
- Get your questions answered by AOCS staff
- Peruse AOCS books

Stop by and visit!

HUNGRY?

Here are some coffee shops and restaurants within walking distance of the convention center.

B = breakfast
L = lunch
D = dinner



- 3 314 The City Bar, L,D
- 5 400 Olive...An Urban Grille, B,L,D
- 6 Bailey's Range, L,D
- 11 Bridge Tap House & Wine Bar, L,D
- 14 Caleco's Bar & Grill, L,D
- 16 Center Cafe, B,L
- 17 Chris' @ The Docket, B,L
- 19 Crazy Bowls & Wraps, L,D
- 21 Flamingo Bowl, D
- 23 Form Skybar at Hotel Saint Louis, D
- 26 Hamburger Mary's, L,D
- 27 Hooter's at Kiener Plaza, L,D
- 28 Jimmy Johns, L,D
- 29 Kaldi's Citygarden, B,L
- 31 Lucas Park Grille, L,D
- 32 Mango Peruvian Restaurant, L,D
- 33 Missouri Bar and Grille, L,D
- 34 Mizu Sushi Bar, L,D
- 36 The Over/Under Bar & Grill, L,D
- 37 Panera/St. Louis Bread Co., B,L,D
- 38 Park Avenue Coffee, B,L
- 39 Pi Pizzeria, L,D
- 40 Pickles Deli, B,L
- 42 Rooster Crepe Sandwich Café, B,L
- 43 Rosalita's Cantina, L,D
- 45 Sauce on the Side, L,D
- 47 Sen Thai-Asian Bistro, L,D
- 49 Snarf's, B,L,D
- 50 Sugarfire Smokehouse, L
- 52 T.G.I. Fridays, L,D
- 56 Trust, L
- 57 Union 30 at Hotel Saint Louis, B,L,D
- 58 Vaya Con Dillas, L,D
- 59 Yiro/Gyro, L

Need help choosing?

Stop by the concierge desk outside of Hall 1 to chat with a St. Louis ambassador! The desk will be staffed during the following times:

Sunday | 9 a.m.–8 p.m.
Monday | 9 a.m.–7 p.m.
Tuesday | 9 a.m.– 7 p.m.
Wednesday | 8 a.m.–3 p.m.

Thank you!

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

Annual Meeting Sponsors

as of April 1, 2019

Air Liquide Engineering & Construction
Monday Afternoon Networking Break

Avanti Polar Lipids, Inc.
Technical Program

BASF We create chemistry
President's Reception

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Olive Oil Workshop

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DMC
Tuesday Afternoon Networking Break

eurofins
Olive Oil Workshop Luncheon

Evonik Power to Create
Electronic Registration Confirmations & Tuesday Morning Networking Break

kalsec
Highlighters

Kemin
Tuesday Happy Hour Reception & Name Badges

Larodan Research Grade Lipids
5K Fun Run/Walk

NEN
Notepads & Pens

Oil-Dri Fluids Purification
Monday Happy Hour Reception

PATTYN
Wednesday Morning Networking Break

PepsiCo (Pepsi, Lay's, Tropicana, Quaker, Gatorade) / **Frito-Lay** Good fun!
Technical Program

QUALISOY Innovate. Collaborate. Advance.
Opening Celebration Keynote & Monday Morning Networking Break

Wiley
We ❤ Publications Reception

Division, Section and Common Interest Group (CIG) Event Sponsors

as of April 9, 2019

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Nestlé Skin Health
The Nisshin OilliO Group, Ltd.
Nitto Pharmaceutical Industries, Ltd.
Palsgaard Inc.
Young Living Essential Oils

ANNUAL MEETING PROGRAM COMMITTEE

Thank you to the volunteer leaders for all your efforts in planning the 2019 Annual Meeting.

ANNUAL MEETING PROGRAM COMMITTEE CHAIR
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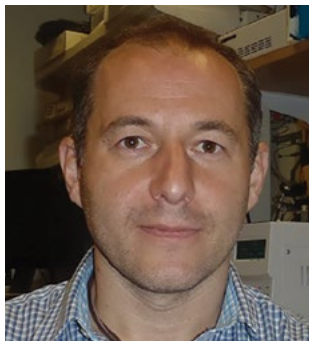
Evonik Industries, USA



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Thank you!

Do you have innovative ideas for next year's program?

Attend the 2020 Technical Session Development meetings to learn how the program is developed and share your ideas.
See page 17 for times and locations for each Division.

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Superior solutions for optimized total cost of ownership, with more than 400 oil processing units built worldwide

STATE OF THE ART

- Unit processes (sliding cell extractor, multi-functional deodorizer, falling film evaporator)
- Product specifications (low GE and 3-MCPD, enriched tocopherols)
- Sustainable technologies (zero effluent waste steam generation, waterless neutralization)

COMPLETE CHOICE

- From oilseeds, fats to value products (edible oils, proteins, biofuels, green-chemicals)
- From initial concept to complete project, upgrades and lifetime support
- Flexible multi-feed operations

Image: Lurgi Sliding Cell Extractor for Mega Oilseed Complex

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engineering-airliquide.com/oleochemicals

2018–2019 AOCS GOVERNING BOARD

Thank you for your service to AOCS.

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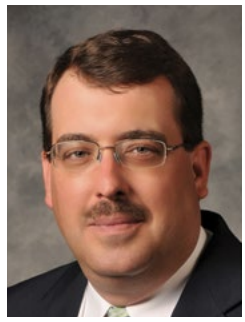

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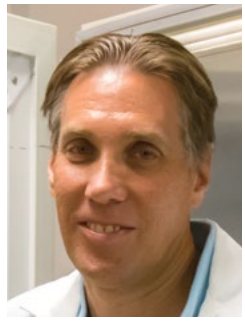

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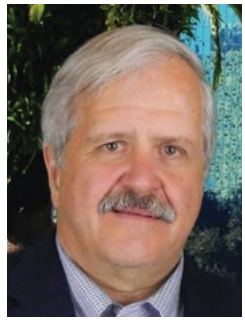

MEMBER-AT-LARGE
Tony O'Lenick
Sitech, USA

MEMBER-AT-LARGE
George A. Smith
Sasol, USA

Join fellow members at the AOCS Governing Board Town Hall

WHEN ▶ Monday, May 6, 2019, 7:15–7:45 a.m.
WHERE ▶ Room 100

In addition to conducting routine business of the Society, members will enjoy the opportunity to meet and exchange ideas with AOCS Governing Board members.

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, proteins, surfactants, and related materials, enriching the lives of people everywhere.

LEADING INNOVATION

As an innovation leader and ingredient supplier, Evonik's portfolio is designed to focus on efficiency, improved stability, exceptional cleansing, and a variety of foam profiles for desired applications. Our innovative product portfolio and research capabilities provide value added service to our homecare and institutional users' customers.

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Richmond, VA 23234
Phone +1 804-727-0700

householdcare@evonik.com
evonik.com/household-care

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TEGO® Antifoam
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Visit us in Booth # 317

DON'T MISS CONNECTING WITH EVONIK AT AOCS!

Monday 5-6 *** S&D 1.1**	Employing Image Analysis to HLD-NAC Salt Scans **Eric "Rick" Theiner**, Application Technology Manager, Session Chair
Monday 5-6 *** FS 6**	Ingredient Transparency **Mike Williams**, Group Leader R&D North America, Care Solutions, Session Chair
Wednesday 5-8 *** S&D 4**	How Biosurfactants Can Enable Degreasing **Eric "Rick" Theiner**, Application Technology Manager

EVONIK
POWER TO CREATE

*Please see AOCS Show Schedule for Presentation Times

NETWORKING AND SOCIAL EVENTS

Make the most of your meeting experience! Take advantage of these opportunities for face-to-face interactions with colleagues

Sunday

Career Catalyst: Speed Networking to Create New Professional Bonds

Sunday, May 5
3–3:45 p.m.
Room 225

Facilitated by AOCS interest-focused and career-based communities

All registrants welcome! A structured yet casual meeting format that allows you to connect with new colleagues — five minutes at a time — in a comfortable and inviting setting. You will discover how welcoming our Society is — just bring your curiosity, smile and business cards.

President's Reception — Welcome to St. Louis

Sunday, May 5 | 5:30 –7 p.m. | Hall 1

Sponsored by BASF We create chemistry

Meet-and-greet at the flags during the reception. Grab your food and drink and then meet with others from your specific career areas — this is where you begin making connections that could lead to life-long collaborations.

The Chemistry of Beer and Cocktails

A Certified Brewmaster will be at the ready to explain the chemistry of the brewing process and recommend beer pairings based on the reception menu. Prefer a cocktail instead? Visit the Mixologist Station to pick up a signature cocktail and learn about the chemistry of the cocktail.

Young Professional Common Interest Group Reception

Sunday, May 5
7 –8 p.m.
Washington Lobby West (1st Floor)

Sponsored by ADM

You have mixed and mingled during the Welcome Reception, but now it is time to get to know more of your colleagues in a relaxed, fun, environment. No ticket required.

We ❤ Reviewers Reception

Sunday, May 5 | 7–8 p.m. | Ballroom Prefunction (2nd Floor)

Sponsored by WILEY

Organized for the Professional Educator and Student CIGs

Thank you AOCS journal manuscript, book proposal, *INFORM* magazine column and Lipid Library article reviewers! Let us show you our appreciation with free food and drinks (no ticket required). This will be a wonderful time to catch up with colleagues from universities around the world, to meet the editors-in-chief and editorial boards, and to learn more about future plans. Students, post-docs and faculty interested in getting involved as a reviewer are encouraged to attend!

Monday

Speed Mentoring

Monday, May 6 | 1–1:45 p.m. | Hall 1 — Fast Track
Organized by a joint committee of the Common Interest Groups

Get and give career advice, find real-world business solutions and exchange ideas in record time. This informal and inviting activity will boost your confidence and connections. Meet with AOCS leaders, authors and recent graduates who can share their valuable experiences. The advice and connections that you make might just lead to your next career advancement!

Informal Student Get-Together

Monday, May 6 | 7-9 p.m. | Gringo-STL, 635 Washington Avenue, St. Louis
Hosted by the Student Common Interest Group

All students, post-docs and friends should attend for fun and comradery. No advance registration needed, just make plans to attend. Drinks and food are on your own, but the connections you make will last a lifetime.

Breakout Sessions: The Recruiting Process

Monday, May 6 | Room 371

Group #1: 9–10 a.m.
Group #2: 11 a.m.–12 p.m.
Group #3: 2–3 p.m.

Breakout sessions will provide time to speak with one of the executive recruiters from Featured Session 3 (see page 35). This is your opportunity to ask questions, engage one-on-one and gain specific insight into the career management process. We will provide an "open book" to the entire recruiting process. Groups are limited to 10 attendees. Save your seat—sign up at the registration desk.

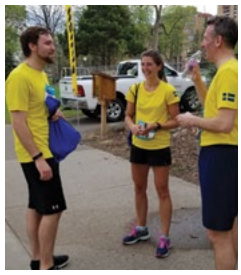
and develop important connections with other industry professionals from around the world.

Tuesday

5K Fun Run/Walk

Tuesday, May 7 | 6–7 a.m. | Gateway Arch National Park in Downtown St. Louis

Sponsored by Larodan Research Grade Lipids



Kick off day three of the 2019 AOCS Annual Meeting with a leisurely stroll or quick run around the recently renovated grounds of the Gateway Arch National Park in Downtown St. Louis, including view of the scenic Eads Bridge, the Mississippi River and Gateway Arch! There is no fee to participate. Pre-registration is required; space is limited!

Runners can meet up at the Marriott Grand at 5:15 a.m. to walk to the starting line together.

Bib pick-up begins at 5:30 a.m. at the Gateway Arch National Park. Race begins at 6 a.m.

Wednesday

AOCS Member and Volunteer Appreciation Luncheon

Wednesday, May 8 | 12:30–2 p.m. | Room 223/224

Hosted by the AOCS Networking Value Center

We appreciate YOU! Enjoy FREE food and fun as we celebrate our volunteers.

To celebrate the efforts and to honor our dedicated volunteers, we invite all attendees to join us for this FREE luncheon. If you have volunteered with AOCS in the past year, be sure to enter our special AOCS Volunteer Raffle and Giveaway! Looking to become involved and make a difference? Get inspired by those who make a difference through AOCS.

The Networking Value Center identifies opportunities and structures that foster networking across all groups of the Society. Want to get involved? Email Janet Brown at janet.brown@aocs.org.

Look for CIG flags at the President's Reception!

AOCS Common Interest Groups (CIGs) foster communication between members who are at the same point in their careers: Students, Young Professionals, and Professional Educators. Connect with like-minded attendees to discuss trends, overcome challenges, and share your knowledge and insights.

STUDENT

Student members are the future of AOCS and the oils, fats, proteins, and related materials industry. Discover the free resources AOCS provides to enhance your education. The Student CIG provides networking opportunities and ways to become more involved with AOCS and industry leaders.

YOUNG PROFESSIONAL

The Young Professional CIG provides opportunities to expand your professional network and build your knowledge through networking events at the annual meeting and webinars throughout the year. CIG members also host meet-ups at other industry events. This CIG is for members who are less than 35 years of age and have been an AOCS member for less than ten years.

PROFESSIONAL EDUCATOR

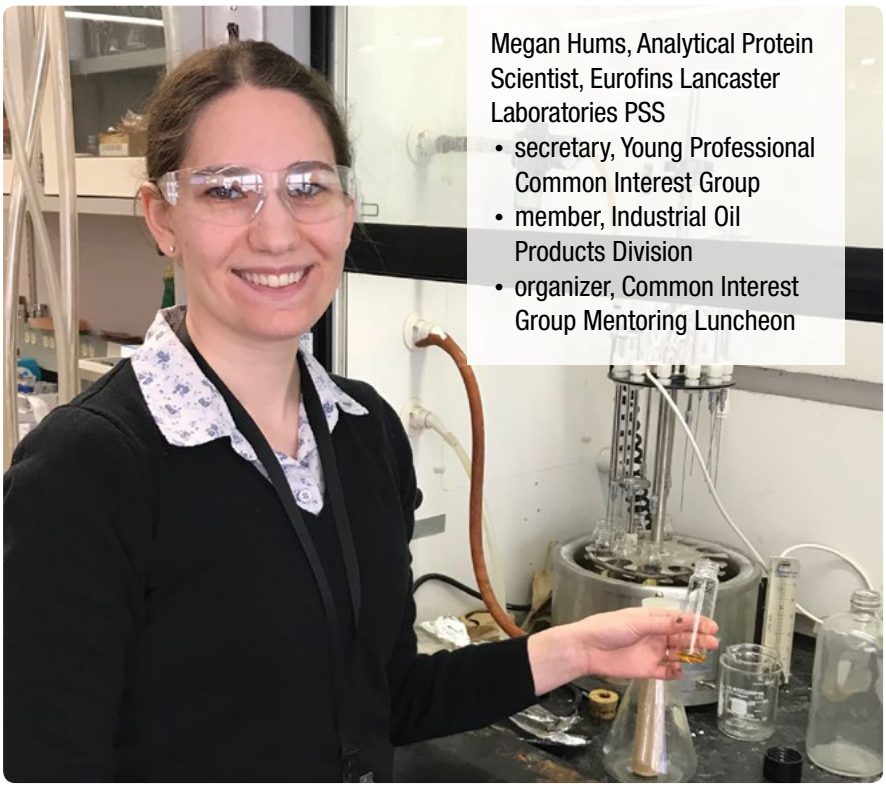
The Professional Educator CIG supports educators in the lipid science and oil technology fields by providing a network of peers who share teaching solutions and resources throughout the year.

Share your Annual Meeting experience!

@AOCS #AOCS2019

Connect. Innovate. Grow.

"AOCS links my past and present as I develop my career in lipid research. Volunteering in AOCS has provided opportunities to meet professionals outside of my research field and to think about other applications and inspire ideas."



Megan Hums, Analytical Protein Scientist, Eurofins Lancaster Laboratories PSS

- secretary, Young Professional Common Interest Group
- member, Industrial Oil Products Division
- organizer, Common Interest Group Mentoring Luncheon

10 Divisions to choose from:

- Analytical
- Biotechnology
- Edible Applications Technology
- Health and Nutrition
- Industrial Oil Products
- Lipid Oxidation and Quality
- Phospholipid
- Processing
- Protein and Co-Products
- Surfactants and Detergents

AOCS
Your Global Fats and Oils Connection

Shape the future together by joining and volunteering with an AOCS Division or Common Interest Group.
aocs.org/divisions

DIVISION EVENTS

Meet colleagues who have similar scientific and technological interests by attending an AOCS Division event and spending time in the Expo Hall within the areas identified by flags. Divisions develop meeting programming, fund student awards and travel grants, and offer numerous leadership opportunities. AOCS members have discovered that through Divisions, connections are made that last a lifetime.

Division activities are open to all attendees!

2020 Technical Session Development

Have innovative ideas for next year's Annual Meeting technical program? If you want a hand in the planning, this is where it all happens — take an active role by participating in these committee discussions to assist in developing the technical program.

Analytical
Tuesday, May 7 | 5:30–6:30 p.m.
Room 100

Biotechnology
Tuesday, May 7 | 12:45–1:45 p.m.
Room 101

Edible Applications Technology
Tuesday, May 7 | 12:30–1:30 p.m.
Room 222

Health and Nutrition
Monday, May 6 | 12:30–1:30 p.m.
Room 370
Will include the Business Meeting

Industrial Oil Products
Monday, May 6 | 12:45–1:45 p.m.
Room 102

Lipid Oxidation and Quality
Monday, May 6 | 12:45–1:45 p.m.
Room 103

Phospholipid
Tuesday, May 7 | 12:45–1:45 p.m.
Room 106

Processing
Tuesday, May 7 | 11:45 a.m.–12:25 p.m.
Room 104

Protein and Co-Products
Monday, May 6 | 12:45–1:45 p.m.
Room 105

Surfactants and Detergents
Monday, May 6 | 5:10–6 p.m.
Room 224

Networking Events

Build connections, reunite with friends, get more involved with AOCS or just have fun! Attend these events to learn more about the Division's plans for the upcoming year, welcome the new leadership team, and celebrate Division award winners.

Analytical Luncheon*
Monday, May 6 | 12:30–1:45 p.m.
Room 240

Biotechnology Dinner*
Tuesday, May 7 | 7–8:30 p.m.
The Over/Under Bar & Grille
911 Washington Avenue, St. Louis, MO

Edible Applications Technology Dinner*
Monday, May 6 | 7–8:30 p.m.
The Over/Under Bar & Grille
911 Washington Avenue, St. Louis, MO

Health and Nutrition Dinner*
Tuesday, May 7 | 7–8:30 p.m.
Lucas Park Grille
1234 Washington Avenue, St. Louis, MO

Industrial Oil Products Luncheon*
Tuesday, May 7 | 12:30–1:45 p.m.
Room 242

Lipid Oxidation and Quality Dinner*
Tuesday, May 7 | 7–8:30 p.m.
Lucas Park Grille
1234 Washington Avenue, St. Louis, MO

Phospholipid Dinner*
Monday, May 6 | 7–8:30 p.m.
Room 232

Processing Luncheon*
Tuesday, May 7 | 12:30–1:45 p.m.
Room 232

Protein and Co-Products Dinner*
Tuesday, May 7 | 7–8:30 p.m.
Mango Peruvian
1001 Washington Avenue, St. Louis, MO

Surfactants and Detergents Networking Reception
Monday, May 6 | 6:30–8 p.m.
Room 230/231

Surfactants and Detergents Luncheon*
Tuesday, May 7 | 12:30–1:45 p.m.
Room 230/231

Leadership Meetings

LEAD. GROW. GO! Division leaders support the AOCS mission by developing programs and activities of interest for professionals with common technical interests and chart the course for the future direction of the AOCS.

Division Executive Steering Committees
Sunday, May 5 | 11 a.m.–1:30 p.m.
Room 223/224

Times vary based on when each Division schedules their meeting. Email victoria@aocs.org or visit @home in the Expo Hall to find meeting times.

Division Council
Sunday, May 5 | 1:45–2:45 p.m.
Room 223/224

Add these events to your meeting itinerary!

See page 6.

*Ticket required for attendance. You may purchase additional tickets at the *Registration Desk*.

SECTION EVENTS

Being an organization that understands the needs of the industry internationally is important to us, but sometimes you want to consult with someone who understands the specific concerns of your region. Sections play a critical role in identifying trends and challenges in their region. Begin your journey to create meaningful solutions at one of the following Section activities.

Section activities are open to all attendees!

Networking Events

Sections offer a variety of networking opportunities where you can build connections, reunite with friends, get more involved with AOCS or just have fun! You can also learn more about the Section's current and future initiatives and opportunities.

Canadian Luncheon*
Monday, May 6 | 12:30–1:45 p.m.
Room 241

China Luncheon*
Monday, May 6 | 12:30–1:45 p.m.
Room 242

Latin American Luncheon*
Tuesday, May 7 | 12:30–1:45 p.m.
Room 370

Leadership Meetings

Anyone interested in joining one of the Section's committees can attend to meet committee leaders and other members. The leadership teams meet to address the growth and welfare of Sections by organizing an upcoming regional meeting and identifying the needs of the region, discussing issues, and planning strategies. Get involved with the numerous leadership opportunities available!

LEAD. GROW. GO! Section leaders promote the growth and welfare of Sections, both domestically and internationally and serve as a communication link between AOCS and our global network.

Asian
Monday, May 6 | 12:45–1:45 p.m.
Room 360

China
Sunday, May 5 | 3–4 p.m.
Room 360

European
Monday, May 6 | 12:45–1:45 p.m.
Room 361

Share your Annual Meeting experience!

@AOCS #AOCS2019

*Ticket required for attendance. You may purchase additional tickets at the *Registration Desk*.

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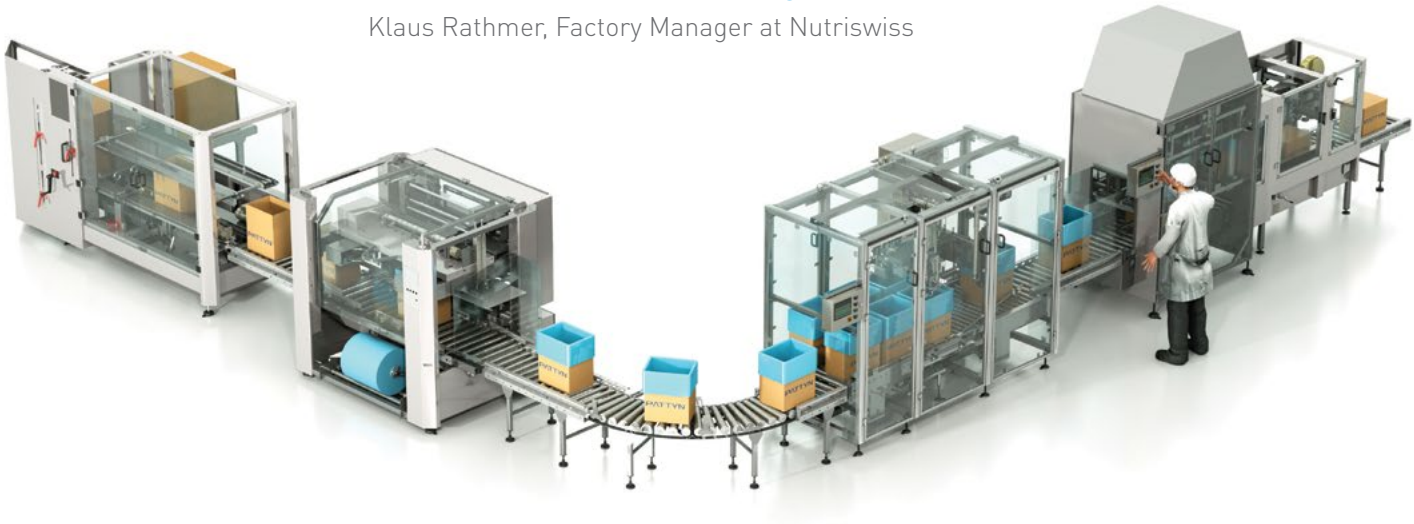
Klaus Rathmer, Factory Manager at Nutriswiss



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COMMITTEE MEETINGS

All committee meetings take place at the America's Center Convention Complex. If you cannot attend a committee meeting of interest or for further information, contact the staff liaison listed.

OPEN TO ALL ATTENDEES

2020 Annual Meeting Program Committee

This committee of Division Vice Chairpersons determines the technical program for the 2020 AOCS Annual Meeting.

Chair: Rick Theiner
Staff Contact: Donna Elbon, donnae@aocs.org
Executive Meeting:
Sunday, May 5 | 10–11 a.m. | Room 223/224
Executive Meeting:
Wednesday, May 8 | 2–5 p.m. | Room 360

Have an idea for a session at the 2020 AOCS Annual Meeting? Please share your ideas during a Division program development session! See page 17 for dates, times, and locations of sessions.

Asian Section Leadership Team

Discusses and develops programs and activities of interest to members from Asia.

Chair: Kazuo Miyashita
Staff Contact: Victoria Santo, victoria@aocs.org
OPEN MEETING
Monday, May 6 | 12:45–1:45 p.m. | Room 360

Books and Special Publications Committee

Identifies potential book topics and editors while also serving as reviewers of proposals.

Chair: Wm. Craig Byrdwell
Staff Contact: Janet Brown, janet.brown@aocs.org
OPEN MEETING
Wednesday, May 8 | 3–4 p.m. | Room 362

China Section Leadership Team Meeting

Meets to discuss plans and activities related to the AOCS China Section.

Chair: Jiang Lianzhou
Staff Contact: Victoria Santo, victoria@aocs.org
OPEN MEETING
Sunday, May 5 | 3–4 p.m. | Room 360

Division Council

Represents all Division leadership teams and recommends policies and procedures for the advancement and improvement of all Divisions.

Chair: Jill Moser
Staff Contact: Victoria Santo, victoria@aocs.org
OPEN MEETING
Sunday, May 5 | 1:45–2:45 p.m. | Room 223/224

Add these events to your meeting itinerary!

See page 6.

Division Executive Steering Committees

Include the officer teams (chair, vice chair, secretary-treasurer) from each Division and are responsible for developing Division programming and activities.

Staff Contact: Victoria Santo, victoria@aocs.org
Executive Meeting:
Sunday, May 5 | 11 a.m.–1:30 p.m. | Room 223/224

European Section Leadership Meeting

Oversees the European Student Travel Grant and develops programs and activities of interest to members from Europe.

Staff Contact: Victoria Santo, victoria@aocs.org
OPEN MEETING
Monday, May 6 | 12:45–1:45 p.m. | Room 361

Foundation Board

Reviews the opportunities to support new products and services of AOCS.

Chair: Neil Widlak
Staff Contact: Patrick Donnelly, patrick.donnelly@aocs.org
OPEN MEETING
See listing in the app for date, time and location.

Governing Board

Reviews progress against goals and objectives of the 2018–2020 Strategic Plan.

Chair: Len Sidisky
Staff Contact: Patrick Donnelly, patrick.donnelly@aocs.org
OPEN MEETING
Wednesday, May 8 | 2–5 p.m. | Room 370

JAOCS Associate Editors Breakfast

Thank you breakfast and business meeting for all Journal of the American Oils Chemists' Society (JAOCS) *editors and the editorial advisory board. Visitors are welcome.*

Chair (JAOCS Editor-in-Chief): James A. Kenar
Staff Contact: Pam Landman, plandman@aocs.org
OPEN MEETING
Monday, May 6 | 7:45–9 a.m. | Room 370

JAOCS Senior Associate Editors

Meeting for JAOCS *editor-in-chief and the senior associate editors to discuss the state of the journal.*

Chair (JAOCS Editor-in-Chief): James A. Kenar
Staff Contact: Pam Landman, plandman@aocs.org
Executive Meeting:
Sunday, May 5 | 2:30–3:30 p.m. | Room 361

JSD Committee

Business meeting and strategy session for Journal of Surfactants and Detergents (JSD) *editors. Visitors are welcome.*

Chair (JSD Editor-in-Chief): George A. Smith
Staff Contact: Pam Landman, plandman@aocs.org
OPEN MEETING
Tuesday, May 7 | 11 a.m.–Noon | Room 361

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Laboratory Proficiency Program Committee

Reviews proficiency program details and suggests changes or new series.

Chair: Susan Seegers
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Sunday, May 5 | 11 a.m.–Noon | Room 362

Lipid Library Committee

Develops and maintains the AOCS Lipid Library website.

Chair: Alejandro Marangoni
Staff Contact: Anthony Miller, anthony.miller@aocs.org
OPEN MEETING
Wednesday, May 8 | 7–8 a.m. | Room 371

Lipids Luncheon

Business meeting and strategy session for Lipids *journal editors. Visitors who want to learn more about getting involved with* Lipids *are welcome to attend.*

*Chair (*Lipids *Editor-in-Chief): Eric J. Murphy*
Staff Contact: Pam Landman, plandman@aocs.org
OPEN MEETING
Tuesday, May 7 | 12:15–2 p.m. | Room 360

Olive Oil Expert Panel

Advises and directs AOCS' technical activities and services related to olive oil.

Chair: Luisito Cercaci
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Saturday, May 4 | 4–5 p.m. | Room 103

Process Contaminants Expert Panel

Discusses AOCS projects and general developments related to the analysis and mitigation of processing contaminants in edible oils.

Chair: Scott Bloomer
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Wednesday, May 8 | 2:30–3:30 p.m. | Room 104

Professional Educator Common Interest Group Business Meeting

A venue to bring together educators from industry and university settings to identify opportunities to improve the teaching and training of individuals new to lipid chemistry.

Chairs: Nuria Acevedo, Deland Myers and Sara Shinn
Staff Contact: Janet Brown, janet.brown@aocs.org
OPEN MEETING
Wednesday, May 8 | 2–3 p.m. | Room 372

Student Common Interest Group Business Meeting

All students are welcome to attend to share ideas on how to improve AOCS awards, social events and career networking opportunities.

Chair: Ruojie (Vanessa) Zhang
Staff Contact: Janet Brown, janet.brown@aocs.org
OPEN MEETING
Wednesday, May 8 | 2–3 p.m. | Room 371

Technical Leadership Meeting

Advises and directs AOCS on analytical services, laboratory services and liaisons with international agencies such as ISO and Codex Alimentarius.

Chair: Lars Reimann
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Sunday, May 5 | 9–10:30 a.m. | Room 362

Uniform Methods Committee (UMC)

Develops and maintains the Official Methods and Recommended Practices of AOCS.

Chair: Chris Dayton
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Sunday, May 5 | 3–4 p.m. | Room 370

UMC Subcommittee Roundtable

Discusses Uniform Methods Committee and Uniform Methods Committee subcommittee projects and proposals.

Chair: Chris Dayton
Staff Contact: Scott Bloomer, scott.bloomer@aocs.org
OPEN MEETING
Sunday, May 5 | 1–3 p.m. | Room 370

Young Professional Common Interest Group Business Meeting

Attend to meet with young professionals and recent graduates and help identify topics of interest for webinars, programming and more.

Chairs: Leann Barden and Orayne Mullings
Staff Contact: Janet Brown, janet.brown@aocs.org
OPEN MEETING
Wednesday, May 8 | 2–3 p.m. | Room 362

Young Professional Common Interest Group Reception

Start the meeting on the right note by meeting with other young professionals and enjoying free drinks and appetizers.

Staff Contact: Janet Brown, janet.brown@aocs.org
OPEN MEETING
Sunday, May 5 | 7–8 p.m. | Washington Lobby West (1st Floor)

@AOCS
#AOCS2019

Share a picture of your committee in action—inspire others to help drive the future of our Society!

AOCS AWARD WINNERS

AOCS honors those individuals and institutions who have taken research and technology 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. We congratulate all of the 2018–2019 award recipients!

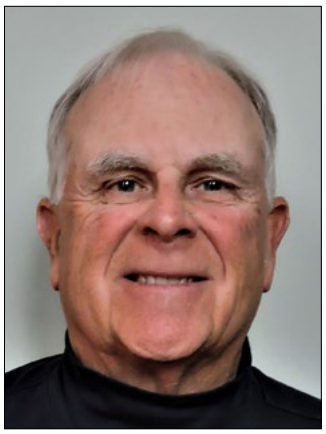
Award lectures are identified in the presentation information with the photo of the winner or award icon. AOCS Scientific Award winners are highlighted by red lines.

Society Awards

Recognized and presented at the Opening Celebration: The Gateway to the Future of our Industry
Sunday, May 5 | 4–5:30 p.m. | Ferrara Theatre

AOCS Award of Merit

Recognizes an AOCS Member who has displayed leadership in administrative activities, meritorious service on AOCS committees or performed an outstanding activity or service.



Michael has served on many committees, with his leadership of the AOCS Foundation being the most significant.

Michael J. Boyer is the President of AWT Management Services, which focuses on business strategy and environmental management issues. He earned a B.S. and M.S. in civil engineering with a minor in chemistry from the University of Missouri – Columbia. He has 40 years of experience in agribusiness water, wastewater and by products management. Mr. Boyer has worked at 200 oilseed, vegetable oil, biodiesel, corn processing, and related facilities and developed sustainability plans for numerous private sector companies in these businesses. In addition, he has authored 50+ papers and presentations in related areas through AOCS and other public forums. Mr. Boyer's current interests and research include managing environmental and sustainability issues for the agribusiness and related industries.

As chair of the Uniform Methods Committee and editor-in-chief of the *7th Edition of the AOCS Official Methods*, Mark has provide exceptional guidance and leadership, all while operating a world-class analytical lab for ADM.

Mark W. Collison received his Ph.D. from Iowa State University in biochemistry, where his research was on heart metabolism related to ischemia. He took a job with Pharmacia in tech support for their biotechnology division, working on protein preparation and analysis. In 1987, he moved to the research division of Nabisco and worked on enzyme technology in baking systems. He moved to Bayer in 1989, moving from bench chemist to group leader to head of a research group working on natural antimicrobials for food. Unfortunately, that work was cancelled after two years due to business economics and Dr. Collison took over an analytical group supporting the citric acid division. He moved to Archer Daniels Midland to take over the research analytical group in 1997 when Bayer was selling the citric business.

Dr. Collison's first involvement with AOCS was at the Cincinnati meeting in 2004. He became involved with the Analytical Division, helping with the completion and validation of the trans-fat method, Ce 1h-05. He became a Uniform Methods Committee (UMC) member a year later. He has attended all the ISO TC34/SC2 and SC11 meetings beginning with the Seattle meeting in 2008 and became head of the US delegation to the ISO committees in 2012. In 2011, he took over the UMC chair and held that role through 2015. In 2016, he became editor-in-chief of the *Official Methods and Recommended Practices of the AOCS*, working to get the 7th Edition revisions published in time for the 2017 AOCS meeting in Orlando. He continues in that position today.

Arnis has been a great contributor to advancing the mission of the society through his scientific contributions to the journals and annual meeting presentations.

Arnis Kuksis is a professor emeritus at the University of Toronto in Canada. He was born in Latvia in 1927 and came to the USA in 1949 from Baltic University, Hamburg, Germany, on an LWF scholarship. Dr. Kuksis obtained his B.Sc. in 1951 and M.Sc. in 1953, both in agronomy, from Iowa State College (now University), Ames, Iowa, and a Ph.D. in biochemistry from Queen's University, Kingston, Ontario, Canada. After a postdoctoral fellowship (1956–1958) in organic chemistry at the Royal Military College, Kingston, Ontario, he returned to Queen's to join the research group of Professor J.M.R. Beveridge as a research associate in lipid biochemistry. In 1960, Dr. Kuksis was awarded a Medical Research Council (MRC) of Canada Associateship (a career investigatorship) and was appointed assistant professor of biochemistry at Queen's. In 1965, he transferred his laboratory to the Banting and Best Department of Medical Research (BBDMR), University of Toronto. Dr. Kuksis advanced to associate and full professor (1965–1974) with parallel cross-appointments in the Department of Biochemistry at the University of Toronto. From 1972 to 1997, he served as director of the MRC Regional Mass Spectrometry Facility at the BBDMR. He was elected professor emeritus in 1997 and is best known for original discoveries in high-temperature gas chromatography of natural triacylglycerols and for the application of a new methodology for profiling neutral glycerolipids and glycerophospholipids in health and disease.

AOCS Fellow Award

Recognizes achievements in science or extraordinary service to the Society.

Richard possesses the combination of outstanding research accomplishments and extraordinary service to AOCS expected of AOCS Fellows.

Richard D. Ashby is a senior research scientist in the Biobased and Other Animal Coproducts Research Unit for the United States Department of Agriculture, Agricultural Research Service (ARS), at the Eastern Regional Research Center in Wyndmoor, Pennsylvania. Dr. Ashby is author or co-author of over 250 publications and presentations about bio-based production, characterization, property manipulation and application of microbial polymers and surfactants. He is a recognized expert in the use of various fermentation techniques for the synthesis of glycolipids and bacterial polyesters (polyhydroxyalkanoates). After obtaining his Ph.D. from Louisiana State University in 1994, he worked as a postdoctoral fellow in the Department of Chemistry at the University of Massachusetts-Lowell under Richard A. Gross studying molecular weight control of PHA biopolymers using poly(ethylene) glycol. In 1996, he joined ARS where his focus was on the use of animal fats and vegetable oils as renewable feedstocks for PHA production.

As the biodiesel industry gained traction, his research focus shifted to the use of crude glycerol and other cheap renewable materials (lignocellulosics) as feedstocks for microbial growth and product synthesis. His work with crude glycerol resulted in his research group being awarded the 2008 ACI/NBB Glycerine Innovation Award bestowed by AOCS. Currently, he is continuing his research focus on the use of fermentation to economically produce unique microbial products designed for wide-spread industrial application.

Awards nominations for 2020 are NOW OPEN!

Nominate candidates @home or on the app.

Or visit aocs.org/awards.

Join us in congratulating our AOCS award winners!

@AOCS #AOCS2019

Craig has distinguished himself from his peers by his imaginative and original research, which enables him to work on the leading of his field.

Wm. Craig Byrdwell is a research chemist at the Food Composition and Methods Development Laboratory in the

Beltsville Human Nutrition Research Center, which is a part of the United States Department of Agriculture (USDA), Agricultural Research Service (ARS). Dr. Byrdwell received his undergraduate and graduate degrees from the University of Louisville, writing his dissertation on identification of the "Unknown Phospholipid" in the human eye lens and quantification of fluorophores in normal and cataractous lenses. Dr. Byrdwell took a position at the USDA's National Center for Agricultural Utilization Research to work on analysis of triacylglycerols (TAGs) using high-performance liquid chromatography (LC) with atmospheric pressure chemical ionization mass spectroscopy (APCI-MS). Then, Dr. Byrdwell took a position at Florida Atlantic University, where he routinely employed dual mass spectrometers, in parallel, using both APCI-MS and electrospray ionization (ESI) MS. He re-joined ARS in 2005 and took on quantification of Vitamin D and TAGs.

Recently, Dr. Byrdwell has been analyzing fat-soluble vitamins and TAGs using triple- and quadruple-parallel mass spectrometry approaches, combining three or four mass spectrometers employing complementary ionization methods (APCI-MS, atmospheric pressure photoionization MS and ESI-MS) coupled to one, two or three liquid chromatographs in LC*x*/MS*y* techniques. Dr. Byrdwell has published more than 60 peer-reviewed articles, 10 book chapters and has been editor/co-editor of three AOCS Press books. He is on the editorial advisory board of *Lipids*, is the lipidomics associate editor for The Lipid Library (www.LipidLibrary.com) and maintains numerous websites, including www.LipidAcademy.com. Dr. Byrdwell received the 2012 Herbert J. Dutton Award from the AOCS Analytical Division and presented the 2013 Society of Chemical Industry Julius Lewkowitsch Award Lecture.

Mila has served the society in a number of capacities, including associate editor of the *JAOCS*, numerous award committees, and a member of the Governing Board, where she made contributions to growth of AOCS.

Mila P. Hojilla-Evangelista was born and raised in the Philippines, where she received her B.S. (Cum laude) in food technology and M.S. in food science from the University of the Philippines at Los Baños. She earned her Ph.D. in food technology from Iowa State University. She is presently a research chemist at the United States Department of Agriculture, Agricultural Research Service, National Center for Agricultural Utilization Research, in Peoria, Illinois. Her research career has focused on value-added products from processing of soybeans, corn and alternative oilseed crops (lesquerella, cuphea, pennycress and camelina). Her recognitions include the 2018 Iowa State University Food Science and Human Nutrition Alumni Impact Award, 2018 College Distinguished Alumnus Award from the University of the Philippines at Los Baños, AOCS ADM Best Paper Award in Protein and Co-Products (four times) and 2007 Federal Laboratory Consortium (FLC) Award for Excellence in Technology Transfer (soybean protein-based foamed plywood adhesives).

Within AOCS, her primary professional society, she has been a long-serving associate editor for *JAOCS* and elected to various leadership positions, including secretary/treasurer, vice-chair, and chair of the Protein and Co-Products Division and member-at-large of the Governing Board. She served as invited guest editor of the peer-reviewed special issue on bio-based adhesives for the *Journal of Adhesion Science & Technology* (2013) and the special issue on alternative proteins for *JAOCS* (2018). She has mentored a postdoctoral research associate and two Ph.D. candidates and is actively involved in many NCAUR Student Outreach Programs for STEM activities for local area students and educators.

Eric deserves to be recognized for his outstanding service to the society, his outstanding research accomplishments in the field of lipid neurochemistry and dedication to welcoming young scientists to the AOCS family.

Eric J. Murphy has a B.A. in history and biology from Hastings College. His Ph.D. in biochemistry is from The Ohio State University, where he studied brain lipid biochemistry with Lloyd Horrocks. He was an assistant research scientist at Texas A&M University, where he studied the role of cytosolic lipid binding proteins with Fred Schroeder. He served as a Senior National Research Council Fellow at the National

2019 Award Sponsors

AOCS thanks all award sponsors for their generous support. Sponsors make it possible for AOCS to recognize outstanding scientists, researchers, technicians and students within our community.

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Archer Daniels Midland Foundation
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Stephen S. and Lucy D. Chang
Manuchehr (Manny) Eijadi
International Food Science Centre A/S
International Lecithin and Phospholipid Society (ILPS)
Kalsec, Inc.
Peter and Clare Kalustian Estate
MilliporeSigma
Myande Group Co., Inc.
National Biodiesel Board (NBB)
Nitto Pharmaceutical Industries, Ltd.
Milton J. Rosen
Seawit Co., Inc.
Vijai K.S. Shukla
Thomas H. Smouse and Family

Institutes of Health and focused on the effect of neurodegenerative disease on brain lipid metabolism with Stanley Rapoport. In 2000, he joined the University of North Dakota (UND) as an assistant professor. At UND he brought together kinetic modeling of lipid metabolism in vivo coupled with his expertise in cytosolic lipid binding proteins to study the role that these and other proteins have in brain lipid metabolism.

He continues to work in the broad area of n-3 fatty acid metabolism to distinguish the metabolic differences between plant-derived and marine-derived n-3 dietary sources. In 1999, he received the Jordi Folch-Pi award for his work in brain lipid neurochemistry. In 2006, he became the editor-in-chief of *Lipids*. In 2005, he became chief strategy officer of Agragen, LLC, a plant science company focused on using *Camelina sativa* as a platform for biopharmaceutical and bioactive fatty acid production for use in humans and in animal feeds. In 2015, he and his sons founded Krampade, LLC, a company that produces anti-cramping formulations for use across a broad consumer base. From 2014 to 2016 he served on the North Dakota State Board of Higher Education.

Scientific Awards

Award lectures will be presented during the Technical Program. Following the presentation, attendees will be able to meet and greet the award winner during a short coffee break in the room.

Alton E. Bailey Award

Lecture: BIO 2 | Tuesday, May 7 | 8 a.m. | Room 101

Recognizes outstanding research and exceptional service in the field of lipids and associated products. Sponsored by Archer Daniels Midland Company.

Casimir has distinguished himself internationally as a researcher, especially in the areas of structured lipids, fat substitutes and lipase-catalyzed interesterification.

Casimir C. Akoh is a distinguished research professor in the Department of Food Science & Technology at The University of Georgia. He has made extensive, innovative, creative and significant contributions to the field of lipids, especially on the use biocatalysts for the modification of fats and oils for better functionality in foods and potential healthful outcome. His work is at the interface of food science and nutrition. He has designed various structured lipids as infant formula fat analogs and studied their applications in infant formula and synthesized trans-free structured lipids to replace hydrogenated fats and used them to make trans-free spreads, margarines and shortenings. He edited eight books and his "Food Lipids" book, now in its 4th Edition (2017), is used worldwide as a textbook for graduate instruction.

Overall, Professor Akoh's research has resulted in over 810 publications and presentations that include up to 278-refereed publications, 50 book chapters, four patents, 301 presentations and more than 180 invited presentations at national and international conferences. He is an editorial board member or associate editor of several journals. He became a member of the AOCS Governing Board in 2001, served as chair of the Biotechnology Division (2001–2004) and secretary of AOCS (2004–2006). He was vice president of AOCS from 2007 to 2008 and president of AOCS from 2008 to 2009 during the Society's 100-year anniversary. Professor Akoh has received many prestigious international awards, including the Stephen S. Chang Awards (AOCS, 2004; IFT, 2008), Research and Development Award (IFT, 2008) and the AOCS Biotechnology Division Lifetime Achievement Award (AOCS, 2009).

Stephen S. Chang Award

Lecture: PHO 2 | Tuesday, May 7 | 2 p.m. | Room 106

Recognizes a scientist, technologist or engineer who has made decisive accomplishments in research for the improvement or development of products related to lipids. Provided by the Stephen and Lucy Chang endowed fund.

Xuebing is a multidisciplinary scientist who has the ability to take scientific findings and apply them to practical, commercially important products and applications.

Xuebing Xu received his Ph.D. in chemical engineering from the Technical University of Denmark and was a professor/honorary professor in Aarhus University, Denmark. Dr. Xu's areas of research include lipid technology, food/lipid/ingredients functionality, enzyme technology, etc. Dr. Xu has published more than 270 papers, edited three books and is inventor of more than 33 patents.

Dr. Xu is the general manager of the Wilmar Global Research and Development Center. He is also a guest professor at a few universities. He was the founding president of the International Association of Rice Bran Oil (2013–2014) and is also the founding president of the International Sunflower Oil Association (2015–present). Dr. Xu won the European Lipid Technology Award in 2017 and became an AOCS Fellow in 2018.

Dr. Xu has been involved in a number of activities in AOCS. He is associate editor of *JAOCS* (2005–present), was chair of the Phospholipids Division (2016–2017) and is vice president of the China Section (2016–present). Dr. Xu was the organization committee member for a few conferences, including the AOCS-CCOA Joint Symposium on Functional Lipids (2014) and 1st AOCS China Section Congress on Oilseeds and Co-Products (2017). He was invited as session chairs for a number of AOCS Annual Meetings.

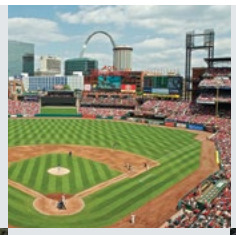
Refer a friend. Grow the Society. Get rewarded.

Did you know that meeting attendees wearing black lanyards are not yet members of AOCS? As you meet these non-member colleagues during the Annual Meeting, be sure to share why AOCS membership is important and how it has made an impact on your career.

New members who join on site save 40% on their Active membership dues for the remainder of 2019. As a recruiter, you could get rewarded too — make sure the new member adds your name to the application while joining, and you will both be eligible to win one of four AOCS Prize Packs. So, start spreading the word about why you love AOCS!

Recruit new members for your chance to win:

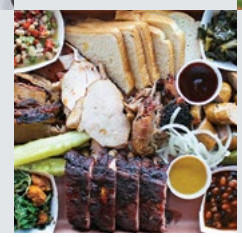
Drinks at Bridge Tap House & Wine Bar



Tickets to a Cardinals baseball game

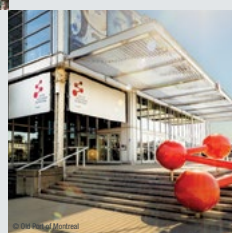
May 7 at 6:45 p.m.

St. Louis-style BBQ from Sugarfire Smoke House



Tickets to the Montréal Science Center

Plan your visit during the 2020 AOCS Annual Meeting & Expo in Montréal!



Prize winners will be announced daily:
Sunday, May 5 – President's Reception
Monday, May 6 – Happy Hour Reception
Tuesday, May 7 – Happy Hour Reception
Wednesday, May 8 – Member + Volunteer Appreciation Luncheon

www.aocs.org/referral

Tip!

The more members you recruit, the greater your chance of winning.

Head to the AOCS Registration desk with your recruit to complete their membership application and be entered to win.

Supelco AOCS Research Award

Lecture: EAT 4 | Wednesday, May 8 | 8 a.m. | Room 222

Recognizes outstanding original research in fats, oils, lipid chemistry or biochemistry. Sponsored by MilliporeSigma, a subsidary of Sigma-Aldrich Corp.

Unlike anyone else, Rich has been able to use state-of-the art analytical and physical methodology to document and precisely control how certain lipids form crystals under certain defined conditions.

Richard W. Hartel, a professor of food engineering, has been with the Department of Food Science at the University of Wisconsin-Madison since 1986. Dr. Hartel has an active research program focused on phase transitions in foods, particularly chocolate (lipids), frozen desserts (ice) and confections (sugars and lipids), funded from a variety of sources, including the United States Department of Agriculture, industry and commodity boards. With over 75 graduated students since 1986, he currently has 14 grad students and three postdocs. His work has resulted in over 220 publications. He also authored or co-authored 15 books, including authoritative works on both ice cream and confectionery science as well as two popular interest books written with his daughter.

Dr. Hartel is well known for being a strong proponent of education and student learning. An active instructor, he teaches classes on food lipids, food manufacturing, food preservation and food functionality, as well as a freshman seminar class and a candy science elective. He has been advisor of the Food Science Club for over 30 years and is academic advisor of 75 undergrad students. His interest in education also extends to adult learning. He is coordinator for several industry-oriented short courses: Nutritional Bars, the 2-week Candy School, and Enhanced Gummies and Jellies.

Dr. Hartel has been an active contributor to AOCS, including numerous presentations at Annual Meetings and many years of service with *JAOCS*. After working through the system from associate editor, he served as editor-in-chief of *JAOCS* for 10 years. He is currently back as an associate editor.

AOCS Young Scientist Research Award

Lecture: H&N 4 | Wednesday, May 8 | 8 a.m. | Room 221

Recognizes a young scientist who has made a significant and substantial research contribution in one of the areas represented by the Divisions of AOCS. Sponsored by the International Food Science Centre A/S.

Guodong's unique approaches are leading to groundbreaking discoveries that could develop technologies to modify lipid pathways to improve health.

Guodong Zhang is an assistant professor of food science and molecular and cellular biology at the University of Massachusetts-Amherst (2013–present). He obtained his B.S.

in chemistry from Xi'an Jiaotong University in China (2003), M.S. in chemistry from National University of Singapore (2005), Ph.D. in food science from the University of Wisconsin-Madison (2010) and performed postdoctoral training at the University of California-Davis (2010–2013).

AOCS Corporate Achievement Award

Lecture: BIO 1 | Monday, May 6 | 2 p.m. | Room 101
Recognizes industry achievement for an outstanding process, product or contribution that has made the greatest impact on its industry segment.

Nisshin OilliO is a progressive, forward-looking company and a leader in development of techniques to make innovative fats and new foods containing these fats.

The Nisshin OilliO Group, Ltd., was originally established in 1907 as the Nisshin Soybean Crushing Company to process and sell soybean meal and oil. The two characters in the name Nisshin denote Japan and China, symbolically reflecting the company's motivation to expand overseas. The name changed to The Nisshin Oil Mills, Ltd., in 1918, and the company launched Japan's first salad oil in 1924, called Nisshin Salad Oil, utilizing highly refined soybean oil.

A Research and Development Center was added in 1959 to hone the company's refining technologies and improve the quality of its edible oils. A wide variety of innovative products emerged—soy protein, meals, edible and industrial oils, and many more. The Nisshin OilliO Group crystallized in 2002 by integrating three oils and fats companies, with four production bases in Japan. Its business operates in China, Taiwan, Malaysia, Singapore, Indonesia and Europe.

The 112-year-old Nisshin OilliO Group is active in mainly four business domains: oil, meal, and processed food; processed oil and fat; fine chemicals; and health science. It tirelessly strives to fulfill its corporate philosophy and core commitment by acting as a responsible member of global society and maximizing its corporate value as a creative and growing business, by contributing to society, the economy, and the health and happiness of every stakeholder. To realize these goals, The Nisshin OilliO Group utilizes cutting-edge technologies to produce a wide range of dietary and lifestyle staples to fulfill its promise of "good flavor, health and beauty."

Schroepfer Medal

Lecture: FS 8: Sterols Symposium, featuring the Schroepfer Medal Award Lecture | Monday, May 6 | 2 p.m. | Room 100
Recognizes a scientist who has made significant and distinguished advances in the steroid field. Originated by colleagues of George Schroepfer.

W. David is also an active and tireless champion of lipid research, a man of highest integrity and a world-class scholar.

W. David Nes is a distinguished professor of chemistry and biochemistry and former director of the Center for Chemical Biology at Texas Tech University. He has published approximately 210 peer-reviewed journal articles, one patent and eight books, and has been among the most cited scientists in sterol research. He is regarded as being a tireless mentor of over 75 graduate students, postdoctoral fellows and visiting scientists. During his career, he has been consultant to government and industry, a question writer for the graduate record exam in biochemistry, sought-after lecturer, taken sabbatical leaves in Germany and Wales, associate editor of journals, AOCS Fellow, and former Program Director at the National Science Foundation. Professionally, he is recognized as an international expert in the chemical biology of sterols and other isoprenoids as highlighted in the 2019 Festschrift special issue in the journal *Molecules* honoring his 65th birthday.

Dr. Nes was born in Bethesda, Maryland, while his father, William R. Nes, was an organic chemist at the National Institutes of Health researching steroids. During Dr. Nes's early life, he was active in sports and recruited to Gettysburg College becoming a varsity wrestler in his sophomore year and pledging Sigma Chi Fraternity. After graduating from Gettysburg College, he attended Drexel University and received an M.S. under the direction of his father, with whom he collaborated on numerous projects until father's death in 1988. After Drexel, Dr. Nes received a Ph.D. from the University of Maryland and then pursued postdoctoral fellowships at the University of California, Berkeley, and the United States Department of Agriculture -Albany.

Join us in congratulating our AOCS award winners!

@AOCS #AOCS2019

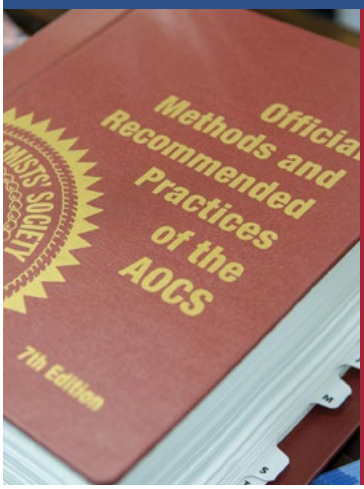
Stay in the know with AOCS

"I learn more from *INFORM* every month than from all my reading and reviewing activities. This is very high value for the membership."

■ **Alejandro G. Marangoni, PhD, Professor and CRC Chair, Dept. Food Science, University of Guelph**

"Most importantly, as a scientist, the opportunity to share my research and learn about new research, technologies, ideas and perspectives from other members in academics and industry has been one of the most enriching experiences."

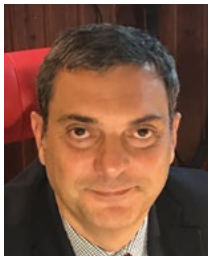
■ **Jill Moser, Research Chemist and Lead Scientist, US Department of Agriculture, Agricultural Research Service, *JAOCS*, Senior Associate Editor**



"…bench-scale tests need to be developed that emulate real-life conditions of oxidation and friction and these new lubricants have to be tested in these bench tests and results compared to real-life operating conditions. AOCS plays a key part in this. Once we come up with these draft test procedures (and instrument prototypes), numerous volunteers will run round-robin testing to check on the plausibility, accuracy, repeatability and reproducibility of these new test techniques before they become official test methods."

■ **Dr. Raj Shah, Koehler Instrument Company, AOCS member since 1995**

AOCS
Your Global Fats and Oils Connection

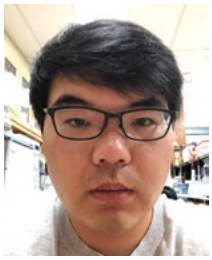

Luigi Mondello


Nuanyi Liang


Randall J. Weselake


Liping Chen


Ashwin Sancheti


Siyu Zhang


Silvana Martini


Gianfranco Mazzanti


Bingjing Zheng


David M. Klurfeld


John J. Miklavcic


Weicang Wang


Eric W. Cochran


R. Christopher Williams


Meghan E. Lamm


Zachary A. Cooper

Division Awards

Analytical

Herbert J. Dutton Award

Luigi Mondello, University of Messina, Italy

Lecture: ANA Luncheon | Monday, May 6 | 12:30 p.m. | Room 240

Student Award

Nuanyi Liang, University of Alberta, Canada

Lecture: ANA 2a | Tuesday, May 7 | 8 a.m. | Room 100

Biotechnology

Ching Hou Biotechnology Award

Randall J. Weselake, University of Alberta, Canada

Lecture: BIO 3 | Tuesday, May 7 | 4:45 p.m. | Room 101

Student Award

First place (tie):

Liping Chen, Hokkadio University, Japan

Lecture: BIO 2 | Tuesday, May 7 | 11:05 a.m. | Room 101

Ashwin Sancheti, University of Akron, USA

Lecture: BIO 1.2a/PRO 1a | Monday, May 6 | 3 p.m. | Room 104

Second place:

Siyu Zhang, University of Georgia, USA

Lecture: BIO 4 | Wednesday, May 8 | 11:25 a.m. | Room 101

Edible Applications Technology

Timothy L. Mounts Award

Silvana Martini, Utah State University, USA

Lecture: EAT 2 | Tuesday, May 7 | 9:40 a.m. | Room 222

Outstanding Achievement Award

Gianfranco Mazzanti, Dalhousie University, Canada

Lecture: EAT 2 | Tuesday, May 7 | 11:45 a.m. | Room 222

Student Award

Bingjing Zheng, University of Massachusetts-Amherst, USA

Poster: EAT-P | Monday, May 6 | 5:30–6:30 p.m. | Hall 1

Health and Nutrition

Ralph Holman Lifetime Achievement Award

David M. Klurfeld, USDA-ARS, Human Nutrition, USA

Lecture: H&N 4 | Wednesday, May 8 | 11:25 a.m. | Room 221

New Investigator Research Award

John J. Miklavcic, Chapman University, USA

Lecture: H&N 1 | Monday, May 6 | 2 p.m. | Room 221

Student Award

Weicang Wang, University of Massachusetts-Amherst, USA

Lecture: H&N 4 | Wednesday, May 8 | 11:05 a.m. | Room 221

Industrial Oil Products

ACI/NBB Glycerine Innovation Award

Eric W. Cochran and R. Christopher Williams, Iowa State University, USA

Lecture: IOP 2 | Tuesday, May 7 | 11:05 a.m. | Room 102

Student Award

Meghan E. Lamm, University of South Carolina, USA

Lecture: BIO 1.1/IOP 1 | Monday, May 6 | 2 p.m. | Room 102

Phospholipid

Student Award

Zachary A. Cooper, Utah State University, USA

Poster: PHO-P | Tuesday, May 7 | 5:30–6:30 p.m. | Hall 1

Processing

Distinguished Service Award

James E. Willits, Willits Fat & Oils Consulting, LLC, USA
Recognition: PRO Luncheon | Tuesday, May 7 | 12:30 p.m.
Room 232

Surfactants and Detergents

Distinguished Service Award

Paul T. Sharko, Shell Global Solutions Inc., USA
Recognition: S&D Luncheon | Tuesday, May 7 | 12:30 p.m.
Room 230/231

Student Awards

Hans Kaunitz Award

Sarah A. Willett, University of Georgia, USA
Lecture: EAT 1 | Monday, May 6 | 3 p.m. | Room 222

Ralph H. Potts Memorial Fellowship

Meghan E. Lamm, University of South Carolina, USA
Lecture: BIO 1.1/IOP 1 | Monday, May 6 | 2 p.m. | Room 102

Lipid Chemistry and Nutrition Award

Marnie Newell, University of Alberta, Canada
Lecture: PHO 1 | Monday, May 6 | 4:05 p.m. | Room 106

Lipid Processing and Biotechnology Award

Ruojie Zhang, University of Massachusetts-Amherst, USA
Lecture: BIO 4 | Wednesday, May 8 | 10:25 a.m. | Room 101

AOCS Foundation

Manuchehr (Manny) Eijadi Award

Longkai Shi, Jiangnan University, China
Lecture: LOQ 3b | Tuesday, May 7 | 4:45 p.m. | Room 103

Honored Student Award

Sampson Anankanbil, Aarhus University, Denmark
Lecture: BIO 4 | Wednesday, May 8 | 11:45 a.m. | Room 101

Hongbing Fan, University of Alberta, Canada
Lecture: PCP 2a | Tuesday, May 7 | 8 a.m. | Room 220

Anabella S. Giacomozzi, Universidad Nacional del Sur, Argentina
Poster: EAT-P | Monday, May 6 | 5:30–6:30 p.m. | Hall 1

Longkai Shi, Jiangnan University, China
Lecture: LOQ 3b | Tuesday, May 7 | 4:45 p.m. | Room 103

Weicang Wang, University of Massachusetts-Amherst, USA
Lecture: H&N 4 | Wednesday, May 8 | 11:05 a.m. | Room 221

Minwei Xu, North Dakota State University, USA
Lecture: LOQ 4a | Wednesday, May 8 | 8:20 a.m. | Room 103

Junsi Yang, University of Nebraska-Lincoln, USA
Lecture: EAT 2 | Tuesday, May 7 | 12:05 p.m. | Room 222

Peter and Clare Kalustian Award

Sampson Anankanbil, Aarhus University, Denmark
Lecture: BIO 4 | Wednesday, May 8 | 11:45 a.m. | Room 101

Thomas H. Smouse Memorial Fellowship

Zipei Zhang, University of Massachusetts-Amherst, USA
Lecture: EAT 1.1/H&N 1.1 | Monday, May 6 | 4:05 p.m. | Room 223


James E. Willits

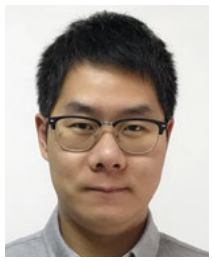

Paul T. Sharko


Sarah A. Willett

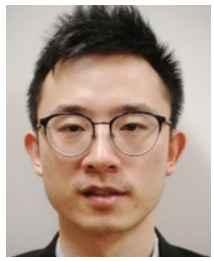

Meghan E. Lamm


Marnie Newell

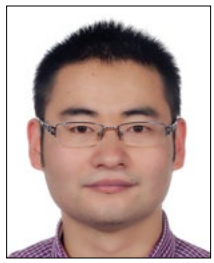

Ruojie Zhang


Longkai Shi

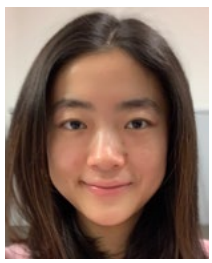

Sampson Anankanbil


Hongbing Fan


Anabella S. Giacomozzi


Weicang Wang


Minwei Xu


Junsi Yang


Zipei Zhang

Join us in congratulating our AOCS award winners!

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Best Paper Awards

American Cleaning Institute (ACI) Distinguished Paper Award

New Interfacial Rheology Characteristics Measured using a Spinning-Drop Rheometer at the Optimum Formulation of a Simple Surfactant–Oil–Water System (*JSD* 21(5):611–623).
Ronald Marquez, Ana M. Forgiarini, Jesús Fernández, Dominique Langevin and Jean-Louis Salager

Recognition: S&D Luncheon | Tuesday, May 7 | 12:30 p.m.
Room 230/231

Archer Daniels Midland (ADM) Award for Best Paper in Protein and Co-Products

Chemistry/Nutrition Category

Stability and Bioavailability of Curcumin in Mixed Sodium Caseinate and Pea Protein Isolate Nanoemulsions (*JAOCS* 95(8):1013–1026).
Manispuritha Yerramilli, Natalie Longmore and Supratim Ghosh

Recognition: PCP Dinner | Tuesday, May 7 | 7 p.m. | Mango Peruvian

Engineering/Technology Category

Changes in Corn Protein Content During Storage and Their Relationship with Dry Grind Ethanol Production (*JAOCS* 95(8):923–932).
Divya Ramchandran, Mila P. Hojilla-Evangelista, Stephen P. Moose, Kent D. Rausch, Mike E. Tumbleson and Vijay Singh

Recognition: PCP Dinner | Tuesday, May 7 | 7 p.m. | Mango Peruvian

Edwin N. Frankel Award for Best Paper in Lipid Oxidation and Quality

Iron-Catalyzed Reaction of γ-Tocopherol with Methyl Linoleate Hydroperoxides in Solutions (*JAOCS* 95(3):361–369).
Ryo Yamauchi, Tomomi Kinoshita and Satoshi Iwamoto

Recognition: LOQ Dinner | Tuesday, May 7 | 7 p.m. | Lucas Park Grille

Phospholipid Division Best Paper Award

New Phenophospholipids Equipped with Multi-functionalities: Regiospecific Synthesis and Characterization (*Journal of Colloid and Interface Science* 523(2018):169–178).
Sampson Anankanbil, Bianca Pérez, Chiranjib Banerjee and Zheng Guo

Lecture: PHO Dinner | Monday, May 6 | 7 p.m. | Room 232

Laboratory Proficiency Program Awards

AOCS' Laboratory Proficiency Program is 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 Program winners is available on aocs.org/series.

Thank you

AOCS Corporate Members

As of March 14, 2019

PLATINUM

AAK
Archer Daniels Midland Co
Bunge Loders Croklaan
Cargill Inc
Louis Dreyfus Co
Novozymes
Richardson International

GOLD

Artisan Industries Inc
Clariant (Mexico) SA de CV
Colgate-Palmolive Co
Crown Iron Works Co
Dallas Group of America Inc
Desmet Ballestra
Kao Corp
Oil-Dri Corp of America
Organic Technologies
Solex Thermal Science Inc
Stratas Foods

SILVER

Ag Processing Inc
Alfa Laval Inc
Anderson International Corp
Arisdyne Systems, Inc
BASF Corp
Bruker Optics Inc
Buss ChemTech AG
Canola Council of Canada
Catania Oils
Church & Dwight Co Inc
CI SIGRA SA
Clorox Co
Colonial Chemical Inc
Corbion
DuPont Nutrition & Health
EP Minerals LLC
Eurofins
Evonik Corp - Household Care
Farmet AS
French Oil Mill Machinery Co
Hershey Co
HF Press + LipidTech
Huntsman Corp
Intertek USA Inc
Kalsec Inc
Kemin Industries Inc
LEEM Filtration
Lion Corp
Lipsa SA
Nisshin OilliO Group Ltd
Plus Group
POS Bio-Sciences
PQ Corp
Procter & Gamble Co
Spectral Service AG
Viterra Inc
Young Living Essential Oils

Corporate Member Lounge hours

Sunday, May 5 | 5–7 p.m.
Monday, May 6 | 7 a.m.–5 p.m.
Tuesday, May 7 | 7 a.m.–5 p.m.
Wednesday, May 8 | 7 a.m.–1 p.m.

BRONZE

American Emu Association
American Lecithin Co
ANKOM Technology Corp
Arkema Inc
Avanti Polar Lipids Inc
Avatar Corp
Bioriginal Food & Science Corp
Botanic Innovations LLC
Caldic Canada Inc
Canadian Food Inspection Agency
Carbon Chemistry Ltd
Caribbean Products Co Ltd
Carribex SA
Center for Testmaterials BV
Croda Europe Ltd
Croll Reynolds Co Inc
Crystal Filtration Co
Darling Ingredients Inc
DuPont Co
DuPont Nutrition & Health
Epax Norway AS
Fuji Vegetable Oil Inc
GC Lipids
Golden Agri-Resources Ltd
Goulston Technologies
Hudson Tank Terminals Corp
Industrial de Oleaginosas SA de CV
Integro Foods Australia Pty Ltd
Intermed Sdn Bhd
Iranian Vegetable Oil Industry Assn
ITS Testing Services (M) Sdn Bhd
Kuala Lumpur Kepong Bhd
Larodan AB
Liberty Vegetable Oil Co
Lovibond North America
Lovibond Tintometer
Modern Olives
MSM Milling PL
Myande Group Co Ltd
Nippon Yuryo Kentei Kyokai
Nutriswiss AG
Pattyn Packing Lines NV
Peerless Holdings Pty Ltd
Perimondo
Perry Videx LLC
Pompeian Inc
Rothsay
Sanmark Ltd
SGS South Africa (Pty) Ltd
Silverson Machines Ltd
Simmons Grain Co
Sunset Olive Oil
Thanakorn Vegetable Oil Prods Co Ltd
TMC Industries Inc
Tsuno Food Industrial Co Ltd
Wilmar International Ltd

Is your company missing from this list?

Learn about the corporate advantage at the Corporate Lounge in the exhibit hall or contact Christina Morley (christina.morley@aocs.org).

FEATURED SESSIONS

FS 1: Opening Celebration: The Gateway to the Future of Our Industry

Sunday, May 5 | 4–5:30 p.m. | Ferrara Theatre

In addition to the keynote speaker, AOCS President Len Sidisky and AOCS President-elect Eric Decker will recognize Society Award winners.

Plenary lecture sponsored by QUALISOY

PLENARY LECTURE

Formulating Great Science Stories

Ainissa G. Ramirez, Ph.D., Science Evangelist, USA

The world is at a crossroads. There are two groups: Those who know science and those who don't. One way to build a bridge between these groups is with stories. With the telling of stories, the impact, benefits, and challenges of science can be expressed in an accessible way. With the telling of stories, more children will come to understand science, will embrace science, and will potentially want to participate in science. This talk challenges audience members to tell better science stories. This presentation will show the elements of a great story and share the human side of science.

Ainissa G. Ramirez, Ph.D. is a science evangelist who is passionate about improving the public's understanding of science. Dr. Ramirez received her training in materials science and engineering from Brown University (Sc.B.) and Stanford University (Ph.D.) and was a research scientist at Bell Laboratories, Lucent Technologies, in Murray Hill, New Jersey where she did award-winning research. Dr. Ramirez has authored more than 50 technical papers, holds six patents and has presented her work worldwide. Most recently, Dr. Ramirez was an Associate Professor of Mechanical Engineering & Materials Science at Yale University.

FS 2: AOCS Governing Board Town Hall

Monday, May 6 | 7:15–7:45 a.m. | Room 100

Want to know more about AOCS? Join us for an informal get-together with AOCS Governing Board members to learn about our strategic initiatives. In addition to conducting routine business of the Society, President Len Sidisky will share his perspective on this past year.

FS 3: Career Management & Networking Techniques: A guide to strategic partnership with recruiters

Monday, May 6 | 8–9 a.m. | Room 221

Opening Presentation

Lowell Isom and Ken Bopp, Hollander Horizon International, USA

Upon completion of this session, you will have the skills to proactively manage your career through effective networking, self-promotion, and resume writing. In addition, you will gain knowledge in the areas of effective interview preparation, social media best practices, and strategic partnering with an executive recruiter — both for your own career and for building your technical teams. 60-minute breakout sessions at 9 a.m., 11 a.m. and 2 p.m. will provide time to speak with a seasoned Executive Recruiter in a small group format. This is your opportunity to ask questions, engage one-on-one and gain specific insight into the career management process. We will provide an "open book" to the entire recruiting process.

LOWELL ISOM
Executive Recruiter & Managing Partner for HHI Search

A scientist by education with an M.S. in Food Microbiology along with 23+ years in the consumer food industry, Lowell held R&D leadership roles at Abbott Laboratories (Scientist), Kraft Foods (Manager), DuPont/Solae (Director) and General Mills (Director). He transitioned to the talent acquisition industry in 2006 and has spent the last 13 years as an Executive Recruiter for HHI Search. In 2012, Lowell assumed ownership of HHI Search as Managing Partner and continues to service the food industry by recruiting the future in technology.

KEN BOPP
Executive Recruiter & Resourcing Director for HHI Search

A scientist by education with a B.S. in Biology along with 18+ years in the consumer food industry, Ken held R&D Leadership roles with DuPont/Solae (Technology Manger), The Dannon Company (Director) and Kraft Heinz (Director) and joined HHI Search in 2016, bringing years of product development and management experience within the food industry. Ken has extensive experience recruiting, hiring and developing talent both within the industry and now as an Executive Recruiter for HHI Search.

FS 4: The OLEUM project advancements for a global strategy to guarantee olive oil quality and fight fraud

Monday, May 6 | 7:55–10 a.m. | Room 222

Organizers: Tullia Gallina Toschi, Department of Agricultural and Food Sciences, Alma Mater Studiorum – Università di Bologna, Italy; and Luisito Cercaci, Pompeian Inc., USA.

Session is sponsored in part by POMPEIAN

The EU H2020 OLEUM project aims to better guarantee olive oil quality and authenticity by improving detection and fostering prevention of olive oil fraud. To solve the actual gaps, thus enhancing the competitiveness of the OO market both within and outside the EU, OLEUM is developing innovative and revising existing analytical methods, sharing relevant results (OLEUM Databank) and establishing a wide community of institutions involved in the olive oil sector (OLEUM Network).

In this session the advancements towards the full validation of innovative analytical methods and reference materials, as well as their proposal to regulatory bodies, will be presented. A panel discussion will be included at the end of the session for starting an active discussion with the involvement of the public on the most relevant presented topics, with a special emphasis on the actual situation of the olive oil sector in the USA.

7:55 a.m. **Opening Remarks.**
8 a.m. **Olive Oil: from Different Processing to Different Regulatory Frameworks. How to Ensure its Quality and Authenticity at a Global Level? Challenges, Gaps and Improvements Proposed by the OLEUM Project.** Tullia Gallina Toschi, Alma Mater Studiorum – Università di Bologna, Italy.
8:20 a.m. **Volatile Compounds as Useful Markers for the Quality Assessment of Virgin Olive Oils.** Diego Luis García González, Instituto de la Grasa, Spain.
8:40 a.m. **Use of NMR Technique in the OLEUM Project.** Torben Kuechler, Eurofins, Germany.
9 a.m. **The OLEUM Databank: A Reference Repository for Olive Oil Quality and Authenticity.** Alain Maquet, JRC - Joint Research Centre, Belgium.
9:20 a.m. **The US Experience on Olive Oil Production and Quality.** Juan Polari, UC Davis Olive Center, USA.
9:40 a.m. **Panel Discussion, Q&A.**

FS 5: Healthy Oils at the Heart of Personalized Medicine

Monday, May 6 | 10:20 a.m.–12:25 p.m. | Room 221

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

New capabilities in epigenetics, nutrigenomics and a growing understanding of the human microbiome are paving the way for increased consumer demand for personalized nutrition. This session will explore new research that is showing the benefits of unsaturated fats in various dietary patterns and how specific fatty acids are providing different benefits to different individuals. We will also discuss how plant genetics is helping the industry meet the demand for healthier ingredients and how the industry is meeting the evolving demands from consumers. Fats and oils provide about one third of our calories and are a key ingredient in most processed products. It is essential to better understand the role oils can play in developing healthier, more personalized products for the future.

10:20 a.m. **Opening Remarks.**
10:25 a.m. **Heart Health and Beyond: The Latest Research on Fatty Acids.** Kristina Petersen, Department of Nutritional Sciences, Pennsylvania State University, USA.
10:45 a.m. **Use of Epigenetics to Identify the Role of Fatty Acids in Personalized Nutrition.** Iwona Rudkowska, Department of Kinesiology, Laval University, Canada.
11:05 a.m. **How Advances in Plant Genetics Will help Industry Meet the Challenge for Healthier Ingredients.** Zhan-bin Liu, PhD, Senior Research Scientist, Trait Discovery, Corteva Agriscience, USA.
11:25 a.m. **Meeting Consumer Expectations for Healthier Products.** Susan Knowlton, DuPont Pioneer, USA.
11:45 a.m. **Panel Discussion, Q&A.**

FS 6: Ingredient Transparency

Monday, May 6 | 10:20 a.m.–12:25 p.m. | Room 220

Organizers: Michael Williams, Alkoxylation Technology, Evonik Corporation, USA and Kathleen Stanton, Technical & Regulatory Affairs, American Cleaning Institute, USA.

Transparency is one of the current key issues surrounding new material development for formulated products, and complex due to the necessary balance of companies protecting their intellectual property and the consumers' right to know about what they are using as part of their daily routines. There are government and non-government activities surrounding this work, and currently there are two US states with regulations related to cleaning product transparency; other states may soon follow suit. Not only are the consumers becoming more concerned with product ingredients — spurring voluntary certification programs, including USEPA Safer Choice, Green Seal and Ecologo — but retailers are demanding more transparency. How are we going to meet these needs?

10:20 a.m. **Opening Remarks.**
10:25 a.m. **SmartLabel® Transparency Initiative.** Julie Savoie, Grocery Manufacturers Association, USA.
10:45 a.m. **Cleaning Product Ingredient Communication Initiatives.** Jacob Cassady, American Cleaning Institute, USA.
11:15 a.m. **US EPA's Safer Choice Program.** Clive Davies, United States Environmental Protection Agency, USA.
11:35 a.m. **Panel Discussion, Q&A.**

What session cannot be missed?

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FS 7: AOCS Technical Services Available to Serve You

Monday, May 6 | 10:20 a.m.–12:25 p.m. | Room 222
Organizers: Technical Services Department, AOCS, USA

AOCS has a long history of providing services to our members and the fats, oils, proteins and surfactants industries. This session presents details on what the AOCS Technical Department has to offer:

- The steps that new methods must take to be validated and included in the AOCS methods collection.
- An overview of the analytical methods currently undergoing the steps required to became AOCS Official Methods.
- Recent changes to the AOCS Laboratory Proficiency Program (LPP) and the benefits of participation.
- Upcoming new LPP series.
- Approved Chemists.
- Quality Reference Materials.
- How a report in our LPP is generated and how to interpret the results.
- AOCS' ISO 17034 accredited GMO Certified Reference Materials (CRMs) program, including the need, users, and impact on commerce of GMO CRMs.
- The work carried out by AOCS with other agencies, such as Codex Alimentarius and the International Organization for Standardization.

10:20 a.m. **Opening Remarks.**
10:25 a.m. **The AOCS Method Validation Process.** Anthony Miller, AOCS, USA.
10:45 a.m. **New AOCS Methods in the Pipeline.** Scott Bloomer, AOCS, USA.
11:05 a.m. **The AOCS Laboratory Proficiency Program — 100 Years Young.** Dawn Shepard, AOCS, USA.
11:25 a.m. **The Interpretation of a Proficiency Test Report.** Xin Wu, AOCS, USA.
11:45 a.m. **AOCS Cooperation with Other Agencies.** Michael Sussman, USDA, AMS, LP, AAD, USA.

FS 8: Sterols Symposium, featuring the Schroepfer Medal Award Lecture

Monday, May 6 | 1:55–5:25 p.m. | Room 100
Chairs: Jill Moser, USDA, ARS, NCAUR, USA; and Laura Nyström, ETH Zurich, Switzerland

1:55 p.m. **Introduction**

AOCS SCIENTIFIC AWARD WINNER

2:00 p.m. **Chemical Biology of Phyla-specific Steroidal Antimetabolites Functioning as Suicide Inhibitors.** W. David Nes*, *Texas Tech University, USA* ***(Schroepfer Medal Award Winner)***

2:25 p.m. Coffee Meet & Greet with the award winner

2:40 p.m. **The Central Role of HMG-CoA in Plant Metabolism and Phytosterol Synthesis.** Thomas Bach*, *Institut de Biologie Moléculaire des Plantes (CNRS), Université de Strasbourg, France*
3:00 p.m. **Semi-synthetic Cholesterol from Diosgenin and NMR Analysis of Minor Impurities.** Shengrong Li, Avanti Polar Lipids, USA
3:20 p.m. **Networking Break**
3:40 p.m. **Welcome Back**
3:45 p.m. **High Resolution Mass Spectrometry for Identification of Plant Sterols and their Glycosides.** Laura Nyström, *ETH Zurich, Switzerland*
4:05 p.m. **Sterol Composition is Critical for Protein Partitioning in the Plasma Membrane.** Kathrin Schrick, *Kansas State University, USA*

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TECHNOLOGY Fast Track

Hall 1 - Fast Track

FT 1: Monday, May 6, at 10:20–11:20 a.m.

What Does an Armadillo Have to do with Oil Analysis? Keit, Dr. Jonathon Speed

An Independent State-of-the-Art Pilot and Demonstration Facility for Bio-based/Biotech Products and Processes. Bio Based Europe, Hendreick Waegeman

How to Save More than $5 USD Per Metric Ton in Refining. Arisdyne, Darren Litle

Your One-Stop Solution for Dioxins and POPS. Thermo Fisher Scientific, Deepali Mohindra

Non-GMO Food Emulsifiers & Specialty Fats-Musim Mas Group. ICOF America, James Jasko

Strengthening your Quality System with Outside Laboratory Services. ATC Scientific, Scott Schuldt

Technology Provider for the Edible Oil Industry. Desmet Ballestra, Orayne Mullings

FT 2: Monday, May 6, at 4:30–5:30 p.m.

Our Industry Innovation and Expertise. Kalsec, Jane Quartel

VELP Oxitest: Accelerated Lipid Oxidation for the Determination of Stability of Edible Oils. Velp, Konrad Kozdra

Porous Metal Technology for Hydrogenated Oils. Mott Corp., Patrick Hill

How a Centrifuge Drive can Improve your TCO. GEA, Patrick Schuermann

Innovative Automation Solutions for Your R&D Workflow. Chemspeed, Stephen Zigari

A Short Path to Success. LCI Corporation, Matthias Montgomery

FT 3: Tuesday, May 7, at 10:20–11:20 a.m.

Secondary Alcohol Ethoxylates-Process and Applications Revisited. Jiangsu Secol Chemical, Alex Cui

The Turbid World of Turbidity: Let's Clear Some Things Up. Optek-Danulat, Jeff Lukas

Eliminate Silica Gel and Optimize Bleaching Earth Consumption with Cellulose Adsorbents. J. Rettenmaier, Ian Kay

Benefits of Incorporating Silica Technology in Edible Oil Refining. PQ Corporation, John McNichol

An Extraction Solvent for Vegetable Oils. Phillips66, Russell Boone & Gustavo Bracho

Process Optimization in Oil and Fat Refining. DVC, Mr. D V Chame

Innovation in Efficiency: The Bühler OLCC Cracking Mill. Bühler, Inc., Dan Lundt

FT 4: Tuesday, May 7, at 4:30–5:30 p.m.

Energy Optimization in Soybean Conditioning. Solex, Mahamed Abid

Spent Bleaching Earth Risk Management: 3 Tips to Reduce Potential to Smolder. EP Engineered Clay Corp., Jorge Bello

Bleaching Cost. Clariant, Raul Padilla

The Proper Care and Handling of Pressure Leaf Filter Leaves. Filtration Group, Carl Berthold

Pre-Treatment for Renewable Diesel Production. Alfa Laval, William Younggreen

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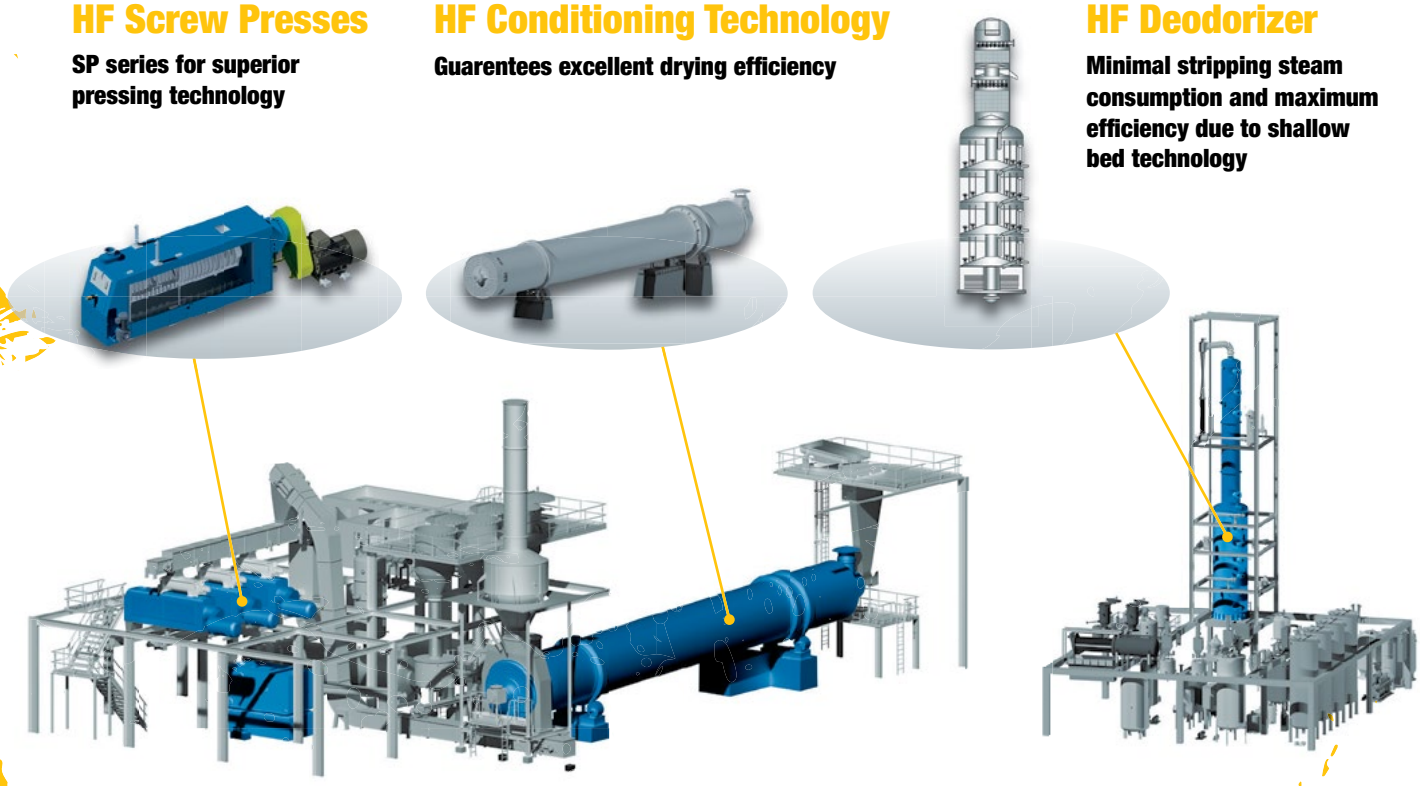

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PRE-MEETING COURSES

Fundamentals of Edible Oil Processing

Saturday, May 4 | 8 a.m.–5:30 p.m. | Room 100
Organizer: Sefa Koseoglu, Filtration and Membrane World LLC, USA

This program offers an overview of oils and fats chemistry, processing steps and product development as related to product quality.

Fundamentals of Oils and Fats.
Ignace Debruyne, ID&A, Belgium.
Edible Oil Refining Technologies.
William Younggreen, Manager, USA and Canada, Edible Oil Systems, Alfa Laval Inc., USA.
Filtration of Edible Oils: Options, Optimization, and Economy.
Lawrence Low, Business Development Manager, PMI, Malaysia.
State of the Art in Edible Oil Fractionation.
Véronique Gibon, Desmet Ballestra Belgium.
Mechanism of Oxidation and Oil Quality Management in Frying and Cooking Oils.
Ignace Debruyne, ID&A, Belgium.
Bleaching Basics and Practical Optimization.
David Brooks, Oil-Dri Corporation of America, USA.
Fundamentals of Emulsions and Emulsifiers.
Kaustuv Bhattacharya, DuPont Nutrition & Health, Denmark.
Opportunities of the 2-Step Pressing Process (Screw Presses).
Maik Bille, Technical Director, HF Press+LipidTech, Germany.
Press Oil Clarification Process and Decanter-Technology.
Patrick Schürmann, GEA Westfalia Separator Group GmbH, Germany.
Deodorization of Edible Oils.
Paulo Telles Moraes, CPM Crown Iron Works, USA.
Solutions to Typical Problems in Refining.
Paulo Telles Moraes, CPM Crown Iron Works, USA.
Hydrogenation of Oils and Fats.
Radu Craciun, Technology Manager Hydrogenation and Specialty Catalysts – Americas, BASF Corporation, USA.

New Techniques in Edible Oil Processing and Refinery Optimization

Sunday, May 5 | 9 a.m.–5 p.m. | Room 100
Organizer: Sefa Koseoglu, Filtration and Membrane World LLC, USA

This short course offers the opportunity for those who are experienced to meet experts in the field to discuss their current problems and enhance their product innovation or plant operation.

The Advantages of Nano-neutralization in Oil Refining.
Leon Pablo Espinosa, Desmet Ballestra North America, USA.
Process Changes Needed to Implement Cavitation Technology and Review of New Applications.
Darren Litle, Arisdyne Systems, USA.
How a Large Reflex Extractor Can Obtain Low ROC on Soya Flakes/Expandates.
Adolfo Subieta, Desmet Ballestra North America, USA.
Trends in Development and Operation of Centrifuges in Edible Oil Processing.
Birger Horns, GEA Westfalia Separator Group GmbH, Germany.
Specialty Extraction of Non-Traditional but Higher Value Products.
Richard Ozer, CPM Crown Iron Works, USA.
High Quality Lecithin Production with Crude Oil and Miscella Clarification.
Birger Horns, GEA Westfalia Separator, Germany.
Influence of Processing Parameters on the Quality of Lamination Margarine.
Miroslav Buchmet, DowDuPont Specialty Products (DuPont) Division, Denmark.
Achieving Better TCO in Edible Oil Refining.
Raul Padilla, Clariant Mexico, USA.
Latest Development in Deodorization.
Wim De Greyt, Desmet Ballestra, Belgium.
Techniques for Mitigation of 3MCPD and GE in Oil Refining.
William Younggreen, Edible Oil Systems, Alfa Laval Inc., USA.
Microencapsulation of Oils and Fats.
Sefa Koseoglu, Bioactives World Forum, USA.

2019 AOCS Lipids School on Lipids and Skin Health

Sunday, May 5 | 1–4 p.m. | Room 105
Organizers: AOCS Health and Nutrition Division

Sponsored in part by Cargill R&D Centre Europe BVBA and Nestlé Skin Health.

Cargill

Nestlé Skin Health
Investigation, Education, Longevity Development
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The goal of this workshop will be to provide an informative experience on basic and advanced information on skin physiology and health and the impacts of nutrition and lipid metabolism.

Presenters include:

- Anne Lynn S. Chang, Associate Professor of Dermatology, Stanford University School of Medicine, USA.
- Anna Nicolaou, Professor of Biological Chemistry, The University of Manchester, UK.
- Apostolos Pappas, Head of Programs Nestlé Skin Health SHIELD Lausanne, Nestlé, Switzerland.

Interested in helping plan this and other Health and Nutrition Division events? Attend the 2020 Technical Session Development meeting to get involved and provide your innovative ideas. See page 17 for meeting details.

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Schedule

Sunday, May 5	**5:30–7 p.m.**	**Expo and Poster Viewing**	
	5:30–7 p.m.	President's Reception — Welcome to St. Louis!	*Sponsored by* BASF We create chemistry
Monday, May 6	**10 a.m.–6:30 p.m.**	**Expo and Poster Viewing**	
	10–10:20 a.m.	Networking Break	*Sponsored by* QUALISOY INNOVATE. COLLABORATE. ADVANCE.
	10:20–11:20 a.m.	Technology Fast Track	
	Noon–2 p.m.	Lunch concessions available	
	3:20–3:40 p.m.	Networking Break	*Sponsored by* Air Liquide ENGINEERING & CONSTRUCTION
	4:30–5:30 p.m.	Technology Fast Track	
	5:30–6:30 p.m.	Happy Hour Reception	*Sponsored by* Oil-Dri FLUIDS PURIFICATION
Tuesday, May 7	**10 a.m.–6:30 p.m.**	**Expo and Poster Viewing**	
	10–10:20 a.m.	Networking Break	*Sponsored by* EVONIK POWER TO CREATE
	10:20–11:20 a.m.	Technology Fast Track	
	Noon–2 p.m.	Lunch concessions available	
	3:20–3:40 p.m.	Networking Break	*Sponsored by* DMC
	4:30–5:30 p.m.	Technology Fast Track	
	5:30–6:30 p.m.	Happy Hour Reception	*Sponsored by* KEMIN
Wednesday, May 8	**10 a.m.–1 p.m.**	**Expo and Poster Viewing**	
	10–10:20 a.m.	Networking Break	*Sponsored by* PATTYN

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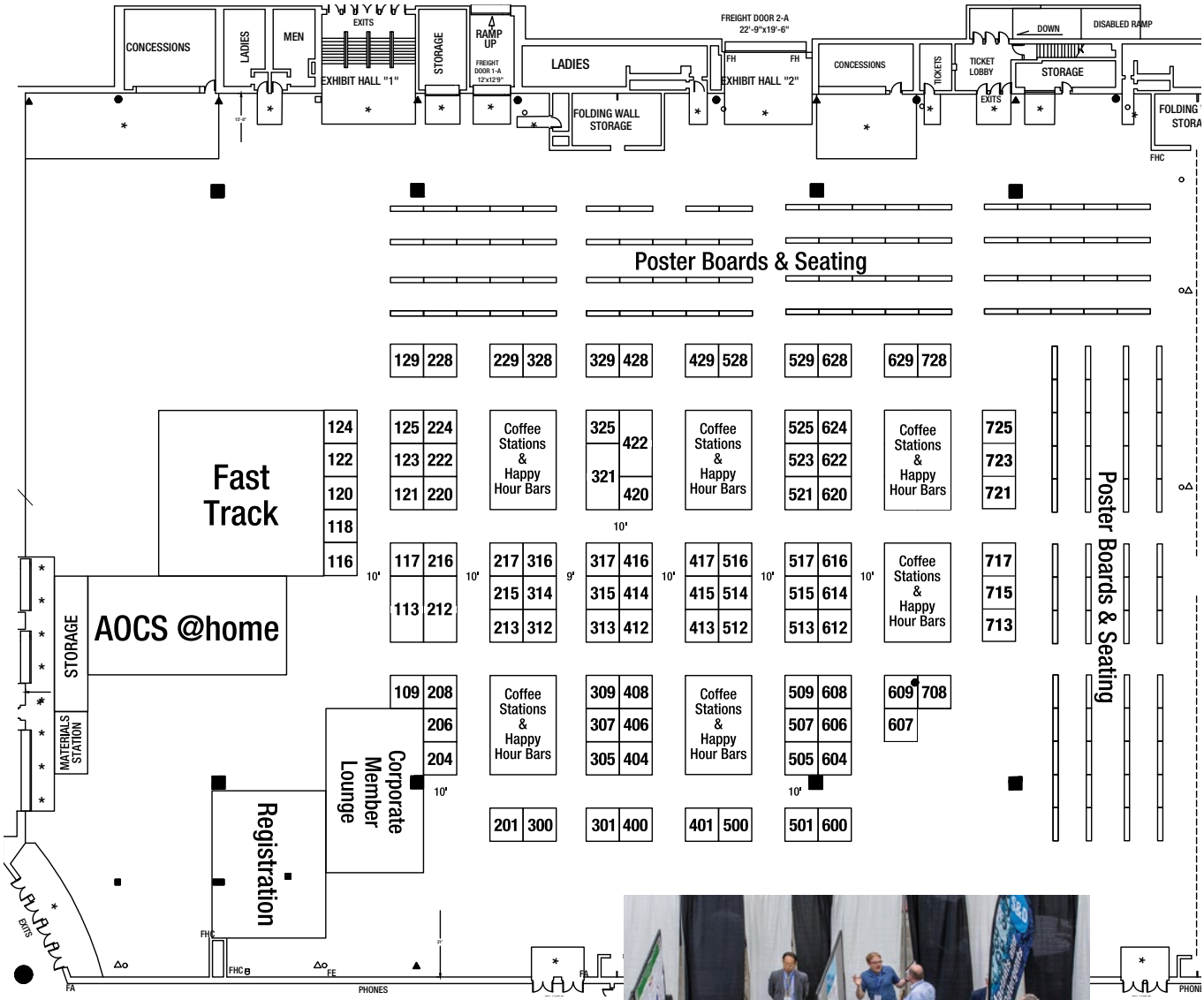

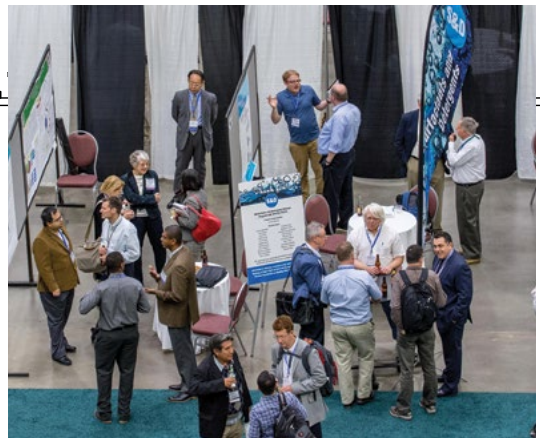

Colorful flags throughout the expo hall feature the names of AOCS' 10 interest areas. Gather near a flag to connect with colleagues who share your scientific and technological interests!

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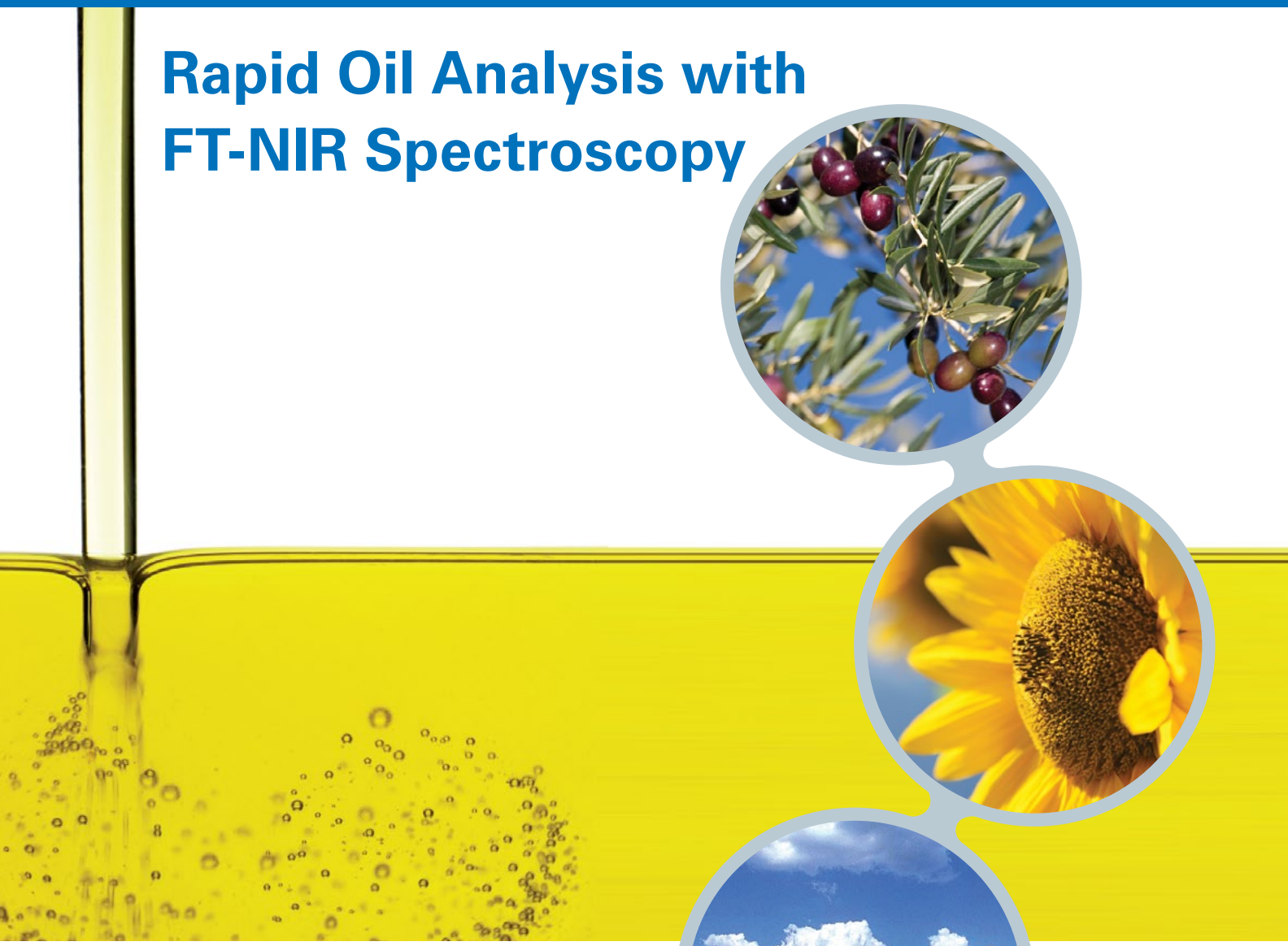

Bruker's FT-NIR systems cover every phase of edible oil production and their use in finished products:

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- Quality control of finished oils and blends
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Innovation with Integrity

Applied Spectroscopy

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gerstenbergs.com

Grace (606)

grace.com

Hanna Instruments (406)

hannainst.com

HF Press+LipidTech (216)

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.

ICOF America (204)

musimmas.com

MUSIM MAS GROUP: Headquartered in Singapore, our business is involved with every part of the palm oil supply chain: from managing plantations and mills to refining crude palm oil and manufacturing palm-based product, supported by an extensive fleet of ships that enhance our logistical capability. ICOF AMERICA is a member of the Musim Mas Group and their marketing arm in North America.

Imerys Filtration (609)

imerys-filtration.com

InConProcess Systems – GIG Karasek (121)

ips-gigk.com

Itaconix Corporation (525)

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J. Rettienmaier USA (528)

jrsusa.com

J. Rettenmaier is the global leader in research, development and processing of natural fibers derived from vegetable raw materials. As part of the ARBOCEL®, VITACEL® and FILTRACEL brand lines, these natural fibers are optimized as filter aids and substrates for added adsorbent functionality, suitable for the edible oil refining and biodiesel industries.

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LCI Corporation (formerly Luwa Corporation) has been providing high-quality Evaporation, Drying and

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Leem Filtration (417)

leemfiltration.com

Louisville Dryer Company (129)

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Lovibond Tintometer, Inc. (224)

lovibond.com

Malaysian Palm Oil Board (404)

mpog.gov.my

Metrohm USA (507)

metrohm.com

Mott Corporation (621)

mottcorp.com

Mott Corporation is a high precision filtration and flow control company trusted by the world's best known technical and performance brands. Often, our customers have no effective options to solve their challenging problems. Our strategic vision is to deliver technological breakthroughs where none currently exist.

Myande Group Co., Ltd. (312)

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Myande Group (China) specializes in providing oils and fats processing machinery and its engineering services on turnkey basis, including process design, equipment manufacturing and supply, project management, installation, commissioning, and training service, etc.

Nanoscience Instruments (629)

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The Nisshin Oillio Group, Ltd. (513)

nisshin-oillio.com

Winner of the AOCS Corporate Achievement Award!

The Nisshin OilliO Group, Ltd., is a leader in the oils and fats and meals manufacturing industry in Japan. It is committed to pursuing enhanced health and well-being through business operations in oils and fats and meals, healthy foods, and fine chemicals. With its 110 years of experience, Nisshin OilliO strives to develop new ways to use "the natural power of plants" to offer a wide range of products for nutritional, functional and tasty solutions across the "healthspan" of the global population. Its medium-chain triglyceride (MCT) raw material/ingredients and food products are some of the fruits of its cutting-edge nutritional assessment and lipid structuring technology.

Oil Dri Corporation of America (217)

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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.

Oil & Fats International (Quartz Business Meia) (118)

ofimagazine.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.

Optek-Damlot, Inc. (413)

optek.com

Pattyn North America, Inc. (213)

pattyn.com

SPONSOR

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

Perkin Elmer (725)

perkinelmer.com

Phillips 66 (125)

phillips66.com

PMI-Technology Sdn Bhd (401)

pmi-group.com

PQ Corporation (428)

pgcorp.com

PQ's SORBSIL® silica improves oil quality and offers process cost savings to the refiner. The silica removes phospholipids, metals and soaps via selective adsorption in edible oil and biodiesel production. SORBSIL® oil purifiers meet all regulatory requirements for food-grade silica. PQ SORBSIL® oil purifiers: silica for enhanced oil quality.

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Sasol Performance Chemicals (422)
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Sasol's Performance Chemicals markets a broad portfolio of organic and inorganic commodity and specialty chemicals. Our four key business divisions are Organics, Inorganics, Wax and PCASG (Phenolics, Carbon, Ammonia and Specialty Gases). Our key products include surfactants, surfactant intermediates, fatty alcohols, linear alkyl benzene (LAB), short-chain linear alpha olefins, ethylene, mineral oil-based and synthetic paraffin waxes, cresylic acids, high-purity alumina, and many other products.

Shimadzu Scientific Instruments, Inc. (628)
ssh.shimadzu.com

Solex Thermal Science Inc. (309)
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Solex Thermal Science, Inc., specializes in the science of heating, cooling and drying of 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.

Solutions 4 Manufacturing (420)
s4mequipment.com

SPX Flow Technology Danmark A/S (123)
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Spex Certiprep (429)
specertiprep.com

ST Equipment & Technology (622)
steqtech.com

Stratas Foods-RDI Center (415)
stratasfoods.com

Technochem international, Inc. (124)
technochemic.com

Testfabrics, Inc. (300)
testfabrics.com

Thermo Fisher Scientific (117)
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Thermo Fisher Scientific™ is a leader in the food and beverage testing industry. Food quality and safety are two of the most challenging issues in the current regulatory environment. Whether you are testing for contaminants or developing a new product, we have the solutions to meet your need.

TNL Tecnal (517)
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Experts in Vacuum for Science

Vacuubrand, Inc. (509)
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VACUUBRAND offers exceptionally quiet, corrosion-resistant, oil-free vacuum pumps and vacuum systems with ultra-long service intervals. Applications include distillation, evaporators, reactors, concentrators, filtration and drying, OEM vacuum, and roughing pumps for high-vacuum systems. Use our rotary vane pumps, low-maintenance HYBRID pumps and NEW fine-vacuum controller for effective molecular distillation of oils.

Velp Scientific Inc. (122)
velp.com

The American branch of VELP Scientifica, an Italian company with 30+ years of experience in the design, manufacture and distribution of high-quality laboratory equipment, is a key reference for lab, research centres and quality control departments worldwide. Applications range from food and feed and water analysis to stirring solutions. VELP analytical instruments include Kjeldahl & Dumas analyzers, solvent and fiber extractors, and instruments for shelf life investigation. Sample preparation instruments include BOD, COD, incubators, Jar Test, vortex mixers, overhead and heating/magnetic stirrers. TEMS technology saves Time, Energy, Money and Space, pursuing VELP's commitment to optimize ecology and economy and protect our planet.

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From our monthly #WebinarWednesday to annual meeting programming, knowing your current demographic information helps us identify the AOCS resources most relevant to you. Return your updated demographic form to the AOCS Registration counter to be entered into a drawing to win US $500.

Keep us up to date and you could win $500!

Completed forms must be turned in by noon on Wednesday, May 8. The drawing will take place during the AOCS Member and Volunteer Appreciation Luncheon, Wednesday, May 8, at 12:30 in Room 223/224. You do not need to be present to win.

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An author who submits a presentation to the Annual Meeting or other conferences must have intentions of attending, registering, and presenting at the meeting once the submission is accepted into the program. Repeated or consecutive last-minute cancellations by presenters may result in future submissions being denied.

Photography: AOCS requests that attendees not take photographs or videos during sessions because they are disruptive to the presenters. If you wish to take photographs of a presentation or poster, please contact the presenter for permission. AOCS reserves the right to use photographs and videos taken and testimonials given during any AOCS event for informational and promotional purposes.

Expected Behavior:

• Communicate openly with respect and consideration for others, valuing a diversity of views and opinions.

• Avoid personal attacks or criticism directed toward speakers, attendees, guests, staff, volunteers, exhibitors, and service suppliers.

• Turn off any ringers or otherwise disrupting devices during oral or poster sessions.

• Respect the rules and policies of AOCS, the convention center, hotels, contracted facility, and any other venue.

• Be mindful of our surroundings and your fellow participants. Alert staff if you notice a dangerous situation or someone in distress.

Unacceptable Behavior, Harassment and Safety: AOCS is dedicated to providing a safe, hospitable, and productive environment for everyone attending our events, regardless of ethnicity, religion, disability, physical appearance, gender, gender identity, or sexual orientation. It is important to remember that a community where people feel uncomfortable or threatened is neither healthy nor productive. Accordingly, AOCS strictly prohibits intimidating, threatening, or harassing conduct during our conferences. This policy applies to all conference participants, including speakers, attendees, guests, staff, volunteers, exhibitors and service suppliers. Violations of this policy should be immediately reported to the Chief Staff Executive and the AOCS Secretary.

Harassment of AOCS participants will not be tolerated in any form. Harassment includes, but is not limited to, offensive gestures or verbal comments related to ethnicity, religion, disability, physical appearance, gender, gender identity, or sexual orientation, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention.

If any conference participant engages in intimidating, threatening or harassing behavior, the AOCS Governing Board may take any action they deem appropriate, including but not limited to, a verbal warning, expulsion from this and/or future conferences, or suspension and termination of membership as provided for in Article III, Section 6 of the AOCS Bylaws.

If you are intimidated, threatened, or harassed, notice that someone else is being intimidated, threatened or harassed, or have any other concerns, please do not hesitate to contact AOCS staff who can work with appropriate AOCS leadership to resolve the situation.

AOCS will not allow retaliation against anyone who in good faith reports or assists in the investigation of intimidating, threatening, or harassing behavior.

We value your attendance, and want to make your experience as productive and professionally stimulating as possible.

Please contact Gloria Cook, gloria.cook@aocs.org, +1 (217) 693-4808 if you have any questions.

Approved by the AOCS Governing Board, May 9, 2018

Antitrust Policy

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 make certain activities between industry participants unlawful, and the Society expressly prohibits participation in such activities at any event which the Society holds or sponsors, or by any member of the Society at any event in which such member participates as a representative of the Society. Such prohibited activities include the following:

A. Non-competition, territorial division, or operationally restrictive agreements;

B. Boycotting, blacklisting, or unfavorable reporting; or

C. Discussion of these and other prohibited matters, including the following:

i. Price, price fixing, price calculation, or price changes;
ii. Costs;
iii. Terms or conditions of sales;
iv. Quote decisions;
v. Discounts;
vi. Product or service offerings; or
vii. 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.

ORAL PRESENTATIONS

Get the app! See page 6.

Presentation Information

- The presenter is identified with an asterisk (*).
- Abstracts are available online at AnnualMeeting.aocs.org/2019Resources or on the app through May 31, 2019.
- Access and print abstracts in the Computer Lab located in room 200 of the Convention Center.
- Following the meeting, select presentations will be available to AOCS members in the AOCS Premium Content Library. Visit www.informconnect.org/joinaocs for details. Many of the papers presented during the meeting may also appear in AOCS Press publications.
- Award lectures are identified with the photo of the winner or award icon. AOCS Scientific Award winners are highlighted by red lines.
- AOCS journal authors invited to present at Annual Meeting are indicated by a red ◆.

Monday Afternoon

ANALYTICAL

ANA 1a: Proposed Updates to AOCS Official Methods, including Green Chemistry

Chairs: Susan Seegers, Bunge Oils, USA; and Cynthia Srigley, US Food and Drug Administration, USA

220

1:55 **Introduction**

2:00 **Update of AOCS Ce 6-86 Antioxidants Method and an Overview of the Need for Methods Updates.** Mark W. Collison*, *Archer Daniels Midland Co., USA*

2:20 **Simultaneous GC-FID and MS Analysis of trans-Fatty Acids in Human Plasma.** Heather C. Kuiper*, Emily J. Mueller, and Hubert W. Vesper, *CDC, USA*

2:40 **The Certo Fatty Acid Extraction Method.** Adam H. Metherel*, *University of Toronto, Canada*

3:00 **Oxidation and Its Challenges: Peroxide Value Determination in Solid Non-oil Matrices.** B.J. Bench*, *Tyson Foods, USA*

ANALYTICAL

ANA 1b: Selected Analytical Presentations by the Dutton Award Winner

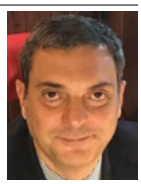
Chairs: Luigi Mondello, University of Messina, Italy; and Walter Vetter, University of Hohenheim, Germany

220

3:40 **Introduction**

3:45 **Evolution of Comprehensive Two-Dimensional Gas Chromatography for Non-Target Analysis Applications.** *John Dimandja, Georgia Institute of Technology, USA*

4:05 **Fast GC and GC×GC Approaches to Detailed Fatty Acid Fingerprinting in Natural Fats and Oils.** Luigi Mondello*, *University of Messina, Italy* ***(Herbert J. Dutton Award Winner)***



4:25 **Unexpected Reduced Peak Widths of Partly Transferred Peaks after Heartcut Two-Dimensional Countercurrent Chromatography.** Walter Vetter*, Marco Müller, Medisa Muric, and Lisa Glanz, *University of Hohenheim, Germany*

4:45 **Studies in Multidimensional Gas Chromatographic Separations for Triglyceride and Fatty Acid Analysis.** Philip Marriott*, *Monash University, Australia*

5:05 **NMR Analysis as a Tool to Ensure Authenticity of Lipids.** Torben Küchler*, *Eurofins Analytik GmbH, Germany*

ANALYTICAL

ANA 1c/PCP 1a: Protein Assessment Methods

Chairs: Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; Sneh Bhandari, Merieux NutriSciences, USA; and Denis Chereau, IMPROVE, France

105

1:55 **Introduction**

2:00 **From Protein Digestibility Corrected Amino Acid Score (PDCAAS) to Digestible Indispensable Amino Acid Score (DIAAS).** Hans H. Stein* and Hannah M. Bailey, *University of Illinois, USA*

2:20 **Protein Contents and Quality Assessment Methods in Relation to Regulations for Nutritional Labeling and Protein Claims.** Sneh Bhandari*, *Merieux NutriSciences, USA*

2:40 **How to Assess Protein Functionality?** Frederic Baudouin*, *IMPROVE, France*

BIOTECHNOLOGY

BIO 1: Biocatalysis I — Oleochemicals and Novel Bioprocesses

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

Chairs: Ching Hou, Retired USDA, USA; and Jun Ogawa, Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto University, Japan

101

1:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

2:00 **Developing Foods to Address Health Concerns throughout the Lifespan.** Kaori Nakajima*, *The Nisshin OilliO Group, Ltd., Japan* ***(AOCS Corporate Achievement Award Winner)***

2:25 Coffee Meet & Greet with the award winner

2:40 **Harnessing the Oil Palm Genome for Enhancing Fatty Acid and Carotenoid Composition.** Rajinder Singh*, Eng-Ti Leslie Low, Meilina Ong-Abdullah, Mohd Din Amiruddin, Mohamad Arif Abd Manaf, and Ghulam Kadir Ahmad Parveez, *Malaysian Palm Oil Board, Malaysia*

3:00 **Production of Palmitoleic Acid-rich Triacylglycerols by Saccharomyces cerevisiae to Control of Skin Microbiome.** Toshihiro Nagao*[1], Kazue Narihiro[2], Shimemitsu Tanaka[1], Kazuyoshi Kimura[3], Kazuhiro Yamashita[2], and Yasushi Kamisaka[4], *[1]Osaka Research Institute of Industrial Science and Technology, Japan; [2]YAEGAKI Bio-industry, Inc., Japan; [3]National Institute of Advanced Industrial Science and Technology, Japan; [4]Bioproduction Research Institute, AIST, Japan*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Molecular Breeding and Characterization of an Oleaginous fungus *Mortierella alpina* for a Prostaglandin, $PGF_{2\alpha}$, Production.** Jun Ogawa*[1], Mohd Fazli Farida Asras[2], Hideaki Nagano[2], Yoshimi Shimada[2], Miho Takemura[3], Shigenobu Kishino[4], and Akinori Ando[2], *[1]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto University, Japan; [2]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; [3]Res. Ins. Biore. Biotech., Ishikawa Pref. Univ., Japan; [4]Kyoto University, Japan*

4:05 **Co-Production of Carotenoids and Polyhydroxyalkanoates by Paracoccus sp. LL1.** Beom Soo Kim*, Prasun Kumar, Won-Gyun Oh, and Mehtab Muhammad, *Chungbuk National University, Republic of Korea*

4:25 **Gas-to-Lipids Bioprocessing by Acetogens and Thraustochytrids.** Charose M.T. Perez[1], Ran Hirotani[1], Motomu Ishigaki[1], Kenshi Watanabe[1], Yoshiko Okamura[1], Takahisa Tajima[1], Yukihiko Matsumura[1], Yutaka Nakashimada[1], Yusuke Sumita[2], Shinzo Mayuzumi[3], and Tsunehiro Aki*[1], *[1]Hiroshima University, Japan; [2]Chugoku Electric Power, Japan; [3]Idemitsu Kosan, Japan*

4:45 **Hydrolysis of Raffinose in Complex Soybean Waste by Engineered *P. chlororaphis* as Biocatalyst.** Daniel K.Y. Solaiman*, Richard D. Ashby, and Nicole V. Crocker, *USDA, ARS, ERRC, USA*

5:05 **Synthesis of Trimethylolpropane Triester Using an Immobilized Lipase in a Recirculated Packed Bed Reactor.** Heejin Kim[1], and In-Hwan Kim*[2], *[1]Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea; [2]Korea University, Republic of Korea*

BIOTECHNOLOGY

BIO 1.1/IOP 1: Biopolymers

Chairs: Richard Ashby, USDA, ARS, ERRC, USA; and Rongpeng Wang, CVC Thermoset Specialties, USA

102

1:55 **Introduction**

2:00 **Plant Oil Derived Emulsion Copolymers with Predictable Properties.** Meghan E. Lamm* ***(Ralph H. Potts Memorial Fellowship Award Winner; Industrial Oil Products Division Student Award Winner)***, Ping Li, and Chuanbing Tang, *University of South Carolina, USA*

2:20 **Corn Oil for Highly Flame-Retardant Rigid Polyurethane Foams for Industrial Applications.** Camila Zequine, Sanket Bhoyate, Brooks Neria, Pawan Kahol, and Ram Gupta*, *Pittsburg State University, USA*

2:40 **Rapid Conversion of Oils into Various Monomers and Biopolymers.** Aman Ullah*, Muhammad Arshad, Reza Ahmadi, and Liejiang Jin, *University of Alberta, Canada*

3:00 **Cationic Polymerization of Epoxidized Oils to Cast Resins and Foams.** Zoran Petrovic* and Dragana Radojcic, *Pittsburg State University, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Synthesis, Properties and Structure Function Correlation of Bioplasticizers in PVC.** Dharma R. Kodali* and Lucas J. Stolp, *University of Minnesota, USA*

4:25 **Synthesis and Characterization of Lipid-Based Biopolymers and Bionanocomposites from Poultry Industry By-Product.** Muhammad Safder*, *University of Alberta, Canada*

4:45 **Corn Stover and Levulinic Acid: Two Valuable, Renewable Substrates for Biosynthesis of Unique Polyhydroxyalkanoate Biopolymers.** Richard D. Ashby*, Daniel K.Y. Solaiman, Gary Strahan, and Alberto Nunez, *USDA, ARS, ERRC, USA*

5:05 **Microalgae for the Production of Novel Biopolymer Feedstocks.** Scott Franklin*[1], Zoran Petrovic[2], Jian Hong[3], Leon Parker[1], Lauren Slutzky[1], Mona Correa[4], Nina P. Reyes[1], Constantine Athanasiadis[4], Jon Wittenberg[1], Estelle Schaefer[5], and Kevin Ward[1], *[1]Checkerspot, USA; [2]Pittsburg State University, USA; [3]Kansas Polymer Research Center, Pittsburg State University, USA; [4]Checkerspot; [5]Checkerspot, France*

BIOTECHNOLOGY

BIO 1.2a/PRO 1a: Advances in Enzyme Processing Technologies

Chairs: Long Zou, Bunge Oils, USA; and Leslie Kleiner, Roquette Americas Inc., USA

104

1:55 **Introduction**

2:00 **Unique Phospholipase Degumming Enzyme.** Michael E. Spampinato*, *DSM Inc., USA*

2:20 **New Enzymatic Process Improves the Yield in Alkaline Refining of Vegetable Oils.** Hans Christian Holm, Per Munk Nielsen, and Morten Moeldrup*, *Novozymes A/S, Denmark*

2:40 **Enzyme Assisted Chemical Refining of Vegetable Oils.** Sambasivarao Javvadi*, Sandeep Chaudhary, Melkita P. Sequeira, and Archana P. Ashok, *Shirdi Sai Nutraceuticals Pvt. Ltd., India*

3:00 **Kinetic Modelling of Enzymatic Saccharification of Soy Molasses.** Ashwin Sancheti* ***(Biotechnology Division Student Award Winner)*** and Lu-Kwang Ju, *University of Akron, USA*

EDIBLE APPLICATIONS TECHNOLOGY

EAT 1: Structuring of Liquid Oil for Low SAFA and Non-trans Applications

This session is sponsored in part by Palsgaard Inc.

Chairs: Jorge Toro-Vazquez, Universidad Autónoma de San Luis Potosí, Mexico; and Nils Hinrichsen, Archer Daniels Midland, Co., USA

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1:55 **Introduction**

2:00 **Oleogels – from Scientific Feasibility to Applicability.** Eckhard Flöter*, *Technical University Berlin, Germany*

2:20 **Addition of High-Melting Monoglyceride and Candelilla Wax Significantly Improved Oleogelation of Pulse Protein Foams.** Athira Mohanan, Michael Nickerson, and Supratim Ghosh*, *University of Saskatchewan, Canada*

2:40 **Water-Induced Self-Assembly of Hybrid Gelator System (Ceramide and Lecithin) for Edible Oil Structuring.** Shenglan Guo, and Yaqi Lan*, *South China Agricultural University, China*

3:00 **Physicochemical Properties of Yellow Cake Produced with Menhaden Oil or Structured Lipid Organogels.** Sarah A. Willett* ***(Hans Kaunitz Award Winner)*** and Casimir C. Akoh, *University of Georgia, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Advanced Structure-Functional Properties of Lipids in Product Reformulation.** Filip Van Bockstaele[1] and Koen Dewettinck*[2], *[1]Ghent University, Belgium; [2]University of Gent, Belgium*

4:05 **Chitosan-Based Oleogels as Trans Fat Replacer Using Water-Continuous Emulsions as Templates.** Gabriela B. Brito*[1], Vanessa O. Di-Sarli[2], Matheus T. Martins[1], Denes K. Rosário[1], Karina F. Delgado[1], Carlos A. Conte-Júnior[1], Torres Alexandre[3], and Gabriela B. Baptista[1], *[1]Federal Fluminense University, Brazil; [2]Federal University of Rio de Janeiro, Brazil; [3]UFRJ, Brazil*

4:25 **Interactions Between Candelilla Wax and Saturated Triacylglycerols in Oleogels Formation.** Thais Silva*[1], Daniel B. Arellano[2], and Silvana Martini[1], *[1]Utah State University, USA; [2]Unicamp, Brazil*

4:45 **Oleogels Based on the Small Molecule Food Emulsifier: Macroscopic Property, Microstructure, and Application.** Zong Meng*[1], Ying Guo[1], and Yuanfa Liu[2], *[1]School of Food Science and Technology, Jiangnan University, China; [2]School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China*

5:05 **Polymer Coated Fat Crystals as Oil Structuring Agents: Fabrication and Oleogelation Properties.** Mohd Dona Bin Sintang*[1], Tom Rimaux[2], Sabine Danthine[3], and Koen Dewettinck[4], *[1]Faculty of Food Science and Nutrition, Malaysia; [2]Vandemoortele R&D Centre, Belgium; [3]University of Liège, Belgium; [4]University of Gent, Belgium*

EDIBLE APPLICATIONS TECHNOLOGY

EAT 1.1/H&N 1.1: Structural Determinates of the Metabolic Response for Lipids

Chairs: Michael Rogers, University of Guelph, Canada; and Pamela Hutton, Bunge Loders Croklaan, USA

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1:55 **Introduction**

2:00 **Replacement of Saturated Fat with Unsaturated Fats from Different Food Sources: Implications for Cardiovascular Risk.** Kristina S. Petersen*, *The Pennsylvania State University, USA*

2:20 **Foodomics Insights in the Health Effects of Vegetable Oil.** YongJiang Xu*[1], Chen Cao[1], Zhaojun Zheng[1], and Yuanfa Liu[2], *[1]Jiangnan University, China; [2]School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China*

2:40 **Musseling-up Program: Review of Greenshell Mussel Bioactive Lipids and Role in Inflammation Management and Joint Health.** Matthew R. Miller*[1], Marlena C. Kruger[2], Fran M. Wolber[2], Hong Tian Hong Tian[3], Parkpoon Siriarchavatana[2], and Saima Rizwan[4], *[1]Cawthron, New Zealand; [2]Massey University, New Zealand; [3]Sanford Ltd., New Zealand; [4]Riddet Institute, New Zealand*

3:00 **Serum β-carotene Concentrations is Inversely Associated with Reported Fatty Acid Intake in U.S. Adults.** Ambria Crusan*[1], Marla Reicks[1], and Susan K. Raatz[2], *[1]University of Minnesota, USA; [2]USDA, ARS, Grand Forks Human Nutrition Research Center, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Oleogelation of Emulsified Oil Delays *in vitro* Intestinal Lipid Digestion.** Dérick Rousseau*, *Ryerson University, Canada*

4:05 **Encapsulation, Protection and Controlled Release of Nutraceuticals using Biopolymer Microgel.** Zipei Zhang* ***(Thomas H. Smouse Memorial Fellowship Award Winner)*** and D. Julian J. McClements, *University of Massachusetts Amherst, USA*

4:25 **The Role of Emulsifiers in Lipid Digestion of Oil-in-Water Emulsions.** Michael Rogers*, Natalie Ng, Saeed M. Ghazani, Peter Chen, Alejandro G. Marangoni, Amanda Wright, and Douglas Goff, *University of Guelph, Canada*

4:45 **Bioavailability of Pesticide Residue in Agricultural Products: Impact of Food Emulsions with Different Surface Properties.** Ruojie Zhang* and D. Julian J. McClements, *University of Massachusetts Amherst, USA*

5:05 **Impact of Indigestible Oils on the Bioaccessibility of Vitamin D3 in Nanoemulsion-Based Delivery Systems.** Yunbing Tan*[1], and D. Julian J. McClements[2], *[1]Dept. of Food Science, University of Massachusetts, Amherst, USA; [2]University of Massachusetts Amherst, USA*

HEALTH AND NUTRITION

H&N 1: Lipids and Inflammation

This session is sponsored in part by Young Living Essential Oils.

Chair: Eric Murphy, University of North Dakota, USA

221

1:55 **Introduction**

2:00 **Increase in Plasma Ganglioside Content is Associated with Improved Quality of Life in Inflammatory Bowel Disease.** John J. Miklavcic*[1] ***(Health and Nutrition Division New Investigator Research Award Winner)***, Glen Shoemaker[2], Kareena L. Schnabl[3], Alan BR Thomson[4], Vera Mazurak[2], and M Tom Clandinin[5], *[1]Chapman University, USA; [2]University of Alberta, Canada; [3]Laboratory Medicine and Pathology, University of Alberta, Canada; [4]Gastroenterology, Western University, Canada; [5]Centre for Health and Nutrition, University of Alberta, Canada*

2:40 **Endocannabinoids and Inflammation.** Bruce A. Watkins*, *University of California, Davis, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Are Oxidized Linoleic Acid Metabolites Bioavailable?** Ameer Taha*, *University of California, Davis, USA*

4:25 **Oxylipins in Kidney Inflammation.** Harold M. Aukema*, *University of Manitoba, Canada*

HEALTH AND NUTRITION

EAT 1.1/H&N 1.1: Structural Determinates of the Metabolic Response for Lipids

Chairs: Pamela Hutton, Bunge Loders Croklaan, USA; and Michael Rogers, University of Guelph, Canada

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Joint session: for details, see EAT 1.1/H&N 1.1 on page 55.

INDUSTRIAL OIL PRODUCTS

BIO 1.1/IOP 1: Biopolymers

Chairs: Richard Ashby, USDA, ARS, ERRC, USA; and Rongpeng Wang, CVC Thermoset Specialties, USA

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Joint session: for details, see BIO 1.1/IOP 1 on page 54.

LIPID OXIDATION AND QUALITY

LOQ 1a: Antioxidant Mechanism and Activity

Chairs: Fereidoon Shahidi, Memorial University of Newfoundland, Canada; and Zhuliang Tan, DSM Nutritional Products, Canada

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1:55 **Introduction**

2:00 **Antioxidant Activity and Mechanism of Action of Natural Extracts: Their Impact on Color and Lipid Stability in Meat Products.** S.P.J. Namal Senanayake*, *Camlin Fine Sciences, USA*

2:20 **Antioxidant Mechanism of Natural Phenolics on Scallop Adductor Muscle During Drying and Storage.** Dayong Zhou*[1], Hongkai Xie[2], Fereidoon Shahidi[3], and Beiwei Zhu[4], *[1]Dalian Polytechnic University, China; [2]National Engineering Research Center of Seafood, China; [3]Memorial University of Newfoundland, Canada; [4]College of Food Science & Technology, Dalian Polytechnic University, China*

2:40 **Influence of Antioxidants on Oxidation Pathways.** Zhehan Jiang*, Suzanne M. Budge, and Wei Xia, *Dalhousie University, Canada*

3:00 **Stability and Stabilization of Edible Oils: Role of Endogenous Antioxidants and Phenolipid Addition.** Fereidoon Shahidi*, *Memorial University of Newfoundland, Canada*

LIPID OXIDATION AND QUALITY

LOQ 1b/PRO 1b: Effect of Processing on Lipid Oxidation in Oils and Fats and Lipid-Containing Foods

Chairs: S.P.J. Namal Senanayake, Camlin Fine Sciences, USA; and Sean Liu, USDA, ARS, USA

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3:40 **Introduction**

3:45 **Effects of Modified Phosphatidylcholine on Physical and Oxidative Stability of Omega-3 Delivery 70% Oil-in-Water Emulsions.** Betül Yesiltas*[1], Ann-Dorit Moltke Sørensen[2], Pedro J. Garcia-Moreno[2], Sampson Anankanbil[3], Zheng Guo[4], and Charlotte Jacobsen[2], *[1]National Food Institute, Technical University of Denmark, Denmark; [2]Technical University of Denmark, Denmark; [3]Dept. of Engineering, Aarhus University, Denmark; [4]Aarhus University, Denmark*

4:05 **Effect of Maillard Reaction Conditions on Physicochemical Properties and Oxidative Stability of Microencapsulated Chia Oil.** Vanesa Y. Ixtaina[1], Bernd W.K. Diehl[2], Claudia N. Copado[1], and Mabel Tomás*[1], *[1]CIDCA (CONICET-UNLP), Argentina; [2]Spectral Service AG, Germany*

4:25 **Impact of Ratios of Polyunsaturated and Saturated Fatty Acids on Oxidation Kinetics in Oil/Water Emulsions.** Raffaella Inchingolo[1], D. Julian J. McClements[2], Eric A. Decker[2], and Mitchell D. Culler*[2], *[1]University of Massachusetts, USA; [2]University of Massachusetts Amherst, USA*

4:45 **Effective Prevention of Oxidative Deterioration of Fish Oil by the Combination of Amine-compounds and General Antioxidants.** Mariko Uemura[1], Masashi Hosokawa[1], Kazuo Miyashita*[1], Ai Iwashima-Suzuki[2], and Hiroaki Kubouchi[2], *[1]Hokkaido University, Japan; [2]Megmilk Snow Brand Co. Ltd., Japan*

5:05 **Determination of Lipid Oxidation Parameters in Solid Non-oil Matrices and the Impacts on the Pet Food Industry.** B.J. Bench*, *Tyson Foods, USA*

PHOSPHOLIPID

PHO 1: Phospholipids and Bioactive Lipids in Foods and Pharmaceutical Applications

Chairs: Ernesto Hernandez, Advanced Lipid Consultants, USA; and Samia Mezouari, Research & Consulting, Canada

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1:55 **Introduction**

2:00 **Bioactive Lipids.** Yeonhwa Park*, *Dept. of Food Science, University of Massachusetts Amherst, USA*

2:40 **Superior Antioxidant Activity of Lecithin Derived from High Oleic Soybeans.** Susan Knowlton*, *DuPont Company, Pioneer, USA*

3:00 **Long-Chain Omega-3 Status in Canadian Adults: Results from the Canadian Health Measures Survey 2012-2015.** Isabelle Demonty*[1], Kellie Langlois[2], Linda Greene-Finestone[3], Rana Zoka[4], and Loan Nguyen[5], *[1]Nutrition Research Division, Bureau of Nutritional Sciences, Health Canada, Canada; [2]Health Analysis Division, Statistics Canada, Canada; [3]Public Health Agency of Canada, Canada; [4]Bureau of Nutritional Sciences, Food Directorate, HPFB, Health Canada, Canada; [5]Bureau of Food Surveillance and Science Integration, Food Directorate, HPFB, Health Canada, Canada*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Lecithin as a Support System of Various Antioxidant Management Solutions.** Duška Dimitrijević*[1], Ksenija Uroic, Simona Urbancic, Masa Hojnik Niderl[2], Karmen Plajnsek, and Nina Janzekovic[2], *[1]Frutarom IFF, Slovenia; [2]Food Protection BU of Frutarom-IFF, Slovenia*

4:05 **Achieving a Tumor Docosahexaenoic Acid (DHA) Content of 5% from Different Doses and Sources of DHA Improved Chemotherapy Efficacy in Mice Bearing Patient Derived Breast Cancer Xenografts.** Marnie Newell****(Lipid Chemistry and Nutrition Award Winner)***, Vera Mazurak, Lynne M. Postovit, and Catherine J. Field, *University of Alberta, Canada*

4:25 **Composition and Structure of Human Milk Fat Globules: Towards Specific Interest in Infant Formula.** Wei Wei*[1], Mingdong Dong[2], and Xingguo Wang[1], *[1]Jiangnan University, China; [2]Interdisciplinary Nanoscience Center, Aarhus University, Denmark*

4:45 **Use of New Phospholipid Blends for Stabilization and Delivery of Bioactives in Beverages.** Ernesto M. Hernandez*, *Advanced Lipid Consultants, USA*

PROCESSING

BIO 1.2a/PRO 1a: Advances in Enzyme Processing Technologies

Chairs: Long Zou, Bunge Oils, USA; and Leslie Kleiner, Roquette Americas Inc., USA

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Joint session: for details, see **BIO 1.2a/PRO 1a** on page 54.

PROCESSING

LOQ 1b/PRO 1b: Effect of Processing on Lipid Oxidation in Oils and Fats and Lipid-Containing Foods

Chairs: Sean Liu, USDA, ARS, USA; and S.P.J. Namal Senanayake, Camlin Fine Sciences, USA

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Joint session: for details, see LOQ 1b/PRO 1b on page 56.

PROTEIN AND CO-PRODUCTS

ANA 1c/PCP 1a: Protein Assessment Methods

Chairs: Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; Sneh Bhandari, Merieux NutriSciences, USA; and Denis Chereau, IMPROVE, France

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Joint session: for details, see **ANA 1c/PCP 1a** on page 53.

PROTEIN AND CO-PRODUCTS

PCP 1b: Protein Biofunctions

Chairs: Kaustav Majumder, University of Nebraska, USA; Hisham Ibrahim, Kagoshima University, Japan; and Hitomi Kumagai, Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan

105

3:40 **Introduction**

3:45 **Wheat-Gliadin Allergy Induced by Cutaneous Sensitization.** Yusuke Yamaguchi*[1], Narumi Matsukaze[1], Ryosuke Abe[1], Hitoshi Kumagai[2], and Hitomi Kumagai[3], *[1]Nihon University, Japan; [2]Faculty of Home Economics, Kyoritsu Women's University; [3]Dept. of Chemistry and Life Science, College of Bioresource Sciences, Nihon University, Japan*

4:05 **Anti-viral and Anti-allergic Activities of Highly Phosphorylated Casein Phosphopeptide.** Shigeru Katayama* and Soichiro Nakamura, *Shinshu University, Japan*

4:25 **Molecular Properties of Food Allergen Proteins.** Philip E. Johnson*, *University of Nebraska-Lincoln, USA*

4:45 **Effect of Whey Peptides on Metabolism and Insulin Signaling in Muscle and Fat Cells.** Kenneth D'Souza*[1], Angella Mercer[1], Hannah Mawhinney[2], Thomas Pulinilkunnil[1], Chibuike C. Udenigwe[2], and Petra Kienesberger[1], *[1]Dalhousie Medicine New Brunswick, Canada; [2]University of Ottawa, Canada*

5:05 **Glucagon-Like Peptide-1 is Released from the Distal Small Intestine by a Standard Diet Containing Casein as a Protein Source but not by a Non-Protein Diet in Rats.** Tohru Hira*, Madoka Sekishita, and Hiroshi Hara, *Hokkaido University, Japan*

SURFACTANTS AND DETERGENTS

S&D 1a: Fabric Care

Chair: Yvon Durant, Itaconix, USA

224

1:55 **Introduction**

2:00 **Formulating High Performance Odor Neutralizing Carpet Cleaners.** Gregory Smith*[1], Scott Jaynes[1], and Anita Augustyniak[2], *[1]Croda, Inc., USA; [2]Itaconix, USA*

2:20 **Deliver In-Wash Laundry Care with Minimal Greying - Smart Cationic Sensorial Enabler.** Yunshen Chen*, Randara Pulukkody, Emmett Partain, John Hayes, Peilin Yang, Michael Clark, Sharon Vuong, Daniel Miller, Asghar Peera, and Mariann Clark, *Dow Chemical Company, USA*

2:40 **Study on Change in Clothing Texture of Clothes Bought by Depending on Drying Method.** Hiroyuki Masui, Aiko Tai*, Shota Okeda, Tsuyoshi Terabayashi, Ai Tanaka, Yoichiro Kohno, Yukari Matsunaga, *Lion Corporation, Japan*

3:00 **Elucidation of Softening Mechanism in Rinse Cycle Fabric Softeners.** Takako Igarashi*[1], Masato Hoshi[1], Kouichi Nakamura[2], Takeshi Kaharu[2], and Ken-ichiro Murata[3], *[1]Kao Corporation, Japan; [2]Material Science Research Laboratory, Japan; [3]Institute of Low temperature Science, Hokkaido University, Japan*

SURFACTANTS AND DETERGENTS

S&D 1b: Trends in Clothing/Trends in Machines

Chairs: Erika Szekeres, Method, USA; and Hongwei Shen, Colgate Palmolive Co., USA

224

3:40 **Introduction**

3:45 **Principles and Applications of PhabrOmeter - Comparison with Other Existing Instruments.** Ning Pan*, *University of California Davis, USA*

4:05 **Impact of ADW Machine Design on Formulations and Raw Materials.** Jim W. Gordon* and Bo Jiang, *Itaconix, USA*

4:25 **Dishwashing Appliance Trends' Impact on Detergent Formulation.** Monica Ochoa Ruiz*, *Home and Personal Care, DuPont, The Netherlands*

4:45 **Sustainable Fabric Protection using Bio-Polymers.** Gregory Smith*[1], Sue Burn[2], Scott Jaynes[1], and Xin Chen[1], *[1]Croda, Inc., USA; [2]Croda International Plc, UK*

SURFACTANTS AND DETERGENTS

S&D 1.1: Analytical and Performance Determination

Chairs: Robert Nolles, Cosun Biobased Products, USA; and Eric Theiner, Evonik Corporation, USA

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1:55 **Introduction**

2:00 **Wettability Determination using High-Speed centrifuge, NMR, and Micro-CT.** Sarmad Khan [1], Syed S. Hussain[2], Muhammad Sha Kamal*[2], Xianmin Zhou[1], and Syed S. Hussain[2], *[1]KFUPM, Saudi Arabia; [2]King Fahd University of Petroleum and Minerals, Saudi Arabia*

2:20 **Branched Alcohols Contribution to Surfactants Characteristic Curvature and Other HLD-NAC Parameters.** Sanja Natali*, *ExxonMobil Chemical, USA*

2:40 **MACH 5+, the Next Generation of Image Analysis for Measuring Cleaning Performance.** Caspar van Leeuwen*[1], and Björn Hotting[2], *[1]Center For Testmaterials BV, Netherlands; [2]Colour Consult BV, Netherlands*

3:00 **Employing Image Analysis to HLD-NAC Salt Scans.** Eric Theiner* and J. R. Bennett, *Evonik Corporation, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Comparing Industry Soiled Stains to Freshly Soiled Stains in Laundry Detergent Evaluations.** Tod Losey*, *Sterling Laboratories, USA*

4:05 **Effect of Alkyl Chain Distribution, Branching and Oligomer Distribution on Hard Surface Cleaning Performance.** George A. Smith*[1], and Ollie James[2], *[1]Sasol North America, USA; [2]Sasol Performance Chemicals, USA*

4:25 **Limiting Variance: Exploring Primary Cleaning Evaluations for Hard Surface Cleaners.** Kevin M. Salmon*, *BASF Corporation, USA*

4:45 **The Interaction of Hydrophobe-Terminated Nonionic Surfactants with Silica.** Eric P. Wasserman*, Kebede Beshah, Sara Klamo, Junsi Gu, Fang Yuan, and Robert Campbell, *The Dow Chemical Company, USA*

FEATURED SESSION

FS 8: Sterols Symposium, featuring the Schroepfer Medal Award Lecture

Chairs: Jill Moser, USDA, ARS, NCAUR, USA; and Laura Nyström, ETH Zurich, Switzerland

100

1:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

2:00 **Chemical Biology of Phyla-specific Steroidal Antimetabolites Functioning as Suicide Inhibitors.** W. David Nes*, *Texas Tech University, USA* ***(Schroepfer Medal Award Winner)***

2:25 Coffee Meet & Greet with the award winner

2:40 **The Central Role of HMG-CoA in Plant Metabolism and Phytosterol Synthesis.** Thomas Bach*, *Institut de Biologie Moléculaire des Plantes (CNRS), Université de Strasbourg, France*

3:00 **Semi-synthetic Cholesterol from Diosgenin and NMR Analysis of Minor Impurities.** Shengrong Li, Avanti Polar Lipids, USA

3:20 **Networking Break**

3:40 **Welcome Back**

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3:45 **High Resolution Mass Spectrometry for Identification of Plant Sterols and their Glycosides.** Laura Nyström, *ETH Zurich, Switzerland*

4:05 **Sterol Composition is Critical for Protein Partitioning in the Plasma Membrane.** Kathrin Schrick, *Kansas State University, USA*

Tuesday morning

ANALYTICAL

ANA 2a: Polar Lipids, including Phospholipids

Chairs: Francesca Giuffrida, Nestec SA, Switzerland; and Bernd W.K. Diehl, Spectral Service AG, Germany

100

7:55 **Introduction**

8:00 **Advances in Preparative Separation of Gangliosides from Porcine Samples via High-Speed Counter Current Chromatography (HSCCC).** Nuanyi Liang*[1] ***(Analytical Division Student Award Winner)***, Lucie Necasova[2], Yuanyuan Zhao[2], and Jonathan M. Curtis[1], *[1]Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada; [2]University of Alberta, Canada*

8:20 **Analyzing Thousands of Individual Cellular Lipid Species Without HPLC Separation.** Xianlin Han*, *University of Texas Health Science Center at San Antonio, USA*◆

8:40 **Analytical Tools Allowing You to Push the Boundaries of Lipid Analysis.** Balji Ubhi*, *Sciex, USA*

9:00 **Polar Lipid Quantification in Human Milk.** Francesca Giuffrida*[1], Emmanuelle Bertschy[2], Isabelle Tavazzi[2], and Cynthia Marmet[2], *[1]Nestec SA, Switzerland; [2]Nestlé Research, Switzerland; [3]Nestlé Research, Switzerland*

9:20 **Normal Phase HPLC of Hydroxylated Neutral Lipids and Polar Lipids Compatible with UV, ELSD and Radio Detectors.** Hari Kiran Kotapati*, and Philip D. Bates, *Washington State University, USA*

9:40 **Multinuclear NMR Spectroscopy, a Holistic Quality Test on GPC.** Bernd W.K. Diehl*[1] and Lorenzo De Ferra[2], [1]Spectral Service AG, Germany; [2]Chemie SPA, Italy

ANALYTICAL

ANA 2b: Advanced Methods of Analysis, including Automation

Chairs: William Byrdwell, USDA, ARS, BHNRC, FCMDL, USA; and Arun Moorthy, National Institute of Standards and Technology, USA

100

10:20 **Introduction**

10:25 **Covalent Adduct CI-MS/MS for FAME Double Bond Position Assignment without Standards on Shimadzu Triple Quadrupole.** J. Thomas Brenna*[1], Hui Gyu Park[2], Dong Hao Wang[3], Zhen Wang[4], Riki Kitano[5], and Kumar S.D Kothapalli[3], *[1]Cornell University, USA; [2]Dell Medical School/Dell Pediatric Research Institute, USA; [3]Dell Medical School/Dell Pediatric Research Institute, USA; [4]Cornell University/University of Texas at Austin, USA; [5]Shimadzu Scientific Instruments, Inc., USA*

10:45 **Lipidomics Workflows – from Sample Preparation to Data Analysis.** Sheher Mohsin*, *Agilent, USA*

11:05 **Comprehensive Multidimensional LCMS Analysis of Milk: Working Toward LC3MS4 = LC1MS2 x (LC1MS1+LC1MS1).** William C. Byrdwell*, *USDA, ARS, BHNRC, FCMDL, USA*

11:25 **Simultaneous Analysis of Desired Aroma-Active Compounds and Undesired Food-Borne Toxicants.** Michael Granvogl*, *Technical University of Munich, Germany*

11:45 **On the Reliability of Identifications using Mass Spectral Library Searching.** Arun S. Moorthy*, *National Institute of Standards and Technology, USA*

12:05 **A Fast-Analytical Approach for Simultaneous Determination of Biphenyl, 2-Phenyl phenol and Anthraquinone in Coconut Oil Using Stable Isotope Dilution and Gas Chromatography-Tandem.** XueQing Wei*, ZhiMin Jiao, Ruifeng Zhang, Chuan Zhou, Wen Ming Cao, Hai Zhang, Yang Zhao, and Xuebing Xu, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*

ANALYTICAL

ANA 2c/LOQ 2c: Chemical and Sensory Methods to Predict Food Stability

Chairs: J. David Pinkston, 3174 Consulting, LLC, USA; and Lan Ban, Kemin Food Technologies, USA

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10:20 **Introduction**

10:25 **The Effect of Rosemary Extract and Phospholipase A2 on the Color Stability and Lipid Oxidation of Fresh Pork Sausage.** James Whalin* ***(Lipid Oxidation and Quality Division Student Travel Grant Winner)***, Ling Liu, and Mark P. Richards, *University of Wisconsin-Madison, USA*

10:45 **The Effect of Volatile and Non-volatile Degraded Products on the Performance of Frying Oil.** Junmei Liang*, Fuhuan Niu, and Yuan Rong Jiang, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*

11:05 **Improvement of Flavour and Stability of High-oleic Sunflower Oil by Onion Frying.** Chang Chang* and Xingguo Wang, *Jiangnan University, China*

11:25 **Correlation of Oxidative Shelf-life to Test Conditions and Physical Stability of Antioxidants.** Chia-Yu F. Shen*, Kristen Robbins, and Lan Ban, *Kemin Food Technologies, USA*

11:45 **Evaluation of Oxipres™ Apparatus to Study Oxidative Stability and Antioxidant Activity.** Cindy Tian*, *Kalsec, Inc., USA*

BIOTECHNOLOGY

BIO 2: Biocatalysis II — Functional Foods and Natural and Derived Oleo-materials

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

Chairs: Lu-Kwang Ju, University of Akron, USA; and Masashi Hosokawa, Hokkaido University, Japan

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7:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

8:00 **Restructuring Lipids for Functionality and Health.** Casimir C. Akoh*, *University of Georgia, USA* ***(Alton E. Bailey Award Winner)***

8:25 Coffee Meet & Greet with the award winner

8:40 **Improvement in Enzymatic Enrichment of DHA in Algal Lipids by Thermostable Lipase Preparation.** Yomi Watanabe*[1], Tsunehiro Aki[2], and Araki Masuyama[3], *[1]Osaka Research Institute of Industrial*

Science and Technology, Japan; [2]Hiroshima University, Japan; [3]Osaka Institute of Technology, Japan

9:00 **Interesterification of Palm Based Oils for Specialty Fat Hardstock: Comparison of Enzymatic Catalysis and Chemical Catalysis.** Jing Ye[1], Zhen Zhang[2], Ying Li[3], and Yong Wang*[1], *[1]Jinan University, China; [2]South China University of Technology, China; [3]Guangdong Saskatchewan Oilseed Joint Laboratory, Dept. of Food Science and Engineering, Jinan University, China*

9:20 **Efficient Production of MLCT Oils by Lipase Reactions.** Yutaro Kataoka*, Hidetaka Uehara, and Yoshihiro Ueda, *The Nisshin OilliO Group, Ltd., Japan*

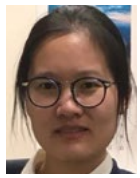
9:40 **Synthesis of Triacylglycerol Containing Hydroxy Fatty Acids as a Constituent Fatty Acid.** Shigenobu Kishino*[1], Daichi Toyama[1], and Jun Ogawa[2], *[1]Kyoto University, Japan; [2]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto University, Japan*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Production of xanthophylls by New Zealand Microalgae and the Sea Urchin *Evechinus chloroticus* (Kina).** Donato Romanazzi*[1], Johnathon Puddick[1], Masashi Hosokawa[2], Matthew R. Miller[1], Michael Packer[1], Serean Adams[1], Ruihana Paenga[3], and Sarah Bond[4], *[1]Cawthron Institute, New Zealand; [2]Hokkaido University, Japan; [3]Hikiarangi Bioactives Limited, New Zealand; [4]Massey University, New Zealand*

10:45 **Production of ω3-docosapentaenoic Acid (DPA) by *Aurantiochytrium* sp. T7 Strain.** Akinori Ando*[1], Ayami Hatano[2], Tomoyo Okuda[1], Hiroshi Kikukawa[3], Keisuke Matsuyama[4], and Jun Ogawa[5], *[1]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; [2]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto Univ., Japan; [3]Gifu university, Japan; [4]Nagase & Co., Ltd., Japan; [5]Div. Appl. Life Sci., Grad. Sch. Agric., Kyoto University, Japan*



11:05 **PUFA Enriched PG Synthesized by PLD-Mediated Transphosphatidylation Exerts Anti-inflammatory Effect upon LPS-stimulated RAW264.7 Cells.** Liping Chen*[1] ***(Biotechnology Division Student Award Winner)***, Masashi Hosokawa[2], and Kazuo Miyashita[2], *[1]Hokkaido University Faculty of Fisheries Sciences, Japan; [2]Hokkaido University, Japan*

11:25 **A New Enzymatic Preparation Method for L-α-Glycerylphosphorylcholine for Use as a Food-Grade Cognitive Enhancer.** Byung Hee Kim*, *Sookmyung Women's University, Korea*

11:45 **Roles of Conjugated Linoleic Acids in Oxidation of Vegetable Oils as Functional Lipids.** Suk Hoo Yoon*, *Woosuk University, Republic of Korea*

12:05 **Improved Carbohydrase Production by *Aspergillus niger* Fermentation for Soybean Meal Carbohydrate Hydrolysis for use as Fermentation Feedstock.** S.M. Mahfuzul Islam* and Lu-Kwang Ju, *University of Akron, USA*

EDIBLE APPLICATIONS TECHNOLOGY

EAT 2: Crystallization Behavior of Fats and Oils

This session is sponsored in part by Palsgaard Inc.

Chairs: Alejandro Marangoni, University of Guelph, Canada; and Kiyotaka Sato, Hiroshima University, Japan

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7:55 **Introduction**

8:00 **Pressure Induced Triolein Crystals.** André Roßbach[1], Leo A. Bahr[1], Sebastian Gäbel[1], Angela Mayer[1], Peter Ferstl[2], Andreas S. Braeuer[1],

and Andreas Wierschem◆*[1], *[1]Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; [2]Technische Universität München, Germany*

8:20 **Triglyceride Crystallisation Model based on Fatty Acid Interaction Coefficients.** Rasmus L. Miller*[1], and Eckhard Flöter[2], *[1]DuPont, Denmark; [2]Technical University Berlin, Germany*

8:40 **A Phenomenological Theory of Polymorphic Phase Transitions in Triacylglycerol Crystals.** David A. Pink*, *St. Francis Xavier University, Canada*

9:00 **Heterogeneous Nucleation of a Cocoa Butter Triglyceride on Surfaces Formed by Tristearin.** Edmund Daniel T. Co*[1], Saeed M. Ghazani[1], David A. Pink[2], and Alejandro G. Marangoni[1], *[1]University of Guelph, Canada; [2]St. Francis Xavier University, Canada*

9:20 **Effects of Molecular Complementarity between Mono- and Triglycerides on the Interfacial Tension of an Oil-Water Interface.** Nicole Green* and Dérick Rousseau, *Ryerson University, Canada*

9:40 **Lipid Sonocrystallization: What have we learned? What is next?** Silvana Martini*, *Utah State University, USA* ***(Timothy L. Mounts Award Winner)***

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Crystallization and Polymorphic Behavior of Cocoa Butter in Fresh Cacao Beans.** Laura Bayés-García*[1], Teresa Calvet[1], Tetsuo Koyano[2], and Kiyotaka Sato[3], *[1]Universitat de Barcelona, Spain; [2]Meiji Co., Japan; [3]Hiroshima University, Japan*

10:45 **New Insight into Molecular Origins of Cocoa Butter Polymorphism.** Saeed M. Ghazani* and Alejandro G. Marangoni, *University of Guelph, Canada*

11:05 **Physical Properties and Fat Bloom Stability of Dark Chocolate Made of Ternary Fat Blends of Cocoa Butter/OSO- Fat/Lauric-based CBS.** Shimpei Watanabe*[1], Shinichi Yoshikawa[1], and Kiyotaka Sato[2], *[1]Fuji Oil, Japan; [2]Hiroshima University, Japan*

11:25 **Fat Bloom Caused by De-oiling from Chocolate Surface.** Sohei Sato*[1], Hironori Hondoh[2], and Satoru Ueno[2], *[1]Hiroshima University, Japan; [2]Graduate School of Biosphere Science, Hiroshima University, Japan*

11:45 **Evidence of Molecular Clustering in Liquid Triacylgycerols.** Gianfranco Mazzanti*, *Dalhousie University, Canada* ***(Edible Applications Technology Division Outstanding Achievement Award Winner)***

12:05 **Development of Peppermint Essential Oil-Loaded Hollow Solid Lipid Micro- and Nanospheres as Natural Food Antimicrobials.** Junsi Yang****(AOCS Honored Student Award Winner)***, Car Reen Kok, Robert Hutkins, and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*

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EDIBLE APPLICATIONS TECHNOLOGY

EAT 2a/PCP 2b: Plant Protein Utilization in Food Products

Chairs: Graciela Padua, University of Illinois, USA; and Baraem Ismail, University of Minnesota, USA

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10:00 **Introduction**

10:25 **Rheological Assessment of Ethanol Induced Plant Protein Gels.** Nahla Kreidly*[1], Graciela W. Padua[2], and Hakime Yavuz[1], *[1]University of Illinois at Urbana Champaign, USA; [2]University of Illinois, USA*

10:45 **Plants to Meat: Utilizing Plant Proteins to Satisfy the Carnivores.** Ines Resano Goizueta*, *Impossible Foods, USA*

11:05 **Soy Protein-based Nanoparticles and Derivatives as Bioavailability Enhancers for Bioactive Compounds.** Qin Wang*, *University of Maryland, USA*

11:25 **Overcoming the Challenges in the Production and Utilization of Plant Protein Isolates in Food Products.** Nagul Naguleswaran*, *Ingredion, USA*

11:45 **Improvement of Targeted Pea Protein Functionalities for Beverage Applications.** Serpil Metin*[1], Sonia Han[2], and Tasha Hermes[2], *[1]Cargill R&D, USA; [2]Cargill, USA*

12:05 **Structural and Functional Properties of Plant Protein Isolates and Hydrolysates for Various Applications.** Baraem Ismail*, *University of Minnesota, USA*

HEALTH AND NUTRITION

H&N 2: Brain Lipid Biochemistry

Chairs: Eric Murphy, University of North Dakota, USA; and Charles Nider, Abitec Corp., USA

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7:55 **Introduction**

8:00 **How Docosahexaenoic Acid Enters the Brain: Consensus, Controversies and Updates.** Richard P. Bazinet*, *University of Toronto, Canada*

8:40 **Lipidomic Analysis of Post-mortem Alzheimer's Disease Pre-Frontal Cortex Reveals Changes In Pro-Repair Lipid Pathways.** Ameer Taha*, *University of California, Davis, USA*

9:20 **Lipid Binding Proteins and Brain Fatty Acid Uptake and Metabolism: What is the Role of Liver-Fatty Acid Binding Protein (FABP1)?** Eric J. Murphy*, *University of North Dakota, USA*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Shotgun Lipidomics Sheds Light on Diabetic Neuropathy.** Xianlin Han*, *University of Texas Health Science Center at San Antonio, USA*◆

11:05 **Cytochrome c is a Plasmalogenase that Oxidatively Cleaves the sn-1 vinyl Ether Linkage of Plasmalogens.** Christopher M. Jenkins*[1], Kui Yang[2], Gaoyuan Liu[3], Sung Ho Moon[3], Beverly G. Dilthey[3], and Richard W. Gross[3], *[1]Washington University School of Medicine, USA; [2]U.S. Food and Drug Administration, USA; [3]Washington University School of Medicine, USA*

11:45 **Homozygous Expression of Mutant ELOVL4 Leads to Seizures and Death in a Novel Animal Model of Very Long-Chain Fatty Acid Deficiency**. Blake Hopiavuori*, *Lipid Biologics, LLC, USA*◆

INDUSTRIAL OIL PRODUCTS

IOP 2: Olechemicals and Green Chemistry

Chairs: Darrell Sparks, Mississippi State University, USA; and Zheng Guo, Aarhus University, Denmark

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7:55 **Introduction**

8:00 **Chemistry and Property of pH-responsive Amino Acid-based**

Amphiphiles. Weiwei Cheng[1], Sampson Anankanbil[2], Liu Guoqin[3], and Zheng Guo*[4], *[1]South China University of Technology, China; [2]Dept. of Engineering, Aarhus University, Denmark; [3]School of Food Science and Engineering, South China University of Technology, China; [4]Aarhus University, Denmark*

8:20 **Modifying the Double Bond in Fatty Acids for New Materials: Oleo-chemistry versus Linoleo-chemistry.** Grigor B. Bantchev* and Girma Biresaw, *USDA/ARS/NCAUR, USA*

8:40 **Membrane-based Oil Washing.** Nikolai Kocherginsky*[1], Brajendra K. Sharma[2], and Kishore Rajagopalan[2], *[1]Biomime, USA; [2]Illinois Sustainable Technology Center, USA*

9:00 **Applicability of Esters from Mono-unsaturated Linear Dicarboxylic Acids for Lubricants.** Svajus J. Asadauskas*[1], Asta Griguceviciene[2], Linas Labanauskas[2], Jean-Luc Couturier[3], and Jean-Luc Dubois[3], *[1]FTMC, Lithuania; [2]Institute of Chemistry, FTMC, Lithuania; [3]Arkema, France*

9:20 **Investigation of a Heterogeneous Chemical Process to Convert Sunflower Oil into a Value Added Branched-Chain Oil.** Helen Ngo Lew*[1], Yunzhi Chen[2], and Robert A. Moreau[1], *[1]USDA, ARS, ERRC, USA; [2]USDA-Agriculture Research Service, USA*

9:40 **Feasibility of the novel utilization of modified Azadirachta Indica seed oil as transformer insulating fluid.** Chinedu Agu*[1], Matthew Menkiti[1], Albert Agulanna[2], and Emeka Udokporo[3], *[1]Nnamdi Azikiwe University, Nigeria; [2]Project Development Institute, Nigeria; [3]University of Nigeria, Enugu Campus, Nigeria*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Coating Performance and Rheological Characteristics of Novel Soybean Oil-based Emulsions.** Kangzi Ren[1], Tao Fei*[1], Tong Wang[1], and Keneth Metzger[2], *[1]Iowa State University, USA; [2]Eurica Group LLC., USA*

10:45 **Synthesis of Lipid Derived Nanocomposites and Microwave Assisted Copolymers.** Aman Ullah, Muhammad Arshad*, Liliang Huang, and Mahrzadi N. Shahi, *University of Alberta, Canada*

11:05 **Waterborne Glycerol Based Thermoplastic Adhesives for Wood Composites.** Eric Cochran* ***(ACI/NBB Glycerine Innovation Award Winner)***, R. Christopher Williams ***(ACI/NBB Glycerine Innovation Award Winner)***, Andrew N. Becker, Nacu B. Hernandez, and Michael J. Forrester, *Iowa State University, USA*

11:25 **Understanding Improvements to Stiff Asphalt Binders Modified with Epoxidized Plant Derived Oil Materials through Analytical Chemistry**. Nacu B. Hernandez, Chris Williams*, Eric Cochran, Joseph H. Podolsky, Mohamed Elkashef, and Austin D. Hohmann, *Iowa State University, USA*

11:45 **Engineering Green Phase Change Materials: Dibasic or Diol Esters?** Latchmi Raghunanan*[1], Laziz Bouzidi[2], and Suresh Narine[2], *[1]Trent Centre for Biomaterials Research, Departments of Physics & Astronomy and Chemistry, Trent University, Canada; [2]Trent University, Canada*

12:05 **New Insights for the Advancement of Bio-based Diamides as Phase Change Materials.** Kosheela D. Poopalam*[1], Latchmi Raghunanan[2], Laziz Bouzidi[1], Yeong SK[3], and Suresh Narine[1], *[1]Trent University, Canada; [2]Trent Centre for Biomaterials Research, Departments of Physics & Astronomy and Chemistry, Trent University, Canada; [3]Malaysian Palm Oil Board, Malaysia*

LIPID OXIDATION AND QUALITY

LOQ 2a: Oxidation and Antioxidants in High Protein Foods

Chairs: Michelle Peitz, Archer Daniels Midland Co., USA; and David Johnson, Kalsec Inc., USA; and Minwei Xu, North Dakota State University, USA

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7:55 **Introduction**

8:00 **Increasing Oxidative, Microbial and Color Stability of Fresh Meats: Mechanism and Application.** Min Hu*, *DuPont Nutrition & Health, USA*

8:20 **Maillard Reaction Products as Antioxidants in a Muscle Model System: Effect of pH and Tocopherol.** Ling Liu, Jie Yin, and Mark P. Richards*, *University of Wisconsin-Madison, USA*

8:40 **Pea Protein Isolate/Gum Arabic Glycation Improves the Oxidative Stability of Oil-in-Water Emulsions.** Bingcan Chen*, *North Dakota State University, USA*

LIPID OXIDATION AND QUALITY

LOQ 2b: Special Session to Honor Dr. Michael Eskin's 50 Years of Research in Fats and Oils

Chairs: Michelle Peitz, Archer Daniels Midland Co., USA; and David Johnson, Kalsec Inc., USA; and Minwei Xu, North Dakota State University, USA

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9:00 Introduction

9:05 **Mustard and Canola-Derived Canolol: Challenges and Opportunities.** Usha Thiyam-Hollander, *Food and Human Nutritional Sciences, University of Manitoba, Canada*

9:20 **The Ramblings and Raps of an Aging Lipid Chemist.** N.A. Michael Eskin, *University of Manitoba, Canada*

LIPID OXIDATION AND QUALITY

ANA 2c/LOQ 2c: Chemical and Sensory Methods to Predict Food Stability

Chairs: J. David Pinkston, 3174 Consulting, LLC,, USA; and Lan Ban, Kemin Food Technologies, USA

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Joint session: for details, see **ANA 2c/LOQ 2c** on page 60.

PROCESSING

PRO 2: Expert Insights in Seed and Oil Processing Technologies

Chairs: Gijs Calliauw, Desmet Ballestra Group, Belgium; and William Younggreen, Alfa Laval Inc., USA

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7:55 **Introduction**

8:00 **Deodorizer Energy Use – How Low Can We Go?** Alan R. Paine*, Desmet Ballestra, Belgium

8:20 **An Experts' Insight in the Separation-Technology for Degumming and Neutralization Processes.** Birger Horns*, GEA, Germany

8:40 **Degumming and Neutralization of Vegetable Oils with Hydrodynamic Cavitation: A Long-Term CFC™ Experience Review.** Paul Bloom[1], Inmok Lee[1], Peter Reimers[2], and Darren J. Litle[2], *[1]Archer Daniels Midland Co., USA; [2]Arisdyne Systems, Inc., USA*

9:00 **Reducing Wastewater in a Solvent Extraction Plant.** Matthew Ducharme*, Crown Iron Works, USA

9:20 **Pre-Treatment of Inedible Fats and Oils for Renewable Fuel Production.** Dan Anderson, Alfa Laval Inc., USA

9:40 **White Flake Desolventization, Feedback from the Field and New Applications such as Palm Kernel and Citrus Fiber.** Richard W. Ozer*, Crown Iron Works, USA

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Adsorbents, Filter Aids, Reagents and Their Synergy to Maximize Frying Oil Life.** Li-Chih Hu*, Andrew Oh, and David Gittins, *Imerys Performance Minerals, USA*

PROTEIN AND CO-PRODUCTS

PCP 2a: Emerging Sources of Protein

Chairs: Lamia L'Hocine, Agriculture and Agri-Food Canada, Canada; and Andrea Liceaga, Purdue University, USA

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7:55 **Introduction**

8:00 **Value-added Applications of Spent Hen as Nutraceuticals and Functional Food Ingredients.** Hongbing Fan* ***(AOCS Honored Student Award Winner)*** and Jianping Wu, *University of Alberta, Canada*

8:20 **Recovering Amino Acids and Peptides in an Integrated Algal Biomass Refinery.** Tao Dong*, Nick Nagle, Eric P. Knoshaug, Philip Pienkos, and Lieve Laurens, *National Renewable Energy Laboratory, USA*

8:40 **Improvement of Functional and Bioactive Properties with Microwave-Assisted Hydrolysis of Chia Seed (Salvia hispanica) Protein.** Uriel C. Urbizo*, M. Fernanda San Martín-Gonzalez, Jose G. Bravo, and Andrea M. Liceaga, *Purdue University, USA*

9:00 **Introducing Hairless Canaryseeds: An Emerging Source of High-Quality Protein.** Emily Mason*[1], and Lamia L'Hocine[2], *[1]McGill University, Canada; [2]Agriculture and Agri-Food Canada, Canada*

9:20 **Effect of Enzymatic Hydrolysis and Microwave Energy on Allergenicity of Edible Cricket (*Gryllodes sigillatus*) Protein Hydrolysates.** Andrea M. Liceaga[1], Philip E. Johnson[2], and Felicia G. Hall*[1], *[1]Purdue University, USA; [2]University of Nebraska-Lincoln, USA*

9:40 **Optimization of Process for the Production of a Light-Coloured and Highly Soluble Sunflower Protein Isolate.** Sara Albe Slabi*[1], Christelle Mathé[2], Melody Basselin[3], Xavier Framboisier[4], Arnaud Aymes[4], Olivier Galet[5], and Romain Kapel[4], *[1]Reaction and Process Engineering Laboratory UMR-7274, Avril Group, France; [2]Reaction and Process Engineering Laboratory, France; [3]LRGP - UMR 7274, France; [4]Reaction and Process Engineering Laboratory UMR-7274, France; [5]Avril Group, France*

PROTEIN AND CO-PRODUCTS

EAT 2a/PCP 2b: Plant Protein Utilization in Food Products

Chairs: Graciela Padua, University of Illinois, USA; and Baraem Ismail, University of Minnesota, USA

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Joint session: for details, see **EAT 2a/PCP 2b** on page 62.

SURFACTANTS AND DETERGENTS

S&D 2a: Trends in I&I Cleaning and O&G Applications

Chairs: Michael Tate, The Dow Chemical Company, USA; and Juan Goncalves, Diversey, Inc., USA

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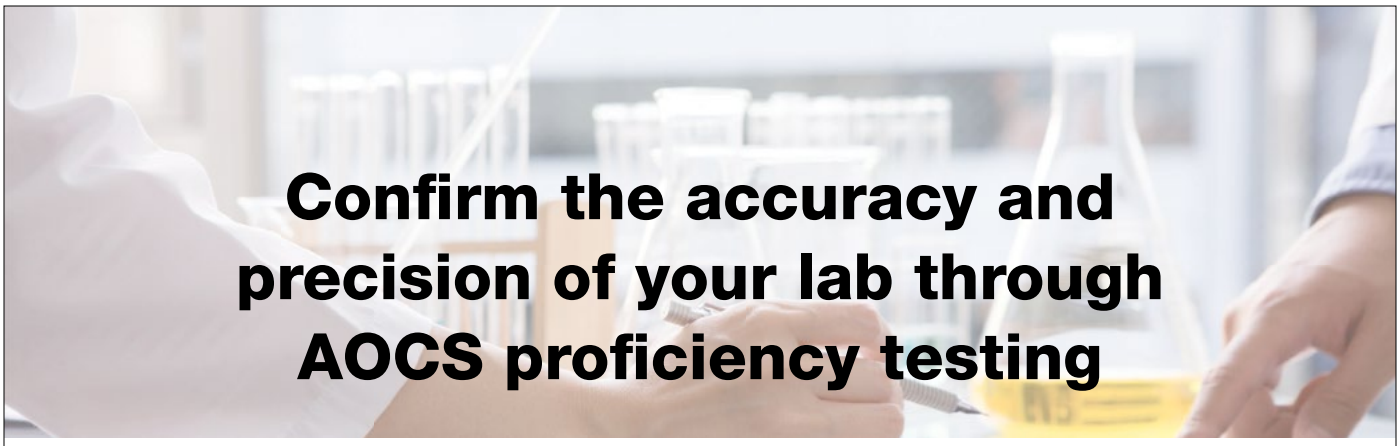
7:55 **Introduction**

8:00 **Globally Harmonized System (GHS) Trend for I&I Cleaners: Surfactants to Help Minimize GHS Pictograms and Classification.**



Confirm the accuracy and precision of your lab through AOCS proficiency testing

When Ricardo Arévalo Bravo, a Quality Assurance Manager at Grupo Agroindustrial Numar SA, needed to confirm the accuracy of several analytical methods being used in his lab, he turned to the AOCS Laboratory Proficiency Program.

"I entered the program as a way to validate that the methodologies implemented in my laboratory were providing the expected results within the acceptable analytical margin," Arévalo notes.

Arévalo's physicochemical analysis laboratory monitors the production processes of their plant as well as tests the raw materials and finished products sent to their customers. Given the importance of quality assurance, the ability to point to a quantitative measure of the quality of his work is equally important.

"I believe that the most important benefit that this program has, both for me and for my laboratory, is that it serves as a continuous improvement tool to check if our results are within the expected margin of error for the official methodology we use and in this way to reach the analytical goals that we have proposed and thus give confidence to our internal and external clients."

That's where the AOCS proficiency program provides an important benefit.

But there are other benefits too, namely the opportunity to apply for Approved Chemist status. AOCS recognizes Approved Chemists every year in *INFORM* magazine, and chemists can use the Approved Chemist logo to advertise their expertise to clients. To earn this status, chemists must achieve a precise score in four consecutive quarters as a participant in the program, return results for all samples, report results for all required constituents and be an AOCS member.

Arévalo is a 2018–2019 Approved Chemist in the palm oil, solid fat content by nuclear magnetic resonance, trace metals in oil and *trans* fatty acid content series. Additionally, he received an honorable mention in the 2017–2018 program award for the palm series, which means he scored within the top 10% of participants in the series.

Arévalo finds that Approved Chemist status further confirms the analytical quality of his work.

"It has allowed me to give confidence that the analytical work is being carried out properly as well as to demonstrate, in the audits of the management systems, that the monitoring of the official methods is being carried out."

Full-year LPP participants are eligible to apply for the Approved Chemist program. **AOCS Approved Chemists** are in high demand, and are highly respected throughout the industry. Use your status as an AOCS Approved Chemist to promote your technical expertise and attract new business – apply today!

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Ron A. Masters*, Lela Jovanovich, Tracy Strilich, Luke Jancich, and Sangeeta Ganguly-Mink, *Stepan Company, USA*

8:20 **Shiny and Spotless Dishes with Phosphate-free Formulations.** Yves Kensicher*[1] and Alexandra L. Foguth[2], *[1]Coatex SAS, France; [2]Arkema, USA*

8:40 **C20+ Alkoxylates in Industrial Applications.** Ollie James*[1] and George A. Smith[2], *[1]Sasol Performance Chemicals, USA; [2]Sasol North America, USA*

9:00 **Ability of Terpene-Based Microemulsions to Remove Asphaltene Residue from Solid Surfaces.** Eleazar Mendoza[1], Alyssa Perrard[2], Helen W. Hernandez*[2], Wesley Ehlert[2], and Siwar Trabelsi[2], *[1]Texas A&M University, USA; [2]Flotek Chemistry, USA*

9:20 **Effect of Reservoir Parameters and Surfactant Structures on Surfactant – Rock Adsorption in Various Rock Types.** Daniel F. Wilson*[1], Laurie A. Poindexter[1], Carla Morgan[2], and Thu Nguyen[2], *[1]Sasol North America, USA; [2]Sasol Performance Chemicals, USA*

9:40 **Rapid Identification of Surfactants to Improve Rheological Compatibility and Cleaning of Oil-Based Drilling Muds.** Carol Mohler*[1], Thiago Alonso[1], Robert Sammler[1], Valeriy Ginzburg[1], Stephanie Hughes[1], Brian Nickless[1], Anatoly Medvedev[2], and Yan Gao[2], *[1]Dow Chemical Company, USA; [2]Schlumberger, USA*

SURFACTANTS AND DETERGENTS

S&D 2b: Disinfectants and Preservatives

This session is sponsored in part by The Clorox Company.

Chairs: Andrew Guttentag, Church and Dwight, USA; and Nancy Falk, Clorox, USA

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10:00 **Introduction**

10:25 **Application of Quantitative Microbial Risk Assessment (QMRA) to Predict Infection Risk by Disinfection Interventions of Hard Surfaces.** Charles P. Gerba*[1] and Nancy Falk[2], *[1]University of Arizona, USA; [2]Clorox, USA*

11:05 **Functional Secondary Benefits of Fragrances and Flavors in Consumer Products.** Charles C. Steward*, *Takasago International Corp. (USA), USA*

11:25 **Polymer-micelle Complexes for Enhanced Adsorption and Antimicrobial Activity.** David Scheuing* and Nancy Falk, *Clorox, USA*

11:45 **Antimicrobial Efficacy of Oxygen-Based Bleach Systems.** Sam Adamy*, *Church & Dwight Co. Inc., USA*

12:05 **A Brief Overview of the Continuum of Care: The Cleaning Touchpoints.** Doe Kley*, *Clorox Company, USA*

SURFACTANTS AND DETERGENTS

S&D 2.1: General Surfactants I

Chairs: Michael Miguez, Shell Global Solutions, Inc., USA; and Ann Lee, Novozymes North America, Inc., USA

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7:55 **Introduction**

8:00 **Microemulsions as Robust Electrolyte Solutions for Electrochemistry?** Douglas G. Hayes*, Jing Peng, Thomas A. Zawodzinski, Gabriel A. Goenaga, and Mark Dadmun, *University of Tennessee, USA*

8:40 **Impact of Number of Ethylene Oxide Groups on the Surface and Thermal Properties of Betaine-based Polyoxyethylene Surfactants for Enhanced Oil Recovery.** Syed S. Hussain* and Muhammad Sha Kamal, *King Fahd University of Petroleum and Minerals, Saudi Arabia*

9:00 **Secondary Alcohol Ethoxylate - Process and Applications Revisited.** David Li*, *Jiangsu Secol Chemical Company, China*

9:20 **Surfactant EOR Formulations for High Temperature/High Salinity Reserviors.** Thu Nguyen*[1], Carla Morgan[1], and Jorge M. Fernandez[2], *[1]Sasol Performance Chemicals, USA; [2]Sasol North America, USA*

9:40 **Defoaming of Non-Aqueous Foams: Occurrence, Challenges and Silicon-free Defoamers.** Ramesh Varadaraj*[1], Ollie James[1], and George A. Smith[2], *[1]Sasol Performance Chemicals, USA; [2]Sasol North America, USA*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **The Effect of Surface Roughness on Surfactant Adsorption at the Solid-Water Interface.** Brian P. Grady*, *University of Oklahoma, USA*

11:05 **Solvents and Surfactants for Cleaning Applications in Oil and Gas.** Jorge M. Fernandez, and Cornell Stanciu*, *Sasol North America, USA*

11:25 **Cleaning Efficiency of Soap Spent Bleaching Clay and Palm Fatty Acid Distillate.** Daniel Pioch[1], and Teerasak Punvichai*[2], *[1]CIRAD, UR 114 Biowooeb, TA-B 114/16, France; [2]Prince of Songkla University, Thailand*

11:45 **Controlling the Physical Properties of Softener in a Continuous Manufacturing Process.** Fumiya Yamagishi*, Tatsuo Nagano, and Taku NISHIO, *Lion Corporation, Japan*

12:05 **The Role of Meso-structure of Citrus Pectin for its Emulsifying Performance.** Shaojie Zhao[1], Guifang Tian*, David Julian McClements[2], Hang Xiao[3], and Jinkai Zheng[1], *[1]Institute of Food Science and Technology, Chinese Academy of Agricultural Sciences; [2]Dept. of Food Science, University of Massachusetts Amherst; [3]Dept. of Food Science and Technology, University of Massachusetts, Amherst, USA*

Tuesday afternoon

ANALYTICAL

ANA 3a: Rapid Methods of Analysis, including Portable Devices

Chairs: Magdi Mossoba, US Food and Drug Administration, USA; and Hongshun Yang, National University of Singapore, Singapore

100

1:55 **Introduction**

2:00 **Rapid Evaluation of Extra Virgin Olive Oil Authenticity: A Targeted FT-NIR Spectroscopic Procedure.** Magdi Mossoba*, Sanjeewa R. Karunathilaka, Kyungeun Lee, Zachary Ellsworth, Lea Brückner, and Betsy J. Yakes, *US Food and Drug Administration, USA*

2:20 **Effects of Molar Mass and Ester Functionalities on Terahertz Spectra of Oils.** Svajus J. Asadauskas*, Mindaugas Karaliunas, and Gintaras Valušis, *FTMC, Lithuania*

2:40 **Synthesis of Immuno Magnetic Nanopartical for Quantification of Aflatoxin B1 in Oil Seeds.** Hongshun Yang*, Xi Yu, and Suan Liang Isaac Foo, *National University of Singapore, Singapore*

3:00 **The Development of a Robust Spectrometer for Online and Real-time Monitoring of Oil Quality.** Jonathon D. Speed*, *Keit Spectrometers, UK*

ANALYTICAL

ANA 3b: General Analytical

Chairs: Torben Küchler, Eurofins Analytik GmbH, Germany; and Pierluigi Delmonte, US Food and Drug Administration, USA

100

3:40 **Introduction**

3:45 **Direct Quantification of Valuable Furan Fatty Acids in Fish Oils by NMR.** Walter Vetter*[1], Veter Gottstein[1], Johannes Günther[2], Marco Müller[1], and Katharina Wasmer[1], *[1]University of Hohenheim, Germany; [2]Core Facility Hohenheim, Germany*

4:05 **Critical Evaluation of Olive Oil Triglyceride Composition by Ultra High Performance Liquid Chromatography for the Detection of**

Added Seed Oils. Pierluigi Delmonte* and Andrea Milani, *US Food and Drug Administration, USA*

4:25 **Practical Analyzing Method of Triacylglycerol Isomers by using Supercritical Fluid Chromatography.** Koji Masuda*[1], Kosuke Abe[2], and Yoshihiro Murano[1], *[1]The Nisshin OilliO Group, Ltd., Japan; [2]Nisshin Global Research Center Sdn. Bhd, Malaysia*

4:45 **C9-C11 Unsaturated Aldehydes in Oxidized Oils as Prediction Markers of Growth Performance in Non-ruminant Animals.** Jieyao Yuan*[1], Brian Kerr[2], and Chi Chen[1], *[1]University of Minnesota, USA; [2]USDA-ARS, USA*

5:05 **Characterization of the Key Odorants of Steam-treated Canola Oil Eliciting the Desired Sensory Properties Compared to Canola Oil Eliciting a Fishy Off-flavor.** Michael Granvogl*[1], and Katrin Matheis[2], *[1]Technical University of Munich, Germany; [2]Chair for Food Chemistry, Technical University of Munich, Germany*

ANALYTICAL

ANA 3c/LOQ 3a: Advanced Analytical Techniques for Lipid Oxidation

Chairs: Matthew Fhaner, University of Michigan-Flint, USA; and Rick Della Porta, Pepsico/Frito-Lay, USA

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1:55 **Introduction**

2:00 **New Method for the Investigation of Oxidation Stability of Fats, Oils and Complex Food Products.** Carolin Edinger*, *Anton Paar ProveTec GmbH, Germany*

2:20 **Analysis of Polar Compounds Generated during Thermal Process of Oils and its Biochemical Function Evaluation.** Chen Cao*, Yongjiang Xu, and Yuanfa Liu, *Jiangnan University, China*

2:40 **Electrochemistry as an Analytical Tool for Monitoring Antioxidant and Omega-3 Fatty Acid Levels during Degradation.** Matthew Fhaner*, *University of Michigan-Flint, USA*

3:00 **Application of Flow Cytometry as Novel Technology in the Study of Lipid Oxidation in Oil-in-Water Emulsions.** Peilong Li*[1] ***(Lipid Oxidation and Quality Division Student Travel Grant Winner)***, D. Julian J. McClements[2], and Eric A. Decker[2], *[1]Dept. of Food Science, University of Massachusetts, Amherst, USA; [2]University of Massachusetts Amherst, USA*

ANALYTICAL

ANA 3.1/EAT 3.1/IOP 3.1: Analysis of Food Applications of Low Saturated Fats/Oils; and PUFA, and Fat-Soluble Vitamins with Emphasis on Nutrition Labeling

Chairs: Jillonne Kevala, Food and Drug Administration, USA; and Serpil Metin, Cargill R&D, USA

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1:55 **Introduction**

2:00 **Modernizing the Nutrition Facts and Supplement Facts Labels.** Jillonne H. Kevala*, *Food and Drug Administration, USA*

2:40 **Low Saturate High Oleic Canola Oil in Health and Nutrition.** Xiaolan Luo*[1], Nisa Tharayil[1], and Diliara Iassonova[2], *[1]Cargill, USA; [2]Cargill Inc., USA*

3:00 **Validation of a HPLC Method for Analysis of Provitamin A Carotenoids (β-carotene, α-carotene and β-cryptoxanthin).** Sneh Bhandari* and Ming Gao, *Merieux NutriSciences, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Rheology and Baking Stability of Water in Oil Emulsion Designed as Low Saturated Bakery Shortening.** Fernanda Davoli*[1], Serpil Metin[2], and Paul Smith[3], [1]*Cargill, USA;* [2]*Cargill R&D, USA;* [3]*Cargill Global Foods Research, Belgium*

4:05 **Quantification of Furan Fatty Acids by LC-MS/MS and their Identification in New Zealand Marine Oils.** Matthew R. Miller*[1], Donato Romanazzi[2], Hajime Uchida[3], Johnathon Puddick[2], Yutaka Itabashi[3], Masashi Hosokawa[4], Toshiyuki Suzuki [3], and Michael Boundy[2], [1]*Cawthron, New Zealand;* [2]*Cawthron Institute, New Zealand;* [3]*National Research Institute of Fisheries Science, Japan;* [4]*Hokkaido University, Japan*

4:25 **Physicochemical Properties, Chemical Composition and Risk Assessment of Polycyclic Aromatic Hydrocarbons of Commercial Fragrant Rapeseed Oils.** Youfeng Zhang*, *School of Food Science and Technology, Jiangnan University, People's Republic of China*

4:45 **The Role of Fat in Determining the Structural and Textural Properties of Semi-sweet Biscuit.** Hasmadi Mamat*, *Universiti Malaysia Sabah, Malaysia*

5:05 **Effect of Tempering Parameters on the Plasticity and Hardness of Puff Pastry Margarine.** Miroslav Buchmet*, *DuPont Nutrition Bioscience, Denmark*

BIOTECHNOLOGY

BIO 3: Plant and Algae Lipid Biotechnology and Genomics

Chairs: Jay Shockey, SRRC-ARS-USDA, USA; and Timothy Durrett, Kansas State University, USA

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1:55 **Introduction**

2:00 **The Interaction of the Soybean Seed High Oleic Acid Oil Trait with Other Quality Traits.** Kristin Bilyeu*, *USDA/ARS, USA*◆

2:20 **Getting the Most Value Out of Soybeans: A Case for Understanding Resource Partitioning and Allocation Over Seed Development.** Shrikaar Kambhampati*[1], Jose A. Aznar-Moreno[2], Jennifer J. Arp[3], Sally K. Bailey[3], Kevin L. Chu[1], Timothy P. Durrett[2], and Doug K. Allen[4], [1]*Donald Danforth Plant Science Center, USA;* [2]*Kansas State University, USA;* [3]*Donald Danforth Plant Science Center, USA;* [4]*Agricultural Research Service, U.S. Dept. of Agriculture/Donald Danforth Plant Science Center, USA*

2:40 **Chemical Jolt to Increase Storage Lipid in Microalgae.** Concetta C. DiRusso* and Nishikant Wase, *University of Nebraska-Lincoln, USA*

3:00 **CoverCress – a Novel Oilseed Winter Crop with Canola-like Composition that Helps to Prevent Soil Erosion.** Tim Ulmasov*, *CoverCress, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Repurposing Carbon in Plant Leaves for Enhanced Agricultural Productivity.** Doug K. Allen*[1], Kevin Chu[2], Lauren Jenkins[3], and Shrikaar Kambhampati[2], [1]*ARS-USDA, Donald Danforth Plant Science Center, USA;* [2]*Donald Danforth Plant Science Center, USA;* [3]*USDA-ARS, USA*

4:05 **Developing Healthier Oils and Other Food Ingredients through Genome Editing.** Javier Gil Humanes*, *Calyxt, Inc., USA*

4:25 **USDA Approach to Regulating Plant Breeding Innovation.** Neil E. Hoffman*, *USDA/APHIS, USA*

4:45 **Development of Strategies for Modification of Seed Oil Formation.** Randall J. Weselake*, *Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada* ***(Biotechnology Division Ching Hou Biotechnology Award Winner)***

BIOTECHNOLOGY

BIO 3.1/IOP 3/PRO 3.1: Biofuels

Chairs: Frank Dumeignil, Lille University, France; Xiaofei P. Ye, University of Tennessee, USA; and Megan Hums, USDA, ARS, ERRC, USA

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1:55 **Introduction**

2:00 **An Innovative Lipid Extraction Process from Spent Coffee Grounds.** Mingming Lu*[1], Yang Liu, and Gerhard Knothe[2], [1]*University of Cincinnati, USA;* [2]*USDA, ARS, NCAUR, USA*

2:20 **Modulating the Solubility of Saturated Monoglycerides (SMG) and Glycerol (GLY) in Blended Biodiesel Fuels.** Richard W. Heiden*[1], and Martin Mittelbach[2], [1]*R.W. Heiden Associates, LLC, USA;* [2]*Institute of Chemistry, University of Graz, Austria*

2:40 **Co-production of Acrylic Acid in a Typical Biodiesel Plant: A Techno-Economic Assessment.** Xiaofei P. Ye*, *University of Tennessee, USA*

3:00 **The Use of Controlled Flow Cavitation to Improve the Performance of Degumming, Refining and Biodiesel Operations.** Darren J. Litle*, *Arisdyne Systems, Inc., USA*

EDIBLE APPLICATIONS TECHNOLOGY

EAT 3: Implication of Lipids Structuring in Food Application

Chairs: José Trujillo, Chemtech, Peru; and Kaustuv Bhattacharya, DuPont Nutrition & Biosciences ApS, Denmark

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1:55 **Introduction**

2:00 **A Novel Strategy for Increasing Solid Fat Content of Oils without Addition of Saturated or trans Fats or Oil Gelling Compounds.** Alejandro G. Marangoni* and Reed A. Nicholson, *University of Guelph, Canada*

2:20 **Effect of Various Concentrations of Two Stabilizer Series on Peanut Butter's Physical and Functional Attributes.** Rachel E. Mertz, and Donald D. Gifford*, *Stratas Foods, USA*

2:40 **Controlling the Texture of Oil-continuous Systems by Filler Particles.** Auke de Vries* and Dérick Rousseau, *Ryerson University, Canada*

3:00 **Development of Solids in Palm Oil at Varying Cooling Temperatures.** Neil R. Widlak*, *Consultant, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Structuring Lipids Through Enzymatic Glycerolysis.** Reed A. Nicholson* and Alejandro G. Marangoni, *University of Guelph, Canada*

4:05 **Effect of Storage Time on Physical Properties of Sonocrystallized All-purpose Shortening.** Juhee Lee*, Melissa Marsh, and Silvana Martini, *Utah State University, USA*

4:25 **Application of Spray-dried Oil Powder in Oil-in-Fat Dispersions.** Iris Tavernier[1], Bart Heyman[2], Tony Ruyssen[1], Paul Van Der Meeren[1], Filip Van Bockstaele*[1], and Koen Dewettinck[3], [1]*Ghent University, Belgium;* [2]*Vandemoortele Lipids R&D, Belgium;* [3]*University of Gent, Belgium*

4:45 **Sensory Evaluation and Physical Properties of Wax-Stabilized Peanut Butter.** Jill Moser*, Julie Anderson, Hong-Sik Hwang, Jeffrey A. Byars, and Mukti Singh, *USDA, ARS, NCAUR, USA*

5:05 **Practical Experiences on Fat Crystallization in Food and Non-food Industry.** Jose Trujillo*, *Chemtech, Peru*

EDIBLE APPLICATIONS TECHNOLOGY

ANA 3.1/EAT 3.1/IOP 3.1: Analysis of Food Applications of Low Saturated Fats/Oils; and PUFA, and Fat-Soluble Vitamins with Emphasis on Nutrition Labeling

Chairs: Jillonne Kevala, Food and Drug Administration, USA; and Serpil Metin, Cargill R&D, USA

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Joint session: for details, see **ANA 3.1/EAT 3.1/IOP 3.1** on page 67.

HEALTH AND NUTRITION

H&N 3: Dairy Fatty Acids and Health

This session is sponsored in part by National Dairy Council.

Chairs: Moises Torres-Gonzalez, National Dairy Council, USA; and Ignacio Vieitez, UdelaR, Uruguay

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1:55 **Introduction**

2:00 **Saturated Fat and Cardiometabolic Health.** Moises Torres-Gonzalez*, *National Dairy Council, USA*

2:20 **Dairy Fat and Cardiometabolic Health.** Mario Kratz*, *Fred Hutchinson Cancer Research Center, USA*

3:00 **Effects of Medium- and Long-chain Triacylglycerols on Lipid Metabolism and Host Faecal Microbiota Composition in C57BL/6J Mice.** Shengmin Zhou*[1], Yuan Rong Jiang[2], and Liangli Yu[2], *[1]Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China; [2]Dept. of Nutrition and Food Science, University of Maryland, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Dairy Fatty Acids: Potential Benefits.** Jana Kraft* and Allison Unger, *University of Vermont, USA*

4:25 **Other Dairy Fat Components with Potential Health Benefits: Milk Phospholipids.** Christopher N. Blesso*, *University of Connecticut, USA*

5:05 **A Novel Dietary Oil Rich in Pentadecanoic (C15:0) and Heptadecanoic (C17:0) Odd-chain Fatty Acids.** Eneko Ganuza* and Magdalena Amezquita, *Heliae Development LLC, USA*

INDUSTRIAL OIL PRODUCTS

BIO 3.1/IOP 3/PRO 3.1: Biofuels

Chairs: Frank Dumeignil, Lille University, France; Xiaofei P. Ye, University of Tennessee, USA; and Megan Hums, USDA, ARS, ERRC, USA

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Joint session: for details, see BIO 3.1/IOP 3/PRO 3.1 on page 68.

INDUSTRIAL OIL PRODUCTS

ANA 3.1/EAT 3.1/IOP 3.1: Analysis of Food Applications of Low Saturated Fats/Oils; and PUFA, and Fat-Soluble Vitamins with Emphasis on Nutrition Labeling

Chairs: Jillonne Kevala, Food and Drug Administration, USA; and Serpil Metin, Cargill R&D, USA

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Joint session: for details, see **ANA 3.1/EAT 3.1/IOP 3.1** on page 67.

LIPID OXIDATION AND QUALITY

ANA 3c/LOQ 3a: Advanced Analytical Techniques for Lipid Oxidation

Chairs: Rick Della Porta, Pepsico/Frito-Lay, USA; and Matthew Fhaner, University of Michigan-Flint, USA

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Joint session: for details, see **ANA 3c/LOQ 3a** on page 67.

LIPID OXIDATION AND QUALITY

LOQ 3b: Specialty Oils: Phytochemicals, Extraction and Oxidative Stability

Chairs: Hong-Sik Hwang, USDA, ARS, NCAUR, USA; Ignacio Vieitez, UdelaR, Uruguay; and Alex Kripps, Caldic USA, USA

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3:40 **Introduction**

3:45 **Supercritical Fluid Extraction of Black Sesame Seeds and Study of the Functional Properties Obtained in Comparison with the Extraction by Soxhlet Method.** Ignacio Vieitez*[1], Florencia Jorge[1], Elena Dutto[1], Lucia Velazco[1], and Cecilia Abirached[2], *[1]UdelaR, Uruguay; [2]PEDECIBA Química, Dept. de Ciencia y tecnología de los Alimentos, Universidad de la República, Uruguay*

4:05 **Development of Pulse Protein-Polyphenol Conjugates for Improved Oxidative Stability of Flaxseed Oil-in-Water Emulsions.** Saakshi Parolia[1], Rick Green[2], Michael Nickerson[1], and Supratim Ghosh*[1], *[1]University of Saskatchewan, Canada; [2]POS Bio-Sciences, Canada*

4:25 **Physicochemical Characteristics and Bioactivities of Black Raspberry Seed Oil.** Keum Taek Hwang*, Hee Jae Lee, Taehwan Lim, and Hana Jung, *Seoul National University, Republic of Korea*

4:45 **Effects of Deacidification Methods on High FFA Containing Oils Obtained from Sea Buckthorn Berry.** Longkai Shi* ***(AOCS Honored Student Award Winner; Manuchehr (Manny) Eijadi Award Winner)***, Ruijie Liu, Ming Chang, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*

5:05 **Characterization of Key Aroma Compounds of Turkish Olive Oils by Aroma Extract Dilution Analysis.** Gamze Guclu*[1], Songul Kesen[2], Hasim Kelebek[3], and Serkan Selli[1], *[1]Cukurova University, Turkey; [2]Gaziantep University, Turkey; [3]Adana Science and Technology University, Turkey*

PHOSPHOLIPID

PHO 2: New Trends in Lecithin Process, Modification and Applications

Chairs: Moghis Ahmad, Jina Pharmaceuticals Inc., USA; and Swapnil Jadhav, Archer Daniels Midland Co., USA

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1:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

2:00 **Polar Lipids: Potentiality for Exploration.** Xuebing Xu*, *Wilmar Global Research and Development Center, China* ***(Stephen S. Chang Award Winner)***

2:25 Coffee Meet & Greet with the award winner

2:40 **Enzymatic Production of Marine Based Lysophosphatidylcholine Enriched in ω-3 Polyunsaturated Fatty Acids.** Bo Zhou[1], Sampson Anankanbil[2], Yongjin He[1], and Zheng Guo*[1], *[1]Aarhus University, Denmark; [2]Dept. of Engineering, Aarhus University, Denmark*

3:00 **Effect of Ultrasonic Treatment on the Physicochemical Properties and Oxidative Stability of Phospholipids.** Xiaofei Jiang*[1], Shengmin Zhou [1], Yuan-Rong Jiang[1], Alireza Abbaspourrad[2], and J. Thomas Brenna[2], *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China; [2]Cornell University, USA*

3:20 **Networking Break**

3:40 **Welcome Back**

3:45 **Production and Applications of New Structured Phospholipids with Omega 7, Palmitoleic Fatty acid.** Ernesto M. Hernandez*, *Advanced Lipid Consultants, USA*

4:05 **Application of Zinc and Calcium Acetate to Precipitate Milk Fat Globule Membrane Components from a Dairy By-Product.** Tao Fei, Stephanie Clark, Tong Wang, and Nathan R. Price*, *Iowa State University, USA*

4:25 **Lecithin: The Role in Compounds (Coating, Filling), Does the Source Matter?** Donna C. Studenka*, *Bunge Loders Croklaan, USA*

4:45 **Double-Layer Chia Oil Microcapsules with Sunflower Lysolecithin and Maltodextrin-Chia Mucilage.** *Mabel Tomás*,* CIDCA (CONICET-UNLP), Argentina

5:05 **Forty Years of 31P NMR Spectroscopy of Phospholipids.** *Kristie Adams*[1], and Bernd W.K Diehl[2],* [1]Steelyard Analytics, Inc., USA; [2]Spectral Service AG, Germany

PROCESSING

PRO 3: Processing of Oils and Fats in China and the US

(joint session with AOCS China Section)

Chairs: Xuebing Xu, Wilmar Global Research and Development Center, China; and Michael Boyer, AWTMS, USA

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1:55 **Introduction**

2:00 **To be announced.** Andres Martin, *Bunge, USA*

2:20 **Trends of the Enzyme-Assisted Aqueous Extraction of Soybean Oil and Protein in China.** Xiaonan Sui* and Lianzhou Jiang, *Northeast Agricultural University, China*

2:40 **Processing of Rice Bran Oil in China.** Yuan-Rong Jiang*, *Wilmar Global Research and Development Center, China*

3:00 **Networking Break**

3:20 **Welcome Back**

3:25 **Processing of Flavored Rapeseed Oil in China.** Manyi Wang*, Xiangyu Wang, Fei Guo, Fengyan Wang, and Ju Hui, *COFCO Nutrition & Health Research Institute, China*

3:45 **Antioxidant Activities of Natural Antioxidants in Rice Bran Oils during Oil Refining Processing.** Ruijie Liu*, Lisha Zhang, Ruru Liu, Ming Chang, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*

4:05 **Recent Progress in Converting Grain-based Feedstock into Bioethanol, Oils, and Protein Co-products.** Keshun Liu*, *USDA, ARS, USA*

4:25 **To be announced.** William Blake Hendrix*, *Desmet Ballestra North America Inc., USA*

4:45 **Summary Remarks from the Session Chairs**

PROCESSING

BIO 3.1/IOP 3/PRO 3.1: Biofuels

Chairs: Frank Dumeignil, Lille University, France; Xiaofei P. Ye, University of Tennessee, USA; and Megan Hums, USDA, ARS, ERRC, USA

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Joint session: for details, see **BIO 3.1/IOP 3/PRO 3.1** on page 68.

PROTEIN AND CO-PRODUCTS

PCP 3a: Proteins in Delivery Functions

Chairs: Chibuike Udenigwe, University of Ottawa, Canada; and Lingyun Chen, University of Alberta, Canada

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1:55 **Introduction**

2:00 **Beta-lactoglobulin and its Cationic Derivatives for Effective Encapsulation and Delivery of Bioactives.** Qin Wang*, *University of Maryland, USA*

2:20 **Plant Protein Based Nano-Emulsions for Delivery of Vitamin D.** Lingyun Chen, Zhigang Tian, and Niharika Walia*, *University of Alberta, Canada*

2:40 **Prolamin-based Nanoparticles as Sustained Release Drug Delivery System.** Yue Zhang*, *University of Nebraska-Lincoln, USA*

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3:00 **Development of Pickering Oil-in-Water Emulsions Stabilized by Desolvated Pea Protein Nanoparticles.** Chi Diem Doan* and Supratim Ghosh, *University of Saskatchewan, Canada*

PROTEIN AND CO-PRODUCTS

PCP 3b: Biotransformation of Proteins

Chairs: Buddhi Lamsal, Iowa State University, USA; and Xiaonan Sui, Northeast Agricultural University, China

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3:40 **Introduction**
3:45 **Recent Progress in Preparing Bioactive Peptides from Food Proteins.** Jianping Wu*, *University of Alberta, Canada*
4:05 **Fabrication and Characterization of Gelatin-Based Nanofibers by Emulsion Electrospinning.** Cen Zhang* and Hui Zhang, *Zhejiang University, China*
4:25 **Interactions between Peptides and Polyphenols: Their Potential Usages in Recovering Peptides.** Xiaonan Sui* and Lianzhou Jiang, *Northeast Agricultural University, China*
4:45 **Bioactivity of Anti-Cancer Pentapeptide and its Application in Orange Juice.** Navam S. Hettiarachchy*, Ruiqi Li, and Ronny Horax, *University of Arkansas, USA*
5:05 **Hydrolysis of Carioca Beans Protein and Some Functional Properties.** Francine Gomes Basso Los[1], Ivo Mottin Demiate[2], and Buddhi Lamsal*[1], *[1]Iowa State University, USA; [2]Ponta Grossa State University, Brazil*

SURFACTANTS AND DETERGENTS

S&D 3: Trends in Household Cleaning

Chairs: Mark Sivik, Procter & Gamble Co., USA; and Brian Sansoni, American Cleaning Institute, USA

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1:55 **Introduction**
2:00 **Evolving Trends and their Influence on the Design of Fabric, Air and Home Care Products.** Mary B. Johnson*, *P&G Fabric and Air Care, USA*
2:30 **Commercialization Opportunities for Printed, Flexible, Stretchable and Functional Fabric Sensors and IoT. What does it mean to have a functional fabric?** Eric Spackey*, *Advanced Functional Fabrics of America, USA*
2:50 **Promoting Fragrance's Ability to Enhance Lives — People, Perfume and the Planet.** Farah K. Ahmed*, *Fragrance Creators Association, USA*
3:20 **Networking Break**
3:40 **Welcome Back**
3:45 **Green Chemistry and Noncovalent Derivatization in Fabrics and Home Care Products.** John C. Warner*, *Warner Babcock Institute for Green Chemistry, USA*
4:25 **Product Manufacturers Approach to Ingredient Transparency and Sustainability.** Nancy Falk*, *Clorox, USA*
4:45 **Biomaterials and the Circular Economy.** Michael A. Saltzberg*, *DuPont Industrial Biosciences, USA*
5:05 **Appliance Manufacturers Trends and Approach to Sustainability.** Brigitte Mader-Urschel*, *GE Appliances, USA*

Share your Annual Meeting experience!

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SURFACTANTS AND DETERGENTS

S&D 3.1: General Surfactants II: Surfactant Synthesis and Fundamental Properties

Chairs: George A. Smith, Sasol, USA; and Sanja Natali, ExxonMobil Chemical, USA

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1:55 **Introduction**
2:00 **An Analytically Defined Fire-Suppressing Foam Formulation for Evaluation of Fluorosurfactant Replacement.** Katherine M. Hinnant[1], Spencer L. Giles[1], Arthur W. Snow*[1]◆, John P. Farley[1], James W. Fleming[2], and Ramagopal Ananth[1], *[1]U.S. Naval Research Laboratory, USA; [2]NOVA Scientific Inc., USA*
2:20 **Correlation Between Hydrophilic-Lipophilic Deviation (HLD) and Detergency of Different Oily Soils.** Parichat Phaodee* and David A. Sabatini, *University of Oklahoma, USA*
2:40 **Tuning Structuring in Aqueous Media via Surfactant-polymer Interactions.** Paschalis Alexandridis◆* and Marina Tsianou, *University of Buffalo, SUNY, USA*
3:00 **Characteristic Curvature of Secondary Alcohol Ethoxylates and Emulsion Stability.** Michael Tate*, Daniel Miller, Emily Bellairs, Bethany Karl, and Christopher J. Tucker, *The Dow Chemical Company, USA*
3:20 **Networking Break**
3:40 **Welcome Back**
3:45 **Effect of Alkyl Chain and Oligomer Distribution on Performance of Ziegler Alcohol Ethoxylates.** Tamra Weemes*[1] and George A. Smith[2], *[1]Sasol Performance Chemicals, USA; [2]Sasol North America, USA*
4:05 **The Effect of Surfactant Systems, Alcohol Types and Salinity on Cold Water Detergency of Triglyceride Semisolid Soil.** Parichat Phaodee* and David A. Sabatini, *University of Oklahoma, USA*
4:25 **On the Oil-like and Surfactant-like Characterization of Polar Oils.** Edgar Acosta* and Amir Ghayour, *University of Toronto, Canada*
4:45 **Characteristic Curvature of Various Commercial Laundry Formulations.** Jeff Harwell, Brian P. Grady, and Michael T. Warren*, *University of Oklahoma, USA*
5:05 **New Sugar-based Surfactant Compositions.** Phillip K. Vinson* and Ryan M. West, *The Procter & Gamble Co., USA*

Wednesday morning

ANALYTICAL

ANA 4a: Trace Contaminants

Chairs: Jessica Beekman, US Food and Drug Administration, USA; and Jan Kuhlmann, SGS Germany GmbH, Germany

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7:55 **Introduction**
8:00 **Managing Chemical Contaminants in Foods: A Review of Selected Chemicals and Mitigation Strategies.** Richard Stadler*, *Nestlé Research, Switzerland*
8:20 **Estimated Exposures to 3-MCPD Esters and Glycidyl Esters from U.S. Consumption of Infant Formula.** Judith Spungen*, *FDA, USA*
8:40 **MCPD and Glycidyl Esters - Present and Future EU Legislation, Implementation in German Risk Management.** Martin Kaminski*, *Federal Office of Consumer Protection and Food Safety, Germany*
9:00 **Opportunities and Drawbacks in the Mitigation of 3-MCPD- and Glycidylesters.** Nils Hinrichsen*, *Archer Daniels Midland, Co., USA*
9:20 **Quantification of MCPDE and GE in Edible Oils and Fats: A High Throughput Method for QC Purposes.** Ralph P. Zwagerman* and Pierre Overman, *Bunge Loders Croklaan, The Netherlands*

9:40 **Stability of Food Contaminants 3-MCPD-, 2-MCPD- and Glycidyl Fatty Acid Esters in Foods During Long-Term Storage.** Jan Kuhlmann*, *SGS Germany GmbH, Germany*

ANALYTICAL

ANA 4b: Authentication of High Value Oils, including Olive Oil, Sensory Evaluation and Correlation with Analytical Results

Chairs: Rodney Mailer, Australian Oils Research, Australia; and Luisito Cercaci, Pompeian, USA

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10:20 **Introduction**

10:25 **Assessment of Authenticity of Blended Oil by Triacyglycerols and Chemometrics Tools.** Hong Yang*, Wen Ming Cao, and Yuan Rong Jiang, *Wilmar Biotechnology Research & Development Center (Shanghai) Co., Ltd., China*

10:45 **Flash Gas-Chromatography in Tandem with Chemometrics: A Screening Tool to Discriminate the Olive Oil Quality.** Alessandra Bendini*[1], Chiara Cevoli[1], Sara Barbieri[1], Diego L. García González[2], and Tullia GT Gallina Toschi[3], *[1]DISTAL University of Bologna, Italy; [2]Instituto de la Grasa (CSIC), Spain; [3]Alma Mater Studiorum - University of Bologna, Italy*

11:05 **Putting a Gate Around High Quality EVOOs from Specific Origins by ^{1}H NMR Profiling Databases.** Chiara Roberta Girelli, Laura Del Coco[1], Federica Angilè[2], Francesca Calò[3], Paride Papadia[3], Andrea Biagianti[4], Daniele Barbini[4], and Francesco Paolo Fanizzi*[2], *[1]Dept. of Biological and Environmental Sciences and Technologies (Di.S.Te.B.A.), University of Salento,, Italy; [2]Dipartimento di Scienze e Tecnologie Biologiche ed Ambientali Università del Salento, Italy; [3]Dipartimento di Scienze e Tecnologie Biologiche ed Ambientali Università del Salento Italy; [4]Certified Origins Italia Srl Loc. Madonnino, Italy*

11:25 **A New Identity Standard for Olive Oil Refined.** Gina M. Clapper*[1], Kristie Laurvick[1], and Richard C. Cantrill[2], *[1]USP, USA; [2]Independent Consultant, Canada*

11:45 **Olive Oil Authentication Using Raman Spectroscopy Combined with Pattern Recognition Analysis.** Didem P. Aykas* and Luis E. Rodriguez-Saona, *Ohio State University, USA*

12:05 **Near-Infrared Spectroscopy as a Rapid Screening Technique to Determine Authenticity and Adulteration of Avocado Oil.** Kathryn J. Lawson-Wood*[1], Hannah Rance[1], and Ariel Bohman[2], *[1]PerkinElmer, UK; [2]PerkinElmer, USA*

BIOTECHNOLOGY

BIO 4: General Biotechnology: Novel Lipids and Proteins

Chairs: Long Zou, Bunge Oils, USA; and Zheng Guo, Aarhus University, Denmark

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7:55 **Introduction**

8:00 **"Directed Evolution and New-to-Nature Chemistry" - Experience of Working Together the Nobel Prize Laureate in Chemistry 2018.** Zheng Guo*, *Aarhus University, Denmark*

8:40 **Computational Protein Design.** Walter Rakitsky[1], and Alexandre L. Zanghellini*[2], *[1]TerraVia, USA; [2]Arzeda, USA*

9:00 **Glycol-Functionalized Ionic Liquids for Enzyme Stabilization.** Hua Zhao*[1], and Gary A. Baker[2], *[1]University of Northern Colorado, USA; [2]University of Missouri-Columbia, USA*

9:20 **Development of Novel Enzymes for *trans* Fat-Free Oil Conversion Using Recurrent Neural Network-based Structure Prediction.** Andres E. Castillo*[1], Richard B. Rubin[2], Juan C. Duarte[1], and Leonardo Alvarez[1], *[1]Protera Biosciences, Chile; [2]Protera Biosciences, USA*

9:40 **The Next Generation of Immobilized Lipases for Interesterification in Vegetable Oil Processing.** Per Munk Nielsen and Hans Christian Holm*, *Novozymes A/S, Denmark*

10:00 **Networking Break**
10:20 **Welcome Back**

10:25 **Enhancing the Bioaccumulation of Curcumin in Caenorhabditis elegans by Using Nanoemulsion-Based Delivery Systems.** Ruojie Zhang* ***(Lipid Processing and Biotechnology Award Winner)***, Peiyi Shen, D. Julian J. McClements, and Yeonhwa Park, *University of Massachusetts Amherst, USA*

10:45 **Biotechnology Approaches to Convert Sugars into Alka(e)nes: A Review.** Jingbo Li*, *MIT, USA*

11:05 **A New Stable Protease for Medical Instrument Cleaning.** Arjan Siebum*[1], Marvanne DeClerck[2], Jenny Newton[2], and Arjen J. Hoekstra[1], *[1]DuPont Industrial Biosciences, The Netherlands; [2]DuPont Industrial Biosciences, USA*

11:25 **Solvent-Free Enzymatic Synthesis of Glyceryl Monogallate Optimized by Taguchi Method.** Siyu Zhang* ***(Biotechnology Division Student Award Winner)*** and Casimir C. Akoh, *University of Georgia, USA*

11:45 **Valorization of Fatty Alcohols: Derivatization of Fatty Alcohols into Novel Antioxidant Emulsifiers for Fish Oil Delivery.** Sampson Anankanbil*[1] ***(AOCS Honored Student Award Winner; Peter and Clare Kalustian Award Winner)***, Bianca Perez[2], Weiwei Cheng[3], Gustavo Gouveia, and Zheng Guo[4], *[1]Aarhus University, Dept. of Engineering, Denmark; [2]Dept. of Engineering, Aarhus University, Denmark; [3]South China University of Technology, China; [4]Aarhus University, Denmark*

12:05 **Physicochemical Properties of Oleogels Synthesized by Lipase-Catalyzed Interesterification.** Heejin Kim*[1], Nakyung Choi[2], No Young Kim[3], Hong-Sik Hwang[4], Byung Hee Kim[5], and In-Hwan Kim[6], *[1]Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea; [2]Korea University, South Korea; [3]Korea university, South Korea; [4]USDA, ARS, NCAUR, USA; [5]Sookmyung Women's University, Korea; [6]Korea University, Republic of Korea*

BIOTECHNOLOGY

BIO 4.1/S&D 4: Biosurfactants and Environmentally Friendly Ingredients

Chairs: Sujan Singh, Arkema, USA; and Douglas Hayes, University of Tennessee, USA

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7:55 **Introduction**

8:00 **Comparative Antimicrobial Efficiency Among C18 and C22 Sophorolipid Congeners towards Select Gram+ Bacterial Strains.** Richard D. Ashby* and Daniel K.Y. Solaiman, *USDA, ARS, ERRC, USA*

8:20 **How Biosurfactants Can Enable Degreasing.** J.R. Bennett, Eric Theiner*, and Stephanie Hackney, *Evonik Corporation, USA*

8:40 **The Combined Effects of Soap and Sophorolipids in the Development of Mild Body Wash for Sensitive Skin.** Glen Lelyn Quan*[1], Chie Matsubara[1], Yoshihiko Hirata[2], Satoshi Yoshida[1], Maiko Iwai[1], Shinji Hamaguchi[1], Etsuko Komiyama[3], and Shigaku Ikeda[2], *[1]Saraya Co., Ltd., Japan; [2]Saraya Co., Ltd., Japan; [3]Juntendo University, Japan*

9:00 **Optimal Regulation of Oxygenation for Coordination of Rhamnolipid Productivities and Residual Fatty Acid Content in Fermentation of *Pseudomonas aeruginosa*.** Qin Meng*, *Zhejiang University, China*

9:20 **Aspartic Acid-Based Ampholytic Amphiphiles: Synthesis, Characterization, and pH-Dependent Properties at Air/Water and Oil/Water Interface.** Weiwei Cheng[1], Sampson Anankanbil[2], Liu Guoqin[3], and Zheng Guo*[4], *[1]South China University of Technology, China; [2]Dept. of Engineering, Aarhus University, Denmark; [3]School of Food Science and Engineering, South China University of Technology, China; [4]Aarhus University, Denmark*

9:40 **Beyond the Blindfold – Conquering the Unseen Enemy.** Gina P. Sloan*, *Microban International, Ltd., USA*

10:00 **Networking Break**
10:20 **Welcome Back**

10:25 **Fatty Acid, Methyl Ester and Vegetable Oil Ethoxylates.** George A. Smith*, *Sasol North America, USA*

11:05 **Biobased Surfactants: An Overview.** Douglas G. Hayes*, *University of Tennessee, USA*

11:25 **Laundry Sustainability vs. Laundry Sanitization: The Tension and the Solutions.** Nancy Falk*, *Clorox, USA*

11:45 **Biodegradable Dispersants for Phosphate Free Automatic Dishwashing Detergents.** Scott A. Backer*[1], Severine S. Ferrieux[2], Eric P. Wasserman[1], Paul P. Mercando[1], Randara Pulukkody[1], Anurima Singh[1], Lin Wang, Ken Laughlin[4], Steve Arturo[1], and Lu Bai[1], *[1]Dow Chemical Company, USA; [2]The Dow Chemical Company, France*

12:05 **Greener and Milder Functionalized Sugar-Based Surfactants for Home Care and Industrial Applications.** Robert J. Coots*, Dennis Abbeduto, and Andy Sun, *Colonial Chemical, Inc., USA*

EDIBLE APPLICATIONS TECHNOLOGY

EAT 4: Phase Transition and Interfacial Phenomena in Complex Food Systems

Chairs: Dérick Rousseau, Ryerson University, Canada; and Ravin Gnanasambandam, USA

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7:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

8:00 **Hydrophilic Fat Crystals: Partitioning Across an O/W Interface.** Richard W. Hartel*, *University of Wisconsin-Madison, USA* ***(Supelco AOCS Research Award Winner)***

8:25 Coffee Meet & Greet with the award winner

8:40 **Aqueous Droplets as Active and Inactive Fillers in Crystal-stabilized Water-in-Oil Emulsions.** Dérick Rousseau*, *Ryerson University, Canada*

9:00 **The Role of Oscillatory Structural Forces in the Gelation Behaviour of Citrem-Stabilized Nanoemulsions.** Kunal Kadiya*[1], and Supratim Ghosh[2], *[1]Dept. of Food and Bioproduct Sciences, University of Saskatchewan, Canada; [2]University of Saskatchewan, Canada*

9:20 **Crystal Stabilization of Edible Oil Foams.** Filip Van Bockstaele*[1], Lien Tytgat[1], Robbe Heymans[1], Tom Rimaux[2], and Koen Dewettinck[3], *[1]Ghent University, Belgium; [2]Vandemoortele R&D Centre, Belgium; [3]University of Gent, Belgium*

9:40 **Formation of Low Density and Free-flowing Hollow Microparticles from Butter and Fractionated Palm Oil Mixture.** Junsi Yang*, Joshua Gudeman, and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*

10:00 **Networking Break**
10:20 **Welcome Back**

10:25 **High Shear and Ultrasound-Assisted Emulsification as Methods for Preparing Sacha Inchi (*Plukenetia volubilis* L.) Oil Emulsions.** Lina-Marcela Gonzalez Cardoso*[1], Claudia Elizabeth Mora Huertas[2], and Luis-Felipe Gutiérrez[3], *[1]Facultad de Ciencias Agrarias - Universidad Nacional de Colombia Sede Bogotá, Colombia; [2]Departamento de Farmacia, Universidad Nacional de Colombia Sede Bogotá, Colombia; [3]Instituto de Ciencia y Tecnología de Alimentos - Universidad Nacional de Colombia Sede Bogotá, Colombia*

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10:45 **Performance of a Dairy-Based Phospholipid Ingredient in a Low-fat Spread Product.** Pravin Gadkari, Ravin Gnanasambandam, and Supratim Ghosh*, *University of Saskatchewan, Canada*

11:05 **Relationship Between Stability and Structure of Sodium Caseinate-Stabilized Emulsions.** Juan M. Montes de Oca[1], Cristián J. Huck Iriart[1], Federico L. Jara[2], Maria V. Borroni[2], Roberto J. Candal[3], and Maria L. Herrera*[4], *[1]National University of San Martin, Argentina; [2]University of Buenos Aires-ITPN, Argentina; [3]3IA-UNSAM, Argentina; [4]University of Buenos Aires, Argentina*

11:25 **Vegetable and Mineral Oil Organogels Based on Monoglyceride and Lecithin Mixtures.** Jorge F. Toro-Vazquez*[1], Mayra Aguilar-Zarate[1], Flor Alvarez-Mitre[2], and Miriam A. Charo-Alonso[1], *[1]Universidad Autónoma de San Luis Potosí, Mexico; [2]Universidad Autónoma de San Luis Potosi, Mexico*

11:45 **Characterization of Whey Protein-Lipid Interactions within Oleocolloid Matrices through Infrared and Raman Spectroscopy.** Clifford Park*, Terrence Dent, Rafael Jimenez-Flores, and Farnaz Maleky, *Ohio State University, USA*

12:05 **On the Importance of Minor Components and Oil Properties for Oleogel Strength.** Maria Scharfe* and Eckhard Flöter, *Technical University Berlin, Germany*

HEALTH AND NUTRITION

H&N 4: Health and Nutrition Awards and General Topics

Chairs: Matthew Picklo, USDA, ARS, Grand Forks Human Nutrition Research Center, USA; and Elisa Di Stefano, University of Ottawa, Canada

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7:55 **Introduction**

AOCS SCIENTIFIC AWARD WINNER

8:00 **Oxidized Dietary Fat: A Novel Risk Factor of Inflammatory Bowel Disease and Colon Cancer via Altering Gut Microbiota.** Guodong Zhang*, *University of Massachusetts-Amherst, USA* ***(AOCS Young Scientist Research Award Winner)***

8:25 Coffee Meet & Greet with the award winner

8:40 **4-HNE, an Endogenous Lipid Peroxidation Product, Exacerbates Colonic Inflammation through Activation of Toll-like Receptor 4 Signaling.** Yuxin Wang*, Weicang Wan, and Guodong Zhang, *University of Massachusetts-Amherst, USA*

9:00 **Anti-inflammatory Effect of a Novel Metabolite from Marine Carotenoid Fucoxanthin.** Masashi Hosokawa*, Naoki Takatani, Daisuke Taya, Fumiaki Beppu, and Kazuo Miyashita, *Hokkaido University, Japan*

9:20 **Oxidized Triacylglycerols from Grape Seed Oil Modulate Phospholipid Pool in Gastric Cells.** Sarah Frühwirth[1], Sofie Zehetner[1], Mohammed Salim[1], Sonja Sterneder[1], Barbara Lieder[1], Luca Nicolotti[2], Martin Zehl[3], Markus Herderich[2], Veronika Somoza[1], and Marc Pignitter*[1], *[1]Dept. of Physiological Chemistry, Faculty of Chemistry, University of Vienna, Austria; [2]Metabolomics South Australia, Australian Wine Research Institute, Adelaide, Australia; [3]Dept. of Analytical Chemistry, Faculty of Chemistry, University of Vienna, Austria*

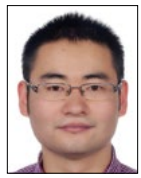
9:40 **Comparison of Postprandial Triacylglycerols and Satiety Ratings by Healthy Men Following Ingestion of Tempered Palm Stearin-based Emulsions Containing Droplets in Different Physical States.** Samar Hamad*, Surangi K.P.H. Thilakarathna, Amanda Cuncins, Melissa Brown, and Amanda Wright, *University of Guelph, Canada*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Analysis of Plasmalogen Species in Serum and Post-mortem Brain Tissue of Alzheimer's Disease Patients.** Yurika Otoki*[1], Shunji Kato[1], Kiyotaka Nakagawa[1], Di Yu[2], Danielle J. Harvey[3], Lee-Way Jin[3], Britany N. Dugger[3], Walter Swardfager[2], and Ameer Taha[3], *[1]Tohoku University, Japan; [2]Sunnybrook Research Institute, Canada; [3]University of California, Davis, USA*

10:45 **Applying Carbon-13 Natural Abundance in Human Plasma as a Tool for the Assessment of n-3 Polyunsaturated Fatty Acid Metabolism.** Adam H. Metherel*[1], Maha Irfan[1], Shannon L. Klingel[2], David M. Mutch[2], and Richard P. Bazinet[1], *[1]University of Toronto, Canada; [2]University of Guelph, Canada*



11:05 **Lipidomic Profiling Reveals Soluble Epoxide Hydrolase as a Therapeutic Target of Obesity-induced Colonic Inflammation.** Weicang Wang* (***AOCS Honored Student Award Winner; Health and Nutrition Division Student Award Winner)***, Jun Yang, Jianan Zhang, Yuxin Wang, Katherine Z. Sanidad, Zhenhua Liu, Bruce D. Hammock, and Guodong Zhang, *University of Massachusetts-Amherst, USA*

11:25 **Why Fat Was the Dietary Devil … and Then it Wasn't.** David M. Klurfeld*, *USDA Agricultural Research Service, USA* ***(Ralph Holman Lifetime Achievement Award Winner)***

INDUSTRIAL OIL PRODUCTS

IOP 4/PRO 4.1: Biorefinery Technology and Catalysis

Chairs: Helen Ngo Lew, USDA, ARS, ERRC, USA; and Kris Knudson, Crown Iron Works Co., USA

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7:55 **Introduction**

8:00 **An Efficient Catalytic Approach to the Synthesis of Wax Esters from Fatty Acid Methyl Esters.** Duc Hanh Nguyen[1], Guillaume Raffa[1], Yohan Morin[1], Simon Desset[1], Frédéric Capet[1], Véronique Nardello-Rataj[1], Franck Dumeignil*[2], and Régis Gauvin[1], *[1]UCCS, France; [2]Université de Lille, France*

8:20 **Towards the Biolubricants Endgame: Building Superior Lubricants, One Structural Feature at a Time.** Latchmi Raghunanan*[1], Laziz Bouzidi[2], and Suresh Narine[2], *[1]Trent Centre for Biomaterials Research, Departments of Physics & Astronomy and Chemistry, Trent University, Canada; [2]Trent University, Canada*

8:40 **Renewable Diesel from Waste Lipids: Challenges and Conversion Impacts.** David Schwalje*[1], Larissa Perotta[2], and Michael Zhao[1], *[1]Axens NA, USA; [2]Axens, France*

9:00 **Challenges in Converting Various Fats and Oils into a High Yield of Renewable Jet Fuel.** Asbjørn S. Andersson*, *Haldor Topsoe A/S, Denmark*

9:20 **Effect of Thermal Treatment on Feeding Value of Expeller Soybean Meal in Hexane-free Soybean Processing.** Michal Kaválek* and Vladimír Plachý, *Farmet a.s., Czech Republic*

9:40 **Microwave and Megasonic Treatments for Increased Canola Oil Yield.** Mohamed M. Gaber*[1], Pablo Juliano[1], Peter Mansour[1], and Francisco Trujillo1[2], *[1]CSIRO, Australia; [2]University of New South Wales, Australia*

10:00 **Networking Break**

10:20 **Welcome Back**

10:25 **Maximizing Heat Recovery in Soybean Processing.** Mohamed Abid*, *Solex Thermal Science Inc., Canada*

10:45 **A New Material for Reducing Glycidyl Esters in Edible Oil.** Chelsea L. Grimes* and Cristian Libanati, *W.R. Grace, USA*

11:05 **A Comparison of Conventional Short Path Distillation to a Proprietary Short Path Stripper in Reducing Glycidyl Fatty Acid Esters (GEs) and 3-MCPD Esters in Refined Edible Oils.** Marc Koukoulas*, *Artisan Industries Inc., USA*

LOQ 4a: Development of Novel Antioxidants

Chairs: John Sander, Kemin Agrifood, USA; Min Hu, DuPont Nutrition & Health, USA; and Yu Zhao, Penn State University, USA

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7:55 **Introduction**

8:00 **Enzyme Assisted Extraction of Antioxidant Ingredients from Seaweeds.** Sabeena Farvin Koduvayur Habeebullah*[1], Zainab Al-Sattari[2], Sakhina Al-Haddad[2], Saja Fakhraldeen [2], Surendraraj Alagarsamy[2], and Faiza Al-Yamani[2], *[1]Environmental and Life Science Research Center, Kuwait Institute for Scientific Research, Kuwait; [2]Kuwait Institute for Scientific Research, Kuwait*

8:20 **Opposite Antioxidative Activity Variation of Soluble Free and Soluble Bound Phenolic Compounds during Yellow Pea Germination.** Minwei Xu* ***(AOCS Honored Student Award Winner)*** and Bingcan Chen, *North Dakota State University, USA*

8:40 **Structural Determination of Polyphenols Bound to Hemoglobins: Mechanisms of Anti-Oxidative and Pro-Oxidative Effects.** Jie Yin, Mark P. Richards*, Wenjing Zhang, and Craig Bingman, *University of Wisconsin-Madison, USA*

9:00 **Impact of Intrinsic Chemical Properties and External Emulsion State on Antioxidant Performance in Food Emulsions.** Yvonne Gildemaster*, Joan Randall, and Lan Ban, *Kemin Food Technologies, USA*

9:20 **Mechanistic Investigation and Efficacy of Polar Antioxidants to Stabilize Bulk Oil.** David R. Johnson*, Laura Lafond, Xin Tian, and Nora Yang, *Kalsec Inc., USA*

9:40 **Physicochemical Properties of Black Bean Protein Hydrolysates and Their Antioxidant Activities in Oil Phase.** Zhaojun Zheng*[1], Yuanfa Liu[2], Yongjiang Xu[1], Chen Cao[1], and Jinwei Li[1], *[1]Jiangnan University, China; [2]School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China*

LIPID OXIDATION AND QUALITY

LOQ 4b: Frying Oils: Industry Perspective and Novel Solutions

Chairs: Shawn Pan, Bunge North America, USA; Cindy Tian, Kalsec, Inc., USA; and Chandra Ankolekar, Kemin Industries Inc., USA

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10:20 **Introduction**

10:25 **Practical Application of Amino Acids as Natural Antioxidants for Frying.** Hong-Sik Hwang*[1], Jill Moser[1], Kenneth M. Doll[1], Mayuresh Gadgil[2], and Sean Liu[3], *[1]USDA, ARS, NCAUR, USA; [2]Bradley University, USA; [3]USDA, ARS, USA*

10:45 **The Advantage of Adsorbent Treatment in Snack Foods Frying Oil Application.** Joby Ulahanan*, *Crystal Filtration Co., USA*

11:05 **Capturing the Value of Fry Life Extension Through High Oleic Oils.** Susan Knowlton*, *DuPont Company, Pioneer, USA*

11:25 **High Oleic Soybean for Frying.** Tammy Bratton, *Bunge Loders Croklaan, USA*

11:45 **Achieving Desired Shelf Life for Fried and Baked Products.** Monoj K. Gupta*, *MG Edible Oil Consulting International, Inc., USA*

PROCESSING

PRO 4a: New Technologies for Oil Processing

Chairs: Mohamed Abid, Solex Thermal Science Inc., Canada; and Mehmet Tulkbek, AGT Food and Ingredients, Inc., Canada

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7:55 **Introduction**

8:00 **Bleaching Optimization through Use of Cellulose Adsorbents.** Donald F. Hearl*, *J. Rettenmaier USA LP, USA*

8:20 **New Concept in Shallow Bed Extractors.** Anibal Alv Demarco*, *Desmet Ballestra, Argentina*

8:40 **Advanced Process Filtration in Oil Hydrogenation Using Porous Metal Technology.** Patrick Hill*, *Mott Corporation, USA*

9:00 **Dry Tribo-electrostatic Protein Enrichment of Oilseed Meal.** Kyle P. Flynn*, Abhishek Gupta, Frank Hrach, and Philip Ronsivalli, *ST Equipment & Technology, USA*

9:20 **Enzymes in Oil Processing: Milder, Sustainable and Economical Solution for Oil Quality Requirements.** Véronique Gibon*, Wim De Greyt, and Marc J. Kellens, *Desmet Ballestra Group, Belgium*

PROCESSING

IOP 4/PRO 4.1: Biorefinery Technology and Catalysis

Chairs: Helen Ngo Lew, USDA, ARS, ERRC, USA; and Kris Knudson, Crown Iron Works Co., USA

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Joint session: for details, see **IOP 4/PRO 4.1** on page 76.

PROTEIN AND CO-PRODUCTS

PCP 4a: Processing and Non-food Applications of Proteins

Chairs: Keshun Liu, USDA, ARS, USA; Jianping Wu, University of Alberta, Canada; and Yonghui Li, Kansas State University, USA

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7:55 **Introduction**

8:00 **Quality, Safety and Stability of Protein for Pet Diets: An Overview of Research Evaluating Protein Ingredients for Pet Food Applications.** Greg Aldrich*, *Kansas State University, USA*

8:20 **Peptide Antioxidants from Cereal Grain Co-Products and Performances in Pet Food and Feed.** Yonghui Li*[1] and Ruijia Hu[2], *[1]Kansas State University, USA; [2]Kansas State University, Grain Science and Industry, USA*

8:40 **Self-assembly of Peptides is Responsible for Nanoparticle Formation of Canola Protein Cruciferin.** Jianping Wu*, *University of Alberta, Canada*

9:00 **Fungal Fermentation of Oilseed Meals and Cereal Grains to Produce Protein-rich Ingredients for Aquafeed.** Bishnu Karki*[1], Jacob Zahler[2], Stephanie A. Wootton[2], Burgandy R. Roberts[2], Jason Croat[3], Michael Brown[4], and William Gibbons[2], *[1]Dept. of Biology and Microbiology, South Dakota State University, USA; [2]South Dakota State University, USA; [3]CTE Global Inc., USA; [4]Dept. of Natural Resource Management, South Dakota State University, USA*

9:20 **Aqueous Extraction for Making Feed Proteins from Soybeans.** Keshun Liu*, *USDA, ARS, USA*

9:40 **Alternative Oilseed Crops (*camelina, cuphea, lesquerella, pennycress*): Novel Protein Sources for Industrial Uses.** Mila P. Hojilla-Evangelista*, Roque L. Evangelista, Gordon W. Selling, and Mark Berhow, *USDA, ARS, NCAUR, USA*

PROTEIN AND CO-PRODUCTS

PCP 4b: General Protein and Co-Products

Chairs: Nandika Bandara, Dept. of Plant, Food & Environmental Sciences, Dalhousie University, Canada; and Apollinaire Tsopmo, Carleton University, Canada

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10:20 **Introduction**

10:25 **Identification of a New Potential Allergen from Mullet and Salmon.** Qinchun Rao* and Behnam Keshavarz, *Florida State University, USA*

10:45 **Antioxidant Activity in *Amaranthus hypochondriacus* Protein Fractions Fermented with Lactic Acid Bacteria at Different Growth Stage.** Apollinaire Tsopmo[1], Fabiola Sánchez*[2], Madeleine Morales[2], and Víctor J. Robles[2], *[1]Carleton University, Canada; [2]Instituto Tecnológico de Veracruz, Mexico*

11:05 **Alternative Method of Obtaining Amino Acids from Canola Meal for Further Conversions as Functional Molecules.** Sumudu N. Warnakulasuriya*[1], Takuji Tanaka[1], and Janitha P.D Wanasundara[2], *[1]University of Saskatchewan, Canada; [2]Agriculture and Agri-Food Canada, Canada*

11:25 **Speciation of Arsenic and Chromium in the Presence of Hydrolyzed Oat Proteins.** Apollinaire Tsopmo*, *Carleton University, Canada*

11:45 **Protein Based Delivery Systems for Improved Bioavailability of Bioactives: Past, Present and Future.** Nandika Bandara*, *Dept. of Plant, Food & Environmental Sciences, Dalhousie University, Canada*

SURFACTANTS AND DETERGENTS

BIO 4.1/S&D 4: Biosurfactants and Environmentally Friendly Ingredients

Chairs: Sujan Singh, Arkema, USA; and Douglas Hayes, University of Tennessee, USA

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Joint session: for details, see **BIO 4.1/S&D 4** on page 74.

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POSTER PRESENTATIONS

Presentation Information

- The presenter is identified with an asterisk (*).
- Abstracts are available online at AnnualMeeting.aocs.org/2019Resources or on the app through May 31, 2019.
- Access and print abstracts in the Computer Lab located in room 200 of the Convention Center.
- Following the meeting, select presentations will be available to AOCS members in the AOCS Premium Content Library. Visit www.informconnect.org/joinaocs for details. Many of the posters presented during the meeting may also appear in AOCS Press publications.
- Award lectures are identified with the photo of the winner or award icon. AOCS Scientific Award winners are highlighted by red lines.

See page 6.

Poster viewing

Sunday, May 5 | 5:30–7:00 p.m. | Hall 1
Monday, May 6 | 10 a.m.–6:30 p.m. | Hall 1
Tuesday, May 7 | 10 a.m.–6:30 p.m. | Hall 1
Wednesday, May 8 | 10 a.m.–1 p.m. | Hall 1

Dedicated poster viewing

Monday, May 6
5:30–6:30 p.m. | Hall 1

Analytical
Edible Application Technology
Health and Nutrition
Industrial Oil Products
Lipid Oxidation and Quality
Protein and Co-Products
Surfactants and Detergents

Tuesday, May 7
5:30–6:30 p.m. | Hall 1

Biotechnology
Phospholipid
Processing

Don't miss the chance to discuss poster presentations with their authors! Authors will be at their posters during these times.

ANALYTICAL

ANA-P: Analytical Poster Session

Chair: Ali Reza Fardin-Kia, US Food and Drug Administration, USA

Hall 1

1. **Analysis of Acylglycerols in Edible Oils by Gas Chromatography Using a Unique Stationary Phase.** Colton Myers, Kristi Sellers, Jana Rousova, Joseph D. Konschnik*, Shawn Reese, Jaap de Zeeuw, and Chris Rattray, *Restek Corporation, USA*
2. **Analysis of trans-Fatty Acids in Food Products Using Various GC Columns.** Jana Rousova*, Joseph D. Konschnik, and Chris English, *Restek Corporation, USA*
3. **Optimizing GC-MS Analysis of 3-MCPD and Glycidyl Esters.** Jana Rousova*, Joseph D. Konschnik, and Chris English, Restek Corporation, USA
4. **Profiling of Sugars in Honey by HILIC-MS.** Jinchuan Yang* and Paul Rainville, *Waters, USA*
5. **Thermal Degradation of the Natural Anti-oxidant p-hydroxybenzoic Acid (PHBA) in Macadamia Nut Oil, Olive Oil and Corn Oil.** Hardy Z. Castada*[1], Sheryl Barringer[1], Zhaoyu Sun[2], and Xuesong Huang[2], *[1]Dept. of Food Science and Technology, Ohio State University, USA; [2]Dept. of Food Science and Engineering, Jinan University, China*
6. **MCPD Esters and Glycidyl Esters in Infant Formulas: Current Research at the U.S. Food and Drug Administration.** Jessica K. Beekman*[1], Michael Granvogl[2], and Shaun MacMahon[1], *[1]US Food and Drug Administration, USA; [2]Technical University of Munich, Germany*
7. **Quantitation of Trans-Fatty Acids in Humans: An Assessment of Internal Standards.** John M. Goodwin*, Heather C. Kuiper, Emily J. Mueller, Samuel P. Caudill, and Hubert W. Vesper, *CDC, USA*
8. **Separation of Trans Fatty Acids in Human Plasma by Silver Ion High-Performance Liquid Chromatography and Gas Chromatography-Mass Spectrometry.** Na Wei*, Sarah Kingsley, Heather C. Kuiper, and Hubert W. Vesper, *CDC, USA*
9. **Monitoring the Oxidative Stability of Olive Oils by Electron Spin Resonance Forced Oxidation Assay.** Matilde Tura[1], Mara Mandrioli[1], Enrico Valli[2], David Barr[3], Manfred Spraul[3], Agnes Haber[3], Alessandra Bendini[4], and Tullia Gallina Toschi*[4], *[1]Alma Mater Studiorum – Università di Bologna, Italy; [2]University of Bologna; [3]Bruker, USA; [4]DISTAL University of Bologna, Italy*
10. **HPTLC in the Analysis of Lipids.** Maged Sharaf*, *Camag Scientific, Inc., USA*
11. **Comparison of Fat Content between Home Meal Replacement Products and Restaurant Foods in Korea.** Eunji Choi*, Jung Eun Lee, Soo Jeong Lee, Yejin Song, and Byung Hee Kim, *Sookmyung Women's University, Republic of Korea*
12. **Rapid Separation of Fatty Acid Methyl Esters with Agilent DB-Fast FAME and the Intuvo 9000 GC System.** Yun Zou, Gustavo Serrano Izaguire*, and Phil Stremple, *Agilent, USA*
13. **Discrimination of Korean and Chinese Perilla Seeds by Mineral Analyses in Combination with a Multivariate Statistical Method.** Jung Eun Lee*[1], Soo Jeong Lee[1], Hyang Sook Chun[2], Sangdoo Ahn[2], and Byung Hee Kim[1], *[1]Sookmyung Women's University, Republic of Korea; [2]Chung-Ang University, South Korea*
14. **A Comparative Study on the Change of Quality, Free Radical and Molecular Structure in Different Edible Oils during Deep-frying by EPR and FTIR Spectroscopy.** Iirong Xu*, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*
15. **High Pressure Preparative HPLC for Prepare Individual Tocopherol and Tocopherolquinone.** Liyou Zheng*[1], Xingguo Wang[2], and Qingzhe Jin[2], *[1]State Key Laboratory of Food Science and Technology Synergetic*

Innovation Center of Food Safety and Nutrition School of Food Science and Technology, China; [2]Jiangnan University, China

16. **Valuable Source of Antioxidants from Agri-industrial Waste.** Stefano Casiraghi*, *VELP Scientific, Inc., USA*
17. **Identification of Off-flavor Compounds in Cereals and Oils by HS-SPME Coupled to GC-MS-O Technique.** Wang Jing*, *Wilmar, China*
18. **Rapid Prediction of Low (< 1%) trans Fat Content by IR Spectroscopy and Chemometric Analysis: Edible Oils and Fast Food Lipid Extracts.** Magdi Mossoba*, Samantha Farris, and Sanjeewa R. Karunathilaka, *US Food and Drug Administration, USA*
19. **Simple Methods for the Determination of PAHs and PAEs in Deodorizer Distillates Obtained from Soybean, Rapeseed, Corn and Rice Bran Oils.** Longkai Shi*, Qingzhe Jin, and Xingguo Wang, *Jiangnan University, China*
20. **Objective Evaluation of Crispy and Crunchy Textures of Foods by Acoustic Analysis.** Tae Sugiyama*[1], Yoshihiro Murano[1], Takashi Toyoshima[1], Kinya Tsuchiya[1], and Fumiaki Satoh[2], *[1]The Nisshin OilliO Group, Ltd., Japan; [2]Chiba Institute of Technology, Japan*
21. **Efficient Method for a Simultaneous Determination of Monochloropropanediol and Glycidol in Natural Glycerin by GCMS.** Ruifeng Zhang*, Chuan Zhou, Wen Ming Cao[2], and Tiankui Yang, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*
22. **Simultaneous Determination of Bisphenol A, alkylphenol and 2-phenylphenol In Edible Vegetable Oil by Solid Phase Extraction and Liquid Chromatography with Tandem Mass Spectrometry.** Mingming Zhang*, Chuan Zhou, Ruifeng Zhang, Wen Ming Cao, and Yuan Rong Jiang, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*
23. **Stable Isotope Dilution Assays in Quantitation of 4-HNE and 4-HHE in vegetables oils by UPLC/MS/MS.** Chuan Zhou*, Hai Ming Shi, Junmei Liang, Wen Ming Cao, and Yuan Rong Jiang, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*
24. **Fast Analysis of a Multi-Class Pesticides Panel in Wine and Olive Oil Extracts by LC-MS/MS.** Illaria Palini[1], Ed George*[2], Charles T. Yang[2], and Debora D. Addona[3], *[1]ISVEA, Italy; [2]Thermo Fisher, USA; [3]Thermo Fisher, Italy*
25. **Investigations in Changing Carrier Gas Helium to Hydrogen for GC-FID Analyses of FAMEs with CLAs.** Deborah L. Chance*, Yiyi Li, Raad S. Gitan, James K. Waters, and Thomas P. Mawhinney, *University of Missouri, USA*
26. **Identification of Major Volatile Components in Olive Oil by SPME-LTM-GC/MS.** Ali Reza Fardin-Kia*, *US Food and Drug Administration, USA*
27. **Olive Oil Triglycerides Analysis Exploiting Multidimensional Liquid-Gas Chromatography Coupled to Isotope Ratio and Quadrupole Mass Spectrometry Simultaneous Detection.** Danilo Sciarrone*[1] and Luigi Mondello[1,2], *[1]Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali, University of Messina, Polo Annunziata, Italy; [2]Chromaleont S.r.l., c/o University of Messina, Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali, Italy*
28. **Reliable Identification of Intact Lipids by High Efficiency Liquid Chromatography Techniques and a Novel Linear Retention Index Database.** Francesca Rigano[1], Danilo Sciarrone[2]*, Marianna Oteri[2], Paola Dugo[1,2,3], and Luigi Mondello[1,2,3], *[1]Chromaleont s.r.l., Italy, [2]Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali, University of Messina, Italy, [3]Unit of Food Science and Nutrition, Department of Medicine, University Campus Bio-Medico of Rome, Italy*
29. **Development of a Fully Automatic Analytical Method for the Evaluation of Fatty Acids in Human Blood Spotted on DBS Paper by Gas Chromatography.** Giuseppe Micalizzi[1], Danilo Sciarrone[1], and Luigi Mondello[1,2,3]* *[1]Dipartimento di Scienze Chimiche, Biologiche, Farmaceutiche ed Ambientali, University of Messina, Italy, [2]Chromaleont s.r.l., Italy, [3]Unit of Food Science and Nutrition, Department of Medicine, University Campus Bio-Medico of Rome, Italy*
30. **Evolution of the Orbitide Gene Family in Cultivated Flax (*Linum usitatissimum* L.)** Ziliang Song*, Timothy Sharbel, and Martin Reaney, *University of Saskatchewan, Canada*

BIOTECHNOLOGY

BIO-P: Biotechnology Poster Session

Chairs: Shigenobu Kishino, Kyoto University, Japan; and Byung Hee Kim, Sookmyung Women's University, Korea

Hall 1

Biotechnology Division Poster Oral Presentations
Monday, May 6, 5:40–6:40 p.m. | Hall 1 - Fast Track
Presentation details are located in the app.

1. **Absolute Quantification of Acyl-ACPs by Mass Spectrometry.** Lauren M. Jenkins*[1], Bradley S. Evans[2], and Doug K. Allen[3], *[1]USDA/Donald Danforth Plant Science Center, USA; [2]Donald Danforth Plant Science Center, USA; [3]Agricultural Research Service, U.S. Dept. of Agriculture/Donald Danforth Plant Science Center, USA*
2. **Carbon Partitioning in *Chlamydomonas reinhardtii* under Autotrophic and Mixotrophic Conditions for Growth and Biomass Production.** Kevin P. Foley*[1], Zoee Perrine[2], James Umen[2], and Doug K. Allen[3], *[1]Donald Danforth Plant Science Center, USA; [2]Donald Danforth Plant Science Center, USA; [3]Agricultural Research Service, U.S. Dept. of Agriculture/Donald Danforth Plant Science Center, USA*
3. **Modeling Pulse/Pulse-Chase Radiolabeling to Assess Lipid Metabolism.** Doug K. Allen*[1], and Philip Bates[2], *[1]Agricultural Research Service, U.S. Dept. of Agriculture/Donald Danforth Plant Science Center, USA; [2]Washington State University, USA*
4. **Characterization of Central Carbon Metabolism in High Oil Tobacco Lines Over Development.** Kevin L. Chu*[1,] Lauren Jenkins2, Sally K. Bailey1, Shrikaar Kambhampati3, Philip Bates3, and Doug K. Allen1,2, *1Donald Danforth Plant Science Center, USA; 2USDA-ARS, USA; 3Washington State University, USA*
5. **Chemical Composition of a Human Milk Fat Substitute Produced by Enzymatic Interesterification.** Roberta Claro da Silva[1], Rafaela Airoldi*[2], Juliana N.R. Ract[3], Iván Jachmanián[4], Heather L. Colleran[1], Salam A. Ibrahim, and Luiz A. Gioielli[3], *[1]North Carolina A&T University, USA; [2]Sao Paulo University, Brazil; [3]University of Sao Paulo, Brazil; [4]UdelaR, Uruguay*
6. **Human Milk Fat Substitute Produced by Continuous Enzymatic Interesterification: Effect of Different Reaction Parameters.** Roberta Claro da Silva[1], Heather L. Colleran[1], Juliana N.R. Ract[2], Salam A. Ibrahim, Luiz A. Gioielli[2], and Ezinne C. Chukwu*[1], *[1]North Carolina A&T University, USA; [2]University of Sao Paulo, Brazil*
7. **Specialized Lysophosphatidic Acid Acyltransferases Contribute to Unusual Fatty Acid Accumulation in Exotic Euphorbiaceae Seed Oils.** Jay Shockey*, *SRRC-ARS-USDA, USA*
8. **Enhancing acetyl-TAG synthesis through metabolic engineering of the oilseed crop *Camelina sativa*.** Timothy P. Durrett*, Linah Alkotami, and Catherine Kornacki, *Kansas State University, USA*
9. **Modification of Alkyl Chain Length Composition of Microalgae Nannochloropsis.** Tatsurou Ozaki, Shinji Sugihara*, Mayumi Wada, Akihito Kawahara, Takeshi Saito, and Yasushi Takimura, *Kao Corporation, Japan*
10. **Modeling and Optimization of Lipase-Catalyzed Hydrolysis of Phosphatidylcholine Using Response Surface Methodology for L-α-Glycerylphosphorylcholine Production.** Yejin Song*, Soo Jeong Lee, Jung Eun Lee, Eunji Choi, and Byung Hee Kim, *Sookmyung Women's University, Republic of Korea*
11. **Characterizing Monosaccharides and Starches in a Co-Culture of Microalgae.** Chelsea M. Tyus*, Zhimin Xu, Maria Teresa Gutierrez-Wing, JeeWon Koh, and Joan King, *Louisiana State University, USA*
12. **Solvent Fractionation Method for Preparing Pinolenic Acid**

Concentrates from Pine Nut Oil Fatty Acids. Min-Yu Chung[1], In-Hwan Kim[2], and Byung Hee Kim*[3], *[1]Korea Food Research Institute, South Korea; [2]Korea University, Republic of Korea; [3]Sookmyung Women's University, Korea*

13. **Preparation of Oleogel from Sunflower Wax and a Vegetable Oil in a Packed Bed Reactor via Lipase-Catalyzed Interesterification.** Jihyun Kim*[1], Nakyung Choi[1], Heejin Kim[2], Hong-Sik Hwang[3], Byung Hee Kim[4], Phyrim Lee[5], and In-Hwan Kim[6], *[1]Korea University, South Korea; [2]Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea; [3]USDA, ARS, NCAUR, USA; [4]Sookmyung Women's University, Korea; [5]Dept. of Integrated Biomedical and Life Science, Graduate School, Korea University, South Korea; [6]Korea University, Republic of Korea*
14. **Optimize the Astaxanthin Production Platform by Using Optima Cultural Condition Analysis of Chlorella. sp. DT and the Transgenic Approach.** Wei-Tin Lin, Yi-Ting Kou, Cheng-Huan Liu, Wei-Ting Lin, and Yu-Ting Chen*, *Institute of Genomics and Bioinformatics, National Chung Hsing University, Taiwan*
15. **Production of Natural Rubber by Lactuca spp.** Tom McKeon*, *Agricultural Research Service, USA*
16. **Polyol Obtained from Liquefaction of Nicotiana tabacum Stalks using PEG – Glycerin Blend.** Chiragkumar M. Patel*, *Industrial Chemistry Dept., V. P. & R. P. T. P. Science College, India*
17. **A New Methodology for the Process Monitoring of Enzymatic Proteolysis by Size-exclusion Chromatography.** Sophie Beaubier*[1], Irina Ioannou[1], Xavier Framboisier[2], Olivier Galet[3], and Romain Kapel[2], *[1]LRGP - UMR CNRS 7274, France; [2]Reaction and Process Engineering Laboratory UMR-7274, France; [3]Avril Group, France*
18. **A Methodology to Predict Kinetics of Protein Enzymatic Hydrolysis.** Sophie Beaubier*[1], Claire Defaix[1], Xavier Framboisier[2], Olivier Galet[3], and Romain Kapel[2], *[1]LRGP - UMR CNRS 7274, France; [2]Reaction and Process Engineering Laboratory UMR-7274, France; [3]Avril Group, France*

EDIBLE APPLICATIONS TECHNOLOGY

EAT-P: Edible Applications Technology Poster Session

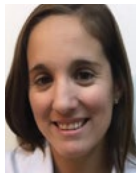
Chair: Farnaz Maleky, Ohio State University, USA

Hall 1

1. **Influence of Physical Fat State Properties on Lipid Digestibility.** Megan Borduas*, *University of Guelph, Canada*
2. **Regression Analysis as a Tool to Explore Processing Effects in Palm-based Dispersions.** Ryan West* and Dérick Rousseau, *Ryerson University, Canada*
3. **In-vitro Release Profiles of Compounds from Water-in-Oil Emulsions Stabilized with Crystalline or Liquid Interfaces.** Vivekkumar H. Patel* and Dérick Rousseau, *Ryerson University, Canada*
4. **Performance of Sunflower Waxes Recovered from Oil Tank Settlings as Oil Structurant Agents.** Cintia Redondas[1], Anabella S. Giacomozzi*[2], Erica Baumler[1], and Amalia Carelli[3], *[1]Planta Piloto de Ingenieria Quimica (CONICET), Argentina; [2]Universidad Nacional del Sur, Argentina; [3]Planta Piloto de Ingeniería Química (PLAPIQUI, UNS-CONICET), Argentina*
5. **Characterization of Emulsions Based on Oleogels Structured with Commercial and Recovered Sunflower Waxes.** Julie Merchan Sandoval[1], Anabella S. Giacomozzi*[2], Camila Palla[3], Amalia Carelli[4], and Erica Baumler[1], *[1]Planta Piloto de Ingenieria Quimica (CONICET), Argentina; [2]Universidad Nacional del Sur, Argentina; [3]Departamento de Ingeniería Química (DIQ) - Universidad Nacional del Sur (UNS), Argentina; [4]Planta Piloto de Ingeniería Química (PLAPIQUI, UNS-CONICET), Argentina*
6. **The Effect of Lipophilic Emulsifiers in Water-in-Oil Emulsions Gelled in the Continuous Phase.** JAIME D. PÉREZ-MARTÍNEZ[1], Diego Orlando García-González*[2], Bernardo Yánez-Soto[2], and Elena Dibildox Alvarado[2], *[1]Lab. Biopolímeros Alimentarios, Facultad de Ciencias Químicas, Universidad Autónoma de San Luis Potosí, Av. Manuel Nava*

No. 6, 78210, México., Mexico; [2]Universidad Autónoma de San Luis Potosí, Mexico

7. **Phase Behavior, Structure, and Rheology of Oleogels Produced with Candelilla Wax, Saturated Fat and Microcrystalline Cellulose.** JAIME D. PÉREZ-MARTÍNEZ[1], Luz Vriridiana Pérez-Meza*[2], and Miguel Ángel Ruíz-Cabrera[2], *[1]Lab. Biopolímeros Alimentarios, Facultad de Ciencias Químicas, Universidad Autónoma de San Luis Potosí, Av. Manuel Nava No. 6, 78210, México., Mexico; [2]Universidad Autónoma de San Luis Potosí, Mexico*
8. **Assessing the Bioaccessibility of Curcumin Solubilized in Oleogels.** Robert M. Hallinan*, Chureeporn Chitchumroonchokchai, and Farnaz Maleky[2], *Ohio State University, USA*
9. **Optimizing Fat Matrices for the Minimization of Moisture Transport.** Dennis R. Heldman, Farnaz Maleky, and Brandon Howard*, *Ohio State University, USA*
10. **Use of High Intensity Ultrasound to Change the Physical Properties of Oleogels and Emulsion Gels.** Thais Silva[1], Daniel B. Arellano[2], and Silvana Martini*[3], *[1]Utah State University - Nutrition, Dietetics and Food Sciences Department, USA; [2]Unicamp, Brazil; [3]Utah State University, USA*
11. **Revealing the Modulation of Temperature on Triacylglycerol Crystal Networks in Semicrystalline Oil-in-Water Emulsions.** Liu Chunhuan*[1], Zheng Zhaojun[1], Chen Cao[2], and Yuanfa Liu[3], *[1]jiangnan university, China; [2]Jiangnan University, China; [3]School of Food Science and Technology, State Key Laboratory of Food Science and Technology, Jiangnan University, China*
12. **Crystallization Behaviour of Cocoa Butter and Cocoa Butter-sugar Composites Affected by Lecithin and PGPR.** Selvyn Simoes* and Dérick Rousseau, *Ryerson University, Canada*
13. **The Influence of Lecithin and PGPR on the Properties of Oil-Sugar Dispersions.** Jessica K. Phulchand* and Dérick Rousseau, *Ryerson University, Canada*
14. **Effect of Degree of De-acetylation of Chitosan on the Gelation Behavior of CITREM-chitosan Stabilized Bilayer Nanoemulsions.** Kunal Kadiya*[1], and Supratim Ghosh[2], *[1]Dept. of Food and Bioproduct Sciences, University of Saskatchewan, Canada; [2]University of Saskatchewan, Canada*
15. **Phase Behavior of Monoglyceride Mixtures in Vegetable and Mineral Oil.** Maria E. Charó-Alvarado*, Flor Alvarez-Mitre, Miriam A. Charo-Alonso, and Jorge F. Toro-Vazquez, *Universidad Autónoma de San Luis Potosi, Mexico*
16. **Melting Behavior and Volumetric Expansion of Solid Lipids in Pressurized Carbon Dioxide.** Junsi Yang* and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*
17. ***In vitro* Digestibility of the Novel Fish Oil-loaded Hollow Solid Lipid Micro- and Nanoparticles.** Junsi Yang* and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*
18. **Effect of Polysaccharide Charge on the Formation and Properties of Pea Protein Isolate-pectin Complexes.** Yang Lan* and Jiajia Rao, *North Dakota State University, USA*
19. **Effect of the Addition Order of α-tocopherol and Candelilla Wax on the Oleogel Texture.** Vanessa O. Di Sarli[1], Gabriela B. Brito[2], Karina F. Delgado[2], Denes K. Rosário[2], Carlos A. Conte-Júnior[2], Torres Alexandre[3], and Vanessa N. Castelo-Branco*[2], *[1]Federal University of Rio de Janeiro, Brazil; [2]Federal Fluminense University, Brazil; [3]UFRJ, Brazil*
20. **Tailoring Physical Properties of Monoglyceride Oleogels by using High Intensity Ultrasound and Cooling Rate.** Anabella S. Giacomozzi*[1] ***(AOCS Honored Student Award Winner)***, Camila Palla[2], María E. Carrín[2], and Silvana Martini[3], *[1]Universidad Nacional del Sur, Argentina; [2]Departamento de Ingeniería Química (DIQ) - Universidad Nacional del Sur (UNS), Argentina; [3]Utah State University, USA*



21. **Oleaginous Potential of Ozoroa insignis and Zanthoxylum zanthozyloides, Two Tropical Plants.** Lassina Ouattara*, Paulin OUOBA[1], Philippe-Pierre Robichaud[2], Jérémie A. Doiron[2], and Marc E. Surette[2], *[1]UFR-ST/ Université Nazi BONI, Burkina Faso; [2]Dpt Chimie et Biochimie/Université de Moncton, Canada*
22. **Effects of Chemical Interesterification on the Palm Oil based Triacylglycerols Solid Fat Content and its Application in Plastic Fats.** Zhen Zhang*, *South China University of Technology, China*
23. **Development of Oleogels by Ethylcellulose and Monoglycerides in Vegetable Oil.** Jorge F. Toro-Vazquez*, Martha Garcia-Ortega, Miriam A. Charo-Alonso, Anaid De la Peña-Gil, and Flor Alvarez-Mitre, *Universidad Autónoma de San Luis Potosí, Mexico*
24. **Impact of Curcumin-loading Methods on Lipid Nanoparticles Bioaccessibility: Comparison of Heat-driven and pH-driven Method.** D. Julian J. McClements[1], Xiaoyun Zhang[1], Shengpeng Pen[1], and Bingjing Zheng*[3] ***(Edible Applications Technology Division Student Award Winner)***, *[1]University of Massachusetts Amherst, USA; [2]University of Massachusetts Amherst, Food Biopolymers and Colloids Lab, USA*

25. **Polymorphic Behavior of Cupuassu Fat and its Fractions as Affected by Thermal Treatments.** Ana C. Rodriguez Negrette[1], Maria J. Rodriguez Batiller[1], and Maria L. Herrera*[2], *[1]University of Buenos Aires-ITPN, Argentina; [2]University of Buenos Aires, Argentina*
26. **Enzymatic Hydrolysis of Cricket (*Acheta domesticus*) Protein to Generate Functional Peptides for Their Use in a Corn Tortilla Formulation.** Andrea M. Liceaga, Gabriela Calzada Luna*, Fernanda San Martin, and Lisa J. Mauer, *Purdue University, USA*
27. **Formation of Oleogel as a Replacement of Shortening in Cookies: Impact of Oil Type.** Leqi Cui*[1], and Bingcan Chen[2], *[1]North Dakota State University, USA; [2]North Dakota State University, USA*
28. **Effect of Dissolved CO_2 and Low Power Ultrasound on Crystallization Behaviour of Anhydrous Milk Fat.** Bhaskar M. Adhikari*[1] ***(Australasian Section Student Travel Grant Winner)***, Tuyen Truong[2], Nidhi Bansal[2], and Bhesh Bhandari[2], *[1]The University of Queensland, Australia; [2]School of Agriculture and Food Sciences, The University of Queensland, Australia*

29. **On the Invention of Milk Chocolate by Daniel Peter in 1875.** Kiyotaka Sato*, *Hiroshima University, Japan*
30. **Molecular Features of 1,3:2,4 Dibenzylidene-D-sorbitol (DBS) that Drive Self-Assembly.** Pedram Nasr*, France-Isabelle Auzanneau, Jarvis Hill, and Michael Rogers, *University of Guelph, Canada*

HEALTH AND NUTRITION

H&N-P: Health and Nutrition Poster Session

Chair: Matthew Picklo, USDA, ARS, Grand Forks Human Nutrition Research Center, USA

Hall 1

1. **Effect of Whey Peptides on Metabolism and Insulin Signaling in Muscle and Fat Cells.** Kenneth D'Souza*[1], Angella Mercer[1], Hannah Mawhinney[2], Thomas Pulinilkunnil[1], Chibuike C. Udenigwe[2], and Petra Kienesberger[1], *[1]Dalhousie Medicine New Brunswick, Canada; [2]University of Ottawa, Canada*
2. **Ursolic Acid Attenuates 6-Hydroxydopamine Induced-Apoptosis through Up-Regulation of OPA1 in SH-SY5Y Cells.** Fang-Ting Chang, Chia-Yuan Lin, and Chia-Wen Tsai*, *China Medical University, Taiwan*
3. **Incorporation of Antioxidants and Omega-3 Fatty Acids in Fresh Lambs by Feeding Rumen-protected Dietary Supplements.** Chelsea Jeanjulien[1], Jung Hoon Lee*[1], and Stephan Wildues[2], *[1]Fort Valley State University, USA; [2]Virginia State University, USA*
4. **Identification of Angiotensin-converting Enzyme Inhibitory Peptides Resisting Gastrointestinal Digestion from Thermolysin-digested Egg White Hydrolysate.** Hongbing Fan*, Jiapei Wang, and Jianping Wu, *University of Alberta, Canada*

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5. **Effects of Dietary Scallop Oil Prepared from Scallop By-product on Lipid Metabolism in Type II Diabetic/Obese KK-Ay Mice.** Koki Sugimoto*[1], Junpei Nakamura[1], Ryota Hosomi[1], Munehiro Yoshida[1], and Kenji Fukunaga[2], *[1]Kansai University, Japan; [1]Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan*
6. **Dietary n-3 polyunsaturated Fatty Acid Ethyl Ester Influences the Composition of Bacteria and Their Metabolites in Rat Cecal Content.** Ryota Hosomi*[1], Anna Matsudo[1], Tadahiro Tsushima[2], Yoshihisa Misawa[2], Takaki Shimono[3], Seiji Kanda[3], Toshimasa Nishiyama[3], Munehiro Yoshida[3], and Kenji Fukunaga[4], *[1]Kansai University, Japan; [2]Bizen Chemical C. Co. Ltd., Japan; [3]Kansai Medical University, Japan; [4]Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan*
7. **Evaluate the Efficacy of γ-glutamyl Peptide in Reducing Hypertension-associated Vascular Inflammation.** Snigdha Guha*[1] and Kaustav Majumder[2], *[1]University of Nebraska, Lincoln, USA; [2]University of Nebraska, USA*
8. **Metabolomics Revealed the Selective Effects of Feeding Oxidized Oil on Amino Acid Metabolism in Nursery Pigs.** Yue Guo*[1], Andrea Hanson[1], Lei Wang[1], Brian Kerr[2], Pedro Urriola[1], Gerald Shurson[1], and Chi Chen[1], *[1]University of Minnesota, USA; [2]USDA-ARS, USA*
9. **The Mechanisms of Hypoglycemic Effect of Foxtail Millet Based on Transcriptomics.** Fu Yongxia*, Fan Zhang, Xin Ren, and Qun Shen, *China Agricultural University, China*
10. **Improving Glycemic Control with Foxtail Millet Foods and How to Get Them in the Marketplace.** Fan Zhang*, Fu Yongxia, Ren Xin, and Qun Shen, *China Agricultural University, China*
11. **Time-Dependent Differences in Essential Omega-3 Fatty , during Lactation in the Guatemalan Highlands.** Doug Bibus[1]*, Heike Rolker[2], Alejandra Zamora[2], Rosario Garcia-Meza[2], Claudia Arriaga[2], and Noel W. Solomons[2], *[1]Lipid Technologies, LLC and The Center for Spirituality and Healing, University of Minnesota, USA, [2]Center for the Studies of Sensory Impairment, Aging and Metabolism, Guatemala*
12. **Using Dried Human-milk Spots to Document Time-Dependent Omega-3 Content with Oral DHA and EPA Supplementation of Guatemalan Mothers.** Doug Bibus[1]*, Rosario Garcia-Meza[2], Marta Escobar[2], Debora Fuentes[2], Alejandra Maldonado[2], Alejandra Zamora[2], Claudia Arriaga[2], and Noel W. Solomons[2], *[1]Lipid Technologies, LLC and The Center for Spirituality and Healing, University of Minnesota, USA, [2]Center for the Studies of Sensory Impairment, Aging and Metabolism, Guatemala*

INDUSTRIAL OIL PRODUCTS

IOP-P: Industrial Oil Products Poster Session

Chair: Jerry King, Critical Fluid Symposia, USA

Hall 1

1. **Copolymers from Photochemical Thiol-ene Polycondensation of Fatty Dienes with Alkyl Dithiols.** Bryan R. Moser*, *USDA Agricultural Research Service, USDA*
2. **Effect of Burgundy Solid Extracted from Eastern Red Cedar on Subterranean Termites and Wood-Decay Fungi.** Fred J. Eller*, *USDA, ARS, NCAUR, USA*
3. **Synthesis of Thiophene and Thiolane Derivatives Found in Biodiesel Produced from Brown Grease Lipids.** Shehu Isah*, *Delaware State University-USDA, USA*
4. **Proximate Composition, Fatty Acid Profile, Mineral and Tocopherol Contents of Two Industrial Hempseed Varieties in Response to Sowing Dates and Pesticide Treatment.** Peiyi Shen*[1], Zili Gao[1], Hui Li[1], and Bingcan Chen[2], *[1]Dept. of Plant Sciences/North Dakota State University; [2]North Dakota State University, USA*
5. **Cost-effective Polyurethane Sealants and Adhesives from Soybean Polyols.** Jian Hong*[1], Dragana Radojcic[2], Mathew Long[1], and Zoran Petrovic[2], *[1]Kansas Polymer Research Center, Pittsburg State University, USA; [2]Pittsburg State University, USA*
6. **Lipid-Based Sulfones as Next-Generation Organic Phase Change Materials.** Navindra Soodoo*[1], Latchmi Raghunanan[2], Laziz Bouzidi[1], and Suresh Narine[1], *[1]Trent University, Canada; [2]Trent Centre for Biomaterials Research, Departments of Physics & Astronomy and Chemistry, Trent University, Canada*
7. **Soy Oil-Based Non-Isocyanate Polyurethane Resins for Stereolithography.** Ivan Javni*[1], Olivera Bilic[2], Vivek Sharma[1], Camille Holman[3], and Xianmei Wan[1], *[1]Pittsburg State University, USA; [2]Kansas Polymer Research Center/PSU, USA; [3]Pittsburg State University - KPRC, USA*
8. **Renewable Polyols for Polyurethane from Soybean Oil.** Maha L. Shrestha*[1], Petar Dvornic[2], and Mathew Long[1], *[1]Kansas Polymer Research Center, Pittsburg State University, USA; [2]Pittsburg State University, USA*
9. **Isocyanate-Free Polyurethane Coatings from Soybean Oil.** Olivera Bilic*[1], Ivan Javni[2], Tim Dawsey[3], Xianmei Wan[2], and Camille Holman[1], *[1]Kansas Polymer Research Center/Pittsburg State University, USA; [2]Pittsburg State University, USA*
10. **Feruloylated Vegetable Oils Protect Vitamins C and E from UV Degradation.** David L. Compton*[1], Kervin O. Evans[1], and John R. Goodell[2], *[1]USDA, ARS, NCAUR, USA; [2]iActive Naturals, USA*
11. **Development of New Coconut Oil-based Biting Fly Repellents.** Jim A. Kenar*[1], Steven C. Cermak[1], and Junwei J. Zhu[2], *[1]USDA-ARS-NCAUR-FFR, USA; [2]USDA-ARS-Lincoln, USA*
12. **Application of Green Technology using Natural Deep Eutectic Solvents (NaDES) for Recovering Canola Seed Phenolics.** Sumudu N. Warnakulasuriya*[1], Takuji Tanaka[1], and Janitha P.D. Wanasundara[2], *[1]University of Saskatchewan, Canada; [2]Agriculture and Agri-Food Canada, Canada*
13. **Extraction, Purification and Characterization of Wax from Sorghum as an Alternative Natural Wax.** Junsi Yang*, Loren Isom, Felipe Sperotto, Curtis Weller, and Ozan N. Ciftci, *University of Nebraska-Lincoln, USA*
14. **Novel Catalyst for Cationic Homopolymerization of Epoxidized Methyl Oleate.** Dragana Radojcic* and Zoran Petrovic, *Pittsburg State University, USA*
15. **Filled Epoxy Resins from Natural Oils.** Dragana Radojcic*, *Pittsburg State University, USA*
16. **Impact of Delivery System Type on Curcumin Bioaccessibility: Comparison of Curcumin-loaded Lipid Nanoparticles with Commercial Curcumin Supplements.** D. Julian J. McClements, Bingjing Zheng*, Xiaoyun Zhang, and Shengpeng Pen, *University of Massachusetts Amherst, USA*

LIPID OXIDATION AND QUALITY

LOQ-P: Lipid Oxidation and Quality Poster Session

Chair: Scott Bis, Kemin Industries Inc., USA

Hall 1

1. **Determination of Triacylglycerol Oxidation Mechanisms using Liquid Chromatography-tandem Mass Spectrometry.** Shunji Kato*[1], Naoki Shimizu[2], Yurika Otoki[1], Junya Ito[2], Masayoshi Sakaino[3], Takashi Sano[4], Takahiro Eitsuka[2], Teruo Miyazawa[5], and Kiyotaka Nakagawa[1], *[1]Tohoku University, Japan; [2]Food and Biodynamic Chemistry Laboratory, Graduate School of Agricultural Science, Tohoku University, Japan; [3]Innovation Development Section, J-OIL MILLS, INC., Japan; [4]J-Oil Mills, Inc.., Japan; [5]Food and Biotechnology Innovation Project, New Industry Creation Hatchery Center (NICHe), Tohoku University, Japan*
2. **Effect of Furan Fatty Acids and 3-methyl-2,4-nonanedione on Light-Induced Off-Odor in Soybean Oil.** Takashi Sano*[1], Ryo Okabe[1], Maiko Iwahashi[1], Jun Imagi[1], Toshiro Sato[1], Eiichiro Fukusaki[2], and Takeshi Bamba[3], *[1]J-Oil Mills, INC., Japan; [2]Osaka University, Japan; [3]Kyushu University, Japan*
3. **The Antioxidant Effect of Licorice Root Extract in Retarding Lipid Oxidation in High Oleic Canola Frying Oil and Comparison to Rosemary Extract.** Brandon Williams*[1], Jane Whittinghill[2], and Rachael Miller[1], *[1]ICL Phosphate Solutions, USA; [2]ICL Food Specialties, USA*
4. **Influence of Margarine and Oil Composition on Phytosterols, Fatty**

Acid Profile and Quality Parameters at High Heating Temperatures. Jallah Smith[1], Peace C. Asuzu[2], Anh T.L Nguyen[3], Benjamain M. Bougouneau[4], Samuel A. Besong[5], and Alberta N A Aryee*[3], *[1]Delaware State University, USA; [2]College of Agriculture & Related Sciences, Delaware State University, USA; [3]Delaware State University, USA; [4]Dept. of Human Ecology, Delaware State University; [5]Dept. of Human Ecology, College of Agricultural Sciences, Delaware State University, USA*

5. **Oxidative Stability of Spray-dried Microencapsulated Chia Seed Oil with the Addition of Antioxidants.** Elizabeth Hoffmann[1], Claudia N. Copado[2], Vanesa Y. Ixtaina*[2], and Mabel Tomás[2], *[1]CIDCA, Argentina; [2]CIDCA (CONICET-UNLP), Argentina*

6. **Antioxidative Polyphenols of Canola Meal: Effect of High Pressure, Temperature and Solvents.** Usha Thiyam, Michael Eskin, and Ruchira Nandasiri* ***(Lipid Oxidation and Quality Division Student Travel Grant Winner)***, *University of Manitoba, Canada*

7. **Prediction of Oxidative Stability in Edible Bulk Oils using Dielectric Constant Changes.** HeeSun Na*[1], YunSik Woo[1], SeungBeen Jo[2], MiJa Kim[2], and JaeHwan Lee[3], *[1]Sungkyunkwan university, South Korea; [2]Kangwon National University, South Korea; [3]Dept. of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

8. **Antioxidant Effects on the Oxidative Stability in Bulk Oil Treated with Plasma Stress.** HeeSun Na*[1], SeungBeen Jo[2], MiJa Kim[3], and JaeHwan Lee[4], *[1]Sungkyunkwan university, South Korea; [2]Sungkyunkwan University, South Korea; [3]Kangwon National University, South Korea; [4]Dept. of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

9. **Effects of Sesamol on the Oxidative Stability of Canola Oil-based Organogels with Beef Tallow.** SeungBeen Jo*[1], Heesun Na, Seungmi Hong, MiJa Kim[2], and JaeHwan Lee[3], *[1]Sungkyunkwan University, South Korea; [2]Kangwon National University, South Korea; [3]Dept. of Food Science and Biotechnology, Sungkyunkwan University, Republic of Korea*

10. **Influence of Oil Type on Epoxy Fatty Acid Formation in Repeated Deep-frying of Potatoes.** Ru Shen*[1], Jingyi Meng[2], Claire Schane[2], Tilo Lamken[2], William G. Helferich[2], and Nicki J. Engeseth[2], *[1]University of Illinois, USA; [2]University of Illinois at Urbana-Champaign, USA*

11. **Antioxidant Performances and Emulsifying Activity of Corn Gluten Meal Hydrolysate in Oil-in-Water Emulsions.** Yanting Shen*[1] (***Lipid Oxidation and Quality Division Student Travel Grant Winner)***, Ruijia Hu[2], and Yonghui Li[1], *[1]Kansas State University, USA; [2]Kansas State University, Grain Science and Industry, USA*

12. **Proximate Composition, Fatty Acids Profiles and Nutritionally Valuable Minerals of 10 Industrial Hemp Seeds Varieties.** Minwei Xu* and Bingcan Chen, *North Dakota State University, USA*

13. **Aroma Characteristics of Fried Onion Prepared by Palm, High-oleic Sunflower, and Soybean Oils Frying.** Chang Chang* and Xingguo Wang, *Jiangnan University, China*

PHOSPHOLIPID

PHO-P: Phospholipid Poster Session

This session is sponsored in part by Agilent Technologies.

Chairs: Shawn Pan, Bunge North America, USA; and Sheher Mohsin, Agilent, USA

Hall 1

1. **Retardation of Anhydrous Milk Fat Crystallization through the Addition of Dairy Phospholipids.** Zachary Cooper* ***(Phospholipid Division Student Award Winner)***, Casey R. Simons, and Silvana Martini, *[1]Utah State University, USA*

PROCESSING

PRO-P: Processing Poster Session

Chair: Alan R. Paine, Desmet Ballestra, Belgium

Hall 1

1. **Effects of Moisture and Heat Pretreatments on the Quality of Crude Corn Germ Oil.** Liyou Zheng*[1], Jianhua Huang[2], Xingguo Wang[3], and Qingzhe Jin[3], *[1]State Key Laboratory of Food Science and Technology Synergetic Innovation Center of Food Safety and Nutrition School of Food Science and Technology, China; [2]School of Food Science and Technology, Jiangnan University, China; [3]Jiangnan University, China*

2. **Flavor Generation, Characteristics and Stability of Roasted Sunflower Oil.** Xiaojun Liu*, Shengmin Zhou, and Yuan Rong Jiang, *Wilmar Biotechnology R&D Center (Shanghai) Co., Ltd., China*

3. **Study on Rice Bran Nutrition Extractions by Combined Enzymatic Approaches.** Guang Zhang*, Mingshou Lyu, Yan-Guo Shi, and Zhihui Sun, *Harbin University of Commerce, China*

4. **Concentration of Carotenoids from Tomato using Supercritical Carbon Dioxide.** Shinhae Hwang*[1], Heejin Kim[2], Aree Lee[1], and In-Hwan Kim[1], *[1]Korea University, South Korea; [2]Dept. of Public Health Sciences, Graduate School, Korea University, Republic of Korea*

5. **The Reduction of 3-MCPDs and GEs in Palm Oil Using Acidified and Non-Acidified Bleaching Earths.** Victor Vega* and Frank Filippini, *Oil-Dri Corporation of America, USA*

6. **Factors Affecting Cottonseed Hull Strength.** Michael K. Dowd*, Roji Manandhar, and Christopher D. Delhom, *SRRC-ARS-USDA, USA*

PROTEIN AND CO-PRODUCTS

PCP-P: Protein and Co-Products Poster Session

Chairs: Bishnu Karki, Dept. of Biology and Microbiology, South Dakota State University, USA; and Mila Hojilla-Evangelista, USDA, ARS, NCAUR, USA

Hall 1

1. ***In vitro* Antioxidant and Lipase Inhibitory Activities of Oat Bran Derived Peptides.** Apollinaire Tsopmo, and Ramak Esfandi****(Protein and Co-Products Division Student Travel Grant Winner)***, Carleton University, Canada

2. **Effect of Sonication on Extraction of Proteins from Oats and Antidiabetic Properties of Hydrolysates.** Mallory E. Walters****(Protein and Co-Products Division Student Travel Grant Winner)*** and Apollinaire Tsopmo, Carleton University, Canada

3. **Yellow Bean: Processing, Characterization and Product Development.** Jacquiline N. Maina[1], Anh T.L Nguyen[2], Peace C. Asuzu[3], Samuel A. Besong[4], and Alberta N.A. Aryee*[2], [1]EARTH University, Costa Rica; [2]Delaware State University, USA; [3]College of Agriculture & Related Sciences, Delaware State University, USA; [4]Dept. of Human Ecology, College of Agricultural Sciences, Delaware State University, USA

4. **Value Added Use of Commercial Canola Meal Protein via Converting into Amino Acids.** Sumudu N. Warnakulasuriya*[1] ***(Protein and Co-Products Division Student Travel Grant Winnerz)***, Janitha P.D Wanasundara[2], and Takuji Tanaka[1], [1]University of Saskatchewan, Canada; [2]Agriculture and Agri-Food Canada, Canada

5. **Utilizing Enzymatic Hydrolysis and Fungal Fermentation to Enhance the Nutritional Profile of Distillers Dried Grains with Solubles (DDGS) for Aqua-Diet.** Burgandy R. Roberts*[1], Bishnu Karki[2], Michael Brown[3], and William Gibbons[1], [1]South Dakota State University, USA; [2]Dept. of Biology and Microbiology, South Dakota State University, USA; [3]Dept. of Natural Resource Management, South Dakota State University, USA

6. **Role of Intracellular Protein Fraction of Lactobacillus casei CRL-431 on its Bioactive Properties.** José E. Aguilar-Toalá*[1], Hugo S. Garcia[2], Andrea M. Liceaga[3], Belinda Vallejo-Cordoba[1], Aarón F. González-Córdova[1], and Adrian Hernández-Mendoza[1], [1]Centro de Investigación en Alimentación y Desarrollo, A.C., Mexico; [2]Technological Institute of Veracruz, Mexico; [3]Purdue University, USA
7. **Keratin Protein Derived Nanomembrane for Water Purification.** Muhammad Zubair*, Roopesh Mohandas, and Aman Ullah, University of Alberta, Canada
8. **Effect of Demucilaging Methods on Functional Properties of Flaxseed Protein Isolates from Flaxseed Cake.** Yang Lan* ***(Protein and Co-Products Division Student Travel Grant Winner)*** and Jiajia Rao, North Dakota State University, USA
9. **Complex Coacervation of Pea Protein Isolate with Sugar Beet Pectin for Controlling Food Texture.** Yang Lan* and Jiajia Rao, North Dakota State University, USA
10. **Bioactive Properties of Hairless Canaryseed Protein.** Emily Mason*[1] ***(Protein and Co-Products Division Student Travel Grant Winner)***, Lamia L'Hocine[2], Allaoua Achouri[2], Melanie Pitre[3], and Salwa Karboune[4], [1]McGill University, Canada; [2]Agriculture and Agri-Food Canada, Canada; [3]Agriculture and Agri Food Canada; [4]Dept. of Food Science and Agricultural Chemistry, Faculty of Agricultural and Environmental Sciences, McGill University, Canada
11. **L-cysteine Effects on Chlorogenic Acid Quinone and Amino Acid Induced Greening and Maillard Browning.** Yundi Liang* and Lilian M. Were, Chapman University, USA
12. **Enzyme-assisted Aqueous Extraction of Oil and Protein from Almonds and Cream De-emulsification.** Fernanda Furlan Goncalves Dias*, Thaiza Serrano Pinheiro de Souza, and Juliana M. Leite Nobrega de Moura Bell, UC Davis, USA
13. **Effect of Growing Conditions on the Protein Digestibility and the Production of Peptides with Antioxidant Activity of Locally Cultivated Great Northern Beans (*Phaseolus vulgaris*).** Madhurima Bandyopadhyay* and Kaustav Majumder, *University of Nebraska, Lincoln, USA*
14. **Influence of Processing Conditions on the Structure, Functionality and Flavor Profile of Pea Protein Isolate.** Zili Gao*[1], Peiyi Shen[2], and Jiajia Rao[1], *[1]North Dakota State University, USA; [2]Dept. of Plant Sciences/North Dakota State University, USA*
15. **Bioprocessing Affects Seed Microstructure, Phenolic Compound and Protein Profiles of Yellow Pea and Green Lentil.** Chibuike C. Udenigwe[1], Apollinaire Tsopmo[2], Teresa Oliviero[3], and Elisa Di Stefano*[1] ***(Protein and Co-Products Division Student Travel Grant Winner)***, *[1]University of Ottawa, Canada; [2]Carleton University, Canada; [3]Wageningen University, Netherlands*
16. **Development of Sandwich Enzyme-Linked Immunosorbent Assay for Porcine Hemoglobin Quantification.** Xingyi Jiang*, Qinchun Rao, Meng Wu, and Weiya Dong, *Florida State University, USA*
17. **Comparing the Glyceollin Production Efficiency of Different Varieties of Soybeans during Fungal Infection.** Bishnu Karki*[1], Stephanie A. Wootton[2], and William Gibbons[2], *[1]Dept. of Biology and Microbiology, South Dakota State University, USA; [2]South Dakota State University, USA*

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18. **Sacha Inchi Press Cake as a Smart Ingredient for Applications in the Preparation of Functional Foods.** Luis-Felipe Gutiérrez*, *Instituto de Ciencia y Tecnología de Alimentos - Universidad Nacional de Colombia Sede Bogotá, Colombia*
19. **Recent Advances in Proteins Derived Bionanocomposites for Food Packaging Applications.** Muhammad Zubair* and Aman Ullah, *University of Alberta, Canada*
20. **Electron Paramagnetic Resonance (EPR) Spin Trapping of Free Radicals During Ultrasound of Soy Proteins.** Md Mahfuzur Rahman* ***(Protein and Co-Products Division Student Travel Grant Winner)***, Bibek Byanju, and Buddhi Lamsal, *Iowa State University, USA*
21. **Effects of High Power Sonication on Extraction Yield and Structure of Some Plant Based Protein Isolates.** Bibek Byanju*, Md Mahfuzur Rahman, and Buddhi Lamsal, *Iowa State University, USA*
22. **Optimization of Purification Chlorogenic Acid from Sunflower Meal Co-product by Macroporous Resins: StatiC/Dynamic Study.** Tuong Thi Le*[1], Irina Ioannou[2], Armelle Ropars[3], Arnaud Aymes[4], Jean-Pol Frippiat[3], and Romain Kapel[4], *[1]Laboratoire Réactions et Génie des Procédés,Université de Lorraine,CNRS, LRGP, France; [2]LRGP - UMR CNRS 7274, France; [3]Stress, Immunity, Pathogens, Université de Lorraine, EA 7300, France; [4]Reaction and Process Engineering Laboratory UMR-7274, France*
23. **Effect of Eucheuma Powder as a Partial Flour Replacer on Gluten Protein in Sponge Cake.** Min Huang and Hongshun Yang*, *National University of Singapore, Singapore*
24. **Electrospun Gelatin/Zein Nanofibers Crosslinked by Maillard Reaction for Improved Fiber Morphology Retention and Mechanical Strength.** Hui Zhang* and Lingli Deng, Zhejiang University, China
25. **A Study of Hydrolysis of Rapeseed Albumin: Kinetics Modelling and Functionalities Characterization.** Sophie Beaubier*[1], Melody Basselin[2], Xavier Framboisier[3], Olivier Galet[4], and Romain Kapel[3], *[1]LRGP - UMR CNRS 7274, France; [2]LRGP - UMR 7274, France; [3]Reaction and Process Engineering Laboratory UMR-7274, France; [4]Avril Group, France*

SURFACTANTS AND DETERGENTS

S&D-P: Surfactants and Detergents Poster Session

This session is sponsored in part by DuPont Industrial Biosciences.

Chair: Mike Wint, Amway Corporation, USA

Hall 1

1. **Amide Types of Gemini Surfactants Derived from Diethyl Tartrate.** Daisuke Ono*[1], Keisuke Yoshida[2], Yuki Morimoto[2], Shintaro Kawano[1], Hirofumi Sato[1], Motohiro Shizuma[1], and Araki Masuyama[2], *[1]Osaka Research Institute of Industrial Science and Technology, Japan; [2]Osaka Institute of Technology, Japan*
2. **Assessment of Skin Mildness of Personal Care Cleansers.** Brajesh Jha*[1], Aixing Fan[1], Hongwei Shen[1], Derek Kim[2], Irina Chernyshova[2], Ponisseril Somasundaran[2], and Parta Patra[2], *[1]Colgate Palmolive Co., USA; [2]Dept. of Earth and Environmental Engineering, Columbia University, USA*
3. **Monoglyceride-stabilized Pickering Emulsions as Vehicles for Controlled Release.** Malek El-Aooiti*, Auke de Vries, and Dérick Rousseau, *Ryerson University, Canada*
4. **Nanoparticles Stabilized Foams for Enhanced Oil Recovery using Carboxylate-based Extended Surfactants.** Pattamas Rattanaudom*[1], Ben Shiau[2], Ampira Chareonsaeng[1], and Uthaiporn Suriyapraphadilok[1], *[1]The Petroleum and Petrochemical College, Chulalongkorn University, Thailand; [2]University of Oklahoma, USA*
5. **DSC and 3D X-Ray Microscopy Study on Bar Soap Structures.** Aradhana Das and Hongwei Shen*, *Colgate Palmolive, USA*

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