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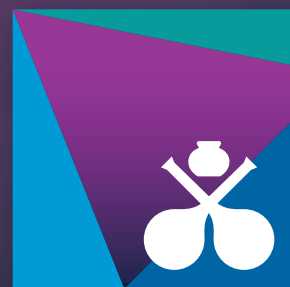


@AOCS #AOCS2022

PROGRAM

2022 AOCS Annual Meeting & Expo May 1–4

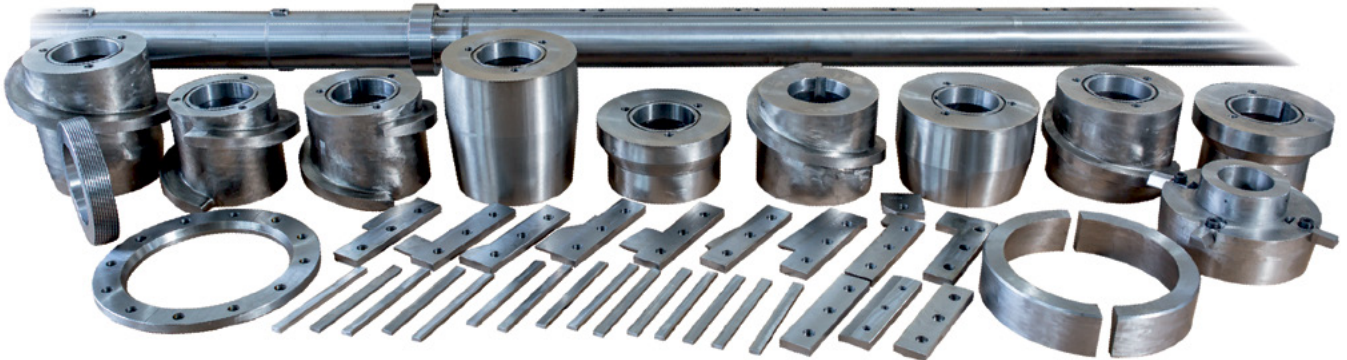
Hyatt Regency Atlanta
Atlanta, Georgia, USA
annualmeeting.aocs.org



Premier international science and business forum on oils, fats, proteins, surfactants, and related materials.



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Welcome!

Welcome to the 2022 AOCS Annual Meeting & Expo!

It's wonderful to be back in person with you in Atlanta, Georgia! For those joining online, we hope you enjoy the meeting and that we will have the opportunity to see you in 2023.

We have an excellent technical program this year, thanks to the program committee's diligence in preparing sessions that address the wide range of critical issues facing our industries. 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 to connect with scientists, engineers, and business professionals bringing solutions to technical and business challenges to life.

The meeting also allows you to discover how AOCS provides a gateway to helping you develop your career and to becoming more involved in the Society. I hope you will take advantage of the many networking events sponsored by our Divisions, Common Interest Groups (CIG), and Sections, as well as the committee meetings that help guide the direction and work of AOCS. These include developing the meeting program, managing three peer-reviewed journals, planning events and webinars, and convening expert technical panels. I have found that participating in these leadership opportunities has been a great way to impact the direction that our organization takes while building relationships and skill sets that are truly invaluable.

Though AOCS is one big family, our Divisions, Sections, and CIGs provide smaller communities relevant to specific technical interests, regions, 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 have helped so many AOCS members become leaders in the industry. I encourage you to attend the networking events, lunches, dinners, or business meetings hosted by the Divisions, Sections, and CIGs.

To celebrate the hard work and commitment of our volunteer leaders, as well as the contributions of our members, we are hosting a Member and Volunteer Appreciation Luncheon on Wednesday afternoon. I hope you will stay after the sessions conclude to help us recognize the work of our colleagues as an AOCS community. If you have not yet decided to become an active member of the Society, I hope you will join us to learn what the AOCS family is all about—the luncheon is open to everyone.

On a personal note, it has been a privilege to chair the Annual Meeting Program Committee for the past few years. I am sorry to say that this will be my last welcome letter as the committee chair, but I do look forward to continuing to serve our members and the Society as a member of the AOCS Governing Board. Above all, I look forward to seeing so many of my friends and colleagues in person again!



Best regards,

Eric (Rick) Theiner
Program Committee Chair
Evonik Industries, USA

Share your Annual Meeting experience!



@AOCS #AOCS2022



COMPLIMENTARY WI-FI
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Contents

- Award Winners 25
- Code of Conduct 36
- Committee Meetings 22
- Common Interest Group Events . . . 20
- Division Events 19
- Expo Directory insert
- Featured Events 37
- Featured Sessions 39
- Hot Topic Symposia 39
- Meeting Information 6
- Networking and Social Events . . . 16
- Oral Presentations 39
- Poster Presentations 73
- Restaurant Map 14
- Schedule by Day insert
- Section Events 20
- Sponsors 9

How to get involved at the A



Connect with colleagues. Grow 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 take the next step in your career.

4

Connect with other attendees

- Enjoy the Young Professional, Student, or Educators Receptions on Sunday evening. ▶▶▶ [page 16](#)
- For students and early-career meeting attendees, the Early Career Inspiration Lounge is your place to feed your curiosity and meet new colleagues. ▶▶▶ [page 20](#)
- Make more connections during the Member and Volunteer Appreciation Luncheon on Wednesday—free to all! ▶▶▶ [page 17](#)

Make lifelong connections

- Meet new colleagues at the evening receptions. ▶▶▶ [page 16](#)
- Make connections at Division networking events. ▶▶▶ [page 19](#)

Expand your career opportunities

- Visit *@home* to learn about the AOCS Career Center's tools and resources. ▶▶▶ [page 8](#)
- Make connections at Speed Networking. ▶▶▶ [page 16](#)

Have a voice in next year's annual meeting

Attend the 2023 Technical Session Development Meetings to learn how the program is developed and share your ideas. ▶▶▶ [page 19](#)

**Want to learn more about Divisions?
Attend the Leadership Planning Session on Sunday.**

▶▶▶ [page 19](#)



OCS Annual Meeting & Expo



Get technical.

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

Olive Oil Expert Panel

Discusses advances and concerns related to olive oil.
Sunday, May 1 | 9–10 a.m. | Harris

Laboratory Proficiency Program Committee

Reviews proficiency program details and suggests changes or new series.
Sunday, May 1 | 11 a.m.–Noon | Harris

Uniform Methods Committee Subcommittee Roundtable

Presentations and discussion of progress in new AOCS methods, and proposal of new AOCS methods.
Sunday, May 1 | 1–3 p.m. | Regency VI

Uniform Methods Committee (UMC)

Develops and maintains the *Official Methods and Recommended Practices of AOCS*.
Sunday, May 1 | 3–4 p.m. | Regency VI

Avocado Oil Expert Panel

Discusses advances and concerns related to avocado oil.
Sunday, May 1 | 2:30–4 p.m. | Greenbriar

Process Contaminants Expert Panel

Discusses developments related to the analysis and mitigation of processing contaminants in edible oils.
Wednesday, May 4 | 2:30–3:30 p.m. | Hanover C

5

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

Find all committee meetings on pages 22 and 23.

Meeting Information

Abstracts

Abstracts are published as submitted. Search and print abstracts from the computer stations located in Chicago A. Abstracts are also available online at 22AOCS.meetbreakout.com through June 30, 2022. Registered AOCS members receive extended access to on-demand content through December 31, 2022.

Computer Lab

Check email, print abstracts, and finalize presentations in Chicago A. The computer lab is open Sunday from 9 a.m.–4 p.m., Monday and Tuesday from 7 a.m.–5 p.m., and Wednesday from 7–11 a.m.

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.

Health and Safety Plan

AOCS is committed to the safety of our members and meeting attendees and being good stewards of public health. The current health and safety plan is outlined at annualmeeting.aocs.org/attend/safety-plan.

Hotel 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.

Lost and Found

Items may be turned in or recovered at the registration desk.

Luggage Storage

You can store luggage on Wednesday, May 4, from 7 a.m.–5 p.m. in room Kennesaw for no charge. Luggage not picked up by 5 p.m. will be turned over to the Hyatt Regency Atlanta security.

Meetings Conduct Policy

View the AOCS Meetings Conduct Policy at annualmeeting.aocs.org/attend/register.

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

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Name badges should be worn at all times.

Oral Presentations

Oral presentations will be recorded and available for on-demand viewing the same day the content is presented live. Recorded presentations will be available to all attendees at 22AOCS.meetbreakout.com through June 30, 2022. Registered AOCS members receive extended access to on-demand content through December 31, 2022.

Poster Presentations

ePosters are available online at 22AOCS.meetbreakout.com through June 30, 2022. Registered AOCS members receive extended access to on-demand content through December 31, 2022. Select posters are also on display in Centennial II. See more on page 73.

Program Changes

The most accurate program can be viewed at 22AOCS.meetbreakout.com.

Publish your Research with AOCS (Additional Opportunities)

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

- Authors 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 Patrick J. Donnelly at patrick.donnelly@aocs.org.
- To submit an article based on your paper to *INFORM* magazine, contact Rebecca Guenard at rebecca.guenard@aocs.org.
- To present an AOCS webinar, please visit aocs.org/stay-informed/aocs-webinars or email Amy Garren at amy.garren@aocs.org.

Smoking Policy

Smoking is prohibited at all AOCS functions.

Social Media

Share your annual meeting experience online! Tag @AOCS and #AOCS2022 to join the conversation.



Wi-Fi

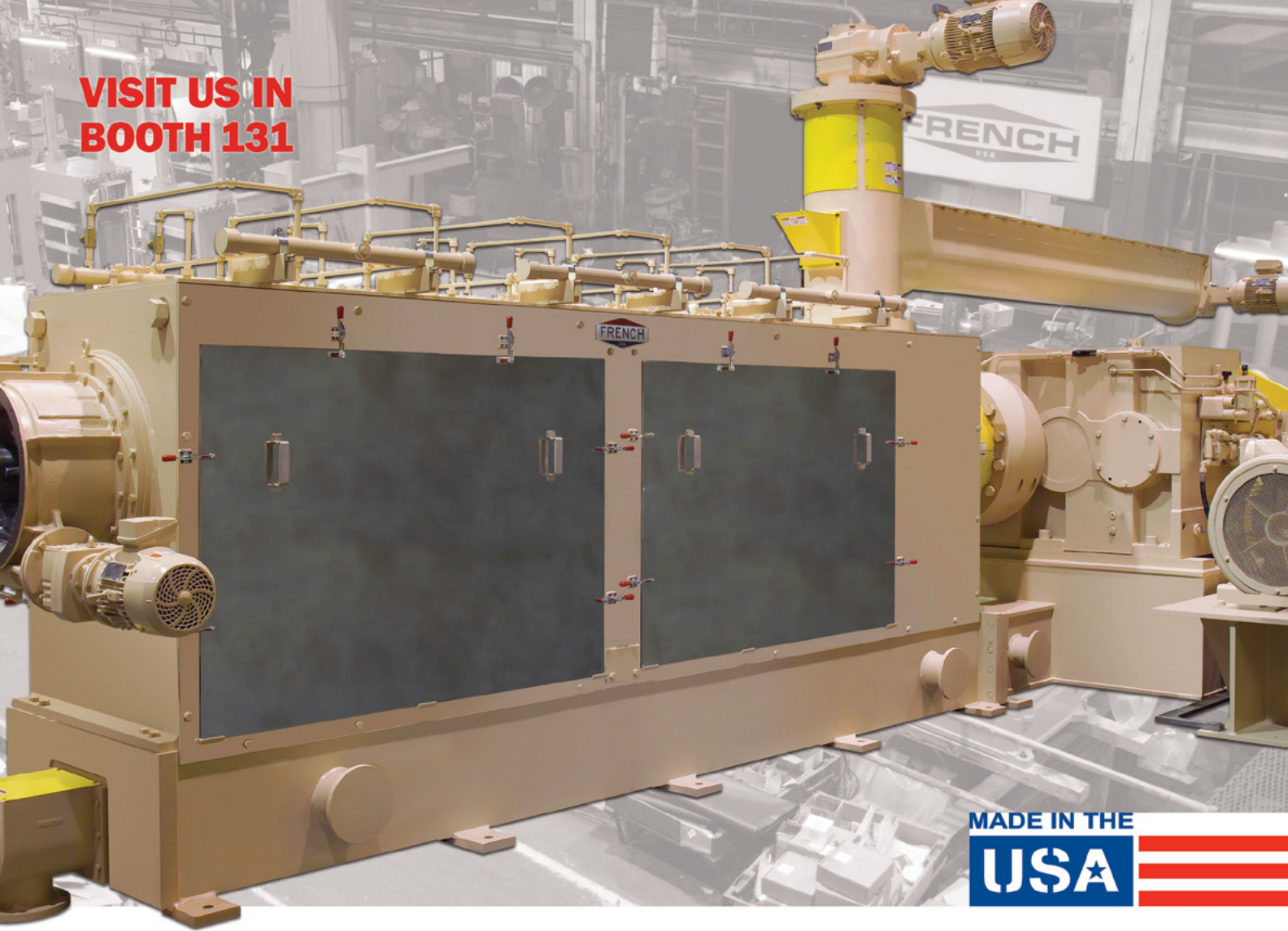
Complimentary wi-fi is available within the exhibit hall and throughout the meeting space.

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AOCS @home

Your home away from home at the annual meeting!

Sunday, May 1 | 8:30 a.m.–7 p.m.

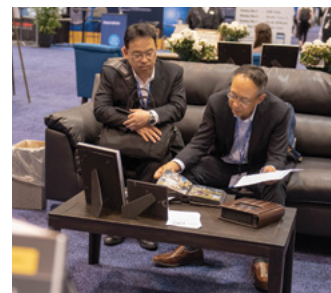
Monday, May 2 | 7 a.m.–7 p.m.

Tuesday, May 3 | 7 a.m.–7 p.m.

Wednesday, May 4 | 7 a.m.–3 p.m.

What can I do @home?

- Take a fun photo with photobooth props in front of the green screen.
- Take a break and catch up with colleagues.
- Get your questions answered by AOCS staff.
- Peruse AOCS books.
- Learn about the AOCS Career Center's available tools and resources for you to efficiently search and apply to jobs that will advance your career.
- Learn about AOCS Scientific and Society Awards.
- Join an AOCS Division, Section, or Common Interest Group.



*Stop by
and say hi!*



Your Global Fats and Oils Connection

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.

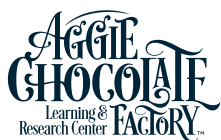
AOCS Mission | AOCS advances the science and technology of oils, fats, proteins, surfactants, and related materials, enriching the lives of people everywhere.

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

Thank you!

Annual Meeting Sponsors

as of April 1, 2022



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Welcome Reception



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Happy Hour Reception

*



Attendee Communication Package

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Networking Break

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Technical Program and Industry Update

*



Technical Program



Name Badges

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5K Fun Run/Walk

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Technical Program

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Happy Hour Reception

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Industry Update

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Industry Update

Visit sponsor at Booth 234 | *



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Notepads

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Technical Program

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Program-at-a-Glance, Networking Break

Visit sponsor at Booth 122

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as of April 1, 2022

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Annual Meeting Program Committee

Thank you to the volunteer leaders for all your efforts in planning the 2022 AOCs Annual Meeting & Expo.



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Evonik Industries, USA



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Sanja Natali
ExxonMobil Chemical, USA

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

Attend the 2023
Technical Session
Development Meetings
to learn how the
program is developed
and share your ideas.

See page 19 for times
and locations for each
interest area.

Thank you!

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2021–2022 AOCS Governing Board

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Wilmar Global R&D Center, China

*Join fellow members
at the AOCS
Governing Board
Town Hall*

WHEN

Monday, May 2, 7–7:25 a.m.

WHERE

Centennial Ballroom Foyer

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



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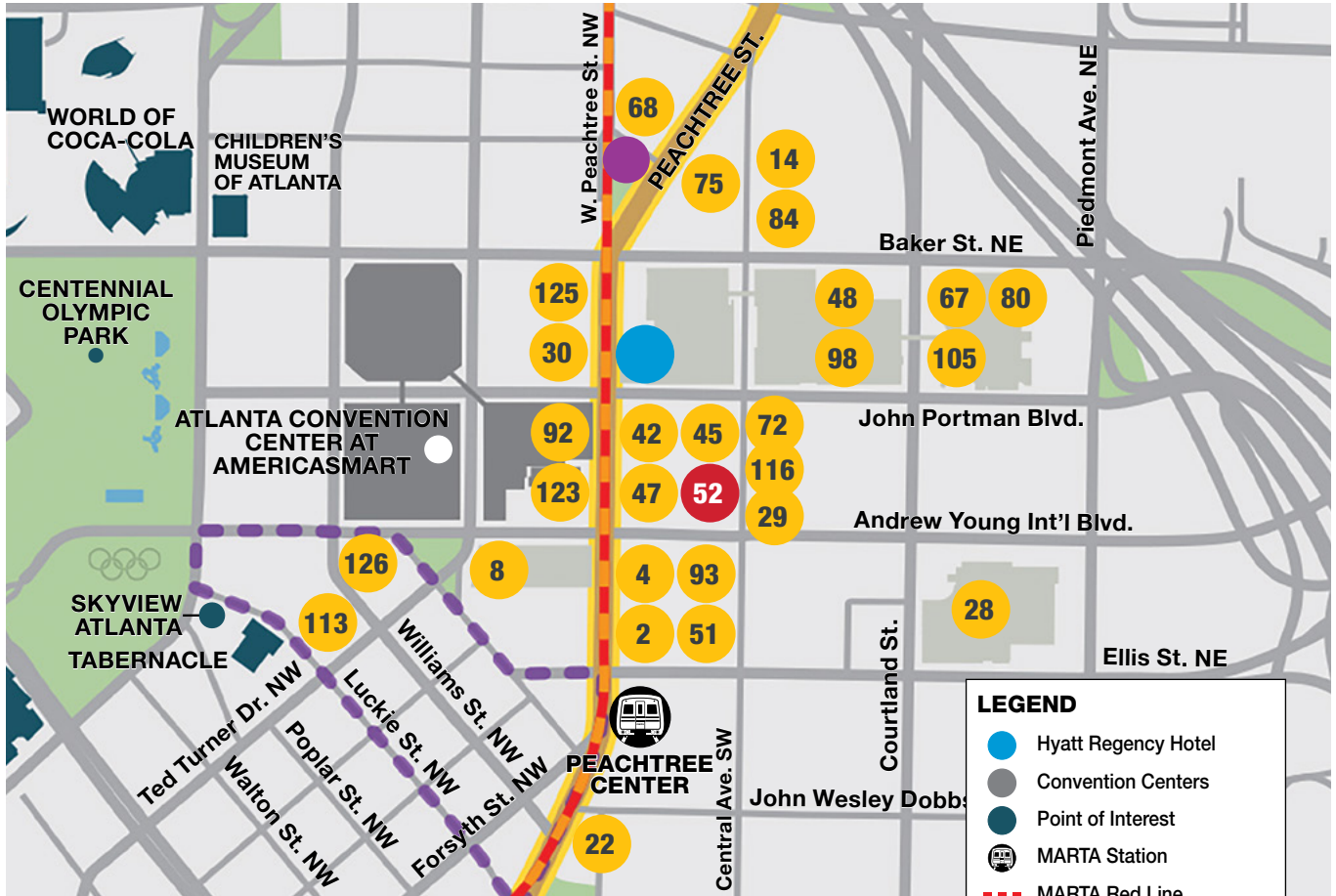
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- MARTA Red Line
- MARTA Gold Line
- Atlanta Streetcar
- Hardy Ivy Park — 5K Fun Run/Walk
- Restaurant
- Food Hall

Hungry?

There are plenty of restaurants within walking distance of the hotel!

B = Breakfast
L = Lunch
D = Dinner

- 2 AG, **B, D**
- 4 Amalfi Pizza, **D**
- 8 Bar 210 (Westin Peachtree Plaza), **D**
- 14 Big Kahuna, **L, D**
- 22 By George (Candler Hotel), **B**
- 26 The Cloakroom (The American—Doubletree by Hilton), **B, D**
- 28 The Collage (Sheraton Atlanta Hotel), **B**
- 29 Cuts Steakhouse, **L, D**
- 30 Corner Bakery, **B, L**
- 42 Gibney's Pub, **L, D**
- 45 Gus's Fried Chicken, **L, D**
- 47 Hard Rock Café, **L, D**
- 48 High Velocity (Atlanta Marriott Marquis), **D**
- 51 Hsu's Gourmet, **L, D**
- 52 The Hub at Peachtree Center, **B, L, D**
- 67 The Marketplace (Hilton Atlanta), **B, L, D**
- 68 Max Lager's Wood-Fired Grill & Brewery, **D**
- 72 Metro Cafe Diner, **B, L, D**
- 75 Morton's The Steakhouse/Downtown, **D**
- 80 Nikolai's Roof (Hilton Atlanta), **D**
- 84 Pacific Rim Bistro, **L, D**
- 92 Ray's in the City, **L, D**
- 93 Red Phone Booth, **D**
- 98 Sear (Atlanta Marriott Marquis), **B, L**
- 105 Southern Elements (Hilton Atlanta), **B, L, D**
- 125 White Oak Kitchen & Cocktails, **L, D**
- 123 Wahlburgers Downtown Atlanta, **L, D**
- 113 Ted's Montana Grill, **L, D**
- 116 Tin Lizzy's Cantina-Downtown Atlanta, **L, D**

Hyatt Regency Atlanta offers three dining options:

- The Market, **B, L, D**
- Sway, **B**
- Twenty-Two Storys, **D**

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Networking and Social Events

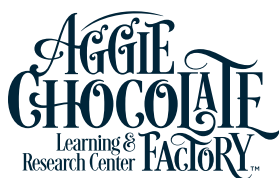
Make the most of your meeting experience! Take advantage of these opportunities for face-to-face interaction

Sunday, May 1

Speed Networking to Create New Professional Bonds

2:30–3:30 p.m. | Centennial Ballroom Foyer
Hosted by AOCs Divisions, Sections and Common Interest Groups

This informal and inviting activity will boost your confidence and connections. Interact with other registrants in a structured yet casual format, five minutes at a time. The advice and friendships that you make might just lead to career-long relationships! Open to all attendees; pre-registration is not required.



College of Agriculture & Applied Sciences
Utah State University

Aggie Chocolate Factory Welcome Reception

5:30–7 p.m. | Grand Hall

Welcome to the Chocolate Factory! Reconnect with colleagues and network with new business contacts during this chocolate-inspired reception in the expo hall. Grab your food and drink and then meet with others—this is where you begin making connections that could lead to life-long collaborations. During the reception, learn how the Aggie Chocolate Factory makes their bean-to-bar chocolate—from sourcing and sorting to molding and packaging. Ready to try some yourself? Visit the tasting counter to enjoy samples from across the Thistle & Rose, single-origin chocolate line, and then head over to the beverage counter to make your selection from the list of recommended drink pairings!

Established in 2018, the Aggie Chocolate Factory (ACF) is the only academic bean to bar facility in the United States and is part of the Nutrition, Dietetics, and Food Sciences Department at Utah State University. AOCs President-elect and JAOCs Editor-in-Chief, Dr. Silvana Martini, is Director, Professor, and Research Supervisor of the ACF, whose mission is to provide educational, research, and outreach opportunities to faculty, students, chocolate producers, and the local community about their high-quality bean-to-bar chocolate. This opportunity is extended to students, industry professionals, the public, and the people that work with and for the ACF. Learn more at aggiechocolatestore.com.



Common Interest Group Networking Receptions

7–8 p.m. | Pool Deck

Each of AOCs' three Common Interest Groups—Student, Young Professional, and Professional Educator—host evening receptions to get to know more colleagues in a relaxed and fun environment. Open to all attendees; pre-registration is not required.

Monday, May 2

Networking Breaks

Sponsored by SOY

9:30–10 a.m. and 3:30–4 p.m. | Grand Hall

Take a break! Join fellow attendees in the expo hall for coffee and good conversation during these scheduled program breaks.

Happy Hour Reception

Sponsored by Oil-Dri
FLUIDS PURIFICATION

6–7 p.m. | Grand Hall

Enjoy snacks and drinks, including local craft beers. Meet with exhibitors as you learn about their products and services that help you back at the office.

Tuesday, May 3

5K Fun Run/Walk

Sponsored by Larodan

6–7 a.m. | Hardy Ivy Park

Kick off day three of the annual meeting with a leisurely stroll or quick run around downtown Atlanta. There is no fee to participate but pre-registration is required. Space is limited! Runners can meet in the lobby of the Hyatt Regency Atlanta at 5:30 a.m. to walk to the starting line together. Race bib pick-up begins at 5:30 a.m. at Hardy Ivy Park. Race begins promptly at 6 a.m.

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

Networking Breaks

Sponsored by 

9:30–10 a.m. and 3:30–4 p.m. | Grand Hall

Take a break! Join fellow attendees in the expo hall for coffee and good conversation during these scheduled program breaks.

Happy Hour Reception

Sponsored by 

6–7 p.m. | Grand Hall

Enjoy snacks and drinks, including local craft beers. Meet with exhibitors as you learn about their products and services that help you in your work.

Wednesday, May 4

Networking Break

Sponsored by  **2023 AOCs Annual Meeting & Expo**

9:30–10 a.m. | Grand Hall

Take a break! Join fellow attendees in the expo hall for coffee and good conversation during this scheduled program break.

AOCs Member and Volunteer Appreciation Luncheon

12:15–1:45 p.m. | Centennial III

We appreciate you! Enjoy complimentary food and fun as we recognize our volunteers. To celebrate their efforts and to honor our dedicated volunteers, we invite all attendees to join us for this free luncheon. All attendees will have a chance to win prizes. Learn more about how to volunteer and get inspired by those who make a difference through volunteering with AOCs. Open to all attendees; pre-registration is not required.

Share your Annual Meeting experience!



@AOCs #AOCs2022



Corporate Member Lounge

Grand Hall

Sunday		5:30–7 p.m.
Monday		7 a.m.–7 p.m.
Tuesday		7 a.m.–7 p.m.
Wednesday		7 a.m.–10 a.m.

All employees of our valued AOCs Corporate Member organizations are welcome to enjoy the lounge, which features morning coffee service, device charging stations and comfortable spaces for relaxing or business conversations. See the full list of AOCs Corporate Member organizations on page 28.



Welcome students and early career professionals!

Stop by the lounge in the Expo Hall to make connections, sip some coffee or tea, and enjoy a snack.

Hours

Sunday	■	5:30–7 p.m.
Monday	■	9:30 a.m.–7 p.m.
Tuesday	■	9:30 a.m.–7 p.m.
Wednesday	■	8–10 a.m.

Network

Engage

Recharge

Advance your career and learn new skills with the AOCS Continuing Education Program

The world of fats, oils, lipids, proteins, surfactants, and related materials is rapidly evolving. Staying up-to-date with the latest innovations and applications will ignite your thinking and help you solve your toughest work challenges. AOCS Continuing Education courses are the perfect place for live online interaction with today's leaders in the field.



Upcoming Live Courses

Chocolate science and processing: An applied perspective on how to process chocolate from bean to bar

June 2022

Instructor: Silvana Martini, PhD, Professor, Utah State University

High oleic oils: Development, properties and uses

August 2022

Organizer: Frank Flider, Edible Oils and Lecithin Consultant, Flider Group LLC

Fundamentals of spectroscopy in the analysis of fats and oils

October 2022

Instructor: Jonathon D. Speed, PhD, CChem, Product and Applications Manager, Keit Spectrometers

Coming soon

Analysis and cosmetic use of natural oils

Joint course with the Society of Cosmetic Chemists

Learn more at aocs.org/education

Division Events

Meet colleagues who have similar scientific and technological interests by attending an AOCS Division event. 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.

2023 Technical Session Development

What topics would you like to see on the 2023 Annual Meeting technical program? What problems are keeping you up at night that if presented at AOCS, would encourage you and your colleagues to attend? If you have topics and ideas, join us at these open meetings to take an active role in shaping and developing the technical program.

Analytical

Meeting virtually after the conference.

Biotechnology

Tuesday, May 3 | 11am-Noon
■ Kennesaw

Edible Applications Technology

Tuesday, May 3 | 11:20 a.m.–Noon
■ Hanover AB

Health and Nutrition

Tuesday, May 3 | 1:30–2:30 p.m.
■ Kennesaw

Industrial Oil Products

Meeting virtually after the conference.

Lipid Oxidation and Quality

Monday, May 2 | 4–5 p.m.
■ Inman

Phospholipid

Monday, May 2 | 10–11 a.m.
■ Inman

Processing

Wednesday, May 4 | 11:20 a.m.–Noon
■ Regency V

Protein and Co-Products

Tuesday, May 3 | 11:20 a.m.–Noon
■ Hanover E

Surfactants and Detergents

Monday, May 2 | 11:20 a.m.–Noon
■ Regency VI

Networking Events

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

Analytical Luncheon*

Monday, May 2 | Noon–1:15 p.m.
■ Courtland

Biotechnology Dinner*

Tuesday, May 3 | 7:15–8:45 p.m.
■ Baker

Edible Applications Technology Dinner*

Monday, May 2 | 7:15–8:45 p.m.
■ Courtland

Health and Nutrition Dinner*

Tuesday, May 3 | 7:15–8:45 p.m.
■ Fairlie

Industrial Oil Products Luncheon*

Tuesday, May 3 | Noon–1:15 p.m.
■ Edgewood

Lipid Oxidation and Quality Dinner*

Monday, May 2 | 7:15–8:45 p.m.
■ Dunwoody

Phospholipid Dinner*

Monday, May 2 | 7:15–8:45 p.m.
■ Edgewood

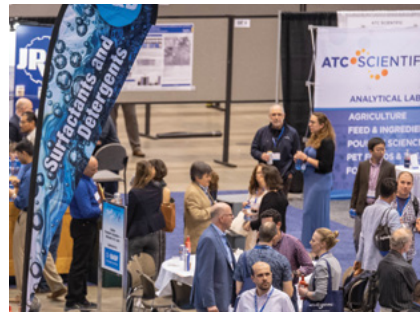
Processing Happy Hour*

Monday, May 2 | 7:15–8:45 p.m.
■ Pool Deck

Protein and Co-Products Dinner*

Tuesday, May 3 | 7:15–8:45 p.m.
■ Dunwoody

Division activities are open to all attendees!



Surfactants and Detergents Networking Reception

Monday, May 2 | 7:15–8:45 p.m.
■ Centennial Ballroom Foyer

Surfactants and Detergents Luncheon*

Tuesday, May 3 | Noon–1:15 p.m.
■ Dunwoody

*Ticket required for attendance. You may purchase additional tickets at the registration desk.

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.

Leadership Planning Session: Divisions, Sections, and Common Interest Groups

Sunday, May 1 | 11 a.m.–12:30 p.m.
■ Regency VII

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.

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 2 | Noon–1:15 p.m.

■ Dunwoody

Attend to celebrate student travel grant winners and recognize the tremendous

efforts of the 2022 Canadian Lipids and Proteins Conference.

Latin American Luncheon*

Tuesday, May 3 | Noon–1:15 p.m.

■ Fairlie

Engage with members of the Latin American Section as they enjoy great food and lively conversations!

*Ticket required for attendance. You may purchase additional tickets at the registration desk.

Leadership Planning Session: Divisions, Sections and Common Interest Groups

Sunday, May 1
11 a.m.–12:30 p.m.

■ Regency VII

Common Interest Group Events

AOCS Common Interest Groups (CIGs) foster communication between members who are at similar points in their careers. Connect with fellow attendees to discuss trends, overcome challenges, and share your knowledge and insights.

Early Career Inspiration Lounge

Grand Hall

Sunday ■ 5:30–7 p.m.

Monday ■ 9:30 a.m.–7 p.m.

Tuesday ■ 9:30 a.m.–7 p.m.

Wednesday ■ 8–10 a.m.



Hosted by the Student Common Interest Group and the Young Professional Common Interest Group

Students and early career professionals are welcome to enjoy the lounge, which features complimentary tea and coffee, fresh fruit, energy bars, and fresh baked snacks. Come network, relax, or use this comfortable space for work or business conversations.

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.

Networking Reception

Sunday, May 1 | 7–8 p.m.

■ Pool Deck

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 and fun environment.

Student Meeting

Wednesday, May 4 | 2–3 p.m.

■ Fairlie

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

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 within 10 years of their final degree.

Networking Reception

Sunday, May 1 | 7–8 p.m.

■ Pool Deck

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 and fun environment.

Young Professional Meeting

Wednesday, May 4 | 2–3 p.m.

■ Harris

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

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.

Networking Reception

Sunday, May 1 | 7–8 p.m.

■ Pool Deck

Catch up with friends and colleagues and share online teaching strategies!



OIL & FAT TECHNOLOGIES

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Committee Meetings

If you cannot attend a committee meeting of interest or for further information, contact the staff liaison listed.

Avocado Oil Expert Panel

OPEN MEETING

Sunday, May 1 | 2:30–4 p.m. | Greenbriar

Discusses advances and concerns related to avocado oil.

Chair: Selina Wang

Staff Contact: Denise Williams, denise.williams@aocs.org

Books and Special Publications Committee

OPEN MEETING

Wednesday, May 4 | 3–4 p.m. | Greenbriar

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

Chair: Wm. Craig Byrdwell

Staff Contact: Pat Donnelly, patrick.donnelly@aocs.org

Leadership Planning Session: Divisions, Sections, and Common Interest Groups

OPEN MEETING

Sunday, May 1 | 11 a.m.–12:30 p.m. | Regency VII

Leadership teams—incoming and outgoing—meet to finalize activities held in Atlanta and develop plans for the year ahead. This is a meeting for anyone interested in getting more involved with the Society.

Staff Contact: Bill Stanton, william.stanton@aocs.org

Governing Board

OPEN MEETING

Saturday, April 30 | 9 a.m.–5:30 p.m. | Fairlie

Sunday, May 1 | 8 a.m.–Noon | Fairlie

Reviews progress against goals and objectives of the current strategic plan.

Chair: Phil Kerr

Staff Contact: Pat Donnelly, patrick.donnelly@aocs.org

JAOCS Senior Associate Editors

CLOSED MEETING

Sunday, May 1 | 2:30–3:30 p.m. | Harris

Meeting for *Journal of the American Oils Chemists' Society* (JAOCS) editor-in-chief and the senior associate editors to discuss the state of the journal.

Chair (JAOCS Editor-in-Chief): Silvana Martini

Staff Contact: Pam Landman, plandman@aocs.org

JAOCS Associate Editors Breakfast

OPEN MEETING

Monday, May 2 | 7:45–9 a.m. | Greenbriar

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): Silvana Martini

Staff Contact: Pam Landman, plandman@aocs.org

JSD Committee

OPEN MEETING

Tuesday, May 3 | 11 a.m.–Noon | Harris

Business meeting and strategy session for *Journal of Surfactants and Detergents* (JSD) editors. Attendees who want to learn more about getting involved with JSD are welcome.

Chair (JSD Editor-in-Chief): Douglas G. Hayes

Staff Contact: Pam Landman, plandman@aocs.org

Laboratory Proficiency Program Committee

OPEN MEETING

Sunday, May 1 | 11 a.m.–Noon | Harris

Reviews proficiency program details and suggests changes or new series.

Chair: Susan Seegers

Staff Contact: Scott Bloomer, scott.bloomer@aocs.org

Olive Oil Expert Panel

OPEN MEETING

Sunday, May 1 | 9–10 a.m. | Harris

Discusses advances and concerns related to olive oil.

Staff Contact: Fiona Liu, fiona.liu@aocs.org

Process Contaminants Expert Panel

OPEN MEETING

Wednesday, May 4 | 2:30–3:30 p.m. | Hanover C

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

Staff Contact: Scott Bloomer, scott.bloomer@aocs.org

Sustainable Protein Analysis Expert Panel

OPEN MEETING

Sunday, May 1 | 9–10:30 a.m. | Regency VI

A meeting of parties interested in the analytical challenges of the sustainable proteins, including proteins derived from plants and produced by fermentation or cell culture.

Staff Contact: Scott Bloomer, scott.bloomer@aocs.org

Student Meeting (SCIG)

OPEN MEETING

Wednesday, May 4 | 2–3 p.m. | Fairlie

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

Chair: Ece Gulkirpik

Staff Contact: Bill Stanton, william.stanton@aocs.org



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



@AOCS #AOCS2022

Technical Leadership Meeting

OPEN MEETING

Wednesday, May 4 | 4–5:30 p.m. | Harris

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@aoacs.org

Uniform Methods Committee (UMC) Subcommittee Roundtable

OPEN MEETING

Sunday, May 1 | 1–3 p.m. | Regency VI

Presentations and discussion of progress in new AOCS methods, and proposal of new AOCS methods.

Chair: Chris Dayton

Staff Contact: Scott Bloomer, scott.bloomer@aoacs.org

Uniform Methods Committee (UMC)

OPEN MEETING

Sunday, May 1 | 3–4 p.m. | Regency VI

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

Chair: Chris Dayton

Staff Contact: Scott Bloomer, scott.bloomer@aoacs.org

Young Professional Meeting (YPCIG)

OPEN MEETING

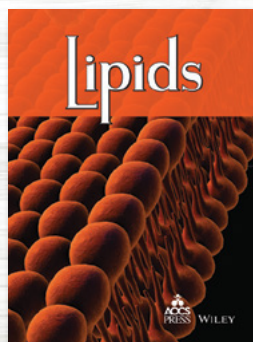
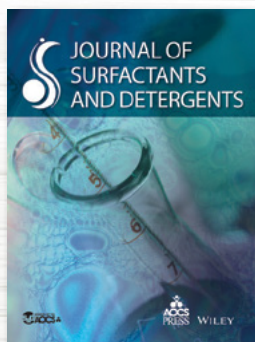
Wednesday, May 4 | 2–3 p.m. | Harris

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

Chairs: Orayne Mullings and Sarah Willett

Staff Contact: Bill Stanton, william.stanton@aoacs.org

Facilitate innovation in your work



AOCS journals publish high-quality, peer-reviewed research at the intersection of basic and applied science in oils, fats, lipids, proteins, surfactants, and related materials. Become a reader of AOCS journals to discover new perspectives that drive innovation in your work.

**AOCS members receive online access to all AOCS journals —
a savings of up to US \$600.**

Learn more at aoacs.org/member-benefits



“Read the literature outside your specialty to see if it applies to your projects and develop a broad range of research interests.”

—AOCS Emeritus member,
John Massingill, Jr.





Grow the AOCS Family!

Refer a friend

Make a positive impact on our global community by inviting a colleague to join AOCS today.



Invite

Invite colleagues to join AOCS. Visit aocs.org/refer2022 for a Recruiter's Toolkit.



Inspire

Share the best parts of AOCS, and how your membership has benefitted you personally.



Incentive

Earn US \$20 for every new member that joins AOCS – the more members you recruit, the more rewards you earn!

No one knows the value of an AOCS membership better than YOU! Sharing your AOCS membership experience grows your network and enriches the professional path of your colleagues. Introduce your peers to the many benefits and connections that you have found at AOCS. Recruiters will also be recognized on the AOCS Blog and the inform|connect Open Forum as a leader in the AOCS community.

Win an AOCS Picnic Basket filled with prizes

With each successful referral, you will gain one entry into the **grand prize** drawing for a chance to win an AOCS-branded picnic basket filled with a variety of prizes valued at over US \$600. The winner will be randomly selected during the complimentary AOCS Member and Volunteer Appreciation Luncheon held on Wednesday, May 4 at 12:15 p.m.



For full details about the program, visit aocs.org/refer2022.

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. Their contributions are critical to AOCS and the advancement of the science and technology of oils, fats, proteins, surfactants, and related materials. We congratulate all the 2022 award recipients!

Society Awards

Recognized and presented at the Opening Celebration:
Collaborate to Innovate.
Sunday, May 1 | 4 p.m.
■ Centennial IV

A. R. Baldwin Distinguished Service Award

Recognizes an active or previously active member of the Society making outstanding contributions and service to the Society over a substantial period of time. Sponsored by Cargill, Inc.



Casimir is an international authority on the synthesis of structured lipids by enzymatic catalysis who has brought his leadership to many volunteer roles within the Society.

Dr. Casimir C. Akoh is a distinguished research professor at the University of Georgia. He earned a Ph.D. in food science, an M.S. in biochemistry from Washington State University, and a B.Sc. in biochemistry from the University of Nigeria.

He served on the AOCS Governing Board as secretary, vice president, and president (2008–2009). He has also served on many committees—including the Recognition Program, Membership Steering, and *INFORM* Editorial Advisory

Award lectures are identified in the presentation information with the photo of the winner or award icon.

committees—and as an associate editor of the *Journal of the American Oil Chemists' Society*.

Dr. Akoh's research is mainly in lipid chemistry and phytochemicals. He is an internationally recognized expert on low calorie fat substitutes and structured lipids. He edited eight books and his "Food Lipids" book, now in its Fourth Edition (2017), is used worldwide as a textbook for graduate instruction. Dr. Akoh's research has resulted in over 850 publications and presentations, including up to 296 peer-reviewed refereed publications, 50 book chapters, eight edited books, four patents, 313 presentations, and 187 invited presentations. He has received nearly \$7.5 million in grants and gifts. He is an editorial board member or associate editor of six journals.

Dr. Akoh received two top research awards from international professional societies in 2012: the Supelco AOCS Research Award, and the Institute of Food Technologists (IFT) Nicholas Appert Award. Dr. Akoh has received seven awards or honors from IFT and six from AOCS. He recently received the University of Nigeria Alumni Achievement Award (2015), the IFT Babcock-Hart Award (2018) for food technology contributions that resulted in improved public health through nutrition or a more nutritious food, and the AOCS Alton E. Bailey Award (2019). He is a fellow of IFT, AOCS, ACS, and ISBAB.

2023 Awards open on June 1, 2022!

Start planning your nomination or application now—visit [@home](#) or aocs.org/awards to learn more about all the awards AOCS offers.

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.



Robert's high caliber of leadership and service during his AOCS volunteer roles enhanced the prestige and standing of the Society.

Dr. Robert A. Moreau grew up in Massachusetts and received a B.A. from Boston University and Ph.D. from the University of South Carolina. He also received a postdoctoral fellowship from the University of California at Davis.

Dr. Moreau was a member of the AOCS Governing Board for nearly 13 years, served as chair of the Publications Steering Committee, and participated in numerous other committees. He also served as associate editor, contributing editor, and member of the Editorial Advisory Committee for *INFORM* magazine, and as an associate editor of *Lipids*.

He was instrumental in leading AOCS journals into the modern era by transitioning them to a commercial publisher. This step has helped the journals remain leading publications in their areas.

Likewise, he helped guide *INFORM* magazine as it transitioned from a publishing outlet for original research to a trade magazine. The magazine continues to be a timely source of information about critical issues and research news.

For 38 years, Dr. Moreau conducted research at the Eastern Regional Research Center, United States Department of Agriculture (USDA), Agricultural Research Service (ARS), in Wyndmoor, Pennsylvania. His research was mainly focused on the analysis of health-promoting lipids (phytosterols, tocopherols, tocotrienols, and carotenoids) in plant oils and other plant materials. He published more than 172 peer-reviewed scientific research publications, of which 33 appeared in either *Lipids* or the *Journal of the American Oil Chemists' Society*.

Dr. Moreau was named an AOCS Fellow in 2009. He received the Herbert J. Dutton Award in 2006, Alton E. Bailey Award in 2015, and A.R. Baldwin Distinguished Service Award in 2021. He has been blessed with a wonderful wife, three great kids and three wonderful grandkids.



Lianzhou played a key leadership role in the formation and growth of the AOCS China Section, bringing new members and international perspectives into the Society.

Dr. Lianzhou Jiang is a professor at Northeast Agricultural University (NEAU), China, and fellow of the International Academy of Food Science and Technology.

He led the formation and chaired the AOCS China Section in 2016. He was selected as a valid candidate for the academican of the Chinese Academy of Engineering (CAE) in 2019. Dr. Jiang served as the dean of the College of Food Science at the NEAU, the director of the National Research Center of Soybean Engineering and Technology from 2005–2019. He also served as the committee member of the discipline evaluation group of the State Council of the People's Republic of China, and vice president of the China Soybean Industry Association.

For nearly 40 years, Dr. Jiang has been dedicated to the research of soybean processing theory and technology as well as the cultivation of talents, pioneering the theory of flexible processing of plant proteins, and promoting the creation of a distinctive modern soybean processing industry technology system. He has served on, and chaired, more than 50 scientific and technological projects, including the United Nations Development Programme (UNDP), the National High-tech R&D Program of China ("863" Program), the National Science and Technology Support Program, and the National Nature Science Foundation of China. He has contributed to more than 400 peer-reviewed articles and edited 15 books. He has received more than 30 science and technology awards and obtained nearly 100 authorized invention patents. His research results have been widely promoted and applied, creating tens of billions of yuan of economic benefits and effectively promoting the scientific and technological progress of the global soybean industry.

Join us in congratulating our
AOCS award winners!



@AOCS #AOCS2022

AOCS Fellow Award

Recognizes achievements in science or extraordinary service to the Society.



Navam has contributed scientific achievements in peptide structure-function research that have increased the global capacity to produce new and novel therapeutic molecules with efficacy against various diseases.

Dr. Navam Hettiarachchy is a professor in the Department of Food Science at the University of Arkansas. She earned a B.S. in chemistry from the University of Madras, India, an M.S. in biochemistry, University of Edinburgh Medical School, Scotland, and a Ph.D. in biochemistry from the University of Hull, England, U.K. She is internationally recognized for her research in maximizing the use of oilseed crops, particularly soy, and rice.

Dr. Hettiarachchy served as chair of the Protein and Co-Products Division as well as moderator and chair of numerous technical sessions at the AOCS Annual Meeting & Expo. In her role as chair, she recruited world-class speakers. She collaborated with other AOCS Divisions to host technical sessions that attracted numerous attendees.

Dr. Hettiarachchy has published 164 journal articles and chapters, in which she provided innovative and creative approaches in fundamental protein chemistry. She pioneered work revealing the structural requirements necessary for peptides to inhibit cancer cell proliferation.

In 1999, Dr. Hettiarachchy and her co-authors received the ADM Award for Best Paper in Protein and Co-Products in the category of Chemistry/Nutrition from AOCS for their article "Hydrophobicity, Solubility, and Emulsifying Properties of Soy Protein Peptides Prepared by Papain Modification and Ultrafiltration." She is a fellow of IFT and the International Union of Food Science and Technology. She has been inducted into the National Academy of Inventors (2015) and won the Spitze Land-Grant Professorial Career Excellence Award for excellence in teaching, research, and service.

In addition to her research, she has developed and taught six outcome-based courses. Her mentorship in product development, IFT College Bowl competition, and others led to student cash awards amounting to \$98,550.



Charlotte is one of the leading scientists in developing antioxidant technologies for the use of omega-3 oils in foods.

Dr. Charlotte Jacobsen is a professor and leader of the Research Group for Bioactives—Analysis and Applications at the National Food Institute, Technical University of Denmark. She is internationally renowned for her research in lipid oxidation of omega-3 rich foods.

She has served on the AOCS European Section Leadership Team as president and vice president. As chair of the Lipid Oxidation and Quality Division, Dr. Jacobsen fostered a collaborative and supportive culture for students, academics, and industry professionals. She also served as an associate editor of the *Journal of the American Oil Chemists' Society* and is a member of the AOCS Journal Advisory Board.

She was appointed by European Food Safety Authority as an expert in the Fish Oil Working Group under the Biohazard Panel to evaluate the potential hazards associated with human intake of refined fish oil. Her recent research also concerns the use of side-streams from plant and marine food production as new ingredients (e.g., antioxidants) for the food industry. She has led several large national and international projects, including the on-going EU BBI JU project WaSeaBi. Most of her projects involve collaboration with industry partners, such as Royal Greenland, Kalsec, Nestlé, and Novozymes. Dr. Jacobsen has over 200 publications and 6,500 citations. She has authored 31 book chapters, co-edited four books, and has one granted patent and four pending.

Dr. Jacobsen has received several awards, including the Danish Danisco prize (2003), the French La Médaille Chevreul (2010) awarded by Association Française pour l'Étude des Corps Gras, the German DGF Normann Medaille (2020), AOCS Stephen S. Chang award (2021), and two best paper awards from AOCS.



Did you miss the Industry Updates pre-meeting sessions?

These sessions are available to view on demand at 22AOCS.meetbreakout.com. See page 38 for presentation information.

Join these
prestigious
companies as a
Corporate Member
today.

aocs.org/corporate



Thank you
for supporting
and partnering with AOCS

AOCS Corporate Members: Innovators and influencers — supply chain authorities for fats, oils and surrounding markets.

Current AOCS Corporate Members as of March 31, 2022.

Platinum

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Barrow-Agee Laboratories LLC
Bunge Loders Croklaan
Cargill Inc
Louis Dreyfus Co
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Artisan Industries Inc JET-VAC Technologies
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Kao Corporation
Oil-Dri Corp of America
Stratas Foods
Wiley Companies

Silver

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Alfa Laval
Anderson International Corp
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Colonial Chemical Inc
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Keyleaf
LEEM Filtration
Lion Corp
Matrix Life Science*
Nisshin OilliO Group Ltd
Plus Group
PQ Corp
Procter & Gamble Co
Richardson International

Solex Thermal Science Inc
Wilmar International Ltd
Young Living Essential Oils

Bronze

ADF Engineering Inc
Advanced Biocatalytics*
American Emu Association
American Lecithin Co
Arkema Inc
Avanti Polar Lipids Inc
Avatar Corp
BASF Corp
Bioriginal Food & Science Corp
Caldic Canada Inc
Canadian Food Inspection Agency
Caribbean Products Co Ltd
Carribex SA
Center for Testmaterials BV
Corteva Agriscience
Darling Ingredients Inc
Epax Norway AS
Evonik Corp — Household Care
GOED (Global Organization For EPA and DHA Omega-3s)
Golden Agri-Resources Ltd
Goulston Technologies
Graincorp Foods

Henkel
Hollbras Industrial Filtration Ltda
Industrial de Oleaginosas SA de CV
Intercontinental Specialty Fats Sdn Bhd
Intermed Sdn Bhd
International Flavors & Fragrances
ITS Testing Services (M) Sdn Bhd
JST Global, LLC
Kuala Lumpur Kepong Bhd
La Tourangelle Inc*
Liberty Vegetable Oil Co
Lipsa SA
Lovibond North America
Lovibond Tintometer
Modern Olives
MSM Milling PL
Myande Group Co Ltd
Natec Network
Nippon Yuryo Kentei Kyokai
Nutriswiss AG
Pattyn Packing Lines NV
Peerless Holdings Pty Ltd
Pennakem Europa
Perimondo LLC
Perry Videx LLC
Pompeian Inc
Sanmark Ltd
Schrödinger*
Silverson Machines Inc
Simmons Grain Co
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Janitha has contributed significantly to the scientific knowledge of food protein chemistry as well as to the training of future leaders in the oilseed industry.



Jill is an excellent scientist and highly skilled leader whose service to AOCS has benefited all members of the Society.

Dr. Janitha P. D. Wanasundara is a senior research scientist with Agriculture and Agri-Food Canada (AAFC). Her research program is in protein chemistry and bioproducts focusing on oilseeds and pulses produced in Canadian prairies. She has a B.Sc. (agriculture with honors, 1986), a M.Phil. (food science and technology) from the University of Peradeniya, Sri Lanka, and an M.Sc. and Ph.D. in food science (1996) from Memorial University, Canada.

As a member of the Protein and Co-Products Division, she established a Lifetime Achievement Award for the Division and streamlined its student poster competition and awards, which increased student participation. In 2019, Dr. Wanasundara helped to establish the AOCS Pulse Science and Technology Forum, serving as a steering committee member. She contributed to program development, as well as organized and chaired sessions. This forum, now called the Sustainable Protein Forum, continues to gather leaders from a wide range of food science applications. She also served as co-editor of a special issue of the *Journal of the American Oil Chemists' Society* on satisfying protein demand through plant and alternative proteins.

Dr. Wanasundara's research furthers understanding of the relationship between a seed protein's genetics and its structure, function, and physical properties. Her research also identifies the macromolecular function of these proteins when used in complex food systems. In the area of plant protein chemistry, her research focuses on understanding the chemistry and structure of seed storage proteins for legumes and dicot crops of *Brassica* to improve application in the plant protein industry.

Her scholarly contributions include 59 peer-reviewed journal articles and 25 book chapters, nearly 100 presentations, one book, and one patent.

Dr. Jill K. Winkler-Moser is a research chemist and lead scientist at the USDA, ARS, in the Functional Foods Research Unit in Peoria, Illinois. She received a B.S. and an M.S. in food science from the University of Idaho and a Ph.D. in food science and human nutrition at the University of Illinois at Urbana-Champaign. She is an authority on lipid oxidation and the chemical and phytochemical characterization of plant and seed oils. Her research has facilitated the development of oils with altered tocopherol compositions for increased oxidative stability.

She has served in several leadership roles with AOCS. She was on the AOCS Governing Board from 2019 to 2021. She also served as chair, vice-chair, and secretary-treasurer for the Lipid Oxidation and Quality Division. As part of Division leadership, she coordinated well-attended events that connected members across the Society. She has demonstrated a long-standing commitment to the *Journal of the American Oil Chemists' Society*, where she has served as associate editor and is currently a senior associate editor. She also served as chair of the Division Council from 2018 to 2020.

Her research has supported the development of new CODEX standards for oils, such as rice bran oil. She also developed a novel and simple method using tocopherol fingerprinting to detect adulteration of coffee by less valuable cereals. Dr. Winkler-Moser has published more than sixty peer-reviewed journal articles. In 2018, Dr. Winkler-Moser and co-authors won the AOCS Edwin N. Frankel Best Paper in Lipid Oxidation and Quality for their article "Application of Differential Pulse Voltammetry to Determine the Efficiency of Stripping Tocopherols from Commercial Fish Oil."

2022 Award Sponsors

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

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Scientific Awards

Attend the award lectures presented during the Technical Program to see the winner receive the award and present their talk.

Alton E. Bailey Award

Lecture: PRO session | Monday, May 2 | 1:50 p.m.
 ■ Regency V

Recognizes outstanding research and exceptional service in the field of lipids and associated products. Sponsored by ADM.



Keshun is an internationally recognized scholar for his contributions to the chemistry of soybeans, grains, and legumes and sustained advocacy of science in AOCS and other professional societies.

Dr. Keshun Liu is a research chemist with USDA, ARS. Born in rural China, he received a Ph.D. in food science from Michigan State University, and did post-doctoral work at Coca-Cola Co. and University of Georgia. Before joining USDA in 2005, he was an employee at Monsanto Co. and University of Missouri-Columbia. He has been active with AOCS by organizing meeting symposia and contributing his time and knowledge in many other volunteer and committee roles. He served the Proteins and Co-Products Division at all levels of Division leadership.

Dr. Liu is well known for his expertise in chemistry, processing, and utilization of soybeans, cereals, and legumes. His seminal research has had significant impacts on food and feed industries and scientific communities. His books on soybeans have become a must-read for researchers in the soy industry; the fibrous meat analog he and colleagues developed at University of Missouri has been commercialized by Beyond Meat. His research on fuel ethanol co-products and their recovery benefits the biofuel industry. Dr. Liu authored or co-authored 139 publications.

His improved analytical methods have been used by laboratories around the world. In January 2021, his trypsin inhibitor assay was approved as AOCS Official Method Ba 12a-2020. His low-cost method for making soy protein concentrates is being evaluated by the Soybean Innovation Lab (University of Illinois at Urbana-Champaign) for use in fighting protein shortage in Africa.

Dr. Liu was named an AOCS Fellow in 2011. He was awarded the Award of Merit in 2010 and Protein and Co-Products Division Lifetime Achievement Award in 2020.

AOCS Young Scientist Research Award

Lecture: EAT session | Monday, May 2 | 10 a.m.
 ■ Hanover AB

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



Jiajia is an extraordinary scientist, mentor and instructor, who has developed an incredibly strong research program in protein functionality and lipid encapsulation systems.

Dr. Jiajia Rao is an assistant professor in the Cereal and Food Science Program in the Department of Plant Sciences at North Dakota State University (NDSU). She received her B.S. from Sichuan University of Science and Engineering, China (2002), M.S. from Chongqing University, China (2005), and Ph.D. from the University of Massachusetts, Amherst in 2013.

Dr. Rao has worked with the AOCS Protein and Co-Products Division to develop and chair technical sessions on plant proteins. She and her students have presented their latest research at AOCS meetings, helping to amplify this topic within and outside the Society. Her efforts help ensure that AOCS attracts new members as the “go-to” society for new plant protein technologies. She won the AOCS Honored Student Award in 2012.

Dr. Rao worked for PepsiCo Inc. for 3 years, where she was involved in emulsion technology and protein fortified beverage development. At NDSU, her research focuses on the structure and function relationships of plant-based ingredients for improved quality and safety in food. Dr. Rao has published more than 70 peer-reviewed articles. Her research has been supported by grants from the United States Department of Agriculture, food industry and local commodity groups, and she has secured funding worth over \$1 million as a principal investigator while working at NDSU since 2015. This funding has enabled Dr. Rao to build up an active and competitive laboratory. She has trained 10 graduate students, 6 post-doctoral appointees, and 4 visiting scientists.

*Join us in congratulating our
AOCS award winners!*



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Stephen S. Chang Award

Lecture: BIO session | Monday, May 2 | 11:40 a.m.

■ Regency V

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.



Xavier is a pioneer in enzyme-based technology and a true leader in his field.

Dr. F. Xavier Malcata is a professor in the Department of Chemical Engineering of University of Porto and senior researcher at the Laboratory for Process Engineering, Environment, Biotechnology and Energy. He received his Ph.D. (1991) from the University of Wisconsin–Madison.

His research on lipases in immobilized form has supported a number of industrial advances. Dr. Malcata's various reviews on the subject have become classical references for anyone interested in enzymes for catalytic reactions of hydrolysis, ester synthesis, acidolysis, alcoholysis, or transesterification. He pioneered immobilization of lipases for modifying oils and fats via hydrolysis and transesterification and developed non-conventional configurations of photobioreactors for producing polyunsaturated fats and high-added value metabolites by lipidogenic microalgae.

He has authored 470+ refereed papers that have received more than 17,500 cites by peers, with an h-index of 65. He currently appears in the 0.5%-top tier of Stanford University ranking of the most influential researchers worldwide.

He has also edited 5 books and published 17 books, including the 11-volume treatise titled *Enzyme Reactor Engineering* published by Wiley, and the 3-volume collection titled *Food Process Engineering* published by CRC. In addition, he has supervised 30 Ph.D. dissertations, coordinated 37 research and development projects, and written 55 book chapters.

Dr. Malcata is the recipient of many prestigious awards, including the Ralph H. Potts Memorial Award (1991) and Young Scientist Research Award (2001) from AOCS; Foundation Scholar Award (1998), Danisco International Dairy Science Award (2007), Distinguished Service Award (2012) and Teaching Award in Dairy Manufacturing (2019) from the American Dairy Science Association; Samuel Cate Prescott Award (2008) and William V. Cruess Award (2014) from IFT; and International Leadership Award (2008) and Elmer Marth Educator Award (2011) by International Association for Food Protection. He was named an AOCS Fellow in 2014.

Supelco AOCS Research Award

Lecture: H&N session | Wednesday, May 4 | 11 a.m.

■ Hanover F

Recognizes outstanding original research in fats, oils, lipid chemistry, or biochemistry. Sponsored by MilliporeSigma.



Penny is a world class lipid chemist contributing cutting-edge research in the areas of dietary fats, coronary heart disease, and human nutrition.

Dr. Penny M. Kris-Etherton is the Evan Pugh University Professor of Nutritional Sciences in the Department of Nutritional Sciences at The Pennsylvania State University, where she has served on the faculty since 1979. She earned her B.S. from the Rochester Institute of Technology, M.S. from Case Western Reserve University, and Ph.D. from University of Minnesota.

Her clinical nutrition research focuses on understanding the effect of diet on cardiovascular disease (CVD) risk factors. Dr. Kris-Etherton has served on committees that have issued dietary guidelines (the 2005 Dietary Guidelines for Americans Advisory Committee and the 2002 National Academies Dietary Reference Intakes for Energy, Macronutrients and Cholesterol). She served on the second Adult Treatment Panel of the National Cholesterol Education Program.

Dr. Kris-Etherton has co-authored numerous American Heart Association (AHA) Scientific Statements and Advisories that have made lifestyle recommendations for the prevention and treatment of CVD. She also co-authored the National Lipid Association's recommendations for Patient-Centered Management of Dyslipidemia. In addition, she served on the American College of Cardiology Expert Consensus Decision Panel that published a paper on the management of ASCVD risk reduction in patients with persistent hypertriglyceridemia.

Dr. Kris-Etherton is a former chair of both the AHA Council on Lifestyle and Cardiometabolic Health and the AHA Nutrition Committee. She is a Fellow of the AHA, the National Lipid Association (where she was president), and the American Society for Nutrition. She has published over 420 papers and has received numerous awards from the American Society for Nutrition, AOCS, Academy of Nutrition and Dietetics, International Nut & Dried Fruit Council, and National Lipid Association for her scientific contributions.

In 2014, she received the AOCS Ralph Holman Lifetime Achievement Award.

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Michal Holčapek



Hilary Green



Lu-Kwang Ju

Division Awards

Analytical

Herbert J. Dutton Award

Michal Holčapek, University of Pardubice, Czech Republic
Lectures: ANA session | Monday, May 2 | 7:30 a.m. | Hanover E
ANA Luncheon | Monday, May 2 | Noon | Courtland

Student Award

Hilary Green, University of California, Davis, USA
Lecture: ANA session | Tuesday, May 3 | 7:50 a.m. | Hanover C

Biotechnology

Ching Hou Biotechnology Award

Lu-Kwang Ju, The University of Akron, USA
Lecture: BIO session | Monday, May 2 | 10 a.m. | Regency V

Student Award

First place:

Jiazi Chen, Jinan University, China
Lecture: BIO session | Tuesday, May 3 | 4:20 p.m. | Regency VII

Second place:

Xin Guo, University of Massachusetts, Amherst, USA
Poster: BIO | 22AOCS.meetbreakout.com and Centennial II

Edible Applications Technology

Timothy L. Mounts Award

Maria Lidia Herrera, University of Buenos Aires and National Research Council of Argentina (CONICET), Argentina
Lecture: EAT session | Monday, May 2 | 1:30 p.m. | Hanover AB

Student Award

Sten ten Klooster, Wageningen University, The Netherlands
Lecture: EAT/S&D session | Tuesday, May 3 | 4:20 p.m. | Hanover AB

Health and Nutrition

New Investigator Research Award

Sugasini Dhavamani, University of Illinois at Chicago, USA
Lecture: H&N session | Tuesday, May 3 | 8:20 a.m. | Hanover F

Ralph Holman Lifetime Achievement Award

Martha Ann Belury, Ohio State University, USA
Lecture: H&N session | Monday, May 2 | 2:30 p.m. | Hanover F

Student Award

Waqas Baba, United Arab Emirates University, United Arab Emirates
Lecture: H&N session | Wednesday, May 4 | 10 a.m. | Hanover F

Industrial Oil Products

Student Award

Tsutomu Chida, Tohoku University, Japan
Lecture: IOP session | Monday, May 2 | 4:20 p.m. | Hanover D



Jiazi Chen



Xin Guo



Maria Lidia Herrera



Sten ten Klooster



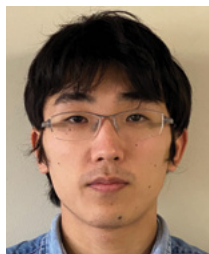
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Waqas Baba



Tsutomu Chida

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Processing

Student Award

Greta Canelli, ETH Zürich, Switzerland
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Protein and Co-Products

Lifetime Achievement Award

Rotimi E. Aluko, University of Manitoba, Canada
Lectures: PCP Dinner | Tuesday, May 3 | 7:15 p.m. | Dunwoody
PCP session | Tuesday, May 3 | 10 a.m. | Hanover E

Surfactants and Detergents

Samuel Rosen Memorial Award

Padma Prabodh Varanasi, BASF, USA
Lecture: S&D Luncheon | Tuesday, May 3 | Noon | Dunwoody
Lecture: S&D session | Wednesday, May 4 | 7:30 a.m. | Regency VII

Student Awards

Hans Kaunitz Award

Morgan Kandrac, Rutgers University, USA
Lecture: LOQ session | Wednesday, May 4 | 8:50 a.m. | Hanover D

Lipid Chemistry and Nutrition Award

Sponsored by Seawit Co., Inc.

H. M. A. Ruchira Nandasiri, University of Manitoba, Canada
Poster: LOQ | 22AOCS.meetbreakout.com and Centennial II

AOCS Foundation

Manuchehr (Manny) Eijadi Award

Lingyi Liu, University of Nebraska-Lincoln, USA
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Honored Student Award

Snigdha Guha, University of Nebraska-Lincoln, USA
Poster: PCP | 22AOCS.meetbreakout.com and Centennial II
Lingyi Liu, University of Nebraska-Lincoln, USA
Poster: EAT | 22AOCS.meetbreakout.com and Centennial II



Greta Canelli



Rotimi E. Aluko



Padma Prabodh
Varanasi



Morgan Kandrac



H. M. A. Ruchira
Nandasiri



Lingyi Liu



Snigdha Guha



Han Peng



Melissa A. Marsh

Han Peng, Memorial University of Newfoundland, Canada
Lecture: LOQ session | Monday, May 2 | 11:20 a.m. | Hanover D

Peter and Clare Kalustian Award

Snigdha Guha, University of Nebraska-Lincoln, USA
Poster: PCP | 22AOCS.meetbreakout.com and Centennial II

Thomas H. Smouse Memorial Fellowship

Melissa A. Marsh, Utah State University, USA
Lecture: EAT session | Monday, May 2 | 1:50 p.m. | Hanover AB

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Best Paper Awards

American Cleaning Institute (ACI) Distinguished Paper Award

Sponsored by American Cleaning Institute (ACI).

Interactions of Surfactants with Biomimetic Membranes.

1. *Ionic Surfactants* (JSD 24(4):661–667).

Nikolai Kocherginsky and Brajendra K. Sharma

Recognition: S&D Luncheon | Tuesday, May 3 | Noon | Dunwoody

ADM Award for Best Paper in Protein and Co-Products

Sponsored by ADM.

Chemistry/Nutrition Category

An International Collaborative Study on Trypsin Inhibitor

Assay for Legumes, Cereals, and Related Products

(JAOCS 98 (4):375–390).

Keshun Liu, Susan Seegers, Wenming Cao, Janitha Wanasundara, Juxing Chen, Alessandro Esteves da Silva, Kristopher Ross, Alexandra Lozano Franco, Theo Vrijenhoek, Pankaj Bhowmik, Yonghui Li, Xin Wu and Scott Bloomer

Recognition: PCP Dinner | Tuesday, May 3 | 7:15 p.m. | Dunwoody

Engineering/Technology Category

Effect of Peroxyl-Radicals-Induced Oxidative Modification

in the Physicochemical and Emulsifying Properties of

Walnut Protein (JAOCS 98(9):903–910).

Xiaoying Mao, Dandan Wang, Lingge Sun, Jian Zhang and Qingzhi Wu

Recognition: PCP Dinner | Tuesday, May 3 | 7:15 p.m. | Dunwoody

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

Sponsored by Kalsec, Inc.

Quantitative Evaluation of Oxidative Stability of Biomembrane

Lipids in the Presence of Vitamin E (JAOCS 98(5):567–579).

Atsushi Takahashi, Ryota Takahashi, Kousuke Hiromori, and Naomi Shibasaki-Kitakawa

Lecture: LOQ session | Wednesday, May 4 | 9:10 a.m. | Hanover D

Phospholipid Division Best Paper Award

Sponsored by International Lecithin and Phospholipid Society (ILPS).

Dietary lysophospholipids reduce lymphatic cholesterol

transport compared with dietary phospholipids in thoracic

lymph-duct cannulated rats (Lipids 56(6):579-590).

Ai Takeyama, Asami Teramoto, Tianyu Wang, Takuya Hayashi, Yasutake Tanaka, Masao Sato and Bungo Shirouchi

Lecture: PHO Dinner | Monday, May 2 | 7:15 p.m. | Edgewood

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.



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Student Awards ■ October 1, 2022

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AOCS Code of Conduct for Conferences and Events

By attending any AOCS event, you agree voluntarily to abide by the following Code of Conduct.

Authorship: All authors connected to a presentation and/or abstract must agree on all information contained in the presentation. Failure of an author to agree to the presentation format and information will lead to the presentation being withdrawn from the conference.

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 Patrick Donnelly, patrick.donnelly@aocs.org, +1 217-377-4384 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:

- Non-competition, territorial division, or operationally restrictive agreements;
- Boycotting, blacklisting, or unfavorable reporting; or
- Discussion of these and other prohibited matters, including the following:
 - Price, price fixing, price calculation, or price changes;
 - Costs;
 - Terms or conditions of sales;
 - Quote decisions;
 - Discounts;
 - Product or service offerings; or
 - 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.

Featured Events

Opening Celebration: Collaborate to Innovate

Sunday, May 1 | 4–5:30 p.m. | Centennial IV

In addition to the keynote speaker, AOCS President Phil Kerr and AOCS President-elect Silvana Martini will recognize Society Award winners.

Lessons Learned from a Lifetime in Research and Development

Mark Matlock, Retired Senior Vice President, Food Research and Development, ADM, USA



Mark will share stories demonstrating the power of a pivot when you need a customer and how diversity in scientific teams provides unique and unexpected insights, among other lessons from a lifetime in research and development.

Mark Matlock joined ADM in 1980, where he developed an analytical instrument to measure vegetable oil stability (OSI) that is widely used today. He has conducted enzymatic research leading to new soy protein ingredients and managed research that led to *trans* free fats via an enzymatic interesterification technology. Mark Matlock is a past-president of the American Oil Chemists' Society and AOCS Fellow. He retired from ADM in 2019 as Sr. Vice President, Food Research.

AOCS Governing Board Town Hall

Monday, May 2 | 7–7:25 a.m. | Centennial Ballroom Foyer

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, members will have the opportunity to meet and exchange ideas with AOCS Governing Board members.

Protein and Co-Products Division Graduate Student Oral Competition

Available to view on demand at
22AOCS.meetbreakout.com

Session moderator: Lamia L'Hocine, Research Scientist, Agriculture and Agri-Food Canada, Canada

Judging panel: Milagros P. Hojilla-Evangelista, PhD, Research Chemist, USDA ARS NCAUR Plant Polymer Research Unit, USA; Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; and Rotimi Aluko, Food and Human Nutritional Sciences, University of Manitoba, Canada

Disaggregation of islet amyloid polypeptide fibrils as a potential anti-fibrillation mechanism of tetrapeptide TNGQ. Raliat Abioye*, Ogadimma Okagu, Chibuike Udenigwe, *Chemistry and Biomolecular Sciences, University of Ottawa, Canada*

The effect of uniform whey protein microgels on oil-in-water emulsion property improvements and their potential application as fat replacers to prepare fat-reduced food products. Yifu Chu*¹ (**Protein and Co-Products Division Student Travel Grant Winner**), Lingyun Chen², ¹*University of Alberta, Canada*; ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

Spent hen proteins: An untapped bioresource for food packaging applications. Muhammad Zubair*¹, Jianping Wu², Aman Ullah¹, ¹*Agricultural, Food and Nutritional Science, University of Alberta, Canada*; ²*University of Alberta, Canada*

Fabrication of strong heat-induced protein gels by combining soluble pea protein aggregates and k-carrageenan. Wenhao Cai*, Lingyun Chen, *University of Alberta, Canada*

*Indicates the presenting competition finalist.

Student ePoster Pitch Competition

Available to view on demand at
22AOCS.meetbreakout.com

The Student ePoster Pitch Competition gives student researchers an opportunity to highlight their achievements, demonstrate their ability in scientific presentations, and receive important feedback and mentoring from industry leaders.

Industry Updates

Available to view on demand at
22AOCS.meetbreakout.com

Industry Updates highlight the latest innovations in products and services of direct relevance to oils, fats, proteins, surfactants, foods and sustainable materials research, development, and production. View the presentations for insights into how industries are growing and changing.

Clean label food protection strategies: Dual functional and synergistic food preservation system with DuraShield™ natural food protection blends. Andrew Lee*¹, Divek Nair¹, Lorna Polovina¹, Alessandra Pham-Mondala¹, Poulson Joseph², ¹Food Protection, Kalsec® Inc., United States; ²Kalsec Inc., United States

Combined use of microwave assisted extraction and saponification for food quality and safety. Giorgia Purcaro*¹, Diego Carnaroglio², Roberto Boschini², ¹Gembloux Agro-Bio Tech, University of Liege, Belgium; ²Milestone srl, Italy

Recent achievements in the industrial scale-up of EcoXtract® solution, the sustainable and safe hexane alternative to extract efficiently vegetable oils and plant-based proteins. Gabriel Dufour*, Pennakem Europe, France

How digital molecular simulations will drive the next generation of innovation in reformulation and sustainability of consumer-packaged goods. Jeffrey Sanders*, Materials Science, Schrödinger, United States

*Denotes presenting author.

What session cannot be missed?



@AOCS #AOCS2022



25 Years of innovation in surfactants and detergents



For 25 years, AOCS's *Journal of Surfactants and Detergents* has published the latest scientific contributions in basic and applied sciences in surfactants and detergents.

We're celebrating this milestone year with a special session! Session topics and speakers are on page 39.

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Oral Presentations

- The presenter is identified with an asterisk (*).
- Award lectures are identified with the photo of the winner or award icon. AOCs Scientific Award winners are highlighted by red lines.
- Presentation information current as of April 1.

Monday | Early Morning

Featured Session

25th Anniversary of the *Journal of Surfactants and Detergents*

Organizers: Douglas Hayes, University of Tennessee, USA; and Nancy A. Falk, Formulation Consulting LLC, USA

Hanover C

- 7:25 **Introduction**
- 7:30 **CO₂-switchable viscoelastic surfactants.** Yujun Feng*, Polymer Research Institute, Sichuan University, China (People's Republic)
- 7:50 **Surfactant micelle structure and composition.** Samhitha Kancharla¹, Dengpan Dong², Dmitry Bedrov², Marina Tsianou¹, Paschalis Alexandridis*¹, University at Buffalo, The State University of New York (SUNY), United States; ²University of Utah, United States
- 8:10 **Design of smart sustainable emulsions for cosmetic applications.** Samiul Amin*, Chemical Engineering, Manhattan College, United States
- 8:30 **Miscibility of Gemini surfactants and DOPE in binary mixed monolayers: Implications for DNA transfection.** Shawn Wettig*, Scott Gillis, Gurmeet Lall, School of Pharmacy, University of Waterloo, Canada
- 8:50 **How to use in practice a simplified HLDN linear equation for surfactant mixtures.** Jean-Louis Salager*¹, Ronald Marquez², Jesus F. Ontiveros³, ¹FIRP Laboratory, Universidad de Los Andes, Venezuela, Venezuela; ²Laboratoire Physico-Chimie des Interfaces Complexes, TotalEnergies, Lille University, ESPCI, France; ³ENSCL, France
- 9:10 **Biobased emulsions for lubrication applications.** Brajendra K. Sharma*¹, Derek Vardon², ¹SBCP, USDA-ARS-ERRC, United States, ²Alder Fuels, United States

Featured Session

Microbial Lipids for Foods as a Solution

Organizer: Saeed M. Ghazani, Food Science Department, University of Guelph, Canada

Hanover AB

- 7:25 **Introduction**
- 7:30 **Microalgae based triglyceride alternatives to vegetable and animal derived oils/fats for food and nutrition applications.** Walter Rakitsky*, Checkerspot, Inc., USA

- 7:50 **Microbial lipid production for foods.** Nesli Sozer*, VTT Technical Research Centre of Finland Ltd, Finland
- 8:10 **Science and commercial evolution of plant-based microbial oils rich in omega-3 fatty acids: An overview.** Roberto Armenta*, Mara Renewables Corporation, Canada
- 8:30 **Microbial lipid technology as the next generation fats & oils platform.** Shara Ticku*, Ling Li, C16 Biosciences, USA
- 8:50 **Microbial lipids for nutrition: History, status and future challenges and opportunities.** Ross Zirkle*, DSM, USA
- 9:10 **Panel discussion**

Featured Session

The Impact of Hydrotreated Vegetable Oils (Renewable Diesel and Sustainable Aviation Fuel) on the Fats and Oils Industry

Organizer: Bryan Yeh, American Biodiesel dba Community Fuels, USA

Hanover F

View the presentation schedule at 22AOCs.meetbreakout.com

Hot Topic Symposia

Climate Change: What Can the Vegetable Oil and Related Industries Do About It?

Organizers: Alan Paine, ARP Lipids Consulting, UK; and Richard H. Barton, N Hunt Moore & Associates Inc., USA

Regency VII

- 7:25 **Introduction**
- 7:30 **What is climate change: How did we get here and where can we go?** Alan Paine*, ARP Lipids Consulting, UK
- 7:50 **A practical guide to scope 1 & 2 carbon footprint reduction.** Cary Johnson*, Jimmy Fildes, Engineering, Fuji Vegetable Oil, Inc., USA
- 8:10 **Panel discussion**
- 8:30 **Plant-based ingredients—challenges from an industrial perspective.** Pulari Krishnankutty Nair*, Danone North America, USA
- 8:50 **Life cycle assessment (LCA) of microbial oil-derived fuels and other non-fuel products.** Mahesh Balwant Khot*, Farmsow Pvt. Ltd., India
- 9:10 **Panel discussion**

Hot Topic Symposia

Sustainability Opportunities in Edible Oils and Fats Supply Chain—from Farm to Fork

Organizers: Serpil Metin, Megan Leill, and Beatriz Bettler, Cargill Inc., USA
Centennial I

- 7:25 **Introduction**
- 7:30 **Sustainability opportunities in edible oils and fats supply chain.** Tai Ullmann*, Cargill, Inc., USA
- 7:50 **Supporting the commercialization, adoption, and scaling of climate-smart winter annual and perennial oilseeds.** Colin Cureton*, UMN Forever Green Initiative, University of Minnesota, USA
- 8:10 **Environmental quality benefits of winter hardy oilseeds.** Jessica Gutknecht*, University of Minnesota, USA
- 8:30 **Sustainability of fats and oils from farm to fork—an important criterion for ingredient choice in R&D.** Beate Pfeiffer*, Nestle Product Technology Center Singen, Germany
- 8:50 **Panel discussion**

Hot Topic Symposia

Creating a Trans Free World

Organizers: Paul R. Smith, Cargill R&D Centre Europe, Cargill, Inc., Belgium; and Serpil Metin, Cargill Inc., USA

Hanover D

- 7:25 **Introduction**
- 7:30 **A global initiative to remove trans fats from the diet.** Julien Lafleur*, International Food and Beverage Alliance, USA
- 7:50 **The nutritional impact of trans fatty acids.** Penny Kris-Etherton*, Department of Nutritional Sciences, The Pennsylvania State University, USA
- 8:10 **An academic approach to structuring systems without trans fats.** Filip Van Bockstaele*, Department of Food Technology, Safety and Health, Ghent University, Canada
- 8:30 **Trans fat reduction in the Asia Pacific region.** Mark Alton*, Cargill Inc., Australia
- 8:50 **Trans fat reduction for oil suppliers.** Paul R. Smith*, Cargill R&D Centre Europe, Cargill, Inc., Belgium
- 9:10 **Producing trans-free consumer products.** Naina Shah*, Pepsico, USA

Analytical

Dutton Award Symposium

Organizers: Giorgia Purcaro, University of Liège, Belgium; and Michal Holčapek, University of Pardubice, Czech Republic

Hanover E

- 7:25 **Introduction**
- 7:30 **Comprehensive analysis of lipids: From plant oil analysis towards lipidomic cancer screening.** Michal Holčapek*, Department of Analytical Chemistry, University of Pardubice, Czech Republic
(Herbert J. Dutton Award Winner)



- 8:10 **Adventures in multiple dimensions of chromatography and mass spectrometry for lipidomic Analysis.** William C. Byrdwell*¹, Hari Karin Kotapati², ¹Methods and Application of Food Composition Lab, USDA ARS BHNRC MAFCL, United States; ²University of Maryland, Nutrition and Food Science, United States
- 8:30 **MetaboAtlas21: A comprehensive metabolome and lipidome atlas of mouse tissues and biofluids.** Tomas Cajka*, Lucie Rudl Kulhava, Michaela Novakova, Jiri Hricko, Ondrej Kuda, Michaela Paucova, Institute of Physiology of the Czech Academy of Sciences, Czech Republic
- 8:50 **Lipidomic analysis in food: The role of a detailed elucidation of intact lipids in functional foods for investigating on nutritional aspects.** Paola Dugo*, Francesca Rigano, Luigi Mondello, Università Di Messina, Italy
- 9:10 **Foodomics study of the neuroprotective potential of natural products.** Alberto Valdés*, Rocío Gallego, Zully J. Suárez-Montenegro, José David Sánchez-Martínez, Elena Ibañez, Miguel Herrero, Alejandro Cifuentes, Institute of Food Science Research (CIAL-CSIC), Spain

Biotechnology

Gene Editing Technologies

Chairs: Tim Ulmasov, CoverCress, Inc., USA; and Timothy P. Durrett, Kansas State University, USA

Regency V

- 7:25 **Introduction**
- 7:30 **Unlocking the next generation of row crop quality traits through genome editing.** Julia Stevens*, Plant Biotechnology, Bayer Crop Science, United States
- 7:50 **Utility of CRISPR/Cas in accelerating gene discovery in soybean.** Minviluz Stacey*, Division of Plant Science and Technology, University of Missouri, United States
- 8:10 **CRISPR/Cas9-based editing of OsNF-YC4/GmNF-YC4 promoter yields high-protein crops.** Ling Li*, Biological Sciences, Mississippi State University, United States
- 8:30 **Update on the revised USDA biotech regulation.** Neil Hoffman*, Animal Plant Health Inspection Service/Biotechnology Regulatory Services, United States
- 8:50 **Detection of genome edited products—is it CRISPR?** Raymond D Shillito*, Regulatory Science, BASF (United States), United States

What session cannot be missed?



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Analytical

AOCS Official Methods

Chairs: Susan Seegers, Bunge North America, USA; and Mark Collison, Retired ADM, USA

Hanover C

- 9:55 **Introduction**
- 10:00 **Changes to AOCS evaluation and design of test methods.** Scott Bloomer*, *Technical Services, American Oil Chemists' Society, United States*
- 10:20 **Ce 6a-2021 HPLC analysis of phenolic antioxidants: A successful collaborative trial during the Covid pandemic.** Mark Collison*, *Retired, United States*
- 10:40 **Development of ISO18363-4/AOCS Cd29f-2021: A new standardized method to quantify MCPDE and GE in edible oils.** Ralph Zwagerman*, *Analytical Development, Lodders Crokiaan BV, Netherlands*
- 11:00 **New AOCS Methods and Methods under development.** Xin Wu*, Fiona Liu, Scott Bloomer, *Technical Services, American Oil Chemists' Society, United States*

Biotechnology

General Biotechnology

Chairs: Todd Underiner, Procter & Gamble, USA; and Sarah Willett, Kerry Group, USA

Regency V

- 9:55 **Introduction**
- 10:00 **Enzyme-based soy processing.** Lu-Kwang Ju*¹ (*Biotechnology Division Ching Hou Biotechnology Award Winner*), Abdullah Al Loman², Qian Li³, S. M. Mahfuzul Islam⁴, Ashwin Sancheti⁵, Md Fauzul Kabir¹, *¹Department of Chemical, Biomolecular, and Corrosion Engineering, University of Akron, United States; ²Technical Development, Biogen, United States; ³Catalent, United States; ⁴Archer Daniels Midland Company, United States; ⁵CMC, DermBiont Inc, United States*
- 10:20 **Simultaneous loading of (–)-epigallocatechin gallate and ferulic acid in chitosan-based nanoparticles as effective antioxidant and skin-whitening agent.** Guanghai Li*¹, Chaoying Qiu¹, Ning Liu², Xuanxuan Lu¹, Yong Wang¹, *¹Food Science and Engineering, Jinan University, China (People's Republic); ²Shaanxi University of Science and Technology, China (People's Republic)*
- 10:40 **ISO TC 34/SC 16 Horizontal methods for molecular biomarker analysis—international standards for molecular biomarker analysis/isothermal nucleic acid amplification methods.** Michael Sussman*, *ISO/USDA, AMS, L&P, Agricultural Analytics Division, United States*
- 11:00 **Lipozyme TL IM-catalyzed synthesis of γ -linolenic acid rich triacylglycerol from borage oil as a novel strategy.** Hui su Yoon*¹, In-Hwan Kim², *¹Department of Integrated Biomedical and Life Sciences, Graduate School, Korea University/BK21FOUR R&E Center for Learning Health Systems, Korea University, Republic of Korea; ²Korea University, Republic of Korea*
- 11:20 **Concentration of eicosapentaenoic acid via *Candida rugosa* lipase-catalyzed esterification with phytosterol and fatty acid from anchovy oil.** Jeanne Kang*¹, In-Hwan Kim², *¹Department of Integrated Biomedical and Life Science, Graduate School, Korea*



University/BK21FOUR R&E Center for Learning Health Systems, Korea University, Republic of Korea; ²Korea University, Republic of Korea

AOCS SCIENTIFIC AWARD WINNER

- 11:40 **Engineering of microalgae toward biodiesel: Facts and prospects.** F. Xavier Malcata*, *Department of Chemical Engineering—LEPABE, FEUP, Portugal (Stephen S. Chang Award Winner)*



Edible Applications Technology

General Edible Applications Technology

Sponsored by Kalsec

Chairs: Supratim Ghosh, University of Saskatchewan, Canada; and Filip Van Bockstaele, Ghent University, Belgium

Hanover AB

9:55 Introduction

AOCS SCIENTIFIC AWARD WINNER

- 10:00 **Tuning plant protein for improved functionality and flavor profile: From field to application.** Jiajia Rao*, *North Dakota State University, United States (AOCS Young Scientist Research Award Winner)*



- 10:20 **Incorporating heterogeneous stress translation in a fractal structural-mechanical theory of particle-filled colloidal networks.** Andrew J. Gravelle*¹, Alejandro G. Marangoni², *¹Food Science and Technology, University of California, Davis, United States; ²Food Science Department, University of Guelph, Canada*
- 10:40 **Attrition of fully hydrogenated soybean oil-coated micronutrient granules during mixing.** Kiki Chan*, Gladys Olubowale, Yu-Ling Cheng, Levente Diosady, *Chemical Engineering and Applied Chemistry, University of Toronto, Canada*
- 11:00 **The physicochemical and sensory characteristics of yoghurt fortified with encapsulated fish oil/milkfat.** Mitra Nosratpour*¹, Yong Wang², Jisheng Ma³, Victoria Haritos⁴, Cordelia Selomulya², *¹Chemical Engineering, Monash University/Riverina oils and Bio energy, Australia; ²School of Chemical Engineering, UNSW, Australia; ³Monash X-Ray Platform, Monash University, Australia; ⁴Chemical Engineering, Monash University, Australia*
- 11:20 **Enhancing the quality of fried food and frying oil by adjusting the frying processing.** Junmei Liang*, Fuhuan Niu, Lingling Wei, Yuanrong Jiang, *Wilmar Global R&D Center, China (People's Republic)*

Industrial Oil Products

Biofuels I

Joint session with the Processing Division

Sponsored by Desmet Ballestra North America, Inc. and MBP Solutions

Chairs: Bruce Patsey, Oil-Dri Corp of America, USA; and Robert O. Dunn, Jr., USDA ARS NCAUR, USA

Hanover F

9:55 Introduction

- 10:00 **Scale up biodiesel production from palm fatty acid distillate at palm oil refining plant.** Teerasak Punvichai*^{1,2}, *¹Faculty of Innovative Agriculture and Fisheries Establishment Project/Integrated High-Value Oleochemical Research Center, Prince of Songkla University, Thailand; ²Faculty of Science and Industrial Technology, Prince of Songkla University, Thailand*

- 10:20 **Renewable diesel pretreatment: Focus on soybean oil.** Patrick Harrington*, *Crown Iron Works Co, United States*
- 10:40 **New developments in enzymatic biodiesel.** Rasmus B. Hansen*, Per M. Nielsen, *Oils & Fats R&D, Novozymes AS, Denmark*
- 11:00 **Requirements and solutions for the pretreatment of HVO feedstocks.** Wim de Greyt*, *Desmet Ballestra, Belgium*
- 11:20 **Updates on hydrothermal cleanup (HCU) pretreat.** Jocelyn Goodwin*, *Better Fuels Group, Applied Research Associates, United States*

Lipid Oxidation and Quality

Identification of Novel Antioxidants and Their Efficacies

Sponsored by Kalsec

Chairs: Ignacio Vieitez Osorio, *Universidad de la República, Uruguay*; and Ruchira Nandasiri, *University of Manitoba, Canada*

Hanover D

- 9:55 **Introduction**
- 10:00 **Antioxidants from plant food and aquatic species.** Fereidoon Shahidi*, *Biochemistry, Memorial University of Newfoundland, Canada*
- 10:40 **Effect of pressurized fluids on the extraction of phenolics/anthocyanins from crops and by-products.** Marleny D.A. Saldana*, *Agricultural, Food and Nutritional Science, University of Alberta, Canada*
- 11:00 **Bioactive ingredients from underexplored nuts.** Jane Mara Block*, Gerson Teixeira², Gabriela Polmann¹, *Food Science and Technology, Universidade Federal De Santa Catarina, Brazil* ²UFSC, Brazil

- 11:20 **Antioxidant activity of EGC (epigallocatechin) ester derivatives in food and biological model system.** Han Peng*¹ (*Honored Student Award Winner*), Fereidoon Shahidi², *Memorial University, Canada*; ²Memorial University of Newfoundland, Canada



- 11:40 **Antioxidant chelating peptides production from Rapeseed meal proteins proteolysis.** Erwann Durand*¹, Pierre Villeneuve², Nathalie Barouh², Nastassia Kaugarenia³, Sophie Beaubier⁴, Romain Kapel⁵, *CIRAD/UMR QUALISUD, France*; ²CIRAD, France; ³LRGP, France; ⁴University of Lorraine, LRGP CNRS, France; ⁵CNRS, LRGP, France

Processing

Biofuels I

Sponsored by Desmet Ballestra North America, Inc. and MBP Solutions

Chairs: Bruce Patsey, *Oil-Dri Corp of America, USA*; and Robert O. Dunn, Jr., *USDA ARS NCAUR, USA*

Hanover F

Joint session with the Industrial Oil Products Division. See page 42 for details.

Join the conversation!



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Protein and Co-Products

Application of Advanced Green Processing for the Preparation and Utilization of Food Proteins

Chairs: Lamia L'Hocine, Agriculture & Agri-Food Canada, Canada; Mehmet Tulbek, Saskatchewan Food Industry Development Centre, Canada; and Md Mahfuzur Rahman, Kraft Heinz Food Company, USA

Hanover E

9:55 **Introduction**

10:00 **Conventional and novel technologies for extraction of protein and their impact on structure and functionality as ingredient.** Md Mahfuzur Rahman¹, Buddhi Lamsal^{*2}, ¹Kraft Heinz Food Company, United States; ²Iowa State University (ISU), United States

10:20 **Effects of high-power sonication and atmospheric cold plasma on the dispersions and gelling properties of mung bean protein.** Md Mahfuzur Rahman^{*1}, Buddhi Lamsal², ¹Kraft Heinz Food Company, United States; ²Iowa State University (ISU), United States

10:40 **Functional properties of faba bean proteins extracted by different aqueous processes for food applications.** Brasathe Jeganathan^{*} (*Canadian Section Student Support Grant Winner*), Thavaratnam Vasanthan, Feral Temelli, Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada



11:00 **Impact of plasma-activated water treatment on physicochemical and functional properties of Bambara globulin.** Opeyemi Alabi^{*1}, George Annor², Eric O. Amonsou¹, ¹Biotechnology and Food Technology, Durban University of Technology, South Africa, South Africa; ²Food Science and Nutrition, University of Minnesota, United States

11:20 **Development and statistical optimization of a tribo-electrification separation process for dry fractionation of yellow pea flour.** Sama Ghadiri Gargari^{*1}, Jamaka Thomas², Solmaz Tabatabaei², ¹Civil and Environmental Engineering, Howard University, United States; ²Chemical Engineering, Howard University, United States

11:40 **Creating functional protein ingredients by cross-processing herring co-products with lingonberry press-cake, shrimp shells or green seaweed.** Jingnan Zhang^{*1} (*Protein and Co-Products Division Student Travel Grant Winner*), Anna Ström², Romain Bordes³, Marie Alminger¹, Ingrid Undeland¹, Mehdi Abdollahi¹, ¹Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden; ²Department of Chemistry and Chemical Engineering-Pharmaceutical Technology, Chalmers University of Technology, Sweden; ³Department of Chemistry and Chemical Engineering-Applied Surface Chemistry, Chalmers University of Technology, United States



Hojilla-Evangelista², William Hay³, ¹USDA/ARS, United States; ²USDA ARS NCAUR Plant Polymer Research, United States; ³USDA/ARS/NCAUR/MPM, United States

10:40 **Effect of the addition of tetramethyl ammonium chloride on the solubility and interfacial activity of a sodium linear alkylbenzene sulfonate surfactant.** José Alvarado^{*1}, Naycarí Forfora², Luz Meza², Franklin Salazar-Rodríguez³, Ana Forgiarini⁴, ¹Industrial and Applied Chemistry, FIRP Laboratory, Venezuela; ²FIRP Laboratory, Venezuela; ³Unit Operations, FIRP Laboratory, Venezuela; ⁴FIRP Laboratory, Universidad de Los Andes, Venezuela, United States

11:00 **Study on the application of surfactin for enhanced oil recovery.** Yuichi Sugai^{*1}, Nao Miyazaki², Yoshifumi Okamoto³, Satoshi Yanagisawa³, ¹Faculty of Engineering, Kyushu University, Japan; ²Graduate School of Engineering, Kyushu University, United States; ³New Business Development Department, Kaneka Corporation, Japan

Surfactants and Detergents

Next Generation Ingredients

Sponsored by Testfabrics Inc.

Chairs: Scott Backer, Dow Chemical Co., USA; and Amir Ghayour, Syngenta, Canada

Regency VII

9:55 **Introduction**

10:00 **Evaluation of *in situ* synthesized DIPA in plant-based surfactants as Cocamide DEA alternatives in personal care formulations.** Gabriel Ortego^{*}, George Smith, Research & Development, Sasol Chemicals, United States

10:20 **Redeposit or not? Not a question for sustainable fabric cleaning!** Robert Nolles^{*}, Cosun Biobased Experts, United States

10:40 **Linking care to clean, naturally.** Paulo Cesar Barjona^{*1}, Jatin Sharma², ¹Novozymes North America Inc., United States; ²Consumer Biosolutions, Novozymes North America, Inc., United States

11:00 **Fatty acid methyl ester ethoxylates: New sustainable surfactants for next generation crop protection formulations.** Dean Oester^{*1}, Timothy Anderson¹, Mel Long², Rodney Klima¹, ¹AgChem Additives Development, BASF Corporation, United States; ²AgChem Additives Technical Service, BASF Corporation, United States

11:20 **Sustainable approaches to cleaning and deodorizing with probiotic ingredients.** Scott Jaynes^{*}, Home Care, Croda, Inc., United States

11:40 **Biosurfactants for home care applications.** Aslin Izmitli^{*1}, Tim Young¹, Daniel S. Miller², ¹Home and Personal Care, Dow Inc., United States; ²Core R&D, Formulation, Automation & Material Science, Dow Inc., United States

Monday | Early Afternoon

Surfactants and Detergents

General Surfactants and Detergents

Sponsored by Testfabrics Inc.

Chairs: Adriana Sanchez Cruz, Sanchez Y. Martin SA De CV, Mexico and Sanja Natali, ExxonMobil Chemical, USA

Centennial I

9:55 **Introduction**

10:00 **Metal salt-induced hydrogelation of biosurfactants.** Alexandre Poirier^{*1}, Niki Baccile², ¹Sorbonne Université, United States; ²Laboratoire de chimie de la matière condensée de Paris, France

10:20 **New high-performance starch-based emulsifiers using amylose inclusion complexes.** Gordon Selling^{*1}, Milagros P.

Analytical

Authentication of Olive Oil

Chairs: Selina Wang, University of California, Davis, USA; and Enrico Valli, Università di Bologna, Italy

Hanover C

1:25 **Introduction**

1:30 **The results of the EU H2020 OLEUM project for the authenticity of olive oils.** Tullia Gallina Toschi^{*}, Department of Food and Agriculture Sciences, University of Bologna, Italy

1:50 **Metabolic fingerprinting strategies for authentication challenge: EVOO adulterated by soft deodorized olive oil.** Jana Hajslova^{*1}, Klara Navratilova¹, Enrico Valli², Tullia Gallina Toschi³,



- 1:30 **Effects of processing conditions and emulsifiers addition of crystallization kinetics and polymorphism of cupuassu fat and its fractions.** Maria Lidia Herrera*¹ (**Timothy L. Mounts Award Winner**), Maria R. Ramos¹, Victor Alonso Garcia Londoño¹, Karina Dafne Martinez¹, Maria Jose Rodríguez Batiller¹, Virginia Borroni¹, Roberto Candal², ¹Institute of Polymer Technology and Nanotechnology, University of Buenos Aires-CONICET, Argentina; ²Institute of Research and Environmental Engineering, University of San Martin, Argentina



- 1:50 **Relationship between oil binding capacity, oil loss, and the physical properties of an interesterified palm-based fat—influence of high-intensity ultrasound, cooling rate, and saturation level.** Melissa Marsh* (**Thomas H. Smouse Memorial Fellowship Winner**), Silvana Martini, Utah State University, United States
- 2:10 **Filterability of oil slurries as a function of particle-size distribution.** Jeppe Hjorth*, Product and Technology Development, AAK Denmark AS, Denmark
- 2:30 **Microstructure development in semi-liquid shortenings upon storage.** Kato Rondou*, UGent, Belgium
- 2:50 **Relating polymorphic transition and triglyceride composition.** Julia Seilert*, Eckhard Flöter, Food Process Engineering, Technical University of Berlin, Germany

¹Department of Food Analysis and Nutrition, University of Chemistry and Technology, Prague, Czech Republic; ²Department of Agricultural and Food Sciences and Interdepartmental Centre of Agri-Food Industrial Research, Alma Mater Studiorum—Università di Bologna, Italy; ³Department of Food and Agriculture Sciences, Università di Bologna, Italy

- 2:10 **Artificial Intelligence smelling machines based on multidimensional gas chromatography: Capturing extra-virgin olive oil aroma blueprint and unique identity.** Chiara Emilia Cordero*¹, Simone Squara¹, Federico Stilo¹, Erica Liberto¹, Carlo Bicchi¹, Stephen Reichenbach², Luis Cuadros Rodriguez³, Humberto Bizzo⁴, ¹Dipartimento di Scienza e Tecnologia del Farmaco, Università Degli Studi di Torino, Italy; ²University of Nebraska Lincoln, United States; ³University of Granada, Spain; ⁴Embrapa Agroindústria de Alimentos, Brazil
- 2:30 **Easy and green method for the peroxide value determination in olive oil.** Francesco Longobardi*¹, Vito Michele Paradiso², ¹Chemistry, University of Bari A. Moro, Italy; ²Università del Salento, Italy
- 2:50 **Panel discussion**

Edible Applications Technology

Fat Crystallization I—Microstructure and Polymorphic Transition

Chairs: Alejandro Marangoni, University of Guelph, Canada; and Eckhard Flöter, Technical University Berlin, Germany

Hanover AB

- 1:25 **Introduction**

**Food.
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All attendees will have a chance to win door prizes!

AOCs Member and Volunteer Appreciation Luncheon

Wednesday, May 4, 12:15 p.m.
Centennial III

A complimentary luncheon for everyone!

Get to know fellow attendees while we acknowledge leaders in our community, including the winner of the member refer-a-friend prize.

Health and Nutrition

General Health and Nutrition I

Chairs: Matthew Picklo, USDA ARS, USA; and Ambria Crusan, St. Catherine University, USA

Hanover F

- 1:25 **Introduction**
- 1:30 **Improved Mediterranean diet pattern scores by increasing Omega-3 containing foods in U.S. adult diets.** Ambria Crusan*¹, Francine Overcash², ¹Nutrition and Dietetics, St. Catherine University, United States; ²Department of Food Science and Nutrition, University of Minnesota–Twin Cities, United States
- 1:50 **New methods using natural abundance carbon isotope ratio analysis to measure the turnover of docosahexaenoic acid in preclinical models.** Richard Bazinet*, *Nutritional Sciences, University of Toronto, Canada*
- 2:10 **Wheat bran protects vitamin A from oxidation during storage.** Eline Van Wayenbergh*, Niels A. Langenaeken, Imogen Foubert, Christophe M. Courtin, *KU Leuven, Belgium*
- 2:30 **Targeting inflammation and mitochondria with dietary linoleic acid for cardiometabolic health—when research comes full circle.** Martha A. Belury*, *Nutritional Sciences, Ohio State University, United States (Ralph Holman Lifetime Achievement Award Winner)*



Industrial Oil Products

Green Chemistry and Oleochemicals I

Sponsored by MBP Solutions

Chairs: Helen Ngo, USDA ARS ERRC, USA; and Majher Sarker, USDA, USA

Hanover D

- 1:25 **Introduction**
- 1:30 **Innovations in high performance, environmentally acceptable lubricants (EALs) in lubricant applications.** Mark Miller*, *Biosynthetic Technologies, United States*
- 1:50 **Serendipitous production of industrially useful p-cymene by catalytic dehydration and isomerization of perillyl alcohol.** Bryan R. Moser*¹, Michael A. Jackson², Kenneth M. Doll¹, ¹Bio-Oils Research Unit, USDA ARS NCAUR, United States; ²Renewable Product Technology Research Unit, USDA ARS NCAUR, United States
- 2:10 **Investigation of the physical and tribological properties of alkyl-branched chicken fat.** Majher I. Sarker*¹, Hailemichael Yosief², Grigor Bantchev³, Robert Dunn², Steven Cermak², ¹Sustainable Biofuel and Co-Product Research Unit, USDA, United States; ²USDA, United States; ³NCAUR, USDA/ARS, United States
- 2:30 **Quantifying corrosive behavior of triacylglycerol feedstocks under elevated temperature and pressure.** Deborah Liu*, Nathan Levandovsky, Soheil Daryadel, Samyukta Shrivastav, Jiahui Li, Zhiheng Lyu, Qian Chen, Jessica Krogstad, Daniel Krogstad, *University of Illinois, United States*
- 2:50 **Sustainability aspects of the production and life stages of surfactants.** Douglas Hayes*, *Biosystems Engineering and Soil Science, University of Tennessee, United States*
- 3:10 **Green engineering approach with microstructured coiled flow inverter for CMF and HMF continuous flow synthesis.** Frank Schael*¹, Patrick Rojahn¹, Krishna Nigam², ¹Department of Chemical Engineering and Biotechnology, Hochschule Darmstadt University of Applied Science, Germany; ²Department of Chemical Engineering, Indian Institute of Technology Delhi, India

Processing

How Processing Affects Emerging Economies

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Juan Andrade, University of Florida, USA; and Annette Donnelly, Soybean Innovation Lab, USA

Regency V

- 1:25 **Introduction**
- 1:30 **Oilseeds, innovation and the 4th agricultural revolution: USAID's perspective.** Michael Michener*, *Bureau for Resilience and Food Security, U.S. Agency for International Development, United States*

AOCS SCIENTIFIC AWARD WINNER

- 1:50 **Improving and developing sustainable methods for plant protein processing.** Keshun Liu*, *Agricultural Research Service, US Dept. of Agriculture, United States (Alton E. Bailey Award Winner)*



- 2:30 **Evaluation of an alternative low-resource soy protein production method.** Ece Gulkirpik*¹, Juan E. Andrade Laborde², Kephass Nowakunda³, ¹University of Illinois at Urbana–Champaign, United States; ²Food Science and Human Nutrition, University of Florida, United States; ³National Agricultural Research Laboratories, United States
- 2:50 **Supporting argo-processing in Africa.** Marjatta Eilitta*¹, Michael Boyer², ¹Cultivating New Frontiers in Agriculture, United States; ²AWT Management Services, Inc., United States
- 3:10 **Opportunity to assist in the expansion of high-quality soybean feed and edible oil production in Madagascar.** Bob Andriamifidy*, *Agrival/Agrifarm, Agrival, Madagascar*

Protein and Co-Products

Emerging Source of Proteins

Chairs: James House, University of Manitoba, Canada; Rotimi Aluko, University of Manitoba, Canada; and Janelle Courcelles, Pulse Canada, Canada

Hanover E

- 1:25 **Introduction**
- 1:30 **Combined effect of extraction and purification conditions on yield, composition, functional and structural properties of lupin proteins.** Sara Albe Slabi*¹, Odile Mesieres², Christelle Mathé², Mbalo Ndiaye¹, Olivier Galet¹, Romain Kapel², ¹Groupe AVRIL, France; ²LRGP CNRS UMR7274, France
- 1:50 **Opportunities and challenges for the development of insect protein-rich ingredients.** Alain Doyen*, *Food Sciences, Université Laval, Canada*
- 2:10 **Spotlight on sustainability: How growing consumer preferences are changing the plant-based protein industry.** Jean Heggie*¹, Mac Marshall², ¹U.S. Soy, United States; ²United Soybean Board, United States
- 2:30 **Animal-free protein production using precision fermentation.** Fei Luo*, Pratih Gawand, Ondrej Halgas, Sagar Lahiri, *Liven Proteins Corp., Canada*
- 2:50 **Effect of optimised infrared heat treatment on composition structure and gelation properties of cowpea protein isolate.** Opeoluwa M. Ogundele*¹, Opeyemi Alabi², Oluwatosin A. Ijabadeniyi³, Oluwafemi A. Ogundele¹, ¹University of Johannesburg, South Africa; ²Biotechnology and Food Technology, Durban University of Technology, South Africa, South Africa; ³Durban University of Technology, South Africa

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- 3:10 **Processing opportunities and challenges for plant-based proteins.** Buddhi Lamsal^{*1}, Bibek Byanju², ¹*Iowa State University (ISU), United States*; ²*Food Science and Human Nutrition, Iowa State University, United States*

Surfactants and Detergents

Personal Care

Sponsored by Testfabrics Inc.

Chairs: Hongwei Shen, Colgate-Palmolive Company, USA; and Tony O'Lenick, Surfatech Corporation, USA

Centennial I

- 1:25 **Introduction**
- 1:30 **Substantiation of cosmetic claims.** Martha L. Tate^{*}, *Tate Science LLC, United States*
- 1:50 **A novel anti-inflammatory class of lipids and their potential in Skincare and Skin Health.** Apostolos Pappas^{*}, *Entrinsic, United States*
- 2:10 **Understanding the modification of sebum cohesion upon air pollutant uptake.** Nicole Rosik^{*1}, Ian McRobbie², Jon Preece³, Zhenyu Jason Zhang¹, ¹*Chemical Engineering, University of Birmingham, United Kingdom*; ²*Innospec, United Kingdom*; ³*Chemistry, University of Birmingham, United Kingdom*
- 2:30 **Cosmetic emulsions under the new lamellar gel network model.** Ricardo Diez^{*}, *Master of Business and Science, Rutgers University, Canada*
- 2:50 **Nanoemulsion-based cosmetic containing only an extended surfactant.** Thaily Pernaete^{*}, Atilio Cordero, Mairis Guevara, Ana Forgiarini, *FIRP Laboratory, Universidad de Los Andes, Venezuela, United States*
- 3:10 **Bar soap cracking analysis by differential scanning calorimetry.** Ivan Romero^{*1}, Luis Miguel Lopez², ¹*PD Bar Soaps, Colgate Palmolive, Mexico*; ²*Early research, Colgate Palmolive, United States*

Surfactants and Detergents

HLD-NAC

Sponsored by Testfabrics Inc.

Chairs: Sanja Natali, ExxonMobil Chemical, USA; and Juliana Caixeta Guimaraes, Oxiteno, Brazil

Regency VII

- 1:25 **Introduction**
- 1:30 **Direct assessment of the characteristic curvature (Cc) of single surfactants.** Edgar Acosta^{*}, Rafael Perez, Brandon Cordeiro, Carol Tan, Corrine Leng, *Chemical Engineering and Applied Chemistry, University of Toronto, Canada*
- 1:50 **Application of the HLD Framework to Agricultural Applications—Emulsion Concentrates.** Matthew G. Lyon^{*}, *Care Chemicals—Industrial Formulators, BASF, United States*
- 2:10 **Nonionic surfactant concentration effects in the HLD mapping of oil-in-water emulsion stability.** Gregory P. Dado^{*1}, Rachel M. Lang², ¹*Research & Development, Stepan Co, United States*; ²*Stepan Co, United States*
- 2:30 **Advanced detergent formulation design by progressing from hydrophilic/lipophilic balance (HLB) to hydrophilic-lipophilic deviation (HLD).** Parichat Phaodee^{*1}, Jeffrey Harwell², David Sabatini², ¹*Ecolab Inc., United States*; ²*University of Oklahoma, United States*
- 2:50 **Cc variances as a result of sophorolipid lactone/lactonic acid ratios.** Eric Theiner^{*1}, Stephanie Hochstetler², Christine Dunstan², Leon Zheng³, Fiona Dong³, ¹*Evonik Industries, United States*; ²*PL Cleaning Solutions, Evonik Corporation, United States*; ³*PL Cleaning Solutions, Evonik, China (People's Republic)*

- 3:10 **Clearing the current confusion in the meaning of the surfactant term in the HLD equation.** Jean-Louis Salager^{*}, *FIRP Laboratory, Universidad de Los Andes, Venezuela*

Monday | Late Afternoon

Analytical

General Analytical Methods

Chairs: Pierluigi Delmonte, US Food and Drug Administration, USA; and Lisa Clement, Cargill Inc., USA

Hanover C

- 3:55 **Introduction**
- 4:00 **Detection of partially hydrogenated vegetable oils in food products based on fatty acid composition.** Pierluigi Delmonte^{*1}, Sarah Prebihalo¹, Andrea Milani², ¹*Office of Regulatory Science, Bioanalytical Methods Branch, U.S. Food & Drug Administration, United States*; ²*U.S. Food & Drug Administration, United States*
- 4:20 **Analysis of hopanes by LC-GCxGC-ToF MS/FID, and their use for the confirmation of mineral oil contamination.** Carlos Martin Alberca^{*1}, Marian Steverink¹, Torsten Tonak², Thomas Gude², ¹*Cargill, Global Edible Oils Solutions, Europe; R&D, Cargill, Netherlands*; ²*Swiss Quality Testing Services (SQTS), Switzerland*
- 4:40 **Development of a method for the identification and quantification of terpenes and cannabinoids in hemp using multidimensional gas chromatography and quadrupole-orbitrap mass spectrometry.** Sarah Prebihalo^{*}, Rahul S. Pawar, Geoffrey Dubrow, Pierluigi Delmonte, *Office of Regulatory Science, Bioanalytical Methods Branch, U.S. Food & Drug Administration, United States*
- 5:00 **Isolation and purification phenolic compounds in California olive pomace by pilot-scale C18 gel chromatography.** Hefei Zhao^{*}, Selina Wang, *Department of Food Science and Technology, University of California, Davis, United States*
- 5:20 **Enhancing techno-functional and bioactive properties of whey proteins by conjugation with quercetin using combined treatment of redox pair and ultrasonication.** Waqas N. Baba^{*}, Sajid Maqsood, *Food Science, UAE University, United Arab Emirates*

Biotechnology

Biosurfactants

Joint session with the Surfactants and Detergents Division

Sponsored by Testfabrics Inc.

Chairs: Phil Vinson, Procter & Gamble Co, USA; George Smith, Sasol, USA; and Douglas Hayes, University of Tennessee, USA

Centennial I

- 3:55 **Introduction**
- 4:00 **Selective synthesis of alpha monoglycerides by clean method: Techno-economic and environmental assessment.** Ahmad Mustafa^{*1}, Reham Mohsen², Fumiya Niikura³, ¹*General Systems Engineering, October University for Modern Sciences and Arts (MSA), Egypt*; ²*Faculty of Biotechnology, October University for Modern Sciences and Arts (MSA), Egypt*; ³*Lion Corporation, Japan*
- 4:20 **Sugar for hydrophobes? Fermentation to palm-free detergent alcohols at scale.** Risha Bond^{*}, *Genomatica, Inc., United States*
- 4:40 **Oleo-furan surfactants as fully biorenewable, carcinogen-free drop-in replacements for commercial anionic surfactants.** Shawn Eady^{*}, *Sironix Renewables, United States*
- 5:00 **The role of sophorolipid as carrier of active substances.** Glen Lelyn Quan^{*1}, Michiaki Araki¹, Yoshihiko Hirata², Kentaro Matsumiya³, Yasuki Matsumura⁴, ¹*Biochemical Laboratory, Saraya*

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the
date!

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AOCS 

Co., Ltd., Japan; ²Product Development Division and Biochemical Laboratory, Saraya Co., Ltd., Japan; ³Graduate School of Agriculture, Kyoto University, Japan; ⁴Research Institute for Sustainable Humanosphere, Kyoto University, Japan

- 5:20 **Biosurfactants and biopolymers: Between interactions, orthogonality and mutual responsiveness.** Niki Baccile*, Chloé Seyrig, Alexandre Poirier, Sorbonne Université, France
- 5:40 **Molecular simulation as a tool for the design of biosurfactant-based cosmetic formulations.** Benjamin Coscia*¹, Andrea Browning¹, Jeffrey Sanders², Mat Halls¹, ¹Schrodinger, United States; ²Materials Science, Schrodinger, United States

Edible Applications Technology

Fat Crystallization II—Solid-state Structure

Chairs: Alejandro Marangoni, University of Guelph, Canada; and Eckhard Floter, Technical University Berlin, Germany

Hanover AB

- 3:55 **Introduction**
- 4:00 **Exploring lipid structure and phases with x-ray scattering.** Scott Barton*, Xenocs Inc., United States
- 4:40 **Isotropic liquid state of triacylglycerols: The starting point of fats and oils crystallization.** Daniel Golodnizky*¹, Yulia Shmidov², Ronit Bitton³, Carlos E. S. Bernardes⁴, Maya Davidovich-Pinhas⁵, ¹Biotechnology and Food Engineering, Technion Israel Institute of Technology, Israel; ²Duke University, Israel; ³Ben-Gurion University of the Negev, Israel; ⁴Faculdade de Ciências Universidade de Lisboa, Portugal; ⁵Technion Israel Institute of Technology, Israel
- 5:00 **USAXS and SAXS data: Their interpretation and the organization of alkyl chains in crystals.** Fernanda Peyronel*¹, David A. Pink², Joseph Cooney³, Silvana Martini³, ¹Food Science, University of Guelph, Canada; ²Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada; ³Utah State University, United States
- 5:20 **Molecular structures of triacontane, stearic acid and behenyl lignocerate crystals: Monte Carlo simulations and comparison with x-ray scattering.** David A. Pink¹, Joseph Cooney*², Fernanda Peyrone³, Silvana Martini⁴, ¹Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada; ²Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States; ³Food Science, University of Guelph, Canada; ⁴Utah State University, United States

Edible Applications Technology

Novel Edible Application of Food Proteins

Joint session with the Protein and Co-Products Division

Chairs: Pulari Krishnankutty Nair, Danone North America, USA; and Serpil Metin, Cargill Inc, USA

Hanover E

- 3:55 **Introduction**
- 4:00 **Plant protein functionalization: Exploring cold plasma.** Pam Ismail*, Department of Food Science and Nutrition, University of Minnesota, United States
- 4:20 **Physicochemical properties of buckwheat albumin.** Rio Ogawa*¹, Kazumi Ninomiya², Yusuke Yamaguchi¹, Hitoshi Kumagai², Hitomi Kumagai¹, ¹Bioresource Sciences, Nihon University, Japan; ²Food Science and Nutrition, Kyoritsu Women's University, Japan
- 4:40 **Utilization of mildly fractionated pea proteins for the development of heat-stable beverage emulsions.** Neksha Devaki*, Supratim Ghosh, University of Saskatchewan, Canada
- 5:00 **Utilization of faba bean protein-stabilized structured emulsions in the replacement of animal fat in beef burgers.** Breann

Squires¹, Oluwafemi J. Coker², Phyllis J. Shand², Supratim Ghosh*¹, ¹University of Saskatchewan, Canada; ²Department of Food & Bioproduct Sciences, University of Saskatchewan, Canada

5:20 Panel discussion

Health and Nutrition

Omega-3s: How Much Do We Currently Know About Omega-3 Fatty Acids?

Chairs: Ignacio Vieitez Osorio, Universidad de la República, Uruguay; and Rinat Rivka Ran-Ressler, Nestle Health Science, USA

Hanover F

- 3:55 **Introduction**
- 4:00 **How does knowledge of omega-3 fatty acids inform the food system?** J. Thomas Brenna*, Pediatrics, Chemistry, Nutrition, University of Texas, United States
- 4:40 **Omega-3 and cardiovascular disease.** William S. William*, Fatty Acid Research Institute, United States
- 5:00 **Challenges in proposing omega-3 fatty acid recommendations for the public.** Kristina Jackson*, Research, Omegaquant Analytics, LLC, United States
- 5:20 **Omega-3 fats as pivotal elements integrating neural, immune and sympathetic nervous systems in aggression, depression and consciousness.** Joseph Hibbeln*, Psychiatry and Mental Health, Barton Health, South Lake Tahoe, United States
- 5:40 **Novel n-3 very-long-chain polyunsaturated fatty acids and their potential role in skin tissue.** Martina Torrisen*¹, Bente Ruyter², Elisabeth Ytteborg³, Harald Svensen¹, Tone-Kari Østbye⁴, Astrid Nilsson⁴, Iren Stoknes⁵, Gerd Marit Berge⁴, Marta Bou Mira⁶, ¹Epax, Norway; ²Nutrition, Nofima, Norway; ³Fish Health, Nofima, Norway; ⁴Nofima, Norway; ⁵R&D, Epax Norway AS, Norway; ⁶Nutrition and Feed Technology, Nofima, Norway

Industrial Oil Products

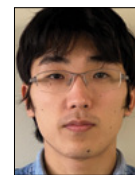
New Uses of Glycerine

Sponsored by MBP Solutions

Chairs: Franck Dumeignil, University of Lille, France; and Dharma Kodali, University of Minnesota, USA

Hanover D

- 3:55 **Introduction**
- 4:00 **Electro-oxidation of glycerol and diglycerol in the presence of Pt or Pd-based electrocatalyst follows by the reductive amination of the products obtained.** Bitty Serge Roméo Kouamé, Karine De Oliveira Vigier*, Stève Baranton, Christophe Coutanceau, IC2MP, Université de Poitiers, CNRS, France
- 4:20 **Process design for efficient production from glycerol into high-value chemicals.** Tsutomu Chida*¹ (*Industrial Oil Products Division Student Award Winner*), Kousuke Hiromori¹, Naomi Shibasaki-Kitakawa¹, Naoki Mimura², Aritomo Yamaguchi², Atsushi Takahashi¹, ¹Tohoku University, Japan; ²National Institute of Advanced Industrial Science and Technology (AIST), Japan



- 4:40 **Glycerol polymerization over stable and selective calcium hydroxyapatite.** Negissa Ebadi Pour¹, Sébastien Paul¹, Benjamin Katryniok¹, Franck Dumeignil*², ¹Centrale Lille Institut, France; ²Univ. Lille, France
- 5:00 **Selective monoallylation of anilines to form fine chemicals using allyl alcohol derived from glycerol.** Yoshihiro Kon*, Interdisciplinary Research Center for Catalytic Chemistry, AIST, Japan
- 5:20 **Panel discussion**

Phospholipid

General Phospholipid

Chair: Ernesto Hernandez, *Advanced Lipids, USA*

Courtland

- 3:55 **Introduction**
- 4:00 **Recent developments on thin film and short path evaporation technologies for edible oils processing.** Ernesto Hernandez*¹, Rob Reintjes², ¹*Advanced Lipids, United States*, ²*Artisan Industries Inc., United States*
- 4:20 **Synthesis of complex phospholipid species.** Oliver Bogojevic*¹, Zheng Guo¹, Carl Arevang², ¹*Department of Biological and Chemical Engineering, Aarhus University, Denmark*; ²*Larodan AB, Sweden*
- 4:40 **Demonstrating the viability of implementing phospholipases in enzymatic degumming of rapeseed oil.** Chinmayi Bhatt*, *Oils & Fats Technical Service, Novozymes, Denmark*
- 5:00 **Enzymatic modification of lecithin for improved antioxidant activity in combination with tocopherol in emulsions and bulk oil.** Mitchell Culler*, Ipek Bayram, Eric A. Decker, *Food Science, University of Massachusetts, Amherst, United States*
- 5:20 **Strategies for protecting functional components of chia oil by emulsion-based delivery systems with sunflower lecithin.** Luciana Julio¹, Claudia Copado¹, Vanesa Ixtaina¹, Mabel Tomas*², ¹*CIDCA-CONICET UNLP, Argentina*; ²*CIDCA-UNLP, Argentina*

Processing

Processing Basics—Palm Oil

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Alan Paine, *ARP Lipids Consulting, UK*; Leon Pablo Espinosa, *Desmet Ballestra North America Inc, USA*; and Syed Mohd Hadi Syed Hilmi, *Sime Darby Plantation Research Sdn. Bhd., Malaysia*

Regency V

- 3:55 **Introduction**
- 4:00 **Sustainability and oil palm practices.** Syed Mohd Hadi Syed Hilmi*¹, Nurul Hayati Ibrahim², ¹*Processing Technology, Sime Darby Plantation Research Sdn. Bhd., Malaysia*; ²*Sustainability Compliance, Sime Darby Plantation Sdn Bhd, Malaysia*
- 4:20 **The palm oil crop in Ecuador and its extraction.** Sebastian Alzamora*, *Extractor la Joya, Ecuador*
- 4:40 **Palm oil basic steps to process this oil.** Anibal Urizar*, *Sales, Desmet Ballestra Latin America sa de CV, Mexico*
- 5:00 **Fractionation of palm and palm kernel oils for designing high quality commodity and specialty fats.** Veronique J. Gibon*¹, Marc Kellens², ¹*R&D Department, Desmet Ballestra Group SA, Belgium*; ²*Desmet Ballestra Group, Belgium*
- 5:20 **Optimization of palm oil deodorization process conditions by RSM.** Fatma Nevin Basaran*¹, Ferda Altuner¹, Özgür Anuk¹, Onur Özdiğerler², Muzaffer Kamilçelebi¹, Ömer Faruk Kan¹, Ali Yasin

Karahan¹, Onur Erdemir¹, ¹*R&D, Besler Gıda Ve Kimya San Ve Tic A.Ş., Turkey*; ²*Faculty of Engineering—Food Engineering Department, Ege University, Turkey*

- 5:40 **High oleic palm oil: Uses and applications.** Juan Fernando Munoz*, *R&D-Innovation, Danec SA, Ecuador*

Protein and Co-Products

Novel Edible Application of Food Proteins

Chairs: Pulari Krishnankutty Nair, *Danone North America, USA*; and Serpil Metin, *Cargill Inc, USA*

Hanover E

Joint session with the Edible Applications Technology Division. **See page 50 for details.**

Surfactants and Detergents

Biosurfactants

Sponsored by Testfabrics Inc.

Chairs: Phil Vinson, *Procter & Gamble Co, USA*; George Smith, *Sasol, USA*; and Douglas Hayes, *University of Tennessee, USA*

Centennial I

Joint session with the Biotechnology Division. **See page 48 for details.**

Surfactants and Detergents

Surfactant LCA/Sustainability

Sponsored by Testfabrics Inc.

Chairs: Julian Barnes, *Shell Global Solutions International B.V., Netherlands*; and Kathleen Stanton, *American Cleaning Institute, USA*


Regency VII

- 3:55 **Introduction**
- 4:00 **Henkel's sustainability goals.** Janet Coope-Epstein*¹, Thorsten Bastigkeit², Arndt Scheidgen³, Uta Steffan⁴, ¹*Laundry & Home Care, Henkel, United States*; ²*Future Science, Henkel, Germany*; ³*Regulatory, Henkel, Germany*; ⁴*Sustainability, Henkel, Germany*
- 4:30 **Measuring sustainability—strengths and limitations of life cycle assessments for surfactants and detergents.** Franziska Enzmann*, *Evonik Industries, Germany*
- 5:00 **New developments in surfactants for laundry and hand dish detergents.** Phillip K. Vinson*, *Procter & Gamble/Fabric & Home Care Technology, United States*
- 5:30 **Delivering value to home care markets through cradle-to-grave life cycle assessments (LCAs).** B. Scott Jaynes*, *Consumer Care, Croda Inc., United States*



Did you miss the Industry Updates pre-meeting sessions?

These sessions are available to view on demand at 22AOCS.meetbreakout.com. See page 38 for presentation information.



AOCs Laboratory Proficiency Program 2020-2021 Award Winners

Aflatoxin in Corn Meal

First Place

Joe Barney
USDA
Kansas City, MO 64153 USA

Aflatoxin in Corn Meal Test Kit

First Place

Tina Harrell
JLA USA
Edenton, NC 27932 USA

Honorable Mention

Frank Hahn
Hahn Laboratories, Inc.
Columbia, SC 29202 USA
Cindy McCormick & Ashli Brown
Office of the Texas State Chemist
College Station, TX 77843 USA

Aflatoxin in Peanut Paste

First Place

Marisel Corelli
JLA Argentina SA
General Cabrera CD X5809 BAS
Argentina

Honorable Mention

Fabrizio Lopresti
SGS Argentina SA
Florencio Varela 1888 Argentina
Juan Regnicoli
SGS Argentina SA
Villa Mercedes San Luis 5730
Argentina
Zhang Peng
JLA China, Inc.
Qingdao Shandong Province 266000
China
Carolina Casagrande Bedani
JLA Brasil Laboratorio de Analise de
Alimentos SA
Marilia SP 17512-120 Brazil

Aflatoxin in Peanut Paste Test Kit

First Place

JLA Dawson Analytical Team
JLA USA
Dawson, GA 39842 USA

Honorable Mention

Judy Thomas
JLA brownfield
Brownfield, TX 79316 USA
JLA Colquitt Analytical Team
JLA
Colquitt, GA 39837 USA
Sylvester Analytical Team
JLA Sylvester
Sylvester, GA 31791 USA
JLA Albany Analytical Team
JLA USA
Albany, GA 31721 USA

Aflatoxin in Pistachio and Almond

First Place

Alina Hernandez
IEH Labs and Consulting Group
Fresno, CA 93727 USA

Honorable Mention

Laura Reina
IEH Kings Chemistry
Lost Hills, CA 93249 USA

Cholesterol

First Place

Imprang Chutyanawat
Ligand Scientific
Northaburi 1100 Thailand

DDGS from Corn Meal

First Place

Dennis Hogan
SDK laboratories
Hutchinson, KS 67501 USA

Honorable Mention

Anders Thomsen
Eurofins Nutrition Analysis Center
Des Moines, IA 50321 USA

Edible Fat

First Place

James Houghton
AAK USA
Louisville, KY 40208 USA

Honorable Mention

Jerry Buttell
AGP
Hastings, NE 68901 USA
Konni Shipman
AGP
Hastings, NE 68901 USA
Eddie L. Baldwin, Helen Cianciolo,
Derek Gum
Stratas Foods RDI Center
Bartlett, TN 38133 USA
Felicia Melendez
AGP
Hastings, NE 68901 USA
Travis Patterson
AGP
Hastings, NE 38133 USA

Fish Meal

First Place

Pete Cartwright
New Jersey Feed Lab, Inc.
Ewing, NJ 08638 USA

Honorable Mention

Paul Thionville/Andre Thionville/Kris-
topher Williams
Thionville Labs LLC
New Orleans, LA 70123 USA

Gas Chromatography

First Place

Oilseed Lab
Canadian Grain Commission
Winnipeg MB R3C 3G8 Canada

Honorable Mention

Jamie Ayton
NSW Dept. of Primary Industries
Wagga Wagga NSW 2650 Australia
Claudia Guillaume
Modern Olives
Lara VIC 3212 Australia
Zachary Martin
Darling Ingredients
Ankeny, IA 50021 USA
QA Team
Viterra USA LLC
Warden, WA 98857 USA
Sofrida Sofrida
PT Musim Mas
Utera 20371 Indonesia
Heather Compton
Stratas Foods
Quincy, IL 62305 USA
Razmah Ghazali
Malaysian Palm Oil Board AOTD
Kajang Selangor 43000 Malaysia

GOED Nutraceutical Oils

First Place

Edith Von Kries
BASF Personal Care & Nutrition
Illertissen 89257 Germany

Honorable Mention

QC Laboratory
Helene Jehanno, Eric Le Naour
Polaris
La Foret Fouesnant 29940 France
Laboratory
KD Norway AS
Brattvag 6270 Norway
Henriette Meiser-Zessner
KD Pharma Bexbach GmbH
Bexbach 66444 Germany

Marine Oil

First Place

Otelia Robertson
Omega Protein, Inc.
Reedville, VA 22539 USA

Honorable Mention

Lisette Van Schie
TLR International Laboratories
Rotterdam 3077 Netherlands
Matthew Rahn
Omega Protein Inc.
Reedville, VA 22539 USA

Marine Oil Fatty Acid Profile

First Place

Pete Cartwright
New Jersey Feed Lab, Inc.
Ewing, NJ 08638 USA

Honorable Mention

QC Laboratory
Helene Jehanno, Eric Le Naour
Polaris
La Foret Fouesnant 29940 France
Dana Walkenhorst, Steve Clotter,
Dustin Le
Eurofins Central Analytical Labs
New Orleans, LA 70122 USA

NIOP Fats and Oils

First Place

Melanie Greer
Dallas Group of America, Inc.
Jeffersonville, IN 47130 USA

Honorable Mention

George Hicks
Dallas Group of America, Inc.
Jeffersonville, IN 47130 USA

Nutritional Labeling

First Place

Helene Lachance
Trouw Nutrition Canada, Inc
Saint Hyacinthe QC J2R 1S5
Canada

Honorable Mention

Anders Thomsen
Eurofins Nutrition Analysis Center
Des Moines, IA 50321 USA

Oilseed Meal

First Place

Tyler Hack
Amspec
Webster, TX 77589 USA

Honorable Mention

Mumtaz Haider
Amspec
Webster, TX 77589 USA
Trevor Meredith
Solbar Food Technologies
Ashdod 7712102 Israel
Lidieth Solara Carranza
INOLASA
Barranca Puntarenas 6651-1000
Costa Rica
Robert Carr
RMG-PNW
Portland, OR 97218 USA
Jennie Stewart/Brad Beavers
Carolina Analytical Services LLC
Bear Creek, NC 27207 USA

Olive Oil Part A

First Place

Vera Chen
Catania Oils Inc.
Ayer, MA 01432 USA

Honorable Mention

Ryan Drazenovic
Pompeian Inc.
Baltimore, MD 21224 USA
Alex Vargo
Pompeian Inc.
Baltimore, MD USA

Olive Oil Part B

First Place

Vera Chen
Catania Oils, Inc.
Ayer, MA 01432 USA

Honorable Mention

Gwendolyn Truong
Sunset Olive Oil
Montebello, CA 90640 USA

Zhennian Huang
Catania Oils, Inc.
Ayer, MA 01432 USA

Olive Oil Part C

First Place

Vera Chen
Catania Oils, Inc.
Ayer, MA 01432 USA

Honorable Mention

Alex Vargo
Pompeian, Inc.
Baltimore, MD 21224
Ryan Drazenovic
Pompeian, Inc.
Baltimore, MD 21224 USA

Palm Oil

First Place

Tiam Huat Goh
PT Musim Mas
Medan Utera 20371 USA

Honorable Mention

Lin Hendrik
PT Musim Mas Martubung
Medan Sumatera, Utera 20244
Indonesia
Bee Suan Tan
Southern Edible Oils Industries Sdn
Bhd
Kapar Selangor 42200 Malaysia
Kah Soon Ng
PGE0 Edible Oils Sdn Bhd
Pasir Guidang Johor 81700 Ma-
laysia

Peanut

First Place

Tina Harrell
JLA USA
Edenton, NC 27932 USA

Honorable Mention

Fran Fletcher
IEH - Douglas
Douglas, GA 31535 USA

Phosphorus in Oil

First Place

Angie Johnson
Keyleaf
Saskatoon, SK SN 2R4 Canada

Honorable Mention

QA Team
Viterra USA LLC
Warden, WA 98857-0010 USA

Solid Fat Content by NMR

First Place

Eddie L. Baldwin, Helen Cianciolo,
Derek Gum
Stratas Foods RDI Center
Bartlett, TN 38113 USA

Honorable Mention

Ricardo Arevalo Bravo
Grupo Industrial Numar SA
San Jose Costa Rica

Soybean

First Place

Tyler Hack
Amspec
Webster, TX 77598 USA

Honorable Mention

Renato Ramos
Admiral Testing Services, Inc.
Luling, LA 70070 USA
Marvin Boyd, Jr., Luis Robles, Evan
Melancon
Eurofins Central Analytical Labs
New Orleans, LA 70122 USA

Soybean Oil

First Place

Jill Cecil
Owensboro Grain Edible Oils
Owensboro, KY 42302 USA

Honorable Mention

Scott Schuldt
ATC Scientific
North Little Rock, AR 72114 USA

Specialty Oils

First Place

QA Team
Viterra USA LLC
Warden, WA 98857 USA

Honorable Mention

Anders Thomsen
Eurofins Nutrition Analysis Center
Des Moines, IA 50321 USA
Thomas Mawhinney
University of Missouri
Columbia, MO 65211 USA

Tallow and Grease

First Place

Kester Emeffena
Amspec LLC
Webster, TX 77598 USA

Honorable Mention

Zachary Dewilde
Sanimax
Green Bay, WI 54303 USA
Francois Leveille
Sanimax
Montreal QC H1C 1G2 Canada
Tony Mendez
JST Global LLC
Houston, TX 77011 USA

Trace Metals in Oil

First Place

QA Team
Viterra USA LLC
Warden, WA 98857 USA

Honorable Mention

Quality Assurance Team
Richardson Oilseed LLC
Lethbridge AB T1H 9P5 Canada

Jack Riley, William House
Eurofins Central Analytical Labs
New Orleans, LA 70122 USA
Eric Garand
Viterra USA LLC
Ste. Agathe MB ROG 1Y0 Canada

trans Fatty Acid Content

First Place (tie)

Jocelyn Alfieri
Silliker Canada Co.
Markham, ON L3R 5V5 Canada
Anders Thomsen
Eurofins Nutrition Analysis Center
Columbia, MO 65211 USA

Honorable Mention

Heather Compton
Stratas Foods
Quincy, IL 62305 USA
Jill Cecil
Owensboro Grains Edible Oils
Owensboro, KY 42302 USA

Unground Soybean Meal

First Place (tie)

Zhang Xianmei
Bunge (Nanjing) Grains & Oils Co.
Ltd
Nanjing City 210038 China
Ma Yinxia
Bunge Chia Tai (Tianjin) Grain &
Oilseeds Ltd
Tianjin City 300457 China

Honorable Mention

Jun Zhang
Bunge Taixing Grains and Oils Ltd.
Jiangsu 225404 China
Wang Qian
Bunge Rizhao
Shandong 276826 China
Augustin Rodriguez Arguello
Proteinas Naturales SA De CV
Guadalupe NL 67130 Mexico
Jennie Stewart/Brad Beavers
Carolina Analytical Services LLC
Bear Creek, NC 27207 USA
Quality Assurance Lab
Riceland Foods Inc.
Stuttgart, AR 72160 USA
Paul Thionville/Andre Thionville/
Kristopher Williams
Thionville Labs LLC
New Orleans, LA 70123 USA

Vegetable Oil for Color Only

First Place

Hamilton Plant
Bunge Canada
Hamilton, ON L8L 8G7 Canada

Tuesday | Early Morning

Analytical

Authentication of Avocado and Other High-value Oils

Chairs: Selina Wang, University of California, Davis, USA; and Jill Winkler-Moser, USDA ARS NCAUR, USA

Hanover C

- 7:25 **Introduction**
- 7:30 **Update on the progress of the Codex Alimentarius standard for avocado oil.** Jill Winkler-Moser*, USDA ARS NCAUR, United States
- 7:50 **Avocado oil chemical composition varies with harvest time, growing region, and fruit quality, demonstrating important considerations for standard development.** Hilary Green* (*Analytical Division Student Award Winner*), Selina Wang, Department of Food Science and Technology, University of California, Davis, United States
- 8:10 **Differentiating avocado oil from other vegetable oils using low-field NMR spectroscopy and chemometrics.** Fenfen Tang*¹, Hilary Green², Selina Wang², Emmanuel Hatzakis¹, ¹Department of Food Science and Technology, The Ohio State University, United States; ²Department of Food Science and Technology, University of California, Davis, United States
- 8:30 **High throughput authenticity screening of high value edible oils with benchtop NMR.** James Sagar*¹, Marcel Lachenmann², Rachel Brignall¹, Yvonne Gunning³, Kate Kemsley³, ¹Oxford Instruments, United Kingdom; ²Oxford Instruments Inc., United States; ³Quadram Institute Bioscience, United Kingdom
- 8:50 **Panel discussion**



Analytical

Standard/Novel Analytical Methods for Protein Analysis in Food

Joint session with the Protein and Co-Products Division

Chairs: Sneha Bhandari, Independent Consultant, USA; Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; and Frederic Baudouin, Improve SAS, France

Hanover E

- 7:25 **Introduction**
- 7:30 **Nitrogen to protein conversion factors—an update and practical guidance for their use and for determining specific factors for novel protein sources.** Elaine S. Krul*, EKSci, LLC, United States
- 7:50 **Allergenicity risk assessment of glabrous canaryseed as novel food protein source.** Lamia L'Hocine*¹, Mélanie Pitre², Emily Mason², Allaoua Achouri², ¹Saint-Hyacinthe Research and Development Centre, Agriculture & Agri-Food Canada, Canada; ²Agriculture and Agri-Food Canada, Canada
- 8:10 **Methodological inconsistencies in novel plant protein functional properties, and improvements for water absorption capacity determinations.** Analiese Goins*, Sara Griffin, Department of Food Science and Nutrition, California State University, Fresno, United States
- 8:30 **Developing an optimized method for measuring chymotrypsin inhibitor activity in protein products.** Keshun Liu*, Mike Woolman, Agricultural Research Service, US Dept. of Agriculture, United States
- 8:50 **Prediction of protein and amino acid contents in whole and ground lentils using near-infrared reflectance spectroscopy.**

Jiayi Hang*¹, Da Shi¹, James House¹, Jason Neufeld¹, Kirstin Bett², ¹University of Manitoba, Canada; ²University of Saskatchewan, Canada

Biotechnology

Biorenewable Polymers

Joint session with the Industrial Oil Products Division

Chairs: Eric Cochran, Iowa State University, USA; and Richard Ashby, USDA ARS ERRC, USA

Regency VII

- 7:05 **Introduction**
- 7:10 **Cashew NutSell Liquid (CNSL), a promising source of biobased additives and building blocks for the industry.** Benoit Briou*, Audrey Roy, Lucas Jago, Adélaïde Gartili; R&D, Orpia Innovation/ICGM, France
- 7:30 **Plant oil based radically polymerizable monomers for sustainable polymers.** Sylvain Caillol*, ICGM, France
- 7:50 **Epoxy materials with triglyceride structure.** Zoran S. Petrovic*, Jian Hong, Dragana Radojic, Kansas Polymer Research Center, Pittsburg State University, United States
- 8:10 **Bio-based cationic waterborne polyurethane dispersions from high oleic soybean oil.** Jasna Djonlagic*, Milica Lovric Vukovic, Jian Hong, Zoran S. Petrovic, Kansas Polymer Research Center, Pittsburg State University, United States
- 8:30 **Biobased composites from renewable monomers and cellulosic reinforcements by photoinduced processes.** Sara Dalle Vacche*, Department of Applied Science and Technology, Politecnico di Torino, Italy
- 8:50 **Soybean oil-based polymeric coatings for the rejuvenation of old asphalt shingles.** Nacu B. Hernandez*, Andrew Becker, Michael Forrester, Eric Cochran, Chemical and Biological Engineering, Iowa State University, United States
- 9:10 **Lipid derived block copolymers as amphiphilic nanocarriers for targeted delivery.** Aman Ullah*, Huiqi Wang, Rehan Pradhan, AFNS, University of Alberta, Canada

Edible Applications Technology

Implications of Lipids Structuring in Food Applications I

Chairs: Nuria Acevedo, Iowa State University, USA; and Sabine Danthine, University of Liege, Belgium

Hanover AB

- 7:25 **Introduction**
- 7:30 **Fat structuring in confectionery applications: Evaluation of raw materials and its impact on processing and functionality.** Miguel Bootello*¹, Jeanine Werleman², Imro Zand², ¹Bunge Loders Croklaan, Spain; ²Bunge Loders Croklaan, Netherlands
- 8:10 **Properties of wax-hempseed oil oleogels and their use for margarines.** Hong-Sik Hwang*¹, Sanghoon Kim¹, Jill Winkler-Moser¹, Suyong Lee², Sean Liu¹, ¹USDA ARS NCAUR, United States; ²Sejong University, United States
- 8:30 **Characterization of the mechanical properties, freeze-thaw stability, and oxidative stability of edible, high-lipid rice bran wax-gelatin biphasic gels.** Nuria Acevedo¹, Rodrigo Tarté², Karim Cho*³, ¹Griffith Foods, United States; ²Meat Science, Iowa State University, United States; ³Food Science and Human Nutrition, Iowa State University, United States
- 8:50 **Study of microstructure entropy to optimize wax-based oleogel production technology.** Varuzhan Sarkisyan*, Roman Sobolev, Yuliya Frolova, Alla Kochetkova, Federal Research Center of Nutrition, Biotechnology and Food Safety, Russia

Bioactive Lipid Mediators

Sponsored by K.D. Pharma Bexbach GmbH

Chairs: Philip C. Calder, University of Southampton, UK; and Gerard Bannenber, GOED Omega-3, USA

Hanover F

- 7:25 **Introduction**
- 7:30 **The biosynthesis and action of enzymatically-oxidized lipids during innate immunity and inflammation.** Valerie O'Donnell*, Cardiff University, United Kingdom
- 7:55 **Eicosapentaenoic acid ethyl esters prevent obesity-driven impairments to glucose homeostasis through the biosynthesis of downstream hydroxylated metabolites.** Saame (Raz) Shaikh*, Abrar Al-Shaer, Anandita Pal, Ian Carroll, Nutrition, UNC Chapel Hill, United States

- 8:20 **Enrichment of brain DHA through dietary LPC EPA/DHA—Potential application for the Alzheimer disease.** Sugasini Dhavamani* (Health and Nutrition Division New Investigator Research Award Winner), Poorna CR Yalagala, Papasani V. Subbaiah, Medicine, University of Illinois at Chicago, United States



- 8:35 **α-Linolenic acid metabolism in human CD3+ T cells favours oxylipin production over polyunsaturated fatty acid synthesis.** Johanna Von Gerichten*¹, Annette Holland², Nicola Irvine², Elizabeth Miles², Philip Calder², Karen Lillycrop³, Graham Burdge³, Barbara Fielding⁴, ¹Nutritional Sciences, University of Surrey, United Kingdom; ²School of Human Development and Health, University of Southampton, United Kingdom; ³University of Southampton, United Kingdom, ⁴University of Surrey, United Kingdom
- 8:50 **Intact milk fat globules as a dynamic encapsulation matrix for DHA, which *in situ* produces DHA-derived anti-inflammatory lipids.** Tana Hernandez Barrueta*¹, Nitin Nitin², Ameer Y. Taha¹, ¹Food Science and Technology, University of California at Davis, United States, ²Food Science and Technology/Biological and Agricultural Engineering, University of California at Davis, United States
- 9:05 **Hydrolysis of hydroxy PUFA GPC of plasma lipoproteins by group IIA, V and X sPLA₂s.** Arnis Kuksis*, University of Toronto, Canada
- 9:20 **Panel discussion**

Industrial Oil Products

Biorenewable Polymers

Chairs: Eric Cochran, Iowa State University, USA; and Richard Ashby, USDA ARS ERRC, USA

Regency VII

Joint session with the Biotechnology Division. See page 54 for details.

Lipid Oxidation and Quality

Evaluating Antioxidant Efficacy via Accelerated Storage for Shelf-life Determination

Sponsored by BTSA

Chairs: Min Hu, Corbion, USA; Leqi Cui, Florida State University, USA; and Carolin Edinger, Anton Paar, Germany

Hanover D

- 7:25 **Introduction**
- 7:30 **Supercritical extracts from olive leaves as natural antioxidants: Extraction optimization, characterization and evaluation.**

- Ignacio Vieitez Osorio*¹, Cecilia Dauber², Tatiana Carreras², Laura González², Alberto Valdés³, Adriana Gámbaro², Elena Ibañez³, ¹PEDECIBA Química-UdelaR, Uruguay, ²Universidad de la República, Uruguay; ³Institute of Food Science Research (CIAL-CSIC), Spain
- 7:50 **Determination of oxidation stability and shelf life of cannabis formulations.** Stuart Castillo, Drew Marquardt*, Chemistry and Biochemistry, University of Windsor, Canada
- 8:10 **Quantitative and predictive modelling of lipid oxidation in mayonnaise.** John Van Duynhoven*¹, Donny Merckx², Andries Swager³, Ewoud van Velzen², Marie Hennebel³, ¹Unilever R&D Vlaardingen, Netherlands; ²Unilever, Netherlands; ³Wageningen University, Netherlands
- 8:30 **Rapid small scale oxidation test: Screening the influence of antioxidants on food products.** Carolin Edinger*, Anton Paar Provetec GMBH, Germany
- 8:50 **Modeling the kinetics of tocopherol degradation during the lag phase to predict shelf-life.** Jiakai Lu*, Food Science, University of Massachusetts Amherst, United States

Processing

General Processing (Energy, Sustainability, Future)

Sponsored by Clariant

Chairs: Darren Litle, Arisdyn Systems Inc, USA; and Ruchira Nandasiri, University of Manitoba, Canada

Regency V

- 7:25 **Introduction**
- 7:30 **A world first funded by the European Union: Adaptation and startup of an U.K. hexane extraction plant to run on a 100% biobased solvent.** Laurence Jacques*, Mickael Bartier, EcoXtract, Pennakem Europe, France
- 7:50 **Improving the efficiency and capacity of edible oil refineries.** Alan Paine*, ARP Lipids Consulting, United Kingdom
- 8:10 **Process management.** Brent German*, Blind Corner Solutions LLC, United States
- 8:30 **Utilization of controlled flow cavitation to minimize process inputs, energy, and waste while maximizing process yield, quality, and sustainability.** Darren Litle*, Arisdyn Systems, Inc., United States
- 8:50 **Energy treasure hunts.** John Barry*, Barry Consulting Services LLC, United States
- 9:10 **Organic solvent nanofiltration membrane for vegetable oil refining.** Mohammad Hossein Davood Abadi Farahani*, Seppure Ptd Ltd, Singapore

Protein and Co-Products

Standard/Novel Analytical Methods for Protein Analysis in Food

Chairs: Sneha Bhandari, Independent Consultant, USA; Janitha Wanasundara, Agriculture and Agri-Food Canada, Canada; and Frederic Baudouin, Improve SAS, France

Hanover E

Joint session with the Analytical Division. See page 54 for details.

Join the conversation!



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Surfactants and Detergents

Interactions of Surfactants at Solid Surfaces

Chairs: Brian Grady, University of Oklahoma, USA; and Geoffrey Pasciak, Promega Corp, USA

Centennial I

- 7:25 **Introduction**
- 7:30 **Adsorption of switchable diamine surfactants on heterogeneous mineral surfaces.** Sibani Biswal*, Chemical & Biomolecular Engineering, Rice University, United States
- 7:50 **Interfacial adsorption of gastrointestinal lipases onto heterogeneous biomimetic vegetal membranes.** Jeanne Duplessis-Kergomard*¹, Frédéric Carrière², Gérard Lambeau³, Gilles Paboeuf¹, Nathalie Barouh⁴, Pierre Villeneuve⁴, Claire Bourliou-Lacanal⁵, Véronique Vié¹, ¹Soft Matter, Institut de Physique de Rennes, Université De Rennes 1, France; ²Enzymology of Supramolecular Systems, UMR7281 Bioenergetics and Protein Engineering laboratory, France; ³Institut de Pharmacologie Moléculaire et Cellulaire (IPMC) UMR 7275, France; ⁴CIRAD, France; ⁵UMR IATE, INRAE/Univ Montpellier/Institut Agro, France
- 8:10 **Microemulsion bicontinuous polymers thin films and their use as membranes.** Brandon Cordeiro*, Edgar Acosta, Chemical Engineering and Applied Chemistry, University of Toronto, Canada
- 8:30 **Evaluation of alcohol ethoxylates for industrial & institutional hard surface cleaning.** Nelson E. Prieto*¹, David Benitez¹, Christoph Groß-Heitfeld², ¹R&D, Applications, Sasol, United States; ²R&D, Sasol, Germany
- 8:50 **Hard surface cleaning formulations containing hydroxyproline rich, natural proteins (HRPs) can allow for easier sequential cleanings that reduce the need for harsh cleaning chemistries.** Eric Yezdimer*¹, Nina Rittreiser², Matthias Reihmann², ¹Gelita, United States; ²Gelita AG, Germany
- 9:10 **Aqueous lubrication with an amphiphilic block copolymer and its application.** Shinji Yamada*, R&D—Analytical Science Research, Kao Corporation, Japan

Tuesday | Late Morning

Edible Applications Technology

Implications of Lipids Structuring in Food Applications II

Chairs: Nuria Acevedo, Iowa State University, USA; and Sabine Danthine, University of Liege, Belgium

Hanover AB

- 9:55 **Introduction**
- 10:00 **Characterization and comparison of oleogels and emulgels prepared from *Schizochytrium* algal oil using monolaurin and MAG/DAG as gelators.** Joseph Hyatt*, Siyu Zhang, Casimir Akoh, Food Science and Technology, University of Georgia, United States
- 10:20 **Crystallization of wax esters—a prerequisite to understand wax-based oleogels.** Henriette Brykczynski*¹, Eckhard Flöter², ¹Technical University Berlin, Germany; ²Food Process Engineering, Technical University of Berlin, Germany
- 10:40 **Structured water-in-oil emulsions developed with candelilla wax.** Jorge F. Toro-Vazquez*¹, Anaïd De la Peña-Gil¹, Miriam A. Charó-Alonso¹, David Pérez-Martínez², ¹Food Physicochemistry, UASLP-FCQ, Mexico; ²UASLP-FCQ, United States
- 11:00 **Carnauba wax and beeswax as structuring agents for surfactant-free water-in-oleogels emulsions.** Ivana A. Penagos*¹, Juan S. Murillo Moreno², Koen Dewettinck², Filip Van Bockstaele², ¹Food Structure & Function Research Group, Ghent University,

Belgium; ²Department of Food Technology, Safety and Health, Ghent University, Belgium

Health and Nutrition

Lipids and the Microbiome

Chairs: Jeanette Andrade, University of Florida, USA; and Melissa Pérez Santana, Impossible Foods, USA

Hanover F

- 9:55 **Introduction**
- 10:00 **The gut microbiome and dietary fatty acids.** J. Thomas Brenna*, Pediatrics, Chemistry, Nutrition, University of Texas, United States
- 10:25 **Creating a metabolomics pipeline for investigating microbiome-host interactions.** Shuo Han*, Microbiology and Immunology, Stanford University School of Medicine, United States
- 10:50 **Addition of cholesterol esterase substantially enhances phytosterol ester bioaccessibility in emulsions with different droplet sizes using a standardized *in vitro* digestion model.** Abigail Boyd*¹, Joey Talbert¹, Nuria Acevedo², ¹Food Science and Human Nutrition, Iowa State University, United States; ²Griffith Foods, United States
- 11:05 **Lipidomic analysis of TRPC1 Ca²⁺-permeable channel-knock out mouse demonstrates a vital role in placental tissue sphingolipid and triacylglycerol homeostasis under high-fat diet.** Michael Bukowski*¹, Brij Singh², James Roemmich³, Kate Larson³, ¹USDA-ARS Beltsville Human Nutrition Research Center, United States; ²Department of Periodontics, UT Health San Antonio, United States; ³USDA-ARS Grand Forks Human Nutrition Research Center, United States
- 11:20 **Impact of milk polar lipid supplementation on postprandial bile acid composition.** Mélanie Le Barz¹, Cécile Vors², Lydie Humbert³, Emilie Gauliard³, Patrice Gaborit⁴, Stéphanie Lambert-Porcheron⁵, Lemlih Ouchchane⁶, Hubert Vidal⁷, Corinne Malpuech-Brugère⁸, Dominique Rainteau⁹, Marie-Caroline Michalski*², ¹CarMeN laboratory, UCBL1, France; ²INRAE, Carmen Laboratory, UMR1397, France; ³Biochemistry, Laboratory of Biomolecules, Sorbonne University, France; ⁴Dairy Technology, Actalia, France; ⁵Hospices Civils de Lyon, France; ⁶Unité de Biostatistique-Informatique Médicale, Université Clermont Auvergne, CHU de Clermont-Ferrand, France; ⁷CarMeN laboratory, INSERM, France; ⁸UMR 1019 UNH, UFR de Médecine & Des Professions Paramédicales, University of Clermont Auvergne, France; ⁹Biochemistry, Sorbonne University, France
- 11:35 **Anti-obesity potential of 4,4-dimethylsterols by inhibiting pancreatic lipase.** Tao Zhang*¹, Xingguo Wang², ¹Jiangnan University, Netherlands; ²Jiangnan University, China (People's Republic)
- 11:50 **Panel discussion**

Industrial Oil Products

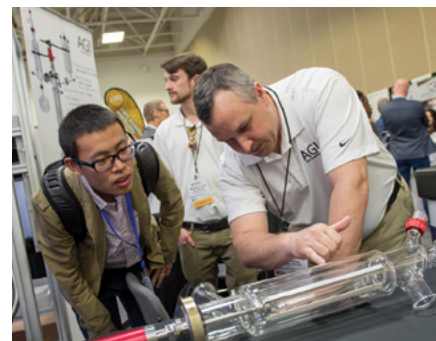
Green Chemistry and Oleochemicals II

Chairs: Helen Ngo, USDA ARS ERRC, USA; and Majher Sarker, USDA, USA

Hanover C

- 9:55 **Introduction**
- 10:00 **Heat sealable soluble soybean polysaccharide based composite films containing gelatin and curcumin for oil packaging.** Jie Liu*¹, Yitong Dong², Xuejing Zheng², Keyong Tang², ¹School of Materials Science and Engineering, Zhengzhou University, China (People's Republic); ²Zhengzhou University, China (People's Republic)
- 10:20 **Evaluation of hybridized bio-based building blocks as coating materials.** Emre Kinaci*, Sarah Salazar, Giuseppe Palmese, Joseph Stanzione, Rowan University, United States
- 10:40 **Converting birch bark extracts into bio-based thermosets.** Emre Kinaci*, John Chea, Kylie Howard, Kirti Yenkie, Rowan University, United States

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2023 AOCs Annual Meeting & Expo
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Colorado Convention Center, Denver, Colorado, USA + Online

- 11:00 **Correlating viscosity of 2-ethylhexyl oleic estolide esters to their molecular weight.** Grigor Bantchev^{*1}, Steven Cermak²; ¹NCAUR, USDA/ARS, United States; ²USDA, United States
- 11:20 **Proposal of complete utilization system of soapstock by electrolysis.** Kousuke Hiromori^{*}, Keisuke Katagami, Atsushi Takahashi, Naomi Shibasaki-Kitakawa, *Tohoku University, Japan*
- 11:40 **Enzyme developments in oleochemicals and surfactants.** Martin Rushworth^{*}, Hon Seng Yee, *Novozymes Malaysia, Malaysia*

Industrial Oil Products

General Industrial Oil Products

Chairs: Darrell Sparks, *Mississippi State University, USA*; and B.K. Sharma, *USDA ARS ERRC, USA*

Regency VII

- 9:55 **Introduction**
- 10:00 **Advancing PCMO (passenger car motor oil) with sustainable high oleic soybean base oil.** Mark Miller¹, Matthew Kriech^{*2}, ¹Biosynthetic Technologies, United States; ²Innoleo LLC, United States

- 10:20 **Oil produced from Ghana cocoa bean for potential industrial applications.** Samuel K. Tulashie¹, Daniel Dodoo^{*2} (*Industrial Oil Products Division Junior Researcher Travel Grant Winner*), Godfred Appiah³, Francis Kotoka⁴, Kingsley Enoch Adukpoh⁵, ¹Industrial Chemistry Section, Department of Chemistry; *University of Cape Coast, Ghana*; ²Department of Chemistry, *Aix-Marseille University, Ghana*; ³Department of Water Supply, Sanitation and Environmental Engineering, *IHE Delft Institute of Water Education, Czech Republic*; ⁴Department of Green Chemistry and Technology, *Ghent University, Belgium*; ⁵Chemistry, *Kwame Nkrumah University of Science and Technology, Ghana*



- 10:40 **Innovations in high performance, environmentally acceptable lubricants (EALs) in lubricant applications.** Mark Miller^{*}, *Biosynthetic Technologies, United States*

- 11:00 **Eutectic solvent as co-solvent for oil extraction from plant seeds.** Adeeb Hayyan^{*} (*Industrial Oil Products Division Junior Researcher Travel Grant Winner*), *Department of Chemical Engineering, University of Malaya, Malaysia*



- 11:20 **Membrane-based oil and biodiesel washing.** N. Kocherginsky^{*}, *UIUC, United States*
- 11:40 **Energy conservation in solvent extraction plants of oilseeds.** Sadru H. Dada^{*}, *Consultancy, Self Employed, United Arab Emirates*

Lipid Oxidation and Quality

Food Preservation Strategies: Combination of Antioxidants with Other Actives in Food Systems

Sponsored by BTSA

Chairs: Marie Hennebelle, *Wageningen University, Netherlands*; and Liyun Ye, *Finless Foods, Inc., USA*

Hanover D

- 9:55 **Introduction**
- 10:00 **Role of natural antioxidants for favoring dual functionality in meat and poultry products.** Divek Nair^{*}, Alessandra Pham-Mondala, Lorna Polovina, Andrew Lee, *Food Protection, Kalsec® Inc., United States*
- 10:20 **Enzymatic production of antioxidative and antimicrobial hydrolysates from cod solid side-streams.** Ann-Dorit Moltke Sørensen^{*1}, Dimitra Marinou², Charlotte Jacobsen¹, ¹National Food

Institute, Technical University of Denmark, Denmark; ²Chr. Hansen, Denmark

- 10:40 **Physical and oxidative stability of emulsions stabilized with fractionated potato protein hydrolysates obtained from starch production byproduct: Use of bioinformatics and proteomics.** Betül Yesiltas^{*1}, Rasmus K. Mikkelsen², Pedro J. Garcia-Moreno³, Simon Gregersen⁴, Tobias H. Olsen⁵, Paolo Marcatili², Michael T. Overgaard⁴, Egon B. Hansen², Charlotte Jacobsen¹, ¹National Food Institute, *Technical University of Denmark, Denmark*; ²Technical University of Denmark, Denmark; ³Department of Chemical Engineering, *University of Granada, Spain*; ⁴Aalborg University, Denmark; ⁵University of Oxford, United Kingdom

- 11:00 **Antioxidant and antimicrobial active packaging systems.** Zhe Cheng^{*}, Matthijs Dekker, Jenneke Heising *Wageningen University & Research, Netherlands*

- 11:20 **Plant protein-stabilized emulsions: Implications of protein and non-protein components for lipid oxidation.** Katharina Münch^{*1}, Karin Schroën², Simeon Stoyanov¹, Claire Berton-Carabin³, ¹Wageningen University, Netherlands; ²Food Process Engineering, *Wageningen University, Netherland*; ³INRAE Nantes, France

Processing

Novel Technologies—Plant-based Foods

Sponsored by Clariant

Chairs: Pulari Krishnankutty Nair, *Danone North America, USA*; and Anil Kommineni, *Danone, USA*

Regency V

- 9:55 **Introduction**
- 10:00 **Processing plant proteins colloidal structures.** Milena Corredig^{*}, *Department of Food Science, Aarhus University, Denmark*

- 10:20 **Modifying plant proteins as microgels for fat replacement applications.** Ben J. Kew^{*} (*European Section Student Travel Grant Winner*), Melvin Holmes, Anwasha Sarkar, Evan Liamas, *School of Food Science and Nutrition, University of Leeds, United Kingdom*



- 10:40 **Fat crystal network reinforced plant-derived polysaccharide-based oleogels.** Zong Meng^{*}, Qinbo Jiang, *School of Food Science and Technology, Jiangnan University, China (People's Republic)*
- 11:00 **Evaluation of plant-based milk quality and stability: A commercial analysis.** Andrew Elder^{*1}, Steve McColley¹, James G. Redwine², Ashley Apil¹, ¹Kalsec Inc., United States; ²Analytical, *Kalsec, Inc., United States*

Protein and Co-Products

Protein Biofunctions

Chairs: Kaustav Majumder, *University of Nebraska-Lincoln, USA*; Hitomi Kumagai, *Nihon University, Japan*; and Hongbing Fan, *University of Alberta, Canada*

Hanover E

- 9:55 **Introduction**
- 10:00 **Protein gelation enhances resistance to proteolysis and *in vivo* cholesterol-lowering ability of the indigestible proteins.** Rotimi Aluko^{*}, *Food and Human Nutritional Sciences, University of Manitoba, Canada (Protein and Co-Products Division Lifetime Achievement Award Winner)*



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Sarah A. Echols, Sr. R&D Manager—Nut Butters at Golden Boy Foods and member of the Edible Applications Technology Division

- Student member in 2010–2011
- Member of inaugural leadership team of the Young Professional Common Interest Group, 2014–2018
- Secretary-Treasurer of the Edible Applications Technology Division, 2017–2019
- Speaker Funding Task Force, 2020–2021

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- 10:20 **Plant and gut microbiota-derived protein metabolites and potential health functions.** Thanutchaporn Kumrungsee^{*1}, Toshiro Matsui², Yongshou Yang³, Norihisa Kato¹, ¹Graduate School of Integrated Sciences for Life, Hiroshima University, Japan; ²Faculty of Agriculture, Kyushu University, Japan; ³School of Life Sciences, Anhui University, China (People's Republic)
- 10:40 **Amelioration of high fat diet-induced obesity in rat by short chain pyroglutamyl peptides in Japanese salted fermented soy paste (miso).** Kenji Sato*, Graduate School of Agriculture, Kyoto University, Japan
- 11:00 **From the bench to the bedside: The history of lupin bioactive peptides as useful ingredient for the prevention of metabolic syndrome.** Carmen Lammi*, University of Milan, Italy

Surfactants and Detergents

Performance Additives Featuring Formulating Waterless Products

Chairs: Robert Nolles, Cosun Biobased Experts, USA; and David Stott, Mary Kay, Inc., USA

Centennial I

- 9:55 **Introduction**
- 10:00 **Innovation, sustainability and cost trends in detergent formulations.** Roel M. Hermant*, Jean-Paul Janssens, FRAMES Formulation Intelligence, Netherlands
- 10:20 **Enter a new world of clean: Phosphodiesterase breaks down and removes body grime in clothing and home textiles resulting in true malodor removal.** Donna Nguyen*, Renata Hyczy, Household Care, Novozymes, United States
- 10:40 **The power of enzymes in automatic dishwashing.** Grace Lau*, Arjen Hoekstra, IFF, United States
- 11:00 **Non-aqueous foams based on high alcohol content stabilized by fatty acid crystalline particles.** Anne-Laure Fameau^{*1}, Yingzhen Ma², Bhuvnesh Bharti², ¹INRAE, France; ²Cain Department of Chemical Engineering, Louisiana State University, United States
- 11:20 **Formulating waterless cleaners in solid or powder form: Considerations for stability and performance.** Ron Masters^{*1}, Vanessa DeMarco¹, Sarah Kovach², ¹Consumer Products R&D, Stepan Company, United State; ²Marketing, Stepan Company, United States
- 11:40 **High-active alcohol ethoxysulfate/alcohol ethoxylate blends: Cost-effective alternatives for formulation of concentrated liquid and pod detergents.** Kirk Raney*, A&I Ventures, LLC, United States

Tuesday | Early Afternoon

Analytical

Analysis of Less-abundant Lipids

Chairs: Kim Ekroos, Lipidomics Consulting Ltd, Finland; and Federico Torta, National University of Singapore, Singapore

Hanover C

- 1:25 **Introduction**
- 1:30 **Quantification of minor lipid species in mammalian samples—strategies and pitfalls.** Gerhard Liebisch*, Sabrina Krautbauer, Marcus Höring, University Hospital Regensburg, Germany

- 2:10 **The wonders of isoprostanoids in biological systems.** Jetty Chung-Yung Lee^{*1}, Jean-Marie Glanao², Thierry Durand², ¹The University of Hong Kong, Hong Kong; ²Institut des Biomolécules Max Mousseron, (IBMM), UMR 5247, CNRS, Université de Montpellier, ENSCM, France
- 2:30 **Structure elucidation and biological evaluations of sulfido-conjugated specialized pro-resolving mediators.** Jesmond Dalli^{*1}, Kimberly Pistorius¹, Ana Rodriguez², Bernd Spur², Charles Serhan³, ¹Queen Mary University of London, United Kingdom; ²Rowan University, United States; ³Brigham and Women's Hospital, United States
- 2:50 **An online structural-based connectivity and omic phenotype evaluations (SCOPE) cheminformatics toolbox for lipidomic data visualization.** Melanie Odenkirk^{*1}, Erin Baker¹, David Reif², ¹Department of Chemistry, North Carolina State University, United States; ²Department of Biological Sciences, North Carolina State University, United States
- 3:10 **Selective ionization of oxidized versus non-oxidized lipid species using different solvent additives in direct infusion MS.** Eleni Lazaridi^{*1}, Marie Hennebell¹, Boudewijn Hollebrands², Jean-Paul Vincken¹, Hans-Gerd Janssen³, ¹Wageningen University and Research, Netherlands; ²Unilever, Netherlands; ⁴Unilever, United States

Analytical

Surface Methods and Analysis

Joint session with the Surfactants and Detergents Division

Chair: Rick Theiner, Evonik Industries, USA and Jeff Botts, Corbion, USA

Regency VII

- 1:25 **Introduction**
- 1:30 **Use of 1H NMR as a rapid analytical technique to distinguish between emulsifier and surfactant classes coupled with cosine similarity computations as part of a raw material surveillance program.** Margaret Walsh^{*1}, Jeff Botts², ¹Emulsifiers, Corbion, United States; ²Sustainable Food Solutions, Corbion, United States
- 1:50 **Understanding interfaces: Using contact angle measurements to determine surface tension, interfacial tension, and kinetic properties from contact angle hysteresis.** Daniel Scholz^{*1}, Paul Simutis², ¹DataPhysics Instruments GmbH, Germany; ²DataPhysics Instruments USA Corp., United States
- 2:10 **The spinning drop method: An accurate technique to study interfaces at low interfacial tensions.** Ronald Marquez^{*1}, Jose Maria Zamora², ¹Laboratoire Physico-Chimie des Interfaces Complexes, TotalEnergies, Lille Univ., ESPCI, France; ²CITEC ULA, Venezuela
- 2:30 **Fundamental interfacial properties and industrial applications of a new class of surface active docosanols and higher alcohol ethoxylates.** Ramesh Varadaraj*, Ollie Normand, Dustin Landry, R&D, Sasol North America, United States
- 2:50 **Rheological-based approach to gel curve analysis of alcohol ethoxylates.** Timothy King^{*1}, Franklin Caputo¹, Auriana Hughes¹, Julian Barnes², ¹Shell Global Solutions US Inc., United States, ²Shell Global Solutions International B.V., United States
- 3:10 **Good, better, best: 3 Methods to quantify surfactant performance in laundry detergent tests.** Caspar van Leeuwen, Remco Langedijk*, Patrick Zwamborn, Center for Testmaterials BV, Netherlands

Analytical

Edible Oil Contaminants—Analysis and Industrial Perspective

Joint session with the Processing Division

Sponsored by Clariant

Chairs: Jan Kuhlmann, SGS Germany GmbH, Germany; and Wim de Greyt, Desmet Ballestra Group, Belgium

Regency V

- 1:25 **Introduction**
- 1:30 **Mitigation of MCPD in physically refined palm oil.** Kornél Nagy*, Marine Nicolas, Karine Redeuil, Xanthippe Theurillat, *Nestlé Research—Société Des Produits Nestlé SA, Switzerland*
- 1:50 **MCPD and glycidyl esters—presentation of a modular analysis method for oils and fats as well as compound foods.** Martin Kaminski*, *Department 5, BVL, Germany*
- 2:10 **Determination of 3-MCPD and glycidol in food emulsifiers: Analytical solution and multi-laboratory validation.** Jan Kuhlmann*, *SGS Germany GmbH, Germany*
- 2:30 **Recent analytical methodologies for the determination of MOSH/MOAH in edible oils & fats.** Susanne Kühn*, Michael Koch, *Institut Kirchoff Berlin GmbH part of Mérieux NutriSciences, Germany*
- 2:50 **MOSH/MOAH in edible oils and fats: Current status and mitigation solutions.** Antonios Papastergiadis*, Wim De Greyt, *R&D Centre, Desmet Ballestra Group, Belgium*

Biotechnology

New Crops for Oils/Feedstock Engineering

Joint session with the Industrial Oil Products Division

Chairs: Roque Evangelista, USDA ARS NCAUR, USA; and Mahesh Balwant Khot, Farmsow Pvt. Ltd., India

Hanover F

- 1:25 **Introduction**
- 1:30 **Carinata: An emerging biofuel feedstock platform.** Rick Bennett*, *Nuseed, Canada*
- 1:50 **Camelina breeding and development—A Canadian perspective.** Christina Eynck*, *Specialty Crop Breeding, AAFC, Canada*
- 2:10 **CoverCress—A novel oilseed winter crop with canola-like composition that helps sequester carbon and prevent soil erosion.** Tim Ulmasov*, *CoverCress Inc., United States*
- 2:30 **Targeted genome editing of industrial oilseed crops to enhance synthesis of functional lipids.** Linah Alkotami*¹, Maliheh Esfahanian², Brice Jarvis³, Kathleen M. Schuler⁴, Jianhui Zhang⁵, Somnath Koley⁶, Doug K. Allen⁷, Chaofu Lu⁸, John Sedbrook⁹, Timothy Durrett¹, ¹*Biochemistry and Molecular Biophysics, Kansas State University, United States; 2**Plant Biology, Carnegie Institution for Science, United States; 3**Illinois State University, United States; 4**Biochemistry, Kansas State University, United States; 5**Plant Sciences & Plant Pathology Department, Montana State University, United States; 6**Donald Danforth Plant Science Center, United States; 7**Agricultural Research Service, U.S. Department of Agriculture/Donald Danforth Plant Science Center, United State; 8**Montana State University, United States; 9**Biological Sciences, Illinois State University, United States*
- 2:50 **Development of dedicated non-food oil crops for industrial oil production through metabolic engineering.** Xueyuan Li, Emelie Ivarson, Li-Hua Zhu*, *Swedish University of Agricultural Sciences, Lomma, Sweden*

- 3:10 **Viability of utilization of *Chrysophyllum albidum* seed oil as bio-industrial fluid.** Chinedu M. Agu*¹, Goziya W. Dzarma¹, Albert C. Agulanna², Emeka L. Udokporo², ¹*Chemical Engineering, Michael Okpara University of Agriculture, Nigeria; 2**Centre for Environmental Management and Control, University of Nigeria, Enugu Campus, Nigeria*

Edible Applications Technology

Phase Transitions and Interfacial Phenomena in Complex Food Systems

Chairs: Andrew Gravelle, University of California, Davis, USA; and Reed Nicholson, Motif FoodWorks, Inc., USA

Hanover AB

- 1:25 **Introduction**
- 1:30 **From molecular assemblies to nutritious food products.** Maya Davidovich-Pinhas*, *Technion—Israel Institute of Technology, Israel*
- 1:50 **Role of interfacial compositions in achieving dispersed phase-induced gelation and controlled digestion of oil-in-water bilayer nanoemulsions.** Kunal Kadiya*, Supratim Ghosh, *Department of Food and Bioproduct Sciences, University of Saskatchewan, Canada*
- 2:10 **Tailored rigidity of W/O Pickering emulsions using diacylglycerol-based surface-active solid lipid nanoparticles.** Yong Wang*, Chaoying Qiu¹, Guoyan Li, *Jinan University, China (People's Republic)*
- 2:30 **Edible oleofoams stabilized by fatty acid and fatty alcohol crystalline particles.** Anne-Laure Fameau*, *INRAE, France*
- 2:50 **Fabrication and characterization of oleofoams composed of the edible oils and tribehenoil-glycerol: Towards stable and higher air content colloidal system.** Kazuki Matsuo*¹, Satoru Ueno², ¹*POLA Chemical Industries, Inc., Japan; 2**Hiroshima University, Japan*

Industrial Oil Products

New Crops for Oils/Feedstock Engineering

Chairs: Roque Evangelista, USDA ARS NCAUR, USA; and Mahesh Balwant Khot, Farmsow Pvt. Ltd., India

Hanover F

Joint session with the Biotechnology Division. **See details on this page.**

Lipid Oxidation and Quality

Antioxidant Applications: Emulsions, Biofuels, Proteins, and More

Sponsored by BTSA

Chairs: Claire Berton-Carabin, INRAE, France; and Andrew Elder, Kalsec, Inc., USA

Hanover D

- 1:25 **Introduction**
- 1:30 **Lipid oxidation in emulsions and bulk oils: A review of the importance of micelles.** Pierre Villeneuve*¹, Eric A. Decker², Erwann Durand³, Julian McClements⁴, Claire Bourlieu-Lacanal⁵, ¹*CIRAD, France; 2**Food Science, University of Massachusetts Amherst, United States; 3**CIRAD/UMR QUALISUD, France; 4**U Mass, United States; 5**UMR IATE, INRAE/Univ Montpellier/Institut Agro, France*
- 2:10 **Succinylated cellulose-based ampholytic amphiphiles as a novel dual-function emulsifier for the emulsions.** Li Ziqian*¹, Zheng Guo², ¹*Aarhus University, Denmark; 2**Department of Biological and Chemical Engineering, Aarhus University, Denmark*

- 2:30 **Enhancing antioxidant capacity at the interfaces of oil-in-water emulsions stabilized by phenolic conjugated protein: protein structure and surface activity effect.** Hui Li*, Bingcan Chen, *Plant Sciences, North Dakota State University, United States*
- 2:50 **Lipid oxidation in pickering emulsions.** Claire Berton-Carabin*, *INRAE Nantes, France*
- 3:10 **Mindful snacking: Formulating antioxidant solutions to increase extruded puffed snack stability.** Jennifer Young*, *Food Protection, Kalsec, United States*

Processing

Edible Oil Contaminants—Analysis and Industrial Perspective

Sponsored by Clariant

Chairs: Jan Kuhlmann, *SGS Germany GmbH, Germany*; and Wim de Greyt, *Desmet Ballestra Group, Belgium*

Regency V

Joint session with the Analytical Division. See page 61 for details.

Processing

Control, Instrumentation, and Machine Learning

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Jonathon Speed, *Keit Spectrometers, UK*; and William Younggreen, *Alfa Laval Inc., USA*

Centennial I

- 1:25 **Introduction**
- 1:45 **Static optics FTIR spectroscopy for the measuring and control of fermentation.** Jonathon Speed*, *Keit Spectrometers, United Kingdom*
- 2:05 **Raman spectroscopy as a tool for understanding oil or fat quality in food products.** Karen Esmonde-White*, Tory Woolf, Mary Lewis, Ian Lewis, *Endress+Hauser, United States*
- 2:25 **Interpretability as a quality parameter for validation of sensor analytics approaches.** Geir Rune Flaaten*, *Aspentech, Norway*
- 2:45 **Advanced process control in edible oils refining.** Richard Sallis*, *Keit Spectrometers, United States*

Protein and Co-Products

Protein Based Hydrocolloids for Food and Health Applications

Chairs: Lingyun Chen, *University of Alberta, Canada*; and Navam Hettiarachchy, *University of Arkansas-Fayetteville, USA*

Hanover E

- 1:25 **Introduction**
- 1:30 **Gluten as a unique protein building cereal product structure, is there an alternatives?** Presenter to be announced
- 1:50 **Pulse starch as a promising gelling agent and resistant starch source for industrial applications.** Yongfeng Ai*, *Food and Bioproduct Sciences, University of Saskatchewan, Canada*
- 2:10 **Pickering emulsions stabilized by soybean protein isolate/cellulose nanofibrils: Influence of pH.** Xingzhong Zhang¹, Xiaogang Luo², Yixiang Wang^{*3}, Yan Li¹, Bin Li¹, Shilin Liu¹, ¹Huazhong Agricultural University, China (People's Republic); ²Wuhan Institute of Technology, China (People's Republic); ³McGill University, Canada
- 2:30 **Comparing the structure and functionality of amyloid fibrils assembled from peanut, pea, lentil, and mung bean proteins.** Sara Zamani¹, Fan Bu¹, Lanfang Shi¹, Derek Dee^{*2}, ¹The University of

British Columbia, Canada; ²Faculty of Land and Food Systems, The University of British Columbia, Canada

- 2:50 **Self-assembly and hydrogelation properties of egg white-derived peptides.** Raliat Abioye^{*1}, Xiaohong Sun², Pei Chun Queenie Hsu³, Caleb Acquah², Nico Huttmann³, Chibuikwe Udenigwe³, ¹Chemistry and Biomolecular Sciences, University of Ottawa, Canada; ²School of Nutrition Sciences, University of Ottawa, Canada; ³University of Ottawa, Canada
- 3:10 **Structural design of plant protein gel networks for food applications.** Lingyun Chen*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

Surfactants and Detergents

Surface Methods and Analysis

Chair: Rick Theiner, *Evonik Industries, USA* and Jeff Botts, *Corbion, USA*

Regency VII

Joint session with the Analytical Division. See page 60 for details.

Tuesday | Late Afternoon

Analytical

Advanced Methods of Analysis, Including Lipidomics

Chairs: William C. Byrdwell, *USDA ARS BHNRC MAFCL, USA*; and Hari Kiran Kotapati, *USDA ARS MAFCL, USA*

Hanover C

- 3:55 **Introduction**
- 4:00 **Combining near-complete characterization with quantitation for lipid analysis in matrix using electron activated dissociation.** Mackenzie J. Pearson*, Paul Norris, Ryan Anderson, *SCIEX, United States*
- 4:20 **Lipid separation and structural characterization using travelling wave cyclic ion mobility.** Giorgis Isaac*, Hernando Olivos, Robert Plumb, *Biomedical Research, Waters Corporation, United States*
- 4:40 **Unknown unknowns in lipidomics: A de novo method for fatty acid discovery.** Stephen Blanksby*, Philipp Menzel, Reuben Young, David Marshall, Berwyck Poad, *Queensland University of Technology, Australia*
- 5:00 **Potential of lipid class separation—mass spectrometry approaches for high-throughput lipidomic quantitation.** Michal Holčapek*, *Department of Analytical Chemistry, University of Pardubice, Czech Republic*
- 5:20 **Fast chromatography with dual parallel mass spectrometry for lipidomic analysis and regioisomer quantification of pulse lipids.** William C. Byrdwell^{*1}, Hari Karin Kotapati², ¹Methods and Application of Food Composition Lab, *USDA ARS BHNRC MAFCL, United States*; ²Nutrition and Food Science, *University of Maryland, United States*
- 5:40 **Update on guidelines for lipidomics analysis and reporting.** Kim Ekroos^{*1}, Robert Ahrends², Christer Ejsing³, Nils Hoffmann⁴, Michal Holčapek⁵, Harald Köfeler⁶, Jeffrey McDonald⁷, Gerhard Liebis⁸, ¹Lipidomics Consulting Ltd, *Finland*; ²University of Vienna, *Austria*; ³European Molecular Biology Laboratory, *Germany*; ⁴Universität Bielefeld, *Germany*; ⁵Department of Analytical Chemistry, *University of Pardubice, Czech Republic*; ⁶Lipidomics Research Center Graz, *Austria*; ⁷UT Southwestern, *United States*; ⁸University of Regensburg, *Germany*

Biocatalysis—Enzyme Processing

Chairs: Jun Ogawa, Kyoto University, Japan; and Lu-Kwang Ju, The University of Akron, USA

Regency VII3:55 **Introduction**

4:00 **Production of value-added oleochemicals via Eversa immobilized lipase-catalyzed esterification.** In-Hwan Kim*, Dongchan Oh, Suhyeon Choi, Korea University, Republic of Korea

4:20 **Immobilized lipase in the synthesis of high purity medium chain diacylglycerols using a bubble column reactor: Characterization and application.** Jiazi Chen*, Jinan University, China (People's Republic) (**Biotechnology Division Student Award Winner**)



4:40 **Applications and benefits of phospholipase A enzymes in seed oil processing.** Ying Zha¹, Nikita Iltchenko*¹, Jesse Beam², ¹DSM Food & Beverage, Netherlands; ²DSM Food & Beverage, United States

5:00 **Temperature effects on enzyme stability for carbohydrate hydrolysis of soy materials.** Md Fauzul Kabir*, Lu-Kwang Ju, Chemical, Biomolecular, and Corrosion Engineering, The University of Akron, United States

5:20 **Bioprocessing strategies to improve the extractability and functional properties of lipids, proteins, and carbohydrates from full-fat chickpea flour.** Fernanda Furlan Goncalves Dias*, Kazunori Machida, Juliana Leite Nobrega De Moura Bell, University of California, Davis, United States

Edible Applications Technology**Surfactants in Food**

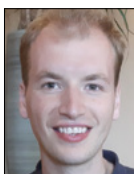
Joint session with the Surfactants and Detergents Division

Chairs: Pulari Krishnankutty Nair, Danone North America, USA; and Kaustuv Bhattacharya, IFF, Denmark

Hanover AB3:55 **Introduction**

4:00 **Local distribution of limonene in phospholipid vesicles.** Ann-Dorie Webley*¹, Stephanie Dungan¹, Susan Ebeler³, ¹Food Science and Technology, University of California Davis, United States; ³Viticulture and Enology, University of California Davis, United States

4:20 **Transport of lipid oxidation intermediates and its impact on the lipid oxidation rate in a model food emulsion.** Sten ten Klooster*¹ (**Edible Applications Technology Division Student Award Winner**), Karin Schroën¹, Claire Berton-Carabin², ¹Food Process Engineering, Wageningen University, Netherlands; ²INRAE Nantes, France



4:40 **Extraction of clove oil via solvent-enhanced capillary displacement.** Carol Tan*, Edgar Acosta, Chemical Engineering and Applied Chemistry, University of Toronto, Canada

5:00 **Sucralose hydrogels: Peering into the reactivity of sucralose versus sucrose using lipase catalyzed trans-esterification.** George John*¹, Malick Samateh¹, Siddharth Marwaha², Jose James², Vikas Nanda², ¹Chemistry and Biochemistry, City College of New York (CUNY), United States; ²Biochemistry, Rutgers University, United States

5:20 **Methods of improving the lactose recovery from the permeate and the drying ability of Greek yogurt whey.** Venkateswarlu Sunkesula*, Idaho Milk Products, United States

5:40 **Panel discussion****The Role of Lipids and Related Nutrients in Companion Animal Health**

Chairs: Elaine Krul, EKSci, LLC, USA; and Christine Rogers-Kelly, Mississippi State Chemical Lab, USA

Hanover F3:55 **Introduction**

4:00 **Nutritional opportunities to advance companion animal health—focus on lipids and related nutrients.** Elaine S. Krul*, EKSci, LLC, United States

4:20 **An investigation into the effect of high fat and carbohydrate diets on a range of biomarkers associated with pancreatitis in dogs.** David G. Thomas*¹, Mark Roberts², Wayne Young³, David Thomas⁴, Emma Bermingham³, ¹School of Agriculture & Environment, Massey University, New Zealand; ²Nutritional Instinct Consultancy Services LLC, United States; ³AgResearch Ltd, New Zealand; ⁴School of Veterinary Science, Massey University, New Zealand

4:40 **Technologies utilizing MCT oil for canine health.** Christina Germain*, Yuanlong Pan, Hui Xu, Sandeep Bhatnagar, Brian Zanghi, Brian Larson, Asa Gore, Nestle Purina Petcare, United States

5:00 **Bioactive lipids and related nutrients in companion animal and poultry diets for reducing inflammation and improving immunity.** Elizabeth Bobeck*, Animal Science, Iowa State University, United States

5:20 **Dietary choline in feline nutrition and its role in obesity prevention and liver health.** Adronie Verbrugghe*, Alexandra Rankovic, Ontario Veterinary College, University of Guelph, Canada

Lipid Oxidation and Quality**Lipid Oxidation in Omega-3 Products and Stabilization Strategies****Sponsored by BTSa**

Chairs: Janaka Senanayake, CFS North America, LLC, USA; and Haizhou Wu, Chalmers University of Technology, Sweden

Hanover D3:55 **Introduction**

4:00 **Delivery systems for omega-3 oils.** Charlotte Jacobsen*¹, Ann-Dorit Moltke Sørensen¹, Betül Yesiltas¹, Pedro J. Garcia-Moreno², ¹National Food Institute, Technical University of Denmark, Denmark; ²Department of Chemical Engineering, University of Granada, Spain

4:20 **Strategies to prevent hemoglobin-mediated lipid oxidation in fish.** Ingrid Undeland*, Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden

4:40 **Co-encapsulation of fish oil with essential oils, lutein, and curcumin to produce stable fish oil powders with multiple functionalities using ovalbumin-polysaccharide coacervation.** Shulan Xiao*, Dong Ahn, Animal Science, Iowa State University, United States

5:00 **Developing pickering and nanoemulsions for inhibiting lipid oxidation of aquatic food products.** Hongshun Yang*¹, Zhongyang Ren², Xiao Feng³, ¹Food Science and Technology, National University of Singapore, Singapore; ²Ocean Food and Biological Engineering, Jimei University, China (People's Republic); ³Food Science and Engineering, Nanjing University of Finance & Economics, China (People's Republic)

5:20 **Inhibitory effect of sphingoid bases on the oxidative flavor deterioration of fish oil.** Kazuo Miyashita*¹, Masashi Hosokawa², ¹Obihiro University of Agric and Vet Med, Japan; ²Faculty of Fisheries Sciences, Hokkaido University, Japan

- 5:40 **Stability of omega-3 fatty acids in different lipid forms analyzed by SPME-GC-MS, NMR and loss of antioxidants.** Kaisa Linderborg*, Annelie Damerau, Eija Ahonen, Maaria Kortensniemi, *Department of Life Technologies, University of Turku, Finland*

Processing

Food Safety, Process Safety, and Energy

Sponsored by Clariant

Chairs: Matthew Williamson, *ADF Engineering, USA*; and Richard Clough, *Texas A&M University, USA*

Regency V

- 3:55 **Introduction**
- 4:00 **Cost effective hygienic design strategies for your protein plant.** Dennis M. McCullough*, Scott Korte, *Process Plus LLC, United States*
- 4:20 **Maintaining compliance with combustible dust regulations.** Matthew Williamson*, *ADF Engineering, United States*
- 4:40 **Energy management systems.** John Barry*, *Barry Consulting Services LLC, United States*
- 5:00 **Controlling outcomes succeeding in safety.** Brent German*, *Blind Corner Solutions LLC, United States*
- 5:20 **Recent advances in enzymatic fat splitting—has the time come for wide industrial plant implementation?** Hans Christian Holm*, *Novozymes AS, Denmark*

Protein and Co-Products

Functionality of Proteins in Foods and Interactions with Other Food Components

Chairs: Jiajia Rao, *North Dakota State University, USA*; Chibuike Udenigwe, *University of Ottawa, Canada*; and Yifu Chu, *University of Alberta, Canada*

Hanover E

- 3:55 **Introduction**
- 4:00 **Enhancing pea protein functionalities through “green” modifications for food applications.** Yonghui Li*¹, Yanting Shen², Shan Hong², ¹*Grain Science and Industry, Kansas State University, United States*; ²*Kansas State University, United States*
- 4:20 **Improved emulsification behaviour of pea protein-polysaccharide complexes for beverage application.** Burcu Guldiken¹, Maxime Saffon², Supratim Ghosh*¹, Michael Nickeson¹, ¹*University of Saskatchewan, Canada*; ²*Nestle Product Development Center, United States*
- 4:40 **The role of conformational state of pea protein fractions on the oil/water dynamic adsorption, rheological interfacial properties and emulsifying properties.** Liuyi Chang*¹, Jiajia Rao, *Plant Science, North Dakota State University, United States*
- 5:00 **Effects of extraction methods on the composition, structure, and gelling mechanism of pea proteins.** Jingqi Yang*, Lingyun Chen, ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

- 5:20 **Functional, nutritional properties and aroma profile of hemp protein isolate by reverse micelles extraction technique: Impact of defatting processing.** Baochen Fang*, Jiajia Rao, *North Dakota State University, United States*

Surfactants and Detergents

Surfactants in Food

Chairs: Pulari Krishnankutty Nair, *Danone North America, USA*; and Kaustuv Bhattacharya, *IFF, Denmark*

Hanover AB

Joint session with the Edible Applications Technology Division. **See page 63 for details.**

Surfactants and Detergents

Surfactant Mixtures and Trace Components

Chairs: Sukhwan Soontravanich, *Ecolab, USA*; and Ronald Marquez, *TotalEnergies, France*

Centennial I

- 3:55 **Introduction**
- 4:00 **Surfactants adsorbed at the water/oil interface.** Reinhard Miller*, *Soft Matter Physics, TU Darmstadt, Germany*
- 4:20 **Anionic and cationic surfactant synergism: Minimizing precipitation, microemulsion formation, and enhanced solubilization and surface modification.** Parichat Phaodee*¹, David Sabatini², ¹*Ecolab Inc., United States*; ²*University of Oklahoma, United States*
- 4:40 **Effect of surfactant mixtures on the coalescence and rheology of densely packed emulsions—theory and experiments.** Enric Santanach-Carreras*¹, Huy-Hong-Quan Dinh¹, Marie Lalanne-Aulet¹, Pascal Panizza², Veronique Schmitt³, François Lequeux⁴, ¹*TotalEnergies SE, France*; ²*Université de Rennes 1/ESPCI/Laboratoire PIC, France*; ³*CRPP Bordeaux/CNRS, France*; ⁴*CNRS SIMM ESPCI/Laboratoire PIC CNRS/TotalEnergies/ESPCI, France*
- 5:00 **Exploration of surfactant additives for improvement of bitumen froth.** Daniel S. Miller*¹, Heather Wiles², David Brennan², Adam Schmitt², Kathryn Grzesiak², Rohini Gupta², Tom Kalantar², Harpreet Singh², Tzu-Chi Kuo³, ¹*Core R&D, Formulation, Automation & Material Science, Dow Inc., United States*; ²*Dow Inc., United States*; ³*The Dow Chemical Company, United States*
- 5:20 **Aldehydes in poloxamer and PEGs-detection and quantification.** Sharda Prasad*, *BASF Corporation, United States*
- 5:40 **The role of natural surfactants in gas hydrate anti-agglomeration in crude oil systems.** Jose Delgado-Linares*, Hannah Stoner, Nur Ismail, Ahmad Majid, Carolyn Koh, *Colorado School of Mines, United States*



Did you miss the Industry Updates pre-meeting sessions?

These sessions are available to view on demand at 22AOCS.meetbreakout.com. See page 38 for presentation information.

Analytical

Trace Contaminants

Chairs: Jessica Beekman, US Food & Drug Admin, USA; and Jan Kuhlmann, SGS Germany GmbH, Germany

Hanover C

- 7:25 **Introduction**
- 7:30 **Analysis of MCPD and glycidyl esters: Recent occurrence data in U.S. infant formulas and effects of cooking on contaminant concentrations in frozen fried foods.** Jessica Beekman*, Samanta Popol, Steven Peyton, Shaun MacMahon, *Center for Food Safety and Applied Nutrition, U.S. FDA, United States*
- 7:50 **LC-GC×GC-TOFMS/FID: Extra dimensionality to untangle mineral oil contamination: A particular look into the MOAH fraction.** Gregory Bauwens, Giorgia Purcaro*, *Gembloux Agro-Bio Tech, University of Liege, Belgium*
- 8:10 **Determination of MOSH and MOAH—German standard method with improved precision data.** Ludger Ruehl*, *Institut für Sicherheit und Qualität bei Getreide, Max Rubner-Institut, Germany*
- 8:30 **Solutions for modern routine analysis of mycotoxins in edible oils.** Jan Kuhlmann, Nicolaus von Mouillard*, *SGS Germany GmbH, Germany*
- 8:50 **Gas chromatography-mass spectrometry (GC-MS) and liquid chromatography-high resolution mass spectrometry (LC-HRMS) approaches for analysis of chlorinated paraffins in edible fats and oils.** Thomas J McGrath*¹, Franck Limonier², Giulia Poma¹, Jasper Bombeke¹, Raf Winand³, Kevin Vanneste³, Mirjana Andjelkovic², Els Van Hoeck², Laure Joly², Adrian Covaci¹, ¹*Toxicological Centre, University of Antwerp, Belgium*; ²*Chemical and Physical Health Risks Department, Sciensano, Belgium*; ³*Transversal activities in Applied Genomics, Sciensano, Belgium*
- 9:10 **EU policy on certain processing contaminants in vegetable oils and foods containing vegetable oils: recent developments and outlook.** Frans Verstraete*, *Directorate General for Health and Food Safety, European Commission, Belgium*

Analytical

Phospholipid Analysis in Food and Nutrition Research

Joint session with the Phospholipid Division

Chairs: Michael Bukowski, USDA ARS, USA; and Francesca Giuffrida, Nestle Research Center, Switzerland

Hanover F

- 7:25 **Introduction**
- 7:30 **Current challenges in phospholipid analysis in bovine milk.** Zhiqian Liu*, Simone Rochfort, *Agriculture Victoria Research, Australia*
- 7:50 **Differentiation of the animal source of milk and milk products by means of ¹H NMR and ³¹P NMR spectroscopy.** Bernd Diehl*, *Spectre Service AG, Germany*
- 8:10 **Identification of glycerophospholipid species in food and biological matrices by supercritical fluid chromatography coupled with high resolution mass spectrometry.** Francesca Giuffrida*, *Societe des produits Nestlé, Switzerland*
- 8:30 **Shotgun lipidomics assistant: An open-source application to facilitate high-throughput, comprehensive lipidomics.** Baolong Su¹, Mackenzie J. Pearson², Steven J. Bensinger³, Kevin J. Williams*¹, ¹*Biological Chemistry, UCLA, United States*; ²*SCIEX, United States*; ³*Microbiology, Immunology, & Molecular Genetics, UCLA, United States*
- 8:50 **Panel discussion**

Biotechnology

Breeding and Biotechnology for Improved Quality of Food Proteins

Joint session with the Protein and Co-Products Division

Chairs: Phil S. Kerr, Prairie AquaTech, LLC, USA; and Long Zou, Bunge Creative Solutions Center, USA

Hanover E

- 7:25 **Introduction**
- 7:30 **High-yield soybean lines with improved seed protein and oil balance.** George Graef*, *Dept. of Agronomy & Horticulture, University of Nebraska-Lincoln, United States*
- 7:50 **Ultra-high protein soybeans for food and aquaculture.** Michael Lassner*, *Amfora, Inc., United States*
- 8:10 **Developing high yielding soybean varieties with desirable carbohydrate fraction for enhancing nutrition.** Henry T. Nguyen*, Pengyin Chen, Tri D. Vuong, Haiying Shi, Dongho Lee, Ali Md Alikat, *Plant Science & Technology, University of Missouri, United States*
- 8:30 **Evaluating breeding and management solutions for methionine content in soybean.** William M. Singer*¹, Zachary Shea², Dajun Yu², Keren Brooks¹, Mark Reiter¹, David L. Holshouser¹, Haibo Huang³, Rouf Mian⁴, Maria L. Rosso¹, Bo Zhang¹, ¹*School of Plant and Environmental Sciences, Virginia Tech, United States*; ²*Virginia Tech University, United States*; ³*Food Science and Technology, Virginia Tech, United States*; ⁴*Soybean & Nitrogen Fixation Unit, USDA-ARS, United States*
- 8:50 **Modifying oil and protein quality in hemp using modern conventional breeding approaches.** Rich Fletcher*, *New West Genetics, United States*
- 9:10 **Production of highly soluble and functional hydrolysates from sunflower proteins.** Sophie Beaubier*¹, Sara Albe Slabi², Odile Mesieres³, Marine Bianeis², Olivier Galet², Romain Kapel³, ¹*University of Lorraine, LRGP CNRS, France*; ²*Groupe AVRIL, France*; ³*LRGP CNRS UMR7274, France*

Edible Applications Technology

Interactions Between Lipids and Other Ingredients in Plant-based Products

Chairs: Karel Hrnčirik, Upfield, Netherlands; and Zong Meng, Jiangnan University, China

Hanover AB

- 7:25 **Introduction**
- 7:30 **Polysaccharide microgel particles-dominated Pickering emulsion gels for oil structuring: Formation, interfacial layer construction, and physical properties.** Zong Meng*, Qinbo Jiang, *School of Food Science and Technology, Jiangnan University, China (People's Republic)*
- 7:50 **Development and characterization of a novel, edible oleocolloid made of rice bran wax oleogel and sodium alginate-kappa-carrageenan hydrogel.** Julia Nutter*¹, Xiaolei Shi¹, Nuria Acevedo², ¹*Food Science and Human Nutrition, Iowa State University, United States*; ²*Griffith Foods, United States*
- 8:10 **Spontaneous aggregation of glutathione in aqueous solutions and the use of Ellman's procedure to detect thiol moieties.** Shajahan G. Razu¹, Gurpreet Matharoo², Iris Joye³, Wei Cao³, Erzsebet Szabo⁴, David A. Pink*⁵, ¹*Chemistry, St. Francis Xavier University, Canada*; ²*ACENET/Physics Dept., Compute Canada/ACENET, Canada*; ³*Food Science, University of Guelph, Canada*; ⁴*Physics, St. Francis Xavier University, Canada*; ⁵*Physics/Food Science, St. Francis Xavier University/University of Guelph, Canada*
- 8:30 **Effect of crosslinking gelatin with tannic acid on the mechanical and thermal properties of gelatin—beeswax biphasic**

gel. Ariana Saffold*¹, Nuria Acevedo², ¹Food Science and Human Nutrition, Iowa State University, United States; ²Griffith Foods, United States

8:50 Panel discussion

Lipid Oxidation and Quality

Lipid Oxidation and Quality General Session

Sponsored by Kalsec

Chairs: Hong-Sik Hwang, USDA ARS NCAUR, USA; and Sumudu Warnakulasuriya, University of Saskatchewan, Canada

Hanover D

7:25 Introduction

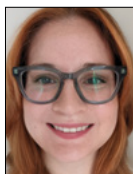
7:30 **Formation of reactive aldehydes (MDA, HHE, HNE) during *in vitro* digestion of cod muscle: role of hemoglobin from trout and bovine sources.** Haizhou Wu*¹, Cecilia Tullberg², Ingrid Undeland³, ¹Dept of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden; ²Biotechnology, Lund University, Sweden; ³Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden

7:50 **Lipid oxidation in sorted herring (*Clupea harengus*) filleting co-products and its relationship to composition.** Haizhou Wu*¹, Bitu Forghani², Mehdi Abdollahi¹, Ingrid Undeland¹, ¹Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden; ²Chalmers University of Technology, Sweden

8:10 **Influence of monosodium glutamate on the oxidative stability of meat lipids.** Jon Alberdi-Cedeno*, Kübra Demir, Marc Pignitter, Department of Physiological Chemistry, University of Vienna, Austria

8:30 **Savoury snacks: How to improve their quality and shelf life by using naturally derived food additives?** Henna Lu*, R&D, Kalsec Europe Ltd, United Kingdom

8:50 **Epoxides are major products in oxidation of methyl oleate and linoleate and their triacylglycerols.** Morgan Kandrac* (**Hans Kaunitz Award Winner**), Karen M. Schaich, Food Science, Rutgers University, United States



9:10 **Quantitative evaluation of oxidative stability of biomembrane lipids in the presence of vitamin E.** Atsushi Takahashi* (**Edwin N. Frankel Award for Best Paper in Lipid Oxidation and Quality Winner**), Ryota Takahashi, Kousuke Hiromori, Naomi Shibasaki-Kitakawa, Tohoku University, Japan



Phospholipid

Phospholipid Analysis in Food and Nutrition Research

Chairs: Michael Bukowski, USDA ARS, USA; and Francesca Giuffrida, Nestle Research Center, Switzerland

Hanover F

Joint session with the Analytical Division. See page 65 for details.

Join the conversation!



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Processing

New and Emerging Technology

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Fernanda Furlan Goncalves Dias, University of California, Davis, USA; and Orayne Mullings, Desmet Ballestra North America Inc., USA

Regency V

7:25 Introduction

7:30 **Purification of fumarated rosin.** Bing Wang*¹, Mitra Ganewatta², ¹Ingevity, United States; ²Innovation, Ingevity, United States

7:50 **Latest developments in ice condensing in oil refining: The SAFE solution.** Marc Kellens, Bart Schols*, Desmet Ballestra OFO, Belgium

8:10 **Understanding the impact of proteolysis on extractability, physicochemical, and functional properties of proteins and lipids from almond flour.** Juliana Leite Nobrega De Moura Bell*, Fernanda Furlan Goncalves Dias, Food Science and Technology, University of California, Davis, United States

8:30 **Oilseeds extraction using 2-methyloxolane as an alternative bio-based solvent to hexane.** Ombeline Claux*, GREEN Laboratory, Avignon University, France

8:50 **Effect of ultrasound disruption on lipid extraction from *Nannochloropsis* sp.** Esther Mienis*¹, Dries Vandamme², Imogen Foubert³, ¹Microbial and Molecular Systems, KU Leuven, Belgium; ²Analytical and circular chemistry, UHasselt, Belgium; ³KU Leuven, Belgium

9:10 **Optimization of feed preparation for sunflower meal prior to protein separation using triboelectric belt separation.** Natsuki Barber*, Abhishek Gupta, ST Equipment & Technology, United States

Protein and Co-Products

Breeding and Biotechnology for Improved Quality of Food Proteins

Chairs: Phil S. Kerr, Prairie AquaTech, LLC, USA; and Long Zou, Bunge Creative Solutions Center, USA

Hanover E

Joint session with the Biotechnology Division. See page 65 for details.

Surfactants and Detergents

Regulatory Issues

Chairs: Yvon Durant, Itaconix Corporation, USA; and Jennifer Foreman, ExxonMobil Chemical Company, USA

Centennial I

7:25 Introduction

7:30 **Category development of safer choice qualified branched alcohol ethoxylates.** Jennifer Foreman*, ExxonMobil, United States

7:50 ***In silico* tools for study endpoint predictions, their use and abuse in regulatory toxicology and ecotoxicology.** Paul Thomas*, KREATIS, France

8:10 **Fish cell lines as animal-free and resource-efficient alternatives to fish in environmental risk assessment.** Stephan Fischer*¹, Melanie Fischer², Kristin Schirmer², ¹aQuaTox-Solutions Ltd., Switzerland; ²Department Environmental Toxicology, Eawag, Swiss Federal Institute of Aquatic Science and Technology, Switzerland

8:30 **Surfactants category: An Integrated Approach to Testing and Assessment (IATA) including new approach methods (NAMs) for assessing inhalation risks under the Toxic Substances Control Act (TSCA).** Annie Jarabek*¹, Tala R. Henry², ¹U.S. Environmental

8:50 **Panel discussion**

Surfactants and Detergents

Household and I&I Cleaning

Chair: Julian Barnes, Shell Global Solutions International B.V., Netherlands
Regency VII

7:25 **Introduction**

- 7:30 **The role of interfacial and transport phenomena in consumer and industrial applications.** Padma P. Varanasi*, Care Chemicals, BASF, United States (*Samuel Rosen Memorial Award Winner*)



- 7:50 **Approaches and cleaning mechanisms to remove stubborn stains using methyl ester ethoxylate surfactant.** Junya Sato*, Shiho Kuroda, Hideaki Watanabe, Hiroyuki Masui, Lion Corporation, Japan
- 8:10 **Laundry sustainable goals need a paradigm change in cleanliness testing.** Rodrigo Olmedo*, CONSUMERTEC, Ecuador
- 8:30 **Effect of alkyl chain length, branching and oligomer distribution of alcohol ethoxylates on performance in textile cleaning applications.** George A. Smith*, Gabriel Ortego, Research & Development, Sasol, United States
- 8:50 **From concept to practice: Development of fully 'biological' cleaning products.** Thomas Burns*¹, Renata Hyczy², Jatin Sharma¹, ¹Consumer Biosolutions, Novozymes North America, Inc., United States, ²Household Care, Novozymes, United States
- 9:10 **Evaluation of alcohol ethoxylates for industrial & institutional laundry.** Nelson E. Prieto*, David Benitez, Christian Jones, R&D, Applications, Sasol, United States

Wednesday | Late Morning

Analytical

Rapid and High-throughput Screening Methods

Chairs: David Barr, Bruker BioSpin Corp., USA; and Torben Kuechler, Eurofins Analytik GmbH, Germany

Hanover C

9:55 **Introduction**

- 10:00 **¹H-NMR spectral fingerprints of extra virgin olive oils: Confirmation of the identity and homogeneity within commercial lots.** Torben Kuechler*, Ole Winkelmann, Eurofins Analytik GmbH, Germany
- 10:20 **Single-wavelength near-infrared analysis as a rapid and field-deployable tool to determine the solid fat content in fats and oils.** Marco Grossi¹, Enrico Valli*², Virginia Teresa Glicerina², Pietro Rocculi², Tullia Gallina Toschi³, Bruno Riccò¹, ¹Department of Electrical Energy and Information Engineering Guglielmo Marconi, Alma Mater Studiorum—Università di Bologna, Italy; ²Department of Agricultural and Food Sciences and Interdepartmental Centre of Agri-Food Industrial Research, Alma Mater Studiorum—Università di Bologna, Italy; ³Department of Food and Agriculture Sciences, University of Bologna, Italy
- 10:40 **Demystifying chemometrics: How multivariate analysis allows spectroscopy to be used to solve most analytical problems.** Jonathon Speed*, Keit Spectrometers, United Kingdom

- 11:00 **Calibration of NMR for total fat analysis in chocolate manufacturing.** Dika Lau*¹, Rebecca Kuehn¹, Linsen Liu², ¹R&D, Guittard Chocolates Company, United States, ²Sciences, Guittard Chocolates Company, United States
- 11:20 **Palm oil extraction process control using TD-NMR—study of losses reduction case.** Daniel M. Consalter*¹, Silvia P. De Azevedo, Lucas Topp, Cristina Consalter, Bruno Caravieri, Gabriel Torresam, Fine Instrument Technology, Brazil
- 11:40 **A nondestructive method for oil distribution evaluation in healthy fried food developing by Raman imaging.** Peijin Tong*¹, Lingling Wei², Junmei Liang², Wenming Cao¹, ¹Wilmar (Shanghai) Biotechnology Research & Development Center Co., Ltd, China (People's Republic); ²Wilmar Global R&D Center, China (People's Republic)

Analytical

Novel Analytical Tools to Assess Oil Quality and Oxidation

Joint session with the Lipid Oxidation and Quality Division

Sponsored by Kalsec

Chairs: Matthew Phaner, University of Michigan-Flint, USA; Richard Della Porta, Pepsico/Frito-Lay, USA; and Fernanda Furlan Goncalves Dias, University of California, Davis, USA

Hanover D

9:55 **Introduction**

- 10:00 **Novel and versatile tool for investigating the oxidation stability of speciality oils.** Carolin Edinger*, Anton Paar PROVETEC GMBH, Germany
- 10:20 **Time Domain (TD) NMR Proton (¹H) Mobility Sensor to assess oil quality and oxidation.** Zeev Wiesman*, Tatiana Osheter, Charles Linder, Biotechnology Engineering, Ben Gurion University of the Negev, Israel
- 10:40 **Analysis of lipid radiolysis in irradiated dried meat products.** Umut Yucel*, Food Science Institute, Animal Sciences and Industry Department, Kansas State University, United States
- 11:00 **Implementation of green solvents to monitor thermal oxidation of common frying oils.** Matthew Phaner*, Department of Natural Sciences, University of Michigan-Flint, United States
- 11:20 **Quantitative assessment of epoxide formation in bulk oil and mayonnaise by ¹H-¹³C HSQC NMR spectroscopy.** Vincent Boerkamp¹, Donny Merckx², Jianli Wang¹, Jean-Paul Vincken¹, John Van Duynhoven³, Marie Hennebelle*¹, ¹Wageningen University, Netherlands; ²Unilever, Netherlands; ³Unilever R&D Vlaardingen, Netherlands

Biotechnology

Fermentation

Joint session with the Processing Division

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Tsunehiro Aki, Hiroshima University, Japan; and Mahesh Balwant Khot, Farmsow Pvt. Ltd., India

Regency VII

9:55 **Introduction**

- 10:00 **Fungal bioprocessing to improve quality of pennycress meal as potential feeding ingredient for monogastric animal.** Xiao Sun¹, David Marks², Bo Hu*¹, ¹Bioproducts and Biosystems Engineering, University of Minnesota, United States; ²Plant and Microbial Biology, University of Minnesota, United States
- 10:20 **Rhodotorula mucilaginosa R2: A potent oleaginous yeast isolated from traditional fermented food, as a promising platform**

for the production of lipid-based biofuels, bioactive compounds and other value-added products. Pritam Bardhan*, Manabendra Mandal, *Department of Molecular Biology & Biotechnology, Tezpur University, India*

10:40 **Genetic modification to enhance single cell oil production in the oleagineous yeast *Rhodotorula mucilaginosa*.** Sheetal Bandhu*¹, Debashish Ghosh², ¹*Kusuma School of Biological Sciences, Indian Institute of Technology, Delhi, India;* ²*Biochemistry and Biotechnology, CSIR-Indian Institute of Petroleum, India*

11:00 **Studies on filamentous fungus *Fusarium sp.* accumulating hydroxy fatty acids.** Eiji Sakuradani*, Kai Yoshida, Naomi Murakawa, Takaiku Sakamoto, *Tokushima University, Japan*

11:20 **Process optimization for biodiesel production using agro-waste substrate.** Ameeta Ravikumar*¹, V. Ravi Kumar², Rashmi Bed¹, ¹*Institute of Bioinformatics and Biotechnology, Savitribai Phule Pune University, India;* ²*Chemical Engineering and Process Development Division, CSIR-National Chemical Laboratory (CSIR-NCL), India*

11:40 **Utilization of sugar cane bagasse as a substrate for fatty acid production by *Aurantiochytrium sp.*** Kenshi Watanabe*, *Hiroshima University, Japan*

Health and Nutrition

General Health and Nutrition II

Chairs: Douglas Bibus, Lipid Technologies, LLC, USA; and Rotimi Aluko, University of Manitoba, Canada

Hanover F

9:55 **Introduction**

10:00 **Novel antihypertensive and anticholesterol-emic peptides from peptic hydrolysates of camel whey proteins.** Waqas Baba* (*Health and Nutrition Division Student Award Winner*), Sajid Maqsood, *UAE University, United Arab Emirates*



10:20 **Development of a method for separation of geometric isomers of alpha-linolenic acid in human plasma by silver ion HPLC and GC-NCI-MS.** Na Wei*, Heather C. Kuiper, Enada Archibold, Grace Jairo, Hubert W. Vesper, *NCEH, DLS, Center for Disease Control, United States*

10:40 **Associations between n-3 fatty acid status and depressive symptoms in Swiss adolescents with and without diagnosed paediatric major depressive disorder: A case-control study.** Ester Osuna*¹, Isabelle Herter-Aeberli¹, Sophie Emery², Mona Albermann², Noemi Baumgartner², Michael B. Zimmermann¹, Isabelle Häberling², Gregor Berger², Jeannine Baumgartner¹, ¹*ETH Zurich, Laboratory of*

Human Nutrition, Switzerland; ²*University Hospital Zurich, Clinics for Child and Adolescent Psychiatry, Switzerland*

AOCS SCIENTIFIC AWARD WINNER

11:00 **The essentiality of a healthy dietary pattern across the lifespan for reducing the global burden of cardiovascular disease.** Penny Kris-Etherton*, *Department of Nutritional Sciences, The Pennsylvania State University, United States (Supelco AOCS Research Award Winner)*



Industrial Oil Products

Biofuels II

Joint session with the Processing Division

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Bruce Patsey, Oil-Dri Corp of America, USA; and Robert O. Dunn, Jr., USDA ARS NCAUR, USA

Hanover AB

9:55 **Introduction**

10:00 **Fractionation of biodiesel by urea inclusion to improve its cold flow properties and provide feedstocks for chemicals/polymers production.** Junli Liu*, Bernie Tao, *Agricultural and Biological Engineering, Purdue University, United States*

10:20 **Filter media options in renewable fuels and edible oils.** Zachary Galberd*, Eric Appelbaum, *Dicalite Management Group, Inc., United States*

10:40 **Adsorptive reduction of metals and phospholipids from biofuel feedstocks.** Neal Williams*¹, David Gittins², Tony Smith², ¹*Science and Technology, Imerys, United States;* ²*Imerys, United States*

11:00 **Silica adsorbents for biofuel feedstock pretreatment.** Chelsea Grimes*, *Biofuels and Edible Oils, W. R. Grace & Co., United States*

Lipid Oxidation and Quality

Novel Analytical Tools to Assess Oil Quality and Oxidation

Sponsored by Kalsec

Chairs: Matthew Phaner, University of Michigan-Flint, USA; Richard Della Porta, Pepsico/Frito-Lay, USA; and Fernanda Furlan Goncalves Dias, University of California, Davis, USA

Hanover D

Joint session with the Analytical Division. **See page 67 for details.**



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Processing

Biofuels II

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Bruce Patsey, *Oil-Dri Corp of America, USA*; and Robert O. Dunn, Jr., *USDA ARS NCAUR, USA*

Hanover AB

Joint session with the Industrial Oil Products Division. **See page 68 for details.**

Processing

Control, Instrumentation, and Machine Learning

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Jonathon Speed, *Keit Spectrometers, UK*; and William Younggreen, *Alfa Laval Inc., USA*

Moved to Tuesday, May 3 in Centennial I, starting at 1:25 p.m.

See page 62 for details.

Processing

Fermentation

Sponsored by Desmet Ballestra North America, Inc.

Chairs: Tsunehiro Aki, *Hiroshima University, Japan*; and Mahesh Balwant Khot, *Farmsow Pvt. Ltd., India*

Regency VII

Joint session with the Biotechnology Division. **See page 67 for details.**

Protein and Co-Products

Non-food Applications of Proteins

Chairs: Nandika Bandara, *University of Manitoba, Canada*; Yixiang Wang, *McGill University, Canada*; and Bishnu Karki, *South Dakota State University, USA*

Hanover E

9:55 **Introduction**

10:00 **Developments of plant polymer-based solid foams applications in the Food Industry.** Marcela A, Jarpa-Parra*, *Research Direction, Universidad Adventista De Chile, Chile*

10:20 **3D Printing of gelatin/alginate based hydrocolloids as delivery systems for food and pharmaceutical applications.** Xiaolei Shi*, *Iowa State University, United States*

10:40 **Protein based biopolymers as sorbents for treatment of industrial wastewater.** Aman Ullah*¹, Irum Zahara², Tariq Siddique², ¹*AFNS, University of Alberta, Canada*; ²*ReNR, University of Alberta, Canada*

11:00 **Relationships between wet strength of wood adhesives made with soy protein, and the protein aggregation state/physical chemistry.** Christopher G. Hunt*¹, Nayomi Plaza², Charles Frihart³, Casey Crooks², Matthew Gargulak⁴, ¹*Forest Biopolymer Science and Engineering, USDA, Forest Service, Forest Products Laboratory, United States*; ²*USDA Forest Service, Forest Products Laboratory, United States*; ³*Retired, United States*; ⁴*Agrichemical Technologies, United States*

11:20 **Food protein self-assembly towards high-performance functional materials.** Yiping Cao*, *Department of Chemical Engineering, MIT, United States*

11:40 **Improving mechanical, barrier, and thermal properties of canola protein-based packaging films using hydrophobically modified nanocrystalline cellulose.** Thilini Dissanayake*¹ (*Canadian Section Student Support Grant Winner; Protein and Co-Products Division Student Travel Grant Winner*), Binh Minh Trinh², Tizazu Mekonnen² Nandika Bandara¹, ¹*Food and Human Nutritional Sciences, University of Manitoba, Canada*; ²*Chemical Engineering, University of Waterloo, Canada*



Surfactants and Detergents

Surfactants for Petroleum Applications

Chairs: Daniel Miller, *The Dow Chemical Company, USA*; and Dorianne Castillo, *Baker Hughes, USA*

Centennial I

9:55 **Introduction**

10:00 **Innovative biofuels derived from wood pyrolysis bio-oil. Compatibility with petroleum cuts for applications in marine transportation.** Ronald Marquez*¹, Sophie Gelade², François Lequeux³, Nicolas Sanson³, Jesus F. Ontiveros⁴, Veronique Rataj⁴, Jean-Marie Aubry⁴, Valerie Molinier², ¹*Laboratoire Physico-Chimie des Interfaces Complexes, TotalEnergies, France*; ²*TotalEnergies, France*; ³*ESPCI, France*; ⁴*ENSC, France*

10:20 **Alkaline-surfactant-foam design for improving heavy oil mobility.** Sibani Biswal*, *Chemical & Biomolecular Engineering, Rice University, United States*

10:40 **Mechanistic approaches to break water-in-crude oil emulsions.** Tzu-Chi Kuo*, Arash Nowbahar, Decai Yu¹ Roxanne Jenkins, Michael Tulchinsky, Kathryn Grzesiak, Heather Wiles, Sara Ouellette, Adam Schmitt, Daniel S. Miller, Tom Kalantar, *The Dow Chemical Company, United States*

11:00 **The zipper self-assembly effect applied to naphthenic acid systems.** Rafael Perez, Edgar Acosta*, *Chemical Engineering and Applied Chemistry, University of Toronto, Canada*

11:20 **Tri-methyl-propane and glycerin-based surface-active co-solvents (SAS) as an effective, low-cost, and environmentally friendly source of nonionic/anionic amphiphiles for chemical EOR applications.** Karasinghe A. Upamali*, Upali Weerasooriya, Chris Britton, Matt Dean, Jith Liyanage, Winoto Winoto, *Ultimate EOR services LLC, United States*

11:40 **Novel Gemini surfactants as a cost-effective material for oil-wet carbonate reservoirs: Wettability Alteration at HTHP conditions.** Muhammad Shahzad Kamal*, Xiao Deng, Shirish Patil, Syed Muhammad Hussain, Xianmin Zhou, Mohamed Mahmoud, *KFUPM, Saudi Arabia*

What session cannot be missed?



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Renato M. Ramos: Aflatoxin in Corn Meal Test Kit, Oilseed Meal, Soybean, Unground Soybean Meal

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Tyler Hack: Oilseed Meal, Soybean, Unground Soybean Meal

Mumtaz Haider: NIOP Fats and Oils, Oilseed Meal

Kester Emefiena: Tallow and Grease

Abhishek Vispute: Aflatoxin in Corn Meal Test Kit, DDGS from Corn Meal, Gas Chromatography

Applied Sensory LLC

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+1 707-344-0254
www.appliedsensory.com

Sue Langstaff: Olive Oil Sensory Panel Testing

ATC Scientific

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+1 501-771-4255
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Scott Schuldt: Aflatoxin in Corn Meal Test Kit, Gas Chromatography, Oilseed Meal, Phosphorus in Oil, Soybean Oil, Tallow and Grease, Unground Soybean Meal

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Tamara Coory: Gas Chromatography

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Michael Hawkins: Oilseed Meal, Unground Soybean Meal, Soybean Oil

Mandi Self: Oilseed Meal, Unground Soybean Meal

Brooke Norris: Oilseed Meal, Unground Soybean Meal

BASF Canada Inc.

Saskatoon, SK S7K 3J9 Canada
+1 306-477-9443

Rudy Fulwka: Gas Chromatography

Blue Diamond Growers

Sacramento, CA 95811 USA
+1 916-329-3311

Jeremy Scheeler: Aflatoxin Almond

California Olive Oil Council

Berkeley, CA 94710 USA
+1 888-718-9830
https://cooc.com

Patricia King and Dean Wilkinson: Olive Oil Sensory Panel Testing

California Olive Ranch

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+1 530-846-8000
www.californiaoliveranch.com

Christopher Moore: Olive Oil Part A

Callaghan Innovation

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www.callaghaninnovation.govt.nz

Kirill Lagutin: Marine Oil Fatty Acid Profile

Andrew MacKenzie: Marine Oil Fatty Acid Profile

Canadian Food Inspection Agency

Ottawa, ON K1A 0C6 Canada
+1 343-572-6255

Mariola Rabski: Gas Chromatography

Canadian Grain Commission

Winnipeg, Manitoba B3C 3G8 Canada
+1 204-983-3354

Ann Puvirajah: Gas Chromatography, Soybean

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Brad Beavers, Jennie Stewart: Oilseed Meal, Unground Soybean Meal

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Zhennian Huang: Olive Oil Part A, B & C

Marc Duffey: Olive Oil Part A & B

Sampath Abeylath: Olive Oil Part A, B & C

Ceno

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Joao Peixoto: Soybean

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Cipriano Cruz: NIOP Fats and Oils, Oilseed Meal, Soybean Oil

Chemiservice SRL

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Valentina Cardone: Olive Oil Chemistry Part A, B & C, Olive Oil Sensory Panel Testing

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Thomas Patterson: Soybean

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Sandy Holloway: Aflatoxin in Corn Meal Test Kit

Cumberland Valley Analytical Services

Waynesboro, PA 17268 USA
+1 301-790-1980
www.foragelab.com

Sharon Weaver: Oilseed Meal, DDGS from Corn Meal, Gas Chromatography

Dallas Group of America

Jeffersonville, IN 47130 USA
+1 812-283-6675
www.dallasgrp.com

Gabe Berhe: NIOP Fats and Oils

Melanie Greer: Vegetable Oil for Color, NIOP Fats and Oils, Phosphorus in Oil

George Hicks: Vegetable Oil for Color, NIOP Fats and Oils

Gina Hoke: Vegetable Oil for Color

Darling Ingredients

Ankeny, IA 50021 USA
+1 515-289-3718

Zachary Martin: Gas Chromatography, Tallow and Grease

Eurofins Biodiagnostics, Inc.

River Falls, WI 54022 USA
+1 715-629-1958
www.eurofinsus.com/biodiagnostics

Joseph Zalusky: Gas Chromatography

Eurofins Central Analytical Laboratory, Inc.

New Orleans, LA 70122 USA
+1 504-297-3400
www.eurofins.com

John Reuther, Dana Walkenhorst, Marvin Boyd, Jr: Aflatoxin Pistachio and Almond, Aflatoxin Corn Meal, Aflatoxin in Corn Meal Test Kit, DDGS from Corn Meal, Fish Meal, GOED Nutraceutical Oils, Marine Oil, Marine Oil Fatty Acid Profile, NIOP Fats and Oils, Oilseed Meal, Olive Oil Part A, Soybean, Soybean Oil, Trace Metals in Oil, Unground Soybean Meal

Eurofins Food Chemistry Testing Des Moines, Inc.

Des Moines, IA 50321 USA
+1 515-265-1461

Ardin Backous: Aflatoxin in Corn Meal Test Kit, Fish Meal, Oilseed Meal, Soybean, Unground Soybean Meal

Kent Karsjens: Aflatoxin in Corn Meal Test Kit, Fish Meal, Nutritional Labeling, Oilseed Meal, Soybean, Unground Soybean Meal

Keith Persons: Cholesterol, Edible Fat, GOED Nutraceutical Oils, Marine Oil Fatty Acid Profile, Marine Oil, NIOP Fats and Oils, Nutritional Labeling, Tallow and Grease, trans Fatty Acid Content

Anders Thomsen: Aflatoxin in Corn Meal Test Kit, Cholesterol, DDGS from Corn Meal, Edible Fat, Fish Meal, GOED Nutraceutical Oils, Marine Oil Fatty Acid Profile, Nutritional Labeling, Oilseed Meal, Soybean, Specialty Oils, Tallow and Grease, Unground Soybean Meal, Vegetable Oil for Color

Exact Scientific Services, Inc.

Ferndale, WA 98248 USA
+1 360-733-1205
www.exactscientific.com

Erik Madden: Specialty Oils, Marine Oil Fatty Acid Profile

Fieldale Farms Corp.

Baldwin, GA 30511 USA
+1 706-778-5100

Janet Smith: Aflatoxin in Corn Meal Test Kit, Oilseed Meal

Food Chain ID Testing LLC

Chantilly, VA 20151 USA
+1 703-222-8700
www.foodchainid.com

Thomas Scott: Tallow and Grease, Gas Chromatography

Fuji Vegetable Oil, Inc.

Savannah, GA 31408 USA
+1 912-433-5331

Gregg Newman: trans Fatty Acid Content, Edible Fat

GC Rieber Vivomega AS

Kristiansund – N NO 6512 Norway
+47 481 34 957
www.gcrieber-oils.com

Magdalena Sobieska-Pietrzak: GOED Nutraceutical Oils

GrainCorp Foods

West Footscray, VIC 3012 Australia
+61 3 9275 6705

Wei-Chun Tu: Gas Chromatography, trans Fatty Acid Content

Grupo Agroindustrial Numar S.A.

San Jose 3657-1000 Costa Rica
+506 2284-1192
www.gruponumar.com

Ricardo Arevalo Bravo: Palm Oil, Solid Fat Content by NMR, Trace Metals in Oil

Hahn Laboratories, Inc.

Columbia, SC 29201 USA
+1 803-799-1614
www.hahnlaboratories.com

Frank Hahn: Oilseed Meal, Unground Soybean Meal, Soybean Oil, Aflatoxin in Corn Meal Test Kit, DDGS from Corn Meal

Hormel Foods Co.

Austin, MN 55912 USA
+1 507-434-6662
www.hormel.com

Darcy Schroeder: trans Fatty Acid Content

Illinois Crop Improvement Association

Champaign, IL 61822 USA

+1 217-359-4053
www.ilcrop.com

Sandra K. Harrison: Oilseed Meal

Imperial Western Products

Coachella, CA 92236 USA
+1 760-275-7122
www.imperialwesternproducts.com

Joseph Boyd: DDGS from Corn Meal

Indelab SDN BHD

Port Klang, Selangor 42000 Malaysia
+603-3167 6929

Cheah Ping Cheong: Palm Oil

INOLASA

Puntarenas 60108 Costa Rica
+506 2636-0300
www.inolasa.com

Limber Porras Ramirez: Edible Fat

Alexis Ramirez Ugalde: Edible Fat

Carlos Andrade Jimenez: Oilseed Meal, Edible Fat

Josue Nunez Moya: trans Fatty Acid Content

Lidieth Solera Carranza: Oilseed Meal, Soybean

Oliver Miranda Moreno: Edible Fat

Mexayda Sandoval Montoya: Edible Fat

Dexter Patterson Salmon: Edible Fat

Christian Porras Barahona: Unground Soybean Meal

Milena Venegas Fallas: Unground Soybean Meal

Josue Morales Zepeda: Unground Soybean Meal

Priscilla Rojas Alvarado: Edible Fat

Carlos Tamayo Soto: Edible Fat

Intertek Agri Services

New Orleans, LA 70122 USA
+1 504-662-1420
www.intertek.com

Tuyen Ngoc Mai: DDGS from Corn Meal, Gas Chromatography, NIOP Fats and Oils, Oilseed Meal, Soybean

Intertek Agri Services Ukraine

Odessa 65003 Ukraine
+380 487 202 452
www.intertek.com

Elena Kovalenko: Palm Oil

Intertek Champaign Laboratories

Champaign, IL 61821 USA
+1 217-352-6060

Douglas Nickelson: Marine Oil Fatty Acid Profile

Isotek Laboratories, LLC

Oklahoma City, OK 73127 USA
+1 405-948-8889
www.isoteklabs.com

R. Bruce Kerr: Gas Chromatography, Oilseed Meal, Tallow and Grease

George Ducsay: Gas Chromatography, Oilseed Meal, Tallow and Grease

JST Global LLC

Houston, TX 77011 USA
+1 713-632-5897
www.jstg.com

Tony Mendez: Tallow and Grease

K-Testing Laboratory

Memphis, TN 38116 USA
+1 901-332-1590

Edgar Tenent: Oilseed Meal, Unground Soybean Meal

LaMesha Stone: Oilseed Meal, Unground Soybean Meal

Greg Crosby: Oilseed Meal, Unground Soybean Meal

KeyLeaf

Saskatoon, SK S7N 2R4 Canada
+1 306-978-2829

Angie Johnson: Oilseed Meal, Marine Oil Fatty Acid Profile

Lipid Analytical Laboratories, Inc.

Guelph, ON N1G 4T2 Canada
www.lipidanalytical.com
Andrew Jenkins: GOED Nutraceutical Oils

Lysi

Reykjavik 101 Iceland
+354 525 8159
www.lysi.com

Lara Bjorvinsdottir: GOED Nutraceutical Oils, Marine Oil, Marine Oil Fatty Acid Profile

Malaysian Palm Oil Board, AOTD

Selangor 43000 Malaysia
+60 3-87694208
www.mpob.gov.my

Razmah Ghazali: Palm Oil, Gas Chromatography

Modern Olives Laboratory Services

Lara, VIC 3212 Australia
+61 4 2789 8268
www.modernolives.com.au

Claudia Guillaume: Olive Oil Chemistry Part A, B & C, Gas Chromatography, trans Fatty Acid Content

Modern Olives Laboratory Service

Woodland, CA 95776 USA
+1 530-632-5551
www.modernolives.com

Natalie Ruiz: Olive Oil Chemistry Part A, B & C, Olive Oil Sensory Panel Testing

National Beef Packing Co.

Liberal, KS 67901 USA
+1 620-626-0638

Adalberto Coronado: Tallow and Grease

Luis Aguilar: Tallow and Grease

Caroline Kirby: Tallow and Grease

National Beef Packing Co.

Dodge City, KS 67801 USA
+1 620-338-4250

Mike Clayton: Tallow and Grease

Nature's Way of Canada

Dartmouth, NS B3B 0A6 Canada
+1 902-718-7554
www.natureswaycanada.ca

Rosemarie Hughes: GOED Nutraceutical Oils

New Jersey Feed Lab, Inc.

Ewing, NJ 08638 USA
+1 609-882-6800
www.njfl.com

Pete Cartwright: Fish Meal, GOED Nutraceutical Oils, Marine Oil Fatty Acid Profile

Gordon Thomas: Aflatoxin in Corn Meal Test Kit, Marine Oil, Oilseed Meal, Unground Soybean Meal

Stephan Sansone: Gas Chromatography

NSW Department of Primary Industries

Wagga Wagga, NSW 2650 Australia
+61 02-6938 1823

Jamie Ayton: Gas Chromatography, Olive Oil Chemistry Part A, B & C, trans Fatty Acid Content, Olive Oil Sensory Panel Testing

Nu-Mega Ingredients Limited

Victoria 3025 Australia
+61 3 8369 2101
www.nu-mega.com

Doqueza Langaman: Marine Oil Fatty Acid Profile

Omega Protein Health and Science Center

Reedville, VA 22539 USA
+1 804-453-3830
www.omegaprotein.com

Matthew Rahn: Marine Oil
Otelia Robertson: Marine Oil, Marine Oil FAP

Owensboro Grain Company

Owensboro, KY 42301 USA
+1 270-686-6594

Molly Harris: Soybean Oil, trans Fatty Acid Content

Stephanie Shalosky: Oilseed Meal

Pilgrims Corp.

Gainesville, GA 30501 USA
+1 770-533-4812

Lisa Marlow: Unground Soybean Meal

Pompeian Inc.

Baltimore, MD 21224 USA
+1 443-573-8048
www.pompeian.com

Ryan Drazenovic: Olive Oil Chemistry Part A, B & C

Alex Vargo: Olive Oil Chemistry Part A, B & C, Olive Oil Sensory Panel Testing



2021-2022 AOCs Approved Chemists

Natasha Ssenyondo: Olive Oil Part A, B & C

Primex Farms

Wasco, CA 93280 USA
+1 661-758-7790

Steven Dominguez: Aflatoxin
Pistachio and Almond

Denisse Razo: Aflatoxin
Pistachio and Almond

PT Musim Mas

Medan, Sumatera Utara 20371
Indonesia
+62 616-871-123

Goh Tiam Huat: Gas Chromatography, NIOP Fats and Oils, Palm Oil, Solid Fat Content by NMR, Trace Metals in Oil, trans Fatty Acid Content

Russell Marine Group—PNW LLC

Portland, OR 97218 USA
+1 503-224-9325

Robert Carr: Oilseed Meal, Soybean

Sanimax—ACI, Inc.

Charney, QC G6X 2L9 Canada
+1 418-832-4645

Anne Tremblay: Tallow and Grease

Sanimax USA LLC

Howard, WI 54303 USA
+1 920-494-5233
www.sanimax.com

Zachary DeWilde: Tallow and Grease

SDK Laboratories

Hutchinson, KS 67501 USA
+1 620-665-5661
www.sdklabs.com

Dennis Hogan: Tallow and Grease (MIU, FFA), Aflatoxin in Corn Meal Test Kit, DDGS from Corn Meal

Seragro SA

Chinandega Nicaragua
+505 2340-3493

Norma Hernandez: Peanut, Aflatoxin Peanut Paste

SGS Canada, Inc.

Burnaby, BC V5A 4W4 Canada
+1 604-638-2349
www.sgs.com

Cathy Sun: Oilseed Meal, Tallow and Grease

Stratas Foods

Quincy, IL 62305 USA
+1 217-221-0569
www.stratasfoods.com

Heather Compton: Edible Fat, Gas Chromatography, trans Fatty Acid Content

Stratas Foods

Decatur, IL 62526 USA
+1 217-451-3220
www.stratasfoods.com

Chelsea Sisson: trans Fatty Acid Content, Edible Fat, Gas Chromatography

Stratas Foods—RDI Center

Bartlett, TN 38133 USA
+1 901-387-2237
www.stratasfoods.com

Eddie L. Baldwin, Helen Cianciolo, Derek Gum: Gas Chromatography, trans Fatty Acid Content, Solid Fat Content by NMR, Edible Fat

Sunset Olive Oil, LLC

Montebello, CA 90640 USA
+1 323-816-7555

Gwendolyn Truong: Olive Oil Part A, B & C, Olive Oil Sensory Panel Testing

Thai Vegetable Oil PCL

Bangkok, 10600 Thailand
+66 2 477 9020

Piyanut Boriboonwiggai:

Unground Soybean Meal, trans Fatty Acid Content

Thionville Laboratories, LLC

New Orleans, LA 70123 USA
+1 504-733-9603
www.thionvillenola.com

Paul C. Thionville, Andre Thionville, Kristopher Williams: DDGS from Corn Meal, Fish Meal, Gas Chromatography, Marine Oil, NIOP Fats and Oils, Oilseed Meal, Palm Oil, Soybean, Soybean Oil, Tallow and Grease, trans Fatty Acid Content, Unground Soybean Meal

Trouw Nutrition

St. Hyacinthe, QC J2R 1S5
Canada
+1 450-796-2555
www.trouwnutrition.ca/fr-ca/laboratory-services/

Helene LaChance: Cholesterol, Marine Oil, Nutritional Labeling, Oilseed Meal, Unground Soybean Meal

University of Missouri—AESCL

Columbia, MO 65201 USA
+1 573-882-2608
www.AESCL.missouri.edu

Thomas P. Mawhinney: Gas Chromatography, Soybean, Specialty Oils

University of Stirling

Stirling, Scotland FK9 4LA UK
+44 1786 467997
www.stir.ac.uk

James R. Dick: Marine Oil Fatty Acid Profile

Waypoint Analytical

Leola, PA 17540 USA
+1 717-656-9326
www.waypointanalytical.com

Robin Finkill: Oilseed Meal

Whitbeck Laboratories, Inc.

Springdale, AR 72764 USA
+1 479-756-9696
www.whitbecklabs.com

Gordon Whitbeck: Tallow and Grease (MIU), Unground Soybean Meal, Aflatoxin in Corn Meal, Oilseed Meal

Wiley Companies

Coshocton, OH 43812 USA
+1 740-622-0755
www.wileyco.com

MeganLowery: GOED Nutraceutical Oils

The Approved Chemist Program honors the most accomplished participants in the Laboratory Proficiency Program (LPP). Approval is earned by superior performance during the previous LPP year. In addition, Approved Chemists in oilseed meal can become referees for NOPA Soybean meal trading. Visit aocs.org/series to find the right series for your lab.

2021-2022 AOCs Certified Laboratories

ATC Scientific

312 North Hemlock
North Little Rock, AR 72114 USA
+1-501-771-4255
Scott Schuldt
sschuldt@atcscientific.com

Eurofins Barrow-Agee

1555 Three Place
Memphis, TN 38116 USA
+1-901-332-1590
Michael Hawkins, Amanda Self
mself@balabs.com

Carolina Analytical Services LLC

17570 NC 902 Hwy
Bear Creek, NC 27207 USA
+1-919-837-2021
Jennie Stewart, Brad Beavers
jenniestewart@gmail.com

Cotecna Inspection, Inc

40 Veterans Memorial Blvd.
Kenner, LA 70062 USA
+1 504-464-6000
Nikki Lassere
Nikki.lassere@cotecnausa.com

Eurofins Nutrition Analysis Center

2200 Rittenhouse St.
Suite 150
Des Moines, IA 50321 USA
+1-515-265-1461
Ardin Backous, Kent Karsjens, Anders Thomsen, Keith Persons
kentkarsjens@eurofinsus.com

Hahn Laboratories, Inc.

1111 Flora St.
Columbia, SC 29201 USA
+1-803-799-1614
Frank M. Hahn
hahnlab@bellsouth.net

Thionville Laboratories, LLC

5440 Pepsi St.
New Orleans, LA 70123 USA
+1-504-733-9603
Paul Thionville, Andre Thionville, Kristopher Williams
lab@thionvillenola.com

Whitbeck Laboratories, Inc

441 Reinert Dr.
Springdale, AR 72764 USA
+1 479-756-9696
Gordon Whitbeck
gordonw5@aol.com

Poster Presentations

- The presenter is identified with an asterisk (*).
- Award lectures are identified with the photo of the winner or award icon. AOCS Scientific Award winners are highlighted by red lines.
- Presentation information current as of April 1.

Poster viewing

ePosters are available online at 22AOCSS.meetbreakout.com through June 30, 2022. Registered AOCS members receive extended access to on-demand content through December 31, 2022.

Select posters are on display in Centennial II during the following times:

Monday, May 2 | 7 a.m.–7 p.m.

Tuesday, May 3 | 7 a.m.–7 p.m.

Wednesday, May 4 | 7 a.m.–3 p.m.

Dedicated poster viewing

Do not miss the chance to discuss poster presentations with their authors! Authors will be at their physical poster displayed in Centennial II from Noon–1:30 p.m. on the following days:

Monday, May 2

- Health and Nutrition
- Industrial Oil Products
- Lipid Oxidation and Quality
- Phospholipid
- Processing
- Protein and Co-Products
- Surfactants and Detergents

Tuesday, May 3

- Analytical
- Biotechnology
- Edible Applications Technology

Analytical

Chairs: Lisa Clement, Cargill Inc., USA; and Ali Reza Fardin Kia, U.S. Food and Drug Administration, USA

22AOCSS.meetbreakout.com and Centennial II

- ANA-01** Development of a near-infrared spectroscopy calibration model to predict methionine content in whole soybeans. Maria Erazo*, William M. Singer, Nick Lord, Maria L. Rosso, Bo Zhang, School of Plant and Environmental Sciences, Virginia Tech, United States
- ANA-02** Identification of soybean germplasm with higher concentrations of long chain fatty acid. Patrick Bewick*¹, Eva Collakova¹, Bo Zhang², ¹Virginia Tech, United States; ²School of Plant and Environmental Sciences, Virginia Tech, United States
- ANA-03** Simultaneous determination of free and esterified fatty acids of food fats using a rapid gas chromatographic method. Aubreyona Migliori*¹, Robert E. Ward², Silvana Martini¹, Melissa

Marsh³, ¹Utah State University, United States; ²Nutrition, Dietetics and Food Sciences, Utah State University, United States; ³Food Science, Utah State University, United States

- ANA-04** Consistent units are required when using the activated complex theory in oil evaluation process. Liyou Zheng*¹, Hongyan Guo¹, Jun Jin², Qingzhe Jin², ¹Anhui Polytechnic University, China (People's Republic); ²Jiangnan University, China (People's Republic)
- ANA-05** Enhance HS-SPME extraction kinetics by vacuum-assisted headspace and multi-cumulative trapping SPME and the combination of them for olive oil volatile profiling. Steven Mascrez*, Giorgia Purcaro, Gembloux Agro-Bio Tech, University of Liege, Belgium
- ANA-06** Increase the throughput and reliability of fatty acid characterization in food by using a rapid single step microwave-assisted extraction and derivatization method followed by GC×GC-FID. Steven Mascrez*, Angelica Fina, Giorgia Purcaro, Gembloux Agro-Bio Tech, University of Liege, Belgium
- ANA-07** Nutrient content and carotenoid bioaccessibility of underutilized taro varieties from Hawaii. Kento Senga*¹, Kacie Ho¹, Jon-Paul Bingham¹, Marisa Wall², ¹University of Hawaii at Manoa, United States; ²United States Department of Agriculture, United States
- ANA-08** Thoughtful optimization of microwave-assisted saponification and extraction of MOSH&MOAH in edible oil. Grégory Bauwens*¹, Giorgia Purcaro², ¹Analytical Chemistry, University of Liege, Belgium; ²Gembloux Agro-Bio Tech, University of Liege, Belgium

Biotechnology

Chair: Sarah Willett, Kerry Group, USA

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- BIO-01** An efficient and environment friendly bio-based polyols through liquefaction: Liquefaction temperature and catalyst concentration optimization and utilized for rigid polyurethane foams. Chiragkumar Patel*¹, Nikhil Dhore², ¹SICART, India; ²IICT Hyderabad, India
- BIO-02** Effect of oil carbon chain length on the physical stability and bioactivity of nanoemulsion delivery systems incorporating lipophilic ingredients. Xin Guo*¹ (Biotechnology Division Student Award Winner), Ming Chang², ¹University of Massachusetts, Amherst, United States; ²Jiangna University, China (People's Republic)



- BIO-03 Encapsulation of melittin in bicontinuous microemulsions for topical delivery.** Madison Oehler¹, Douglas Hayes¹, Doris D'Souza², ¹Biosystems Engineering and Soil Science, University of Tennessee, Knoxville, United States; ²Food Science and Technology, The University of Tennessee Knoxville, United States
- BIO-04 International standards for food authenticity and allergen detection from ISO TC 34/SC 16 horizontal methods for molecular biomarker analysis.** Michael Sussman*, ISO/USDA, AMS, L&P, Agricultural Analytics Division, United States
- BIO-05 Measurement of volumetric mass transfer coefficient in lab-scale stirred tank reactors: Is there a point of diminishing returns for impeller speed and gas flowrate?** Robert Bertrand¹, Emmanuel Revellame², Lisa Stephanie Dizon¹, Kristel Gatdula², Remil Aguda², ¹Chemical Engineering, University of Louisiana at Lafayette, United States; ²University of Louisiana at Lafayette, United States
- BIO-06 Variation in cellulase production during solid and submerged state fermentation of raw and processed canola meal by *Aureobasidium pullulans*, *Neurospora crassa*, and *Trichoderma reesei*.** Ahmad F. Alhomodi¹, William Gibbons², Bishnu Karki², ¹Dept. of Biology and Microbiology, South Dakota State University, United States; ²South Dakota State University, United States
- BIO-07 A comparative analysis of nanoluc luciferase and alkaline phosphatase as reporter proteins for phage-based pathogen detection.** Joey Talbert*, Shalini Wijeratne, Arubdan Bakshi, Department of Food Science and Human Nutrition, Iowa State University, United States
- BIO-08 Characterization of monoolein liquid crystals using oscillatory rheology and strain rate frequency superposition.** Shweta Mistry¹, Philipp Fuhrmann¹, D eric Rousseau², ¹Ryerson University, Canada; ²Department of Chemistry and Biology, Ryerson University, Canada
- BIO-09 CRISPR/Cas9-targeted mutagenesis of KTI1 and KTI3 to reduce trypsin inhibitors in soybean seeds.** Zhibo Wang¹, Zachary Shea¹, Maria L. Rosso², Chao Shang¹, Jianyong Li¹, Patrick Bewick¹, Bingyu Zhao¹, Bo Zhang², ¹Virginia Tech, United States; ²School of Plant and Environmental Sciences, Virginia Tech, United States
- BIO-10 Evaluating the differences in cellulase activities and proximate composition of different economically important substrates under submerged fungal fermentation.** Mohammad Raihan¹, Ahmad F. Alhomodi², Mark Berhow³, William Gibbons¹, Bishnu Karki¹, ¹South Dakota State University, United States; ²Dept. of Biology and Microbiology, South Dakota State University, United States; ³USDA, United States
- BIO-11 Effects of growth conditions on the bacterial conversion of methane to lipids.** Lisa Stephanie Dizon¹, Robert Bertrand¹, Mark Zappi¹, Rafael Hernandez¹, William Holmes², Dhan Lord Fortela¹, Emmanuel Revellame³, ¹Chemical Engineering, University of Louisiana at Lafayette, United States; ²Energy Institute of Louisiana, University of Louisiana at Lafayette, United States; ³Industrial Technology, University of Louisiana at Lafayette, United States
- BIO-12 In situ direct transesterification process optimization for biodiesel production from *Aspergillus terreus* wet biomass.** Rashmi Bed¹, Ameeta Ravikumar¹, V. Ravi Kumar², ¹Institute of Bioinformatics and Biotechnology, Savitribai Phule Pune University, India; ²Chemical Engineering and Process Development Division, National Chemical Laboratory, Pune, India
- BIO-13 Lignin-alginate-based biopolymers for the bioencapsulation of *Rhizobium*.** Toby A. Adjuik*, Sue E. Nokes, Michael D. Montross, Biosystems and Agricultural Engineering, University of Kentucky, United States
- BIO-14 Novel strategy for synthesis of stearidonic acid enriched triacylglycerol from ahiflower seed oil via a two-step enzyme reaction.** Yu Jin Lee¹, Changhwan Ju², In-Hwan Kim², ¹Department of Integrated Biomedical and Life Sciences, Graduate School, Korea University/BK21FOUR R&E Center for Learning Health Systems, Korea University, Republic of Korea; ²Korea University, Republic of Korea
- BIO-15 Optimizing corn steep liquor as fermentation media for the production of recombinant antifreeze proteins.** Bibek Byanju¹, Buddhi Lamsal², Swastik Sen³, Thomas Mansell³, ¹Food Science and Human Nutrition, Iowa State University, United States; ²Iowa State University (ISU), United States; ³Department of Chemical and Biological Engineering, Iowa State University, United States
- BIO-16 Phosphatidylglycerol-specific phospholipase C from *Amycolatopsis* sp. NT115: Biochemical characterization and heterologous expression.** Daisuke Sugimori*, Kiyoto Kajiyama, Shunsuke Kawashima, Yuho Matsumoto, Fukushima University, Japan
- BIO-17 Probiotic fermentation to improve nutritional profile in extruded or ground corn and wheat brans.** Bibek Byanju¹, Buddhi Lamsal², ¹Food Science and Human Nutrition, Iowa State University, United States; ²Iowa State University (ISU), United States
- BIO-18 Statistical optimization of media for enhancing intracellular lipid content in *Yarrowia lipolytica* NCIM 3589 grown on waste cooking oil for biodiesel production.** Shubhangi Jagtap¹, Ameeta Ravikumar¹, Gouri Raut², V. Ravi Kumar³, ¹Institute of Bioinformatics and Biotechnology, Savitribai Phule Pune University, Pune, India; ²Bioenergy, Agharkar Research Institute, India; ³Chemical Engineering and Process Development Division, CSIR-National Chemical Laboratory (CSIR-NCL), India
- BIO-19 Synthesis of pinolenic acid enriched triacylglycerol from pine nut oil via a two-step consecutive enzyme reaction.** Mi Soon Park¹, Yu Jin Lee¹, In-Hwan Kim², ¹Department of Integrated Biomedical and Life Sciences, Graduate School, Korea University/BK21FOUR R&E Center for Learning Health Systems, Korea University, Republic of Korea; ²Korea University, Republic of Korea

Edible Applications Technology

Chair: Supratim Ghosh, University of Saskatchewan, Canada

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- EAT-01 Chemical and physical stability of EPA and DHA fortified plant milk analogs.** Abigail A. Sommer*, Yael Vodovotz, Department of Food Science and Technology, The Ohio State University, United States
- EAT-02 Comparison of high oleic palm oils and shortenings in a baking application.** Melissa Perez-Santana*, Gloria Cagampang, Christopher Nieves, Victor Cede o-S anchez, Andrew MacIntosh, University of Florida, United States
- EAT-03 Does cannabidiol affect the physical properties of anhydrous milk fat and palm kernel oil?** Joseph Cooney¹, Silvana Martini², ¹Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States; ²Utah State University, United States
- EAT-04 Effect of cannabidiol on crystallization behavior and physical properties of cocoa butter and palm oil.** Isaac Hilton¹, Joseph Cooney², Silvana Martini¹, ¹Utah State University, United States; ²Department of Nutrition, Dietetics and Food Sciences, Utah State University, United States
- EAT-05 Effect of waxes on oil separation and texture properties of peanut butter.** Md. Jannatul Ferdous¹, Rycal Blount², Nathan Zauner¹, Roberta Silva¹, ¹Family and Consumer Sciences, North Carolina A&T State University, United States; ²North Carolina A&T State University, United States
- EAT-06 Effect of the fat content of cream on the physical properties of butter.** Annalisa Jones*, Silvana Martini, Utah State University, United States

- EAT-07 Effects on the physical properties of corn oil oleogels structured with different ratios of rice bran or carnauba waxes.** Jabarius Jones^{*1}, Jaden Payne¹, Rycal Blount², Roberta Silva¹, ¹Family and Consumer Sciences, North Carolina A&T State University, United States; ²North Carolina A&T State University, United States
- EAT-08 Exploring plant biodiversity to extract oil bodies for sustainable food applications.** Nathalie Barouh^{*1}, Claire Berton-Carabin², Thierry Chardot³, Sabine D'andrea³, Jean-François Fabre⁴, Yann Gohon³, Eric Lacroux⁷, Valérie Lullien-Pellerin⁵, Valérie Micard⁵, Othmane Merah⁴, Anne Meynier², Romain Valentin⁴, Véronique Vié⁶, Pierre Villeneuve⁷, Claire Bourlieu-Lacanal⁵, ¹CIRAD, France; ²UR BIA, INRAE, France; ³UMR 1318 Institut Jean-Pierre Bourgin (IJPB), INRAE/ AgroParisTech/ Université Paris-Saclay, INRAE, France; ⁴UMR 1010 LCA, INRAE/ Université de Toulouse/INPT/ENSIACET, United States; ⁵UMR IATE, INRAE/Univ Montpellier/Institut Agro, France; ⁶Soft Matter, Institut de Physique de Rennes, Université de Rennes 1, France; ⁷UMR QUALISUD, CIRAD/Univ Montpellier/ Institut Agro/IRD/Univ Réunion, France
- EAT-09 Impact of almond roasting and particle size on the simultaneous extraction of lipids and proteins for almond milk production.** Jessica Hallstrom^{*}, Fernanda Furlan Goncalves Dias¹, Juliana Leite Nobrega De Moura Bell, Food Science & Technology, University of California, Davis, United States
- EAT-10 Monoglyceride type and concentration affect the rheological and structural properties of Pickering stabilized oleofoams.** Matteo Grossi^{*}, Bingcan Chen, Plant Science, North Dakota State University, United States
- EAT-11 Physical properties of beeswax-based oleogel-emulsion as a delivery system of probiotics.** Rycal Blount^{*}, North Carolina A&T State University, United States
- EAT-12 Plant-based adipose tissue developed using advanced emulsion technology: Comparison of soy-based high internal phase emulsions with beef adipose tissue.** Xiaoyan Hu^{*}, David J. McClements, Food Science, University of Massachusetts Amherst, United States
- EAT-13 Solubilized proteins as a fat block in production.** Stephen Kelleher^{*}, Wayne Saunders, William Fielding, Kemin Industries, United States
- EAT-14 Static *in vitro* digestibility impacted by emulsion crystallinity under different experimental conditions.** Ye Ling Li^{*}, Amanda J. Wright, Human Health & Nutritional Sciences, University of Guelph, Canada
- EAT-15 African butter seed fat: A potential substitute for cocoa butter.** Sandaru Jayathissa^{*1}, Buddhika Silva², Shiromi De Silva³, Renuka Jayatissa², Terrence Madhujith¹, ¹Food Science and Technology, University of Peradeniya, Sri Lanka; ²Department of Nutrition, Medical Research Institution, Sri Lanka; ³Department of Electron microscopy, Medical Research Institute, Sri Lanka
- EAT-16 Candelilla and rice bran wax as oleogelators in soybean oil for deep frying application.** Maslia Manja Badrul Zaman^{*1}, Amelia Najwa Ahmad Hairi¹, Norliza Saporin², Ahmadilfitri Md Noor², ¹Oils and Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia; ²Sime Darby Plantation Research Sdn Bhd, Malaysia
- EAT-17 Cocoa butter crystallization and fat bloom formation in the presence of rice bran wax.** Pawitchaya Podchong^{*1}, Sopark Sonwai², Dérick Rousseau³, ¹Department of Food Science and Technology, Faculty of Agricultural Technology and Agro-Industry, Rajamangala University of Technology Suvarnabhumi, Thailand; ²Department of Food Technology, Faculty of Engineering and Industrial Technology, Silpakorn University, Thailand; ³Department of Chemistry and Biology, Ryerson University, Canada

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- EAT-18 Comparative analysis of cocoa beans from different climatic regions in Togo.** Daniel Kalnin*, *ISTOM, France*
- EAT-19 Consumers' perceptions and associations on plant-based cheese analogue in Malaysia.** Amelia Najwa Ahmad Hairi*, Ungku Fatimah Ungku Zainal Abidin², Maimunah Sanny², Nur Qistina Aznor Shahril², ¹*Oils and Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia*; ²*Universiti Putra Malaysia, Malaysia*
- EAT-20 Destabilization of particle-stabilized emulsions with non-ionic surfactants.** Malek El-Aooiti*, Auke de Vries², Dérick Rousseau¹, ¹*Chemistry and Biology, Ryerson University, Canada*; ²*Ryerson University, Canada*
- EAT-21 Determination of solid fat content in plain fats and suspensions with lab-scale SAXS device.** Fien De Witte*, Koen Dewettinck, *Department of Food Technology, Safety and Health, Ghent University, Belgium*
- EAT-22 Effect of dispersed aqueous droplet volume fraction on the rheology and structure of water-in-oil emulsions stabilized with fat crystals.** Veronica Hislop*, Dérick Rousseau², ¹*Molecular Science, Ryerson University, Canada*; ²*Department of Chemistry and Biology, Ryerson University, Canada*
- EAT-23 Improving the consistency of high internal phase water-in-oil emulsions stabilized by fat crystals.** Natalia Mello*, Dérick Rousseau², ¹*Ryerson University, Canada*; ²*Department of Chemistry and Biology, Ryerson University, Canada*
- EAT-24 Inclusion complexes between amylose and long-chain dicarboxylic acids prepared by jet cooking: Characterization and thermal properties.** James Kenar*, David Compton², Steve Peterson³, Frederick Felker¹, ¹*Functional Food Research, USDA ARS MWA NCAUR, United States*; ²*Renewable Products Technology, USDA ARS MWA NCAUR, United States*; ³*Plant Polymer Research, USDA ARS MWA NCAUR, United States*
- EAT-25 Microstructure controlling on the printability of high oil paste formulated with nanoporous starch aerogels (NSAs).** Lingyi Liu* (*Honored Student Award Winner; Manuchehr Eijadi Award Winner*), Ozan Ciftci, *Food Science and Technology, University of Nebraska-Lincoln, United States*
- EAT-26 Physicochemical properties of bambangan (*Mangifera pajang*) kernel fat and its stearin mixtures with cocoa butter.** Hasmadi B. Mamat*, Norazlina Ridhwan², ¹*Faculty of Food Science and Nutrition, University Malaysia Sabah, Malaysia*; ²*Universiti Malaysia Sabah, Malaysia*
- EAT-27 Sucrose esters potential as oleogelators to form oleogels using different structuration routes.** Thais da Silva*, Vicent Baeten², Sabine Danthine¹, ¹*Gembloux Agro-Bio Tech, University of Liege, Belgium*; ²*Quality and Authentication of Products, Walloon Agricultural Research Centre, Belgium*
- EAT-28 Temperature-dependent microstructure and rheology of fat in adipose tissue in pork, beef and lamb.** Khakhanang Wijarnprecha*, Philipp Fuhrmann², Christopher Gregson³, Matt Sillick³, Sopark Sonwai⁴, Dérick Rousseau², ¹*Ryerson University, Canada*; ²*Department of Chemistry and Biology, Ryerson University, Canada*; ³*Paragon Pure Inc, United States*; ⁴*Silpakorn University, Thailand*
- EAT-29 Temperature-dependent phase behaviour of blends of SSS (tristearin) and SSO (1,2-distearoyl-3-oleoyl-rac-glycerol).** Khakhanang Wijarnprecha*, Ryan West², Dérick Rousseau³, ¹*Ryerson University, Canada*; ²*Mondelez International, United States*; ³*Department of Chemistry and Biology, Ryerson University, Canada*
- EAT-30 Tuning suspension rheology in hybrid capillary suspension-oleogels for edible oil structuring.** Selvyn Simoes*, Dérick Rousseau², ¹*Ryerson University, Canada*; ²*Department of Chemistry and Biology, Ryerson University, Canada*



Health and Nutrition

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- H&N-01 Biological activities of flaxseed peptides (Linusorbs).** Youn Young Shim*, Timothy Tse², Martin J. Reaney², ¹*Department of Plant Sciences, University of Saskatchewan, Canada*; ²*University of Saskatchewan, Canada*
- H&N-02 Changes in energy metabolism induced by PFOS and dietary oxylipins.** William A. Evans*, Jazmine Eccles, William S. Baldwin, *Biological Sciences, Clemson University, United States*
- H&N-03 Dietary γ -glutamyl valine in reducing inflammation in endothelial cells and in a mouse model for Atherosclerosis.** Snigdha Guha*, Kaustav Majumder, *Food Science and Technology, University of Nebraska, Lincoln, United States*
- H&N-04 Eco-designed virgin coriander seed oil: A food supplement solution to soothe sensitive skin.** Regis Marchand*, Catherine Kern, Remi Laville, Alicia Roso, *Research and Innovation, Seppic, France*
- H&N-05 Enhancing soybean meal demand and market by developing soy meal based aquafeeds.** Zachary Shea*, Bo Zhang², ¹*Virginia Tech University, United States*; ²*School of Plant and Environmental Sciences, Virginia Tech, United States*
- H&N-06 Fungal digestive enzymes promote macronutrient hydrolysis in the INFOGEST *in vitro* simulation of digestion.** Justin L. Guice*, Caroline H. Best¹, Morgan D. Hollins¹, Kelly M. Tinker¹, Sean M. Garvey², ¹*Research and Development, BIO-CAT, Inc., United States*; ²*BIO-CAT, Inc., United States*
- H&N-07 Fungal multi-enzyme blend promotes improved macronutrient hydrolysis of mixed meal substrates in the INFOGEST *in vitro* simulation of digestion.** Justin L. Guice*, Morgan D. Hollins¹, Caroline H. Best¹, Kelly M. Tinker¹, Sean M. Garvey², ¹*Research and Development, BIO-CAT, Inc., United States*; ²*BIO-CAT, Inc., United States*
- H&N-08 Lipid oxidation kinetics of model systems representative of follow-on formulas.** Mathilde Cancalon* (*European Section Student Travel Grant Winner*), Nathalie Barouh¹, Youna Hemery², Erwann Durand³, Pierre Villeneuve¹, Claire Bourliou-Lacanal⁴, ¹*CIRAD, France*; ²*IRD, France*; ³*CIRAD/UMR QUALISUD, France*; ⁴*UMR IATE, INRAE/Univ Montpellier/Institut Agro, France*
- H&N-09 *In vitro* bioaccessibility and antioxidant activity of commercial standard and enriched whole egg compounds modulated by production and processing practices.** Emerson Nolasco*, Eugene Baraka², Danh C. Vu², Sophie Alvarez², Kaustav Majumder¹, ¹*Food Science and Technology, University of Nebraska-Lincoln, United States*; ²*University of Nebraska-Lincoln, United States*
- H&N-10 Comparing physical stability of ultrasound and Pickering emulsion fortified with vitamin D.** Sibel Uluata*, Seymanur Avci², Gokhan Durmaz², ¹*Food Engineering, Inonu University, Turkey*; ²*Inonu University, Turkey*
- H&N-11 Diet-induced gene expression changes of cachectic muscle, adipose, and liver.** Austin Angelotti*, Rachel Cole¹, Amy Webb¹, Maciej Pietrzak¹, Martha A. Belury², ¹*Ohio State University, United States*; ²*Nutritional Sciences, Ohio State University, United States*
- H&N-12 Dietary intakes of *trans* fatty acids in the Canadian population before the prohibition of partially hydrogenated oils.** Isabelle Demonty*, Kuan Chiao Wang², Isabelle Rondeau², Chantal Martineau³, Lindsay Lukeman³, Dominique Ibanez², ¹*Nutrition Research Division, Bureau of Nutritional Sciences, Health Products and Food Branch, Health Canada, Canada*; ²*Bureau of Food Surveillance and Science Integration, Health Products and*



Food Branch, Health Canada, Canada; ³Nutrition Regulations and Standards Division, Bureau of Nutritional Sciences, Health Products and Food Branch, Health Canada, Canada

H&N-13 Eco-friendly strategies to produce bioactive lipids from the omega-3 rich microalga *Nannochloropsis gaditana*. Natalia Castejón*, Department of Food Chemistry and Toxicology, University of Vienna, Austria

H&N-14 Effect of food emulsions on the cytotoxicity of 3-chloropropane-1,2-diol esters. Ayse Nur Akpınar*¹, Selvi Secil Sahin², Büşra Moran Bozer³, Aziz Tekin¹, Cansu Ekin Gumus-Bonacina¹, ¹Ankara University, Turkey; ²University of Leeds, United Kingdom; ³Hitit University, Turkey

H&N-15 Effects of palm stearin and palm olein emulsion crystallinity on beta-carotene degradation and *in vitro* bioaccessibility. Jessica Ulbikas*, Ye Ling Li, Amanda J. Wright, Human Health & Nutritional Sciences, University of Guelph, Canada

H&N-16 Genotoxicity evaluation of prickly pear cactus seeds oil in cultured V79 cells. Ghanya Al-Naqeb*

H&N-17 Medium-chain fatty acids for the prevention or treatment of Alzheimer's disease: A systematic review and meta-analysis. Carolina Castro*¹, Cintia Dias², Hamid Sohrabi¹, Tejal Shah¹, Pratihtha Chatterjee³, Heidi Hillebrandt³, Stephanie Fuller³, Manohar Garg², Ralph Martins³, ¹Murdoch University, Australia; ²The University of Newcastle, Australia; ³Macquarie University, Australia

H&N-18 Nutrition for longevity and healthy aging type. Khalid Elsayed Elsayed*, Geriatrics and Gerontology, Faculty of Medicine, Ain Shams University, Egypt

H&N-19 The effects of dietary soybean oil on blood fatty acids and body weight in overweight and obese adults: Protocol for a crossover design pilot study. Rachel Cole*¹, Eric Colombo¹, Austin Angelotti¹, Martha A. Belury², ¹Ohio State University, United States; ³Nutritional Sciences, Ohio State University, United States

Industrial Oil Products

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IOP-01 The effect of structure regularity of natural oils on properties of oil-based epoxy resins. Jian Hong*, Dragana Radojic, Zoran S. Petrovic, Kansas Polymer Research Center, Pittsburg State University, United States

IOP-02 Crystallography and functionality of natural waxes: Insights for the development of tailored lipid materials. Francisco Leyva Gutierrez*, Tong (Toni) Wang, Department of Food Science, University of Tennessee Knoxville, United States

IOP-03 Flame retardant polyurethane foams using vegetable oil-based polyol. Prashant Kote*, Magdalen Asare, Sahilkumar Chaudhary, Tim Dawsey, Ram Gupta, Pittsburg State University, United States

IOP-04 Production of branched esters via continuous alkylation of fatty acid methyl esters over montmorillonite and H-ZSM5 catalysts. Evan Davison*¹, Jessica Otto¹, Sandeep Kumar², Randy Maglinao¹, ¹Montana State University-Northern, United States; ²Department of Civil & Environmental Engineering, Old Dominion University, United States

IOP-05 Study of the phenolic fraction for the valorization of olive pomace as a functional ingredient. Ilaria Grigoletto¹, Patricia García Salas², Enrico Valli*³, Alessandra Bendini⁴, Federica Pasini¹, Sebastián Sánchez Villascaras⁵, Roberto García Ruiz⁶, Tullia Gallina Toschi¹, ¹Department of Agricultural and Food Sciences, Alma Mater Studiorum—University of Bologna, Italy; ²University of Bologna, Italy; ³Department of Agricultural and Food Sciences and Interdepartmental Centre of Agri-Food Industrial Research, Alma

Mater Studiorum—Università di Bologna, Italy; ⁴DISTAL, Alma Mater Studiorum Università di Bologna, Italy; ⁵Chemical, Environmental and Materials Engineering, University of Jaen, Spain; ⁷Plant and animal biology and ecology, University of Jaén, Spain; ⁸Department of Food and Agriculture Sciences, University of Bologna, Italy

IOP-06 Synthesis of cycloalkanes from lignocellulosic platform. Jessica Otto*, Evan Davison, Randy Maglinao, Montana State University-Northern, United States

Lipid Oxidation and Quality

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LQ-01 Antioxidative functionality of natural olive extract vs. synthetic tertiary butyl hydroquinone in sunflower oil during deep frying. Mayamol Nichlavose*¹, Sergey Melnikov², Rupesh Sarfare¹, Chirag Jain¹, ¹Research & Development, International Foods Stuff Company (IFFCO), United Arab Emirates; ²IFFCO, United Arab Emirates

LQ-02 Determination of antioxidant synergism between tocopherols and myricetin in bulk oil. Ipek Bayram* (**Lipid Oxidation and Quality Division Student Travel Grant Winner**), Eric A. Decker, Food Science, University of Massachusetts Amherst, United States



LQ-03 Effect of processing and fat content on the oxidative stability and interfacial behavior of tree nut oil-bodies. Jeanne Duplessis-Kergomard¹, Mélina Robert², Gilles Paboeuf¹, Nathalie Barouh³, Pierre Villeneuve*³, Olivier Schafer⁴, Tim Wooster⁴, Claire Bourlieu-Lacanal⁵, Véronique Vié¹, ¹Soft Matter, Institut de Physique de Rennes, Université De Rennes 1, France; ²Liffhe, CIRAD/UMR QUALISUD, France; ³CIRAD, France; ⁴Institute of Material Sciences, Lipids, Nestlé, Switzerland; ⁵UMR IATE, INRAE/Univ Montpellier/Institut Agro, France

LQ-04 Inhibitory mechanisms of quercetin against hemoglobin-mediated lipid oxidation in washed muscle model. Haizhou Wu*¹ (**Lipid Oxidation and Quality Division Junior Researcher Travel Grant Winner**), Jie Yin², Mark P. Richards³, ¹Dept of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden; ²University of Wisconsin-Madison, United States; ³Department of Animal and Dairy Sciences, University of Wisconsin-Madison, United States



LQ-05 Optimization of oxidative stress indicator workflows for enhanced quality control of rendered meals and fats utilizing the CDR FoodLab Analyzer: Peroxide value and free fatty acids. Jennifer Pelerin*¹, B.J. Bench², Madison Schaugaard², Jacob Swann², Toniese Bailey², ¹Quartz Analytics, United States; ²Tyson Food Ingredient Solutions Group, United States

LQ-06 Review of oil quality of soybeans grown in different geographic areas. Huazhen Liu*¹, Micah Pope², Todd Doehring², Pradeep Kachroo¹, David Hildebrand¹, ¹University of Kentucky, United States; ²Centrec Consulting Group, United States

LQ-07 Screening of metal-chelating peptides and hydrolysates using Surface Plasmon Resonance and switchSENSE. Mads Bjørleie*¹, Rachel Irankunda², Jean-Michel Girardet³, Sandrine Boschi-Müller⁴, Betül Yesiltas¹, Charlotte Jacobsen¹, Laetitia Canabady-Rochelle², ¹National Food Institute, Technical University of Denmark, Denmark; ²CNRS, LRG, University of Lorraine, France; ³INRAE, IAM, University of Lorraine, France; ⁴CNRS, IMoPA, University of Lorraine, France

LOQ-08 Stability of novel peptides (linusorbs) in flaxseed meal fortified gluten-free bread. Youn Young Shim^{*1}, Clara M. Olivia², Xian-Guo Zou³, Young Jun Kim⁴, Martin J. Reaney², ¹Department of Plant Sciences, University of Saskatchewan, Canada; ²University of Saskatchewan, Canada; ³Zhejiang University of Technology, China (People's Republic); ⁴Korea University, Republic of Korea

LOQ-09 Valorization of oilseeds: Impact of pH, hot air, and pressurized cooking on major phenolic derivatives. Ruchira Nandasiri^{* (Lipid Chemistry and Nutrition Award Winner)}, Olamide Fadairo, Thu Nguyen, N. A. Michael Eskin, *Food and Human Nutritional Sciences, University of Manitoba, Canada*



LOQ-10 Assessing the effects of sunlight on the photooxidation of tropical oils with experimental and computational approaches. Daniel Dodoo^{*1}, Samuel K. Tulashie², Thomas Dodoo³, Francis Kwaw⁴, ¹Department of Chemistry, Aix-Marseille University, Ghana; ²Industrial Chemistry Section, Department of Chemistry, University of Cape Coast, Ghana; ³Department of Computer Science and Engineering, University of Mines and Technology, Ghana; ⁴Quality Assurance Department, Ghana Nuts Company Limited, Ghana

LOQ-11 Comparison of the fatty acid composition of different culinary oils with high saturated coconut oil towards the improvement of public health. Ruchira Nandasiri^{*1}, Buddhika Silva², Nethmi Senevirathene³, Helani Munasinghe⁴, Shiromi De Silva⁴, Renuka Jayatissa⁴, ¹Food and Human Nutritional Sciences, University of Manitoba, Canada; ²Department of Nutrition, Medical Research Institution, Sri Lanka; ³Department of Botany, University of Sri Jayewardenepura, Sri Lanka; ⁴Department of Electron Microscopy, Medical Research Institute, Sri Lanka

LOQ-12 ESR photochemical method for evaluating oil oxidation by spin trapping method. Hiromi Kameya^{*}, *The Institute of Food Research, NARO, Japan*

LOQ-13 Extrusion 3D printing and oxidative stability of high-oil-content printing paste formulated with waxes-based oleogels. Lingyi Liu^{*}, Ozan Ciftci, *Food Science and Technology, University of Nebraska-Lincoln, United States*

LOQ-14 Free fatty acids in commercial krill oils: Concentrations, compositions, and implications for oxidative stability. Ioan D. Fuller^{*1}, Adam H. Cumming², Asli Card², Elaine J. Burgess², Colin J. Barrow³, Nigel B. Perry¹, Daniel P. Killeen², ¹Department of Chemistry, University of Otago, New Zealand; ²Plant & Food Research, New Zealand; ³School of Life & Env Sciences, Deakin University, Australia

LOQ-15 Kinetic and thermodynamic studies of the thermal-degradation of tocored in lipid systems with different unsaturation degree. Liyou Zheng^{*1}, Hongyan Guo¹, Jun Jin², Qingzhe Jin², ¹Anhui Polytechnic University, China (People's Republic); ²Jiangnan University, China (People's Republic)

LOQ-16 Lingonberry press-cake inhibits lipid oxidation during pH-shift processing of herring co-products and subsequent ice storage of recovered protein isolates. Bovie Hong, Jingnan Zhang^{*}, Mehdi Abdollahi, Marie Alminger, Ingrid Undeland, *Department of Biology and Biological Engineering-Food and Nutrition Science, Chalmers University of Technology, Sweden*

LOQ-17 Pulsed electric field treatment enhances lipid bioaccessibility while preserving oxidative stability in *Chlorella vulgaris*. Greta Canelli^{* (Processing Division Student Award Winner)}, Isabelle Kuster¹, Luc Jaquenod¹, Patricia Murciano Martínez², Zhen Rohfritsch³, Fabiola Dionisi², Paolo Nanni⁴, Christoph J. Bolten⁵, Alexander Mathys¹, ¹ETH Zurich, Switzerland; ²Nestlé Research,



Switzerland; ³Analytical science, Nestlé Research, Switzerland; ⁴Functional Genomics Center Zurich, Switzerland; ⁵NPTC Food Singen, Switzerland

LOQ-18 Study of the oxidative stability of oleogels structured with beeswax fractions. Roman Sobolev^{*}, Yuliya Frolova, Varuzhan Sarkisyan, Alla Kochetkova, *Federal Research Center of Nutrition, Biotechnology and Food Safety, Russia*

LOQ-19 Wheat and rice bran as natural additives for the protection of fish oil from oxidation. Zhen Rohfritsch^{*1}, Greta Canelli², Philippe Pollien³, Rachid Bel-Rhlid⁴, ¹Analytical science, Nestlé Research, Switzerland; ²Laboratory of Sustainable Food Processing, ETH Zurich, Switzerland; ³IMS, Nestlé Research, Switzerland; ⁴Institute of Material Sciences, Nestlé Research, Switzerland

Phospholipid

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PHOS-01 Rice bran lyso-gums: The unexplored source of potential industrial phospholipid. Olivia Dhara^{*}, Pradosh P. Chakrabarti, *Centre for Lipid Science and Technology, CSIR-Indian Institute of Chemical Technology, India*

Processing

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PRO-01 Effect of emulsifier addition on the thermomechanical properties of a high oleic palm oil based oleogel. Victor Cedeño-Sánchez, Devanshu Mehta^{*}, John Carriglio, Andrew MacIntosh, *University of Florida, United States*

PRO-02 Effect of high oleic acetyl triacylglycerol (acetyl-TAG) on functional properties of biodegradable sorghum DDGS packaging film. Eda C. Kaya^{*1}, Timothy Durrett², Scott Bean³, Valentina Trinetta⁴, Umüt Yuçel¹, ¹Food Science Institute/Department of Animal Sciences and Industry, Kansas State University, United States; ²Biochemistry and Molecular Biophysics, Kansas State University, United States; ³USDA Center for Grain and Animal Health Research, Manhattan, Kansas., United States; ⁴Kansas State University, United States

PRO-03 Efficacy of air frying as a hot air pre-treatment technique in enhancing the yield of the major oil-derived sinapic acid derivatives from canola oil. Olamide S. Fadairo^{*1}, Ruchira Nandasiri², N. A. Michael Eskin², Martin G. Scanlon², ¹Food and Human Nutritional Sciences, Richardson Centre for Functional Food and Nutraceutical, University of Manitoba, Canada; ²Food and Human Nutritional Sciences, University of Manitoba, Canada

PRO-04 Isothermal crystallization of palm olein with different seeding methods. Veronique J. Gibon^{*1}, Bastien Jacquet¹, Christophe Blecker², Sabine Danthine², ¹R&D Department, Desmet Ballestra Group SA, Belgium; ²University of Liège—Gembloux Agro-Bio Tech, Belgium

PRO-05 Adsorptive reduction of metals and phospholipids from biofuel feedstocks. Neal Williams^{*1}, David Gittins², Tony Smith², Lazaebrean McDowell², ¹Science and Technology, Imerys, United States; ²Imerys, United States

PRO-06 Application of choline chloride based deep eutectic solvent for the extraction of ferulic acid from oil palm pressed fibre. Mei Han Ng^{*}, Nu'man Abdul Hadi, *Engineering and Processing, Malaysian Palm Oil Board, Malaysia*

PRO-07 Effect of high-intensity ultrasound on canola oil bleaching (*Brassica napus* L.). Alelhi C. De Jesús-Hernández^{*1}, Genaro G.

Amador-Espejo¹, Raúl J. Delgado-Macuil¹, Héctor Ruiz-Espinosa²,
¹Centro de Investigación en Biotecnología Aplicada, Instituto Politécnico Nacional, Mexico; ²Facultad de Ingeniería Química, Benemérita Universidad Autónoma de Puebla, Mexico

PRO-08 Effect of pretreatment conditions on mustard bioactive compounds. Thu Nguyen*, Ruchira Nandasiri, N. A. Michael Eskin, Food and Human Nutritional Sciences, University of Manitoba, Canada

PRO-09 Formation of lentil protein-tannic acid complexes limits *in vitro* peptic hydrolysis and alters peptidomic profiles of the protein. Ruth Boachie*¹, Ogadimma Okagu², Raliat Abioye³, Nico Huttmann⁴, Teresa Oliviero⁵, Edoardo Capuano⁵, Vincenzo Fogliano⁵, Chibuikwe Udenigwe⁴, ¹School of Nutrition Sciences/Agrotechnology and Food Sciences, University of Ottawa/Wageningen University & Research, Canada; ²University of Ottawa, Canada; ³Chemistry and Biomolecular Sciences, University of Ottawa, Canada; ⁴University of Ottawa, Canada; ⁵Wageningen University & Research, Netherlands

PRO-10 Novel encapsulated ionic liquid analogous for free fatty acid conversion to fatty acid methyl ester. Adeeb Hayyan¹, Mohamed E. Mirghani*², Haneef F. Hizaddin¹, Mahar Diana Hamid¹, Jihad Saleh³, M.Y. Zulkifli⁴, Waleed Al Abdulmonem⁵, Fahad A. Alhumaydh⁶, Abdullah S.M. Aljohani⁶, ¹Department of Chemical Engineering, University of Malaya, Malaysia; ²International Institute for Halal research and Training (INHART), International Islamic University Malaysia (IIUM), Malaysia; ³Department of Chemical Engineering, King Saud University, Saudi Arabia; ⁴Academy of Islamic Studies, Universiti Malaya, Malaysia; ⁵Department of Pathology, Qassim University, Saudi Arabia; ⁶Department of Medical Laboratories, Qassim University, Saudi Arabia; ⁷Department of Veterinary Medicine, Qassim University, Saudi Arabia

PRO-11 Process considerations for using alternative feedstock in the production of biodiesel. Bryan Yeh*, American Biodiesel Dba Community Fuels, United States

PRO-12 Utilizing tea industry by-products to improve instant tea aroma. Umesh Rajapakse*¹, Chamila Jayasinghe¹, Akila Dalpathadu², Darshika Pathiraja¹, Sarath P. Nissanka³, ¹Department of Food Science and Technology, Wayamba University of Sri Lanka, Sri Lanka; ²Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka; ³Department of Crop Science, University of Peradeniya, Sri Lanka

Protein and Co-Products

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PCP-01 Comparing the structural and functional characteristics of novel proteins from Pennycress (*Thlaspi arvense*) and Camelina sativa. Serap Vatansever*¹, Rachel Mitacek¹, Vaidehi Narkar², Pam Ismail³, ¹Food Science and Nutrition, University of Minnesota, United States; ²R&D, General Mills, United States; ³Department of Food Science and Nutrition, University of Minnesota, United States

PCP-02 Comprehensive evaluation and comparison of machine learning methods in QSAR modeling of antioxidant tripeptides. Zhenjiao Du*¹, Donghai Wang², Yonghui Li¹, ¹Grain Science and Industry, Kansas State University, United States; ²Biological and Agricultural Engineering, Kansas State University, United States

PCP-03 Development of a low-cost, nano-fibrillar xerogel network comprised of cyclic-di-amino acids. Arianna Sultani*, Michael Rogers, Pedram Nasr, Food Science, University of Guelph, Canada

PCP-04 Does soil nutrient management with nitrogen fertilizer increase protein content in leguminous plants? Emily Jundt*¹, Kaustav Majumder¹, Bijesh Maharjan², ¹Food Science

and Technology, University of Nebraska-Lincoln, United States; ²Agronomy, University of Nebraska-Lincoln, United States

PCP-05 Efficacy of Great Northern beans-derived γ -glutamyl peptides in reducing vascular inflammation. Snigdha Guha* (*Honored Student Award Winner; Peter and Clare Kalustian Award Winner*), Food Science and Technology, University of Nebraska, Lincoln, United States



PCP-06 Evaluating the efficacy of germination in producing biologically active peptides from garbanzo beans. Kaustav Majumder, Ashley Newton*, Food Science and Technology, University of Nebraska, Lincoln, United States

PCP-07 Functional properties of enzymatic pea protein hydrolysates that inhibit *in vitro* activities of acetylcholinesterase and butyrylcholinesterase. Nancy D. Asen*¹, Rotimi Aluko², ¹Food Science, University of Manitoba, Canada; ²Food and Human Nutritional Sciences, University of Manitoba, Canada

PCP-08 Improving edamame seedling establishment by determining the optimal temperature. Xiaoying Li*¹, Bo Zhang², ¹Virginia Tech, United States; ²School of Plant and Environmental Sciences, Virginia Tech, United States

PCP-09 Increasing soybean meal protein level reduces GHG emissions and improves farm and food sector sustainability metrics. John Osthus*¹, Bart Borg², Shawn Conley³, Paul Mitchell³, R. Dean Boyd⁴, ¹Blue Spring Communications, United States; ²Standard Nutrition Company, United States; ³University of Wisconsin-Madison, United States; ⁴Animal Nutrition Research, United States

PCP-10 Introducing mung bean as an alternative or rotation crop to tobacco in Virginia. Jessica Wilbur*¹, Ozzie Abaye¹, Bo Zhang², Carol Wilki³, ¹Virginia Tech, United States; ²School of Plant and Environmental Sciences, Virginia Tech, United States; ³Virginia Tech Southern Piedmont Agricultural Research & Extension Center, United States

PCP-11 Quantitative structure-activity relationship study on antioxidant dipeptides. Zhenjiao Du*, Yonghui Li, Grain Science and Industry, Kansas State University, United States

PCP-12 RuBisCO proteins as plant-based alternatives to egg white proteins: Characterization of thermal gelation properties. Hualu Zhou*¹, Giang Vu¹, David J. McClements², ¹University of Massachusetts Amherst, United States; ²Food Science, University of Massachusetts Amherst, United States

PCP-13 Sequential fractionation as a tool for understanding the physicochemical and thermal properties of aqueous and enzyme-assisted aqueous extracted black bean proteins. Jasmin S. Yang*, Fernanda Furlan Goncalves Dias, Juliana Leite Nobrega De Moura Bell, Food Science and Technology, University of California, Davis, United States

PCP-14 Tailoring the ultrafiltration of colostrum whey to produce a bioactive compound-rich permeate for subsequent isolation by nanofiltration. Andrea J. Tam*¹, Sierra D. Durham¹, Daniela Barile¹, Juliana Leite Nobrega De Moura Bell², ¹University of California, Davis, United States; ²Food Science and Technology, University of California, Davis, United States

PCP-15 Atmospheric cold plasma treatment enhanced the pea protein gelling properties and mechanisms study. Sitian Zhang*, Lingyun Chen, University of Alberta, Canada

PCP-16 Bioactive peptide production from slaughterhouse blood proteins: Impact of pulsed electric fields and pH on enzyme inactivation, antimicrobial and antioxidant activities of peptic hydrolysates from bovine and porcine hemoglobins. Zain Sanchez Reinosa*, Jacinthe Thibodeau, Laila Ben Said, Ismail Fliiss, Laurent Bazinet, Sergey Mikhaylin, Food Science Department, Université Laval, Canada

PCP-17 Chicken feathers keratin/modified graphene oxide based biosorbent for water remediation. Muhammad Zubair* (*Canadian Section Student Support Grant Winner; Protein and Co-Products Division Student Travel Grant Winner*), Aman Ullah, *Agricultural, Food and Nutritional Science, University of Alberta, Canada*



PCP-18 Development of protein–polyphenol conjugates via free radical grafting method: Evaluation of physicochemical and functional properties. Shahrzad Sharifimehr¹, Supratim Ghosh², Ramaswami Sammynaik³, ¹*Food and Bioproduct Sciences, University of Saskatchewan, Canada*; ²*University of Saskatchewan, Canada*; ³*Saskatchewan Structural Science Center, Canada*

PCP-19 Effects of particle size distribution and feed moisture content on the techno-functional properties of extruded soybean meal. Ravinder Singh*, Filiz Koksel, *Department of Food and Human Nutritional Sciences, University of Manitoba, Canada*

PCP-20 Effects of pH-shifting process on the improvement of gelling properties of pea protein and their potential application as binders in meat alternative products. Peineng Zhu¹, Lingyun Chen², ¹*University of Alberta, Canada*; ²*Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada*

PCP-21 Exploring Malaysian consumers' perception and purchase intention of meat analogues. Maslia Manja Badrul Zaman¹, Chun Wai Lai², Ungku Fatimah Ungku Zainal Abidin², Maimunah Sanny², ¹*Oils & Fats, Sime Darby Plantation Research Sdn Bhd, Malaysia*; ²*Universiti Putra Malaysia, Malaysia*

PCP-22 Extraction and characterization of minimally processed native faba bean (*Vicia faba*) protein using mild fractionation. Madhurima Bandyopadhyay¹, Supratim Ghosh², Michael Nickerson¹, ¹*Food and Bioproduct Sciences, University of Saskatchewan, Canada*; ²*University of Saskatchewan, Canada*

PCP-23 Functionalization of rapeseed protein using membrane filtration. Simone Bleibach Alpiger*, Milena Corredig, *Department of Food Science, Aarhus University, Denmark*

PCP-24 'Green' production of protein isolate from novel golden pennycress seeds. Milagros P. Hojilla-Evangelista¹, Roque L. Evangelista², ¹*USDA ARS NCAUR Plant Polymer Research, United States*; ²*USDA ARS NCAUR Bio-Oils Research, United States*

PCP-26 Optimization of potent mineral chelating peptides production from rapeseed meal proteins proteolysis and peptide characterizations. Nastassia Kaugarenia¹, Sophie Beaubier², Erwann Durand³, François Lesage⁴, Xavier Framboisier⁵, Arnaud Aymes⁵, Pierre Villeneuve⁶, Romain Kapel⁴, ¹*LRGP, France*;

²*University of Lorraine, LRGP CNRS, France*; ³*CIRAD/UMR QUALISUD, France*; ⁴*LRGP CNRS UMR7274, France*; ⁵*LRGP CNRS, France*; ⁶*CIRAD, France*

PCP-27 Prediction of protein and amino acid contents in canola seeds and canola meal with near-infrared spectroscopy. Junya Liu*, *University of Manitoba, Canada*

PCP-28 Processing of silflower (*Silphium integrifolium*) seeds to obtain oil and enriched protein meal. Roque L. Evangelista¹, Milagros P. Hojilla-Evangelista², Steven Cermak³, David Van Tassel⁴, ¹*USDA ARS NCAUR Bio-Oils Research, United States*; ²*USDA ARS NCAUR Plant Polymer Research, United States*; ³*USDA, United States*; ⁴*Perennial Oilseeds, Land Institute, United States*

PCP-29 Variations in phytochemicals in DDGS oil from 30 ethanol plants. Jill Winkler-Moser*, *USDA ARS NCAUR, United States*

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S&D-02 Response surface methodology optimization of the use of acetyl-triacylglycerol for improving the structure of whey protein foams. Eda C. Kaya¹, Dallas Johnson², Timothy Durrett³, Umut Yucel¹, ¹*Food Science Institute/Department of Animal Sciences and Industry, Kansas State University, United States*; ²*Department of Statistics, Kansas State University, United States*; ³*Biochemistry and Molecular Biophysics, Kansas State University, United States*

S&D-03 Characterization of organophilic clays for their application in cosmetic formulations (hectorite). Johnbryner Garcia¹, Angelica Maria Ortega¹, Jesús Guillermo Perez¹, Daniela Martínez², Mairis Guevara², Johnny Bullon², Ana Forgiarini², ¹*RD&I, Belcorp, Colombia*; ²*FIRP Laboratory, Universidad de Los Andes, Venezuela, United States*

S&D-04 Clear and transparent methyl ester sulphonate micellar systems for mild hair shampoo applications. Emily Tan¹, Krassimir D. Danov², Romyana D. Stanimirova², Peter A. Kralchevsky², Tatiana G. Slavova², Veronika I. Yavrukova², Yee Wei Ung¹, Hui Xu³, Jordan T. Petkov¹, Ai Mun Cheong¹, ¹*KLK OLEO, Malaysia*; ²*Department of Chemical and Pharmaceutical Engineering, Sofia University, Bulgaria*; ³*KLK OLEO, China (People's Republic)*

S&D-05 Determination of the concentration of commercial cationic surfactants in aqueous solutions by the colloidal titration method. José Alejandro Fernández¹, Daniela Martínez², Franklin Salazar-Rodríguez³, Johnny Bullon², ¹*FIRP Laboratory/University of Los Andes, Venezuela*; ²*FIRP Laboratory, Venezuela*; ³*Unit Operations, FIRP Laboratory, Venezuela*

S&D-06 Green surfactants as chemical herders for maritime oil spill remediation. George John¹, Charles Maldarelli², ¹*Chemistry and Biochemistry, City College of New York (CUNY), United States*; ²*Chemical Engineering/Levich Institute, The City College of New York, United States*

S&D-07 Triborheological analysis of reconstituted gastrointestinal porcine mucus/polymeric nanoparticles system for studying mucoadhesion. Gustavo Ruiz*, Dora Medina, *School of Engineering and Sciences, Tecnológico De Monterrey, Mexico*

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Company	Ad Page	Booth Number
ANKOM Technology	11	
BTSA	47	312
Crown Iron Works Company	Cover 4	225
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DVC Process Technologists	43	116
French Oil Mill Machinery Co.	7	131
HUM Oil & Fats Technologies	21	243
J. Rettenmaier USA LP	13	146
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