



# CORNUCOPIA

including the AGFD program for the  
263rd American Chemical Society (virtual & live) National Meeting on  
March 20 - 24, 2022

in

## SAN DIEGO

### MICHAEL GRANVOGL & LINSHU LIU

### Program Chairs

Questions about  
**VIRTUAL PROGRAMMING?**

see page 2

Going to San Diego?  
Join the AGFD Social Reception (free refreshments!)  
held concurrently with the  
AGFD Undergraduate Poster Competition  
Tuesday March 22 7-9 pm  
in the Convention Center

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Visit our website - [www.agfoodchem.org](http://www.agfoodchem.org) - for a pdf of Cornucopia, job postings, awards and much more.

Check out our Facebook page - [www.facebook.com/agandfood](https://www.facebook.com/agandfood)

We're on LinkedIn, too!

## MESSAGE FROM THE CHAIR

I am grateful to have an opportunity to serve as AGFD Chair of year 2022, a challenge that I can't treat lightly. I am humbled by this responsibility entrusted by AGFD membership, and I plan to use all my ability to serve you.

First, I must express my deepest appreciation to our past Chairs, Lucy and Youngmok and all ExCom members for guiding and helping me to assume this important AGFD assignment. I also thank all symposium organizers, presiders and presenters for the great contributions to AGFD programs in times when we are facing unprecedented challenges. In the past two years, pandemic ravaged, laboratories were partially shut down, travel was limited, and meeting was constrained; the 259<sup>th</sup>, 260<sup>th</sup>, and 261<sup>st</sup> ACS national meetings had to be organized in totally virtual format. The 262<sup>nd</sup> meeting developed into a hybrid format that allowed those who felt comfortable travelling to do so while also allowing those who were unable to attend in-person to participate remotely. The virtual format was also optimized in such a way that all presentations, whether online or in-person, were delivered live. This design allowed participants to ask questions and network with their peers in a way that pre-recorded presentation format was lacking. The 2022 Spring meeting will continue to use hybrid format. We accepted 226 submissions including 160 oral reports and 66 posters arranged as 10 symposia. These presentations cover the applications of big data, AI, and Nano-technology in agricultural and food chemistry, most recent nutrition and gut microbiome research, as well as food chemistry and safety. Certainly, your genuine creativity and dedication will be appreciated by all attending the forthcoming Spring Meeting.

As Covid-19 pandemic passed the peak and started rapidly decreasing, our colleagues have begun to return to work in-person in laboratories. Thus, I hope that the 2022 Fall ACS Meeting may return to its traditional format. However, we understand the need of keeping all possible options open. Dr. Michael Granvogl will lead the organization of 2022 Chicago and 2023 Indianapolis meetings. If you are interested at participating in these meetings, please show your support by contacting him at michael.granvogl@unit-hohenheim.de

I look forward to welcoming you in Chicago in August.

Best regards,

LinShu Liu  
2022 AGFD Chair  
Linshu.liu@usda.gov

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## VIRTUAL PROGRAMMING – HOW DOES IT WORK ?

See the ACS website links, below, for the San Diego meeting.

Go to **ACS.org, Meetings and Events, ACS Meetings and Expositions,**

Click on **Frequently Asked Questions** or use the link:

<https://www.acs.org/content/acs/en/meetings/acs-meetings/registration/faq.html#general>

For more info - click on **Meeting Experience** or use the link:

<https://www.acs.org/content/acs/en/meetings/acs-meetings/registration/why-attend.html>

## FUTURE PROGRAMS

**CHICAGO August 21-25, 2022**

ACS Meeting Theme: Sustainability in a Changing World

**Advancement of Application of Agricultural & Food Chemistry Award: Symposium honoring Shengmin Sang**  
LinShu Liu linshu.liu Michael Morello mjmorello226@gmail.com

**Advancements in Food and Metabolomics** Jessica Cooperstone cooperstone.1@osu.edu Devin Peterson Peterson.892@osu.edu

**Advances in Packaging Recycling and Sustainability** John Koontz John.Koontz@fda.hhs.gov Yoon Song yoon.song@fda.hhs.gov

**Alternative Protein Sources for Human Nutrition (Plant- Based Protein)** John Finley jfinley5@lsu.edu Brian Guthrie Brian\_Guthrie@cargill.com Michael Morello mjmorello226@gmail.com

**Artificial Intelligence (AI) Applications for Food and Agriculture** Bosoon Park bosoon.park@usda.gov

**Biobased Polymers and Applications** Jinwen Zhang jwzhang@wsu.edu Raisha Gorshkova gorshkova.raisa@gmail.com LinShu Liu linshu.liu@usda.gov

**Breeding for Better Nutrients and Flavor for Freshly Consumed Fruits and Vegetables** Xiaofen Du xdu@twu.edu Yun Yin yunyin2@vt.edu

**Emerging In-Vitro Gut Models for Understanding Nutrient-Microbiome Interactions** Laurel Doherty laurel.a.doherty.civ@mail.mil Ida Pantoja-Feliciano ida.g.pantojafeliciano.civ@mail.mil Karley Mahalak Karley.mahalak@usda.gov

**Extraction and Biotechnology: a Natural and Sustainable Future for Flavors** Liz Kreger Elizabeth.Kreger@sensient.com Lewis Jones Lewis.Jones@sensient.com

**Food Bioactives in Infectious and Autoimmune Diseases** Fang Li fl2532@cumc.columbia.edu Hang Ma hang\_ma@uri.edu Xian Wu Wux57@miamioh.edu

**Food, Food Systems and Precision Nutrition** Thomas Wang tom.wang@usda.gov

**General Papers (Oral)** Michael Granvogl michael.granvogl@uni-hohenheim.de LinShu Liu linshu.liu@usda.gov

**General Papers (Poster)** Michael Granvogl michael.granvogl@uni-hohenheim.de LinShu Liu linshu.liu@usda.gov

**Improving Food for a Changing World** Alyson Mitchell aemitchell@ucdavis.edu Akira Murakami akira@shse.u-hyogo.ac.jp

**JAFC Research Article of the Year Award & AGFD Young Scientist Award Symposium** Michael Granvogl michael.granvogl@uni-hohenheim.de Thomas Hofmann Thomas.hofmann@tum.de

**Modification of Agricultural Biomass into Value-Added Products** Majher Sarker majher.sarker@usda.gov Helen Ngo helen.ngo@usda.gov Madhav Yadav madhav.yadav@usda.gov

**Nanoencapsulation and Delivery of Bioactive Food Ingredients Using Food Biopolymers** Qingrong Huang qhuang@sebs.rutgers.edu Qin Wang wangqin@umd.edu

**New Insights in Gut Microbiota Health-Benefits** Coralía Osorio Roa cosorior@unal.edu.co

**Nutraceutical Lipids, Proteins and Biopeptides** Fereidoon Shahidi fshahidi@gmail.com and fshahidi@mun.ca

**Spencer Award: Symposium in honor of Dr. H.N. Cheng** Michael Appell michael.appell@ars.usda.gov Christine Hilbert chilbert@swbell.net Sarah Leibowitz sleibowitz@gmail.com Michael Morello mjmorello226@gmail.com

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**Sustainability and Greentech in Agriculture and Food** Omowunmi Salik sadik@njit.edu Michael Appell michael.appell@gmail.com

**Sustainable Agriceuticals** Hyunsook Kim hyunsk15@hanyang.ac.kr LinShu Liu linshu.liu Daxi Ren dxren@zju.edu.cn Wallace Yokoyama wally.yokoyama@ars.usda.gov Liangli (Lucy) Yu lyu5@umd.edu

**Utilization of Upcycled Foods in New Product Innovation** Xiaofen Du xdu@twu.edu Yixiang Xu yixu@vsu.edu

## BEYOND CHICAGO

**3rd Global Symposium on Chemistry and Biological Effects of Maple Food Products** Hang Ma hang\_ma@uri.edu Navindra Seeram nseeram@uri.edu

**Chemistry of Wine** (tentative) Gavin Sacks gls9@cornell.edu Elizabeth Chang eabc@vt.edu Gal Kreitman gal.kreitman@ejgallo.com

Co-sponsor **2024 Spring - New Orleans** Meeting theme: **Many Flavors of Chemistry** Apply for thematic program funds Neil DaCosta neil.dacosta@iff.com

**Mid-Atlantic Regional Meeting** - looking for someone from AGFD to organize and chair a symposium/technical session on **Food Lipids/Lipid Chemistry** Contact: Wajira S. Ratnayake wajira.ratnayake@ingredion.com

## Executive Committee Meeting Minutes

Sunday, August 15, 3:00-6:00 pm EST, via Zoom

*Takes place at each ACS National Meeting*

**Attendance:** Alyson Mitchell, Lucy Yu, Keith Cadwallader, LinShu Liu, Bosoon Park, Michael Granvogl, Michael Tunick, Youngmok Kim, Lauren Jackson, Karley Mahalak, Laurel Doherty, Michael Appell, Michael Morello, Xiaofen Du, Majher Sarker, Kathryn Deibler, Fereidoon Shahidi, Steve Toth, Zhichao Zhang, Tianxi Yang, Apratim Jash, Michael Qian, Carl Frey

AGFD Chair Youngmok Kim called the meeting to order at 3:01 PM (EST). The **minutes** of the spring 2021 Executive Committee meeting were approved with no changes and are published in the fall 2021 Cornucopia.

Youngmok Kim summarized the **Special Topics Meeting** and **Business Meeting**. The committee discussed how to increase nominations for AGFD awards. Student representatives have created a new student Listserv and student awards will be advertised through this Listserv as a starting place. ACS members that are faculty members were asked to also disseminate student award information at their institutes. The committee discussed the announcement by ACS leadership August 12, indicating that for Atlanta (and San Diego) at least 50% of the speakers need to be physically present for a “hybrid” meeting and that someone be physically present onsite to preside over each symposium. Virtual symposia can be presided from anywhere. The timing of this announcement precluded efficient conveyance of this message to all symposium organizers. Youngmok Kim and LinShu Liu are working to identify folks to preside over sessions. Organizers for the spring San Diego meetings need to be aware of this policy. The committee also discussed financial support for regional meetings. It was agreed that our Division does not typically offer financial support for regional meetings.

Stephen Toth gave the **Treasurer's Report**. The division spent only \$6,280 this year due to virtual meetings, received \$8,000 from donations, \$8,475 from dues, and \$56,186 from the ACS allotment. The net (revenues minus expenses) for the year so far is \$67,302 giving AGFD \$1,076,730 in the bank and in investments. The division is financially healthy. The **Awards Committee Report** was given by Mike Morello. All award information can be found on the Division website. Mike reviewed the point of contact for each award including: Advancement of Application of Agricultural and Food Chemistry /IFF Award (Mike Morello); Young Industrial Scientist Award (Brian Guthrie); Young Scientist Award (Michael Granvogl); ACS Fellow Award (Fereidoon Shahidi); Student Awards (Kathryn Deibler); Sterling B. Hendricks

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Award (Mike Appell); JAF Best Article of Year Award (Thomas F. Hofmann); and Distinguished Service Award (Mike Tunick). Current awardees received their plaques via mail. Pictures were taken and will be posted on the AGFD website. Mike identified new challenges for the Awards Committee which includes setting a process for identifying and submitting nominations for the Kavli Emerging Leader Award. The Division was very happy that five of our distinguished members received ACS Fellows awards and include; Keith Cadwallader, Kathryn Deibler, Bosoon Park, Wallace Yokoyama and Liangli (Lucy) Yu. Congratulations were also given to Fereidoon Shahidi who received the Sterling B. Hendricks Memorial Leadership Award; Neil DaCosta recipient of the Distinguished Service Award, Lauren Jackson, LinShu Liu, Coralia Osoria Roa, and Jianping Wu recipients of the AGFD Fellow Award, and Holly Child recipient of the AGFD Roy Teranishi Graduate Fellowship in Food Chemistry. Rickey Yada received the 2021 AGFD Award for Advancement of Application of Agricultural and Food Chemistry and Xiaonan Lu received the 2021 Young Scientist Award.

The **Student Committee Report** was given by Zhichao Zhang (UC Davis). Apratim Jash (Cornell University) will be replacing Zhichao after this meeting. They are hosting a social networking Zoom room at the Atlanta meeting and Zhichao will be attending the Poster session to welcome students. They created a new student Listserv and surveyed the students to identify a student-oriented event for the San Diego meeting. The Zoo was chosen.

LinShu Liu gave the **Program Report** for the virtual spring 2021 National Meeting. Overall, it was a good, but small meeting. He reported that many felt disappointed at not being in-person to network. The meeting was smaller than typical and included 290 abstracts given in both oral and poster presentations. In total there were 33 sessions held in 8 symposia. Youngmok Kim indicated that we need to improve and develop programming for upcoming meeting in Indianapolis and San Francisco. Michael Granvogl will contact subdivision leaders to help them organize. Michael Qian indicated that Pacificchem will take place as a hybrid meeting in December 2021 in Hawaii. Most US speakers have elected to attend the meeting in-person whereas most international speakers indicated they will attend virtually. The current ACS policy is if you selected in-person, you will not be able to switch to virtual. Many thought this was a restrictive policy that may need to be more flexible in light of the delta variant of COVID-19. A location for the next International Flavor Conference has not been decided and will depend upon Covid-19.

Steven Toth requested that the **budget** for the San Diego 2022 spring national meeting be set at \$40,000. This is slightly lower than previous years as attendance is anticipated to be down due to COVID-19. The budget was passed.

**Subdivision Reports** were given by Youngmok Kim. The Biotechnology/Bioengineering Subdivision was reorganized and a new slate of officers were selected. The new officers will start their duties in 2022. The previous inactive members have been removed. The Flavor Subdivision is organizing a symposium for spring 2022 entitled *Milking It – Exploring Flavour, Spoilage and Shelf-life of Dairy Products*, and one for fall 2022 entitled *Breath Monitoring for Food Consumption, Drug Intake, Health and Wellbeing*. They are also publishing an ACS Symposium Series book entitled *Dynamic Flavor: Capturing Aroma Release Using Real-time Mass Spectrometry*. The Functional Foods Subdivision will have an upcoming symposium for the fall meeting entitled *Application of Omics Technologies in Food and Medicinal Plants*. The Food Safety Subdivision have two symposia planned for spring. The potential titles of these symposia include *Characterization of Natural Antimicrobials and Antioxidants and Their Applications in Food Preservation*, and *Advancement in the Detection of Food Chemical and Microbiological Hazards*. Prof. Boyan Gao, email: gaoboyan@sjtu.edu.cn will be the new secretary for Food Safety Subdivision beginning in 2022. The Diet and Gut Microbiome Subdivision inaugural programming went well with 22 speakers in 2 sessions. All speakers were invited to contribute manuscripts for a special issue within JAF. This subdivision is planning two symposia for the spring entitled *Advancements in Nutriomics and Gut Reactions*. There also symposia planned for fall 2022 with a session related to *New Insights in Gut Microbiota Health Benefits* and one on *Emerging In Vitro Gut Models for Understanding Nutrient: Microbiome Interactions*. The Chair will be transitioning to Guodong Zhang with Vice-Chair shifting to Karley Mahalak. The Nutrition Subdivision has symposia planned for spring 2022 entitled *Chemistry and Health Benefits of Fermented Foods* and for fall 2021 entitled *Analytical Methods for Health Beneficial Bioactive Components & Hazards in Ethnic Foods*. This division has identified Hae Won Jang at Sukmyeong University and Tom Wang at USDA for secretaries in 2021 and 2022.

**The Councilor Reports** were given by Lauren Jackson, Alyson Mitchell and Mike Tunick. Council meeting will be held on August 25, 2021 (virtually). The ballot for President Elect of ACS includes Judith Giordan and John Warner. Three elections will be held for the Council Policy Committee, Committee on Committees, and Nominations & Elections. DAC Committee has plenty of money for project innovation grants. Mike pointed out that we should consider applying for a Division Strategic Planning retreat. Lauren Jackson was identified as the point person for this. Lauren indicated that there

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is a decline in the number of industrial members and that ACS is not meeting Diversity, Equality, Inclusion, and Respect (DEIR) goals. A prioritized action plan is now being drawn up as a result. Lauren suggested putting in an IPG grant for developing the Young Industrial Scientist Achievement Award. Membership has been sustained during the pandemic by being more flexible and by offering tiered membership. For those interested, professional employment guidelines for hiring in the chemistry industry exist, and language has been added to be more inclusive. Mike Morello pointed out there is a new initiative for how ACS is developing their strategic plan that is available on line.

The **Nominations Report** was given by Immediate Past Chair Lucy Yu. All subdivisions have leadership lined up through 2022. The Sustainability Subdivision should be included in the Cornucopia in 2022. Liz Kreger was previously identified as a potential candidate and her candidacy was passed at the Business Meeting. There are two Alternative Councilor positions that need to be filled this year. Lucy Yu will form a Nomination Committee with 3-4 members to identify at least 3-4 candidates and these will go out for a vote in September.

**Cornucopia** editor Carl Frey indicated that the Cornucopia was put together late as the files from ACS were received only 2.5 weeks before the meeting, and were not in any meaningful order. A total of 100 copies were printed for the hybrid meeting. Usually, 200-250 copies are printed for a meeting. AGFD will decide on how many copies to print for San Diego after the fall meeting.

Alyson Mitchell reported that there was no activity in **Hospitality/Public Relations** since we had no in-person meetings.

**Membership Chair** Michael Qian indicated that ACS did not provide a new membership report after the spring meeting.

Youngmok Kim gave the **Journal Report** for Thomas Hofmann. Dr. Yolanda Gogorcena was hired as an associate editor. The Journal of Agricultural and Food Chemistry grew 26% and the impact factor is now at 5.279 IP. There were 1,500 publications last year and 144,000 citations. *JAFCh* will publish a special issue of each fall meeting. The new ACS FST (Food Science and Technology) journal will publish a special issue of the spring ACS meetings. The ACS-FST has published 125 manuscripts in six issues since August 2020 and 87% of authors are from outside of the United States.

In the **Communications Report**, Michael Appell indicated that the website is updated periodically. It is done through Wix.com (<\$180/3 years). Mike Morello asked that the number of hits to the website be shared with the Executive Committee. Lauren Jackson indicated that we may want to promote our division better and make our members more visible on the website. Alyson Mitchell suggested to have each member in a leadership role send a bio (50 words or less) and a picture to Michael Appell to post on the website. Michael Appell suggested putting together a committee to keep the website updated and going. This will be managed through the Communications Committee in conjunction with the student representative and interested leadership members (Mike Morello, Alyson Mitchell, Mike Appell and Lauren Jackson). A motion was made and approved for Alyson Mitchell to donate or discard the four outdated conference computers in any way that makes sense.

There was no **Old Business**. In **New Business**, Mike Morello pointed to the need to increase the number and diversity of nominations for our Division awards. It was discussed, and the Executive Committee will begin to review nomination forms in order to identify a more diverse candidate pool. It was also decided that the September newsletter will be dedicated to Student awards and a reminder about the Division awards will be made in the January newsletter.

LinShu Liu discussed the desire of **AGRO** to program next to AGFD at the fall meetings in the convention center, all agreed this would benefit both divisions. AGRO also asked to have a single joint special issue for the fall meeting in the Journal of Agricultural and Food Chemistry. This was discussed. No clear benefit to the division was identified, so AGFD will not pursue this offer.

Mike Morello indicated that DAC committee funds grants through IPG for planning activities. Our division has not had a Strategic Planning meeting since 2016. The committee decided to put forward an IPG for a follow up Strategic Planning retreat. A second **IPG grant** will be put forward for Improving Industry Participation by Youngmok Kim and Brian Guthrie. Mike indicated that there are also grants to enhance international relationships that the Division could apply for.

The meeting adjourned at 5:36 PM (EST).

*Submitted by AGFD Secretary Alyson Mitchell*

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## MILESTONES

Long time AGFD member and past AGFD Chair **Chi-Tang Ho** marked **50 years of ACS of membership** in 2021.



**Peter Schieberle**, University Professor (emeritus) Faculty of Chemistry Technical University Munich, celebrated 20 years as **Associate Editor of the Journal of Agricultural and Food Chemistry** and will now step back from his duties. He thanks his colleagues for help in reviewing for the journal and his editorial staff in particular for their cooperation which contributed to significantly increasing the impact factor of JAFc over the years.

**AGFD congratulates Chi-Tang and Peter and looks forward to their continued successes and contributions.**

Find information about AGFD awards at [www.agfoodchem.org](http://www.agfoodchem.org) Scroll down and click on *AGFD Award Details* to load a PowerPoint file detailing award eligibility and nomination deadlines as well as lists of past awardees.

**AGFD Awards Committee:** AAAFC IFF/AGFD Award (Mike Morello), Young Scientist Award (Michael Granvogel), AGFD Fellow Award (Fereidoon Shahidi), AGFD Distinguished Service Award (Mike Tunick), Teranishi Fellowship (Liangli [Lucy] Yu), Graduate & Undergraduate Student Symposia (Kathryn Deibler), Service Award (Michael Qian), Sterling B. Hendricks Memorial Lectureship (Michael Appell/Bosoon Park), Spencer Award (Sarah Leibowitz), ACS Fellow Award (Michael Morello, Michael Appell, Carl Frey)



The logo consists of the Greek letters Φ, Τ, and Σ in a stylized, bold, yellow font, set against a dark red background.

**The Honor Society of Food Science and Technology**

**Membership opportunities  
with  
Phi Tau Sigma**

**The Honor Society of Food  
Science and Technology**

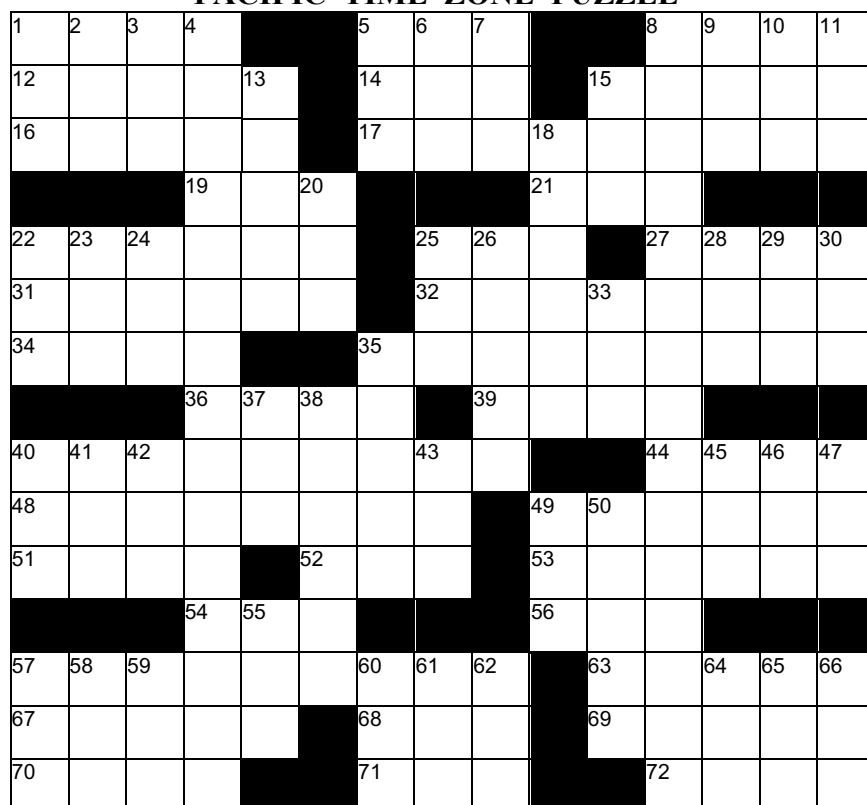
The mission of Phi Tau Sigma is to raise the stature and recognize scholarly achievements of the Food Science and Technology profession. Phi Tau Sigma encourages outstanding achievement by Food Science students and professionals and enhances the careers of Food Science professionals through its member network. Benefits include recognition, networking, mentoring, student scholarships and leadership, career and educational opportunities.

Phi Tau Sigma goals are:

- Recognize and honor academic and professional achievements of students and professionals within the Food Science/Industry and aligned sciences/industries
- Encourage the application of fundamental scientific principles to all fields of Food Science and Technology
- Stimulate the exchange of scientific knowledge through meetings, lectures, and publications
- Promote leadership in science, service, education, and social programs for the Society membership
- Establish and maintain a network of like-minded professionals
- Promote charitable, scientific, literary and educational programs

Membership nomination forms for the 2023 scholarships, must be submitted **by May 1, 2022**. For membership nomination information and forms please visit <http://phitausigma.org/membership/> For questions contact Executive Director, Kathryn Kotula, Ph.D. [klkotula@msn.com](mailto:klkotula@msn.com). (write Phi Tau Sigma Scholarship in the subject line.)

## PACIFIC TIME ZONE PUZZLE



A prize to the first send  
a correct solution to Carl Frey  
(via smartphone photo/e-mail) at -  
cfreyenterprise@gmail.com

Congratulations to -  
Jeremy R. Espano of Vanderbilt U.  
for the 1st correct solution submission

Kudos also to -  
Steve Tait of Indiana U.  
for also submitting a correct  
solution.

## ACROSS

- 1 Na<sup>+</sup>, Cl<sup>-</sup>, Fe<sup>+++</sup> and Ca<sup>++</sup>  
5 Yosemite --- or Uncle ---  
8 Lip  
12 Reduces in amplitude  
14 Flight schedule approx.  
15 Brief film appearance  
16 Las Vegas ---- or drag ---  
17 Continental drift study  
19 Gravestone inscription  
21 Computer programming  
pioneer: --- Lovelace  
22 Right triangle quotient:  
side/hypotenuse  
25 Provider of form 1040  
27 One billionth prefix  
31 Meteor impact aftermath  
32 Marching band boomer  
34 The Biggest Little City in  
the World  
35 Adorable  
36 ---- circus or ---- market  
39 Succulent: ---- vera  
40 DNA transcriber (with

## 58 Down)

- 44 Unfortunately!  
48 E.g.: boeuf bourguignon  
49 Electro-shock weapons  
51 To cry weakly. Whimper.  
52 Poet's 'before'  
53 Contaminate with disease  
54 Shared by me and you  
56 --- Farrow or --- Hamm  
57 Bride's clothes & linens  
63 Salivary gland infection  
prevented by MMR vax.  
67 Asian sub-continent  
68 Computer screen pop-ups  
69 Marry without a big to-do  
70 Some college courses  
are ----/fail  
71 Summertime shirt  
72 Big, heavy book

## DOWN

- 1 Docs checked by the TSA  
2 Quaker ---meal  
3 Spectroscopy technique

- using strong magnets  
4 Famous plane built in  
San Diego by Ryan Airlines  
5 Chemistry --- or tea ---  
6 Consumed for lunch  
7 Popular cheese pairing  
8 Big crack 150 miles east of  
San Diego  
9 Parisian friend  
10 'Dry' on a champagne label  
11 Help!  
13 Book title location  
15 North Atlantic bottom  
dwelling fish  
18 Mortarboard adornment  
20 Middle of 65 Down  
22 *Bad Moon Rising* band  
23 E.g.: galena or cinnabar  
24 --- Francisco or --- Jose  
25 Arabic 'son of'  
26 Rain detection technology  
28 Jackie O's husband  
29 Catholic clergy female  
30 Texter's 'unbelievable!'

- 33 World's largest Portuguese  
speaking city: --- Paulo  
35 Can't wait to start  
37 Hugo's --- *Miserables*  
38 Inputs  
40 Scotch Tape maker  
41 Wide shoe size designation  
42 See 66 Down  
43 Female that goes 'baa'  
45 Wind to a sailor's back  
46 Circle circumference section  
47 Concorde or Tupolev Tu-144  
49 Web creator: --- Berners-Lee  
50 Graphic storybook style  
55 Springsteen's *Born in the ---*  
57 Iceberg part above waterline  
58 See 40 Across  
59 Takes too many meds  
60 Dinnertime! Sit down and ---  
61 Gator---  
62 Employ  
64 Cow talk  
65 One in 1,000,000  
66 Playground toy (w/42 Down)



## AGFD DIVISION MEMBERSHIP APPLICATION

The Agricultural and Food Chemistry Division (AGFD) of the American Chemical Society (ACS) is a non-profit organization dedicated to the technical advancement of all aspects of agricultural and food chemistry. AGFD encourages technical advancement in the field by -

- organizing symposia/workshops on agricultural/food chemistry at ACS national meetings and other venues
- publishing proceedings of AGFD symposia
- publishing the *Cornucopia* newsletter
- updating members several times a year via e-mail blasts
- hosting social and networking gatherings at ACS national meetings
- providing cash awards and recognition to leading undergraduate and graduate students, young scientists and established scientists in the field of agricultural and food chemistry

At ACS National Meetings you can discuss division activities at the AGFD information table located near the AGFD technical session rooms. Join >3000 AGFD members via the application form (below) or on-line at [www.agfoodchem.org](http://www.agfoodchem.org) or [www.acs.org](http://www.acs.org) (click on Communities, Technical Divisions, Technical Division List) or call ACS (800)333-9511 (in US) or 616-447-3776 (outside US). Payment by Visa/MasterCard or AmEx.

Check out AGFD on You Tube: <https://www.youtube.com/watch?v=CyBMAAnOuFKE>

APPLICATION FOR AGFD DIVISION MEMBERSHIP (7623P)	
Title	
Name	
1 <sup>st</sup> address line	
2 <sup>nd</sup> address line	
City	
State	
Zip code	
Country	
e-mail address	
Phone	
check one	<b>MEMBERSHIP FEE</b>
<input type="checkbox"/>	I am an ACS member and wish to join AGFD (\$10.00)
<input type="checkbox"/>	I am not an ACS member and wish to join AGFD (\$15.00)
<input type="checkbox"/>	I am a full-time student and wish to join AGFD (\$10.00)
<b>Be cool JOIN AGFD</b>	Return application, with payment (payable to American Chemical Society), to AGFD Membership Chair: Michael Qian, Professor Department of Food Science and Technology Oregon State University Corvallis OR 97330

## ROSTER OF AGFD OFFICERS & COMMITTEE LEADERSHIP

**Chair** - Serves 1 year. Preside over Division meetings & appoint committees  
LinShu Liu USDA-ARS-ERRC  
linshu.liu@ars.usda.gov

**Chair-Elect** - Serves 1 year. Substitute for the Chair as needed  
Michael Granvogl  
michael.granvogl@uni-hohenheim.de

**Vice-Chair** - Serves 1 year. Assist Chair-elect. Develop future technical programs.  
Jonathan Beauchamp  
Fraunhofer-Institute  
Jonathan.beauchamp@ivv.fraunhofer.de

**Secretary** - Responsible for Division correspondence and meeting minutes.  
Alyson Mitchell  
University of California, Davis  
aemitchell@ucdavis.edu

**Treasurer** - Responsible for Division finances.  
Stephen Toth  
International Flavors & Fragrances R&D  
Union Beach NJ stephen.toth@iff.com

**Cornucopia Editor** - Edit newsletter.  
Carl Frey cfreyenterprise@gmail.com

**Councilors** - Represent Division for 3 years on ACS council.  
Alyson Mitchell (thru '23)  
aemitchell@ucdavis.edu  
Lauren Jackson (thru '23)  
lauren.jackson@fda.hhs.gov  
Michael Tunick (thru '24)  
mht39@drexel.edu

**Website** - Maintain web site.  
Michael Appell  
michael.appell@ars.usda.gov

**Student Activities** - Attract and retain graduate/undergraduate student members.  
Apratim Jash aj623@cornell.edu

**Nominations** - Develop officer slate. Served by Immediate Past Chair.  
Youngmok Kim  
youngmok.kim@finlays.net

**Public Relations** - Publicize Division.  
Alyson Mitchell, aemitchell@ucdavis.edu

**Alternate Councilors** - Substitute for Councilors. Serves 3 years.  
Keith Cadwallader (thru '23)  
cadwldr@uiuc.edu  
Kathryn Deibler (thru '24)  
kdd3@cornell.edu  
Michael Qian (thru '24)  
Michael.qian@oregonstate.edu

### At-Large Executive Committee

**Members** - Assist in Div. management. Serves 3 years.  
Jane Leland (thru '23)  
JLelandEnterprises@gmail.com  
Robert McGorin (thru '23)  
robert.mcgorin@oregonstate.edu  
Bosoon Park (thru '24)  
bosoon.park@usda.gov  
Brian Guthrie (thru '24)  
Brian\_Guthrie@cargill.com

**Awards** - Solicit nominations, oversee awards process.

Chair Michael Morello  
mjmorello226@gmail.com  
Fellow Awards Fereidoon Shahidi  
fshahidi@mun.ca  
Young Scientist Award  
Michael Granvogl  
Michael.Granvogl@uni.hohenheim.de  
Teranishi Fellowship  
Liangli (Lucy) Yu lyu5@umd.edu  
Student Awards  
Kathryn Deibler kdd3@cornell.edu  
Canvassing  
Stephen Toth, stephen.toth@iff.com  
Young Industrial Scientist Award  
Brian Guthrie  
Brian\_Guthrie@cargill.com

**Finance** - Monitor Division's finances. Led by Immediate Past Chair  
Youngmok Kim  
youngmok.kim@finlays.net

**Hospitality** - Organize receptions and banquets. Alyson Mitchell  
aemitchell@ucdavis.edu

**Membership** - Recruit and retain Division members.  
Michael Qian  
michael.qian@oregonstate.edu

**Multidisciplinary Program Planner**  
Help coordinate nat'l mtg programs  
John Finley jfinle5@lsu.edu

**Sub-divisions** Develop symposia.

**Food Bioengineering**  
Chair, Tianxi Yang  
tianxiyang90@gmail.com  
Chair-Elect, Majher Sarker  
Majher.Sarker@usda.gov  
Vice-Chair, Kwang-Guen Lee  
kwglee@dongguk.edu  
Secretary, Hongsik Hwang  
hongsik.hwang@usda.gov  
Changqin Wu, changwu@udel.edu ('23)

### Flavor

Chair, Yu Wang yu.wang@ufl.edu  
Chair-Elect, Gal Kreitman  
Gal.Kreitman@ejgallo.com  
Vice-Chair, Xiaofen Du xdu@twu.edu  
Secretary, Coralia Osorio Roa  
cosorior@unal.edu.co

### Food Safety

Chair, Tony Jin Tony.Jin@usda.gov  
Chair-Elect, Reuven Rasooly  
rueven.rasooly@ars.usda.gov  
V.Chair, Xiaonan Lu xiaonan.lu@mcgill.ca  
Secr'y, Boyan Gao gaoboyan@sjtu.edu.cn

### Functional Foods & Nat. Products

Chair, Xian Wu Wux57@miamioh.edu  
Chair-Elect, Jianping Wu  
Jwu3@ualberta.ca  
Vice-Chair, Kenny Xie KYX@usp.org  
Secretary, Yingdong Zhu, yzhu1@ncat.edu

### Diet & Gut Microbiome

Chair, Guodong Zhang  
guodongzhang@umass.edu  
Chair-elect, Karley Mahalak  
Karley.mahalak@usda.gov  
Vice-Chair Laurel Doherty  
Laurel.a.doherty.civ@mail.mil  
Secretary Ida Pantoja-Feliciano  
Ida.g.pantojafeliciano.civ@mail.mil

### Nutrition

Chair, Mathias Sucan  
Mathias.sucan@gmail.com  
Chair-Elect, Hye-Seon Kim  
hyeseon.kim@usda.gov  
Vice-Chair, Hae won Jang  
Okay0730@gmail.com  
Secr'y Tom Wang, tom.wang@usda.gov

### Sustainability & Green Technology

Chair, Omowunmi "Wunmi" Sadik  
sadik@njit.edu  
Chair-Elect, Vinka Oyanedel-Craver,  
craver@uri.edu  
Vice-Chair, Yufeng Jane Tseng  
yjtseng@csie.ntu.edu.tw  
Secretary Lingyun Chen  
lingyun.chen@ualberta.ca

## AGFD TECHNICAL PROGRAM

Abstracts for all these papers appear in the 'with abstracts' version of the  
spring 2022 Cornucopia posted on the AGFD website

### SUNDAY MORNING Mar. 20

Hilton Bayfront Sapphire A/B

#### **Food Macromolecules: Functionality, Health Benefits, Delivery Systems**

Cospons. AGRO N. Nitin, W. H. Yokoyama,  
*Organizers*

8:00 Introductory Remarks.

8:05 Industrially-scalable microencapsulation of bioactive ingredients in alginates with controlled-release properties. T. Jeoh, H.B. Scher, Y. Tang, B. Arbaugh, R.M. Kawakita, S. Strobel

8:20 Modulation of gut microbiota of broilers by controlled release of polyphenols and essential oils. H. Bao, S. Nahashon, T. Taylor, F. Chen, A. Kilonzo-Nthenge, H. Zhou, Y. Wu

8:35 Effects of *Pleurotus eryngii* polysaccharide on gut inflammation and microbiota regulation. G. Ma, H. Du, H. Xiao

8:50 Curcumin loaded metal-organic framework delivery systems. P. Ma, Q. Wang

9:05 Ultrasonic encapsulation and delivery of functional foods. M. Ashokkumar

9:20 Development of wet media milled purple sweet potato particle-stabilized Pickering emulsions: the synergistic role of bioactives, starch and cellulose. X. Lu

9:35 Characterizing the role of network structure and filler/matrix interactions for tailored functionality in composite protein gels: Emulsion-filled gelatin as a case study. A.J. Gravelle, A.G. Marangoni

9:50 Simultaneous loading and protection of bioactive compounds using protein-based assemblies. L. Liang

10:05 Intermission.

10:15 Micro and nanoscale core-shell carriers for co-delivery of synergistic bioactives. C. Anandharamakrishnan

10:30 Chitin nanofiber stabilized Pickering emulsions with potential in encapsulation of antibacterial essential oils. Y. Huang, H. Liu, S. Liu, S. Li

10:45 Storage stability and loss of resveratrol in protein particles: loading, antioxidant activity and oxidation sensitivity. X. Yin, L. Liang

11:00 Fabrication of hollow zein composite particles with sodium tripolyphosphate for the encapsulation of quercetin. M.A. Khan, L. Liang

11:15 Rapid visible light-mediated crosslinking of casein-based hydrogels to facilitate wound healing. Q. Zhu, X. Zhou, Z. Hu, W. Cao, K. Yu, T. Ren, D. Ren

11:30 Casein-propylene glycol alginate complexes: Formation, stability, and properties for preparation of high internal phase emulsions. N. Li, Q. Zhong

11:45 High protein content casein-alginate conjugates produced by transacylation reaction as novel emulsifiers. N. Li, Q. Zhong

Virtual Zoom Room 16

#### **Big Data and Artificial Intelligence in Agricultural and Food Chemistry**

Cospons. PRES

M. Appell, H. Cheng, B. D. Guthrie, *Organizers, Presiding*

10:00 Introductory Remarks.

10:05 Antibiotic discovery by means of computers. C. de la Fuente

10:35 Experiences in algorithm based chemical process optimization and early attempts towards closed loop automation. S. Bertelsen

11:05 Use of machine learning to navigate the sequence-activity landscape during directed evolution campaigns. O. Alvizo

11:35 Intermission.

11:50 Landscape view: The application of artificial intelligence in agricultural and food chemistry research. Z.J. Baum

12:20 Catalyzing AI-driven research for U.S. agriculture. B. Stucky, D.C. Peters

12:50 Democratizing AI to build solutions for the farms of the future. S.B. Mirsky

1:20 Discussion.

Virtual Zoom Room 1

#### **Human Intervention on Biosynthesis**

Cospons. AGRO Maiher Sarker, LinShu Liu, Karley Mahalak, *Organizers, Presiders*

10:00 Introductory Remarks.

10:05 Glucan phosphorylase as useful bio-catalyst for precision synthesis of amylose and its analogs. J. Kadokawa  
 10:31 Mucorales as promising oleaginous fungi to produce high value of  $\gamma$  linolenic acid and carotenoids. H. Mohamed, Y. Song  
 10:57 Extraction of soybean polysaccharide using immobilized cellulase. J. Liu, Y. Dong, Z. Rao, K. Tang  
 11:23 Biotechnological research to enhance the growth and docosaheptaenoic acids (DHA) production of marine heterotrophic microalgae, *Aurantiochytrium* sp. Y. Nazir  
 11:50 Intermission.  
 12:10 Potential sphorolipid uses in antimicrobial applications. R. Ashby, X. Fan, O. Olanya, M. Ozdener  
 12:36 Biofunneling and functionalization of agricultural waste polymers to advanced platform chemicals. L.N. Jayakody, K. Anderson, L. Dissanayake, S. Kayastha, D. Perry, L. Ryaan  
 1:02 Increase in lipid and DHA production by *Aurantiochytrium* Sp. under the influence of chemical inducers. M. Sarker, S. Hussain  
 1:28 Construction of medium-chain fatty acids (MCFAs) cell factory via metabolic engineering of *Mucor circinelloides*. S. Hussain, Y. Song  
 1:55 Concluding Remarks.

## SUNDAY AFTERNOON

Hilton Bayfront Sapphire A/B

### Food Macromolecules: Functionality, Health Benefits, Delivery Systems

Cospons. AGRO N. Nitin, F. Zhong, *Organizers*

2:00 Introductory Remarks.

2:05 Bioactive components in parabiatic kefir lactic acid bacteria and obesity. H. Kim, E. Kim, S. Han, K. Seo

2:20 Egg white protein ovotransferrin prevents bone loss in ovariectomized rats. N. Shang, J. Wu

2:35 Improvement of probiotic survivability, persistence and colonization in gut by loading probiotic cells with plant extracts. R. Rai, M. Silva, W.H. Yokoyama, N. Nitin

2:50 Reformulating traditional Mediterranean foods: A functional tomato product. B. Berk, M. Çetin, S. Sumnu, B. Mert, O. Ozarda, M. Oztop

3:05 Bio-based micro and nanostructures for the delivery of bioactive compounds. M. Cerqueira

3:20 *In planta* encapsulation of macro-nutrients for enhanced nutritional functionality. S. Dhital

3:35 Eugenol cyclodextrin inclusion complex encapsulated pullulan nanofibers for potential food packaging applications. A. Celebioglu, T. Uyar

3:50 Salt reduction using food macromolecule carrageenan. Y. Fang, W. Lu, Z. Hu

4:05 Intermission.

4:15 Room temperature encapsulation of functional ingredients via high-throughput electrohydrodynamic technology. J.M. Lagaron, C. Prieto

4:30 Unraveling the potential of dry bean flour for utilization in the bakery industry. N. Navneet, m. martinez martinez, I. Joye

4:45 Fate of curcumin-nanoemulsion and the bioaccessibility of curcumin during dynamic *in vitro* digestion within complex dairy matrices. A. Ye

5:00 Eugenol/cyclodextrin inclusion complex encapsulated pullulan nanofibers for potential food packaging applications. T. Uyar, A. Celebioglu

5:15 Electrospun biopolymeric nanofibers as nanocarriers of bioactive compounds. S. Jafari, E. Assadpour

5:30 Microencapsulation using whey protein isolate as wall material: Particle formation behaviour and interactions with core material. N. Fu

Virtual Zoom Room 1

### Big Data and Artificial Intelligence in Agricultural and Food Chemistry

Cospons. PRES

M. Appell, H. Cheng, B. D. Guthrie, *Organizers*, *Presiding*

3:00 Introductory Remarks.

3:05 Using machine learning to predict obesity risk based on genome-wide, epigenome-wide gene-gene, and gene-diet interactions. Y. Lee, J.J. Christensen, L.D. Parnell, C.E. Smith, J. Shao, N.M. McKeown, J.M. Ordoas, C. Lai

3:35 Determining the sex of chicken eggs by machine learning and high-speed volatiles mass spectrometry. A.R. Rivers

4:05 Catch me if you can – tracking volatile compounds as biomarkers of dynamic food processes using direct analysis. J. Beauchamp

4:35 Intermission.

4:50 Big data in food production. R. Weel

5:20 Hypercube big data analytics with artificial intelligence for food safety. B. Park

5:50 Big data and deep learning in agriculture and food chemistry - considerations and practice. Y. Tseng

6:20 Discussion.

## SUNDAY EVENING

Virtual Zoom Room

### General Poster Session and the Undergraduate Poster Competition

M. Granvogl, L. Liu, *Organizers*

7:00 Green polymers derived from cashew based raw materials. H. Cheng, A. Biswas, R.F. Furtado, C.R. Alves, C. Prieto, J.M. Lagaron

7:00 Quantitative specific gravity analysis of salvia rosmarinus in ethanol solutions. E.M. Zippi, A. Marsalis

7:00 Food grade Limonene can be an effective homemade insect repellent. M. Kakkanat, A. Colesmith, H. Brown

7:00 Adulteration of maple syrup: Molecular vs. luminescence spectroscopic approaches. S. Rathnayake, M. Singh, R. Hanner, M.G. Corradini

7:00 Development of hemp nanocellulose-based bioplastics and their application for food packaging. A. Fleming, X. Lu

7:00 Potential of soil enzyme manganese peroxidase to degrade catechin and related polyphenols. M. Fu, A.E. Hagerman

7:00 Analysis and characterization of west Tennessee honeys. E. Ahmed, B. Barrett, A.H. Shelton

7:00 Potential for release of toxic alkaloid ricinine and for influence of bacterial functional diversity from castor cake after soil application. K. Cheng, C. Liu, F. Shen, Y. Tzou, Y. Chuang

7:00 Changes of volatile compounds in rice-based distilled spirits, *soju* aged in different kinds of containers. W. Kim, S. Lee

7:00 Variability of tannic acid and its role in stabilizing hollow zein nanoparticles. S.Y. Mallikarachchi, A.E. Hagerman

7:00 Improving the functional characteristics of sorghum phenolics. J. Peterson, D. Smolensky, S. Bean, U. Yucel

7:00 Influence of the microelements on anticancer metabolites biosynthesis in basidiomycetes. A. Ostrokhishko, A. Pomytkina, L. Levkina, F.V. Lavrentev

7:00 Effect and mechanism of *Citrus depressa* Hayata peel extract against acetaminophen-induced liver injury in mice. Z. Su, P. Tsai, G. Wei, X. Chen

7:00 Enhancing the stability of fish oil-in-water emulsions using whey protein- kappa carrageenan complexes. H. Khouryieh

7:00 Inhibiting ice recrystallization by cellulose nanocrystals: Influences of sucrose concentration and storage time. M. Li, T. Wu

7:00 Effect of boiling and steaming on the carbohydrates of sweet corns. W. Zhang, B. Zhu, L. Yu, J. Zhao, S. Li, X. Wu

7:00 Detection of *Campylobacter jejuni* in agri-food products using a paper-based microfluidic device based on recombinase polymerase amplification and lateral flow immunoassay. Y. Chen, Y. Hu, X. Lu

7:00 Biocatalytic approaches to valorization of food and agriculture waste streams. Z. Wang, J.M. Goddard

7:00 Non-fouling and antimicrobial polyurethane coatings to prevent cross-contamination in food processing facilities. A. Rudlong, J.M. Goddard

7:00 Phenolic metabolites in plasma and urine of children after blueberry consumption. L. Lavefve, R. Liyanage, L. Howard, K. Ono-Moore, R. Lan, E.C. Diaz

7:00 Tailoring protein chemistry for *in situ* water safety applications: rapid pathogen detection and microplastic degradation. H.S. Zurier, S.R. Nugen, J.M. Goddard

7:00 Evaluation of novel coatings to prevent smoke phenol absorption in Pinot noir grapes. L. Garcia, T. Tran, D.C. Cerrato, M. Penner, Y. Zhao, E. Tomasino

7:00 Electrochemical teardown of a trace pesticide assessment system. V. Dhamu, C. Telang, S. Muthukumar, S. Prasad

7:00 Texture and taste flavor characteristics of pecan kernel and the effect of variety. Z. Yusufali, X. Wang, K. Kubenka, X. Du

7:00 Quantitative variation of taste and texture properties in 165 F2 cucumber progenies. C. Duan, Y. Weng, X. Du

7:00 Black tea polyphenols provide a nutraceutical option for preventing the onset of celiac disease *In vitro*. P. Mathews, C. Van Buiten

7:00 Quality characteristics of restructured goat meat jerky as Influenced by natural preservative properties of raisins. B.B. Lemma, J. Lee

7:00 Comprehensive analysis of aromatic and metabolic compounds in beer brewed by new wild yeast by GC-MS and special databases. Y. Takemori, E. Shimbo, Y. Higashi, H. Kawamitsu, K. Kawamura, E.R. Kuhn, T. Yamamiya, N. Suzuki

7:00 Evaluation of non-alcoholic beverages from hop using GC-MS and HPLC. Y. Takemori, M. Hayakawa, A. Nomura, J. Nagata, E.R. Kuhn, T. Yamamiya, N. Suzuki

7:00 Genotoxicity evaluation of lignin-derivable of six bisguaiacols using in silico, in vitro, and in vivo methods. X. Zhang, J.S. Mahajan, T.H. Epps, L. Korley, C. Wu

7:00 Identification and quantitation of anthocyanins in berries using liquid chromatography and high resolution tandem mass spectrometry. N. Abshiru, D. Randolph, B.V. Nemzer

7:00 Phytonutrient composition and potential anti-inflammatory activities of air-dried purslane (*Portulaca oleracea*). F. Al-Taher, D. Kalita, B.V. Nemzer

## **MONDAY MORNING** Mar. 21

Hilton Bayfront Sapphire A/B

### **Characterization of Natural Antimicrobials and Antioxidants and Their Applications in Food Preservation**

Cospons. AGRO H. Redfearn, G. Sun, *Presiding*

8:00 The evaluation of the fabricated bioactive packaging material using essential oils and natural

polymers by electrospray. A. Charles, T. Jin, R. Mu, F. Chen, A. Kilonzo-Nthenge, Y. Wu  
 8:20 Interfacial chemistry of a bioderived active packaging film dictates its performance in complex matrices. I. Kay, J.M. Goddard, J.E. Herskovitz  
 8:40 Sorghum DDGS as a renewable source for production of functional packaging films. U. Yucel, V. Trinetta, S. Bean  
 9:00 Pre-commercial feasibility evaluation of non-equilibrium pulsed discharge for sanitation of whole and cut fresh. G. Fridman  
 9:20 Amino acids and their derivatives preventing oxidation of frying oil: Promising natural antioxidants. H. Hwang  
 9:40 Intermission.  
 9:50 Rapid discovery of novel antimicrobial peptides with machine learning algorithms to improve safety, quality, and shelf-life of clean label food products. C. Xu, Y. Zhou, G. Wang  
 10:10 Antioxidants and antimicrobials to maintain freshness and minimize *Listeria* contamination of fresh-cut apples. X. Fan  
 10:30 Grape pomace as a natural antimicrobial and antioxidant and their application in active food packaging. Y. Xu, E. Sismour  
 10:50 Biobased microcarriers for enhanced antimicrobial delivery to improve food safety and quality. K. Huang  
 11:10 Potential new antimicrobials/antioxidants from peptides using high voltage field technology. T. Jin

Virtual Zoom Room 1

### **Gut Reaction**

Guodong Zhang, Jason Soares, Karley Mahalak, *Organizers, Presiding*  
 10:00 Introductory Remarks.  
 10:05 Discovery of a gut bacterial metabolic pathway that drives  $\alpha$ -Synuclein aggregation and neurodegeneration. L. Ortiz de Ora, K. Uyeda, E. Bess  
 10:45 Discovery and characterization of gut microbial enzymes involved in keto-reductive metabolism. L. Qian, H. Ouyang, L. Gordils-Valentin, J. Hong, A. Jayaraman, X. Zhu  
 11:15 Gut microbial metabolism of aromatic amino acids under dietary and microbiota interventions. C. Chen, Y. Zhou  
 11:55 Intermission.  
 12:00 Effect of fructooligosaccharide on the adult human gut microbiome in vitro. K. Mahalak, J. Firrman, L. Liu, W. Hu, K. Bittinger  
 12:40 Understanding the gut as a human bioreactor. E. Holmes  
 1:20 Panel Discussion.  
 1:35 Concluding Remarks.

### **MONDAY AFTERNOON**

Hilton Bayfront Sapphire A/B

### **Characterization of Natural Antimicrobials and Antioxidants and Their Applications in Food Preservation**

Cospons. AGRO Y. Wu, U. Yucel, *Presiding*  
 2:00 Vitamin derivatives as effective light controlled biocidal agents for food contact surfaces. G. Sun, Z. Zhang, P. Tang, N. Nitin, L. Wang  
 2:20 Antioxidant behavior of polypropylene-graft-maleic anhydride. H. Redfearn, J.M. Goddard  
 2:40 Combined effect of biodegradable packaging with natural antimicrobials and physical agents for liquid foods preservation. L.J. Bastarrachea  
 3:00 Fungicidal constituents from phytopathogens. K.M. Meepagala  
 3:20 Application of natural antimicrobials for the preservation of fresh produce. X. Sun, A. Plotto, J. Bai  
 3:40 Intermission.  
 3:50 New ethyl phenolic branched chain fatty acid arginate products with antimicrobial and surfactant properties. H. Ngo, X. Fan  
 4:10 Antimicrobial activity of defence phytochemicals: Prenylated (iso)flavonoids and isothiocyanates. C. Araya Cloutier, S. Kalli, S. Andini, J. Vincken  
 4:30 Chemical compositions and antioxidant activities of 36 typical pomegranates grown in China. W. Zheng, Y. Luo, B. Gao, L. Yu  
 4:50 Ultrasound improves the antibacterial effect of thyme essential oil nanoemulsions against foodborne pathogens in simulated and real food system. M. Guo, Q. He, Z. Yang

Virtual Zoom Room 1

### **Advancements in Nutriomics**

K. Mahalak, G. Zhang, *Organizers* J. P. Karl, *Presiding*  
 3:00 Introductory Remarks.  
 3:05 Gut microbiome variation influences host responses to diet. F. Rey  
 3:35 Mechanistic implications of the synergistic effect of diabetes drug metformin with the lactate dehydrogenase inhibitor sodium oxamate. B. Dayal, M.A. Lea  
 3:55 Metabolic interplay between gut microbiome and host FGF21 during dietary protein restriction. G. Ecklu-Mensah, A. Martin, C. Ha, G. Hendrick, D. Layman, J. Gilbert, S. Devkota  
 4:25 Intermission.  
 4:40 Novel combinations of prebiotics and polyphenols and their effects upon gut and cognitive health in active military personnel. B. Sayers, G.R. Gibson, A. Wijeyesekera  
 5:10 Effects of supplementation with polyphenols and fiber on gut microbiota form and function during parallel batch fermentation. J. Whitman, L.A. Doherty,

I. Pantoja-Feliciano, J.P. Karl, K. Racicot, S. Hussain, J.W. Soares  
 5:30 Lactose as a modifier of the gut microbiota. J. Firman, L. Liu, K. Mahalak, J. Lemons, P. Tomasula, W. Hu, K. Bitteringer  
 6:00 Discussion.  
 6:30 Concluding Remarks.

## MONDAY EVENING

Convention Center In-Person & Zoom Room

### Sci-Mix

M. Granvogl, L. Liu, *Organizers*

8:00 Effects of *Pleurotus eryngii* polysaccharide on gut inflammation and microbiota regulation. G. Ma, H. Du, H. Xiao  
 8:00 Antioxidant behavior of polypropylene-graft-maleic anhydride. H. Redfearn, J.M. Goddard  
 8:00 Rapid wort color analysis of malts. N.O. Flynn  
 8:00 Quantification of capsaicin and dihydrocapsaicin concentration in potentially the hottest beer using HPLC analysis. V. Ebenki, R. Parrish, S. Smith  
 8:00 Investigating protein adsorption on nanoparticle-based sensors and delivery vehicles in plants. E. Voke, R.L. Pinals, N. Goh, M. Landry  
 8:00 Gut microbial metabolism of aromatic amino acids under dietary and microbiota interventions. C. Chen, Y. Zhou  
 8:00 Sensomics-assisted insights into flavor changes of functional food arising by implementing plant-based proteins as fat-replacer. F. Utz, J. Kreissl, T.D. Stark, C. Schmid, C. Tanger, U. Kulozik, T. Hofmann, C. Dawid  
 8:00 Creation of flavor compounds in cheese. M.H. Tunick  
 8:00 Rapid methods for detecting the presence of nitrite contamination in food and drink. A. Nikolaidis  
 8:00 Detecting adulteration of red rice yeast dietary supplements by distinguishing between lovastatin and monacolin K. K. Hannon, J. Sabala, K. Kubachka, M. Mantha, L. Lorenz, J. Roetting, M. Perini, S. Pianezze  
 8:00 "This fish smells okay, but is it still good?" Using biogenic amines to distinguish seafood species under several stages of decomposition. M.P. Matos, S. Genualdi  
 8:00 Non-fouling and antimicrobial polyurethane coatings to prevent cross-contamination in food processing facilities. A. Rudlong, J.M. Goddard  
 8:00 Fermenting beer with maltose negative yeast: The fate of sugars, alcohol, and volatile flavor compounds in nonalcoholic and low alcohol beers. L. Benedict, S.J. White, C.J. Riley, T.L. Chamberlain, H.N. Nguyen, O. McElearney  
 8:00 Evaluation of non-alcoholic beverages from hop using GC-MS and HPLC. Y. Takemori, M. Hayakawa, A. Nomura, J. Nagata, E.R. Kuhn, T. Yamamiya, N. Suzuki

8:00 Salt reduction using food macromolecule carrageenan. Y. Fang, W. Lu, Z. Hu  
 8:00 Bioactive components in probiotic kefir lactic acid bacteria and obesity. H. Kim, E. Kim, S. Han, K. Seo  
 8:00 Potential sophorolipid uses in antimicrobial applications. R. Ashby, X. Fan, O. Olanya, M. Ozdener  
 8:00 Protecting the integrity of plant-based sweeteners: Updating the FCC standard for Steviol Glycosides. T. Xu  
 8:00 Gas chromatography-based metabolomics to characterize the differences between atypical and dark-cutting beef. R. Ramanathan, F. Kiyimba, J. Habiger, G.G. Mafi  
 8:00 Synthesis and sensory characterization of novel umami enhancing and kokumi peptide glycoconjugates. J. Zhang, H. Wang, G. Su, M. Zhao, C. Ho  
 8:00 Influence of the microelements on anticancer metabolites biosynthesis in basidiomycetes. A. Ostrokhishko, A. Pomytkina, L. Levkina, F.V. Lavrentev  
 8:00 Evaluation of non-alcoholic beverages from hop using GC-MS and HPLC. Y. Takemori, M. Hayakawa, A. Nomura, J. Nagata, E.R. Kuhn, T. Yamamiya, N. Suzuki

## TUESDAY MORNING Mar. 22

Hilton Bayfront Sapphire A/B

### Chemistry of Alcoholic Beverages

Cospons. AGRO Nick Flynn, *Organizer, Presiding*  
 8:00 Introduction: Chemistry of alcoholic beverages. N.O. Flynn  
 8:10 Rapid wort color analysis of malts. N.O. Flynn  
 8:30 Dry-hopping as a general tool to influence the concentrations of key odorants in beer as well as to optimize the overall aroma of alcohol-free beer. M. Granvogl, T. Hofmann, S. Brendel  
 8:50 Quantification of capsaicin and dihydrocapsaicin concentration in potentially the hottest beer using HPLC analysis. V. Ebenki, R. Parrish, S. Smith  
 9:10 Unveiling the chemistry of sake. E.R. Kuhn  
 9:30 Intermission.  
 9:45 Comprehensive aroma characterization of unaged (blanco) tequila. X. Huang, K.R. Cadwallader  
 10:05 Investigating extraction and reutilization of oak products in model beverage systems. J. Belew, J. Beaver  
 10:25 Using Raman spectroscopy for classification of alcohol products. S. Shidler, L. Grainger, T. Prusnick  
 10:45 Elucidating reproducibility of site contributions to composition of Pinot noir wines over multiple vintages: Elemental profile and organic acids characterization. M. M. M. Lima, D. Hernandez, R. Runnebaum

11:05 Determination of histamine, agmatine, and putrescine in wine by ion chromatography single quadrupole mass spectroscopy. T.T. Christison, J. Rohrer

11:25 Incorporation of  $^{13}\text{C}$  as a chemical label for smoke fuel used for smoke affected wine studies. D.C. Cerrato, L. Garcia, M. Penner, E. Tomasino

11:40 Panel Discussion.

#### Virtual Zoom Room 1

##### General Papers

Cospons. AGRO M. Granvogl, L. Liu, *Organizers, Presiding*

10:00 Introductory Remarks.

10:15 Simultaneous quantification of 24 aldehydes and ketones in oysters (*Crassostrea gigas*) with different thermal processing procedures by HPLC-electrospray tandem mass spectrometry. G. Zhao

10:35 PAM free loop mediated isothermal amplification coupled with CRISPR/FnCas12a cleavage for on-spot detection of three rice pathogens. z. zhu, L. Yang

10:55 Coin operated water vending machines: Bacterial contamination analysis. S. Asenjo, R. Gerona, M. Miñoza, C. Flores, G. Sildora

11:15 Ovalbumin-specific peptide aptamer selected in the *In vitro* Selection process using *E. coli* extract. S. Kim, A. Yumoto, N. Minagawa, Y. Heo, K. Son, Y. Ito, T. Uzawa

11:35 The use of mustard bioherbicide in organic potato production: weed control, soil health, and crop quality. D. Temmen, J. Randall, I.E. Popova

11:55 Intermission.

12:15 Rapid screening of glycosyltransferases in plants using a linear DNA expression template based cell-free transcription-translation system. X. Shi, S. Guo, M. Wang

12:35 Analytical performance of a portable gluten sensor for celiac disease patients. A. Maric, K. Scherf

12:55 Challenges of detecting an evolving prion disease, chronic wasting disease (CWD). C.J. Silva

1:15 Gas chromatography-based metabolomics to characterize the differences between atypical and dark-cutting beef. R. Ramanathan, F. Kiyimba, J. Habiger, G.G. Mafi

1:35 Selective dietary plant extract as inhibitors of cyclooxygenase -1 and cyclooxygenase-2 activities. D. Kalita, B.V. Nemzer

1:55 Concluding Remarks.

#### TUESDAY AFTERNOON

##### Virtual Zoom Room 1

##### Advances in Nanomaterials for Food and Agricultural Applications

Cospons. AGRO S. Chang, B. Park, *Organizers, Presiding*

3:00 Intermission.

3:00 Sustained release of hydrogen sulfide from poly (lactic acid) micro particles containing a dithiophosphate to enhance plant growth. N. Ranasinghe Arachchige, E.M. Brown, N.B. Bowden

3:20 Investigating protein adsorption on nanoparticle-based sensors and delivery vehicles in plants. E. Voke, R.L. Pinals, N. Goh, M. Landry

3:40 Electrostatic interactions of carbon dots with plant model and native cell walls. S. Jeon, P. Hu, K. Kim, C. Castillo, J.A. Pedersen, J. Giraldo

4:00 Eco-friendly targeted pest control using nanomaze lure: Application in agricultural nanotechnology. K. Kaur, D.V. Kumar

4:20 Intermission.

4:35 Fabrication of electrospun polyacrylonitrile carbon nanofibers with functionalized multi-walled carbon nanotube for electrochemical biosensing applications. R. Wang, R. Wang

4:55 Nanoscale biomaterial for developing next-generation agrochemicals. R. Raliya

5:15 Chemically tailored nanomaterials to improve material properties of renewable canola protein-based packaging materials. N. Bandara, T. Dissanayake, B. Chang, T. Mekonnen, C. Narvaez-Bravo, S. Ranadheera

5:35 Tobacco mild green mosaic virus as a multifunctional platform for efficient pesticide delivery. I. Gonzalez Gamboa, A. Caparco, N.F. Steinmetz

5:55 Concluding Remarks.

##### Virtual Zoom Room 17

##### General Papers

Cospons. AGRO M. Granvogl, L. Liu, *Organizers, Presiding*

3:00 Introductory Remarks.

3:05 Nutrient compositions of two varieties of tomatoes harvested from single-layer and double-layer high tunnels. A. Odediran, N. Mikiashvili, J. Yu, P.L. Coffey, S. Gu

3:29 Identification of odorants in American pawpaw fruit, *Asimina triloba*. S. Warner, J.P. Munafo

3:53 Identification of odorants in chardonnay marc seeds. S. Warner, J.P. Munafo

4:17 Characterization of odorants from southern mountain mint, *Pycnanthemum pycnanthemoides*. M. Dein, J.P. Munafo

4:41 Synthesis and sensory characterization of novel umami enhancing and kokumi peptide glycoconjugates. J. Zhang, H. Wang, G. Su, M. Zhao, C. Ho

5:05 Intermission.

5:20 Does ultrasound-assisted extraction on berries improve phenolic compounds content in juices?. A.A. Watrelot, L. Bouska

5:44 Characterization of an exopolysaccharide (EPS-3A) produced by *Streptococcus thermophilus*



ZJUIDS-2-01 isolated from traditional yak yogurt. F. Cao, M. Liang, J. Liu, P.X. Qi, D. Ren  
 6:08 Determining the distributions of antioxidants from tea extract in oil-in-water emulsions and exploring the effect of chemical structures on the distributions. L. Cheng, Q. Huang  
 6:32 "This fish smells okay, but is it still good?" Using biogenic amines to distinguish seafood species under several stages of decomposition. M.P. Matos, S. Genualdi  
 6:56 Concluding Remarks.

## TUESDAY EVENING

Convention Center In-Person Room

### General Poster Session and the Undergraduate Poster Competition

M. Granvogl, L. Liu, *Organizers*

7:00 Providing context for chemical effects through compound structure similarity. B.T. Cook, J. Abedini, S. Bell, J. Rooney, E. McAfee, J. Phillips, D. Allen, N. Kleinstreuer  
 7:00 Soy whey protein containing trypsin inhibitors improves the texture of surimi-like gels made with protein recovered from catfish by-products. Y. Zhang, S.K. Chang  
 7:00 Data study of the effect of biochar application on greenhouse gas emissions from agricultural soils. C. Chan, S. Li  
 7:00 Automated identification of potential pesticides residues in fruit samples using HRMS data. E. Ortega, I. Zamora, R. Lopez-Ruiz, A. Garrido Frenich, R. Romero-Gonzalez  
 7:00 Phytochemical characterization of ninety-two Rosinweed (*Silphium integrifolium*) Genotypes: GC-MS profiles and their chemometric analysis. A. Chitrakar, Y. Zhang, B. Johnson, E. Murrell, E. Chérémoud, M. Brasuel  
 7:00 Earthworms increase the potential for enzymatic bioactivation of biochars made from co-pyrolyzing animal manures and plastic wastes. J. Sanchez-Hernandez, K. Ro, A.A. Szogi, S. Chang, B. Park  
 7:00 Modeling beer ratings with machine learning. C.N. Vialva, E. Frondarina, G. Fogel, D.A. Hecht  
 7:00 Peanut allergen isolation using ligand bound magnetic nanoparticles. R. Arena, G. Nagorite, A.I. Omoike  
 7:00 Chemical and electrochemical ion intercalation on cobalt hydroxide: Selective phase transformation and application to electrocatalytic reactions. O.O. Onawumi, P.B. Ayoola, O.A. Adewusi  
 7:00 Improving the extraction and recovery of organic acids from root exudates by WAX-SPE. N.P. Rosario, P. Larsen, G. Barding  
 7:00 Sensitive and visual detection of *Salmonella* spp. using CRISPR-Cas12a assisted lateral flow assay. S. San, J. Chen

7:00 Sucrose treatment improves phytochemical levels and bioactivities of mung bean sprouts. J. Lee, H. Heo, H. Lee  
 7:00 Antioxidant and anti-hypertensive effects of sinapic acid via activation of Nrf2/HO-1 pathway in EA.hy926 endothelial cells. H. Lee, H. Kim, J. Lee  
 7:00 Effects of various pre-treatment and cooking on the levels of biogenic amines in mackerel. H. Ahn, Y. Kim, K.G. Lee  
 7:00 Correlation analysis between volatile compounds and  $\alpha$ -dicarbonyl compounds in various beans as responses to different roasting conditions. S. Do, J. Park, G. Lee, K.G. Lee  
 7:00 Effect of ultraviolet light exposure and compost tea supplementation on growth and nutrient profile of hydroponically grown mustard greens. R. Castro, D. Pentico, S. Lu, S. Dinh, J.J. Love, D. Larom, R. Pérez, C. Liu  
 7:00 Fluorosulfurylation of amino acid-based sweeteners towards novel high intensity artificial sweeteners  
 . S. Khasnavis, N.D. Ball  
 7:00 Determination of quaternary amine polar pesticides using improved cation-exchange separation technology combined with suppressed conductivity and tandem mass spectrometry detection. T.T. Christison, J.E. Madden, J. Rohrer  
 7:00 Effect of infrared drying method on chemical and microbial stability of cold-hardy grape pomaces. Z. Shad, C. Venkitasamy, E. Kuelbs, A.A. Watrelot  
 7:00 Use of  $^1\text{H}$  NMR spectroscopy to identify fraud in commercial honey samples. V. Kizirian, R. Hellberg  
 7:00 Development of novel antioxidant, antibiofilm and hydrophobic cinnamic acid and cinnamic acid derivatives based cellulose nanofibrils (CNF) films for food packaging applications. S. LakshmiBalasubramaniam, D. Skonberg, M. Tajvidi, C. Howell  
 7:00 Oxygen functionalized MWCNTs decorated with silica-coated spinel ferrite—A nanocomposite for potentially rapid and efficient decolorization of the aquatic environment. Z.A. Al Othman, S. Wabaidur  
 7:00 Anti-bacterial, anti-inflammatory activities of lactic acid bacteria-bioconverted indica rice (*Oryza sativa* L.) extract. H. Ahn, H. Kwon, K.G. Lee  
 7:00 Improvement of Robusta coffee aroma with L-leucine powder. H. Park, A. Cho, K.G. Lee  
 7:00 Reduction of sulfur containing volatiles from antioxidative onion skin extract. J. Hong, M. Kim, J. Lee  
 7:00 PVA hydrogel film containing lemongrass essential oil emulsion for smart food packaging. H. Kim, U. Park, C. Ban, S. Lim  
 7:00  $\text{Zn}^{2+}$  and  $\text{Ag}^+$  doped oyster shell waste as a natural antimicrobial agent for active packaging. P. Kitae, S. Jongchul

7:00 Quantification of “smoke taint” compounds in grapes and wine by SPME-GCMS. E.R. Kuhn, A. Sandy, A. Owens, D. Gruszecka  
 7:00 Fermenting beer with maltose negative yeast: The fate of sugars, alcohol, and volatile flavor compounds in nonalcoholic and low alcohol beers. L. Benedict, S.J. White, C.J. Riley, T.L. Chamberlain, H.N. Nguyen, O. McElearney  
 7:00 Analysis of accelerating the whiskey aging process. S. Walker, R. Dixon  
 7:00 Hop (*Humulus lupulus*) acid and metabolite profiles as a function of growth region by HPLC and GC-MS analysis. C. Paoletta, C. Balog, D.V. Liskin, A. Higgs, A. Brehm, R.A. Quinlan  
 7:00 Characterization of aroma and taste profiles as a function of malt growth region in craft brewing by HPLC and GC-MS. C. Balog, C. Paoletta, A. Higgs, D.V. Liskin, A. Brehm, R.A. Quinlan  
 7:00 Structures and binding sites of human bitter taste receptors complexed with G protein and agonists. M. Yang, S. Kim, W.A. Goddard, B.D. Guthrie, S.B. Liggett  
 7:00 Response of metal oxide semiconductor E-nose on aroma compounds and its application in Chinese baijiu. Y. Li, K. Yang, D. Zhao, J. Zheng, M.C. Qian

### ACS Integration Testing - Poster

Spons. ACS, Cospons. AGFD

## WEDNESDAY MORNING Mar. 23

Virtual Zoom Room 19

### Advances in Nanomaterials for Food and Agricultural Applications

Cospons. AGRO S. Chang, B. Park, *Organizers, Presiding*

10:00 Introductory Remarks.  
 10:05 Modified hydroxyapatite nano seed coating for the seedling stage enhancement of *Zea Mays*. L. Abeywardana, M. de Silva, C. Sandaruwan, D. Dahanayake, G. Priyadarshana, S. Chathurika, V. Karunaratne, N. Kottegoda  
 10:25 Smart cellulose nanocrystal-based materials for intelligent packaging. Z. Yu, X. Lu  
 10:45 Material degradation inside and out: Contributions to the deterioration of electrospun matrices with encapsulated corn oil. L. Colaruotolo, S.S. Singh, L. Lim, S. Dobson, A. Sadat, I. Joye, M.G. Corradini  
 11:05 Advances in nanomaterials for food and agricultural applications. I.Z. Zareen Ahmad  
 11:25 Intermission.  
 11:40 Effect of zein and carboxyl-methyl chitosan coated resveratrol nanoparticles on chicken embryonic development as endocrine disruptors. J. Zhang, X. Zhang, Q. Wang, C. Wu

12:00 Compressible nanobubbles induced self-assembly of 7S globulins isolated from pea (*Pisum Sativum* L.). T. Yan, D. Liu

12:20 Hierarchical assembly of safe, pragmatic biocatalytic materials. E. Moreno Reyes, J.M. Goddard

12:40 Synthesis, stability and kinetics of hydrogen sulfide release of dithiophosphates. N. Ranasinghe Arachchige, E.M. Brown, A. Paudel, N.B. Bowden  
 1:00 Concluding Remarks.

Virtual Zoom Room 1

### General Papers

Cospons. AGRO M. Granvogl, L. Liu, *Organizers, Presiding*

10:00 Introductory Remarks.  
 10:05 Resistance mechanism of salmonella typhimurium at low water activity against heat treatment and added trans-cinnamaldehyde or eugenol. Q. Ding, C. Ge, R.C. Baker, R.L. Buchanan, R.V. Tikekar  
 10:29 Analytical and carbohydrate chemistries of contemporary waterpipe tobaccos. J.H. Lauterbach  
 10:53 Characterization of hydroxypropyl methylcellulose bio-composite structures with microcrystalline cellulose-containing natural anthocyanin for developing pH sensing indicator. A. Boonsiriwit, Y. Lee  
 11:17 Scalable functional cationic swabs for improved pathogenic microbes sampling from food contact surfaces. A. El-Moghazy, N. Wisuthiphaet, N. Nitin  
 11:41 Ecofriendly extraction of polyphenolic compounds from *Vaccinium meridionale* fruit by-product with natural deep eutectic solvent (NADES). G.A. Garzon, C.E. Gonzalez, D. Gonzalez, C.D. Mendieta, V. Monroy  
 12:05 Intermission.  
 12:20 Identification of polymers, additives, and contaminants in food contact articles using rapid, direct - high resolution mass spectrometry. K.L. Reese, J. Rusko, I. Perkons, L.K. Ackerman  
 12:44 Raman imaging of plant metabolite crystals. S. Shidler, L. Grainger, T. Prusnick, A. Lewandowska  
 1:08 Gossypol effects on mammalian cell growth and gene expression. H. Cao, K. Sethumadhavan  
 1:32 Changes in cell wall composition of cool-season pasture grasses over the growing season. S. Newhuis, I.A. Kagan, B. Harlow, M. Flythe, R.R. Schendel  
 1:56 Concluding Remarks.

## WEDNESDAY AFTERNOON

Virtual Zoom Room 2

### Tackling Food Fraud Through Innovative Methodologies: Opportunities and Challenges

Q. Rao, Z. Xie, *Organizers, Presiding*

3:00 Introductory Remarks.

3:05 Using ingredient standards to protect food integrity and combat economically motivated adulteration. Z. Xie

3:25 Use of amino acid fingerprinting in authenticity verification of nonfat dry milk and skim milk powders. S.D. Bhandari, Z. Xie

3:45 Development of a LC-QTOF-MS based method for the classification of honeys with different quality attributes. L. Tian, C. Akiki, L. Liu, S. Bilamjian, T. Anumol, D. Cuthbertson, S. Bayen

4:05 Protecting the integrity of plant-based sweeteners: Updating the FCC standard for Steviol Glycosides. T. Xu

4:25 Intermission.

4:40 Exploration of nanobody based immunoassays for the tracing of food fraud. D. Li, C. Morisseau, Y. Ying, B.D. Hammock

5:00 Immunoassays for the detection of meat adulterants. Q. Rao, X. Jiang

5:20 Rapid methods for detecting the presence of nitrite contamination in food and drink. A. Nikolaidis

5:40 Detecting adulteration of red rice yeast dietary supplements by distinguishing between lovastatin and monacolin K. K. Hannon, J. Sabala, K. Kubachka, M. Mantha, L. Lorenz, J. Roetting, M. Perini, S. Pianezze

Virtual Zoom Room 1

### **Milking It: Exploring Flavor, Spoilage and Shelf-Life of Dairy Products**

Cospons. AGRO

Jonathan Beauchamp, Yu Wang, *Organizers, Presiding*

3:00 Creation of flavor compounds in cheese. M.H. Tunick

3:20 Evolution of volatile compounds during cheddar cheese ripening and discovery of the key flavour compounds related to predetermined cheese qualities. Y. Chen, C. Ayed, Q. Yang, T. Foster, N. Yang

3:40 Multivariate methods in dairy spoilage characterization. L. Kuuliala, J. Beauchamp, B. DeBaets, F. Devlieghere

4:00 Real-time monitoring of VOCs associated with kefir *versus* kefir-like (plant-based) fermentation induced inoculating diverse microbial resources. V. Capozzi, M. Fragasso, I. Khomenko, P. Silcock, F. Biasioli

4:20 Non-targeted high-resolution mass spectrometry study for evaluation of milk freshness. M. Suman, C. Loffi, D. Cavanna, G. Sammarco, D. Catellani, C. Dallasta

4:40 Shelf life of packed UHT milk: Storage test and mathematical modelling. M. Reinelt

5:00 Intermission.

5:20 Sensomics-assisted insights into flavor changes of functional food arising by implementing plant-based proteins as fat-replacer. F. Utz, J. Kreissl, T.D. Stark, C. Schmid, C. Tanger, U. Kulozik, T. Hofmann, C. Dawid

5:40 Influence of volatile compounds on consumer acceptability of infant formula. G. Eyres, P. Silcock, S. Gallier, L. Tolenaars, S. Then

6:00 Photooxidation of milk. P.J. Bremer, M.

Asaduzzaman, P. Silcock, E. Zardin, J. Beauchamp

6:20 Understanding microbially induced flavor quality changes in milk. M. Alothman, P. Silcock, K. Lusk, P.J. Bremer

6:40 Exploring volatile spoilage markers and sensory defects of UHT milk in accelerated shelf-life tests. A. Krempf, B. Handwerker, A. Strube, K. Rieblinger, J. Beauchamp

### **THURSDAY EVENING Mar. 24**

#### **ACS Integration Testing - Poster**

Sponsored by ACS, Cospons. AGRO



**Mark August 21-25, 2022  
on your calendar for the  
264th ACS National Meeting  
in  
CHICAGO**



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### Schedule of Technical, Business and Social Meetings

Sunday March 13	11 am – noon	Future Programs	via Zoom
Sunday March 13	1 pm – 2 pm	Special Topics and Business	via Zoom
Sunday March 13	3 pm – 6 pm	Executive Committee	via Zoom
Sunday March 20	8 pm – 10 pm	Undergrad Poster Competition	via Zoom
Monday March 21	8 pm – 10 pm	Sci-Mix	Convention Center & Zoom
Tuesday March 22	7 pm - 9 pm	Undergrad Poster Competition and AGFD Social Reception	Convention Center