



# CORNUCOPIA

including the AGFD program for the  
265th American Chemical Society (virtual & live) National Meeting on  
March 26 - 30, 2023  
in

## INDIANAPOLIS

Jonathan Beauchamp, Jason Soares  
Program Chairs

Going to Indianapolis?  
Join the AGFD Chair's Reception (free refreshments!)  
Buca Di Beppo  
35 N. Illinois St.  
Tuesday, March, 6:00 - 8:00pm

Twelve minute walking directions from Convention Center –  
exit the Center onto Maryland Street, turn right, proceed several blocks to N. Illinois Street, cross  
the street and then turn left. Proceed 1½ blocks. Buca de Beppo is on your right.

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We're on LinkedIn, too! - <https://www.linkedin.com/groups/8154423/>

## MESSAGE FROM THE CHAIR

I did not expect to be writing this message already. Just over one year ago, at the end of January 2022, I was nominated for the position of Vice-Chair of our technical division – to serve with immediate effect after the incumbent officer for that role unexpectedly stepped down. Words of encouragement and support from Youngmok Kim (past Chair) and Michael Granvogl (Chair-Elect) convinced me to stand, and my appointment was promptly approved by the AGFD Executive Committee. My expectations and intentions were to steadily familiarize myself with my new duties, as is foreseen for incoming officers, by supporting the Chair-Elect before transitioning to that position, then ultimately to Chair; a three-year journey, minus the first couple of months of 2022 due to my late incumbency. Then, only a month later, tragedy struck when Michael Granvogl, my anticipated mentor in the coming years, suddenly passed away; I had expected to learn a great deal from Michael, but that was not to be. My swift progression to Chair-Elect coincided with me inheriting the role of Program Chair for ACS Fall 2022. Michael had put in excellent groundwork in seeding the technical program, yet cultivating it was a daunting challenge due to my lack of prior experience and involvement in such a task. While I acknowledge Michael's fundamental contribution, the great success of the AGFD programming and its implementation for ACS Fall 2022 can be primarily attributed to the steadfast resolve and dedication of LinShu Liu, last year's AGFD Chair. LinShu's unfaltering leadership and support was pivotal in jointly pulling everything together to create a captivating technical program for our members and the wider audience. ACS Fall 2022 featured 20 AGFD symposia on a broad range of topics that comprised 207 oral presentations and 89 posters. The Division can look back with contentment on its success under the circumstances, notably the healthy number of contributions and attendance, which indicate an upturn in conference activity compared to the recent COVID-ridden years.

AGFD has successfully overcome the many challenges faced in the disruptive past three years and we can savor the positive outlook for the year ahead, commencing this month with ACS Spring 2023 in Indianapolis and online. Traditionally, the contributions to the spring meetings are fewer than in the fall, but AGFD can be proud to be coordinating 12 symposia for this meeting, including two interactive panel discussions, with almost 200 abstract submissions. In addition to our regular program events – the General Papers oral and poster sessions (the latter featuring the undergraduate poster competition) – AGFD can boast 14 sessions that cover a diversity of topics, from citrus flavor, the chemistries of alcohol and coffee, functional ingredients, food packaging and preservation, and agri-food sustainability, to food allergens and biomarkers of food and drug intake. We encourage interactive and high attendance in these sessions and hope that this broad range of topics will quell your thirst for hearing the latest developments in the many sub-disciplines of agricultural and food chemistry. Beyond the technical program, the meeting sees the return of the Chair's Reception after the COVID-induced hiatus, which I am delighted to host, especially having the honor of conferring the awards for the best undergraduate poster competition contributions. As with every conference, the success in programming rests on the shoulders of the individual symposium organizers, who have worked tirelessly to create this rich assortment of technical sessions. Accordingly, I would like to thank all symposium organizers for their contributions and achievements: Michael Appel, Lingyun Chen, Nina Cleve (née Buck), Vinka Craver, Kathryn Deibler, William Dixon, Nick Flynn, Brian Guthrie, Zhengze Li, Chris Mattison, Alyson Mitchell, Coralia Osorio Roa, Y Lan Pham, Anne Plotto, Qinchun Rao, Omowunmi Sadik, Majher Sarker, Veronika Somoza, Jane Tseng, Yu Wang, Xian Wu, Tianxi Yang and Liangli Yu. Additional and considerable thanks go to Jason Soares, my Program Co-Chair for this meeting and current Chair-Elect of the Division. Like me, Jason was thrown in at the deep end with a premature call to duty by AGFD, but he has risen to the challenge and provided crucial support in coordinating the programming activities.

Returning to my account of the turbulent experiences of last year, I have shared this with you to convey a positive message. The idiom that life can be unexpected holds true, but most challenges can be surmounted with a strong and unwavering support network in place. The AGFD Executive Committee embodies this notion, and I am indebted to many people for their advice and guidance in matters relating to the tasks of Program Chair and incoming Division Chair. Foremost, I sincerely thank Alyson Mitchell, LinShu Liu, Mike Morello, Michael Appell, Michael Tunick, Kathryn Deibler, Brian Guthrie and Jason Soares for their indispensable help that has smoothed my leap from Vice-Chair to Chair within the constricted space of one year. Finally, Carl Frey is gratefully acknowledged for *continues on next page*

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his ever-skillful composition and editing of this eagerly anticipated Cornucopia (and his unrelenting patience in waiting for me to deliver materials with which to fill it.)

As we slowly yet optimistically emerge out of the pandemic, we hope to see physical meeting attendances in greater numbers, accompanied by the much-needed social interactions that all of us sorely missed during times of lockdowns and travel restrictions. Nevertheless, regardless of whether you are attending ACS Spring 2023 in person or virtually, I wish you an enjoyable and insightful meeting; and for those of you heading to Indianapolis, I look forward to meeting you in person, either while perusing the posters, during the coffee breaks of the technical sessions, or enjoying a drink at the Chair's Reception.

**Jonathan Beauchamp**

AGFD Chair 2023

March 2023

Freising, Germany

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## Convergent Chemistry Communities (CCC)

Convergent Chemistry Communities (CCCs) are being piloted by ACS as a new platform for enabling Divisions and Members to come together and collaborate on topics of mutual interest that are best explored in a multi-disciplinary fashion. In particular, CCC initiatives center on important new or emerging focus areas and/or highly multidisciplinary topics and facilitate new collaborative interactions involving multiple Divisions. A primary goal of the CCC is to coalesce interest and activities around an exciting science area that demands the focused attention of the ACS. AGFD is actively undertaking to form CCCs in the following areas:

### Food Security: Tackling Hunger

Zero Hunger is one of the U.N. Sustainable Development Goals (SDG-2). AGFD is coordinating collaboration with AGRO, ANYL, and ENVR Technical Divisions of ACS to address this goal through the **CCC – Food Security: Tackling Hunger**. The community aims to foster collaboration and disseminate how chemistry is tackling challenges associated with eliminating hunger. Our vision is to 1) foster strong working relationships; 2) coordinate multidisciplinary knowledge sharing through technical programming, webinars, and social media; and 3) cultivate interest in chemists – students to explore or pursue careers that address food security and alleviate hunger. Members, Divisions, committees, and other societies interested in scientific efforts aimed at eliminating hunger are welcome to join us! A LinkedIn group has been established to facilitate connections: <https://www.linkedin.com/groups/12750126/>. Contact Kenny Xie [kyx@usp.org](mailto:kyx@usp.org) for more information.

### ACS Microbiome Research Consortium

AGFD, in collaboration with AGRO, ANYL, BIOT, CARB, COMP, ENVR, MEDI, has proposed to establish the **CCC – ACS Microbiome Research Consortium**. Microbiomes have emerged as critical determinants of many aspects in our life, ranging from the environment, to food production, safety, and human health. This proposal seeks to foster and consolidate ACS-wide microbiome research activities. The proposal contains three main initiatives: 1) Scientific initiative to provide a consolidated interactive platform in microbiome research. 2) Education and diversity initiative to educate students and postdocs and provide sound advice on skillsets to be successful in this research area. 3) Industrial partnership initiative to promote interaction with industrial partners, to highlight ACS members' microbiome research, and as conduits to translate microbiome research toward utility in industry. It is envisioned that the consortium be a broad based, interactive, collaborative cross division community to highlight current research, identify emerging issues and solutions. A kick-off meeting is planned for ACS Fall 2023. Members, Divisions, committees, and other societies interested in the scientific efforts are welcome to join us! Please contact [tom.wang@usda.gov](mailto:tom.wang@usda.gov), [linshu.liu@usda.gov](mailto:linshu.liu@usda.gov) or [karley.mahalak@usda.gov](mailto:karley.mahalak@usda.gov) for more information.

## FUTURE PROGRAMS

**SAN FRANCISCO August 13-17 2023**

ACS Meeting Theme - Harnessing the Power of Data

**ACS Microbiome Consortium Kick-off Symposium** Laurel Doherty laurel.a.doherty.civ Masuko Kobori kobori@affrc.go.jp LinShu Liu linshu.liu@usda.gov Karley Mahalak Karley.mahalak@usda.gov Tom Wang tom.wang@usda.gov

**Advances in Food Chemical Informatics, Knowledge Bases and Databases** Andreas Dunkel a.dunkel.leibniz-lsb@tum.de Brian Guthrie brian\_guthrie@cargill.com David Wild djwild@indiana.edu

**Artificial Intelligence Applications for Food and Agriculture** Michael Appell michael.appell@usda.gov Bosoon Park bosoon.park@usda.gov

**Award for the Advancement of Application of Agricultural and Food Chemistry in Honor of Liangli (Lucy) Yu** Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de Michael Morello mjmorello226@gmail.com

**Bioproducts from Biomass** Helen Ngo helen.ngo@usda.gov Majher Sarker majher.sarker@usda.gov Barjendra Sharma Brajendra.Sharma@usda.gov Madhav Yadav madhav.yadav@usda.gov

**Biotechnology and Synthetic Biology for Sustainable Foods, Food Ingredients and Flavor** Keith Cadwallader cadwldr@uiuc.edu Xiaofen Du xdu@twu.edu Yong-Su Jin ysjin@illinois.edu Michael Qian michael.qian@oregonstate.edu YanPing Quin yan.ping.qian@oregonstate.edu

**Chemical Intervention Technology to Improve Microbial Stability of Food** Xuetong Fan xuetong.fan@usda.gov Tony Jin tony.jin@usda.gov

**Chemistry of Wine** Elizabeth Chang eabc@vt.edu Gal Kreitman gal.kreitman@ejgallo.com Gavin Sacks gls9@cornell.edu Elizabeth Tomasino elizabeth.tomasino@oregonstate.edu

**Food Security: The Role of Alternative Protein Sources in Addressing World Hunger** John Finley JFinley@agcenter.lsu.edu Brian Guthrie brian\_guthrie@cargill.com Lauren Jackson Lauren.Jackson@fda.hhs.gov Michael Morello mjmorello226@gmail.com Rickey Yada r.yada@ubc.ca

**Food Toxicants: Occurance, Detection, Formulation Mechanism and Mitigation** Michael Appell michael.appell@ars.usda.gov Xiaohua He xiaohua.he@usad.gov Lauren Jackson Lauren.Jackson@fda.hhs.gov Liangli Yu lyu5@umd.edu

**General Papers** Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de Jason W. Soares Jason.w.soares.civ@mail.mil

**General Posters** Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de Jason W. Soares Jason.w.soares.civ@mail.mil

**JAFC Best Paper Award** Thomas Hofmann thomas.hofmann@tum.de Willam King WKing@acs-i.org Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de

**Methods, Data and Their Usage Towards Solving the Food Allergy Problem** Yuzhu Zhang yuzhu.zhang@usda.gov

**Nutraceutical Lipids, Proteins and Biopeptides** Fereidoon Shahidi fshahidi@mun.ca Jianping Wu jwu3@ualberta.ca Rickey Yada r.yada@ubc.ca

**Oat Bioactives & Their Health Benefits** YiFang Chu yifang.chi@pepsico.com Changling Hu chu@ncat.edu Shengmin Sang ssang@ncat.edu

**Phthalates and PFOS Environmental Exposure and Toxicology** John Finley JFinley@agcenter.lsu.edu

**Renewable Polymer Materials: Preparation, Processing, Application and Disposal** LinShu Liu linshu.liu@usda.gov Jinwen Zhan jwzhang@esu.edu

**Smart Food Safety** Xiaonan Lu xiaonan.lu@mcgill.ca Rickey Yada r.yada@ubc.ca

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**Sustainable Agriceuticals** Hyunsook Kim hyunsuk15@hanyang.ac.kr LinShu Liu linshu.liu@usda.gov Daxi Ren dxren@zju.edu.cn Wally Yokoyama wally.yokoyama@usda.gov Liangli Yu lyu5@umd.edu

**Virtual Graduate Student Symposium in Asia-Pacific Region on Agricultural and Food Chemistry** Daxi Ren dxren@zju.edu.cn Chunxiao Zheng czheng@acs-i.org

**Young Scientist Award** Yongmok Kim youngmok.kim@finlays.net

**NEW ORLEANS March 17-21 2024**

ACS Meeting Theme - The Many Flavors of Chemistry

**Chemistry of Alcoholic Beverages** Nick Flynn nflynn@wtamu.edu

**New Technologies in Flavor Analysis** Mike Morello mjmorello226@gmail.com

**Sensory Beyond Earth: The Relevance of Flavor Chemistry in Space Exploration** Julia Low julia.low2@rmit.edu.au Scott McGrane scott.mcgrane@effem.com Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de Neil Da Costa neil.dacosta@iff.com

**Extraction & Biotechnology: A Natural and Sustainable Future for Flavors** Elizabeth Kreger elizabeth.kreger@sensient.com Lewis Jones lewis.jones@sensient.com

**Authenticity and Adulteration Analysis** Neil Da Costa neil.dacosta@iff.com

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

**Mycotoxins** Hans-Ulrich Humpf humpf@uni-muenster.de

**Microplastics and Nanoplastics in Seafood** Changqing Wu changwu@udel.edu Xuetong Fan Xuetong.fan@usda.gov

**Agnes Rimando Memorial International Student Symposium** Michael Tunick mht39@drexel.edu Roberta Tardugno

**Michael Granvogl Memorial Symposium** Jonathan Beauchamp jonathan.beauchamp@ivv.fraunhofer.de Wang Yu yu.wang@ufl.edu Xiaoting Zhai xiaotingzhai@ahau.edu.cn

**CCC – Food Security: Tackling Hunger** Kenny Xie kyx@usp.org Mike Morello mjmorello226@gmail.com

**CCC – ACS Microbiome Research Consortium** Tom Wang tom.wang@usda.gov LinShu Liu linshu.liu@usda.gov Karley Mahalak karley.mahalak@usda.gov

## Executive Committee Meeting Minutes

*Sunday, August 14, 2022 1:00-3:00 pm CDT, via ZOOM*

*Takes place at each ACS National Meeting*

**Attendees:** LinShu Liu, Jonathan Beauchamp, Alyson Mitchell, Robert McGorin, Michael Appell, Youngmook Kim, Michael Morello, Michael Qian, Stephen Toth, Michael Tunick, Karley Mahalak, Brian Guthrie, Xiaofen Du, Tony Wang, Carl Frey

AGFD Chair LinShu Liu called the meeting to order at 1:10 p.m. (CDT).

The **minutes** of the spring 2022 Executive Committee meeting were approved with no changes and are published in the spring 2022 Cornucopia.

Michael Morello summarized the **Special Topics Meeting**. The committee discussed how to improve the publication of the special issue papers, based on the symposia of Spring (JAF) and Fall (J Food Sci. & Tech) Technical Programs. The editorial board of these journals will be contacted to discuss potential ideas (e.g., review article to summarize the meeting, symposia series book, etc.) for these special issues. Michael Morello of the Senior Program Guidance Committee motioned for approval to establishing a new quarterly speaker seminar series with *continues on next page*

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a following social hour to improve PR for the division. This committee will develop recommendations and guidelines to implement this seminar series during the Fall and will send this plan to the Executive Committee for vote and final approval via email. The motion was approved. A need to update Division Bylaws after the upcoming Strategic Planning meeting was also indicated.

The **Awards Committee Report** was given by Mike Morello. All award information can be found on the Division website and is published in the Fall 2022 Cornucopia. Due to on-going COVID-19 issues, the traditional awards banquet will not be held at the Fall meeting. Instead, a Chair's reception will be held at the Fall meeting. All award winners will be recognized at this reception. The call for student and Division awards will be sent out in September via email to Division members. Youngmok Kim will be taking over Michael Granvogl's responsibilities for the Young Scientist Award.

The **Senior Program Guidance Committee (SPGC) Report** was given by Mike Morello. The SPGC was started one year ago. The members of the committee include Mike Morello and Coralia Osario Roa (thru 22), Neil DaCosta and Kanjana Mahattanatawee (thru 23), Lucy Yu and Michael Appell (thru 24). Replacements for this committee need to be identified by the nominations Chair who appoints these positions. Members of this committee cannot be members of the Executive Committee. The committee meets monthly to help advise and steer technical programming. This committee has developed a master list of national meetings from 2001-2022. This committee is working to improve engagement with AGFD subdivisions, and inform subdivision officers an outline of their role and duties as subdivision officers. The committee has also work to improve pre-meeting promotion. For example, a summary of each symposia is compiled for dissemination via social media. Post-meeting promotion is also being focused on (e.g., social media, special journal issues, books, etc.). New programming opportunities and venues (e.g., webinars and YouTube videos) were identified. Mike Morello indicated that this committee needs volunteers to help accomplish goals and sustain activities (e.g., rotating webinars through the subdivisions).

The **Student Committee Report** was not given as the student graduated and moved on. A new student needs to be identified to carry out these duties. Jonathan Beauchamp asked how our student member numbers are in comparison to previous years. This information was not readily available to the committee. The difficulty of engaging students in AGFD as compared to IFT was brought up by Xiaofen Du as many of the AGFD students research is more related to food science and aligns more with goals of IFT. Additionally, IFT has more student-related events and programs. Michael Qian will contact Alyson Mitchell to discuss forming a committee to address student engagement. This topic will be added to the list of topics to discuss at the Strategic Planning meeting.

**The Nomination Reports** were given by Youngmok Kim. *Division leadership:* a new Division Chair (Jonathan Beauchamp) and Vice-Chair (Jason Soares) were nominated and approved for incoming Chair and vice-Chair due to the tragic loss of Michael Granvogl. A motion to nominate incumbents officers Steven Toth as Treasurer and Alyson Mitchell as Secretary for 2023 was approved. *Subdivision leadership:* the division has seven subdivisions which include: Flavor (Yu Wang), Functional Foods & Natural Products (Xian Wu), Food Bioengineering (Tianxi Yang), Nutrition (Mathias Sucas), Food Safety (Tony Jin), Diet & Gut Microbiome (Guodong Zhang, Karley Mahalak), Sustainability & Green Technology (Wunmi Sadik) Five of these subdivisions have new secretaries nominated for next year. Youngmok Kim will continue to work with the Flavor and Sustainability & Green Technology subdivisions to identify new officers for next year.

LinShu Liu gave the **Program Report**. The 2022 Spring National Hybrid Meeting hosted 12 symposia and 176 abstracts and 77 posters. This is low attendance for our Division and is likely related to the on-going COVID-19 pandemic and technical challenges associated with hosting a hybrid meeting. However, a hybrid meeting offers more flexibility for member engagement and attendance. Student attendance was also low and demonstrates a need to improve engagement with students. The report for the Fall 2022 National Hybrid Meeting was given by Jonathan Beauchamp. The meeting currently has 32 sessions; 14 hybrid, 8 virtual and 10 in-person. The number of papers given will be 207 (215 originally). There will be 45 in-person posters given and 44 virtual posters given. In addition, there will be 32 contributions given at SciMix.

The **Future National Meetings** was summarized by Jonathan Beauchamp. There are 12 symposium and two panel discussions proposed for the 2023 Spring meeting in Indianapolis, in addition to the General Poster Session and Undergraduate Poster Competition and the Graduate Student Symposium. The 2023 Fall San *continues on next page*

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Francisco meeting currently has 16 proposed symposia in addition to JAFC Best Paper Award, Young Scientist Award and Sterling Hendricks Award symposia. A memorial symposium is also proposed in honor of Michael Granvogl. To date there are 4 symposia proposed for the 2024 Spring Meeting in New Orleans.

The **Third International Conference on Flavors** will be held in New Zealand in 2024. The time and date have not been decided. The International Society for Nutraceuticals and Functional Foods will be held in October 2022 in Istanbul, Turkey.

**Subdivision Reports** were given by subdivision leaders. Xiaofen Du indicated that the Flavor subdivision has not been meeting regularly and needs improvement on re-engaging after a lack of in-person meetings due to COVID-19. Tainxi Yang indicated that Food Bioengineering will hold two symposia in 2023; Advances in Food Packaging and Preservation and Microplastics in Seafood. Karley Mahalak indicated that Diet & Gut Microbiome will host 3 hybrid sessions at the Fall meeting and that several new people have been recruited into the division. Michael Appell indicated that Sustainability & Green Technology has a virtual and hybrid session that are part of the thematic programming for the Chicago meeting and Indianapolis meetings. This subdivision is meeting regularly.

The **Councilor Report** was given by Michael Tunick. The Council meeting will be held next week at the Chicago meeting. Several petitions are proposed included one related to Divisional activities including a petition to let DAC step in if a Division is having trouble filling all positions.

**Council Committee Updates.** Michael Tunick gave the DAC update and indicated that there was a strategic planning retreat held last Spring. Several new ideas for improving membership engagement were discussed including encouraging more innovative project grants and strategic planning retreats, among others. The CPRC update was given by Mike Appell who indicated that this committee recently published an article in CE&N titled *Truth Decay*. This committee is also active in doing PR makeovers for divisions. The ComSci update was given by Mike Morello. This committee develops programming such as Frontier Fridays; a webinar series on new and interesting chemistries (e.g., wearable sensors, new battery technology, etc.). This committee also develops policy statements. Finally, this committee helps develop recommendations for non-ACS awards (e.g., National Medal of Science) and is heavily involved in promoting the UN's sustainable development goals (e.g., Zero Hunger). Zero Hunger is a great opportunity to highlight our Division as our programming is in alignment with these goals (e.g., food preservation and sustainable agriculture).

An update on the **Strategic Planning Retreat** was given via email by Lauren Jackson (Chair) who indicated that ACS strategic planning facilitators had not yet contacted her with respect to the October strategic planning retreat and that this may now have to be delayed until the Spring.

**Cornucopia** editor Carl Frey indicated that the Cornucopia went to the website about 2 weeks ago and 100 copies will be printed for the upcoming Fall meeting. The Cornucopia will look slightly different as the data came from ACS in a different format. For example, the papers are no longer numbered which is not ideal.

**Hospitality/Public Relations Report** was given by Mike Morello. A Chair's reception is set for the Chicago meeting and will be held at the Marriott on Tuesday from 6:30-8:30 PM. Food will be ordered for 50 people as there are only 10 in-person sessions. Drinks will be limited to beer, wine and soft drinks.

The **Membership Report** was given by Michael Qian who indicated that membership is down. Before the COVID-19 pandemic the Division membership was ~3,200 and we are now down to 1,900. This is not specific to AGFD. Efforts need to focus on re-growing our membership. Mike Appell suggested giving free membership for presenters. The Program Chair has access to all speakers and could reach out to presenters and ask if they want free membership. We may need to work with ACS to get a membership code that could be given to presenters so they could join the Division for free. Michael Qian will consult with Steve Toth and Michael Tunick will consult with DAC to discuss this possibility.

Stephen Toth gave the **Treasurer's Report**. The division has revenues of about \$42,000. The Division has not received reimbursement for Councilor travel from the Spring 2022 meeting but has received two \$1,000 checks that are not identified for what they are for. The Division spent \$22,000 to date this year. Registration and expenses for the Poster session for San Diego was ~\$5,000. Total assets for the Division are \$942,196, including ~\$780,000 in investments and ~\$165,000 in the checking and savings accounts. The Division is financially in good shape. The *continues on next page*

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total cost for the Chicago meeting will be in alignment with what was allocated for this meeting. A motion to approve the report as provided was passed.

A **budget** of \$25,000 was set and passed for 2023 Spring National Meeting.

The **Communications Report** was given by Michael Appell. The website has been updated to include contact information for the Chair and now links to ACS leadership courses, workshops and jobs as well as other career related resources. The Website now links to over 100 videos on agriculture and food chemistry. Social media resources are also now linked. The website provider also provides a professional letter. Michael indicated that more volunteers are needed to maintain the website.

There is no **New Business**.

The meeting adjourned at 3:15 p.m.

*Submitted by Alyson Mitchell, AGFD Secretary*



### Meet the new AGFD Vice-Chair Liz Kreger

Liz has a Ph.D., [Doctorate & Masters Food Science, U. of Illinois at Urbana-Champaign; B.S Biochemistry, Florida State U.]. Liz leads Innovation and Analytical teams at Sensient Flavors & Extracts NA in research across the spaces of discovery of taste modulators, development of new flavor profiles, delivery systems, and biotechnology. Previous experience includes PepsiCo (performing research to address global flavor issues when reducing sugar), ADM (developing new analytical techniques for flavor molecule discovery) and Nestlé (flavor research to support development of ready-to-drink coffee and cocoa malt products). Liz joined ACS in 2014. She served as Flavor sub-division chair and organized several symposia, most recently in Fall 2022, *Extraction & Biotechnology – A Natural & Sustainable Future for Flavors*

### VIRTUAL PROGRAMMING – HOW DOES IT WORK ?

See the ACS website links, below, for the Indianapolis 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/meetings/acs-meetings/spring-2023/attend/faq.html>

### In Memorium Harold Pattee

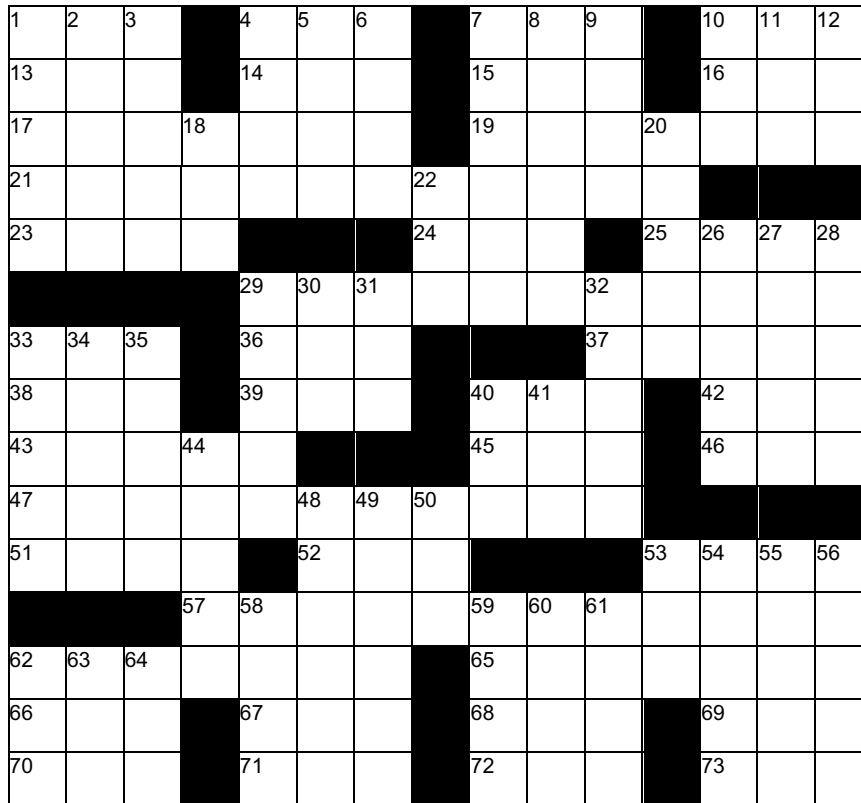
6/27/34 – 10/29/22



Harold Edward Pattee was born in Phoenix to Earnest Harold Pattee and Ina Mae Hamblin. On June 8, 1956, he married his high school sweetheart Phyllis Adams at the Latter-Day Saint Temple in Mesa, Arizona. They celebrated almost 59 years together raising one son and six daughters before Phyllis preceded him in death. As an active member of the Church of Jesus Christ of Latter-Day Saints he served on the High Council, as a Temple and Family History Missionary, as Bishop and leaves a legacy of research related to his love of genealogy. He was active in the Boy Scouts of America, receiving the Silver Beaver Award. Harold is survived by his wife, Letha Liddle Pattee; children, Floyd L. Pattee, Phyllis Kofford, Linda Bernard, Deborah Pattee, Sherri Pattee, Sheila Pattee, and Yvonne Lee; 12 grandchildren; 9 great grandchildren; sisters Pat Wilson and Thelma Winters. He earned many prestigious awards over the course of 42 years of USDA research in peanut science at North Carolina State University in Raleigh. Harold presented numerous papers at ACS Meetings. One of his ACS Symposium Series books sold >1000 copies, earning him a Platinum Club Award. He served as AGFD Chair, received the Distinguished Service to AGFD Award and became a AGFD Fellow in 1989. He is remembered as a good friend, mentor and colleague. His many co-workers, collaborators and friends at AGFD miss him and extend condolences to his family



## START YOUR PENCILS!



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

## ACROSS

- 1 College student stat  
4 Homer's exclamation  
7 School in Muncie, IN  
10 Animation film unit  
13 Tear or shred  
14 Gator \_\_  
15 FedEx competitor  
16 Fish egg  
17 Fermentation product  
19 Make an echoing noise  
21 Purdue's sports teams  
23 Some means justify these  
24 Cheese go-with  
25 Acid + base → \_\_  
29 Waterway slicing Indiana  
33 Brain + spinal cord + etc.  
36 End of many amino acids  
37 Open mouth letter group  
38 Cheer for 21 ACROSS  
39 Genetic code compound  
40 World-wide \_\_  
42 S. Afr. anti-apartheid org.  
43 Change in face of stress

- 45 Jackie O's second  
46 Maiden name  
47 Indy \_\_ race  
51 Apple, pear, orange or oak  
52 Muscle built with pushups  
53 Classic Indian music form  
57 *Cat's Cradle* author  
62 Allows to decompose  
65 What Bert & Ernie are  
66 12 months in Tijuana  
67 Big ISP  
68 Ending for many paraffins  
69 180 degrees from NNW  
70 Peppy citrus soda: Mtn. \_\_  
71 4G phone service acronyn

- 72 On-line ha-ha  
73 JFK & LAX scan pros

## DOWN

- 1 Loon-like bird  
2 Climbing hardware  
3 A little sucker  
4 Niels Bohr, for example  
5 Aroma

- 6 Ship steering apparatus  
7 Some full-body covers  
8 Oration  
9 It fell in 1991  
10 It's 'grand' on wine labels  
11 A really, really long time  
12 Like many new lightbulbs  
18 Gore and Einstein  
20 Stage & film actor Davis  
22 Org. of lots of docs  
26 Pertaining to birds  
27 W. Africa's Sierra \_\_  
28 Agreement to stop fighting  
29 Length x \_\_ = area  
30 Raggedy \_\_ & Andy  
31 'Maude' actress \_\_ Arthur  
32 Extreme/fanatical  
33 Handiwork ability  
34 The lowest low  
35 Use for a razor blade  
40 Simple full-deck card game  
41 Poetic 'before'  
44 Looks under the sheets  
48 Pull from the ground

- 49 Weed you might 48 DOWN  
50 605 in old Rome  
53 Stage of sleep for dreams  
54 Age discriminator  
55 Surmise without data  
56 No longer docked  
58 \_\_ Mountains of W. Russia  
59 Thesis defense format  
60 Taboo  
61 Christmas carol  
62 Young boy  
63 Suffix for an olefin  
64 Pull behind

## 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 >1900 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>

<b>APPLICATION FOR AGFD DIVISION MEMBERSHIP (7623P)</b>	
Title	
Name	
1 <sup>st</sup> address line	
2 <sup>nd</sup> address line	
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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  
Jonathan Beauchamp  
Fraunhofer Institute  
jonathan.beauchamp@ivv.fraunhofer.de

**Chair-Elect** - Serves 1 year. Substitute for the Chair as needed  
Jason W. Soares US Army DEVCOM  
Soldier Ctr Jason.w.soares.civ@army.mil

**Vice-Chair** - Serves 1 year. Assist Chair-elect. Develop future technical programs.  
Liz Kreger Sensient Flavors & Extracts  
Elizabeth.Kreger@sensient.com

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

**Treasurer** - Responsible for Division finances.  
Stephen Toth III  
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 membs.  
Elyse Lauren Doria, eldoria@ucdavis.edu

**Nominations** - Develop officer slate.  
Served by immediate past chair.  
LinShu Liu USDA-ARS-ERRC  
linshu.liu@ars.usda.gov

**Finance** - Monitor Division's finances.  
Served by immediate past chair.  
LinShu Liu USDA-ARS-ERRC  
linshu.liu@ars.usda.gov

**Hospitality** - Organize receptions and banquets. 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** - Oversee awards process.  
Chair Michael Morello  
mjmorello226@gmail.com  
Fellow Awards Fereidoon Shahidi  
fshahidi@mun.ca  
Young Scientist Award  
Youngmok Kim  
youngmok.kim@finlays.net  
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  
Michael Morello  
mjmorello226@gmail.com

**Multidisciplinary Program Planner**  
Help coordinate nat'l mtg programs  
Neil Da Costa International Flavors & Fragrances neil.dacosta@iff.com

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

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

**Agricultural Sub.Div.**  
Chair, Daxi Ren dxren@zju.edu.cn  
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Chair-Elect, Xiaofen Du xdu@twu.edu  
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Secretary, Joonhyuk Suh J.Suh@uga.edu  
Yun Yin, yunyin2@vt.edu (2024)

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Vice-Chair, Yingdong  
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Secretary, Khizar Hayat  
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**Nutrition & Gut Microbiome Sub.Div.**  
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Chair-elect, Laurel Doherty  
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Vice-Chair Ida Pantoja-Feliciano  
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Secretary Tom Wang,  
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**Sustainability/Green Tech. Sub.Div.**  
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Vice-Chair, Lingyun Chen  
lingyun.chen@ualberta.ca  
Secretary, Omowunmi "Wunmi" Sadik  
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## AGFD TECHNICAL PROGRAM

Abstracts for these papers appear in the 'with abstracts' Cornucopia version on the AGFD website

### SUNDAY MORNING & AFTERNOON March 26

**Advances in Biomass-Based Biodegradable Polymers** Spons POLY, Cospons AGFD, BIOT, CELL, I&EC, PMSE

### SUNDAY EVENING 7 – 9 pm Conv. Ctr Hall F-H AGFD General Poster Session and Undergraduate Poster Competition

J. Beauchamp, K. Deibler, J. W. Soares, *Org.*  
(note-first 19 posters listed below also presented at Monday Evening Sci-Mix)

**Synopsis:** This session showcases the talents of undergraduate students, provides a professional forum for presentation of their research and promotes their continued education in food & agricultural chemistry. Participation is open to all undergraduate students at certified universities actively participating in research projects/programs in the areas of food and agricultural chemistry. Students chosen to participate as finalists in the symposium receive travel expenses (\$750 max.) to attend and present their research during the Spring ACS meeting. Undergraduate Research Award winners receive a cash award of \$500, \$250, and \$100 for first, second and third place, respectively. Contact Dr. Kathryn Deibler (kdd3@cornell.edu) for information.

**01--**Comparison of the amino acid metabolism of genetically different brewing yeasts. **A.R. Cicali**, E.M. Diaz-Aceituno, S.A. Morton, S. Harper, C.A. Hughey

**02--**Identification and quantification of carcinogen compounds in carotenoid foods through solid-phase microextraction gas-chromatography mass spectrometry. **A. Pons**, M. Tarrance, K. Barnes

**03--**Hop (*Humulus lupulus*) phytochemical profiles as a function of growth region by HR LCMS and GCMS analysis. **C. Paoletta**, C. Balog, A. Dew, D.V. Liskin, A. Higgs, K. Kingsbury, A. Brehm, R.A. Quinlan

**04--**Effect of trans vaccenic acid on glucose homeostasis in a mouse model of diet-induced obesity and insulin resistance. **C.M. Prajogo**, Y. Xu, P. Vahmani

**05--**Evolution of kombucha in an air-permeable bag. **E. Oberholtzer**, L. Black, J. Kegerreis, J.N. Richardson, L. Stains

**06--**Characterization of total antioxidant capacity in spent coffee ground extracts by roast and brewing method via UV-Vis spectrometry. B.G. Yust, N.Z. Rao, **E. Schwarzmann**

**07--**Analysis of free, conjugated and insoluble-bound phenolics in buriti fruit shells as a potential source of functional dietary fiber. **G. Guerrero**, E. Esparza, E. Cosio

**08--**Design of new, and environmentally safe herbicides using AI and molecular modeling. **J.A. Darsey**, M. Shaver

**09--**Quantification of nitrate in pomegranate extract using ion-pair reverse-phase HPLC. **J.Powell**, R. Tan, P.M. Joyner

**10--**Beer processomics: Evolution of volatile and nonvolatile hop compounds throughout boiling and fermentation with genetically different yeast. **J.M. Garcia**, E. Nasipova, S.A. Morton, S. Harper, C.A. Hughey

**11--**Plasticizing capabilities of glycerol: Acetic acid and choline chloride: Urea in potato thermoplastic starch film. **K. Collier**, R. Singh, J. Staker, E. Collier, A. Ansar, A. Tovar, A. Siegel

**12--**Isolation of monomeric anthocyanins from *Vitis vinifera* utilizing low-cost and high throughput methodologies. **L. Arce-Rosales**

**13--**Determination and comparison of xanthophyll carotenoid content in age related macular degeneration vitamins versus vegetables through UV-visible spectrometry and high performance liquid chromatography. **M. Tarrance**, A. Pons-Aguade, K.W. Barnes

**14--**Induction of viable but nonculturable *Campylobacter jejuni* in various stress conditions. **P. Longchamps**, K. Wang, X. Lu

**15--**Evaluating the efficacy of smoke-water towards ripening of banana (*Musa paradisiaca*). **R. Khursheed**, S. Baba

**16--**Phytoremediation of toxic heavy metals from soils using sunflowers (*Helianthus annuus*), ferns (*Nephrolepis biserrata*) and mustard greens (*Brassica juncea*). **S. Bergeron**, D. Wayment

**17--**Bang for your bark: Comparative analysis of dog food by ICP-OES, mycotoxin testing, and SPME-GC-MS. **V.R. Costilow**

**18--**Changes in selected odorants in basil during growth and development. **W. Yang**, K.R. Cadwallader, K. Martin

**19--**Case study using California olive pomace for potential valorization strategy of olive oil industry by-products by the application in avocado oil based cosmetics. **Y. Cho**, H. Zhao, S. Wang

--Reevaluation of Ferrozine assay for rapid testing iron(II) chelation ability of phenolics in mole ratio: Case study by evaluating chelation of chemical standards of olive phenolics. **A. Mangubat**

--Development of a PCR assay for foodborne pathogens from soil. **L. Speaks**, N. Neff, I. Grabylnikov, K.M. Elkins

--Chemical composition of elderberry extract and its inhibitory effect on SARS-CoV-2 spike protein and

ACE2 binding, and radical scavenging properties. **M. Zeng**, Y. Li, U. Choe, L. Yu

--Maintenance of a kombucha starter preparation.

**J. Scalia**, B. Watson, L. Stains, J.N. Richardson, J. Kegerreis

--Microbial transglutaminase improves the texture of surimi-like gels made with protein recovered from catfish by-products. **Y. Zhang**, S.K. Chang

--Recovery of fat from waste ice cream by destabilizing the emulsion using ethyl alcohol. **C. Lee**, R. Garcia, L. Bumanlag, C. Liang

--Stormwater runoff chemical

contaminants and their effects on urban

areas. **Y. Ahmadibeni**, S. Guha, Q. Hardy

--Phytochemical development over the ripening process of *Aronia mitschurinii*, elderberries, mulberries and haskap fruits. **E. Cable**, B. Green, D.G. Sauder, A.G. Ristvey, V. Volkis

--Effect of copper complexation on the chemical stability of beer. **M. Vincent**, A. Silakov, R. Elias

--Antifungal constituents from the fungus

*Westerdykella multisporea* against anthracnose disease of strawberries. **P. Tamang**, K. Meepagala

--Immunological characterization of peanut flour fermented with *Rhizopus oryzae*. **C.P. Mattison**, R. Dupre, K. Clermont, J. Yu

--Metabolism of condensed tannin by manganese peroxidase. **J. McLain**, A.E. Hagerman

--Computer-aided design and syntheses of novel flavanone derivatives for use as potential inhibitors of COVID-19 proteases. **A. Sigmon**, N. Yennawar, H. Yennawar, E. Margulis, H. Al Quaid

--Polyphenols in plant foods and their bioavailability. **Y. Zuo**, C. Wang, N. Ahmad, Y. Deng

--Fingerprinting of varietal honeys using nuclear magnetic resonance spectroscopy. **C.D. Emal**, G. Wilmes, M. Goodrich

--Comprehensive analysis of aromatic compounds in milk using GC-MS, SPME Arrow and Smart Aroma Database. **Y. Takemori**, M. Matsumoto

--Prebiotic potential of water-soluble non-starch polysaccharides from Barnyard millet grain. **S. Maji**, S. Dey

--Thermal stability of yeast alcohol dehydrogenase in the undergraduate teaching lab. K. Williams, A. Bates, **A.E. Hagerman**

--Zein nanoparticles coated with various types of tannin. J. Jefferson, S. Mallikarachchi, **A.E. Hagerman**

--Processing and characterization of biodegradable mulch films made of potato thermoplastic starch. **J. Staker**, K. Collier, R. Singh, A. Tovar, A. Siegel

--Probing the ripeness of berries rich by anthocyanin for food and nutraceutical markets with ripeness gauge. **R. Buzzetto More**, E. Cable, A.G. Ristvey, V. Volkis

--Development of starch based carriers for controlled release of Urea-ZnO nanoparticles. J.D. Palomino, L.T. Sanchez, **C.C. Villa**, A.F. Cañon-Ibarra

--Reducing the shrinkage and warpage of 3D-printed thermoplastic starch parts by freezing. **K. Collier**, J. Staker, R. Singh, E. Collier, A. Ansar, A. Siegel, A. Tovar

--Fast determination of total unbound fat in snack foods using a new fully automated parallel extraction system. **H. Yang**

--Evaluation of double stack sausages packaging. **D. Patterson**, K. Vorst

--Using Raman spectroscopy for non-destructive evaluation of carotenoids in *Cucumis melo* at different maturity stages. **G. Sah**, N. Goff, J. Singh, D. Kourouski, B.S. Patil

--Evolution of volatile flavor compounds produced during the fermentation of beer with genetically different yeast. **D. Roberts**, E.M. Diaz-Aceituno, J.M. Garcia, K.H. Moore, A.V. Lo Presti, V. Tirado, S.A. Morton, S. Harper, C.A. Hughey

--Natural products magnetic resonance database (NP-MRD): Comprehensive database and repository for natural products NMR data. **J.R. Cort**, A. Jystad, N. Govind, E. Knutson, V. Sullivan, L. Stillwell, M. Schutz,

A. Maras, E. Poynton, P. Tavangar, v. yang, J.A. Van Santen, M. Pin, T. Jordan, J. Kim, B. Ledingham, R.G. Linington, R. Ghosh, S. Sarma, J. Koller, L.W. Sumner, Z. Sayeeda, Z. Budinski, A. Guo, B.L. Lee,

M. Berjanskii, M. Rout, H. Peters, R. Dizon, R. Ma, E. Oler, D. Allen, X. Cao, V. Gautam, D.S. Wishart

--Quantifying estrone and  $\beta$ -estril conjugates in dairy cattle manure and urine using sorptive stir Bar extraction and gas chromatography-mass spectrometry. **S. Ahmed**, S. Antle, J. Loughrin, E.D. Conte

--Lateral flow assay: Development of magneto-plasmonic nanosensors for the detection of E.coli O157:H7. **S. Santra**, N. Panchal, V. Jain, R. Elliott, Z. Flint, P. Worsley, C. Duran, T. Banerjee

--Influence of lutein content of marigold flowers on functional characteristics of baked flour products. **A. Anderson**

--Impact of ethanol and methanol on the betalains extraction of beetroot (*Beta vulgaris* Cv. Pablo). **A. Sani Ali**, W. Hayes, A. Tas, B. Onarinde

## **MONDAY MORNING March 27**

Crown Plaza Downtown Union Square Penn Station B/C

### **Functional Ingredients in Food Processing**

W. Dixon, Z. Li, X. Wu, *Organizers, Presiding*

**Synopsis:** This symposium provides the latest studies highlighting innovative functional ingredients used in food processing and how to use functional ingredients to produce safe, functional foods that offer an array of health benefits.

**8:00** Introductory Remarks.

**8:10** . Structural characterization of cocoa proanthocyanidins using three LCMS-based methods. **S. Navare**, B. Lam, M. Kwasniewski, R.

Anantheswaran, J. Lambert

**8:25** . Complexation of bark proanthocyanidins isolated from Western red cedar (*Thuja plicata* Donn) and food carbohydrates enhances colloidal stability.

**G.M. Bautista**, S.E. Mhatre, O.J. Rojas

**8:40** . Primary extraction methods of R-Phycoerythrin from dry biomass of marine macroalgae *Gracilaria corticata*. **V. Saraswat**, K. Raghavarao, V. Mantri

**8:55** . Process intensification and integration for efficient downstream processing of bioactives from micro and macroalgae. **K. Raghavarao**

**9:10** . Polysaccharide-based self-assembled smart hydrogel for *in vitro* delivery of co encapsulated probiotics and folic acid. **N. Srivastava**, A. Roy Choudhury

**9:25** Intermission.

**9:40** . Enzymatic hydrolysis of *makapuno* for production of potential prebiotics. A.A. Yanos, L. Go-Albia, **S.B. Arreola**, D. Haltrich, T. Nguyen

**9:55** . Mechanism in improving solubility of pea protein isolates by high intensity ultrasound. **K. Gao**

**10:10** . Potential of *Arachis hypogaea* testa as a functional food ingredient for the treatment of depression. **A. Patterson**, R. Donaldson, D. Davis, M. McKoy, W. Gallimore

**10:25** . Effect of oat  $\beta$ -glucan on gut metabolism and health. **J. Bai**, L. Wang, L. Huang

Crown Plaza Downtown Union Sq. Grand Cent. Sta B

### **Agri-Food Sustainability at a Crossroads: Challenges of the Food, Energy, and Water Nexus**

Cospons AGRO M. Appell, L. Chen, V. Craver, Y. Tseng, *Organizers, Presiding*

**Synopsis** This symposium covers the merits and limitations of sustainability and green tech solutions in the Food/Energy/Water nexus.

**8:00** Introductory Remarks.

**8:05** . Complete analysis of the cashew nut (*Anacardium occidentale* L.) production and processing with later recovery of anacardic acid from vegetal residues. **R.A. Gomez**

**Rodríguez**

**8:35** . Grape marc as a potential feed additive to reduce enteric methane production in dairy cattle: Part I chemical composition analysis. **H. Zhao**, E. Kebreab, S. Wang

**9:05** . Biodegradable polymer nanocomposites for controlled P release and nanocellulose hydrogels for efficient delivery of NPK fertilizers. **S. Vaidya**, L.R. Sigmon, C. Thrasher, S. Phillips, M.S. Peresin, C. Dimkpa, H. Fairbrother, J.C. White

**9:35** Intermission.

**9:50** . Foliar delivery of siRNA particles for treating viral infections in agricultural grapevines. **A. Avital**, A. Schroeder

**10:20** . Use of bioconjugation and encapsulation approaches for delivery of cargo for agricultural applications. s. Dodard, Y. Liu, J. Lavertu, A. Parrott, S. Clark, **U. Hemraz**

**10:50** . Nanobiotechnology-based strategies for enhanced crop stress resilience. **J.C. White**, L. Zhao, A.A. Keller, J.L. Gardea-Torresdey

**11:20** Panel Discussion.

### **Virtual Session Section A Citrus Flavor in the Omics Era**

A. Plotto, Y. Wang, *Organizers, Presiding*

**Synopsis:** This symposium covers omics approaches used in the studies of citrus flavor (e.g., biosynthesis and metabolism of flavor compounds, quality assessment, pre- and post-harvest effects etc.). Omics technologies - metabolomics, proteomics, transcriptomics, genomics, metagenomics and/or their combinations (foodomics, nutriomics, flavoromics and sensomics) are powerful tools for these purposes. Rapid and accurate analyses of these components at different biological scales (metabolites, proteins, transcripts and genes) is critical to assess the quality of the products as well as to understand their biochemical mechanisms.

**10:00** Introductory remarks.

**10:05** . Identification of volatile sulfur compounds as key off-flavors in mandarin juice during processing and storage. **L. Huang**, Y. Cheng, R.L. Rouseff, H. Wu, H. Wang

**10:25** . Five-year study of flavor and sensory evaluation of HLB-tolerant citrus hybrids. **K.A. Jeffries**, Z. Fan, X. Sun, E. Baldwin, J. Manthey, W. Zhao, E. Stover, M. Mattia, J. Bai, A. Plotto

**10:45** . Evaluation of volatile profiles in *Poncirus trifoliata*-containing HLB-tolerant citrus hybrids. **Z. Fan**, K.A. Jeffries, X. Sun, E. Baldwin, J. Manthey, W. Zhao, G. Olmedo, E. Stover, M. Mattia, A. Plotto, J. Bai

**11:05** . Effect of different rootstocks on metabolites of orange juices from HLB-affected trees. **X. Liu**, Y. Wang

**11:25** Intermission.

**11:40** . Natural sweeteners and sweetness-enhancing compounds identified in citrus using an efficient metabolomics-based screening strategy. **X. Tang**, Z. Wang, F.G. Gmitter, J.W. Grosser, Y. Wang

**12:00** . Omics and sensorial analysis combinedly revealed characteristic aroma and consumer preference of novel citrus. Z. Hu, M. Chen, K. Zhu, Y. Liu, M. Chen, J. Kong, L. Cao, J. Ye, H. Zhang, X. Deng, **J. Chen**, J. Xu

**12:20** . Using genome-wide association as a breeding tool for healthful flavonoids in mandarin accessions.

**M. Mattia**, D. Du, Q. Yu, T.L. Kahn, M.L. Roose, Y. Hiraoka, Y. Wang, P.R. Munoz, F.G. Gmitter

**Advances in Biomass-Based Biodegradable Polymers** Spons POLY, Cospons AGFD, BIOT, CELL, I&EC, PMSE

**Innovative Technologies to Support 21st Century Agriculture** Spons AGRO, Cospons AGFD, BIOT

### **MONDAY AFTERNOON**

Crown Plaza Downtown Union Sq. Penn Station B/C

**Recent Advances in Analytical Strategies for Food Allergen Detection and Management**

C. P. Mattison, Q. Rao, *Organizers, Presiding*

**Synopsis:** This symposium covers recent developments in detecting and managing food allergens and discusses analytical considerations for quantifying food allergens, global development trends, and the future availability of these technologies. Food allergies represent a significant and growing public health concern. Consumers with allergies must avoid foods containing allergens to prevent potentially fatal health consequences. Currently, the only widely accepted prevention method is complete avoidance of allergen-containing foods. Present analytical methods can be useful, but specific and sensitive detection of food allergens is often hindered by the effects of various treatment processes and food matrices on trace amounts of allergens.

**2:00** Introductory remarks.

**2:10** . Recommendations from the FAO/WHO expert consultation on food allergen risk assessment. **L. Jackson**

**2:30** . Measurement challenges of quantifying milk protein allergens in foods. **D. Bunk**, A. Green, L. Kilpatrick, M.M. Phillips

**2:50** . Mass spectrometric analysis of allergens from pecan protein extracts: Influence of pecan heating on observable peptides and modifications. **R. Dupre**, S. Patil, S.W. Lloyd, C.C. Grimm, B. Smith, C.P. Mattison

**3:10** . Detection of finfish residues on contact surfaces by enzyme-linked immunosorbent assay. **X. Jiang**, Q. Rao

**3:30** . Allergen Testing: How much is too much?. **G. Velasco Lopez**

**3:50** Concluding Remarks.

Crown Plaza Downtown Union Sq. Grand Central Sta B  
**Agri-Food Sustainability at a Crossroads:**

**Challenges of the Food, Energy, and Water**

**Nexus** Cospons AGRO M. Appell, L. Chen, V. Craver, Y. Tseng, *Organizers, Presiding*

**2:00** Introductory Remarks.

**2:05** . Date palm biochar and super hydrophobic sand mulching enhance tomato (*Solanum lycopersicum*) plants' yields in alkaline sandy soils. **N. Huve Musskopf**, K. Odokonyero, L. Oki Exposito, B. Albar, A. Gallo, H. Mishra

**2:35** . Engineering cation exchange capacity of date palm biochar towards a sustainable soil amendment technology. **B. Albar**, N. Huve Musskopf, A. Gallo, H. Mishra

**3:05** . Effect of biochar and superhydrophobic sand mulches on evaporation and water holding capacity in sandy soils. **L. Oki Exposito**, A.H. Al-Zu'bi, B. Albar, N. Huve Musskopf, A. Gallo, H. Mishra

**3:35** Intermission.

**3:50** . HPLC-UV determination of glyphosate, aminomethylphosphonic acid, and glufosinate using pre-column derivatization. **P.J. Martin**, K. He, L. Blaney, S.R. Hobbs

**4:20** . Effects of superhydrophobic sand mulches on steady-state water evaporation fluxes. **A.H. Al-Zu'bi**, L. Oki Exposito, J. Zheng, A. Gallo, H. Mishra

**4:50** Panel Discussion.

**Virtual Session AGFD General Poster Session and Undergraduate Poster Competition**

J. Beauchamp, K. Deibler, J. W. Soares, *Organizers*

**12:00** . Screening and remodeling of enone oxidoreductase for high production of 2(or 5)-ethyl 5(or 2)-methyl-4-hydroxy-3(2H)-furanone in *Saccharomyces cerevisiae*. **X. Fu**, K. Hong, C. Zhang, W. Lu

**12:00** . Effect and mechanism of *Citrus depressa* Hayata peel extract against acetaminophen induced liver injury in mice. **Z. Su**, P. Tsai, G. Wei, X. Chen

**12:00** . Methodologies and strategic studies to estimation methods to reduce carbon emissions on climate change. E.J. Parish, **H. Honda**, S. Lee, G. Ren, W. Wang

**12:00** . Polyphenolic antioxidants as inhibitors of the advanced glycation endproducts. **M. Atty**, J. Mehta, A. Vadapalli, Z. Afrasiabi, P. Reddy

**12:00** . Capsaicin attenuates oleic acid-induced lipid accumulation via the regulation of circadian clock genes in HepG2 cells. **R. Li**, M. Lu, C. Ho

**12:00** . Effects of moringa isothiocyanate-rich seed extract on muscle atrophy in C2C12 cells. **R. Farias-Pereira**, M. Ahmed, W. Bui, K. Thirunavukkarasu, I. Raskin

**12:00** . Investigating secondary metabolites produced by a beneficial root endophyte for improving Canadian Prairie field crops. **K. Gill**

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**MONDAY EVENING 8:00pm** Conv Ctr Hall F-H  
**AGFD Sci-Mix (note - see first 19 posters listed under SUNDAY EVENING AGFD General Poster Session and Undergraduate Poster Competition)**

**TUESDAY MORNING March 28**

Crown Plaza Downtown Union Sq Penn Station B/C  
**Biomarkers of Food or Drug Intake: Chemistry at the Intersection of Human Health Applications**

J. Beauchamp, Y. Pham, *Organizers, Presiding*

**Synopsis:** This symposium explores biomarkers in non-invasive screening applications (e.g., breathalyzer tests to determine alcohol intake or the hydrogen breath test to diagnose lactase deficiency) relating to food intake and tolerance, and the pharmacokinetics of prescribed and recreational drug use. It covers novel approaches to

biomarker detection to identify foods, drugs and their metabolites in urine, feces and breath, with the goal of establishing non-invasive screening procedures or diagnostics.

**8:00** Introductory remarks.

**8:05** . GC saves lives! Determination of short chain fatty acids (SCFA) in human fecal samples. **L.N. Polite**, N.L. Polite, M.M. Freeman, A. Sandhu

**8:25** . Effect of wholegrain particle size on breath metabolites in type 2 diabetes and normoglycaemia. C. Robinson, T. Perry, L. Te Morenga, J. Haszard, J. Mann, P. Silcock, **G. Eyres**

**8:45** . Novel and efficient UHPLC/MS/MS method for assessing glucoraphanin and sulforaphane bioavailability in biological samples. W. Zhu, L.A. Lerno, E. Cremonini, P. Oteiza, A. Mastaloudis, G. Bornhorst, **A.E. Mitchell**

**9:05** . Phytocannabinoids' therapeutic effects on endometriosis. **T. Melville**

**9:25** . Coffee biomarker candidates – structures of conjugated atractyligenin metabolites. **R. Lang**, C. Czech, A. Beusch, S. Dirmdorfer

**9:45** . Biomarker detection using GC-ion mobility spectrometry. **W. Vautz**, C. Hariharan, S. Liedtke

**10:05** Intermission.

**10:20** . Methanol detection in exhaled breath, drinks and sanitizers with a handheld device. **A. Guentner**

**10:40** . Use of exogenous compounds for monitoring human metabolic processes. F. Lochmann, F. Weiss, V. Stock, **V. Ruzsanyi**, C.A. Mayhew

**11:00** . Washout of terpenes in breath following ingestion of a peppermint oil supplement. **Y. Pham**, R. Yu, J. Beauchamp

**11:20** . Using exhaled nitric oxide to evaluate and quantify regional airway response to inhaled medications. J. Saunders, C. Clem, Y. Zhao, B. Gaston, **M. Davis**

Crown Plaza Downtown Union Sq Grand Central Stat B

### General Papers

J. Beauchamp, J. W. Soares, *Organizers, Presiding*

**Synopsis:** This session is a platform for scientific discoveries and innovative developments in agricultural and food chemistry. The session spans the entire field of AGFD on topics not covered in the featured AGFD symposia.

**8:00** Introductory remarks.

**8:05** . Rapid identification of foodborne bacteria using single-cell Raman spectroscopic analysis combined with a conditional generative adversarial network. **K. Wang**, X. Ma, X. Lu

**8:25** . Natural colorants in plant-based foods: Impact of colorant and droplet characteristics on optical properties of oil-in-water emulsions. **D. Wannasin**, D. McClements

**8:45** . Detoxification of lipid peroxidation aldehyde, 4-hydroxynonenal, by flavonoids in apple and grapefruit. **R. Djorgbenoo**, Y. Zhu, W. Wang, S. Sang

**9:05** . Phytochemical characterization of aronia, elderberries, hascaps, and mulberries: New generation of super fruits. A.G. Ristvey, **V. Volkis**

**9:25** . Anti-proliferative properties of biologically active compounds extracted from bio-waste materials. M. Olkiewicz, A. Bajek, M. Maj, J. Montornes, **B. Tylkowski**

**9:45** Intermission.

**10:00** . Influence of chemical structure on the color, molar absorptivity, and stability of naturally derived pyranoanthocyanin pigments. **D.M. Voss**, G. Miyagusuku-Cruzado, L. Xun, M. Giusti

**10:20** . Structural and compositional changes in the cell walls of cool-season pasture grasses for two growing seasons. **S. Newhuis**, M. Kunes-Agbana, B. Angeletti, H. Buecker, B. Harlow, I. Kagan, M. Flythe, R.R. Schendel

**10:40** . Look at the residues not the emissions to understand chemical changes in waterpipe tobaccos during heating. **J.H. Lauterbach**

**11:00** . Synthesis and characterization of 2-D Molybdenum-MOF/MXenes composite and their applications in sensing food contaminants. **G. Kaur**, S. Sharma, A. Deep

**11:20** . Colorimetric assay of bacterial pathogens based on Co3O4 magnetic nanozymes conjugated with specific fusion phage proteins and magnetophoretic chromatography. **L. Pei**, L. Aihua

**Virtual Session Agri-Food Sustainability at a Crossroads: Challenges of the Food, Energy, and Water Nexus** Cospons AGRO M. Appell, L. Chen, V. Craver, Y. Tseng, *Organizers, Presiding*

**10:00** Introductory Remarks.

**10:05** . Microwave-induced specific aggregation behavior myofibrillar proteins. **X. Jiao**, D. Fan

**10:35** . Plant nutrient delivery system for the enhancement of plant growth using an advanced coating on *Zea mays* seeds using modified hydroxyapatite nanoparticles. **L. Abeywardana**, C. Sandaruwan, S. Chathurika, V. Karunaratne, N. Kottegoda

**11:05** . Using protein microgels as emulsion stabilizer, texture modifier, and bio-lubricant for designing fat-reduced food products. **Y. Chu**, L. Chen

**11:35** . Impact of environmental change on the food water energy nexus: Can altering our diets help protect the global environment?. **J.W. Finley**

**12:05** Panel Discussion.

### Biomarkers of Food or Drug Intake: Chemistry at the Intersection of Human Health Applications

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### TUESDAY AFTERNOON

Crown Plaza Downtown Union Sq Grand Central Stat B  
**Advances in Food Packaging and Preservation**



M. Sarker, T. Yang, *Organizers, Presiding*

**Synopsis:** This symposium covers multidisciplinary aspects of packaging materials (e.g., films or coatings) and their applications to ensure the safe use of foods and improve the quality of foods. Packaging techniques include nanotechnology enabled, biopolymer-based, active, and intelligent packaging. Food/packaging material interactions are explored (e.g migration of substances from packaging to foods and its impacts on food safety and human health). This symposium provides information and innovative ideas regarding recently developed packaging techniques and their implications on food preservation.

**2:00** Introductory Remarks.

**2:05** . PHB/PLA/modified cellulose films, as packaging for chocolate and tropical fruits. **C.A. Sierra**, L. Bello-Rocha, V. Perez-Martinez, D. Castellanos, C. Zuluaga, O. Rodriguez, P. Yustres

**2:40** . Development of bacteriophage added coating material to reduce *Escherichia coli* O157:H7 contamination in mushroom. **E. Evran**, E.K. Tayyarcin, I. Boyaci

**3:15** . Sustainable ultra-high performance liquid chromatography method for analysis of carotenoids using GRAS solvents. **J. Singh**, **B.S. Patil**

**3:50** Intermission.

**4:10** . Photoactive films made from curcumin doped ZnO nanoparticles and alginate. **C.C. Villa**, L.T. Sanchez, A.F. Cañon-Ibarra, J.A. Arboleda-Murillo

**4:45** . Effect of gamma irradiation on vitamin D content in high fat finfish. **J.S. Brown**, P. Calvo, P. Julakanti, A. Khan, F. Mohiuddin

**5:20** . Microbial valorization of industrial organic waste to biodegradable smart food packaging materials. **L. Jayakody**, L. Dissanayake, S. Kayastha, S. Jayasekara, B. Kolitha

**5:55** Concluding Remarks.

Crown Plaza Downtown Union Sq Penn Station B/C  
**Chemistry of Alcoholic Beverages**

N. O. Flynn, *Organizer, Presiding*

**Synopsis:** The global alcoholic beverage market share is valued at >1.5 trillion dollars presenting many opportunities for research and development. This symposium presents the latest research on the chemistry of alcoholic beverages.

**2:00** . Introduction: Chemistry of alcoholic beverages.

**N.O. Flynn**

**2:10** . Effect of filtration and inclusion methods on rapid wort analysis of malts. **N.O. Flynn**

**2:30** . 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, K. Kingsbury, A. Brehm, **R.A. Quinlan**

**2:50** . Dry hopping protocol has a limited influence on the chemical and sensory properties of India pale ale (IPA) beers. **B. Lam**, S.G. Ziegler, A.J. Ledley, S. Santan, H. Hopfer, J. Lambert

**3:10** . Developing and analyzing the chemical fingerprint for popular whiskeys sold in the US. M. Hernandez, **J. Nevins**

**3:30** . Required education and understanding in chemical kinetics, thermodynamics and sensory evaluation for distillers. **G. Spedding**

**3:50** Intermission

**4:00** . Investigation of the volatile composition of apple ciders from dessert apple cultivars with and without skin contact during fermentation using a metabolomics-based approach. **Y. Lin**, M. Warmund, M. Kwasniewski

**4:20** . Chemical characterization and sensory evaluation of wine formulated with African black olive (*Canarium schweinfurthii* Engl) fruits. **O. Francis**, J. Okullo, S. Natukunda, R. Komakech, J. Agea

**4:40** . Application of spectroscopy for quality screening in the production of pisco distillate. **Y. Wu**, L. Rodriguez-Saona

**5:00** . Determination of key odorants in Chardonnay marc skins. **S. Warner**, J.P. Munafó

**5:20** . Quantitative errors and analytical method improvement of volatile sulfur-containing compounds in Chinese Baijiu. **Z. He**, D. Zhao, J. Zheng, M.C. Qian

**5:40** . Sensitive volatile phenol analysis in Chinese Baijiu using direct injection-on-line trapping coupled with gas chromatography-tandem mass spectrometry (LVI-TTrap-GC-MS/MS). **K. Yang**, Z. He, J. Zheng, Z. Liu, D. Zhao, M.C. Qian

**Virtual Session Panel Discussion: The Road to Successful Publishing**

B. D. Guthrie, C. Osorio Roa, V. Somoza, *Organizers* J. Beauchamp, L. Yu, *Organizers, Presiding*

**Synopsis:** A discussion with editors from the division's flagship journal, Journal of Agriculture and Food Chemistry, ACS Food Science & Technology and ACS Agricultural Science & Technology. The editors present the current state of the journals and give tips for successful manuscript acceptance. The audience can submit questions during Q&A.

**3:00** Introductory Remarks.

**3:10** . Overview of ACS AGFD journals: Compare & contrast. **T. Hofmann**

**3:20** . Editors' expectations for quality paper submissions. **V. Somoza**

**3:30** Panel Discussion.

**4:00** . Crash course in peer-review publishing. **J. Beauchamp**

**4:10** . Case studies of acceptance/rejection of peer-reviewed publications. **F. Tomas-Barberan**

**4:20** . Tips for successfully writing scientific research papers. **C. Osorio Roa**

**4:30** Panel Discussion.

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## WEDNESDAY MORNING March 29

Crown Plaza Downtown Union Sq Penn Station B/C

### Advances in Food Packaging and Preservation

M. Sarker, *Organizer*, T. Yang, *Organizer*, *Presiding*, L. Jayakody, *Presiding*

**8:00** Introductory Remarks.

**8:05** . Effectiveness of bacteriophage-loaded edible coatings to control foodborne pathogens on fresh-cut apples. **E.K. Tayyarc**, E. Evran, I. Boyaci

**8:40** . Reusable and daylight induced antibacterial ethylene-vinyl acetate copolymer films. S.U. Islam, **G. Sun**, Z. Zhang

**9:15** Intermission.

**9:35** . Anthocyanin-based food packaging for monitoring the freshness of fresh cut fruits and vegetables. **P. Das**, P. Kalyani, M. Khandelwal

**10:10** . Structure and properties of flexible starch-based double network composite films induced by dopamine self-polymerization. **H. Xu**, L. Chen, Z. Jin

**10:45** Concluding Remarks.

Crown Plaza Downtown Union Sq Grand Central Stat B

### General Papers

J. Beauchamp, J. W. Soares, *Organizers*, *Presiding*

**8:00** Introductory remarks.

**8:05** . Non-targeted identification of botanical origin markers for honeys. **L. Tian**, S. Bilamjian, T. Anumol, D. Cuthbertson, S. Bayen

**8:25** . Water soluble vitamin analysis in feed using mass spectroscopy detection. **D.E. Clinton**, H.D. Inerowicz

**8:45** . Inhibiting ice recrystallization with corn cob hemicelluloses. **M.W. Reeder**, T. Wu

**9:05** . Proteolytic treatment of waste dairy ice cream to accelerate butterfat separation. **C. Liang**, R. Garcia, B. Plumier, C. Lee, F. Huynh, J. Uknalis

**9:25** . Profiling the non-starch polysaccharides of hempseed cell walls. **M.K. Agbana**, B. Harlow, M. Bunzel, M. Flythe, R.R. Schendel

**9:45** Intermission.

**10:00** . Thermo-chemical decarboxylation kinetics study for cannabinoid acids in hemp (*Cannabis sativa* L.) by pressurized liquid system. **U. Urvashi**, J. Hatfield, S. Park, C.A. Kinney, J. Han, K. Olejar

**10:20** . Bioprocess development to produce xylitol by *Escherichia coli* K12 from hemicellulosic hydrolysates. **R. Turner**, M. Racine, D. Demirjian

**10:40** . Novel drug-delivery approach against infectious disease by using ovotransferrin nanoparticles. **H. Ibrahim**

**11:00** . Longan pulp polysaccharides regulate gut microbiota and metabolites to protect intestinal epithelial barrier. **Y. Bai**

### Virtual Session Before the Coffee Break: The Rich and Complex Chemistry of Coffee

J. Beauchamp, N. Buck, *Organizers*, *Presiding*

**Synopsis:** This symposium showcases the latest coffee-related chemistry, from bean to brew. Join us in enjoying some coffee chemistry before heading to the coffee break to savor the

beloved brew first-hand. Studies explore different cultivars, examine cherry processing steps, beans undergoing all manner of roasting conditions, modes of brewing, and sensory impressions during consumption.

**10:00** Introductory remarks.

**10:05** . The physical chemistry of coffee brewing. **J. Melrose**

**10:25** . Proton transfer reaction mass spectrometry analysis of coffee flavour compounds: A long story open to innovation. **F. Biasiol**

**10:45** . It's all in the brew: How extraction parameters influence the aroma composition during espresso coffee brewing. **N. Buck**, A. Stenzel, J. Beauchamp

**11:05** . Exploring unique coffee flavours of fermented high-end specialty coffee: Towards the fourth wave coffee. A. El Khouri, **S. Smrke**, S. Opitz, A. Mistretta, C. Yeretzi

**11:25** . Sensory impact and changes in the volatile profiles of special coffees obtained by dry and wet processes. **W. da Silva Oliveira**, N. Buck, J. Beauchamp, C. Arcanjo, A. de Oliveira Garcia

**11:45** Intermission.

**12:00** . Chemistry and analysis of chlorogenic acids from coffee. **N. Kuhnert**

**12:20** . Neglected coffee chlorogenic acids: *p*-coumaroyl-, sinapoyl- and di-acyl-quinic acid isomers in different coffee botanical species. **L. Navarini**, S. Colombar

**12:40** . Anti-obesity and anti-aging effects of coffee components. **Y. Park**, R. Farias-Pereira, J. Cho

**1:00** . NMR-spectroscopic applications to control coffee authenticity. **V. Gottstein**, D.W. Lachenmeier, T. Kuballa, M. Bunzel

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Spons CELL, Cospons AGFD Westin Hotel

8:00-8:30 Rountable and Intro

8:35 NSF BioPACIFIC MIP J. Read De Alaniz

8:55 Degradable Polymers H. Maynard

9:10 Sequence controlled peptoids F. Kafer

9:25 Development & application of high input synthesis C. Hawher

9:40 PARADIM T. McQueen

10:20 Glycol MIP M. Roman

10:40 Carbohydrate-polymer conjugate synthesis C. Callman

10:55 Interaction of human Galectin-3 w/glycosaminoglycans T. Dam

11:10 Polysaccharide H<sub>2</sub>S donors A. Chinn

11:25 2D crystal consortium materials innovation platform J. Redwing

## WEDNESDAY AFTERNOON

Crown Plaza Downtown Union Sq Penn Station B/C

### **Before the Coffee Break: The Rich and Complex Chemistry of Coffee**

J. Beauchamp, N. Buck, *Organizers, Presiding*

**2:00** Introductory remarks.

**2:05** . Chemistry in your cup: Chemical characteristics of cold brew coffee. **N.Z. Rao**, E. Schwarzmann, M.P. Washington, M.D. Grim, M. Fuller

**2:25** . Espresso bitterness and acidity: Influence of process parameters temperature, flow and coffee grind on non-volatile components. **B. Schmieder**, N. Buck, V. Pannusch, M. Minceva

**2:45** . Multidimensional gas chromatography approach to elicit the odour-structure activity of chiral 2-methyltetrahydrothiophen-3-one in coffee. A. Pua, Y. Huang, V. Goh, L. Li, **M. Cornuz**, B. Lassabliere, L. Jublot, B. Yu

**3:05** . NMR and sensory studies on interactions between odorants and melanoidins in coffee beverages. **M. Gigl**, T. Hofmann, O. Frank

**3:25** . Electrochemical assessment of coffee qualities.

**C.H.Hendon, R.Bumbaugh**

**3:45** Intermission

**4:00** . Using microwave energy for the rapid hydrolysis of coffee for amino acid profiling. **A.D. Douglas**, B. Liu, M. Swasy, C. Cashma

**4:20** . Green chemical synthesis of various nanoparticle species using spent coffee grounds. **B.G. Yust**, N.Z. Rao, E. Schwarzmann

**4:40** . Potential of near infrared spectroscopy and machine learning to predict volatile changes during coffee roasting. **B. Kebede**, S. Green, J. Sim

**5:00** . Investigating the flavor of natural (dry process) coffee. M.R. Fernández-Alduenda, **P. Silcock**

### **Virtual Session Panel Discussion: Career Paths in Academia, Government and Industry**

B. D. Guthrie, *Organizer* J. Beauchamp, A. E. Mitchell, *Organizers, Presiding*

**Synopsis:** A panel comprising senior scientists from industry, academia, and government will give a brief overview of their career journeys. The audience can submit questions in Q&A session. This is the second in a series as the first was well attended and enjoyed, especially by young chemists

**3:00** Introductory remarks.

**3:10** . Academia panelist biography - Keith Cadwallader, University of Illinois. **K.R. Cadwallader**

**Cadwallader**

**3:20** . Government panelist biography - Michael Appell, USDA. **M. Appell**

**3:30** . Industry panelist biography: Mathias Sucan, Herbalife Nutrition Ltd.. **M. Sucan**

**3:40** Discussion panel.

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### **THURSDAY MORNING March 30**

#### **Virtual Session General Papers**

J. Beauchamp, J. W. Soares, *Organizers, Presiding*

**10:00** . Bioactive phenolic compounds profiling of prairie berries. **C. Kodikara**, N. Bandara, T. Netticadan, S. Srinivas, C. Wijekoon

**10:20** . Characterization of Cumberland rosemary, *Conradina verticillata*, essential oil. **C. Gorman**, J.P. Munafò

**10:40** . Saltiness enhancement through the synergism of pyroglutamyl peptide mixtures. **O. Sahni**, J.P. Munafò

**11:00** . Investigating the biodegradability of eco-friendly straws in prospective disposal environments. **A. Ali**, R.M. Santos, E. Chiang

**11:20** . Myoglobin post-translational modifications in high- and normal-pH beef. **R. Ramanathan**, S. Suman, F. Kiyimba, S. Li, J. Chen, G. Mafi

**11:40** . Development and validation of a food frequency questionnaire for adults in Fiji to estimate nitrate and nitrite intake. **A.A. Chetty**, J.J. Lal, S. Prasad

**12:00** . *In silico*, *in vitro*, and *ex vivo* assessment to evaluate the antihyperglycemic, antioxidant and cytotoxic activity of *Carica papaya* L. leaf extract. **P. Prabhakar**

**12:20** . Organophosphate esters in UK diet: Exposure and risk assessment. **G.R. Muideen**, S. Harrad, A. Mohamed

**12:40** . Global GAP and harmonized MRL facilitating international trade study case. **D. Cerqueira**, J. Barnekow, C. Tiu

**1:00** . Role of food science in forensic science. **A. Rajani**, **P.Y. Dave**

**1:20** . Highly sensitive SERS-based tool made of gold nanosphere coated glass Petri dish for rapid detection of indole in shrimps and determination of freshness. **A. DAS**, **I. Terry**, H. Guo

**1:40** . Classification of seaweeds based on tannin composition using differential sensing. **D. Garcia**, E. Yu, S. Kim, J. Richardson, M. Ledesma, M. Tran, D. Zamora-Olivares



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**Schedule of Technical, Business and Social Meetings (all times Central Daylight Time)**

Sunday March 26	Noon-1:00pm	Future Programs	via Zoom
Sunday March 26	1:00pm-2:00pm	Special Topics/Business	via Zoom
Sunday March 26	2:30pm-5:00pm	Executive Committee	via Zoom
Tuesday March 28	6:00pm-8:00pm EDT!	AGFD Chair's Reception	Buca Di Beppo, 35 N. Illinois St.