

**\*DRAFT\***

# AGFD

## Division of Agricultural and Food Chemistry

N. Seeram, *Program Chair*

### SUNDAY MORNING

Section A

Pennsylvania Convention Center  
Room 110A

#### Recent Advances in Functional Biopolymers

Y. Ito, L. S. Liu, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 1.** Protein engineering using bioorthogonal and combinatorial chemistry. **Y. Ito**

**8:35 2.** Design of biodegradable injectable polymer formulation exhibiting temperature-responsive covalent hydrogel formation. **Y. Ohya**, Y. Yoshida, K. Kawahara, A. Kuzuya

**9:05 3.** Plant cell-inspired hydrogel consisting of a poly(ethylene glycol) hydrogel and polyurethane foam. **N. Teramoto**, M. Harima, K. Wakayama, T. Shimasaki, M. Shibata

**9:35** Intermission.

**9:50 4.** Preparation and analysis of functional oligosaccharides from rice bran arabinoxylan. **B.J. Savary**, K. Teoh, N. Zhang, J. Xu, F. Medina-Bolivar, S. Yu, S. Lee, Y. Wang

**10:20 5.** Sulfation pattern of fucose branches affects the anti-hyperlipidemic activities of sea cucumber fucosylated chondroitin sulfate. **S. Chen**, X. Ye

**10:50 6.** Advances in food packaging films from milk proteins. **L. Bonnaillie**, L. Aburto, M.H. Tunick, J. Mulherin, M. Du, R. Kwoczek, S. Akkurt, P.M. Tomasula

**11:20 7.** Establishing a working intestinal microbiota community in multi-phase structure from biopolymers. **L.S. Liu**, J. Firrman, P.M. Tomasula

**11:50** Concluding Remarks.

Pennsylvania Convention Center  
Room 110B

### General Papers

N. P. Seeram, *Organizer, Presiding*  
W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 8.** Triterpenoids from the Chinese hawthorn (*Crataegus cuneata*) fruits: Extraction, structure, quantification, and bioactivity. **T. Yuan**

**8:30 9.** Withdrawn.

**8:55 10.** Alkanal suppression of the enzyme tyrosinase. **A. Murray**, H. Satooka, K. Shimizu, W. Chavasiri, I. Kubo

**9:20 11.** Citrus flavonones decreases oxidative stress in the liver and blood serum caused by highfat diet feeding in C57BL/6J mice. **P.S. Ferreira**, A.M. Nasser, J.A. Manthey, D. Goncalves, T.B. Cesar

**9:45** Intermission.

**10:00 12.** Bioactive glucitol-core containing gallotannins from red maple (*Acer rubrum*) inhibit melanogenesis via down-regulation of tyrosinase and melanogenic gene expression in B16F10 melanoma cells. **H. Ma**, J. Xu, L. Guo, W. Lu, N.P. Seeram

**10:25 13.** Binding of polyphenols to transport proteins. **W. Butler**, S. Harbi, J.A. Vinson

**10:50 14.** Internal exposure of hemoglobin adducts of glycidamide enantiomers and acrylamide and the chemoprevention effect by catechins in rats. **Q. Wang**, J. Cheng, Y. Zhang

**11:15 15.** Inhibitory effects of a phenylacetaldehyde-flavonoid adduct, 6-*C*(*E*-phenylethenyl)naringenin, on human colon cancer cells. **Y. Zhao**, M. Wang

**11:40** Concluding Remarks.

### SUNDAY AFTERNOON

Pennsylvania Convention Center  
Room 110A

### Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. Mcgorrin, M. C. Qian, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 16.** Odor images and the chemistry of their stability. **T.E. Acree**, G. Prévost, C. Maxe, M. Gros

**1:30 17.** Innovation in the quality control of thermally processed food flavour using chemical fingerprints derived from FT-ICR-MS spectra. **J.W. Marshall**, C. Roullier-Gall, S. Woodward, A. Jackson, N. Wollmann, P. Schmitt-Kopplin, A.J. Taylor

**1:55 18.** Assuring accuracy in the quantitation of the unstable odorant 2-acetyl-1-pyrroline in aromatic rice. **K.R. Cadwallader**, Y. Yin, B. Hausch, F. Chen

**2:20 19.** Odor active compounds and their chiral compositions in Bluecrop and Elliot blueberry. D. Zhang, **Y.L. Qian**, M.C. Qian

**2:45** Intermission.

**3:00 20.** Changes in key orange juice aroma compounds during chilled storage of NFC juice. **P.H. Schieberle**, V. Mall, I. Sellami

**3:25 21.** Shelf-life challenge of savory snacks with colored vegetables. **C.T. Shao**, V.A. Elder

**3:50 22.** Oiling-out effect of aroma compounds. **H. Tamura**, S. Ueno, A. Naka, A. Fukuzumi, S. Ho, M. Nattawadee, S. Sriwattana, L. Yonekura

**4:15** Concluding Remarks.

Section B

Pennsylvania Convention Center  
Room 110B

### **General Papers**

### **Journal of Agricultural & Food Chemistry Best Paper Award & Young Scientist Award Symposium**

N. P. Seeram, *Organizer*

K. Deibler, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 23.** Identification of bioactive components in wheat bran: An example of team science. **S. Sang**

**1:45** Intermission.

**2:00 24.** Characterization of oligomeric anthocyanins and proanthocyanidins from red grape pomace by mass spectrometry (MALDI-TOF and ORBITRAP ESI-MS). **E. Salas**

**2:30 25.** Development of specific dietary biomarkers to better capture whole grain wheat exposure and beneficial health effects. **Y. Zhu**

**3:00 26.** Integrating traditional disciplines to develop novel technologies to address agricultural and environmental issues. **R. Li**

**3:30** Concluding Remarks.

### **Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods & Sampling Techniques**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

### **Extraction Efficiency-Bridging between Metabolism Studies & Residue Analytical Methods**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

### **Glyphosate: Current Status & Future Prospects**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## **SUNDAY EVENING**

Section A

Pennsylvania Convention Center  
Hall G

### **General Posters**

N. P. Seeram, *Organizer*

**5:00 - 7:00**

**27.** Structural and functional studies of ice nucleation protein and its applications in food industry. **L. Zhang**

**28.** Understanding the ligand specificity of bitter taste receptors in humans and cats. **J. Rucker**, A. Thomas, J. Goodman, M. Sandau, C. Sulli, T. Charpentier, E. Davidson, N. Rawson

**29.** Single-site catalysts in the production of polyolefins for food contact applications. **R. Briñas**, L.T. Cureton, A.B. Bailey

**30.** Enhanced anti-inflammatory efficacy of Calebin-A encapsulated in modified starch. **L. Perera**, M. Pan, Y. Ting

**31.** Role of novel multi-starter on the generation of volatile compounds in buckwheat (*Fagopyrum sculentum*) soksungjang according to fermentation period. M. Park, H. Choi, Y. Kim, **I. Cho**

**32.** Preparation of carbon adsorbent from apple pomace waste aiming removal of estriol from water bodies. **S. Rovani**, A.G. Rodrigues, L. Medeiros, R. Cataluna, E. Lima, A.N. Fernandes

33. Comparison of mineral contents in vegetables (white cucumber, red paprika, water parsley and kohlrabi) undergoing different cooking methods. **J. Hwang, D. Seo, S. Kim, E. Park, H. Kim, S. Lee, M. Yang**
34. Edible packaging: improved strength and thermal stability of casein films with citric pectin. **L. Aburto, L. Bonnaille, P.M. Tomasula**
35. Determination of structural amino acid contents in bamboo shoot, tomato and corn undergoing different cooking methods using automated amino acid analyzer. **D. Seo, W. Yoon, H. Lee, J. Hwang, M. Yang**
36. Aroma composition of kale (*Brassica oleracea* L. Var.) tea. **I. Cho, J. Oh**
37. Heat-stabilized rice bran metabolome reveals biochemical contents and metabolic pathways with medicinal properties. **I. Zarei, E.P. Ryan**
38. Simultaneous analysis of the fenthion and its oxidative metabolites in rice, chili pepper and mandarin using LC-MS/MS. **J. Lee, J. Lee, J. Lee, Y. Shin, M. Jung, E. Kim, J. Kim**
39. Bisphenol A in breast milk from nursing Cavalier King Charles Spaniels: A preliminary study. **M.B. Cichowicz, L.B. Slusher, C. Martin, J. Poshkus**
40. Rapid screening and determining natural and synthetic steroid hormones in baby formulas using gas chromatography – tandem mass spectrometry. **J. Tang, T. Baker, K. LeVanseler**
41. Understanding sodium diffusion in turkey breast meat. **J.K. Pandya, A. Kinchla**
42. Development of lecithin emulsion gels system: Influence of formulation parameters on physicochemical properties and digestion kinetics. **W. Huang, Y. Ting**
43. *In vitro* release, anti-proliferative and antimicrobial activity of carnosic acid nanoemulsion. **H. Zheng, Q. Huang**
44. Stability of beta-carotene and alpha-tocopherol in cooked *Moringa oleifera* leaves, By HPLC-UV. **A. Vasilatis**
45. Physical characterization of mushrooms as taco filling extender. **K. Wong, A. Kinchla**
46. Total polyphenol antioxidants in the US diet. **J.A. Vinson**
47. Effects and molecular mechanisms of soy foods or soy isoflavones in prostate cancer prevention. **C. Jang, C. Wu**
48. Isolation and identification by high-performance liquid chromatography of bioactive metabolites of polymethoxylated flavones in rat urine. **D. Goncalves, M. Rodrigues, T.B. Cesar, J.A. Manthey**
49. Nondestructive analysis of vitamin C content in dietary supplement tablets by using terahertz time-domain spectroscopy. **J. Kang, K. Kwak, H. Chun**
50. Fabrication of oil-in-water nanoemulsions by dual-channel microfluidization using natural emulsifiers: saponins, phospholipids, proteins, and polysaccharides. **L. Bai, D. McClements**
51. Bioactive peptides released during of digestion of processed milk. **M.H. Tunick, D.L. Van Hekken, A. Nunez, P.M. Tomasula**

52. High throughput analysis of caffeine in beverages using 2.3  $\mu\text{m}$  analytical reversed phase chromatography column with dual functionality for use both in HPLC and UHPLC. A. Chakrabarti, **C. Benner**
53. Investigation of the antiproliferative constituents of *Linociera ramiflora* collected in Vietnam. **P. Benatrehina**, L. Pan, C. Naman, H. Chai, T.N. Ninh, D.D. Soejarto, L. Rakotondraibe, A.D. Kinghorn
54. Investigation of the lymphatic transport of solid-lipid curcumin particles (Longvida®) in comparison to curcumin extract in rats. T. Eidenberger, **N. Kheradia, S. Cropper**
55. Chemical composition and anti-hyperglycaemic effects of triterpenoids enriched *Eugenia jambolana* Lam. berry extracts. Y. Li, J. Xu, C. Yuan, **H. Ma**, T. Liu, F. Liu, N.P. Seeram, L. Han, X. Huang, L. Li
56. In vitro anti-neuroinflammatory effects of urolithins, ellagitannin-gut microbial metabolites. **N. DaSilva**, P.P. Nahar, H. Ma, A. Slitt, N.P. Seeram
57. Inhibitory effects on the formation of advanced glycation endproducts by hydroponically grown *Moringa oleifera*. **S. Johnson**, W. Liu, H. Ma, S.M. Meschwitz, J. Chace, N.P. Seeram
58. Natural anthraquinones inhibited protein glycation and amino acids side chain modification by protecting protein structures. **W. Liu**, H. Ma, J.A. Dain, N.P. Seeram
59. Isolation and structure elucidation of diterpenes from *Euphorbia saudi-arabica*. **A.J. Bin Muhsinah**, Y. Liu, H. Ma, N. DaSilva, H. Soliman, A. Alsayari, N.P. Seeram
60. Bioactive glucitol-core containing gallotannins and other phytochemicals from silver maple (*Acer saccharinum*) leaves. **A.J. Bin Muhsinah**, H. Ma, T. Yuan, N.P. Seeram
61. Comparison of acidic collagen extraction methods of collagen from channel catfish skin. **Y. Tan**, S. Chang
62. Size exclusion enhancement of in-vitro digestion model. **K.R. Conca**, K.R. Kensil, J.L. Andresen
63. Tyrosine nano-emulsion stability for supplementation of Army rations. **K.R. Conca**, K.R. Kensil
64. HPLC-ESI-MS analysis of polymethoxylated flavone metabolites in human urine. **J.A. Manthey**, D. Goncalves, T.B. Cesar, E. Baldwin, J. Bai, S. Raithore, J.Q. Silveira
65. Expression and characterization of a thermostable endo-1,5- $\alpha$ -arabinanase (TS-ABN) in *Pichia pastoris* for biocatalytic solubilization of bioactive feruloylated arabino-oligosaccharides from sugar beet pulp. **N. Zhang**, J. Xu, B.J. Savary
66. Biochemical investigation into the functional properties of *Delonix regia*, *Cassia fistula* and *Blighia sapida* extracts. A. Goldson-Barnaby, **R. Williams**
67. Developing a thermally-tolerant pectin methylesterase for improved sugar beet biomass processing. J.C. Tovar, M. Cease, J. Xu, **B.J. Savary**
68. Simultaneous determination of unregistered pesticides in Korea for agricultural products using LC-MS/MS. **S. Lee**, J. Hwang, M. Kang, M. Chang, Y.D. Lee, J. Kim, G. Lee
69. Identification and quantification of phenolic acids and flavonoids in three phenolic-rich legume varieties as affected by thermal treatments. **Y. Zhang**, S.K. Chang

70. Comparative study of phenolic substances in astringent and non-astringent persimmon fruits during development and ripening. S. Kumari, **S.K. Chang**, Y. Zhang, Y. Zhang
71. Determination of carbohydrates in kombucha using HPAE-PAD. **B. Huang**, J. Hu, J. Rohrer
72. Quantitative analysis of allergens in peanut varieties from USDA Core Collection and other resources and assessment of food processing effects on peanut allergens. **S. Meng**, S.K. Chang, L. Jiang, J. Li, N. Puppala, S. Chung
73. Profiling fructosyloligosaccharide (FOS) and galactosyloligosaccharide (GOS) -containing samples by high-performance anion-exchange chromatography with pulsed amperometric detection (HPAE-PAD). **M. Aggrawal**, J. Rohrer
74. 1,2,4-Trithiolane, found in stinky bean (*Parkia speciosa*), is a slow releasing hydrogen sulfide donor. **D. Liang**, D. Huang
75. Development of multi-residue analysis methods of pesticides for red ginseng tea. **M. Kang**, J. Hwang, S. Lee, J. Ryu, H. Jung, S. Kwak, J. Kang, H. Kim, J. Kim
76. Design, synthesis and herbicidal activity of novel triketone compounds. H. Li, A. Guan, Z. Yao, X. Xia, Z. Wang, H. Ma, **C. Liu**
77. Development of an absorbent to reduce pesticide residue in ginseng. **S. Byeung Kon**, J. Kim
78. Tyrosol-based liposomal behavior: size, zeta-potential, TEM, QCM-D and fluorescence analysis. **K. Evans**, D.L. Compton
79. Cellulose-bodipy nanohybrids for singlet oxygen production. **P. Chauhan**, N. Yan
80. Accuracy of volatile quantification using isotopically labeled internal standards for SPME analysis of a grape mapping population. **E.A. Burzynski**, I. Ryona, B.I. Reisch, G.L. Sacks
81. Solid phase mesh enhanced sorption from headspace (SPMESH) coupled to DART-MS/MS for high throughput quantification of trace-level odor-active volatiles. **J.A. Jastrzembki**, G.L. Sacks
82. Effect of microstructure on the barrier property of water and oxygen in hydroxypropyl starch (HPS)/SiO<sub>2</sub> nanocomposites films. **S. Liu**, X. Li, L. Chen, L. Li, B. Li
83. Fully automated sample extraction and analysis of mycotoxins in foods by online SFE-SFC-MS. **W. Hedgepeth**, K. Tanaka, T. Ogura
84. Microbiological and physicochemical analysis of pumpkin juice fermentation by the basidiomycetous fungus *Ganoderma lucidum*. **J. Zhao**
85. Design, synthesis and biological activity of novel substituted diamides derivatives containing thiophene ring. M. Li, L. Li, B. Chai, J. Yang, Y. Song, **C. Liu**
86. Changes of polyphenolic compounds level in artichoke (*Cynara scolymus* L.) grown in Korea during cultivation. **K. Hwang**, D. Son, C. Kim, K. Seong, J. Moon
87. Changes of organic acids level in coffee during roasting. **K. Hwang**, J. Moon

- 88.** Self-assembling behavior of food globular proteins and applications in stabilizing Pickering emulsions. **W. Jin**, Y. Jiang, B. Li, Q. Huang
- 89.** Investigation into the effects of intestinal microbiota on the metabolism and uptake of grape derived products using GC/MS. **E. Carry**, T. Villani, Q. Wu, H. Patel, J. Simon, G.M. Pasinetti, L. Ho, J. Faith
- 90.** 5-hydroxytryptophan, cyanoglycoside, and flavonoid content of 10 *Griffonia simplicifolia* populations. **D. Giurleo**, R. Juliani, L. Hwang, J. Asante-Dartey, Q. Wu, J. Simon
- 91.** HPLC-UV analysis of  $\alpha$ -tocopherol and  $\beta$ -carotene in amaranth, spider plant, and nightshade accessions grown in New Jersey. **D. Giurleo**, **B. Yuan**, **A. Vasilatis**, **B. Somers**, D. Byrnes, J. Simon, Q. Wu
- 92.** Design, synthesis, and biological activities of novel quaternary salts derivatives containing substituted aniline. Q. Wu, J. Yang, H. Ma, **C. Liu**
- 93.** Determination of nepetalactones and dihydronepetalactones in catnip by LC/MS. X. Dong, **W. Reichert**, J. Simon, **Q. Wu**
- 94.** Design, synthesis and biological activity of thienopyrimidine derivatives. F. Yang, **C. Liu**, A. Guan, Z. Yao, Z. Li, Y. Song
- 95.** Molecular modeling of plant ripening receptors and their interactions with ethylene and ripening inhibitors. **J. Gold**, **E. Rosa**, **R.S. Kelly**
- 96.** Dual-enzyme nano-biocatalyst for the cascade conversion of cellulose-derived oligomers to fructose via a glucose pathway. H. Chi, D.R. Radu, G. Ozbay, **C. Lai**
- 97.** Design, synthesis and fungicidal evaluation of novel substituted aryloxy pyridine compounds containing pyrimidinamine moiety. A. Guan, X. Sun, J. Yang, Y. Xie, J. Zhou, **C. Liu**
- 98.** Design, synthesis, and the structure-activity relationships of novel *N*-substituted piperazines derivatives. Y. Xie, **C. Liu**, Y. Xu, A. Guan, L. Ban
- 99.** Design, synthesis and herbicidal evaluation of novel *N*-[3-(pyridin-2-yl)-phenyl]sulfonylcarboxamides. J. Yang, Q. Wu, A. Guan, H. Ma, **C. Liu**
- 100.** Dietary exposure and toxicological effects of non-phthalate plasticizers from use in food contact materials. **L.T. Cureton**, **O.J. Bandele**, A.B. Bailey, A. Ogungbesan
- 101.** Total synthesis of novel flavan-alkaloids isolated from the African tea *Combretum micranthum*. **J. Zhen**, C. Welch, Q. Wu, J. Simon
- 102.** Assessment of dietary exposure to emulsifiers of regulatory interest for the United States population. **R. Kolanos**, R. Shah, M. DiNovi, A. Mattia, K. Kaneko
- 103.** Peptidolytic activity of three probiotic lactic acid bacteria for possible use as sourdough starters. **H. Hernandez-Sanchez**, M. Nava-Romero
- 104.** Explorative study to understand the chemical diversity in Maillard reactions. **D. Hemmler**, C. Roullier-Gall, J.W. Marshall, M. Rychlik, A.J. Taylor, P. Schmitt-Kopplin
- 105.** Effects of maltodextrins with different dextrose-equivalent values on the release of aldehydes in aqueous model systems. **S. Lee**, A. Cho, S. Yoo, Y. Kim



- 106.** Physico-chemical properties and stability of a soy protein isolate and peanut oil-based emulsion as affected by ultra-high pressure homogenization and pH. **D. Mukherjee**, S.K. Chang
- 107.** Phenolic group on A-ring is key for dracoflavan b as a selective noncompetitive inhibitor of  $\alpha$ -amylase. **T.Z. Zhi Siang**
- 108.** Relationship between structural characteristics and digestibility of debranched starch. **G. Liu**, Y. Hong, Z. Gu, Y. Jiang
- 109.** Alginate conjugated keratin for wound dressing materials. **R. Wang**
- 110.** Triacylglycerol compositions of sunflower, corn and soybean oils examined with supercritical CO<sub>2</sub> ultra-performance convergence chromatography combined with quadrupole time-of-flight mass spectrometry. **B. Gao**, Y. Luo, W. Lu, L.L. Yu
- 111.** Evaluation of hydrogen peroxide scavenging activity of phenolic acids by employing optical nanoprobe based on gold nanoshells. **W. Qian**
- 112.** Growth inhibition of bladder cancer cells is greater with quercetin-3-glucoside than with quercetin or quercetin-3-rutinoside. **M.A. Lea**, A. Tandon, C. desBordes
- 113.** Soluble keratin from wool. **E.M. Brown**, K. Pandya, M.M. Taylor, C. Liu
- 114.** Synthesis and development of a new selective ryanodine receptor activator insecticide. **W. Lee**
- 115.** Fluorescence fingerprinting of antioxidants in sorghum and sugarcane. **S.M. Uchimiya**
- 116.** Starch modified by wet-milling process to stabilize Pickering emulsions. **X. Lu**, Q. Huang
- 117.** Chromatography method for determination of penicillin used for dairy production. **A. Miranda**, M. de Moura, D. da Silva
- 118.** ELISA detection of soy proteins in traditionally brewed soy sauce samples obtained during manufacture and commercial soy sauce products. **P. Kande**, M. Bakke, B. Bedford, J. Hammerstone, **L. Jackson**

## MONDAY MORNING

Section A

Pennsylvania Convention Center  
Room 110A

### Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages

K. Tandon, *Organizer*

V. M. Acquarone, R. Elias, J. A. Grover, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 119.** Taste biology and its application to new ingredient discovery. **S. Gravina**

**8:35 120.** How sweet works and what it means for non-caloric sweeteners. **R. Margolskee**

**9:05 121.** Discovery, structure elucidation and efficacy testing of a natural compound used to improve low-calorie beverage sweet flavor quality. **W.R. Bonorden**, T. An, P. Augustin, S. Erickson, L. Flammer, S. Gravina, K. Griswold, T.D. Lee, S. Lindberg, L. Nattress, J. Soto, G. Zehentbauer, C. Galopin

**9:35** Intermission.

**10:00 122.** Stevia innovation: Improved leaf extracts from advanced understanding of taste. **J.C. Fry**

**10:30 123.** Dynamic proteome alteration and functional modulation of human saliva induced by dietary taste stimuli. M. Bader, A. Dunkel, G. Medard, E. del Castillo, A. Gholami, B. Kuster, **T. Hofmann**

Section B

Pennsylvania Convention Center  
Room 110B

### **Chemistry Behind Health Effects of Grains**

R. Landberg, S. Sang, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 124.** Dietary fibers and associated phytochemicals in cereals. **K. Bach Knudsen**

**8:35 125.** Alkylresorcinols as dietary biomarkers of whole grain wheat and rye intake. **R. Landberg**

**9:00 126.** Biomarkers of whole grain wheat intake identified by targeted and non-targeted metabonomic approaches. **Y. Zhu**, W. Sha, P. Wang, S. Sang

**9:25 127.** Non-targeted metabolite profiling for characterization of bioactive compounds in cereals and their metabolic effects in different models. **K. Hanhineva**

**9:50 128.** Avenanthramides and their microbial metabolites as the exposure markers for whole grain oat intake. **P. Wang**, H. Chen, A. Yerke, S. Sang

**10:15** Intermission.

**10:30 129.** Rice-bran phytochemical extracts inhibit invasion and intracellular replication of *Salmonella typhimurium* in mouse and porcine intestinal epithelial cell. **E.P. Ryan**

**10:55 130.** Suppression of high-fat diet induced atherosclerosis by dietary oats avenanthramides. M. Thomas, S. Kim, F. Collins, M. Wise, **M. Meydani**

**11:20 131.** Methyl donors in whole grains – potential mediators of a wide range of whole grain-related health benefits. **A. Ross**, M.V. Lind

**11:45 132.** Benzoxazinoids in cereals: Potential role for human health. **I.S. Fomsgaard**, S.K. Steffensen, K.B. Adhikari, P.L. Gregersen, M. Borre, S. Høyer, L.K. Poulsen, B.M. Jensen, C.H. Nielsen

Section C

Pennsylvania Convention Center  
Room 111A

## **Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation**

R. J. Mcgorrin, M. C. Qian, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 133.** Chemical stability of citral. **Y. Wang**, C. Ho

**8:30 134.** Stability of the curry leaf aroma impact compound 1-phenylethanethiol during traditional processing and use in the kitchen. **M. Steinhaus**

**8:55 135.** Flavor and off-flavor in canned tuna fish. F. He, Y.L. Qian, **M.C. Qian**

**9:20 136.** Unraveling the off-flavor formation of native cold-pressed rapeseed oil using the molecular sensory science concept. **M. Granvogl**, K. Matheis

**9:45** Intermission.

**10:00 137.** NMR approaches to studying wine oxidation: Pathways of acetaldehyde. **A.L. Waterhouse**, A. Peterson

**10:25 138.** Precursors of H<sub>2</sub>S in wine: role of elemental sulfur degradation products. **G.L. Sacks**, J.A. Jastrzembki, E. Friedberg, Y. Chen

**10:50 139.** Stability of smoke taint during the aging of smoke-affected wine. **L. van der Hulst**, R. Ristic, **K. Wilkinson**

**11:15** Concluding Remarks.

## **Glyphosate: Current Status & Future Prospects**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## **Synthetic Biology & Genetically Modified Organisms**

### **Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age**

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI<sup>‡</sup> and COMSCI

**MONDAY AFTERNOON**

Pennsylvania Convention Center  
Room 110A

## **Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages**

K. Tandon, *Organizer*

V. M. Acquarone, R. Elias, J. A. Grover, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 140.** Cellular and molecular mechanisms of salty taste: Implications for developing strategies to combat NaCl overconsumption. **B. Lewandowski**

**1:35 141.** Aroma compounds to rescue the taste of healthy foods and beverages. **T. Thomas Danguin, C. Salles, E. Guichard**

**2:05 142.** Mechanisms of bitterness generation in whole wheat foods. Q. Bin, **D.G. Peterson**

**2:35** Intermission.

**3:00 143.** Effect of pressure and heat treatment on volatile profile in Chinese bayberry juice analysed by GC-MS during storage. **S. Lin, Y. Yu, Y. Lin, S. Zhu**

**3:30 144.** Reducing astringency in persimmons through processing, an approach for increasing marketability. I.J. Sedej, R.D. Woods, A.M. Vilches, C.W. Olsen, J.E. Preece, R.R. Milczarek, **A.P. Breksa**

**4:00 145.** Mitigation strategies for toxicologically relevant styrene during the production of wheat beer. **M. Granvogl, D. Langos, P.H. Schieberle**

**4:30** Concluding Remarks.

Section B

Pennsylvania Convention Center  
Room 110B

## **Chemistry Behind Health Effects of Grains**

R. Landberg, S. Sang, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 146.** Phytochemicals in wheat bran for colon cancer prevention. **S. Sang, Y. Zhu, J. Fu**

**1:30 147.** Whole grain polyphenols in colon health: Positive interaction of complementary sorghum-legume flavonoids. **J. Awika, S. Agah, L. Yang, S. Talcott, C. Allred**

**1:55 148.** Phytochemicals in quinoa grains and their antioxidant and anti-inflammatory effects. **R. Tsao, T. Yao, R. Liu**

**2:20 149.** Buckwheat bioactive compounds, their derived metabolites and health benefits. **J. Gimenez Bastida**, H. Zielinski, M. Piskula, D. Zielinska

**2:45** Intermission.

**3:00 150.** Health-promoting lipids in corn kernels and corn oils. **R. Moreau**

**3:25 151.** Phytosterols and sterol conjugates in cereal grains. **L. Nystroem**

**3:50 152.** Genetic and environmental impacts bioactive components in cereals. **P.R. Shewry**

**4:15 153.** Polyphenols in breakfast cereals and snacks: important contribution to beneficial health effects of whole grain consumption. **J. Goodman**, J.A. Vinson, S. Wang

Section C

Pennsylvania Convention Center  
Room 111A

### **Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation**

R. J. Mcgorrin, M. C. Qian, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 154.** Differences in the non-volatile composition of younger and older Armagnac and Cognac brandies and bourbon and Scotch whiskies using UHPLC/QTOF-MS. **T.S. Collins**

**1:30 155.** Lichenysin, a novel nonvolatile compound in Chinese distilled spirits reduced the headspace concentration of phenolic off-flavors via hydrogen-bond interaction. **S. Chen**, Y. Xu, R. Zhang, Q. Wu

**1:55 156.** Research on the aroma characteristics and impacts of the nonvolatile matrix composition on the aroma release of Vidal icewine based on sensomics. **K. Tang**, Y. Xu

**2:20 157.** Optimization of aroma compounds determination in *Capsicum annuum* cultivars using HS-SPME coupled with GC-MS. **G. Jayaprakasha**, K. Crosby, B. Patil

**2:45** Concluding Remarks.

### **Glyphosate: Current Status & Future Prospects**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

### **Undergraduate Research Posters**

#### **Agricultural & Food Chemistry**

Sponsored by CHED, Cosponsored by AGFD and SOCED

**Pollinators: Agrichemicals, Behavior & Disease**

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

**Synthetic Biology & Genetically Modified Organisms**

**The Debate: What Role Should We Play in the Biotechnology Era?**

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI<sup>‡</sup> and COMSCI

**MONDAY EVENING**

Section A

Pennsylvania Convention Center  
Halls D/E

**Sci-Mix**

N. P. Seeram, *Organizer*

**8:00 - 10:00**

**6, 39, 46, 51, 57, 64, 66, 71, 73, 80-81, 83-84, 90-91, 101, 113, 116, 121.** See previous listings.

**162-163, 220-221, 225, 229, 254, 271, 274, 285-286.** See subsequent listings.

**TUESDAY MORNING**

Section A

Pennsylvania Convention Center  
Room 111B

**Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry**

**Food Components for Cardiovascular & Brain Health**

Cosponsored by AGRO  
E. Hellmuth, A. M. Rimando, *Organizers*  
M. Appell, *Presiding*

**8:00** Introductory Remarks.

**8:10 158.** Pterostilbene in blueberries and PPAR $\alpha$  activation. **A.M. Rimando**

**8:40 159.** Physiological effects of pterostilbene and blueberries in animal models of obesity. **W.H. Yokoyama**, D. Shao, H. Kim, A.M. Rimando

**9:10 160.** Berry bioactives: the health benefits of color. **B. Burton-Freeman**

**9:40** Intermission.

**9:55 161.** Effects of blueberries on cognition and neuroplasticity. **A. Carey**, A.M. Rovnak, K.R. Gildawie, D.R. Fisher, B. Shukitt-Hale

**10:25 162.** Phytochemicals against oxidative stress and inflammatory responses in microglial cells. **G. Sun**

**10:55 163.** Quest for indirect modulators of the endocannabinoid system from natural products. **A. El-Alfy**, E.A. Abourashed

Section B

Pennsylvania Convention Center  
Room 113B

### **Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI<sup>‡</sup>, COMSCI and ENVR<sup>‡</sup>  
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 164.** Traditional plant breeding vs molecular plant breeding. **W. Parrott**

**8:35 165.** Biotechnology innovations and solutions for sustainable agriculture. **D.J. Williams**

**9:05 166.** Herbicide-resistant crops: Past, present and future. **S.O. Duke**

**9:35** Intermission.

**9:50 167.** Challenges for the production and acceptance on transgenic wheat. **P.R. Shewry**

**10:20 168.** How basic research can lead to development of improved cereal crops: But where are they? **P.G. Lemaux**

Section C

Pennsylvania Convention Center  
Room 110A

### **AGFD Division Award**

### **Symposium in honor of Dr. Zhen-Yu Chen**

B. Park, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 169.** Prebiotic-like properties of feruloylated arabinoxylan-oligosaccharides generated from rice bran arabinoxylan. **S. Lee**, T. Pham, B.J. Savary, M. Chen

**8:30 170.** Transition metal-mediated oxidation reactions of sulfidic compounds in wine. G.Y. Kreitman, J.C. Danilewicz, D.W. Jeffrey, **R.J. Elias**

**8:55** Concluding Remarks.

Section D

Pennsylvania Convention Center  
Room 110B

### **General Papers**

N. P. Seeram, *Organizer, Presiding*  
W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 171.** Identification of antimicrobial peptide fragments from soy protein. N. Xiang, Y. Lyu, X. Zhu, A.K. Bhunia, **G. Narsimhan**

**8:30 172.** Enhancement of natural antimicrobial efficacy via biomimetic iron chelating active packaging. **P. Castrale**, M. Roman, E.A. Decker, J.M. Goddard

**8:55 173.** Solid/oil/water emulsions as novel approaches of encapsulating probiotic bacteria. Y. Zhang, **Q. Zhong**

**9:20** Intermission.

**9:35 174.** Gut microbiome research and influence on warfighter performance. **J.W. Soares**, J.P. Karl, L.A. Doherty, S. Arcidiacono, K. Racicot

**10:00 175.** Microencapsulation of tributyrin to improve sensory qualities and intestinal delivery. **Y. Lee**, W. Kuo

**10:25 176.** Characterization and biocidal efficacy of cationic and N-Halamine based antimicrobial coatings. **Y. Hung**, L.J. Bastarrachea, J.M. Goddard

**10:50** Concluding Remarks.

Section D

Pennsylvania Convention Center  
Room 110B

**USDA-ARS Sterling B. Hendricks Memorial Lectureship: Symposium in honor of May Berenbaum**



Cosponsored by AGRO  
K. Kaplan, M. H. Tunick, *Organizers, Presiding*

**11:00** Introductory Remarks.

**11:05 177.** How to eat a plant: phytochemical detoxification in bees vs. butterflies. **M.R. Berenbaum**

**11:55** Concluding Remarks.

### **Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches**

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

### **Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

Sponsored by AGRO, Cosponsored by AGFD

## **TUESDAY AFTERNOON**

Section A

Pennsylvania Convention Center  
Room 111B

### **Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry**

#### **Anticancer Food Components: Functional Food Polymers, Food Flavor & Odor Chemistry & Processing-Induced Food Toxicants**

Cosponsored by AGRO  
E. Hellmuth, A. M. Rimando, *Organizers*  
M. Appell, *Presiding*

**1:00** Introductory Remarks.

**1:05 178.** Dietary pterostilbene is a novel chemopreventive and therapeutic agent in prostate cancer: Pre-clinical studies. **A. Levenson**

**1:35 179.** Topical pterostilbene prevents UV-B-mediated skin damage. **R. Dellinger**

**2:05 180.** Health benefits of natural tocopherol mixtures. **N. Suh**

**2:35** Intermission.

**2:50 181.** Chemistry, safety and caloric value of partially hydrolyzed guar gum. **J.W. Finley**

**3:20 182.** Fifty years of smelling sulfur: From the chemistry of garlic to the molecular basis for olfaction. **E. Block**

**3:50 183.** Rancidity development in roasted almonds (*Prunus dulcis*): Relationships between chemical changes and sensory descriptive analysis. L. Franklin, D. Chapman, E. King, G. Huang, **A.E. Mitchell**

**4:20 184.** Chemical mechanisms for 3-MCPD ester formation. **L.L. Yu**

Section B

Pennsylvania Convention Center  
Room 113B

### **Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI<sup>†</sup>, COMSCI and ENVR<sup>‡</sup>  
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

**1:00 185.** GMO crops may contribute to decline of monarch butterfly populations. **J.N. Seiber**

**1:30 186.** Impressive progress, opportunities, and obstacles in the use of genetically engineered trees. **S.H. Strauss**

**2:00 187.** Progress on transgenic approaches to solving citrus greening disease. M. Dutt, **J.W. Grosser**

**2:30** Intermission.

**2:45 188.** American chestnut research and restoration project. **W.A. Powell**, A. Newhouse, C.K. Maynard, L. McGuigan, A.D. Oaks, K.R. Stewart, T. Desmarais, D. Mathews, Y. Bathula, V. Coffey

**3:15 189.** Transgenic and gene edited animals for use in agriculture: Where are we now? **J.D. Murray**

**3:45 190.** Microalgae derived ingredients, oils and the future of foods. **W.G. Rakitsky**

**4:15** Concluding Remarks.

Section C

Pennsylvania Convention Center  
Room 110A

### **International Student Symposium**

#### **Nanoparticles & Delivery Systems**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 191.** Supramolecular design of coordination bonding architecture on zein nanoparticles for pH-responsible drug deliver and the cellular uptake mechanism. **H. Liang**

**1:30 192.** Preparation, characterization, *in vitro* lipolysis and cell study on antioxidant and anti-inflammatory activities of carnosic acid nanoemulsion. **H. Zheng**, Q. Huang

**1:55 193.** Evaluation of postharvest washing on Ag NPs removal from spinach leaves. **Z. Zhang**, L. He

**2:20** Intermission.

**2:40 194.** Influence of food matrix on the fate of titanium dioxide (TiO<sub>2</sub>) nanoparticles in gastrointestinal tract. **X. Cao**, H. Xiao, D. McClements

**3:05 195.** Application of new nanomaterials as signal probes in immunoassay. **G. Hu**, S. Wang, W. Sheng, Y. Zhang

**3:30 196.** Assemblies, properties and food applications of kafirin nanoparticles based Pickering emulsions. **J. Xiao**, Q. Huang

**3:55 197.** Real-time and *in situ* monitoring of pesticide penetration in edible leaves by surface-enhanced Raman scattering mapping. **T. Yang**, L. He

**4:20** Concluding Remarks.

Section D

Pennsylvania Convention Center  
Room 110B

### General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

**1:00** Introductory Remarks.

**1:05 198.** Development of a neuroprotective potential index for ayurvedic medicinal plants. **W. Liu**, H. Ma, L. Zhang, C. Wan, J.A. Dain, N.P. Seeram

**1:30 199.** Effects of brewing conditions and re-infusion on the antioxidant activity of twenty-four varietal green teas. **E.M. Sharpe**, R. Bradley, S. Andreescu, F. Hua, S. Schuckers

**1:55 200.** Comparative study of performance of regular pyrolysis oil and TGRP oil for catalytic cracking with HZSM-5. **Y. Choi**, Y. Elkasabi, P. Tarves, C.A. Mullen, A. Boateng

**2:20 201.** Novel promising biocomposite derived from calcined eggshells for mitigating soil antibiotic resistance bacteria/gene dissemination and accumulation in bell pepper. **Y. Mao**, S. Mingming, X. Li, A. Schwab, X. Jiang

**2:45** Intermission.

**3:00 202.** Stability of anthocyanin pigments in purple wheat bran and powder isolates. **E.M. Abdelaal**, P. Hucl

**3:25 203.** Ascorbic acid-catalyzed degradation of cyanidin- and malvidin-3-*O*- $\beta$ -glucoside: Proposed mechanism and identification of novel hydroxylated products. **N.B. Stebbins**, L. Howard, R.L. Prior, C. Brownmiller, R. Liyanage, J.O. Lay, X. Yang, S. Qian

**3:50 204.** Analysis of changes in anthocyanin and volatile compounds of Fuji apple under different sizes and storage conditions. **H. Jang**, M. Jeong

**4:15 205.** Measuring color in turbid beer and wort samples. **R. Barth**

**4:40 206.** Investigation of monoterpene enantiomers in Pinot gris wine and sensory perception of these compounds on matrix interactions. **M. Song**, E. Tomasino

**5:05** Concluding Remarks.

### **Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches**

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

### **Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

Sponsored by AGRO, Cosponsored by AGFD

### **Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

Sponsored by AGRO, Cosponsored by AGFD

### **Glyphosate: Current Status & Future Prospects**

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## **WEDNESDAY MORNING**

Section A

Pennsylvania Convention Center  
Room 110A

### **Natural & Bio-Based Antimicrobials for Food Applications**

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 207.** Safer salads and grilled meats: Clean and green approaches. **S. Ravishankar**

**8:30 208.** Organic acids as food antimicrobials. **J. Gurtler**

**8:55 209.** Natural and value-added antimicrobials for pathogen control. **B. Brehm-Stecher**

**9:20 210.** Effectiveness of food grade antimicrobials for controlling *Listeria monocytogenes* in/on ready-to-eat meat and poultry products. **A.C. Porto-Fett**, J.B. Luchansky

**9:45** Intermission.

**10:05 211.** Improve microbial food safety of fresh fruits and vegetables with aqueous and vaporous essential oils. **X. Fan**, C. Wu

**10:30 212.** Berry pomace extracts in enhancing microbial food safety. **D. Biswas**

**10:55 213.** Olive leaf extract inhibits growth and biofilm formation in *L. monocytogenes*. **Y. Liu**, L. McKeever, N. Malik

Section B

Pennsylvania Convention Center  
Room 111B

### **Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI<sup>‡</sup>, COMSCI and ENVR<sup>‡</sup>  
J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 214.** Chemical synthesis of optically pure rhizopines: Steps towards engineering a synthetic symbiosis between bacteria and crops. **A.M. Joffrin**, B. Geddes, H. Sanganee, V. Flemington, P. Poole, S.J. Conway

**8:35 215.** Engineering a bypass of 1-deoxyxylulose-5-phosphate synthase in *Esherichia coli* for the conversion of pentose sugars to isoprenoid chemicals and biofuels. **J.R. King**, B.M. Woolston, G. Stephanopoulos

**9:05 216.** Genetically programmed functional bacterial biofilms. **E. Kalyoncu**, T.T. Olmez , U. Seker

**9:35** Intermission.

**9:50 217.** Novel combination of megaTAL nuclease-driven genome engineering with a drug selection cassette increases efficiency of HIV gene therapy. **B. Paul**, H. Kiem

**10:20 218.** Analysis of the everninomicin gene cluster and dichloroisoeverninic acid biosynthesis in *Micromonaspora carbonacea* var. *aurantiaca* in pursuit of novel everninomicin analogs. **A. Yniguez-Gutierrez**, E.M. Limbrick, B.O. Bachmann

**10:50 219.** It is about safety. **V.C. Knauf**

Section C

Pennsylvania Convention Center  
Room 111A

### **International Student Symposium**

## Bioactive Compounds

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 220.** Synergism between sulforaphane and luteolin in anti-inflammation. **K. Rakariyatham**, X. Wu, H. Xiao

**8:30 221.** 3-MCPD 1-palmitate induced tubular cell apoptosis via JNK/P53 pathways. **G. Huang**, M. Liu, W. Lu, X. Sun, L.L. Yu

**8:55 222.** Functional analyses on antioxidant and anti-inflammatory effects of polyphenols extracted from a Chinese bitter tea (*ilex latifolia* thunb). **T. Zhang**

**9:20** Intermission.

**9:40 223.** Role of cell walls in controlling the release and bioaccessibility of polyphenols from raw compared to processed apples. **D. Liu**, M.J. Gidley, P. Lopez-Sanchez

**10:05 224.** Redox active antioxidants increase chemical stability and biological function of curcumin. **W. Wang**

**10:30 225.** Enhancing bioavailability of lipophilic nutraceuticals in natural food: Excipient emulsion design. **R. Zhang**, D. McClements

**10:55** Concluding Remarks.

Section D

Pennsylvania Convention Center  
Room 110B

## General Papers

N. P. Seeram, *Organizer, Presiding*  
W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 226.** Impact of harvest time and switchgrass cultivar on conversion to sugars and pyrolysis oils using biochemical and thermochemical routes. **M. Serapiglia**, C.A. Mullen, A. Boateng, B.S. Dien, M. Casler

**8:30 227.** Impact of selected phenolics on the quality and health aspect of cookie. **J. Ou**, M. Wang

**8:55 228.** Effect of cluster sunlight exposure on rotundone concentration in Noiret grapes and wine. **L.J. Homich**, R.J. Elias, M. Centinari, J. Vanden Heuvel

**9:20 229.** Antimicrobial and antioxidant activities of lignin from corn stover residue. **M. Guo**, C. Wu, T. Jin, N. Nghiem, X. Fan, P.X. Qi, C. Jang, L. Shao

9:45 Intermission.

10:00 230. Restoring herbicide control in multiple herbicide resistant black grass (*Alopecurus myosuroides*). **M.C. Schwarz**, P.G. Steel, E. Pohl, G. Mitchell

10:25 231. Cabbage inhibits nitrate reduction in vegetable juices during storage. **J. Huang**, C. Robinson, A. Webb

10:50 232. Multi-year ambient air monitoring network to measure multiple pesticides in various California agricultural communities: 2011-2015 sampling results. A. Tuli, **E. Vidrio**, P. Wofford, R. Segawa

11:15 233. Hg speciation by differential photochemical vapor generation at UV-B and UV-C wavelengths. **G. Chen**, B. Lai, N. Mei, J. Liu, X. Mao

11:40 Concluding Remarks.

### Who Should Regulate Pesticides in Our Food?

Sponsored by AGRO, Cosponsored by AGFD and ETHC

## WEDNESDAY AFTERNOON

Section A

Pennsylvania Convention Center  
Room 110A

### Natural & Bio-Based Antimicrobials for Food Applications

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

1:00 234. Anti-listerial activity of hops beta acids on ready-to-eat meat products. **C. Shen**

1:25 235. Natural antimicrobials for acid and acidified foods. C. Chung, H. Haley, R. Price, **F. Breidt**

1:50 236. Use of plant-based antimicrobials for enhanced pressure destruction of pathogens in juices. **A. Mendonca**

2:15 237. Use of natural antimicrobials with combined non-thermal treatments to control *Listeria monocytogenes* and *Clostridium sporogenes* in food systems. **M. Lacroix**

2:40 Intermission.

2:55 238. Modeling the impact of the natural antimicrobial citral and high pressure processing on the survival of *Escherichia coli* O157:H7 and uropathogenic *E. coli* in ground beef. S. Chien, **S. Sheen**, C. Sommers, L. Sheen

3:20 239. Development of delivery systems for essential oils and applications for foods and biofilm removal. **L. McLandsborough**

**3:45 240.** Novel uses of lauric arginate for food preservation: Physical and antimicrobial properties. Q. Ma, **Q. Zhong**

**4:10 241.** Methods to deliver natural antimicrobials to food. **T. Jin**

Section B

Pennsylvania Convention Center  
Room 111B

### **Chemistry, Safety & Technology of GMO Foods**

Cosponsored by AGRO, CEI<sup>‡</sup>, COMSCI and ENVR<sup>‡</sup>

J. N. Seiber, *Organizer*

J. W. Finley, L. Jackson, *Organizers, Presiding*

**1:00 242.** Unintended effects associated with GM crops are both expected and low risk. **R. Herman**, W. Parrott

**1:30 243.** Assessing the risks of resistance evolution for transgenic crops for insect control: Capitalizing on successes and learning from mistakes. **B. Siegfried**

**2:00 244.** FDA's safety evaluation of foods from genetically engineered plants. **R.I. Merker**

**2:30** Intermission.

**2:45 245.** Intellectual property issues of GMO food crops. **A. Coates**

**3:15 246.** Communication of GMO issues to non-technical audiences. **J. Finley**

**3:45** Concluding Remarks.

Section C

Pennsylvania Convention Center  
Room 111A

### **International Student Symposium**

#### **Analytical Approaches**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 247.** Filter based approach to rapid and sensitive SERS detection of ferbam in environmental water. **S. Gao**, L. He

**1:30 248.** Development of immunoassays for detecting oxyfluorfen residue in agricultural products. E. Sheng, X. Hua, **M. Wang**



**1:55 249.** Rapid electrochemical detection of *Salmonella* in agricultural water based on redox cycling. **D. Wang, Z. Wang, J. Chen, S.R. Nugen**

**2:20** Intermission.

**2:40 250.** Detection of *Escherichia coli* (*E. coli*) and sensing of antibiotic drugs using engineered enzymatic bacteriophage. **J. Chen, S.D. Alcaine, V.M. Rotello, S.R. Nugen**

**3:05 251.** Optimization of a new HPLC method with UV/DAD and ESI-MS<sup>n</sup> detection for the analysis of non-psychoactive cannabinoids in *Cannabis sativa* L. **V. Brighenti, R. Tardugno, S. Benvenuti, F. Pellati**

**3:30 252.** Extraction and isolation of stypoldione from stypopodium zonale. **M.R. Denny**

**3:55** Concluding Remarks.

Section D

Pennsylvania Convention Center  
Room 110B

### **High-Resolution Mass Spectroscopy Techniques for Identification & Quantification of Phytochemical Metabolites**

Y. Kim, M. Sukan, S. Talcott, *Organizers*  
L. Howard, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 253.** Scope and limitations of HPLC-HRESI/MS for the analysis of anthocyanins from tropical fruits. **C. Osorio Roa**

**1:30 254.** Target oriented synthesis and mass spectral characterization of curcumin-phenformin adduct: Potential insights into the role of this conjugate as anti-diabetic and anti-cancer agent. **B. Dayal, D.N. Shah, S. Patel, A. Mehta, M.A. Lea**

**1:55 255.** Analysis of urinary and fecal metabolites of tea polyphenol EGCG in mice by LC-MS/MS. **S. Zhang, S. Sang**

**2:20 256.** Qualitative and quantitative analysis of antioxidant and quinone reductase-inducing phytochemicals present in a Maqui berry (*Aristotelia chilensis*) botanical dietary supplement. **C. Naman, J. Li, Y. Deng, W. Keller, A. Kinghorn**

**2:45** Intermission.

**3:00 257.** Identification and quantification of novel cranberry (poly)phenol metabolites in human plasma and urine by UPLC-QTOF MS. **A. Rodriguez-Mateos, R.P. Feliciano, A. Boeres, L. Massaccesi, G. Ista, C. Nunes dos Santos, R. Ventura, C. Heiss**

**3:25 258.** Accuracy of HPLC-MS methods used to assess the absorption, metabolism and excretion of bioactive (poly)phenols: Implications for nutritional and biomedical research. **J. Ottaviani**

**3:50 259.** Absorption, distribution, metabolism and excretion of orange juice flavanones in humans. **A. Crozier**, G. Pereira-Caro

**4:15 260.** Elucidating metabolic signatures of phytochemical consumption. **C. Kay**

**4:40** Concluding Remarks.

### **Who Should Regulate Pesticides in Our Food?**

Sponsored by AGRO, Cosponsored by AGFD and ETHC

### **THURSDAY MORNING**

Section A

Pennsylvania Convention Center  
Room 110A

### **International Student Symposium**

#### **Application of Natural Ingredients**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 261.** Development of food-grade filled hydrogels for oral delivery of lipophilic active ingredients: pH-triggered release. **Z. Zhang**

**8:30 262.** Legume proteins as alternative emulsifiers to encapsulate omega-3 oils. **C.E. Gumus**, D.J. McClements

**8:55 263.** Structures and interfacial properties of self-assembled protein-polyphenol-polysaccharide ternary complexes. **W. Jin**, B. Li, Q. Huang

**9:20** Intermission.

**9:40 264.** Stabilization of pickering emulsions by polysaccharide-polypeptide nanocomplexes. **Y. Jiang**, Q. Huang

**10:05 265.** Ultrasonic treatment of regenerated a-chitin with tunable capacity for stabilization of oil in water emulsion. **Y. Wang**

**10:30 266.** Phytochemical composition of essential oils and *in vitro* screening of the antimicrobial activity on oral pathogenic bacteria. **R. Tardugno**, R. Iseppi, E. Franceschini, F. Pellati, G. Bruzzesi, M. Bondi, S. Benvenuti

**10:55** Concluding Remarks.

Section B

Pennsylvania Convention Center  
Room 111A

### **Natural & Bio-Based Antimicrobials for Food Applications**

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

**8:00 267.** Antimicrobial character of lactonic sophorolipids against select bacterial strains commonly associated with foodborne illness. **R. Ashby**, D. Solaiman, X. Fan, X. Zhang, M. Olanya, D. Ukuku

**8:25 268.** Synthesis of antimicrobial phenolic branch-chained fatty acids. **H.L. Ngo**, K. Wagner, Z. Yan, A. Nunez, R. Moreau, X. Fan

**8:50 269.** Thiamine dilauryl sulfate (TDS) and organic acid combined treatment to secure microbial safety of selected products. H. Park, **H. Feng**

**9:10** Intermission.

**9:30 270.** Characterization of LAB bacteriocins with the potential for food safety and functional food applications. **J. Renye**, G.A. Somkuti

**9:55 271.** Plant-produced colicins for control of foodborne *Escherichia coli*. **C.H. Stahl**, A. Giritch, Y. Gleba

**10:20 272.** Bacteriocins producing lactic acid bacteria: Isolation, optimization of growth condition for bacteriocins production and application in foods. **L. Fan**

**10:45 273.** Evaluation of toxicity and endocrine disruption potential of the natural antimicrobials or biobased antimicrobials. **C. Wu**, C. Jang, M. Guo

Section C

Pennsylvania Convention Center  
Room 110B

### **General Papers**

N. P. Seeram, *Organizer, Presiding*  
W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 274.** Applications of the polysaccharide-polypeptides nanocomplexes in multi-platforms for nutraceuticals encapsulation. **Y. Jiang**, Q. Huang

**8:30 275.** Interaction and structure formation between  $\alpha$ -lactalbumin and chitosan grafted with poly(ethylene glycol) chains. **J. Du**, O.G. Jones

**8:55 276.** De-polymerization of lignin via co-pyrolysis with 1,4-butanediol in a microwave reactor. **P. Tarves**, C.A. Mullen, A. Boateng

**9:20** Intermission.

**9:35 277.** Photoelectrocatalytic oxidation of nitrite using highly ordered anatase form of TiO<sub>2</sub> nanotube array photoelectrodes. **C. Lu**, X. Guo, S. Zhu

**10:00 278.** Halloysite nanotube/polyethylene nanocomposites as multifunctional active food packaging materials. C.E. Tas, B. Alkan, M. Baysal, F. Altay, F.C. Cebeci, S. Unal, Y.Z. Menciloglu, **H. Unal**, E. Sehit

**10:25 279.** Nanodelivery system: zein nanoparticles for entrapped hydrophobic/hydrophilic bioactives. **T. Chuacharoen**

**10:50 280.** Evaluation of polycyclic aromatic hydrocarbons (PAHs) in edible palm oil produced in the Niger Delta, Nigeria. R.O. Raji, **V.O. Akpambang**

**11:15 281.** Analysis and reduction of possible carcinogenic 4(5)-methylimidazole in a caramel colorant model system. **K.G. Lee**

**11:40** Concluding Remarks.

### **Who Should Regulate Pesticides in Our Food?**

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### **THURSDAY AFTERNOON**

Section A

Pennsylvania Convention Center  
Room 110A

### **International Student Symposium**

#### **Molecular Definition of Food Quality**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 282.** Decoding the taste of foods: What makes that cheese taste so good? **M. Salger**, T. Hofmann

**1:30 283.** Changes in the key aroma compounds of dried shiitake mushroom induced by rehydration. **P. Schmidberger**, P.H. Schieberle

**1:55 284.** Evaluation of chiral heterocyclic key aroma compounds in cooked *Allium*-varieties - A case study regarding organoleptic and quantitative characteristics. **M. Flaig**, M. Granvogl

**2:20** Intermission.

**2:40 285.** Differentiating organic and conventional tomatoes using ultra-performance liquid chromatographic fingerprints. **H. Guo**, W. Lu, H. Chen, L.L. Yu

**3:05 286.** Differentiating cultivation locations and flowering stages of chrysanthemum by UPLC fingerprints combined with chemometric data analysis techniques. **L. Yanfang**, W. Lu, L.L. Yu

**3:30** Concluding Remarks.

Section C

Pennsylvania Convention Center  
Room 110B

## General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

**1:00** Introductory Remarks.

**1:05 287.** Lateral flow assay exploiting aptamers for the extremely rapid detection of the anaphylactic allergen  $\beta$ -conglutin. **C. O'Sullivan**, M. Jauset, M. Svobodova

**1:30 288.** Portable optoelectronic nose for rapid monitoring of meat freshness. **Z. Li**, K.S. Suslick

**1:55 289.** Ultrasensitive detection of the anaphylactic allergen  $\beta$ -conglutin exploiting lateral flow, tailed primers and isothermal amplification. **C. O'Sullivan**, M. Jauset, M. Svobodova

**2:20 290.** Fast method for sugar analysis of instant coffee samples. **S. Patil**, J. Rohrer

**2:45** Intermission.

**3:00 291.** Variations in the enantiomeric composition of thujone-containing essential oils. **J.D. Williams**, K.A. Anderson, J.A. Yazarians, G.R. Boyce

**3:25 292.** Improved method for determination of biofuel sugars by HPAE-PAD. **S. Patil**, J. Rohrer

**3:50 293.** Metabolomics characterization of bottled wine: impact of environmental parameters. **C. Roullier-Gall**, D. Hemmler, M. Witting, F. Moritz, S. Heinzmann, P. Jeandet, M. Gonsior, R. Gougeon, P. Schmitt-Kopplin

**4:15 294.** Estimation of total phenolic compounds in leaf tissues of American chestnut (*Castanea dentate*), Chinese chestnut (*Castanea mollissima*), and their back-cross breeding generations. **J. She**

**4:40 295.** Microwave-induced chemical synthesis of oxidized lanosterol and cholesterol derivatives using  $\text{KMnO}_4$ - $\text{CuSO}_4$  catalyst: Potential target molecules for clearing up protein aggregation in diabetes patients suffering from cataract formation. **B. Dayal**, J. Chou

**5:05** Concluding Remarks.

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