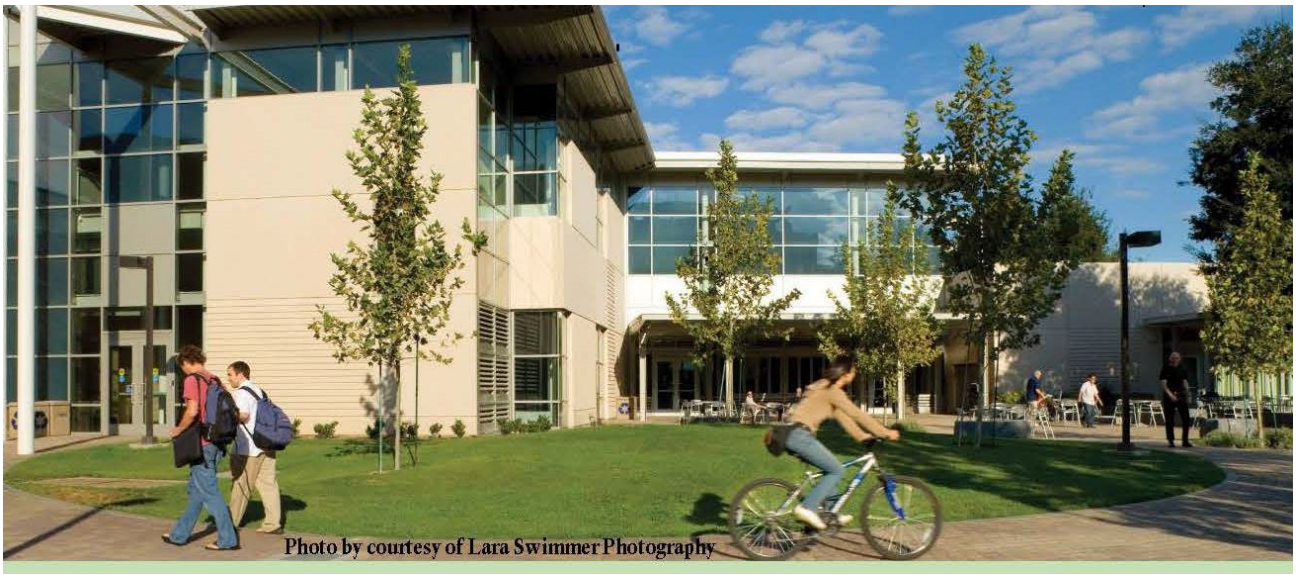
Pacific Section of AOAC INTERNATIONAL
2026 Annual Meeting

What Is In Your Food?



March 23 – 25, 2026	University of California Davis, School of Veterinary Medicine, Gladys Valley Hall

Brought to you by our hard-working volunteers

The Executive Committee and Members-at-Large of

The Pacific Section of AOAC INTERNATIONAL

- Charles Yang , President
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- Shalini Varghese, Sciex
- Gregory Nieckarz, Bruker
- Tom Sidebottom, US Food and Drug Administration (Retired)
- Seth Wong, TEQ Analytical Laboratories

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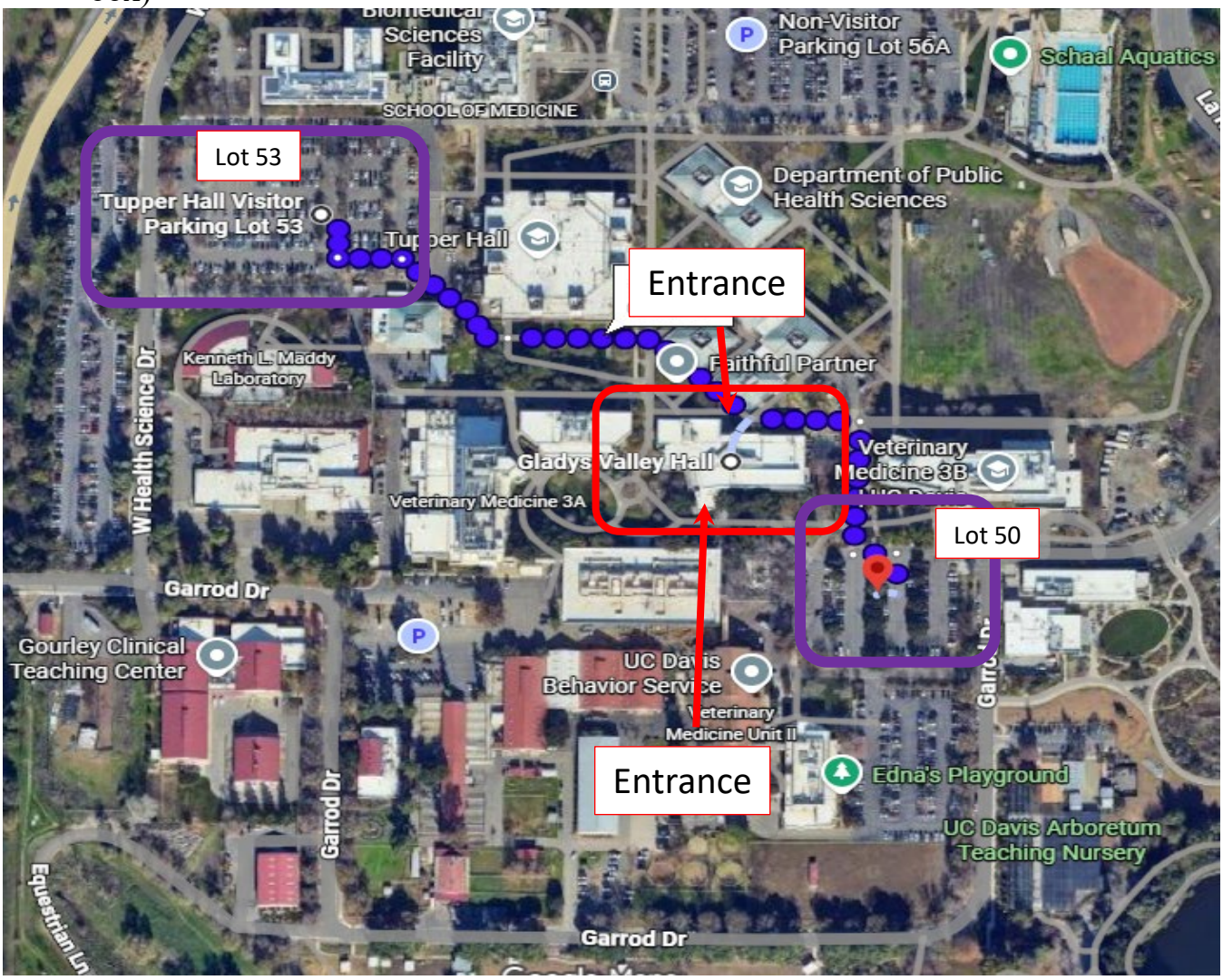
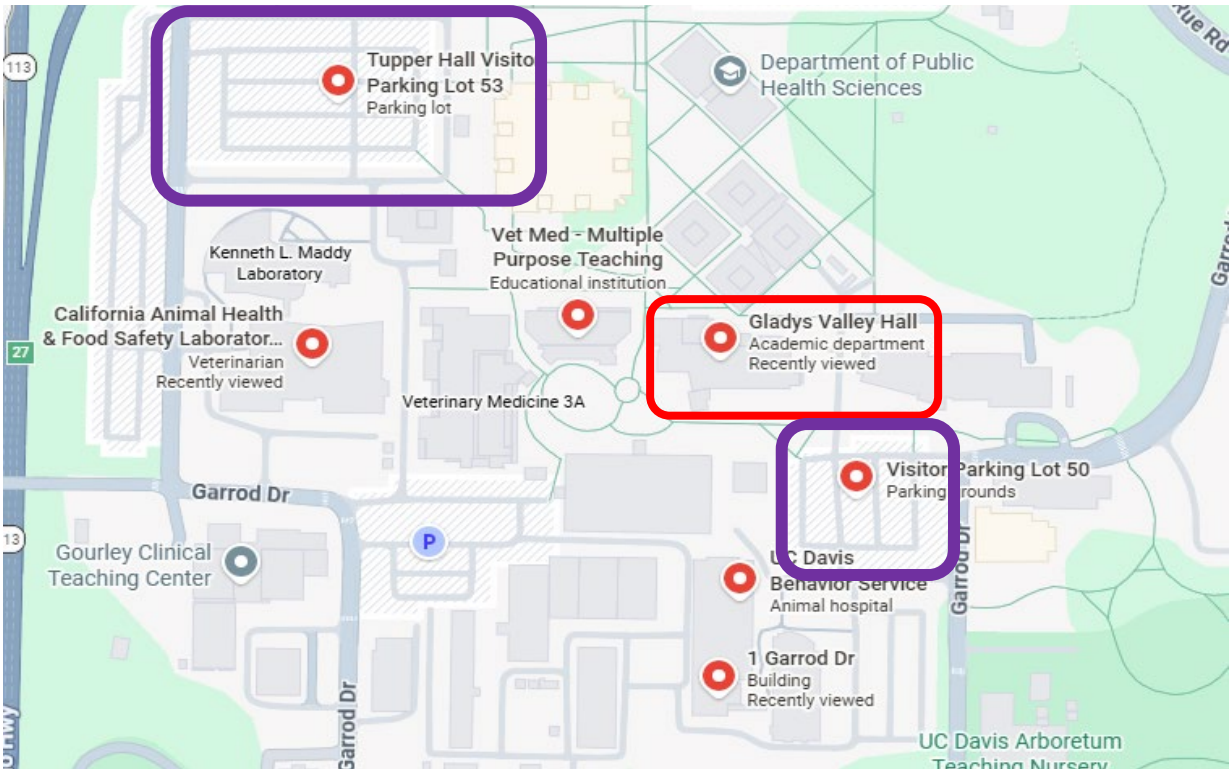
General Information

Address: University of California Davis, School of Veterinary Medicine, Gladys Valley Hall, 1 Garrod Drive, Davis, CA 95616

Site Map and Location:

- Gladys Valley Hall (red box) – Entrance from back for Lot 53 and front for Lot 50
- Parking Lot 53 (Preferred parking location for our meeting) and 50 (purple box)





- Please download the following UC Davis Recommended Parking App for onsite parking
- Make sure you register prior to coming onsite.

UC Davis (recommended)	Visitor Parking https://transportation.ucdavis.edu/visitor
App Site	HONK https://transportation.ucdavis.edu/aggiepark/honkmobile

Presidential Reception

Open to all – Network and enjoy a glass on us!

Monday 23rd, 6:00-9:00 PM

Address: 24800 County Rd 101A, Davis, CA 95616

Parking onsite: Please carpool, lot is limited

We extend our highest appreciation to our Platinum, Gold, and Basic Level Sponsors for their contributions.

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Basic Level

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MONDAY, MARCH 23RD

7:30 - 8:30	**Continental Breakfast** **Sponsored by** Waters™
8:00	**Registration**
8:45 - 9:00	**Welcome and Introduction** **Charles Yang, President of Pacific Section AOAC International and Dr. Pramod Pandey, President-elect of Pacific Section AOAC International**
9:00 – 9:40	**Keynote** **Dr. Mark Stetter, Dean of Veterinary Medicine, University of California, Davis** **"*TBD*"**
9:40 - 10:20	**Dr. Xunde Li, Research Microbiologist, University of California, Davis** **"Antibiotic Resistance of Foodborne Bacteria in Retail Foods"**
10:20 – 10:40	**Break / Poster Session*** *See page 13 for poster topics
10:40 -11:20	**Dr. Seth Yates, Chemistry Professor, Fresno City College , CA** **"Voluntold: Adventures in Chemistry Career and Technical Education in Central California"**
11:20 – 12:00	**Platinum Sponsor, Stell Alicia, Market Development Manage, CEM** **" *Fast. Simple. Smart. The Future of Lab Workflows with CEM* "**

12:00 – 13:00	**Lunch** **Sponsored by** 
13:00 – 13:40	**Keynote** **Dr. Carlito Lebrilla, Distinguished Professor at University of California, Davis** **"*A Multi-Omics Characterization of Food*"**
13:40 – 14:20	**Bruna Paviani, Post Doc, University of California, Davis** **" *The differences in prebiotic oligosaccharides and select phenolics found in grape pomace from different varieties grown in California* "**
14:20 – 14:50	**Dr. Maria Ofitserova, Senior Research Chemist, Pickering Laboratories, Inc in Mountain View, California** **" *Analysis of Glyphosate and Other Contaminants in Food using HPLC with Post-Column Derivatization* "**
14:50– 15:10	**Break / Poster Session*** *See page 13 for poster topics
15:10 – 15:25	**Xiaohong Wei, Project Scientist, University of California, Davis** **" *Determining the Optimal Number of Presumptive Colonies for Reliable Detection of True-Positive E. coli O157:H7 and Non-O157 STEC in Dairy Manure Using Selective Media* "**
15:25 – 15:50	**Dr. Rewa Rai, Project Scientist, University of California, Davis** **" *Bio-based approaches to improve stability, persistence and functionality of probiotics in the gut*"**

15:50 – 16:05	**Asutosh Shukla (Dr. Qi Zhang), University of California, Davis** **"*Advancing Understanding of Atmospheric Aerosols through Online Mass Spectrometry"***
16:05 – 16:20	**Jiwon Oh, Postdoc Researcher, Public Health Sciences, University of California, Davis** ***" Plasticizers in Food: Characterizing Exposure in Pregnant Women and Children and Associated Health Risks"***
16:20 -16:30	**Rodrigo Profeta, University of California, Davis** ***"Characterization of genomic features associated with antimicrobial resistance and virulence genes in Enterococcus spp. isolated from retail chicken and pork in California and Hawaii"***
16:30 – 16:40	**Ana da Silva Oliveira, Student Presentation, University of California, Davis** **"*Assessing the risk of contamination of leafy greens and landscape use in California farmland - a participatory modeling approach* "**
16:40 – 16:50	**Abdullah Imad M Al Rawi, Student Presentation, Department of Electrical and Computer Engineering, University of California, Davis** **"*An NLP-Based Early Warning System for Detecting Emerging Food Safety Threats*"**
16:50 – 17:00	**Neeraj Chandrasekar & Elina Sahoo, Student Presentation, Davis Senior High School & Rocklin High School** ***"Impacts of different drying methods on drying rates of various peppers and quantification of capsaicinoid levels using HPLC"***

18:00 – 21:00	**Presidents' Reception** **Great Bear Vineyards** **Open to all – Network and enjoy a glass on us!** **Sponsored by**  We Simplify Science

TUESDAY, MARCH 24TH

7:30 – 8:30	**Continental Breakfast** **Sponsored by** Waters™
8:00	**Registration**
8:45 – 9:00	**Welcome and Introduction** **Charles Yang, President of Pacific Section AOAC International and Dr. Pramod Pandey, President-elect of Pacific Section AOAC International**
9:00 – 9:40	**Keynote** **Dr. Greer Harris, Senior Manager of Scientific Partnerships** ***"AOAC INTERNATIONAL Current and New Scientific Initiatives"***
9:40 – 10:20	**Dr. Zhengfei Lu, Principal Scientist, Herbalife** ***"MOSH/MOAH, Botanical Integrity (Identification and Pyrrolizidine Alkaloids), and Rapid Microbial Detection"***
10:20 – 10:40	**Break / Poster Session*** *See page 13 for poster topics
10:40 -11:20	**Mario Vendrell Calatayud, Post Doc, University of California, Davis** ***"Rapid Detection of MOAH Contamination in Food Matrices Using A-TEEM and Machine Learning Models"***
11:20 – 12:00	**Platinum Sponsor, Dr. Naren Meruva, Director, Food & Environmental Markets, Waters Corporation** ***"Flexible Methods for Analysis of Natural Toxins in Food to Meet Current and Future Regulatory Requirements "***

12:00 – 13:00	**Lunch Sponsored by** **Agilent Technologies**
13:00 – 13:40	**Keynote** **Dr. Bart Weimer, Chair SVM at University of California, Davis** ***" Microbial Genomics and the Future of Food Safety"***
13:40 – 14:20	**Dr. Maryam Tamizifar, Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA (CAC) in Sacramento, CA** ***" Multiresidue Determination of Pesticides in Cannabis Flower Using LC-MS/MS and GC-MS/MS "***
14:20 – 15:00	**Dr. Chandan Shee, Research Scientist Supervisor I, & Dr. Navneet Rai, Research Scientist II, California Department Cannabis Control** ***" Advancing Microbial Testing in Cannabis: Performance Evaluation of Aspergillus Detection Methods "***
15:00 – 15:10	**Break / Poster Session*** *See page 13 for poster topics
15:10 – 15:50	**Dr. Amber Kramer, Research Scientist IV , Department of Cannabis Control** ***"Challenges in Residual Pesticide Testing in Cannabis Products; from Method Development to Real-World Samples "***
15:50 – 16:20	**Dr. John Kelly, Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA (CAC) in Sacramento, CA** ***"Multi-Laboratory Validation of a Robust Analytical Method for Saxitoxins in Aqueous Environmental Matrices "***

16:20 – 17:00	**Kris Pineda, Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA (CAC) in Sacramento, CA** **"*Non-Targeted Analysis and Data Processing of Pesticides in Groundwater Samples*"**
17:00 – 17:40	**Dr. Matt Tom, Tom Sidebottom, & Zach Eisenberg** **"*What's NOT in Your Food/Product*"**

WEDNESDAY MARCH 25TH

7:30 – 8:30	**Continental Breakfast** **Sponsored by** GUARANTEED CHEMISTRY | PICKERING LABORATORIES
8:00	**Registration**
8:45 – 9:00	**Welcome and Introduction** **Charles Yang, President of Pacific Section AOAC International and Dr. Pramod Pandey, President-elect of Pacific Section AOAC International**
9:00 – 9:40	**Keynote** **Virtual** **Dr. Erik J.M. Konings, Food Safety & Analytical Sciences Expert, Independent Consultant and AOAC International Past President** ***"Importance and impact of AOAC INTERNATIONAL's new Science Program on Vitamins in Food and Dietary Supplements"***
9:40 – 10:10	**Virtual** **Dr. Vera Petrova Dickinson, Founder & CEO, Innova-Q** ***"Applications of AI in Modern Food Safety Systems"***
10:10 – 10:20	**Break**
10:20 - 10:50	**Dr. Shyam Singh, Postdoctoral Researcher, Department of Food Science & Technology at the University of California, Davis** ***"Deep learning based rapid detection and Classification of Bio-aerosolized Bacteria"***

10:50 – 11:30	**Dr. Vikrant Singh, Associate Toxicologist & Dr. Qiaoxiang Dong, Staff Toxicologist, Human Health Assessment Branch, Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, California** **"*Human Health Risk Assessment in Pesticide Labeling and Residue Monitoring in Food and Water in California*"**
11:30 – 12:00	**Dr. Abraar Karan MD MS MPH DTM&H, Instructor, Medicine - Infectious Diseases, Stanford University** **"*Understanding the H5N1 outbreak in Dairy Farms in the United States* "**
12:00 – 13:00	**Lunch** **Sponsored by** RESTEK **End of Meeting** **Thank you all for your support and participation!**
12:30 – 17:00	**Agilent Sponsor Workshop with Department of Food Science and Technology at UC Davis,** **Lunch provided at RMI for registered attendees only**

Poster Sessions for Monday and Tuesday

Author	Poster Title	DAY
Behrooz Pakzadeh	Enhancing Pathogen Reduction in Dairy Wastewater: The Synergistic Role of PAC and CPAM Flocculants	**Monday 23**
Duarte Paola	Development and Validation of a Method to Maximize Volatile Fatty Acid Extraction in Complex Matrices such as Dairy Cow Manure and Digestate	**Monday 23**
Aditya Pandey	Total Carbon & Nitrogen Analysis in Dairy Manure Utilizing Dumas Method	**Monday 23**
Tianchen Shan	Detection Shiga toxin-producing E. coli from dairy manure and characterization of resistance, virulence, and stress genes	**Monday 23**
CEM	CPMG-NMR, a viable rapid replacement of chemical extraction methods for total fat determination in dairy samples	**Monday 23**
Rodrigo Profeta	Characterization of genomic features associated with antimicrobial resistance and virulence genes in Enterococcus spp. isolated from retail chicken and pork	**Monday 23**
Dr. Rewa Rai	Synergistic Combination of Polyphenolics with Probiotics for Enhanced Delivery, Persistence and Functionality in the Gut	**Monday 23**

Author	Poster Title	DAY
Ana da Silva Oliveira	Assessing the risk of contamination of leafy greens and landscape use in California farmland - a participatory modeling approach.	**Tuesday 24**
Neeraj Chandrasekar Elina Sahoo	Impacts of different drying methods on drying rates of various peppers and quantification of capsaicinoid levels using HPLC	**Tuesday 24**
Abdullah Imad M Al Rawi	An NLP-Based Early Warning System for Detecting Emerging Food Safety Threats	**Tuesday 24**
CEM	Efficient Trace Metal Analysis in Complex Food Matrices Using ICP-MS and Microwave Digestion	**Tuesday 24**
CEM	Automated Extraction of PFAS from Shellfish: Improving Sample Preparation Efficiency and Reproducibility	**Tuesday 24**
Adam Vera	Degradation of fluridone in water and sediment by UV light and temperature	**Tuesday 24**
Dr. Shyam Singh	Synergistic effect of mild heat and olive pomace extract on removal of biofilm from food contact surfaces	**Tuesday 24**

Posters

Title: Enhancing Pathogen Reduction in Dairy Wastewater: The Synergistic Role of PAC and CPAM Flocculants

Author: Behrooz Pakzadeh, Noha Amaly, Pramod Pandey
[1] Department of Population Health and Reproduction, School of Veterinary Medicine, University of California Davis, CA 95616

Title: Development and Validation of a Method to Maximize Volatile Fatty Acid Extraction in Complex Matrices such as Dairy Cow Manure and Digestate

Author: Duarte Paola[1], Pandey Pramod[2]
[1] Department of Biological and Agricultural Engineering, University of California-Davis, California 95616, USA
[2] Department of Population Health and Reproduction, University of California Davis, California 95616

Title: Total Carbon & Nitrogen Analysis in Dairy Manure Utilizing Dumas Method

Author: Aditya Pandey[1,2], Omeed Momeni[1], Pramod Pandey[2*]
[1] Department of Electrical and Computer Engineering, University of California-Davis, California 95616, USA
[2] Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis, California 95616, USA

Title: Detection Shiga toxin-producing E. coli from dairy manure and characterization of resistance, virulence, and stress genes.

Author: Tianchen Shan, Xiaohong Wei, Tracee Da Silva, Katie Lee, Megan Gaa, Xunde Li, Pramod Pandey, Edward Rob Atwill
[1] Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis, California 95616, USA

Title: A fully automated temperature, pH and gas measurements in anaerobic reactors under lab settings CPMG-NMR, a viable rapid replacement of chemical extraction methods for total fat determination in dairy samples

Author: Alicia Stella, Devin Darrella, Colin Simpsona, Philippe Trossatb,
[a] CEM Corporation, Matthews, NC, US; [b] Actalia Cecalait, Poligny Cedex, France

Title: Characterization of genomic features associated with antimicrobial resistance and virulence genes in Enterococcus spp. isolated from retail chicken and pork

Author: Rodrigo Profeta,[1,2*,] Katie Lee[1], Lauren Kovanda[3], Xunde Li[1], Yanhong Liu[3], and Bart C. Weimer[1,2]
[1]Population Health and Reproduction, School of Veterinary Medicine, UC Davis, Davis, CA, United States, [2]100K Pathogen Genome Project, [3]Department of Animal Science, UC Davis, CA

Title: Assessing the risk of contamination of leafy greens and landscape use in California farmland – a participatory modeling approach.

Author: Ana R. S. Oliveira, José Pablo Gómez-Vázquez, Beatriz Martinez Lopez, Gabriele Maier, Alda Pires
Graduate Group in Epidemiology, University of California, Davis

Title: Impacts of different drying methods on drying rates of various peppers and quantification of capsaicinoid levels using HPLC

Authors: Neeraj Chandrasekar[1], Elina Sahoo[2], Aditya Pandey[3], Chandrasekar Venkitasamy[3], Pramod Pandey[3]

[1] Davis Senior High School, Davis, California 95616 [2] Rocklin High School, Rocklin, CA 95765

[3] Department of Population Health and Reproduction, School of Veterinary Medicine, University of California Davis, Davis, CA

Title: An NLP-Based Early Warning System for Detecting Emerging Food Safety Threats Authors: Abdullah Rawi

[1] Department of Electrical and Computer Engineering, University of California-Davis

Title: Efficient Trace Metal Analysis in Complex Food Matrices Using ICP-MS and Microwave Digestion

Authors: Alicia Stell, Macy Harris, Layla Abu-Al-Halaweh
CEM Corporation

Title: Efficient Automated Extraction of PFAS from Shellfish: Improving Sample Preparation Efficiency and Reproducibility

Authors: Alicia Stell, Benedict Liu, Layla Abu-Al-Halaweh
CEM Corporation

Title: Degradation of Fluoridone in Water and Sediment by UV Light and Temperature

Authors: Adam Vera[1], Pramod Pandey[2]

[1] Department of Environmental Toxicology, University of California-Davis, One Shields Ave, Davis, CA 95616, USA

[2] Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis, 1089 Veterinary Medicine Drive, Davis, CA 95616, USA

Title: Synergistic effect of mild heat and olive pomace extract on removal of biofilm from food contact surfaces

Author: Dr. Shyam Singh
Department of Food Science & Technology at the University of California, Davis

Speaker Abstracts

Speaker: Dr. Mark Stetter
Title: TDB

Abstract:

Speaker: Dr. Xunde Li

Title: Antibiotic Resistance of Foodborne Bacteria in Retail Foods

Abstract:
Detection of foodborne bacteria from retail foods and characterization of antimicrobial resistance patterns are significant for protecting food safety and public health.

Speaker: Dr. Seth Yates
Title: Voluntold: Adventures in Chemistry Career and Technical Education in Central California

Abstract:
When most people think of Career and Technical Education (CTE), they picture courses in HVAC, Plumbing, or Auto Mechanic Certification. While these dominate the space, there is also a wide range of smaller programs filling a variety of educational niches. In November 2011, a group of chemistry industry professionals in Fresno, California met with faculty at Fresno City College to explore the possibility of creating a technical education Certificate program in Chemistry. The goal would be to train students for employment in the agricultural and environmental laboratories of California's Central Valley. CTE programs in California must be designed by industry professionals (not faculty) and each year those professionals are required to meet to provide feedback on the program and re-approve its existence. Each year's review has brought new lessons and program changes to best meet the needs of students. While a handful of students each year transition directly to employment in local agricultural or environmental laboratories, others started enrolling to gain additional skills toward pursuing careers in academic research or other further studies. The AOAC and associated organizations provide students with a unique connection to both of these worlds and helps them expand their horizons beyond a local community college.

Speaker: Stell Alicia (CEM)
Title: Fast. Simple. Smart. The Future of Lab Workflows with CEM

Abstract:
Modern labs need modern tools. In an era of rapid innovation, there is a growing demand for technologies that streamline workflows and deliver results quickly and reliably. CEM Corporation offers fast, simple, and smart solutions designed to optimize the laboratory workflow. Whether it's solvent extraction for PFAS, microwave digestion for elemental analysis, muffle furnace for ashing, or rapid moisture and fat

determination, CEM technologies help labs boost efficiency, improve consistency, and reduce time to analysis. Specific examples will be given as to how these cutting-edge systems adapt to changing laboratory needs while delivering accurate, precise, and reliable results.

Speaker: Dr. Carlito Lebrilla
Title: A multi-omics characterization of food

Abstract:
Quantitative analysis of food components is critical for food formulation, clinical trials, nutrition policy, and AI-driven food research. To meet these needs, advanced analytical platforms have been developed for carbohydrates and proteins, the two most abundant food components, providing high sensitivity and quantitative accuracy across molecular sizes from monomers to large polymers. Protein analysis integrates metabolomic, peptidomic, and proteomic workflows, while carbohydrate analysis spans monosaccharides, oligosaccharides, and polysaccharides. Carbohydrates pose particular challenges due to their structural complexity and diverse linkages, which often lead to misclassification and clinical misinterpretation. A comprehensive multi-glycomic platform addresses these issues by fractionating carbohydrates into soluble and insoluble components. Soluble sugars are analyzed by LC–MS, while insoluble fractions undergo targeted workflows for monosaccharide quantification, linkage analysis (>100 linkages), and polysaccharide identification. These rapid, automated, and highly quantitative multi-omics methods enable detailed structural characterization of foods and their interactions with digestion and the gut microbiome, generating data that strengthen clinical studies, inform policy, and enhance AI models through improved structure–function insight.

Speaker: Bruna Paviani
Title: The differences in prebiotic oligosaccharides and seelect phenolics found in grape pomace from different varieties grown in California

Abstract:
The large volume of agrifood processing side streams represents a sustainability challenge. Understanding the composition of these by-products and unlocking their functional potential are critical steps for advancing sustainable food systems. Grape pomace is a substantial yet underexplored winemaking product with bioactive compounds with potential human health benefits. This study characterized oligosaccharides and phenolics in grape pomace from four major grape varieties (Chardonnay, Sauvignon Blanc, Pinot Noir, and Merlot) from California. Pomace derived from white wine varieties exhibited higher residual sugars and substantially higher estimated oligosaccharide content than red wine pomaces. Using LC-QToF-MS, nearly 40 oligosaccharides were identified, primarily composed of hexoses and pentoses. The monosaccharide building blocks of these oligosaccharides were characterized by LC-QqQ-MS. Glucose and fructose were dominant, followed by arabinose and xylose. Targeted phenolics were quantified by UPLC-DAD, and total phenolic content and antioxidant capacity were assessed. (+)-Catechin and (–)-epicatechin accounted for up to 50% of quantified phenolics in Chardonnay pomace and 45% in Sauvignon Blanc pomace. Although Merlot pomace exhibited the highest antioxidant capacity, differences were not statistically significant. This work highlights varietal differences in the carbohydrate and phenolic composition of grape pomace, providing a compositional foundation for its targeted valorization as a functional food ingredient

Speaker: Dr. Maria Ofitserova
Title: Analysis of Glyphosate and Other Contaminants in Food using HPLC with Post-Column Derivatization

Abstract:
Quantitative analysis of food components is critical for food formulation, clinical trials, nutrition policy, Glyphosate is the most widely used herbicide worldwide. However, ongoing concerns about its safety and environmental prevalence have led to heightened regulatory scrutiny. In response to evidence of increased human exposure, the U.S. Food and Drug Administration (FDA) has expanded monitoring of glyphosate levels in food products such as soybeans, corn, milk, and eggs. Fluorescence detection following post-column derivatization is a well-established analytical technique for glyphosate determination and forms the basis of the U.S. Environmental Protection Agency (EPA) official method for glyphosate analysis in drinking water. When combined with simplified sample preparation procedure, this approach enables rapid, efficient, and reliable analysis of glyphosate across a wide range of food matrices. This method offers excellent sensitivity and selectivity, and it can be readily implemented in virtually any laboratory equipped with HPLC instrumentation. Beyond glyphosate, the same post-column derivatization equipment can be used to analyze other food contaminants, including Paralytic shellfish toxins, Mycotoxins and Biogenic amines. Pickering Laboratories offers two post-column derivatization systems, Onyx PCX and Vector PCX, allowing laboratories to select the configuration that best fits their workflow, throughput requirements, and budget. Both systems are compatible with any HPLC system.
In addition, Pickering provides ready-to-use post-column reagents and mobile phases to ensure batch-to-batch consistency while reducing preparation time and improving laboratory efficiency.

Speaker: Xiaohong Wei
Title: Determining the Optimal Number of Presumptive Colonies for Reliable Detection of True-Positive E. coli O157:H7 and Non-O157 STEC in Dairy Manure Using Selective Media

Abstract:
Detecting microorganisms in food or environmental matrices requires laboratory methods with high sensitivity and specificity. This study evaluated the influence of the number of presumptive colonies selected per sample from selective media on colony-based positive predictive value (PPV, probability to be truly positive given test positive) and determined the minimum number required for reliable true-positive detection of Escherichia coli O157:H7 (E. coli O157:H7) and non-O157 Shiga toxin-producing E. coli (non-O157 STEC) in dairy cattle manure. A spike-in trial was performed using seven inoculation concentrations of E. coli O157:H7 (−1.1 to 4.3 $\log_{10}$ CFU/g) and non-O157 STEC (−1.4 to 4.6 $\log_{10}$ CFU/g). Up to 45 presumptive colonies per concentration were selected and confirmed by qPCR. Colony-based PPV was calculated to assess selective media performance, and binomial probability models were used to estimate the probability of identifying a true-positive sample as a function of the number of presumptive colonies tested. Colony-based PPV ranged from 45.3% to 100% for E. coli O157:H7 and from 0.7% to 94.8% for non-O157 STEC, varying markedly with inoculation concentration. For E. coli O157:H7, a 91.1% probability of true-positive detection was achieved with only 4 presumptive colonies, even at the lowest concentration (−1.1 $\log_{10}$ CFU/g). In contrast, non-O157 STEC required 5 colonies to reach 90.1% probability at concentrations ≥2.6 $\log_{10}$ CFU/g, but a minimum of 38 colonies per sample was needed at concentrations ≤1.6 $\log_{10}$ CFU/g to achieve comparable performance. This indicates that the current laboratory protocol for E. coli O157:H7 recommended selection of 4 presumptive colonies per sample. In contrast, for non-O157 STEC, the current protocol recommended selecting 5 colonies when pathogen concentrations are ≥2.6 Log_{10} CFU/g. However, at concentrations ≤1.6 Log_{10} CFU/g, achieving comparable detection probability required a minimum of 38 colonies per sample, which is an unrealistic number in routine laboratory practice. A necessary compromise is therefore required.

Speaker: Dr. Rewa Rai
Title: Bio-based approaches to improve stability, persistence and functionality of probiotics in the gut

Abstract:
Probiotics and prebiotics have the potential to modulate gut health. However, gastrointestinal barriers often limit their delivery and, consequently, their biological activity. In addition, the persistence of probiotic cells in the gut, particularly in the large intestine, is crucial to their biological function. This study develops bio-based approaches by developing novel compositions including 1) combination of catechin and model Lacticaseibacillus probiotic cells and 2) fruit byproducts-derived fibrous scaffold with in-situ grown biofilm of Lacticaseibacillus cells (biofilm scaffold). These bio-formulations enhance the delivery and persistence of probiotic cells in the gut without exogenous polymers and coatings. In catechin and Lacticaseibacillus cells combination approach, the polyphenols were infused in probiotic cells using vacuum-assisted infusion process. Whereas, in biofilm scaffold approach, a low-cost microbial delivery system was developed by transforming fruit byproducts into a 3D scaffold by decellularization of intact tissue using a food grade surfactant. Vacuum-assisted infusion of probiotic cells in plant-derived scaffold followed by the in-situ growth of biofilm of infused probiotic cells led to a high encapsulation yield of probiotic cells (10^10 CFU/g of scaffold) in scaffolds on a wet basis. The study further evaluates the survivability of bio-formulations during simulated in vitro gastrointestinal digestion, characterizes the metabolic activity of the modified probiotic cells and their antagonistic activity against target pathogens, and evaluates in vivo delivery and persistence following in vivo delivery. Results showed that catechin-infused cells exhibited 10,000-fold higher viability after simulated gastrointestinal digestion compared to controls and maintained their metabolic and antagonistic activities after simulated gastric treatment. Moreover, catechin-infused cells demonstrated 10-fold improved survivability and persistence over 48 hours, as well as enhanced colonization in the mouse gut. The biofilm scaffold enhanced the 100k-fold survivability of infused probiotic cells during simulated gastric and intestinal digestions. Mouse model study demonstrated million-fold improvement in the persistence and colonization of probiotic cells delivered using 3D scaffold with grown biofilm of cells in comparison to the delivery of planktonic cells without scaffold. Overall, these results highlight the potential of cost-effective bio-based formulations to deliver probiotic cells with enhanced persistence and colonization of cells in the gut.

Speaker: Asutosh Shukla (Dr. Qi Zhang)
Title: Advancing Understanding of Atmospheric Aerosols through Online Mass Spectrometry

Abstract:
Probiotics and prebiotics have the potential to modulate gut health. However, gastrointestinal barriers Atmospheric aerosols—tiny particles suspended in the air—play important roles in air quality, climate, and human health. However, their chemical makeup is highly complex and constantly changing, making them difficult to measure and understand. As a result, aerosols remain one of the largest sources of uncertainty in predicting climate change and assessing air pollution impacts. Gaining clearer insight into where these particles come from and how they transform in the atmosphere requires advanced measurement tools that can capture their composition in real time. Online mass spectrometry has greatly enhanced our ability to study aerosols by providing rapid, detailed measurements of airborne particles and resolving the atmospheric processes that produce and change them. Aerosol mass spectrometers (AMS) quantify the bulk chemical composition and size of fine particles, while chemical ionization mass spectrometry (CIMS) identifies a wide range of gaseous and particulate species at the molecular level. Together, these complementary techniques link emissions sources and atmospheric chemistry to observed pollution levels and aerosol characteristics. Both AMS and CIMS are versatile tools that can be deployed

in large-scale field campaigns as well as in controlled laboratory experiments. In field settings, these instruments provide real-time measurements that capture rapid changes in air composition during events such as wildfire smoke episodes, urban pollution outbreaks, and regional haze. In laboratory studies, they enable detailed investigation of specific chemical reactions and particle formation pathways under well-defined conditions. By combining observations from real-world environments with mechanistic insights gained in the laboratory, we can better understand how emissions evolve in the atmosphere and contribute to particle growth and chemical aging. In this talk, I will present examples from both field and laboratory applications, illustrating how these complementary approaches have advanced our understanding of key air pollution events and the processes that drive particle formation, transformation, and their impacts on air quality and climate.

Speaker: Jiwon Oh
Title: Plasticizers in Food: Characterizing Exposure in Pregnant Women and Children and Associated Health Risks

Abstract:
Plasticizers are widely used in food processing equipment and packaging materials, from which they can migrate into food. Certain plasticizers, primarily phthalates, have been frequently detected in fast-food meals. Indeed, the consumption of fast food and ultra-processed foods has been associated with higher urinary levels of phthalate metabolites, while diets rich in vegetables, fruits, yogurt, fish, and nuts are linked to lower concentrations. Within the ECHO Cohort, a nationwide consortium of pregnancy and pediatric cohorts, a higher Healthy Eating Index (HEI) score was associated with lower urinary metabolite levels of plasticizers, including specific phthalates and organophosphate esters (OPEs). These metabolites are prevalent in the urine of ECHO pregnant participants and young children. Furthermore, in large ECHO samples, prenatal exposure to certain phthalates and OPEs has been associated with adverse birth outcomes and impaired neurobehavioral development. The widespread exposure during pregnancy, a critical window of child development, and the subsequent adverse health impacts in children underscores the urgent need for exposure reduction strategies. Use of these compounds in food contact materials is regulated by the U.S. Food and Drug Administration (FDA). While there are regulations for some phthalates, others with known impacts continue to be used, highlighting the importance of continuing to evaluate these compounds and the need for additional regulation.

Speaker: Rodrigo Profeta
Title: Characterization of genomic features associated with antimicrobial resistance and virulence genes in Enterococcus spp. isolated from retail chicken and pork in California and Hawaii

Abstract:
Enterococcus spp. are common commensals of the gastrointestinal tract but are also recognized as important opportunistic pathogens due to their capacity to acquire and disseminate antimicrobial resistance genes. Retail meat products may serve as reservoirs for resistant strains and associated virulence determinants. In this study, we performed whole genome sequencing on Enterococcus isolates recovered from retail chicken and pork collected in California and Hawaii. After quality control filtering, genomes were analyzed to assess species distribution, genomic relatedness, and the presence of antimicrobial resistance and virulence genes. Chicken isolates were primarily composed of E. faecium and E. faecalis, whereas pork samples were dominated by E. faecalis, revealing distinct species distributions between meat sources. A diverse repertoire of antimicrobial resistance genes was detected in both chicken and pork isolates, with 31 and 23 unique genes identified, respectively, and variation observed across species. Virulence-associated genes were widely distributed among isolates, with substantial overlap between chicken and pork populations. These findings highlight the genomic diversity

of Enterococcus spp. present in retail poultry and pork and underscore the potential role of the food supply as a reservoir for antimicrobial resistance and virulence determinants.

Speaker: Ana da Silva Oliveira
Title: Assessing the risk of contamination of leafy greens and landscape use in California farmland - a participatory modeling approach.

Abstract:
Contamination of leafy greens with pathogenic E. coli has led to human outbreaks and is a well-known concern within strong agricultural regions such as the Salinas Valley in California. The objective of this study was to develop a framework for risk assessment to estimate the risk of contamination of leafy greens with pathogenic E. coli under different agricultural, climatic, and environmental scenarios. We first conducted a literature review of risk factors for contamination of leafy greens. Then, we carried out expert opinion elicitation with stakeholders (researchers, industry representatives, regulators, and extension specialists) to populate parameters for which available data were deemed inexistant, insufficient, or contradictory. A framework for risk assessment integrating expert opinion, literature, and public data was then developed to estimate risk under different settings (e.g., contamination via wildlife, from grazing cattle, or water runoff). This model was integrated into an interactive, open source, and user-friendly web-based interface developed in R, which allows the visualization of risk estimates and sensitivity analyses. Data from 18 experts and data retrieved from the literature and public databases were used in the model. For a scenario in a random location in January, where the user selected a medium initial probability of contamination (1 in 100 batches are contaminated), no wildlife deterrence methods, proximity to cattle located uphill (concentrated animal feeding operations with > 5,000 head of cattle and grazing cattle), movement of cattle, no hobby farms or compost facilities nearby, public water supply use and subsurface drip irrigation, no history of flooding, and a sandy, alkaline soil, the final output is a medium probability of contamination of leafy greens with pathogenic E. coli. Significance: The tool will help growers and other agents to proactively manage contamination risks in leafy greens.

Speaker: Abdullah Imad M Al Rawi
Title: An NLP-Based Early Warning System for Detecting Emerging Food Safety Threats

Abstract:
Food safety incidents involving microbial and chemical contamination pose significant risks to public health and global supply chains. Traditional surveillance systems rely primarily on laboratory-confirmed cases and official reporting mechanisms, which often result in detection delays of days to weeks after initial exposure. During this lag period, contaminated products continue circulating, amplifying outbreak scope and economic losses. Meanwhile, valuable early warning signals remain embedded in unstructured text sources: consumer complaints, social media posts, product reviews, and regional news reports frequently document illness symptoms and food safety concerns before formal investigations commence. Leveraging these signals through natural language processing offers an opportunity to substantially reduce detection latency and enable proactive intervention. This research proposes a multilingual NLP pipeline designed to continuously monitor and analyze diverse text sources for emerging food safety signals. The system architecturecomprises five integrated components: named entity recognition for extracting food products, symptoms, locations, and temporal markers; a supervised classifier trained to distinguish genuine foodborne illness reports from contextually similar but unrelated mentions; geospatial and temporal clustering algorithms to identify statistically anomalous signal concentrations; confidence scoring mechanisms that weight alerts by source credibility and cross-source corroboration; and supply chain linkage modules connecting consumer-reported incidents to

upstream sourcing nodes. Training and validation leverage ground truth data from FDA recall records, the EU Rapid Alert System for Food and Feed, and crowdsourced illness reporting platforms .The proposed system aims to demonstrate measurable improvements in early detection capability compared to conventional surveillance baselines, with a particular emphasis on reducing the time-to-detection for both microbial pathogens and chemical contaminants, including pesticide residues and adulterants. Secondary objectives include evaluating system performance across multiple languages relevant to global food trade and assessing false positive rates under operational conditions. By transforming passively generated text data into actionable intelligence, this approach addresses critical gaps in current food safety infrastructure without requiring costly sensordeployment or physical inspection of every product lot. The framework supports regulatory agencies, food manufacturers, and supply chain managers in prioritizing resources toward the highest-risk scenarios, ultimately protecting consumers while reducing the economic burden associated with delayed outbreak responses.

Speaker: Neeraj Chandrasekar and Elina Sahoo
Title: Impacts of different drying methods on drying rates of various peppers and quantification of capsaicinoid levels using HPLC

Abstract:
Bioactive compounds such as capsaicin are responsible for pepper pungency and associated medicinal characteristics. The extraction and stability of capsaicin is highly dependent on the drying environment. This study investigated the comparative drying kinetics of three capsicum cultivars (Thai, Habanero, Jalapeno) under three drying conditions. The three drying conditions, which were investigated, are: 1) open-sun drying (SD), 2) convective hot air drying (HAD), and 3) dehydration. In addition, the impacts of pepper morphology (whole vs. sliced) on moisture removal was tested followed by capsaicin content estimation using high performance liquid chromatography (HPLC). Results indicated that drying rate was significantly slower in whole (unsliced) peppers compared to sliced peppers. For example, moisture level remained high in unsliced pepper even after 64 hours of sun drying (only 50% moisture reduction). In contrast, moisture content in sliced peppers decreased from 83.49–91.39% (wet basis) to 13.31–18.37% within 24–28 hours under sun drying. Compared to sun drying, both convective hot-air drying and dehydration methods substantially increased the drying rate. Among the tested methods, convective hot-air drying demonstrated superior efficiency, achieving the target moisture content (16.00–19.80%) within 15 hours across all cultivars. The capsaicin levels in the extract (acetonitrile) varied depending on pepper types, drying methods, and morphology of peppers. Results showed that the morphology disruption (i.e., slicing and structural breakdown) of peppers enhanced both drying rate and capsaicin levels in extract.

Speaker: Dr. Greer Harris
Title: AOAC INTERNATIONAL Current and New Scientific Initiatives

Abstract:
tbd.

Speaker: Dr. Zhengfei Lu
Title: MOSH/MOAH, Botanical Integrity (Identification and Pyrrolizidine Alkaloids), and Rapid Microbial Detection

Abstract:
Consumers increasingly expect transparency about what is in their foods and dietary supplements, along with stronger assurances of authenticity, safety, and regulatory compliance. This presentation reviews key

industry trends shaping today's ingredient quality landscape and highlights how emerging analytical technologies can be integrated into a practical, risk-based quality control strategy. The talk will cover an orthogonal testing toolkit that combines targeted chemical analysis (e.g., LC–MS/MS) with genomic approaches (e.g., NGS-based authentication) to improve confidence in ingredient identity for superfood and botanical products. It will also share an implementation example of pathogen testing using multiplex PCR to increase throughput, reduce turnaround time, and lower cost while maintaining fit-for-purpose performance. In addition, the presentation will discuss MOSH/MOAH risk management from screening through confirmatory testing, including key data interpretation considerations for complex matrices.

Speaker: Mario Vendrell Calatayud
Title: Rapid Detection of MOAH Contamination in Food Matrices Using A-TEEM and Machine Learning Models

Abstract:
Consumers increasingly expect transparency about what is in their foods and dietary supplements, along Mineral Oil Aromatic Hydrocarbons (MOAH) are hazardous contaminants that may enter food ingredients through packaging, environmental pollution, or industrial lubricants. The coupled HPLC-GC-FID method is considered the gold standard for testing MOAH; however, it is time-consuming and resource-intensive, limiting its suitability for routine analysis. To solve this issue, fluorescence spectroscopy with absorbance and transmittance is proposed as a tool for rapidly screening MOAH contamination in food caused by high-risk source contaminants along the supply chain. Absorbance-Transmittance-Excitation Emission Matrix (A-TEEM) spectroscopy combined with machine learning algorithms was applied to detect MOAH contamination in sunflower oil, whole milk powder, and cocoa butter. Spectral datasets included 936 points for sunflower oil, 1,560 for milk powder, and 1,248 for cocoa butter, each balanced between uncontaminated controls and samples spiked with 1.0 ppm MOAH standards using one-step methanol dilution. Seven algorithms (Random Forest, SVM, KNN, Gradient Boosting, Logistic Regression, LDA, CART) were trained on these datasets and externally validated using diesel oil–contaminated samples (0.1–5.0 ppm) along with uncontaminated controls. Logistic Regression achieved 100% accuracy for sunflower oil, KNN for milk powder, and Random Forest for cocoa butter. All models showed high sensitivity and specificity, confirming robustness across diverse matrices. Findings suggest that this approach could offer significant benefits for routine quality control of food materials prone to MOAH contamination, offering rapid, easy-to-use, and cost-effective screening of high-risk contaminants. Future work on tailoring algorithms to matrix properties could enhance precision and potential scalability.

Speaker: Dr. Naren Meruva
Title: Flexible Methods for Analysis of Natural Toxins in Food to Meet Current and Future Regulatory Requirements

Abstract:
Changing climates have resulted in an increased demand for natural toxin testing to ensure that products are compliant with various global regulations. In addition, many food and feed companies are becoming interested in performing due diligence testing for identifying trends and emerging threats. Industry standard methods exist for sets of mycotoxins and alkaloids in certain commodities, and advances in sample preparation and tandem mass spectrometry have enabled the development of sensitive and reliable multi-analyte methods. Sample matrix, detection requirements, number of analytes, and instrument sensitivity play critical roles in determining a fit-for-purpose workflow. This presentation will include an overview of natural toxin test methods, flexible options for sample extraction and clean up, and innovations in liquid chromatography and mass spectrometry that enable low level, reproducible, and streamlined workflows capable of meeting current and future regulatory requirements.

Speaker: Dr. Bart Weimer
Title: Microbial Genomics and the Future of Food Safety
Abstract:
The globalization of the food supply and the increasing emergence of foodborne pathogens present urgent challenges for ensuring food safety and public health. Dr. Bart C. Weimer, Professor of Microbiology at the University of California, Davis, has been at the forefront of transforming the field through the integration of microbial genomics, metagenomics, and bioinformatics. His research aims to decode microbial systems at the genomic level to understand how microorganisms evolve, adapt, and interact across food production environments. By applying next-generation sequencing technologies, Dr. Weimer's laboratory investigates the genomic diversity and functional potential of foodborne pathogens, including Salmonella, Listeria monocytogenes, and Escherichia coli. These studies reveal detailed molecular signatures that influence virulence, antimicrobial resistance, and environmental persistence, providing actionable insights for risk assessment and intervention strategies. A cornerstone of Dr. Weimer's work is the establishment of large-scale microbial genome and metagenome databases, which enable predictive modeling and comparative analyses across global pathogen populations. Through collaborations with international agencies and food safety networks, his research has advanced real-time genomic surveillance, linking outbreak strains to contamination sources and improving traceability in complex food systems. Such data-driven frameworks support a shift from reactive to preventive food safety, where genomic insights inform innovative control measures, regulatory decisions, and hazard prediction models. Beyond pathogen detection, his research explores the role of the microbiome in food quality, fermentation, and host health, emphasizing a systems biology perspective that connects food safety to nutrition and sustainability. His vision advocates using microbial genomics as a central tool for designing safer, more transparent, and scientifically grounded food networks capable of meeting future population and environmental demands.

Speaker: Dr. Maryam Tamizifar
Title: Multiresidue Determination of Pesticides in Cannabis Flower Using LC-MS/MS and GC-MS/MS

Abstract:
The determination of pesticide residues in cannabis flower is analytically challenging due to the highly complex matrix, which contains elevated levels of cannabinoids, terpenes, pigments, lipids, and other co-extractive constituents. These components contribute to compound-dependent and analytical-platform specific matrix effects, including ion suppression and enhancement, and can negatively impact chromatographic performance and mass spectrometric response. This work describes the development and evaluation of a multiresidue analytical method for pesticide analysis in dried cannabis flower using complementary gas chromatography–tandem mass spectrometry (GC–MS/MS) and liquid chromatography–tandem mass spectrometry (LC–MS/MS). Samples are extracted using an organic solvent–based approach without additional cleanup to allow direct assessment of matrix contributions. Matrix effects were evaluated and mitigated through additional extract dilution. Method performance was assessed in terms of recovery, precision, linearity, and matrix effects across multiple pesticide classes. Results demonstrate acceptable recovery and reproducibility for targeted analytes, with matrix effects adequately characterized to support accurate quantification. The method provides a robust and efficient approach for routine compliance testing of pesticides in dried cannabis flower.

Speaker: Dr. Chandan Shee / Dr. Navneet Rai
Title: Advancing Microbial Testing in Cannabis: Performance Evaluation of Aspergillus Detection Methods

Abstract:
The California Department of Cannabis Control (DCC) enforces comprehensive laboratory testing requirements to ensure cannabis product safety, including validated methods for detecting microbial contaminants. In accordance with California regulations, current testing assays target specified bacterial and fungal pathogens such as Salmonella, Shiga toxin–producing Escherichia coli (STEC), and Aspergillus species (A. fumigatus, A. flavus, A. niger, A. terreus).
Beyond routine microbial testing, DCC is investigating key scientific and operational questions to further refine and strengthen the performance of Aspergillus assays. These studies encompass determination of limits of detection across diverse cannabis matrices, assessment of assay reproducibility across replicates, analysts, and experimental runs, and evaluation of sample stability under different storage conditions. Additional experiments examine the effects of incubation time and temperature on microbial growth and molecular detection. Collectively, these efforts provide data-driven insights into assay performance, reproducibility, and matrix-specific factors that influence detection outcomes, ensuring robust and consistent microbial testing across cannabis products.
By integrating routine pathogen testing with systematic evaluation of assay performance, DCC strengthens confidence in analytical results, promotes continuous improvement of microbiological testing practices, and reinforces public health protection within an increasingly complex and dynamic regulatory landscape.

Speaker: Dr. Amber Kramer
Title: Challenges in Residual Pesticide Testing in Cannabis Products; from Method Development to Real-World Samples

Abstract:
As California's main reference testing laboratory, the Chemical Testing Laboratory Office (CTLO) of California's Department of Cannabis Control (DCC) strives to build testing methods that are robust, accurate, and precise in an effort to protect the public health of legal cannabis users in California. California has one of the largest numbers of pesticides that are regulated in agriculture and cannabis products. CTLO has been a stand-alone agency since 2021. Building testing capacity in CTLO has taken time and investment in laboratory capabilities. After months of analyzing cannabis samples for residual pesticides, CTLO has identified several issues which need to be addressed for a sustainable industry. We will share the issues that CTLO has come across, our responses to these issues, and our plan for the future of residual pesticide testing of California cannabis products in compliance with current and upcoming DCC regulatory requirements. It is our goal with this presentation, to initiate and then continue discussions with other laboratories and vendors to address the identified issues, as well as build a stronger, more unified cannabis product pesticide testing network.

Speaker: Dr. John Kelly
Title: Multi-Laboratory Validation of a Robust Analytical Method for Saxitoxins in Aqueous Environmental Matrices

Abstract:
Saxitoxins (STX), also known as paralytic shellfish poisoning (PSP) toxins, were originally found in mollusks after poisonings of humans following consumption of seafood but have also been found in both marine and fresh water during the occurrence of some harmful algal blooms (HABs). STX exposure in water primarily comes from consuming untreated surface water, either from water systems that don't

sufficiently treat their surface water or through unintentional swallowing during recreational exposure in lakes and rivers. Accurate, rapid, quantification in complex environmental matrices is essential for exposure assessment and regulatory monitoring. This study aimed to develop and validate a sensitive, selective, and reproducible method for quantifying total Saxitoxins in aqueous environmental samples. An ELISA method was validated using commercially available ELISA kits. Key performance metrics – LCMRL, linearity, matrix effects, and recovery – were evaluated across multiple labs to assess reproducibility and robustness. The method demonstrated excellent sensitivity with MRLs at or below 0.030 ng/L, linearity (R? > 0.995), and recoveries of 98.6% in raw and finished surface-sourced drinking water matrices. Multi-laboratory validation showed high reproducibility with inter-lab RSDs below 20%. This validated method offers a reliable approach for monitoring total Saxitoxins in environmental monitoring programs and can support regulatory decision-making. Its robustness across multiple labs highlights its suitability for large-scale surveillance.

Speaker: Kris Pineda
Title: Non-Targeted Analysis and Data Processing of Pesticides in Groundwater Samples

Abstract:
The detection of pesticides in groundwater requires sensitive and comprehensive analytical approaches to identify both known and unknown contaminants. This study presents a workflow for targeted and non-targeted analysis (NTA) using liquid chromatography coupled with quadrupole time-of-flight mass spectrometry (LC-QTOF) to screen for pesticides in groundwater. Data acquisition was performed on a Sciex X500R QTOF using Sequential Window Acquisition of All Theoretical Fragment-ion Spectra (SWATH), allowing for broad-spectrum detection and retrospective analysis. A key advancement in this study is the integration of custom data processing criteria within Sciex OS software, leveraging mass accuracy , retention time deviations, library match scores, and additional quality metrics. These customized parameters were used to refine data filtering and compound identification. The processed results were then further analyzed through an in-house VBA-based automation tool in Microsoft Excel, streamlining peak selection, spectral matching, and confidence scoring. This automated workflow significantly reduced manual review time while improving reproducibility and detection accuracy. The developed approach enhances the efficiency of suspect screening by systematically prioritizing high-confidence pesticide detections. By combining high-resolution mass spectrometry with customized data filtering and automated post-processing, this workflow improves the identification of pesticide residues in groundwater, supporting regulatory and environmental monitoring efforts.

Speaker: Matt Tom, Tom Sidebottom, Zach Eisenberg
Title: What's NOT in Your Food/Product

Abstract:
tbd

Speaker: Dr. Erik J.M. Konings
Title: Importance and impact of AOAC INTERNATIONAL's new Science Program on Vitamins in Food and Dietary Supplements

Abstract:
The food industry, regulators, nutrition researchers, and risk assessors all rely on fit-for-purpose analytical methods for the determination of vitamins in foods and dietary supplements. However, many existing

AOAC Official Methods in this area date back to the 1980s and 1990s. Since that time, scientific understanding, analytical technologies, and statutory regulations have evolved substantially. This presentation highlights related key challenges associated with vitamin analysis in foods and dietary supplements and underscores the growing recognition among stakeholders of the need for updated, fit-for-purpose methods. This demand is reflected in the broad support for AOAC's new Program on Vitamin Analysis. Analytical science professionals from industry, government, and academia are invited to participate

Speaker: Dr. Vera Petrova Dickinson
Title: Applications of AI in Modern Food Safety Systems

Abstract:
Artificial intelligence (AI) is increasingly being applied across food safety systems to support data interpretation, compliance management, and risk-based decision-making. This presentation will focus on practical, real-world applications of AI in modern food safety programs, including the analysis of laboratory test results, management of analytical data and documentation, regulatory knowledge navigation, and identification of emerging risks. Emphasis will be placed on how AI can improve efficiency, consistency, and visibility across complex food safety workflows while maintaining scientific rigor and human oversight. The discussion will also address current limitations, governance considerations, and best practices for responsible adoption of AI in food safety environments.

Speaker: Dr. Shyam Singh
Title: Deep learning based rapid detection and Classification of Bio-aerosolized Bacteria

Abstract:
Aerosolized microbes pose significant food safety risks through cross-contamination. Current culture-based methods are labor-intensive and time-consuming, creating a need for rapid, low-cost method for detection of bio-aerosolized bacteria from environmental samples. To develop an AI-based approach for rapid detection and classification of aerosolized bacteria based on their microcolony morphologies. Overnight cultures of Salmonella enterica, Escherichia coli, and Pseudomonas fluorescens were aerosolized in a closed chamber using an ultrasonic humidifier and captured on a Tryptic Soy Agar plate. Plates were incubated at 37°C for 3 h, and microcolonies were imaged at 60X magnification. A dataset of 600 images (200/class) was split into training, validation, and testing sets (70:15:15). A Faster R-CNN object detection model was used to localize microcolonies and classify species. Performance was evaluated using mAP, precision, recall and confusion matrices across confidence thresholds. A method was developed to rapidly capture an aerosolized bacteria directly on a culture plate and form microcolonies of individual bacteria within three hours of initial capture. The model based on the white light microscopy images of the various bacterial micro-colonies demonstrated robust identification capabilities, achieving peak performance at a 0.7 confidence threshold, with mAP 89.9% and recall 90.1%. S. enterica showed the highest sensitivity (recall 94.4%), while E. coli had the highest precision (96.4%). While lower thresholds (0.5) revealed minor phenotypic overlap between S. enterica and E. coli, raising the confidence threshold to 0.7 effectively resolved these misclassifications. This study demonstrates an AI-based approach for rapid (3 h) detection and species-level classification bioaerosol bacteria, supporting faster contamination response and improved microbial risk management in food-processing environments.

Speaker: Dr. Vikrant Singh / Dr. Qiaoxiang Dong
Title: Human Health Risk Assessment in Pesticide Labeling and Residue Monitoring in Food and Water in California

Abstract:
The California Department of Pesticide Regulation (DPR) conducts independent, fit-for-purpose evaluations for pesticide registration and reevaluation that address California specific conditions. Pesticide labels are a critical tool for hazard communication and for ensuring compliance with state and federal regulations. Label elements such as signal words, precautionary and first aid statements, and personal protective equipment (PPE), as well as restricted-entry interval (REI) requirements for agricultural products, are informed by the short-term toxicity studies, which include acute oral, acute dermal, acute inhalation, primary eye and skin irritation, and skin sensitization. To assess long-term risks and establish data-driven protective measures, DPR also reviews sub-chronic and chronic toxicity studies, as well as other toxicity studies such as carcinogenicity, reproductive, and developmental toxicity that address a broad range of toxicity endpoints. In addition to evaluating toxicity data for registration and reevaluation, DPR conducts human health risk evaluations of residues in food and water. DPR's California Pesticide Residue Monitoring Program (CPRMP) monitors pesticide residue on fresh produce grown domestically or imported. Illegal residues are identified when detected pesticide levels exceeded USEPA-established tolerances (over tolerance, OT) or when no tolerance is established for that commodity (NTE). A tolerance is the maximum residue level legally permitted on a commodity. Fresh produce are sampled weekly statewide and analyzed for ~500 pesticides. For OT/NTE violations, health risks are evaluated using consumption data from National Health and Nutrition Examination Survey (NHANES) and acute reference doses (aRfDs) established by regulatory agencies. When a health risk is identified for a commodity, enforcement actions such as quarantine, disposal, or product recalls are initiated. DPR also monitors pesticide residues in California drinking water sources through the Surface Water Protection Program (SWPP) and the Groundwater Protection Program (GWPP). To assess potential health risks, DPR establishes Human Health Reference Levels (HHRLs) as screening thresholds for both maximum and average residue concentrations. HHRLs are calculated using acute or chronic RfDs and high-end drinking water intake estimates from the NHANES database. Residue concentrations at or below the HHRLs are not expected to pose a risk to human health while concentrations above are prioritized for further evaluation and potential mitigation.

Speaker: Dr. Abraar Karan
Title: Understanding the H5N1 outbreak in Dairy Farms in the United States

Abstract:
I will discuss the 2024-2025 H5N1 outbreak in dairy farms in the United States. I will discuss the origins of the outbreak, the scientific findings from this outbreak, and the implications for the future in terms of public health and food supply

About Our Speakers

Not all speakers submitted biographical information.

Dr. Xunde Li, Microbiologist, Department of Population Health and Reproduction - University of California, Davis

Dr. Li is a research microbiologist at the Department of Population Health and Reproduction (PHR) of the University of California Davis School of Veterinary Medicine. Dr. Li's research interest focusses on microbiological food safety and antimicrobial resistance in food-producing animal productions and products. He conducts field and laboratory studies to detect and characterize foodborne pathogens and antimicrobial resistance trends of bacteria.

Seth Yates, Chemistry Faculty, Fresno City College

Seth Yates is in his 16th year as a chemistry faculty at Fresno City College. He primarily teaches courses in “Practical” Analytical Chemistry as part of the Certificate of Achievement in Chemistry.

Dr. Alicia Douglas Stell, Market Development Manager, CEM

Dr. Alicia Douglas Stell has 18 years of expertise with CEM, following the completion of her PhD in Analytical Chemistry. With a strong background in chromatographic analysis and mechanical innovation, she has played a key role in developing advanced instrumentation and novel applications. As Market Development Manager, she drives the exploration of new markets and applications, with a focus on cutting-edge sample preparation technologies.

Dr. Carlito B. Lebrilla, Distinguished Professor Department of Chemistry and Department of Biochemistry and Molecular Medicine , University of California, Davis

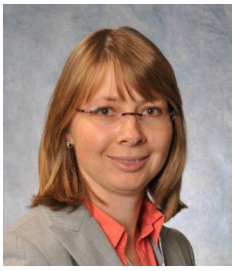
Dr. Carlito B. Lebrilla is a Distinguished Professor at the University of California, Davis, with appointments in the Department of Chemistry and the Department of Biochemistry and Molecular Medicine in the School of Medicine. His research focuses on developing advanced bioanalytical tools—particularly mass spectrometry—for discovering blood-based biomarkers for early detection of cancer and autoimmune diseases, as well as identifying and developing bioactive foods. He has published nearly 500 peer-reviewed articles and is a member of the National Academy of Inventors and a Fellow of the American Association for the Advancement of Science. His honors include the UC Davis Distinguished Researcher Award and Innovator of the Year Award. Dr. Lebrilla earned his B.S. from the University of California, Irvine, and his Ph.D. from the University of California, Berkeley, followed by postdoctoral training as an

Alexander von Humboldt Fellow and an NSF–NATO Fellow at the Technical University of Berlin. He has served as Chair of the Department of Chemistry, teaches undergraduate and graduate courses in analytical chemistry and mass spectrometry, and is co-editor of Mass Spectrometry Reviews

Bruna Paviani, PhD Candidate Food Science and Technology in the Barile lab, University of California, Davis

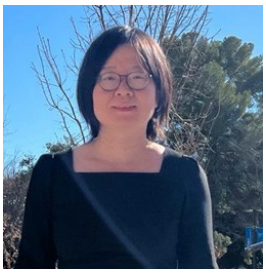
Maria Ofitserova is Senior Research Chemist at Pickering Laboratories, Inc in Mountain View, California. She has extensive experience in HPLC method development and for the last twenty years has led many of the company's research projects including developing and validating the analytical methods for multi-residue Mycotoxins analysis, Theanine in tea analysis as well as various methods for analysis if amino acids in clinical and pharmaceutical samples. Over the years Ofitserova lead Pickering Laboratories participation in AOAC, AAFCO and AOCS collaborative projects and since 2013 she

Maria Ofitserova, Ph.D., Senior Research Chemist, Pickering Laboratories



Maria Ofitserova is Senior Research Chemist at Pickering Laboratories, Inc in Mountain View, California. She has extensive experience in HPLC method development and for the last twenty years was leading many of the company's research projects including developing and validating of the analytical methods for multi-residue Mycotoxins analysis, Theanine in tea analysis as well as various methods for analysis if amino acids in clinical and pharmaceutical samples. Over the years Ofitserova lead Pickering Laboratories participation in AOAC, AAFCO and AOCS collaborative projects and since 2013 she was an active part of SPIFAN Expert Review Panel. Currently her research is centered on new products and methods for medical and environmental applications employing post-column derivatization technology. Ofitserova received Ph.D. in Chemistry from Moscow State University.

Xiaohong Wei, Project Scientist, University of California, Davis



I am a project scientist in University of California, Davis. I expert in epidemiology, specializing in epidemiological modeling, statistical analysis, diagnostic microbiology, microbial food safety, aero-microbiology, and statistical modeling in whole genome sequencing to evaluate metadata influences on foodborne pathogen genome relatedness. The primary goal of my research is to develop strategies for mitigating microbial contamination in food production systems; enhance preharvest microbial food safety; elucidate environmental dissemination mechanisms of foodborne and zoonotic pathogens such as E. coli; and disseminate this knowledge to stakeholders, institutions, and agencies addressing microbial quality and preharvest safety. I bridge genomics, diagnostics, and data analytics to advance outbreak investigation, prevention and public health. My interdisciplinary approach fosters collaborations.

Dr. Rewa Rai, Chemist, Department of Food Science and Technology, UC Davis

Dr. Rewa Rai is a Chemist with 15+ years of experience in biomaterials, formulations, food product development, biosensors, and data science. She earned her Ph.D. in Chemistry from the Indian Institute of Technology Delhi and is a Project Scientist in the Department of Food Science and Technology at UC Davis. Her work focuses on designing biomaterials, bioformulations, and biosensors for applications in food, agriculture, and health. She also develops bioactive and biopesticide formulations to improve stability and delivery, creates biosensors to validate sanitation and predict microbial inactivation, and builds prototype devices that integrate spectroscopy, imaging, and data science to detect plant infections. She has authored over 40 peer-reviewed publications and patents in Chemistry and Food Science.

Dr. Jiwon Oh, Exposure Scientist and Environmental Epidemiologist, Department of Food Science and Technology, UC Davis

Dr. Jiwon Oh is an exposure scientist and environmental epidemiologist studying how prenatal and early-life exposure to environmental pollutants—especially endocrine-disrupting chemicals (EDCs)—affects child health. Using biomonitoring data, she examines EDC levels in pregnant women and children, including trends, variability, and predictors of exposure. Her work focuses on how prenatal exposure to EDC mixtures relates to child neurodevelopmental outcomes such as autism and ADHD, with current research exploring inflammatory mechanisms underlying these effects. She is actively involved in the nationwide ECHO Cohort and serves as a PI on an ECHO early-stage investigator grant.

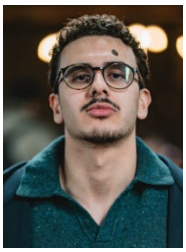
Rodrigo Profeta, Post Doctoral Researcher, Weimer Lab at the School of Veterinary Medicine, University of California, Davis

Rodrigo Profeta is a postdoctoral researcher in the Weimer Lab at the School of Veterinary Medicine, University of California, Davis. His research focuses on comparative genomics and metagenomics to investigate host–microbe interactions relevant to plant, animal, and public health. He specializes in whole-genome sequencing analysis, pangenome reconstruction, SNP-based phylogenomics, and the application of machine learning methods to identify genomic patterns associated with epidemiology and pathogenic potential. Rodrigo earned his B.S. in Biotechnology from the Federal University of Bahia (UFBA), Brazil, and his M.S. and Ph.D. in Bioinformatics from the Federal University of Minas Gerais (UFMG), Brazil.

Dr. Ana Oliveira, Ph.D. Candidate Graduate Group in Epidemiology at the University of California, Davis

Dr. Ana Oliveira is a PhD Candidate in the Graduate Group in Epidemiology at the University of California, Davis (CA, US). She has a DVM degree from the University of Lisbon (Portugal), and an MS from Kansas State University (KS, US). Her current work as a graduate student focuses on evaluating the efficacy of the E. coli Bacterial Extract vaccine with SRP technology in reducing E. coli O157:H7 fecal shedding in cattle herds on rangeland in the Salinas Valley, CA, and developing a user-friendly risk assessment tool to assess the food safety risks of fresh produce production and landscape use in Californ

Abdullah Al Rawi, Computer Engineer, University of California, Davis



Abdullah Al Rawi is a UC Davis computer engineering graduate (B.S., 2025) focused on applied AI systems that turn research into real-world impact. He develops reliable data-driven tools that help organizations make informed decisions, particularly in scientific, environmental, and public-sector areas. At the UC Davis School of Veterinary Medicine, he works on improving field data collection and usability for environmental and community health efforts. He has also supported a gov-tech startup in processing large volumes of public feedback. His past experiences—including a NASA/CASGC robotics internship and academic software projects—strengthen his emphasis on clarity, usability, and impactful, well-delivered solutions.

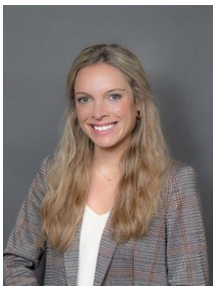
Neeraj Chandrasekar, Junior Class, Davis Senior High School, California, Davis

Neeraj is a high school student in 11th grade currently attending Davis Senior High School. During the summer of 2025, he conducted research at the Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis. He investigated how different drying methods affected the moisture loss and retention of capsaicin in Thai, Habanero, and Jalapeño peppers. His work consisted of comparing open-sun drying, convective hot air drying, and dehydration techniques of sliced peppers, while quantifying capsaicin content through the use of high performance liquid chromatography (HPLC). Through this research, he gained experience in experimental methodology, analytical chemistry, data analysis, and interpretation of results. Neeraj is interested in the real-world applications at the intersection of biology, chemistry, and engineering, and plans to explore a future career in public health or biomedical engineering

Elina Sahoo, Senior Class, Rocklin High School, California, Rocklin

I am a current high school senior with a passion for the biological and life sciences. I am excited to be working with Dr. Pramod Pandey on the project: “Impacts of different drying methods on drying rates of three pepper cultivars and quantification of Capsaicinoids levels using HPLC “. Other projects I am working on include a research review paper titled "The Impacts of Mental Health of Childhood Obesity", a passion project of mine since 2024 under a research professional at Cedar-Sinai medical center. Outside of research I enjoy volunteering at hospitals and hosting community outreach projects.

Dr. Greer Harris, Senior Manager of Scientific Partnerships, AOAC INTERNATIONAL



Greer Harris serves as the Senior Manager of Scientific Partnerships at AOAC INTERNATIONAL, where she leads AOAC's Advisory Panels and multiple scientific working groups. Her role supports innovation, organizational effectiveness, and revenue growth by building and managing strategic scientific partnerships globally. AOAC is an internationally recognized standards-developing organization dedicated to advancing consensus-based analytical methods in food, dietary supplements, and related fields. Greer brings a strong background in laboratory testing and account management within the dietary supplement, food, and pet food sectors. She joined AOAC in September 2024 from a third-party testing laboratory company and continues to foster collaboration among global expert stakeholders to advance scientific rigor and industry-wide standardization.

Dr. Zhengfei Lu, Principal Scientist, Herbalife

Dr. Zhengfei Lu is a Principal Scientist at Herbalife, where he leads a quality control scientist team focused on analytical method development, validation, and external scientific engagement. He holds a Ph.D. in Experimental Pathology from the University of Southern California (2014) and a medical degree from Peking University (2008) and brings more than 20 years of combined experience in molecular biology and analytical chemistry. Beyond his role at Herbalife, he serves on the USP Expert Committees for Botanical Dietary Supplements and Herbal Medicines (2020–2025) and Non-Botanical Dietary Supplements (2025–2030), and is actively involved in AOAC INTERNATIONAL activities, including serving as a guest editor for the Journal of AOAC INTERNATIONAL. Dr. Lu's research has been published in peer-reviewed journals including Food Chemistry, Planta Medica, and the Journal of AOAC INTERNATIONAL, and his publications have been cited over 1,000 times in books and journal articles related to food and dietary supplement quality and safety.

Mario Vendrell Calatayud, Postdoctoral Researcher, Department of Food Science and Technology, UC Davis

Mario Vendrell Calatayud is a postdoctoral researcher in the Department of Food Science and Technology with expertise in food chemistry and advanced analytical methods for lipid characterization and food authenticity assessment. His research focuses on the compositional analysis of edible oils with the aim of understanding variability, quality, adulteration, and contamination. He applies chromatographic and spectroscopic techniques combined with chemometric and multivariate data analysis to extract meaningful chemical information from complex food matrices. His work integrates machine learning modeling to improve the reliability and interpretability of analytical results. Its research contributes to the development of robust analytical strategies for food quality control, authenticity verification, and the detection of fraud.

Naren Meruva, Ph.D., Director, Food & Environmental Markets, Waters Corporation

Naren Meruva is the Director of Food and Environmental Markets at Waters Corporation, bringing over 20 years of expertise in separation science technologies, including LC, GC, and Mass Spectrometry. He earned his Ph.D. in Analytical Chemistry from the University of South Carolina and an MBA from Virginia Tech. An active contributor to the scientific community, Dr. Meruva is engaged with organizations such as AOAC, ACIL, and APHL, where he supports the advancement of standardized methods for food, beverages, dietary supplements, natural products, and environmental applications.

Dr. Bart C. Weimer, Professor of Microbiology, University of California, Davis

Dr. Bart C. Weimer is a Professor of Microbiology at the University of California, Davis, recognized for his pioneering contributions to microbiome research, microbial genomics, and food safety. He leads the Weimer Laboratory, which focuses on understanding microbial activities through genomics, metagenomics, and metabolomics to improve human and animal health. Dr. Weimer has played a key role in developing advanced bioinformatics tools and integrated datasets for studying microorganisms in complex environments, including the gut microbiome and food systems. His research has significantly shaped approaches to microbial ecology, precision nutrition, and public health surveillance. In addition to his scientific accomplishments, Dr. Weimer is deeply involved in interdisciplinary collaborations that bridge microbiology, data science, and biotechnology. His work continues to influence global standards for microbial genome sequencing and analysis, contributing to improved safety, sustainability, and understanding of microbial functions across ecosystems.

Maryam Tamizifar, PhD., Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA

Dr Maryam Tamizifar is a Senior Environmental Scientist (Specialist) with extensive experience in environmental and analytical chemistry. She holds a Ph.D. in Agricultural and Environmental Chemistry from UC Davis and previously served as Laboratory Director at Spectrum CL. Her expertise includes environmental testing, regulatory compliance, and the development and validation of analytical methods for complex matrices.

Dr. Chandan Shee, Research Scientist Supervisor I, California Department of Cannabis Control

Dr. Chandan Shee is an accomplished biologist and scientific leader with extensive expertise in molecular biology, microbiology, and next-generation sequencing technologies. He earned his PhD in Biotechnology from the Indian Institute of Technology, Roorkee, and completed his postdoctoral training at Baylor College of Medicine, where he later served as an Assistant Professor. Following his academic career, Dr. Shee held senior scientific and leadership roles at several prominent biotechnology companies. Over the course of his career, he has authored more than two dozen peer-reviewed publications and patents spanning molecular biology, microbiology and next-generation sequencing technologies. Dr. Shee currently serves as a Research Scientist Supervisor I at the California Department of Cannabis Control, leading the microbiology unit responsible for method development, innovation, and regulatory compliance testing in support of public health.

Dr. Navneet Rai, Research Scientist, California Department of Cannabis Control

Dr. Navneet Rai is a Synthetic Biologist with over 15 years of expertise in microbial genomics, fermentation processes, and the design and engineering of biological systems. He earned his Ph.D. in Synthetic Biology from the Indian Institute of Technology Bombay in collaboration with the National Centre for Biological Sciences, India. He currently serves as a Research Scientist at the California Department of Cannabis Control (DCC), contributing to laboratory science that supports public health and ensures product safety. Prior to joining the DCC, Dr. Rai was Principal Scientist at Equii Foods, where he led microbial strain development and fermentation optimization programs, and a Postdoctoral Research Associate at the University of California, Davis, conducting advanced research in microbial genomics, synthetic biology, and high-throughput sequencing. Dr. Rai has authored over 20 peer-reviewed publications, presented his research at more than 15 conferences, and serves on the editorial boards of leading scientific journals

Amber L. Kramer, PhD, Research Scientist IV, California Department of Cannabis Control

Amber lives in Petaluma, CA. She earned her bachelor's degree in chemistry from CSU Channel Islands, and PhD in chemistry, with a focus on Analytical Environmental Chemistry, from Oregon State University. After a postdoc in the Fielding School of Public Health at UCLA, she was hired at CA Department of Toxic Substance Control to help expand the methods for the Biomonitoring California program. Joined DCC's Chemical Laboratory Testing Office (CTLO) in Richmond CA in June of 2025 as a senior research scientist. The main focus of her position is to improve and expand on the laboratory's current capabilities as well as bring new methods online for measuring contamination in cannabis product.

Dr. John Kelly, Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA

Dr. John Kelly is a Senior Environmental Scientist (Specialist) at the Center for Analytical Chemistry, CDFA (CAC) in Sacramento, CA. He received his BS degree in Chemistry from Montana Tech, and his MS and PhD in Analytical Chemistry from the University of California, Irvine. He has been a member of the Research and Development Unit at CAC for three years. He has worked on method development and validation methods for detecting pesticides and other contaminants in a variety of food and environmental matrices.

Kris Pineda , Senior Environmental Scientist (Specialist), Center for Analytical Chemistry, CDFA

Kris has a BS and MS in chemistry from California State University Sacramento. He began his professional career as an analytical chemist at Ampac Fine Chemicals in Rancho Cordova where he supported quality control operations in the analytical method development group.He later worked for Amyris Biotechnologies in Emeryville as an associate scientist in the chromatography group before joining the CDFA Center for Analytical Chemistry as an environmental scientist in 2024. Outside of work, Kris enjoys family day trips, basketball, snowboarding, and exploring the outdoors.

Zachary Eisenberg, President and COO, Anresco Laboratories

Zachary Eisenberg is the President and COO of Anresco Laboratories, a family owned/operated analytical laboratory providing comprehensive sampling and testing services to the food, import, cannabis, and related industries. He's worked full time for the company since receiving his MBA from the Ross School of Business (U of Michigan) in 2015, focusing on efforts to broaden its scope of services and modernize its operations. He is Chair of the ACIL-CSS (American Council of Independent Laboratories – Cannabis Sciences Section), member of the ACIL Board of Directors, and Vice President of the Oriental Food Association.

Tom Sidebottom, Founder, Regulatory Science Consulting LLC

Tom Sidebottom, is a regulatory scientist and consultant based in the San Francisco Bay Area. Tom spent more than 32 years with the U.S. Food and Drug Administration, including 11 years as Director of the FDA San Francisco Laboratory. During that time, he worked extensively with broker and importer communities, helping them understand and navigate FDA's import processes, Detention Without Physical Examination, and Import Alerts. In 2022, Tom founded Regulatory Science Consulting LLC, where he now helps industry strengthen compliance and manage regulatory risk. He also has a keen interest in using artificial intelligence and deep learning tools to ease regulatory burdens and improve global standard.

Matt Tom, Founder and President, MTCC

Matt Tom is founder and president of MTCC, an SF Bay Area-based small boutique consulting firm primarily focused on engineering design and implementation in the Food & Beverage industry, especially Food Tech Alt Protein, with clients worldwide. Having scaled and launched iconic plant-based products like Kite Hill cheese, Impossible burger, Eat JUST mayo, and Ripple Milk, Matt helps plant-based, cellbased, and fermentation-based startups bridge the gap between science and commercialization. A mentor and advocate for women and minorities in this space, Matt regularly speaks at global conferences and events on product-market fit, manufacturing scale-up, leadership coaching, and startup culture.

Dr. Erik J.M. Konings, Independent Consultant, Former Nestle

Erik Konings retired as R&D Expert from the Nestlé Institute of Food Safety and Analytical Sciences in Lausanne, Switzerland, where he provided leadership to global quality, laboratory and regulatory teams to engage in strategic local activities to drive alignment/harmonization of analytical methods and partnered with government and non-government organizations in the development of standards for analytical methods.Erik graduated in 1984, with majors in Analytical and Clinical chemistry and started his professional career at the then called Food Inspection Service in Maastricht, The Netherlands. He holds an MSc degree in Epidemiology and a PhD in Health Sciences of Maastricht University, The Netherlands (2001). In 2008 he started at the European Food Safety Authority (EFSA) in Parma, Italy, for a secondment as Scientific Officer at the Data Collection and Exposure Unit, and from there accepted, in 2009, a position at the Nestlé Research Centre in Lausanne, Switzerland. Erik has been active in several standard developing organizations including AOAC INTERNATIONAL (Past-President), the International Organization for Standardization (ISO) (Chair ISO TC 34, Working Group 14 on Vitamins, carotenoids and other nutrients), the European Committee for Standardization (CEN) (Chair CEN TC 275 Working group 9 on Vitamins and carotenoids), and the International Dairy Federation (IDF). He still participates in the Codex Committee on Methods of Analysis and Sampling (CCMAS) as member of the Inter-Agency Meeting. Erik is (co)author of more than 45 scientific publications.

Dr. Vera Petrova Dickinson, Founder, Innova-Q

Dr. Vera Petrova Dickinson is a seasoned leader with over 20 years of executive experience directing Product Quality and Food Safety programs at globally respected companies, including Walt Disney World, Mondelez International, Mars Wrigley, Danone, and Sargento Foods. Throughout her career, she has held pivotal leadership roles, guiding cross-functional teams, shaping global quality strategies, and driving operational excellence. As the founder of Innova-Q, Dr. Dickinson is at the forefront of transformative change in Food Safety and Quality Management. The company's mission is to modernize the industry by embedding AI-powered solutions across business functions, redefining compliance, enhancing efficiency, and enabling smarter, future-ready operations.

Dr. Shyam Singh, Postdoctoral Researcher, Department of Food Science & Technology, University of California, Davis

Shyam K. Singh PhD is a Postdoctoral Researcher in the Department of Food Science & Technology at the University of California, Davis. He holds a PhD in Food Engineering from The Ohio State University and an M.S. from the Indian Institute of Technology (IIT) Kharagpur. Dr. Singh’s research interests lie at the intersection of food process engineering and microbiology, with a focus on developing validation-forward solutions for food safety and quality. He specializes in advanced thermal and non-thermal processing technologies designed to enhance safety while preserving sensory attributes. Currently, he is expanding his expertise into artificial intelligence and digital food safety systems. His work includes developing AI-enabled tools for rapid microbial detection.

Dr. Vikrant Singh, Associate Toxicologist Staff Toxicologist, Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento

Dr. Vikrant Singh has been serving as an Associate Toxicologist in the Product Formulation Section of the Human Health Assessment Branch within the Department of Pesticide Regulation (DPR) from 2024. Dr. Singh received his Ph.D. in Synthetic Organic Chemistry from Indian Institute of Technology (IIT) Bombay, India. He continues his research as a postdoctoral fellow in the field of drug discovery at the University of California Davis, where he worked on the development of Senicapoc, currently in Phase IIB of human clinical trials, for the treatment of Alzheimer's disease. Prior to joining the Department of Pesticide Regulation, Dr. Singh worked in the drug manufacturing industry as a process scientist. He has authored more than 60 scientific publications and holds two patents. His current research interests include the development of microfluidic and nano-biosensor based devices for small molecule analytics and new approach methodologies for toxicity testing..

Dr. Qiaoxiang (Daisy) Dong, Staff Toxicologist, Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento

Dr. Daisy Dong joined the California Department of Pesticide Regulation (DPR) in 2016 and is a Staff Toxicologist in the Toxicology Evaluation and Risk Assessment Section of the Human Health Assessment Branch. She serves as DPR's lead risk assessor for sulfuryl fluoride and contributed to the 2018 risk assessment of chlorpyrifos. Her expertise includes inhalation toxicology, dosimetry and PBPK modeling, benchmark dose analysis, and dietary exposure assessment. She also evaluates health risks from pesticide residues as part of the California Pesticide Residue Monitoring Program. Dr. Dong holds a BS in Biology from Zhejiang University and a PhD in Wildlife and Fisheries Science from Louisiana State University, followed by postdoctoral research at UC Davis and the University of Texas Health Science Center at San Antonio. Before DPR, she was a full professor at Wenzhou Medical University, studying toxicity pathways using zebrafish and stem cell models. She has authored over 100 publications and reviews for major toxicology journals.

Abraar Karan MD MS MPH DTM&H, infectious disease physician and researcher, Stanford University

Abraar Karan MD MS MPH DTM&H is an infectious disease physician and researcher at Stanford University. He currently leads studies on COVID-19, Marburg viruses and H5N1. He previously worked on the COVID-19 outbreak for Massachusetts Department of Public Health and the monkeypox outbreak for the Los Angeles County Department of Public Health. Dr. Karan completed his internal medicine training at Harvard University and his infectious disease fellowship at Stanford University.

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