GLOBAL WATER & FOOD SAFETY SUMMIT

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Program Book

GLOBAL WATER AND FOOD SAFETY SUMMIT

The Hotel at the University of Maryland
November 19-21, 2019

AGENDA

DAY 1

Tuesday, November 19, 2019

07:30 – 08:30 AM **Registration and Breakfast**

08:30 – 09:00 AM Opening

Dr. Jianghong Meng, Director, JIFSAN, University of Maryland
Dr. Eric Brown, Director of the Division of Microbiology, CFSAN
Dr. Steven Musser, Deputy Director, CFSAN

KEYNOTE SPEAKER

09:00 – 09:45 AM **Water and Risk: Thinking Broadly in a Shrinking World**
Dr. Jay L. Garland
Senior Scientist – Office of Research & Development
United States Environmental Protection Agency
Cincinnati, Ohio

PLENARY SESSION 1 **(Moderator: Dr. Eric Brown)**
ONE HEALTH AND THE IMPORTANCE OF AN INTEGRATED APPROACH TO FOOD SAFETY MICROBIOLOGY THAT INCLUDES ENVIROMENTAL WATERS, FOODS, & CLINICAL SOURCES

09:45 – 10:15 AM **Advancing Food Safety: Integration of Environmental Monitoring and Genomics**
Dr. Rebecca Bell, Division of Microbiology, FDA-CFSAN, College Park, Maryland

10:15 – 10:45 AM **Microbial Safety of Fresh Produce – the Role of Surface Waters and Weather**
Renata Ivanek Miojevic, Cornell University, Ithaca, New York

10:45 – 11:15 AM **COFFEE BREAK/ NETWORKING**

11:15 – 11:45 AM **The Value of Integrated Approaches to Food Safety Microbiology: Examples and Lessons Learned**
Dr. Lee-Ann Jaykus, Distinguished Professor of Food Science, North Carolina State University, Raleigh, North Carolina

11:45 – 12:15 PM **Global One Health and the Role of –OMICS in Strengthening Integrated Capacity to Address Food – and Water-Borne Diseases**
Dr. Wondwossen Gebreyes, Hazel C. Youngberg Distinguished Professor, Executive Director, Global One Health initiative (GOHi), Ohio State University, Columbia, Ohio

12:15 –12:45 PM **DISCUSSION ROUNDTABLE #1** (Speakers above, Dr. Julie Kase, (FDA), Dr. Susan Leonard (FDA), Dr. Michael Mahovic (FDA)), Dr. Shirley Micallef

12:45 – 02:00 PM **LUNCH**

PLENARY SESSION 2 **(Dr. Rebecca Bell)**
THE SCIENCE OF ENVIRONMENTAL WATER SAMPLING AND SURVEILLANCE: WHERE WE STAND AS A COMMUNITY

02:00 – 02:30 PM **Water Quality Standards: How We Got Here and Where We Are**
Dr. Sam Myoda, IEH Laboratories & Consulting Group, Lake Forest Park, Washington

02:30 – 03:00 PM **Genomic Approaches to Reconstruct the Landscape of Microbial Contamination in Aquatic Systems**
Dr. Jaime Martinez-Urtaza, Centre for Environment, Fisheries and Aquaculture Science, United Kingdom

03:00 – 03:30 PM **COFFEE BREAK/ NETWORKING**

03:30 – 04:00 PM **Refining Sampling and Analysis Approaches to Advanced Understanding of the Microbiological Risks of Agricultural Water Reuse**
Dr. Amy Sapkota, Professor of Public Health, University of Maryland, College Park, Maryland

04:00 – 04:30 PM **Prevalence of Salmonella and Listeria monocytogenes in Public Access Waters and Sediments in Central Coastal California Agricultural Region**
Dr. Lisa Gorski, WRRC, U.S. Department of Agriculture-Agricultural Research Service, Albany, California

04:30 – 05:00 PM **CDC's Recent Experiences Conducting Environmental Investigations of Produce-Associated Disease Outbreaks**
Dr. Vincent Hill, Center for Disease Control, Water Unit, Atlanta, Georgia

05:00 – 05:30 PM **DISCUSSION ROUNDTABLE #2** (Speakers above, plus Dr. Karen Jarvis (FDA) and Dr. Kelli Hiett (FDA))

05:30 PM **RECEPTION**

DAY 2

Wednesday, November 20, 2019

PLENARY SESSION #3 **(Moderator: Dr. Errol Strain)**

MICROBIOLOGY AT THE INTERFACE OF ENVIRONMENTAL SAMPLING AND GENOMIC ANALYSIS: LEVERAGING THE POWER OF WHOLE GENOME SEQUENCING FOR STUDYING ENVIRONMENTAL ENTERIC PATHOGENS

08:30 – 09:00 AM **Crowd-Sourcing Environmental Pathogenomics: Enteric Pathogens and Resistance Plasmids Isolated from Stream Sediments in the Shenandoah Valley of Virginia**
Dr. James Herrick, James Madison University, Harrisonburg, Virginia

09:00 – 09:30 AM **Application of WGS for Studying Environmental Enteric Pathogens: Investigating Outbreaks of *Shiga-Toxin-producing E. coli***
Dr. Claire Jenkins, Gastrointestinal Bacteria Reference Unit, Public Health, England

09:30 – 10:00 AM **Genomic Surveillance of Salmonella spp. Circulating in Surface Water Used in Agriculture**
Dr. Enrique Delgado, FMVC, UNAM, Mexico

10:00 – 10:30 AM	**Dynamic Salmonella *Serovar* Populations in a River Watershed** Dr. Nikki Shariat, University of Georgia, Athens, Georgia
10:30 – 11:00 AM	**COFFEE BREAK/NETWORKING**
11:00 – 11:30 AM	***Salmonella* Diversity and Distribution in Irrigation Ponds, Irrigation Systems, and Produce on Farms in Southern Georgia** Dr. Michele Jay-Russell, University of California-Davis, Davis, California
11:30 – 12:00 PM	**Listeria monocytogenes Prevalence and Population Diversity in Surface Waters** *Dr. Dumitru Macarisin, Food and Drug Administration, College Park, Maryland*
12:00 – 12:30 PM	**Water Quality Monitoring Efforts to Inform Risk-Based Stakeholder Decision Making** *Dr. Channah Rock, Professor of Water Science, University of Arizona, Tucson, Arizona*
12:30 – 01:00 PM	**DISCUSSION ROUNDTABLE #3** (Speakers above, plus Dr. Errol Strain (FDA), Dr. Christopher Grim (FDA/CFSAN), Dr. Yi Chen (FDA))
01:00 – 02:30 PM	**LUNCH**
02:30 – 02:45 PM	**BREAKOUT SESSION (Eric Brown - Introductory Remarks and Charges)**
02:45 – 05:15 PM	**BREAKOUT DISCUSSIONS** ~Workgroup #1: Water Sampling Methods for Enteric Pathogens (Chair: Dr. Rebecca Bell; Co-chair: Dr. Socrates Trujillo; Secretary: Ms. Christina Ferreira) ~Workgroup #2: Analytical Methods Improvements and Genomics (Chair: Dr. Jie Zheng; Co-chair: Dr. Julie Kase; Secretary: Ms. Elizabeth Reed) ~Workgroup #3: Global Opportunities and Challenges Surrounding Water Sampling (Chair: Dr. Eric Brown; Co-chair: Dr. Joergen Schlundt; Secretary: Ms. Tina Pfefer)
5:15 PM	**DINNER ON YOUR OWN**

DAY 3 (Half-Day)

Thursday, November 21, 2019

PLENARY SESSION 4: **(Moderator: Dr. Ruth Timme)**
GLOBAL PERSPECTIVES ON THE SAMPING OF WATER: CHALLENGES AND OPPORTUNITIES FOR A WORLDWIDE EFFORT

08:15 – 08:45 AM **All for One and One for All: The True Potential of Whole Genome Sequencing**
Dr. Marc Allard, Food and Drug Administration, College Park, Maryland

08:45 – 09:15 AM **One Water One Health**
Dr. Sasha Koo-Oshima, FAO Water and Soil Division, Africa

09:15 – 09:45 AM **Salmonella in Surface Waters in Agricultural Areas of Central Chilé**
Dr. Aiko Adell, Universidad Andrés Bello, Chilé

09:45 – 10:15 AM **COFFEE BREAK/ NETWORKING**

10:15 – 10:45 AM *Dr. Mohammad Aminul Islam, Paul G. Allen School of Global Animal Health, Washington State University, Allen Center, Pullman, Washington & International Centre for Diarrhoeal Disease Research, Bangladesh, Bangladesh*

10:45 – 11:15 AM **This for That: How Whole Genome Sequences will Enable International Connections of Food, Water and Human Microbiology – One Health Through New Methodology**
Dr. Joergen Schlundt, Professor NTU, Singapore, Director of the GMI, Singapore

11:15 – 11:45 AM **DISCUSSION ROUNDTABLE #4** *(Speakers above, plus Dr. Marc Allard (FDA), Dr. Eric Brown (FDA), Dr. Jianghong Meng (UMD)*

11:45 – 12:15 PM **BREAK OUT SESSION SUMMARIES AND CHAIR REPORTS/NEXT STEPS**

12:15 – 12:30 PM Closing remarks
Dr. Jianghong Meng and Dr. Eric Brown

Dr. Aiko Adell Nakashima

Universidad Andres Bello

Dr. Adell obtained her Doctor in veterinary medicine degree at Universidad Mayor, and her Master of Veterinary Preventive Medicine (MPVM) and PhD in Comparative Pathology degrees at University of California, Davis, USA. Currently she is has faculty position as Assistant Professor at the Universidad Andrés Bello, Chile. Her area of research involves epidemiology, microbiology, risk assessment, meta-analysis and statistical analysis. Her research focuses in studying the spread of zoonotic microorganisms in surface water sources and irrigation water, determine the source of fecal contamination of these water sources, estimate the negative health impacts that these microorganisms cause on the health of humans and animals through quantitative microbial risk analysis (QMRA), evaluate mitigation methods to reduce the pathogen loads in irrigation water, and investigate the dissemination of antimicrobial resistance bacteria and genes between human, the environment and animals using a one health approach.

Dr. Adell is the principal investigator of an Initiation Fondecyt project that evaluates the impact of the land use in the fecal contamination source of two rivers in the central zone of Chile and determining its impact on human and animal health. Currently, Dr. Adell is a collaborator of Nucleus Millennium 2018 entitled "Interdisciplinary approach in antimicrobial resistance" Fondef Idea 2018 entitled "FageCapsuleS, micro-encapsulated Salmonella bacteriophages with thick and small intestine release technology" and Conicyt Cience/Business Linkage project entitles “Strengthening the productive competencies of horticultural and fruit-growing SMEs in the O'Higgins region, through the evaluation of irrigation water quality improvement strategies through research and transfer activities and, linking and improving Social Capital”. In addition, Dr. Adell was collaborator in the Conicyt Regional Action project (# ARII600006) in which the biological quality of water used to irrigate green vegetables in small producer premises and mitigation methods such as ozone and biofilters were evaluated. She was also part of the Regional Coordination Committee (CCR) that evaluated the information obtained from workshops that were held for small producers in order to identify their problems related to food safety, including irrigation and drinking water.

Dr. Marc Allard

FDA

Marc W. Allard is a Senior Biomedical Research Services Officer in the Division of Microbiology in FDA's Office of Regulatory Science. Dr. Allard joined The US FDA in 2008 where he uses Whole Genome Sequencing (WGS) of foodborne pathogens to identify and characterize outbreaks of bacterial strains, particularly *Salmonella, E. coli,* and *Listeria*. Dr. Allard specializes in both phylogenetic analysis, as well as the biochemical laboratory methods which generate the WGS information. Dr. Allard helped develop the first distributed network of laboratories that utilize whole genome sequencing for pathogen identification and traceback called the GenomeTrakr database, which is part of the NCBI Pathogen Detection web site. These tools are used daily for outbreak investigations and compliance. Dr. Allard acts as senior scientist to advise the US FDA on both WGS and phylogenetic methods as they apply to public health.

Dr. Rebecca Bell

FDA / CFSAN

Dr. Rebecca Bell is a Research Microbiologist in the Molecular Methods and Subtyping Branch within the Division of Microbiology at the Food and Drug Administration Center for Food Safety and Applied Nutrition. Dr. Bell received her Ph.D. in microbiology from The Ohio State University in 2005. Afterwards, she joined CFSAN in 2006 as a postdoctoral fellow in the Division of Analytical Chemistry where she worked on bacterial protein profiling using liquid chromatography/mass spectrometry. In 2008, Dr. Bell moved to MMSB. She is currently a lead microbiologist with the Human Pathogens on Plants (HPOP) research group focusing on the ecological surveillance for *Salmonella* in agricultural areas of the United States, understanding *Salmonella* fitness in the pre-harvest environment and developing strategies to prevent or mitigate contamination of fresh produce. Dr. Bell serves as a subject matter expert on *Salmonella* biology and environmental ecology for CFSAN.

Prof. Enrique Delgado Suarez

National Autonomous University of Mexico

STUDIES

BSc. Food Science. University of Havana. September 1990 through July 1995. Graduated with honor mention and golden title.

Agricultural Diplomas on Pig Husbandry and Animal Feed Formulation. IPC Livestock Barneveld College, The Netherlands, August 1999 through May 2000.

MSc. Animal Science. National Autonomous University of Mexico (UNAM). January 2002 through April 2004. Graduated with honor mention and received the "Alfonso Caso" medal to the most outstanding graduate student of the MSc. Program.

Granted a USDA Borlaug Fellowship in 2011. Conducted an internship, as a research scholar, on identification and molecular characterization of foodborne pathogens. College of Veterinary Medicine, The Ohio State University. October through December 2011.

PhD. Animal Science. UNAM. August 2015 through April 2019. Graduated with honor mention.

WORKING EXPERIENCE

Faculty of Veterinary Medicine, UNAM. 2006 through present. Received the "Manuel Cabrera Valtierra" prize for his outstanding teaching performance in 2007. In 2010 is promoted as assistant professor and became full professor in 2019. He has coordinated several research projects on food safety and quality. Since 2013, his lab joined ICOPHAI, taking part in several research and training activities sponsored by The Ohio State University Global One Health Initiative (GOHi) in the USA, Brazil, and East Africa. In 2015 started a new research line on comparative genomics of foodborne pathogens with focus on *Salmonella* spp. in beef cattle, as part of his PhD. program. He was granted UNAM's funds to conduct a second research project on Salmonella spp. in bovine lymph nodes and ground beef (2017 through 2019) and started collaboration with JIFSAN-UMD in 2018 for the global environmental sampling and analysis of Salmonella in surface waters used for agricultural purposes.

National Association of Federally Inspected Meat Plants of Mexico. 2005-2010. Technical advisor and instructor on food safety management programs, including HACCP.

Publications and scientific congresses

He act as reviewer for several journals, such as Scientific Reports, Revista Mexicana de Ciencias Pecuarias, Biociencias, Revista Peruana de Med Experimental y Salud Pública, among others. He has published 30 peer-reviewed original research articles in journals such as Meat Science, Journal of Animal Science, Journal of Food Safety, Scientific Reports, Journal of Microbiology, Salud Pública de México, Veterinaria México, among others. He has presented abstracts in over 40 congresses and symposia.

Dr. Jay Garland

United States Environmental Protection Agency

Dr. Jay L. Garland joined the EPA's Office of Research and Development in 2011. Dr. Garland received a Ph.D. in Environment Science from the University of Virginia and spent over 20 years working on NASA's efforts to develop closed, bioregenerative life support systems for extended human spaceflight. NASA. He has worked on a range of topics, including methods for microbial community analysis, factors affecting survival of human associated pathogens, and various biological approaches for recycling wastes. He has completed visiting fellowships and professorships at the Institute for Environment Sciences in Japan, the University of Innsbruck in Austria, and the University of Buenos Aires in Argentina. His current efforts focus on advancing innovative approaches to water infrastructure, including decentralized water reuse, and mitigating risks associated with antimicrobial resistance in the water cycle.

Dr. Wondwossen Gebreyes

Global One Health initiative, The Ohio State University

Dr. Wondwossen Gebreyes is a Hazel C. Youngberg Distinguished Professor of molecular epidemiology and Executive Director of Global One Health initiative (GOHi) at The Ohio State University. He completed his Doctor of Veterinary Medicine (DVM) at Addis Ababa University and his PhD at North Carolina State University. Dr. Gebreyes is the principal investigator of several research and training programs sponsored by the National Institute of Health (NIH) Fogarty International Center, Centers for Disease Control and Prevention (CDC) and others. He is engaged in food safety research activities mainly focused on antimicrobial resistance. Dr. Gebreyes co-founded the International Congress on Pathogens at the Human Animal Interface (ICOPHAI) (http://icophai.org) and currently serves as the Chairperson. He is a recipient of several awards including the Universitas 21 international award; Michael P. Malone International Leadership Award by APLU; Battelle Endowment for Technology and Human Affairs (BETHA); Pfizer Award for Veterinary Research Excellence; Andrew Heiskell Award (honorable mention) by the Institute of International Education (IIE) and Emerging International Engagement award.

Dr. Lisa Gorski

USDA, ARS

Work Experience

2014-present **Lead Scientist, and Research Microbiologist**, USDA, ARS, WRRC, Produce Safety and Microbiology Research Unit, Albany, CA

1999-2014 **Research Microbiologist**, USDA, ARS, WRRC, Produce Safety and Microbiology Research Unit, Albany, CA

1994-1999 **Post-Doctoral Fellow**, Department of Biochemistry, Stanford University Medical School, Stanford, CA

Education

1994 – 1999 NIH Post Doctoral Fellow, Stanford University School of Medicine, Dale Kaiser laboratory

1993 – 1994 Post Doctoral Student, The University of Connecticut, Edward Leadbetter laboratory

1993 Ph.D., Microbiology, The University of Connecticut, Storrs, CT

1986 B.S., Microbiology, The Pennsylvania State University, State College, PA

Other Experiences

Member Editorial Board, *Applied and Environmental Microbiology*

Member of Editorial Board, *Journal of Food Protection*

Journal Publications (recent)

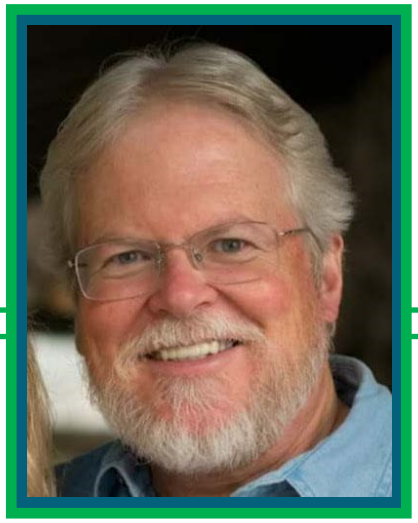
Gorski L, Parker CT, Liang AS, Walker S, Romanolo KF**.** 2016. The majority of genotypes of the virulence gene *inlA* are intact among natural isolates of *Listeria monocytogenes* from the Central California Coast. Public Library of Science ONE **11:**e0167566.

Romanolo, K.F., **Gorski, L**., Wang, S., Lauzon, C,R**.** 2015. Rapid identification and classification of *Listeria* spp. and serotype assignment of *Listeria monocytogenes* using fourier transform-infrared spectroscopy and artificial neural network analysis. *PLoS ONE* 10:e0143425.

Parker, C.T., Huynh, S., **Gorski, L.**, Cooper, K.K., Miller, W.G**.** 2015. Complete genome sequences of two outbreak strains of *Salmonella enterica* subsp. *enterica* serovar Thompson associated with cilantro. *Genome A*. 3**:**e01365-01315.

Cooley, M.B., Quiñones, B., Oryang, D., Mandrell, R.E., and **Gorski, L.** 2014. Prevalence of shiga toxin producing *Escherichia coli*, *Salmonella enterica*, and *Listeria monocytogenes* at public access watershed sites in a California Central Coast agricultural region. *Front. Cell. Infect. Microbiol,* 4: 30.

Gorski, L., Walker, S., Liang, A.S., Nguyen, K.M., Govoni, J., Carychao, D., Cooley, M.B., and Mandrell, R.E. (2014). Comparison of subtypes of *Listeria monocytogenes* isolates from naturally contaminated watershed samples with and without a selective secondary enrichment. *PLoS ONE,* 9: e92467.



Dr. James Herrick

James Madison University

James Herrick earned his Ph.D. in microbiology from Cornell University, where he studied transmissible naphthalene catabolic plasmids in shallow groundwater systems. He completed a postdoctoral fellowship at Los Alamos National Laboratory working on molecular detection of atabolic genes in contaminated aquifers. Dr. Herrick is currently a professor at James Madison University in Harrisonburg, Virginia. He studies transmissible antibiotic resistance in streams and soils, pathogenic bacteria in streams, and the genomics of mobile genetic elements in the environment.

Dr. Vincent Hill

Centers for Disease Control and Prevention

Dr. Vincent Hill has served as the Chief of CDC's Waterborne Disease Prevention Branch since 2016. From 2003-2016, he served as Environmental Engineer (Research) and Principal Investigator of his program's Environmental Microbiology Laboratory. Dr. Hill's research has focused on the development and application of environmental sampling methods, microbial detection methods, and treatment technologies for water, wastewater, and sanitation systems. In his current position, he leads a diverse program focused on understanding waterborne disease transmission risks and best practices for waterborne disease prevention, and developing new techniques and evidence related to water, sanitation and hygiene applications in global and domestic settings.

Dr. Hill joined the Centers for Disease Control and Prevention in 2003 after serving as a Post-doctoral Research Fellow in the CDC/APHL Emerging Infectious Diseases Fellowship Program. Dr. Hill received his PhD in Environmental Science and Engineering from The University of North Carolina at Chapel Hill, School of Public Health in 2001, his MSE in Environmental Engineering from The Johns Hopkins University in 1991, and his BSE in Civil Engineering from Johns Hopkins in 1990. He has been a registered Professional Engineer (PE) since 1996. He is an author of over 120 peer-reviewed journal articles, scientific reports and patents focused on environmental microbiology and engineering.

Dr. Renata Ivanek

Cornell University

Dr. Renata Ivanek is an Associate Professor of Epidemiology in the Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine. She joined the Department in 2015 after being on the epidemiology faculty at Texas A&M University.

Dr. Ivanek holds a Doctor of Veterinary Medicine degree from the Faculty of Veterinary Medicine, University of Zagreb in Croatia; an MS in Veterinary Epidemiology jointly granted by the London School of Hygiene & Tropical Medicine and the Royal Veterinary College in United Kingdom; and a PhD in Comparative Biomedical Sciences from Cornell University.

The overarching goal of Dr. Ivanek's research is to advance *One Health* -- the interconnected health of people, animals, plants and their shared environment. Her computer lab develops new and sustainable data- and model-driven approaches for improving food safety, controlling infectious diseases and optimizing food production systems.

Most recent projects in Dr, Ivanek's lab include studies of antibiotic use and resistance in animal agriculture. She develops decision support tools to reduce food waste and prevent pathogen spread in food and veterinary environments. Also, she conducts controlled intervention trials on farms to reduce contamination of foods with foodborne pathogens and determine how weather conditions affect food safety.

Dr. Michele Jay-Russell

University of California, Davis

Dr. Jay-Russell's research program explores the interface between production agriculture, wildlife, livestock and the environment. She combines epidemiological and field experiments with molecular techniques to test hypotheses related to the prevalence, survival and growth of foodborne pathogens in the agricultural landscape. Data from her collaborative research program is being used to inform industry guidance documents and training materials, especially related to the FDA's Food Safety Modernization Act, Produce Safety Rule in the areas of domesticated animals and wildlife, biological soil amendments/raw manure, small and medium scale farms, and emerging industries such as aquaponics. Prior to joining the university, she worked as an epidemiologist for over 15 years in state and local public health including in the role of California State Public Health Veterinarian, and member of the California Food Emergency Response Team (CalFERT). She received her D.V.M. and M.PV.M degrees in 1992, and her Ph.D. (Microbiology) in 2011, from the University of California-Davis. She is specialty board certified by the American College of Veterinary Preventive Medicine.

Dr. Lee-Ann Jaykus

North Carolina State University

Dr. Lee-Ann Jaykus is a William Neal Reynolds Distinguished Professor in the Department of Food, Bioprocessing, and Nutrition Sciences at North Carolina State University. Her current research efforts are varied and focus on: (1) food virology; (2) development of molecular methods for foodborne pathogen detection; (3) application of quantitative risk assessment in food safety; and (4) understanding the ecology of pathogens in foods. She recently completed service as the scientific director of the USDA-NIFA Food Virology Collaborative. Also called NoroCORE, the Collaborative was a large consortium of scientists and stakeholders working collectively to reduce the burden of foodborne illness associated with viruses, as funded by a $25 million competitive award from USDA-NIFA. Her professional activities have included membership on the National Advisory Committee on Microbiological Criteria for Foods; participation in several National Academies consensus studies and as a member of the Food and Nutrition Board and the Food Forum; and on the executive board of the International Association for Food Protection (IAFP), for which she served as president in 2010-2011. She has taught food microbiology/safety on the undergraduate and graduate levels, has mentored over 40 graduate students and 15 post-doctoral research associates, and authored or co-authored over 170 publications. Dr. Jaykus received a B.S. degree in Food Science and M.S. in Animal Science (Food Microbiology) from Purdue University. Her Ph.D. is from the University of North Carolina-Chapel Hill School of Public Health.

Dr. Claire Jenkins

Gastrointestinal Infections Reference Unit, Public Health England, London

I started working for Public Health England, formerly the Health Protection Agency, as a Clinical Scientist in 1990. I became head of the E. coli Reference Laboratory in 2012 and deputy head of the Gastrointestinal Bacteria Reference Unit in 2014, the same year as we implemented whole genome sequencing as our routine typing method for surveillance and outbreak investigation.

Dr. Sasha Koo-Oshima

Food and Agriculture Organization of the United Nations

Sasha has over 25 years of experience in international assistance and policy development in agriculture water and environment/natural resource management. A former Land & Water Officer at the Food and Agriculture Organization of the United Nations (FAO), Senior Advisor/Director of US-China Clean Water Action Plan at the U.S. EPA, and Secretariat of the Organization for Economic Co-operation and Development (OECD), she directed and managed international water programs/compacts with donors agencies; i.e., public-private-partnerships, climate resilience, multi-stakeholder and multi-jurisdictional policy engagements, blended financing/resource mobilization, and effective policy governance in sustainable water and natural resource-agriculture management. She serves in various Steering Committees in Agri-Environment of the OECD and UNEP Global Partnerships on nutrients, circular economy, and has implemented and supervised a substantial set of country and river basin projects. She published extensively on international water issues, such as the UN World Water Development Reports, FAO-WHO Wastewater Reuse Guidelines for Agriculture, FAO reports on Wealth of Waste: The Economics of Wastewater Reuse, Desalination and Agriculture, Agriculture Water Quality Guidelines for China, and the OECD Water Governance review of the Netherlands: Fit for the Future. In addition, she served on various international technical advisory panels for the GEF and the Ramsar Convention, in support of research and policy-making for planning and management.

Dr. Dumitru Macarisin

FDA, CFSAN

Dr. Dumitru Macarisin is a Research Microbiologist in the Division of Microbiology, in the Center for Food Safety and Applied Nutrition, Food and Drug Administration (FDA), at College Park in Maryland, U.S. Dr. Macarisin is FDA subject matter expert for Listeria monocytogenes in and he also leads the Agency's development and implementation of research projects related to microbial safety of fresh fruits and vegetables.

Dr. Macarisin earned his Ph.D. in Plant Physiology and Biochemistry in 2003 and pursued further postdoctoral research in the Agricultural Research Organization -Volcani Center, Israel followed by an 8-year research tenure with the Agricultural Research Service-United States Department of Agriculture. He conducted extensive research in postharvest pathology and biocontrol, plant stress response, produce safety, and microbiology.

Dr. Macarisin came to the FDA in 2013 and his primary research interests are to identify the mechanisms of fresh produce contamination and environmental reservoirs of Listeria monocytogenes with the goal of developing mitigation strategies to improve good agricultural practices in the prevention of produce recalls and foodborne outbreaks. Dr. Macarisin represents the FDA nationally and internationally on critical food safety issues. He has been furnishing recommendations on preventive controls, environmental monitoring and the improvements of quality controls to other governmental agencies and food industries.

Jaime Martinez-Urtaza

The Centre for Environment, Fisheries and Aquaculture Science (CEFAS)

Jaime Martinez-Urtaza is Principal Scientist at The Centre for Environment, Fisheries and Aquaculture Science-CEFAS (UK) and Professor at the University of Exeter working in different projects on global food safety and epidemiology. He has previously worked at the University of Santiago de Compostela (Spain), the European Centre for Disease Control-ECDC (Sweden), and University of Bath (UK). Jaime has pioneered the use of whole genome sequencing to investigate the evolution and spread of pathogenic bacteria, such as Vibrio and Salmonella, associated with waterborne and foodborne outbreaks. He has applied innovative approaches integrating biological information with climatic data to develop and implement new and cost-effective tools based on the use of remote sensing data to estimate the risk of infections associated with waterborne and foodborne human pathogens. One example of these activities is the global map of risks for non-cholera Vibrio diseases supported by NOAA and ECDC (https://e3geoportal.ecdc.europa.eu/SitePages/Vibrio%20Map%20Viewer.aspx).

With more than 20 years of experience in public health microbiology, Professor Martinez-Urtaza has forged important international collaborations across the globe to investigate links between infectious disease and climate. He is a scientific advisor of the Peruvian National Institute of Health, where he has been working over the last 15 years studying the impact of El Niño events on food and waterborne diseases. He has developed models for an early detection of El Niño and implement coordinated interventions for mitigate the effects of the extreme climatic conditions generated by these events. Jaime is also an regular participant in different expert panels for FAO and WHO on food and waterborne diseases and member of the ECDC European Environment and Epidemiology (E3) Network. Currently, he is an active contributor of the global initiative “The Lancet Countdown: Tracking Progress on Health and Climate Change”, an international academic collaboration convened by The Lancet dedicated to tracking the world's response to climate change, and the health benefits that emerge from this transition.

Dr. Samuel Myoda

IEH Laboratories & Consulting Group

Dr. Samuel P. Myoda is the Executive Vice President of IEH Laboratories & Consulting Group. Dr. Myoda has held a variety of positions at IEH, including COO and CEO of the Produce and Environmental Divisions since joining the company in June of 2007. Dr. Myoda is an expert in forensic microbiology, epidemiological and root cause analysis, genetic fingerprinting, food safety, process verification and validation and environmental monitoring. Dr. Myoda's recent focus is the evaluation, development, advancement and incorporation of new technologies such as Next Generation, Whole Genome Sequencing (WGS) and Metagenomics in the food industry to produce the safest foods possible. Dr. Myoda is also involved in many other aspects of the company's operations which include but are not limited to engineering, routine indicator organism and pathogen detection, customer support, research and development, accreditations, quality, comprehensive risk assessment and program design. Dr. Myoda routinely interacts with the USDA, FDA, CDC, DAFF and Health Canada on a plethora of issues including baseline surveys, regulatory & compliance issues, method development, DWPE, epidemiological issues, etc.

Prior to joining IEH, Dr. Myoda was employed by the State of Delaware, Department of Natural Resources and Environmental Control (DNREC), Division of Water Resources where he was the 2006 Employee of the Year. His responsibilities at DNREC included but were not limited to creator and Director of the Molecular Biology Laboratory, research, method development, computer modeling (water quality, hydrodynamic, etc.), risk assessments, water and wastewater treatment, environmental monitoring, and regulatory and compliance issues (TMDLs, water quality standards, permits (CSO, NPDES,CAFO, MS4, etc.).

Dr. Myoda has a wide-ranging knowledge of federal and state laws, rules, regulations, and policies, e.g. Clean Water Act, Clean Air Act, RCRA, Beach Act and SARA. Dr. Myoda is considered to be a leading expert in the fields of microbial source tracking (MST) and water quality and was invited and served as an expert at the US EPA Experts Scientific Workshop on Critical Research Needs for the Development of New or Revised Recreational Water Quality Criteria (2007). Dr. Myoda has served as a consulting and testifying expert in a variety of cases including the September 2006 spinach E. coli O157 outbreak and Tyson et al. v. Oklahoma (2007). In addition to his expertise in the environmental field, Dr. Myoda has a great deal of experience in disinfection, process controls, program management, computer programming and design.

Dr. Channah Rock

The University of Arizona, Department of Environmental Science

Dr. Channah Rock is a Professor at the University of Arizona in the Department Environmental Science and also maintains a joint appointment as a Water Quality Specialist with UA Cooperative Extension. Dr. Rock is Principal Investigator on several projects relating to microbial evaluation of water quality for the protection of public health including surface water, recycled water, and potable reuse. She is currently facilitating a multi-year study between the U.S. Food and Drug Administration, the University of Arizona, the Wellton-Mohawk Irrigation and Drainage District, and local members of the Yuma growing community to evaluate the environment in and around the 2018 Spring E. coli outbreak area in an effort to enhance food safety. Additionally, her recent research efforts have focused on efficacy of agriculture water treatment options that are viable to the fresh produce industry for risk reduction.

Dr. Amy Sapkota

University of Maryland, School of Public Health

Dr. Sapkota is a Professor of Environmental Health at the University of Maryland School of Public Health, and the Director of CONSERVE: A Center of Excellence at the Nexus of Sustainable Water Reuse, Food & Health, funded by the U.S. Department of Agriculture, National Institute of Food and Agriculture. She is also the Principal Investigator of a new graduate training grant, UMD Global STEWARDS—funded by the National Science Foundation Research Traineeship program—that will prepare a cadre of future leaders focused on innovations at the nexus of food, energy and water systems.

Dr. Sapkota received a PhD in Environmental Health Sciences from the Johns Hopkins Bloomberg School of Public Health, and an MPH in Environmental Health Sciences from the Yale School of Public Health. She completed her postdoc with the Environmental Microbial Genomics Group at Ecole Centrale de Lyon (Lyon, France). Dr. Sapkota's research interests lie in the areas of environmental microbiology, environmental microbial genomics and exposure assessment. Her projects evaluate the complex relationships between environmental microbial exposures and human infectious diseases, with a special focus on assessing the public health impacts associated with water reuse.

Joergen Schlundt

Nanyang Technological University

Jørgen Schlundt (JS) has a Degree of Veterinary Medicine and a PhD from the Royal Agricultural and Veterinary University, Copenhagen, Denmark, 1983. He has worked in Denmark **1983-99,** including a 3-year period in Zimbabwe, focusing on the areas of risk assessment and decision support related to environment protection, food safety and food production (farm-to-table). In this period he participated in the standardization of microbiological and biotechnology risk assessment in Denmark and internationally in EU and OECD as well as in WHO/FAO expert meetings.

From 1999-2010 he worked at WHO HQ in Geneva as Director Department for Food Safety and Zoonoses. The work here focused on:

- The definition of risk analysis principles, creation of a new WHO Expert body for microbiological risk assessment (JEMRA), creation of the Adv. Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR), initiation of the WHO global burden of foodborne disease initiative, creation of the International Food Safety Authorities Network (INFOSAN) as well as the roll-out of the WHO Five Keys to Safer Foods messages (now translated to more than 90 languages). In addition JS headed the WHO part of the Joint WHO/FAO Food Standards Programme, for which the active arm is Codex Alimentarius.

From 2010-15 he was Deputy Director, Director and Professor at the National Food Institute at the Technical University of Denmark. Here the work focused on promotion of science-based decision making at national, regional (EFSA-EU) and global level. During this period JS was a Member of the Advisory Forum for EFSA.

From July 2015 JS is Professor Food Science and Technology at the Nanyang Technological University in Singapore, participating in building new initiatives in support of food security and safety. JS is presently Chair of the Global Microbial Identifier initiative. a promising new decision support development based on the potential for new use of whole-genome DNA-sequencing techniques (www.globalmicrobialidentifier.org). JS continues work on an international agenda in support of public health improvements, e.g. in clarifying the true disease burden from food-related chemical and microbiological hazards and in enabling the prevention of antimicrobial resistance from antimicrobial use in animals.

Dr. Nikki Shariat

University of Georgia

Dr. Nikki Shariat completed her Ph.D. in Biological Sciences at Vanderbilt University in 2008. Following a postdoc at the University of California, San Francisco, she joined the Food Science Department at Penn State University as a postdoctoral fellow, where she became an expert on molecular approaches for subtyping Salmonella. In 2015, she started her own research group at Gettysburg College that was focused on studying Salmonella serovar diversity and ecology in varied environments by employing novel CRISPR-based detection technologies. In 2019 she joined the faculty in the Department of Population Health in the College of Veterinary Medicine at the University of Georgia. Here she continues to examine Salmonella serovar populations in food animals, with an emphasis on poultry, and in different environments, using high-throughput next generation sequencing technologies. Dr. Shariat has published multiple scientific papers addressing methodologies for molecular typing of Salmonella and on improving Salmonella surveillance.

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