
U.S Environmental Protection Agency – Office of Pesticide Programs
Exploration of the Disinfection Hierarchy
Stakeholder Workshop

October 7, 2015

PANEL MEMBERS

Matthew J. Arduino, MS, DrPH, FSHEA, RM(NRCM), M(ASCP)^{CM}
Centers for Disease Control and Prevention

Dr. Arduino is the Chief of the Clinical and Environmental Microbiology Branch in the Division of Healthcare Quality Promotion (DHQP) and also represents the Division in The National Center for Emerging and Zoonotic Infectious Diseases (NCEZID/CDC) as an Associate Director for Laboratory Science. He received his BS in Biology from the College of Mount Saint Vincent, MS, in Microbiology from New York Medical College, and a DrPH from the University of North Carolina at Chapel Hill. He also serves on several Standards committees and Advisory panels (Chair, NSF 444 Joint Committee, Alternate Agency Representative AAMI Renal Disease and Detoxification, Consultant to FDA/CDER/NDAC; Chair, FDA/CDRH/General Hospital and Personal Use Devices Panel; consultant, FDA/CDRH/Gastroenterology-Urology Devices Panel). He has received more than 34 awards and honors including three Health and Human Services Distinguished Service Awards. He serves on several editorial review boards and has authored or co-authored 9 book chapters, 150 Journal articles, 20 *Morbidity and Mortality Weekly Reports*, 3 training manuals, and more than 15 guidance documents. Dr Arduino specializes in Environmental Hygiene and Infection Prevention in the healthcare setting and is the subject matter expert for the agency for disinfection/sterilization, water treatment, dialysis-associated diseases and their control, nontuberculous mycobacteria, and environmental sampling.

Elaine Black, Ph.D.
Ecolab

Dr. Black received her Bachelor's of Food Science from University College Cork (UCC), in Ireland in 2001. She completed her PhD in Microbiology in 2006 also at UCC with time spent as a visiting scholar at Queen's University Belfast and at the University of Delaware. She spent 4 years as a researcher and adjunct professor at the University of Delaware and the University of Minnesota focusing her efforts on food safety issues related to viruses and *E. coli*. Elaine has been with Ecolab for 5 years, four and a half of these spent in Microbiology as a Principal Microbiologist for R & D and later manager of the Technical Services Group. Her experience includes numerous standard methods, GLP testing, and customer troubleshooting of issues related to regulated products. In June she moved to the Regulatory Affairs group of Ecolab as a Principal Regulatory Specialist. In this role she provides microbiology subject matter expertise for product development teams. She works with a range of Food and Beverage, Food Service and Healthcare product lines and the regulatory challenges and opportunities they pose. She has authored two book chapters and 12 peer-reviewed research papers in addition to trade magazine and online articles in the area of food safety and preservation.

Lillian A. Burns, MT, MPH, CIC
SBH Health System

Ms. Burns, is the Director of Infection Control of Epidemiology at SBH Health System Bronx, NY. Prior to joining the SBH Health System Ms. Burns was employed at Lenox Hill Hospital/ North Shore –LIJ in New York City. Ms. Burns earned a Bachelor of Science degree in Biology with a major in Medical Technology at Long Island University in New York City and was awarded a Masters of Public Health degree at New York University, also in New York City. While at New York University Ms. Burns' area of study was epidemiology and health education. Ms. Burns has lectured on infectious diseases, including *Clostridium difficile*, influenza, HIV, and drug resistant microorganisms; as well as on patient quality of care initiatives. She has been a consultant to nursing homes, private and public companies as well as healthcare organizations. In addition Ms. Burns has collaborated on a number of research publications and is a reviewer for the American Journal of Nursing. Ms. Burns has worked extensively on quality improvement initiatives and served as faculty advisor with the Institute of Healthcare Improvement's (IHI) IMPACT Community on Hospital-acquired Infections Collaborative. She has worked with the Blue Shield of California Foundation's California Healthcare-associated Infection Prevention Initiative (CHAPEI) as a faculty advisor. In addition Ms. Burns has served on the Board of Directors at the Association for Professionals in Infection Control and Epidemiology (APIC) and was most recently on the APIC Certification Board of Infection Control and Epidemiology. Ms. Burns was appointed to the Connecticut Healthcare Association's HAI Advisory Committee. She also served on the Center for Disease Control and Prevention's Healthcare Infection Control Practices Advisory Committee (HICPAC). Ms. Burns is a member, Association for Professionals in Infection Control and Epidemiology, the American Society of Microbiology and the Academy of Sciences.

J. Hudson Garrett Jr., PhD, MSN, MPH, FNP-BC, CSRN, VA-BC, CHESP, CDONA, FACDONA
PDI / Industry Liaison, Board of Directors, Association for the Healthcare Environment (AHE)

Dr. Garrett serves as the Industry Liaison for the Association for the Healthcare Environment (AHE), a personal membership group of the American Hospital Association. He has completed the Johns Hopkins Fellows Program in Hospital Epidemiology and Infection Control, and the CDC Fundamentals of Healthcare Epidemiology program. He is board certified in family practice, critical care, vascular access, moderate sedation, legal nurse consulting, and long term care. He is also a Fellow in the Academy of Certified Directors of Nursing Administration. Dr. Garrett currently serves on the Society for Healthcare Epidemiology of America Pediatric Subcommittee, as President of the Board of Directors, for the Vascular Access Certification Corporation, is the past Education Chair for the Greater Atlanta Chapter of the Association for Professionals In Infection Control and Epidemiology Board of Directors, a National Faculty Member for the Emergency Care and Safety Institute, President of the Board of Directors, for the Southeast Chapter of the Infusion Nurses Society, a member of the Clinical Practices Advisory Committee for the Association for Vascular Access, and a past member of the Recommended Practices Advisory Board for the Association of Perioperative Registered Nurses. In addition, he received a Presidential Citation from the Society of Critical Care Medicine in 2011 in recognition for his advancement of critical care nursing and infection prevention. In addition, he is the lead faculty member for the Association for the Healthcare Environment's Online Certificate Program in the Essentials of Infection Prevention for Environmental Services Professionals. He is also a two time nominee for the Association for Vascular Access Herbst Award. He also served as a reviewer for the 2013 Best Practices in Adult Peripheral Vascular Access Resource Guide for the Association of Vascular Access, and is currently the second author for the second revision of the Association for Vascular Access Pediatric Special Interest Organization Guidelines which is scheduled to be released in 2015 and also an author for the AVA CVC Best Practices Resource guide. He was also recognized as a 2013 "Who's Who in Infection Prevention and Control" by Infection Control Magazine.

Charles P. Gerba, Ph.D.
University of Arizona

Dr. Gerba is a professor in the Departments of Soil, Water and Environmental Science (College of Agriculture), and adjunct Professor in the Divisions of Epidemiology and Biostatistics; Environmental and Community Health (College of Public Health) at the University of Arizona. He obtained his Ph.D. in Microbiology from the University of Miami, Florida and was a faculty member in the Department of Virology and Epidemiology at Baylor College of Medicine from 1974 to 1981. He has published more than 500 articles and several books in the area of health related environmental microbiology. His recent research encompasses the transmission of pathogens by water, food and fomites; development of new disinfectants and quantitative microbial risk assessment. He has been an author on more than 500 articles including several books in environmental microbiology. He is an elected fellow of the American Academy of Microbiology, American Association for the Advancement of Science and the International Water Association. He has served on the drinking water and research committees of the U. S. Environmental Protection Agency Science Advisory Board.

Fiona Nemetz, MS, CHESP
Northside Hospital

Ms. Nemetz is the System Director of Environmental Services, Safety and Security for Northside Hospital. Northside is a 3 Hospital System with 856 licensed beds. Fiona's prior roles include leadership positions at Saint Joseph's Hospital for 18 years and Hyatt Hotels for 10 years with responsibility for EVS and other support departments. Fiona served on the National ASHES/AHE board from 2008-2010 and was President in 2010. Fiona holds a bachelor's degree in Hospitality Management and a Master's Degree in Healthcare Administration. She is certified as an Environmental Services Professional through AHE.

Elaine Mayhall, Ph.D.
Food and Drug Administration

Dr. Mayhall is a Chemist and Senior Scientific Reviewer in the Infection Control Devices Branch in the Division of Anesthesiology, General Hospital, Respiratory, Infection Control, and Dental Devices (DAGRID), Office of Device Evaluation (ODE), Center for Devices and Radiological Health (CDRH), Food and Drug Administration. She received her B.A. in Chemistry from Appalachian State University in 1981 and her Ph.D. in Chemistry, with a concentration in Biochemistry, from the University of South Carolina in 1986. Following post-doctoral training at the National Institutes of Health, National Cancer Institute, Laboratory of Biochemistry, Bethesda, MD, she was Assistant Professor of Chemistry in the Department of Chemistry at The American University, Washington, DC and then a Staff Scientist at Dynamac Corporation. She has been a Scientific Reviewer in the Infection Control Devices Branch since 1994. She is Team Leader for reprocessing of reusable medical devices and single use medical devices, liquid chemical sterilants/high level disinfectants (LCS/HLD), and related accessory medical devices. She is the primary contact person in CDRH for the regulation of the LCS/HLD and endoscope washer-disinfectors and has contributed to key guidance documents and reviewer training on reprocessing reusable devices, LCS/HLD, and sterility of medical devices.

Jennifer McLain, Ph. D.

United States Environmental Protection Agency

Dr. McLain has 18 years of experience as a risk manager at the Environmental Protection Agency both in the Office of Pesticide Programs and in the Office of Water. She is currently the Deputy Director of the Antimicrobials Division in OPP responsible for issues ranging from the safety of nanomaterials to regulating public health disinfectants. In the drinking water program, Jennifer led the development of national regulations for microbial pathogens, disinfectants, and disinfection byproducts. She has a Bachelor of Science degree in Chemistry from the University of Notre Dame and a Ph.D. in Chemistry from Princeton University.

Wynne Miller, MS

United States Environmental Protection Agency

Ms. Miller is the Deputy Division Director for OPP's Biological and Economic Analysis Division. She has worked at EPA for over 17 years. Before coming to EPA, Wynne worked as a research chemist in private industry and academia for seven years. Wynne has a Bachelor degree in Chemistry from the University of North Carolina at Chapel Hill and a Masters in Environmental Science and Policy from Johns Hopkins University. Wynne also has Bachelor degrees in both Geology and Environmental Science. Prior to coming to OPP, Wynne worked in EPA's Office of Ground Water and Drinking Water where she used her scientific experience/background to oversee and develop a number of policy and regulatory efforts that focused on a variety of contaminants (including microbes, disinfectants, disinfection byproducts, radionuclides, inorganics, pesticides, etc).

Mark Perry, MPH

United States Environmental Protection Agency

Mr. Perry has 25 years of experience in EPA's Office of Pesticide Programs. He has worked in several divisions within the Office and has experience with conventional, biological and antimicrobial pesticide regulation. He has a Master of Public Health (microbiology) degree from the University of North Carolina.

Brian Portoni, MS

California Department of Pesticide Registration

Mr. Portoni is a microbiologist doing antimicrobial/microbial data evaluation in the registration branch of the California Department of Pesticide Regulation. Prior to joining CDPR in 2006, he was responsible for microbial evaluation of fresh produce in the Microbial Data Program of the California Department of Food and Agriculture. Mr. Portoni has a Bachelors of Science in Biology and a Master of Science in Microbiology from California State University East Bay. His graduate research was on the use of the anaerobic bacteria *Bacteroides vulgatus* as an alternate indicator of human fecal contamination in shellfish and shellfish growing waters. Other research projects have included: the effect of Spirulina-enhanced diet on the nonspecific immune response of channel catfish, *Ictalurus punctatus*; comparison of primers and optimization of PCR conditions for the detection of *Cryptosporidium parvum* and *Giardia lamblia* in water at Water Quality Laboratory, Metropolitan Water District of Southern California; and the effect of iron on the infectivity of *Mycobacterium tuberculosis* Strain: H37Rv in the human macrophage cell line U937 at the University of Mississippi.

Karen Ramm, BS

Accuratus Lab Services

Ms. Ramm is the Technical Director at Accuratus Lab Services (formerly known as ATS Labs). Throughout Karen's 22 year career dedicated to antimicrobial testing, she has held a variety of technical positions including a 15 year tenure overseeing the virology operations at Accuratus. Karen has functioned as a study director for hundreds of EPA and FDA regulated studies. Karen is an active member in CSPA and ASTM organizations and possesses a bachelor's degree in Biology from the College of St. Catherine, St. Paul, MN.

Joseph R. Rubino, MA

Reckitt Benckiser

Mr. Rubino holds the position of R&D Director, Hygiene Personal Care & Surface. Joe began his career with the company in 1987 as Group Leader for the Microbiology and Virology Laboratories when it was L&F Products. Through the years as he took on different functional and managerial responsibilities in R&D including product development, consumer sensory science, regulatory compliance, analytical chemistry, clinical testing while maintaining his role with the microbiology lab. Joe was previously with Gibraltar Biological Laboratories, a contract microbiology laboratory where he worked as a microbiologist. Joe began his professional career in as a Biology Teacher at Lodi High School in New Jersey. Joe holds a B.A. in Biology from Upsala College, as well as an M.A. in Biology from Montclair State University. He also attended New York Medical College studying various aspects of public health. Joe is a member in several trade and professional associations including the American Society for Microbiology (ASM), the Consumer Specialties Products Association (CSPA), the American Cleaning Institute and Association for Professionals in Infection Control and Epidemiology (APIC). He is currently a member of the Global Hygiene Council, a group of the world's top experts in hygiene and hygiene-related fields, including microbiology, virology, infectious disease, immunology, and public health. Joe is also a member of the New York Academy of Science. Joe has authored or co-authored over 30 peer-reviewed journal articles on antimicrobial agents, transmission of infectious agents and infection control strategies and has presented papers on numerous occasions at major scientific and trade organization meetings.

William A. Rutala, Ph.D., MPH

Professor, Division of Infectious Diseases, Department of Medicine,
Director, Statewide Program for Infection Control and Epidemiology
University of North Carolina School of Medicine (Chapel Hill)
Director, Hospital Epidemiology, Occupational Health, and Safety Program at UNC Health Care System

Dr. Rutala is the Director of Hospital Epidemiology, Occupational Health and Safety Program at the University of North Carolina Hospitals and a Research Professor for the Division of Infectious Diseases at the University of North Carolina's School of Medicine, and serves as the. He is also Director and co-founder of the Statewide Program for Infection Control and Epidemiology at the UNC School of Medicine and a retired Colonel with the U.S. Army Reserve. Dr. Rutala is certified in infection control. He is an advisor to the Centers for Disease Control and Prevention (a former member of the Healthcare Infection Control Practices Advisory Committee [HICPAC], 1999-2003), the Food and Drug Administration (a former member of the General Hospital and Personal Use Devices Panel), the U.S. Environmental Protection Agency (a member of the Scientific Advisory Panel on Antimicrobial Research Strategies for Disinfectants) and the Federal Trade Commission. Dr. Rutala is a member of various committees on the local, state, national and international level as well as several professional societies including the American Society for Microbiology, Association for Professionals in Infection Control and

Epidemiology and the Society of Healthcare Epidemiology of America. He serves on the editorial board of the *Infection Control and Hospital Epidemiology*. He has more than 550 publications (peer-review articles, books, book chapters, brief reports) in the fields of infection prevention, epidemiology of healthcare-associated infections, disinfection and sterilization to include several guidelines (e.g., CDC Guideline for Disinfection and Sterilization in Healthcare Facilities). Dr. Rutala has also been an invited lecturer at over 350 state, national and international conferences (in over 40 states, 35 countries and 7 continents) and has testified twice before the U.S. Congress. Dr. Rutala earned his Bachelor of Science degree in science from Rutgers University, his master's degree in microbiology from the University of Tennessee and both his master's in public health and doctorate in microbiology from the University of North Carolina School of Public Health.

Syed A. Sattar, Ph.D.
University of Ottawa

Dr. Sattar is Professor Emeritus of Microbiology at the Faculty of Medicine, University of Ottawa, Ottawa, Canada. He studies the environmental fate of microbes harmful to humans. Another focus of his work is evaluating and promoting safer and better means of preventing the environmental spread of such microbes. Microbicide test methods developed by him now form the basis for several national and international standards. He has published over 225 papers and chapters in conference proceedings and books, and delivered some 325 invited lectures worldwide. He is co-editor of the 5th edition of the reference text on the *Principles and Practice of Disinfection, Preservation and Sterilization* published by Wiley-Blackwell in 2013. He is a Registered Microbiologist of the Canadian College of Microbiologists, a Fellow of the American Academy of Microbiologists and also a Fellow of the Academy of Hygiene Scientists. He is the recipient of numerous international awards and fellowships, the more recent among them being the Martin S. Favero Lectureship (2007), the OCRI Award (2007) and the Hygieia Medal of the Rudolf Schülke Foundation (2009). In December 2012, he received a Queen Elizabeth Diamond Jubilee Medal for his community and professional services. In 2014, the Canadian College of Microbiologists recognized him as 'Distinguished Microbiologist' for his long-standing services to the field nationally and internationally. He is an adviser to the Canadian and U.S. governments on infection prevention and biosafety. He also provides technical and scientific input to the Organization for Economic Cooperation and Development, and the International Civil Aviation Organization. In addition, he regularly interacts with numerous standards-setting bodies and manufacturers of microbicidal products

Stephen Tomasino, Ph. D.
United States Environmental Protection Agency

Dr. Tomasino is a Senior Scientist at the U.S. EPA Office of Pesticide Programs (OPP) Microbiology Laboratory located at the Environmental Science Center, Fort Meade, Maryland. Dr. Tomasino received his Ph.D. in Plant Pathology from Oklahoma State University and has worked for the EPA since 1995. He joined the OPP Microbiology Laboratory in 1999 and is responsible for leading various scientific and Homeland Security-related initiatives including the development and standardization of microbiological assays used in the testing of antimicrobial products with public health claims. Dr. Tomasino has led many collaborative studies with EPA stakeholders and has published numerous papers associated with initiatives designed to improve and develop regulatory methods. Currently, Dr. Tomasino is leading efforts on testing of bacterial biofilms, the development of new quantitative methods, the international harmonization of regulatory methods through the Organization for Economic Cooperation and Development and is working with other federal agencies on testing of surrogates of foreign animal diseases on porous surfaces.

S. Steve Zhou, Ph.D.
MicroBioTest

Dr. Zhou has over 14 years of experience in disinfectant efficacy testing, especially in virology, protozoology and aerobiology. He has designed and directed a number of viral inactivation and/or removal studies for disinfectants and biopharmaceutical products. He currently serves as the Director of Virology and Molecular Biology at MicroBioTest, division of Microbac Laboratories. Prior to joining MicroBioTest, he was laboratory director of viral clearance at BioReliance Corporation. He's also an active publisher in peer-reviewed journals and presenter in scientific conferences. Dr. Zhou holds a Ph.D. in Molecular Virology from Johns Hopkins University School of Medicine and did post-doctoral research at Schering-Plough (part of Merck).