

NIOSH Personal Protective Technology Program Healthcare Stakeholder Meeting Speaker Biographies

Stephen Redd, MD

Keynote Talk: **Respiratory Protection, Infection Control, and Preparing for Pandemic Influenza**

Stephen C. Redd, MD, Rear Admiral and Assistant Surgeon General, United States Public Health Service, is Director of CDC's Influenza Coordination Unit. The unit was formed in 2006 to provide a central focus for pandemic influenza preparations at CDC. Dr. Redd was responsible for developing plans for pandemic response, exercising those plans, tracking progress in developing specific capabilities needed for an influenza pandemic, and communicating progress in these capabilities.

[View Dr. Redd's complete biography](http://www.cdc.gov/media/subtopic/sme/redd.htm) (<http://www.cdc.gov/media/subtopic/sme/redd.htm>)

Lauri Alvarez

Presentation Title: **Design of Filtering Facepiece respirators**

Lauri has worked for 3M's Personal Safety Division for the past twenty five years in product development, technical service and management, with product lines that have included particulate and reusable respirators, sorbent materials for emergency response applications, and hazardous materials packaging. She is a co-inventor on three patents. Her experience includes application of the products in markets such as health care, industrial manufacturing and retail. As a Senior Technical Service Specialist, Lauri's current responsibilities include technical service management of both filtering facepiece and reusable respirators. Her scholastic background includes a Bachelor of Science degree in Chemical Engineering from the University of Minnesota.

Werner Bischoff, MD, PhD

Presentation Title: **Exposure to Influenza Aerosols during Routine Patient Care**

With the academic background of a medical degree from Germany, a Masters in Clinical Epidemiology from Wake Forest School of Medicine, and a PhD in Epidemiology from UNC Chapel Hill, my career has focused primarily on the epidemiology of infectious diseases including the spread, control, and overall impact of infectious pathogens. With the support of the CDC, I developed and successfully implemented novel aerosolization technologies allowing the accurate delivery of viable viral pathogens such as Influenza and rhinoviruses. I have created a unique research environment at Wake Forest School of Medicine providing multidisciplinary support for these studies. As a result, our laboratory has completed several aerosol detection and human exposure studies, with over three hundred subjects. Currently, I am the principal investigator of a CDC/DHHS-funded research project studying the efficacy of commonly used barrier precautions such as face

masks against Influenza transmission in human subjects. In addition, I am the co-principal investigator for the “EMIT: Evaluating Modes of Influenza Transmission using a Human Challenge Model” DHHS/CDC grant.

I am currently serving as the Health System Epidemiologist at Wake Forest School of Medicine. This provides me the opportunity to combine my research interests with practical applications.

Melanie Choe, PhD, BS

Presentation Title: **Advances Toward Improved Respirators for Healthcare Workers**

Melanie is an Interdisciplinary Scientist within the Influenza Division. She joined BARDA in 2011. Her current responsibilities include leading advanced development projects for next generation ventilators and respiratory protection devices for medical countermeasures. Prior to BARDA, Melanie worked at the FDA for five years at the Center for Devices and Radiological Health as a premarket scientific reviewer of anesthesiology and respiratory devices and as an Acting Branch Chief within the Office of Surveillance and Biometrics. She participated in a Leadership Readiness Program while at FDA. She received her PhD in Biomedical Engineering from Northwestern University and her BS in Chemical Engineering from University of Maryland, College Park.

Elizabeth F. Claverie-Williams, MS

Presentation Title: **FDA Regulatory Process for Premarket [510(k)] Submission: General and Antimicrobial containing Surgical N95 Respirators**

CDR Elizabeth F. Claverie-Williams, MS is currently the Branch Chief, Infection Control Devices Branch within the Division of Anesthesiology, General Hospital, Respiratory, Infection Control, and Dental Devices located within the Office of Device Evaluation at the Food and Drug Administration’s Center for Devices and Radiological Health (CDRH). CDR Claverie-Williams has a Masters of Science in Microbiology and three years of post-graduate studies in Preventative Medicine/Infection Diseases and Control. She began her career with the Food and Drug Administration (FDA) in 1990 in the Center for Food Safety and Applied Nutrition as a microbiology researcher and later became a microbiology reviewer. CDR Claverie-Williams was commissioned into the United States Public Health Commissioned Corps Officer in 1994. In 2009, she joined FDA/Center for Devices and Radiological Health as a senior microbiology reviewer in the Infection Control Devices Branch. In late 2009, CDR Claverie-Williams became the Acting Branch Chief, Infection Control Devices Branch (INCB) and in December 2010, she became the Branch Chief, Infection Control Devices Branch. As Branch Chief, she works with the scientists, nurses and medical officer reviewers and consultants within INCB on the review for clearance or approval of infectious disease prevention systems (such as N95 respirators, hospital sterilizers and accessories, automatic endoscope reprocessors (AER’s), medical gloves and gowns).

Maryann D’Alessandro, PhD

Presentation Title: **Welcome Remarks**

Dr. Maryann D’Alessandro has served as the Director of the National Institute for Occupational Safety and Health (NIOSH) National Personal Protective Technology Laboratory (NPPTL) since March 2012, and was

previously the Associate Director for Science for NPPTL. Maryann provides leadership to the NIOSH PPT Cross Sector Program where she serves as the Manager leading the effort to align PPT initiatives with user needs across all workplace industry sectors. Within the Personal Protective Technology (PPT) Program, Maryann has served as the catalyst for aligning research, surveillance, policy and standards, and certification activities. Dr. D'Alessandro has been leading the effort to expand NIOSH's certification/oversight activity to all non-respiratory PPE. She also led the establishment of the National Academies Committee on Personal Protective Equipment for the Workforce (COPPE). The COPPE has generated six significant strategic outputs and increased national and international attention of NIOSH's role related to PPE. She has enhanced extramural research collaborations and fostered increased collaborations and partnerships to increase the understanding of PPE use and expectations in the workplace. Prior to joining NIOSH in 2003, she had a short academic career at the University of Pennsylvania's Department of Bioengineering, and also served 15 years with the U.S. Army in biomedical sensors, communications, and intelligence systems research and development. Maryann holds Electrical Engineering degrees from the Florida Institute of Technology (B.S.), Fairleigh Dickinson University (M.S.), and Georgia Institute of Technology (Ph.D.).

Edward Fisher, MS

Presentation Title: **Transfer of Influenza from Contaminated FFRs to the Hands of Healthcare Workers**

Edward Fisher is an Associate Service Fellow working in the Technology Research Branch at the National Personal Protective Technology Laboratory (NPPTL). In this position, Edward conducts research involving microbial contamination of personal protective equipment including filtering facepiece respirators and surgical masks and gowns. Ed is the author or coauthor of 13 manuscripts published in peer reviewed journals. He received a MS in Biology in 2006 from Duquesne University and joined NPPTL in 2010 and served NPPTL as a contractor from 2006 to 2010.

Brian Heimbuch, MS

Presentation Title: **Filtering Facepiece Respirators and Viable Microbial Aerosols**

Mr. Heimbuch has B.S. degree in Microbiology, an M.S degree in Molecular Biology, and has over 20 years combined experience working in the pharmaceutical industry and in support of the Department of Defense. Mr. Heimbuch currently leads a research team committed to better understanding biological aerosols pertaining to both disease transmission and biological defense. For the past nine years Mr. Heimbuch led biological aerosol and filtration based research focused on developing better respiratory protection devices and performing basic research on biological aerosols.

Sundaresan Jayaraman, PhD

Presentation Title: **The Grand Challenges in the Design of Respiratory Protection Devices**

Dr. Sundaresan Jayaraman is Kolon Professor in the School of Materials Science and Engineering with a joint appointment in the Scheller College of Business at the Georgia Institute of Technology. He and his research students have made significant contributions in the following areas: (i) Engineering Design and Analysis of Intelligent Textile Structures and Processes; (ii) Enterprise Architecture and Modeling Methodologies for Information Systems; (iii) Design and Development of Knowledge-Based Systems (KBS) for textiles and apparel; and (iv) Healthcare Information Systems and Technologies including Wearable Biomedical Systems. His group's research has led to the realization of the world's first *Wearable Motherboard™*, also known as the "Smart Shirt" (www.smartshirt.gatech.edu). The first Smart Shirt is now in the 20th Century Textile Collection at the *Smithsonian's National Museum of American History* in Washington, DC. Dr. Jayaraman has received numerous awards including the *1989 Presidential Young Investigator Award* from the National Science Foundation, USA, and the *Georgia Technology Research Leader Award* from the State of Georgia. He serves on the Standing Committee on Personal Protective Equipment of the Institute of Medicine (IOM), the National Materials and Manufacturing Board, and has served on several Study Committees for IOM and the National Research Council of the National Academies. He is a founding member of the IEEE Technical Committee on Wearable Biomedical Systems.

Lisa M. Koonin, DrPH, MN

Presentation Title: **Roundtable Moderator, Emerging Topic - Considerations for Extending Respirator Supplies during an Outbreak or Pandemic**

Dr. Lisa M. Koonin currently serves as the Senior Advisor for the Influenza Coordination Unit at the Centers for Disease Control and Prevention (CDC) and the Lead for the Pandemic Influenza Medical Care and Countermeasures Task Force. In this role, Dr. Koonin provides leadership and coordination for a team tasked with planning and utilization of key medical countermeasures (including the use of PPE), clinical guidance, infection control strategies, improving the use of medical care resources, and worker safety issues during a novel influenza outbreak. She has been with CDC since 1987 and is a Family Nurse Practitioner and Epidemiologist. Dr. Koonin earned her DrPH degree from the University of North Carolina at Chapel Hill and her Master of Nursing and Master of Public Health degrees from Emory University.

David T. Kuhar, MD

Presentation Title: **Improving the Evidence Base to Support Guidance on the Appropriate Level of Respiratory Protection**

David T. Kuhar, M.D. is the medical officer for infection control among healthcare personnel with the Division of Healthcare Quality Promotion at the Centers for Disease Control and Prevention. He attended medical school at Emory University and completed his internship/residency and served as a chief resident in internal medicine at New York University Medical Center. He completed a fellowship in infectious diseases at Mount Sinai Medical Center in New York and is a board-certified infectious diseases physician. As part of his role at CDC, Dr. Kuhar

participates in working groups, develops guidelines, and participates in investigations of infectious diseases outbreaks in healthcare settings to promote infection prevention among healthcare personnel.

William G. Lindsley , PhD

Presentation Title: **Improving the evidence base to support guidance on the appropriate level of respiratory protection.**

Dr. Lindsley received his PhD in Bioengineering from the University of California, San Diego. He is currently a biomedical engineer with NIOSH in Morgantown, WV.

Barbara Materna, PhD, CIH

Presentation Title: **Development of a Hospital Respiratory Protection Program National Toolkit**

Barbara Materna is the Chief of the Occupational Health Branch, in the California Department of Public Health. Dr. Materna is a Certified Industrial Hygienist with over 25 years of experience and a Ph.D. in Environmental Health Sciences from UC Berkeley. She has worked on research and education projects involving toxic exposures to wildland firefighters, prevention of pesticide illness in agriculture, ergonomics and back injury prevention, perchloroethylene exposure of dry cleaners, occupational lead poisoning, and more recently on respiratory protection in health care.

Debbie Novak, RN, DSN

Presentation Title: **Healthcare Worker Observational Studies of Respirator Use and New Educational Resources**

Dr. Novak holds a Doctorate of Science in Nursing from The University of Alabama-Birmingham and has over 30 years of experience in the field, working in a variety of clinical, research, and faculty positions including: The Pennsylvania State University, The University of Alabama, Virginia Polytechnic Institute and State University, Radford University and most recently Associate Professor Jefferson College of Health Sciences - Carilion Clinic. Dr. Novak has authored or co-authored numerous papers in peer-reviewed health science journals. She has worked as a member of an NIH research team and was selected as a member of a team of clinicians to plan and open one of the few geriatric evaluation hospitals in the nation. Dr. Novak is currently a Senior Service Fellow at the National Personal Protective Technology Laboratory and serves as a technical monitor for several healthcare research projects. In Dr. Novak's current position at NPPTL she is responsible for translating personal protective equipment (PPE) research findings to clinical workplaces and thereby promoting safer healthcare worker practices.

Ramesh Kapil Panguluri, PhD

Presentation Title: **FDA Regulatory Process for Premarket [510(k)] Submission: General and Antimicrobial containing Surgical N95 Respirators**

Dr. Panguluri is currently a Team Leader in the Infection Control Devices Branch of the DAGRID, Office of Device Evaluation, Center for Devices and Radiological Health, Food and Drug Administration. He has Masters in Medical Microbiology and Ph.D in Microbiology. His Graduate and Post-Graduate work was in the interdisciplinary field of cancer research. He has published many publications in the field of genetic polymorphisms and cancer risk associations. During the past 8 years he has been a Scientific Reviewer and a Team Leader involved in the regulatory review of medical devices in the Infection Control Devices Branch. His interests and scientific expertise are in the fields of respiratory protection devices; antiviral and antibacterial containing devices that are intended for reducing or controlling infections, industrial and hospital sterilization; decontamination of medical devices; aseptic processing of tissues and recombinant technology based medical devices.

Trish M. Perl, MD, MSC

Presentation Title: **Respiratory protection in healthcare workers: lessons from the trenches—the ResPECT Study**

Dr. Perl is a Professor in the Departments of Medicine (Infectious Diseases) and Pathology at Johns Hopkins University School of Medicine in Baltimore, Maryland, and in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health. She is Senior Epidemiologist for The Johns Hopkins Medicine in Baltimore, Maryland and Florida.

Dr. Perl received her Bachelor of Arts and medical degree from the University of North Carolina at Chapel Hill and a Master of Science degree from McGill University in Montreal, Canada. She completed an internship, residency, and fellowship in internal medicine at McGill University (Royal Victoria Hospital) in Montreal and a fellowship in infectious diseases and clinical epidemiology at the University of Iowa Hospitals and Clinics in Iowa City, Iowa. She was the hospital epidemiologist of the Johns Hopkins Hospital between 1996 and 2010.

Her scientific interests encompass influenza and pandemic influenza planning, bioterrorism, surveillance, healthcare associated infections, emerging infection prevention and interventions to prevent healthcare associated infections and the spread of epidemiologically significant organisms, and patient and healthcare worker safety. She is also interested in training fellows and others with interests in healthcare epidemiology and has begun working in the developing world to help promote the science of infection prevention.

Kristina Peterson, PhD

Presentation Title: **Adherence to Respiratory Protection Guidelines by Healthcare Workers and Hospitals: the REACH 2 Evaluation**

Dr. Kristina Peterson is the Director of the Program for Occupational Safety and Health at RTI International.* Dr. Peterson has a Ph.D. in Political Science from Northwestern University. She oversees a broad portfolio of

occupational safety and health research including evaluations of health and safety programs, market studies of nanoparticle manufacturing, statistical analyses to support regulatory decisions, quantitative surveys and survey design, analyses of asbestos and other chemicals, and benchmarking studies. Dr. Peterson has over 25 years of experience in work-related and public health studies, including extensive in-country work at the Swedish Center for Worklife Research.

*RTI is an independent, not-for-profit research firm

Amy E. Quiring, BSME

Presentation Title: **Employing a Modular and Scalable Design for Next Generation Healthcare Respiratory Protection**

Amy Quiring holds a BSME from WVU's College of Engineering and is currently enrolled in the Executive MBA Program at WVU's College of Business & Economics. Amy's R&D teams at Scott have launched global platforms for APR, PAPR, portable and fixed gas detection and filtration products and technologies, including the AV-3000 SureSeal and AV-3000 HT Full Facepieces, SureLife Cartridge Calculator, First Responder Respirator (FRR), Xcel HS Half Mask, Protégé Multi-Gas Monitor and CBRN CAP 1 Canister, among others. Amy is the ISRP Americas Section Secretary and participates in NFPA 1984 Wildland Fire, NFPA 1981 SCBA Facepiece and Comms Task Groups, ISO TC94 SC15 Project Groups for filtration, human factors and test methods via the US Technical Advisory Group, and is an ANSI representative to ISO TC94 SC15 WG2/WG3 Joint CBRN task group. Amy holds several US patents including Chemical Detection Method and System, Determining Effluent Concentration Profiles and Service Lives of Air Purifying Respirator Cartridges and Air Purifying Respirator Having Inhalation and Exhalation Ducts to Reduce Rate of Pathogen Transmission.

Lewis Radonovich, MD

Presentation Title: **Standards & Test Methods for Improved Respirators for Healthcare Workers**

Dr. Radonovich is the Director of the national Center for Occupational Health and Infection Control (COHIC) in the U.S. Department of Veterans Affairs (VA), Public Health. As the Director, Dr. Radonovich leads the performance of health policy analysis, demonstration projects and highly applied operational research aimed at answering important questions about public health practice and healthcare delivery in the nations' VA medical centers. Projects typically involve the disciplines of infection control, occupational health, industrial hygiene and/or biosafety.

Key projects over the past two years have included, Project BREATHE (Better Respiratory Equipment using Advanced Technologies for Healthcare Employees, an interagency effort of the U.S. federal government, chaired by the Department of Veterans Affairs, that has sought to shepherd one or more new respirators for healthcare workers to the U.S. marketplace; several energy savings and infection control projects that have sought to improve methods of ventilation and infection control while meeting current energy reduction guidelines for VA medical centers; and the Respiratory Protection Effectiveness Clinical Trial (ResPECT), a multi-site study

comparing the amount of protection provided to healthcare workers by N95 respirators and surgical masks against influenza and other respiratory illnesses.

Dr. Radonovich is board certified in Internal Medicine and holds appointments in the Colleges of Public Health and Medicine at the University of Florida. He has practiced internal and occupational medicine since 1997 and continues to see patients on a part-time basis. He was formerly a Senior Associate at the Center for Biosecurity at the University of Pittsburgh Medical Center and a Senior Fellow at the Johns Hopkins Center for Biodefense Strategies. He has authored numerous peer-reviewed articles and government reports in the field of biosecurity and related disciplines.

Raymond Roberge, MD, MPH

Presentation Title: **Measuring the Factors that Impact Respirator Comfort and Tolerability**

Raymond Roberge, MD, MPH has been a research medical officer with the National Personal Protective Technology Laboratory of NIOSH for the past 8 years. He is board certified in Emergency Medicine, Medical Toxicology, and Occupational Medicine and has authored 10 textbook chapters and 140 articles in peer-reviewed journals, including 35 articles on personal protective equipment use. His area of special research interest is in the physiological and subjective responses to use of personal protective equipment by healthcare workers.

Ron Shaffer, PhD

Presentation Titles: **Progress toward a “B95” Respirator for Healthcare Personnel**

Progress Toward Updating the NIOSH PPT Program Action Plan for Healthcare Worker Personal Protective Equipment

Dr. Ron Shaffer is currently on a 1 year detail as a Senior Scientist in the Office of the Director, National Personal Protective Technology Laboratory (NPPTL). In this position, Dr. Shaffer conducts research to improve respiratory protection for healthcare workers and assists in coordinating NPPTL research activities related to this topic. He received a Ph.D. in Chemistry in 1995 from Ohio University and joined NPPTL in 2003 as Chief of the Research Branch. Dr. Shaffer is author or co-author of over 65 publications in peer-reviewed journals and has been issued 7 U.S. patents.

Jonathan Szalajda, MS

Presentation Title: **Update on NIOSH Respirator Standards Affecting Healthcare**

Jonathan Szalajda is the Branch Chief for Policy and Standards Development at the National Personal Protective Technology Laboratory division of NIOSH. This branch develops and promulgates new approval personal protective equipment-related standards and regulations. He holds a B.S. degree in Chemical Engineering from Penn State University and M.S. degrees in engineering from the George

Washington University and the University of Pittsburgh. He has worked in the field of respiratory protection and personal protective equipment for more than 25 years. Jon currently participates in several NFPA and ANSI standards committees.

Ziqing Zhuang, PhD

Presentation Title: **Human Correlation Fit Testing of a Static Advanced Headform**

Dr. Ziqing Zhuang is the acting branch chief of the Research Branch of the National Personal Protective Technology Laboratory, National Institute for Occupational Safety and Health (NIOSH). He is the Editor-in-Chief for the Journal of the International Society for Respiratory Protection. He serves as an ANSI expert on the ISO TC94 SC15 respiratory protective device standards committee, WG1 (working group 1) and WG2. Dr. Zhuang received a Ph.D. degree in Industrial Engineering specializing in Ergonomics from West Virginia University in May 1995. He has more than 20 years of research experience in respiratory protection. He has more than 50 peer-reviewed journal publications.