

# **Standing Committee on Personal Protective Equipment for Workplace Safety and Health**

## **Committee**

### **Sundaresan Jayaraman**

#### **Chair**

SUNDARESAN JAYARAMAN, Ph.D., is a Professor in the School of Materials Science and Engineering at the Georgia Institute of Technology. A pioneer in bringing about convergence between textiles and computing, Professor Jayaraman's research has led to the paradigm of "Fabric is the Computer." He is a leader in studying and defining the roles of engineering design, manufacturing and materials technologies in public policy for the nation. Professor Jayaraman and his research students have made significant contributions in the following areas: (i) Smart Textile-based Wearable Systems; (ii) Computer-aided Manufacturing, Automation and Enterprise Architecture Modeling; (iii) Engineering Design and Analysis of Intelligent Textile Structures and Processes; (iv) Design and Development of Knowledge Based Systems (KBS) for textiles and apparel; and (v) Design and Development of Respiratory Protective Devices. Professor Jayaraman is a recipient of the 1989 Presidential Young Investigator Award from NSF for his research in the area of computer aided manufacturing and enterprise architecture. In September 1994, he was elected a Fellow of the Textile Institute, (UK). His publications include a textbook on computer-aided problem solving published by McGraw-Hill in 1991, eleven U.S. patents, and numerous refereed journal papers and book chapters. As Principal Investigator, he has received over \$16 Million in research funding from a variety of sources including NSF, DARPA, DoD, NIST, CDC, and industry. Dr. Jayaraman served as Technical Editor, Information Technology, for ATI Magazine (now Textile World) from 1995-2003. From May 2000 to October 2004, he was an Editor of the Journal of the Textile Institute and is currently on the Editorial Advisory Board. Professor Jayaraman is a founding member of the IOM Standing Committee on Personal Protective Equipment in the Workplace (2005-2013, 2018-present). From December 2008 to February 2011, he served on the Board on Manufacturing and Engineering Design of the National Academies. In February 2011, he became a founding member of the National Materials and Manufacturing Board of the National Academies. He has also served on nine NASEM Study Committees. He is also a founding member of the IEEE Technical Committee on Biomedical Wearable Systems (2004 -2008). In October 2000, Professor Jayaraman received the Georgia Technology Research Leader Award from the State of Georgia. He received the 2018 and 2020 Textile Institute Research Publication Awards for the most outstanding paper published in 2018 and 2020 in the Journal of the Textile Institute. In September 2023, he received the National Academy of Medicine Catalyst Award in the Healthy Longevity Global Grand Challenge.

## **Yaneer Bar-Yam**

### **Member**

YANEER BAR-YAM, Ph.D., is a Professor and President, New England Complex Systems Institute, co-Founder World Health Network. Dr. Bar-Yam has been a Visiting Scholar at Department of Molecular and Cellular Biology at Harvard, the Federal Reserve Bank of Boston, and Research Scientist at the MIT Media Laboratory. A complexity physicist, he has contributed to founding the field of complexity science, introducing mathematical rigor, real-world applications, and educational programs for concepts and insights of this field. His research has focused on societal challenges including economic crashes, poverty, violence and pandemics. Dr. Bar-Yam has analyzed the healthcare system to improve effectiveness including costs, quality, adverse events, preventive services, and infection control. Starting in 2006, for Ebola outbreaks in Africa, and for the COVID pandemic, he advised governments around the world as well as US agencies, UN, and WHO on pandemic preparedness and response. He has made contributions to the scientific study of the benefits of individual use and policies about PPE and clean air technologies in healthcare and more generally. He is the author of over 200 publications in scientific journals and two books: a textbook, Dynamics of Complex Systems, and Making Things Work, on solving societal problems. His BS and PhD are from MIT in physics.

## **David Bernzweig**

### **Member**

DAVID BERNZWEIG, B.A., serves as the Director of Health, Safety, and EMS for the Ohio Association of Professional Fire Fighters. David spent 35 years in fire service, the last 25 with the Columbus (OH) Division of Fire. David worked as the Director of Health, Safety, and EMS for the Ohio Association of Professional Firefighters from 2013 until 2022. He is a member of several NFPA Technical Committees, including Occupational Safety and Health, Emergency Responder Health, the Correlating Committee for Protective Clothing and Equipment, and Respiratory Protective Equipment. He also serves on the InterAgency Board (IAB) for Protective Clothing and Equipment. David is a Safety Officer for FEMA US&R Ohio Task Force One, and is a Fire Instructor for the State of Ohio. He has degrees in Political Science and Economics from The Ohio State University.

## **Lisa M. Brosseau**

### **Member**

LISA BROSSEAU, Sc.D., was a professor at the University of Minnesota from 1991 to 2014 and the University of Illinois Chicago from 2014 to 2018. After retiring from academia she has continued to consult with companies and organizations. She holds master's and doctoral degrees in Environmental Health Sciences, and Industrial Hygiene from the Harvard School of Public Health and is a certified industrial hygienist with particular expertise in respiratory protection and aerosol exposures. Dr. Brosseau has more than 100 publications and has served on numerous national professional committees and study sections. She is an Assistant Editor for the Annals of Work Exposures and Health. She has been a part-time research consultant with the Center for Infectious Disease and Research at the University of Minnesota since 2020.

## **Maria J. Brunette**

### **Member**

MARIA BRUNETTE, Ph.D., was born and raised in Perú and has substantial expertise in addressing equity issues among diverse communities in the Americas where she has continuously explored how to best adapt community-based participatory research (CBPR) methodologies to engage resource-constrained populations in addressing their health and social problems. Dr. Brunette, an engineer and health equity scholar, has secured external funding and conducted interdisciplinary research across a broad spectrum of topics including health equity, migration and health, and community-engaged teaching and learning. Drawing on her skills as a scientist, health systems thinker, and advocate, Dr. Brunette is fully engaged and committed to promote social justice, fight systemic racism, and reduce social inequalities. Her approach is as simple as it is creative and effective, beginning with an understanding of people and communities and involving them in developing systemic solutions. She is presently an associate professor at the Ohio State University School of Health & Rehabilitation Sciences in the College of Medicine, and affiliated faculty in the Integrated Systems Engineering Department. Dr. Brunette received her degrees in industrial & systems engineering from the University of Lima, Peru (B.Sc.), from the University of Puerto Rico, Mayagüez (M.Sc.) and from the University of Wisconsin Madison (Ph.D.).

## **Herek L. Clack**

### **Member**

HEREK CLACK, Ph.D., S.B., is an associate professor of civil & environmental engineering at the University of Michigan. At U-M, his group focuses on chemical and biological aerosols and their interactions with electric fields and electrical discharges. He is the recipient of the XVI Distinguished Young Alumni/ae award (MIT, 2000), the NSF CAREER Award (NSF, 2004), the Harry J. White Award for Outstanding Achievement in the Science and Application of Electrostatic Precipitation (Int'l Soc. for Electrostatic Precipitation, 2013), and the Kenneth M. Reese Outstanding Research Scientist Award (Univ. of Michigan College of Engineering, 2019). He is vice-president and a member of the Board of Directors of the International Society for Electrostatic Precipitation (ISESP); serves on the Awards and Representation & Equity Affairs committees of the American Association for Aerosol Research; and is co-founder and chief science officer of the startup company Taza Aya Inc. He earned an S.B. in Aeronautical and Astronautical Engineering from MIT (1987) and an M.S. (1997) and Ph.D. (1998) in Mechanical Engineering from the University of California, Berkeley. He has served on numerous National Research Council committees addressing environmental issues ranging from the implications of changes to the regulations governing power plant emissions to the safe and ethical thermal destruction of both conventional munitions and chemical warfare agents by the U.S. military.

## **Kristin Cummings**

### **Member**

KRISTIN CUMMINGS, M.D., M.PH., is the Chief of the Occupational Health Branch at the California Department of Public Health with training in applied epidemiology and unique experience in multidisciplinary public health research and practice. Her expertise involves new and emerging occupational respiratory diseases, the relationship between occupational exposure and lung disease risk, and the use of controls including personal protective equipment for exposure reduction and disease prevention. She is particularly concerned about occupational health disparities and the impact of nonstandard employment arrangements on health. She has characterized several novel lung diseases, identified causative exposures, demonstrated the effectiveness of workplace controls, and contributed to a national conversation about contingent work. Her work has been published widely, including in high impact journals such as JAMA, American Journal of Respiratory and Critical Care Medicine, European Respiratory Journal, Environmental Health Perspectives, and American Journal of Public Health.

## **Houshang Darabi**

### **Member**

HOUSHANG DARABI, Ph.D., received his Ph.D. in Industrial and Systems Engineering from Rutgers University in 2000. He is a Mechanical and Industrial Engineering (MIE) professor at the University of Illinois Chicago. Dr. Darabi was appointed as the head of the MIE department in July 2022. Dr. Darabi's research focuses on the theory and the application of artificial intelligence (AI) methods in healthcare, education, and occupational safety. He is the Director of the Targeted Research Training program at the Great Lakes Center for Occupational Health and Safety, funded by the National Institutes of Occupational Safety and Health. The program's main focus is the development of AI-related education and research products for the occupational health and safety community. Dr. Darabi is the creator of the first Artificial Intelligence for Occupational Safety and Health Experts course in the United States. Federal and corporate sponsors, including the National Science Foundation and the National Institute of Occupational Health and Safety, have funded Dr. Darabi's research.

## **Stephanie M. Holm**

### **Member**

STEPHANIE HOLM, M.D., Ph.D., M.P.H., is an environmental pediatrician and epidemiologist. She does research on air pollution effects on children's health, and supports public health efforts to improve children's environmental health. She got her medical degree from the University of Pittsburgh, did postgraduate medical training at both Children's Hospital Oakland and University of California San Francisco, and got her MPH and PhD at UC Berkeley. She was previously on the faculty at UCSF and the Director of the Western States Pediatric Environmental Health Specialty Unit. She's been heavily involved in work on health effects of wildfire smoke in children and public health strategies for mitigation for the last few years, and served on the consensus committee for NASEM on Respiratory Protection for the Public and Workers Without Respiratory Protection Programs at their Workplaces, whose report was released in February of 2022.

## **Rachael M. Jones**

### **Member**

RACHAEL JONES, Ph.D., is the chair of the Department of Environmental Health Science and director of the Southern California Education and Research Center at UCLA's Fielding School of Public Health. As industrial hygienist and exposure scientist, Dr. Jones works on a variety of challenges in occupational and environmental health, particularly the assessment and prevention of infectious disease transmission, and control methods including PPE. Dr. Jones received her Master of Public Health and Doctor of Philosophy degrees at the University of California, Berkeley. She also earned her Bachelor of Science from the University of Washington.

## **Jennie H. Kwon**

### **Member**

JENNIE H. KWON, DO, MSCI, is currently the Gene Stollerman Professor of Medicine and Chief of the Division of Infectious Diseases at Northwestern University. Previously, Dr. Kwon was an Associate Professor of Medicine, Section Chief of Hospital Epidemiology & Antimicrobial Stewardship, and the Medical Director of Infection Prevention at Washington University in St. Louis. The Kwon Lab conducts clinical and translational research focused on the epidemiology, transmission, and prevention of antimicrobial resistance (AMR). Dr. Kwon holds multiple national leadership roles including as a voting member of the Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB), which advises the U.S. Department of Health and Human Services on matters related to AMR, and the Healthcare Infection Control Practices Advisory Committee (HICPAC) which advises the CDC on infection control practices and strategies to prevent healthcare-associated infections. Dr. Kwon also completed a 2-year fellowship with the NAM focused on public health. Dr. Kwon is an expert in the evaluation of personnel protective equipment (PPE) in healthcare settings utilizing bacteriophage and surrogate markers for pathogen transmission. Her studies on PPE include the acute hospital setting and non-acute outpatient settings. In addition, Dr. Kwon was the Leader for Occupational Health for COVID-19 at Washington University in St. Louis and has in-depth administrative and clinical experience with supply chain issues, barriers to PPE utilization, and healthcare personnel perspectives on PPE. Her experiences as a clinician, hospital epidemiologist, and scientist encompass her interests in translating the latest research findings into better quality care and outcomes for patients.

## **Anne Miller**

### **Member**

ANNE MILLER, M.B.A., is a strategist with deep experience in healthcare. Over 20 years, she has facilitated the development of novel medical devices, surgical products, diagnostic tools, and innovations for an array of companies. She is currently Principal and co-founder of CrossCut Partners LLC, a healthcare strategy and execution consulting firm that helps clients answer difficult business strategy, product marketing, competitive assessment, and product development questions. The firm works for diagnostic, surgical, medical device, life science, specialty pharmaceutical, health care services and private equity/venture capital clients of all sizes in all stages of growth. Anne was also executive director of Project N95, a national nonprofit focused on creating equitable access to affordable, authentic products and services to be safe during the COVID pandemic. She holds degrees from Harvard Business School and Duke University

## **Jill Morgan**

### **Member**

JILL MORGAN, B.S., is currently the Site Manager for Emory University's Serious Communicable Diseases Unit after spending more than 30 years as an Emergency Department and Critical Care nurse. She is the lead for in-person education and co-chair of the PPE Working Group for the National Emerging Special Pathogens Training and Education Center. Jill has been on Emory's biocontainment team for nearly two decades and was the first nurse in the U.S. to care for a patient with Ebola virus disease. Since caring for Ebola and Lassa fever patients, she has worked to educate herself and others on PPE and safer work practices in high-risk environments. She acts as a subject matter expert on PPE for healthcare workers and the safe handling and inactivation of Category A waste generated in patient care. Jill is a member of ASTM, AAMI, ISRP, and APIC. She received her Bachelors of Science in Nursing from Georgia State University.

## **Jennifer L. Schneider**

### **Member**

JENNIFER SCHNEIDER, Sc.D., is the Eugene H. Fram Chair in Applied Critical Thinking at the Rochester Institute of Technology (RIT). She leads the Collaboratory for Resiliency & Recovery at RIT and is a professor in the Civil Engineering Technology, Environmental Management and Safety Department, and worked in Environmental Health and Safety for Kodak, Mobil, and Goulds/ ITT prior to RIT. She has over 30 years of experience as a certified industrial hygienist and process engineer, and is a retired volunteer HAZMAT Incident Commander and responder, and current trainer. She was appointed to the NY Respond Commission post Hurricane Sandy, and has served on multiple standards committees. Dr. Schneider's research interests include hazardous material control and critical infrastructure emergency planning. She also studies exposure assessment and models exposure scenarios, particularly for HAZMAT emergencies. As a CIH and regional school board member, Dr. Schneider was a key campus, K-12 and regional resource during the COVID-19 pandemic. Since RIT is the home of the National Technical Institute for the Deaf integrated within a larger university community, Dr. Schneider engaged early in equitable PPE for the pandemic, and currently has a key role in large project to create inclusive PPE, including clear respiratory protection. Dr. Schneider holds a B.A. in Comprehensive Science from Roberts Wesleyan, an M.S. in Industrial Hygiene from the University of Rochester School of Medicine and Dentistry, and an Sc.D. in Work Environment from the University of Massachusetts-Lowell, College of Engineering.

## **Margaret M. Seminario**

### **Member**

MARGARET (PEG) SEMINARIO, M.S., was the director of occupational safety and health for the AFL-CIO from 1990 until her retirement in 2019. She is a nationally recognized occupational safety and health leader and expert with extensive experience in safety and health policy, regulation, and legislation. She worked for the AFL-CIO since 1977, and led the federation's efforts to seek improved safety and health protections for workers, participating in dozens of rule makings before the Occupational Safety and Health Administration and organizing broad-based campaigns on the right to know about chemical hazards and ergonomic protections. She was one of the leaders in labor's efforts to enact the 9/11 Health and Compensation Act to provide health care and compensation to responders sick from exposures at the World Trade Center. Seminario was the AFL-CIO's lead organizer of Workers Memorial Day, observed annually on April 28, to remember workers killed, injured and diseased on the job and to highlight the need for improved job safety protections. Seminario served on numerous federal agency and scientific advisory committees and participated in international safety and health work through the International Labor Organization, the Organization for Economic Cooperation and Development and international trade union organizations. She holds a Master of Science degree in industrial hygiene from the Harvard T.H. Chan School of Public Health and a Bachelor of Arts in biological sciences from Wellesley College.

## **Susan L. Sokolowski**

### **Member**

SUSAN SOKOLOWSKI, Ph.D., M.A., is a Professor of Product Design and the Founding Director of the Sports Product Design MS Program at the University of Oregon. She is also the Vice President of Footwear Innovation at Lululemon. Both of these positions are based in Portland, Oregon. Dr. Sokolowski has more than 30 years of performance product innovation experience, working cross-functionally between footwear, apparel, and equipment in creative and strategic roles. Her work is holistic in nature, where consideration of the user's body shape, performance, materials, and styling are addressed to develop game-changing innovation solutions. She is specifically focused on issues surrounding the design of products for the underserved – specifically women, children, and adaptive users. She is also currently investigating anthropometric needs for and developing personal protective equipment for female firefighters. Susan has been internationally recognized for achievements in design innovation from the National Academy of Inventors, Nike, The United States Olympic Committee, Vogue Magazine, Fast Company, Sports Illustrated, the New York Times, Design Museum London, and Volvo. She holds over 45 U.S. patents and 65 foreign patents. Dr. Sokolowski is a graduate of the University of Minnesota (PhD), Cornell University (MA), and the Fashion Institute of Technology (BFA).

## **Qi Zhu**

### **Member**

QI ZHU, Ph.D., is a Professor of Electrical and Computer Engineering and (by courtesy) Computer Science at Northwestern University. His research spans design automation for learning-enabled cyber-physical systems (CPS) and Internet of Things (IoT), safe and robust machine learning for embodied AI systems, energy-efficient CPSs, cyber-physical security, and system-on-chip design, with applications in advanced manufacturing, wearable computing, connected and autonomous vehicles, smart buildings, and robotics. Dr. Zhu published over 150 papers in major conferences and journals, and earned best paper awards at leading venues, including DAC (2006, 2007), ICCPS (2013), ACM TODAES (2016), and DATE (2022). He received the NSF CAREER Award, the IEEE TCCPS Early-Career Award, the Humboldt Research Fellowship for Experienced Researchers, and was selected to attend the National Academy of Engineering's US Frontiers of Engineering Symposium. Dr. Zhu currently serves as VP of Initiatives for the IEEE Council on Electronic Design Automation, Conference Chair for the IEEE Technical Committee on CPS, and Founding Co-Chair for the IEEE Technical Committee on IoT in Intelligent Transportation Systems. He is an Associate Editor for IEEE TCAD, IEEE TCASAI, and ACM TCPS. He holds a Ph.D. in EECS from University of California, Berkeley and a B.E. in CS from Tsinghua University.

## **Heather M. Zoller**

### **Member**

HEATHER M. ZOLLER, Ph.D., is a Professor in the School of Communication, Film, & Media Studies at the University of Cincinnati. She is the advisor for the Communicating Health, Science, Environment and Risk (COMMSHER) undergraduate certificate program and former Director of Graduate Studies. Her research in health and organizational communication addresses occupational health and safety (OHS), workplace health promotion (WHP), and environmental/community health. Relevant applied research projects include investigations of employee perspectives on WHP and OHS at an automobile manufacturer, farm worker leadership in OHS through the Equitable Food Initiative certification program and Our Harvest worker-owned cooperative, as well as employee perspectives on NIOSH research notification. Dr. Zoller is a Fellow of the Graduate School at the University of Cincinnati, and the incoming Editor-in-Chief of the Journal of Applied Communication Research. She was also a Senior Editor at Health Communication and Management Communication Quarterly. Dr. Zoller received her Ph.D. from Purdue University in Communication, her M.A. in Communication at Texas A&M University and a B.S. in Communication from the University of Texas at Austin.

## **Autumn Downey**

### **STAFF CONTACT**