FQPA Science Review Board Members
Biographical Sketches
November 3 – 6, 2009

David S. Barber, Ph.D.

Dr. David Barber is an Associate Professor and Director of the Aquatic Toxicology Facility at the University of Florida Center for Environmental and Human Toxicology. David has a Ph.D. in Toxicology from the University of Arizona and his research focuses on understanding the mechanisms by which compounds in the environment adversely impact organisms. His current research includes using traditional toxicological methods coupled with genomic and proteomic techniques to understand the potential impact of nanomaterials on aquatic organisms and humans.

Zhiqiang (Zack) Hu, Ph.D.

Dr. Hu is an Assistant Professor of Civil and Environmental Engineering at the University of Missouri where he conducts a variety of research projects related to water/wastewater treatment, renewable energy and public health issues. As a registered professional engineer, Dr. Hu has a Ph.D. in Environmental Engineering from the University of Connecticut and is a specialist in water/wastewater treatment and biological nutrient removal. He has served as an ad hoc member of seven EPA and NSF Scientific Review panels since 2007. Dr. Hu has published two dozens peer-reviewed papers in environmental journals. His recent work on nanosilver and metallic nanoparticles was published in journals including *Environmental Science & Technology*, *Water Research* and *Journal of Environmental Engineering*. He also co-edited a book entitled "Nanotechnologies for Water Environment Applications," published by American Society of Civil Engineers in 2009.

Francesca Larese Filon, Ph.D.

Dr. Francesca Larese Filon obtained her degree in Medicine and Surgery from the University of Trieste in 1985, with the highest of honors. In 1989 she specialized in Occupational Medicine amd Industrial Hygiene and has been working as a scientific researcher at the Institute of Occupational Medicine for the University of Trieste where, in December of 1993, she was confirmed as a permanent tenured researcher. Since 1990 she is Head of the Occupational and Environmental Allergies Centre in the Institute of Occupational Medicine in the University of Trieste. In 2006, the center was recognized as High Specialization Center in Trieste Hospitals. She is Specialist in Occupational Medicine (1989), Allergy and Clinical Immunology (1994), Hygiene and Public Health (2000). She is professor in Occupational Medicine in Facoltà di Psicologia - University of Trieste since 2000, Occupational Medicine in Facoltà di Medicina e Chirurgia in Udine since 2007, Occupational Medicine in Facoltà di Medicina – Laurea in Scienze Infermieristiche and Laurea in Fisioterapia and Toxicology and Professional Allergology in the Specialization School of Occupational Medicine in

University of Trieste since 1993. In her professional field she is conducting research in the areas of occupational allergies and in the skin absorption of industrial toxics. She has performed studies of wheat allergy in bakers, latex in nurses, persulphates in hairdressers and in metal sensitizations. In the specific area of percutaneous absorption, she studied subjects exposed to the chemical dimethylformamyde, which is used for the production of synthetic leather as well as in pharmaceutical workers. She also performed studies on skin absorption in vitro on glycolethers, toluene, xylene, metals and nanoparticles.

Igor Linkov, Ph.D.

Dr. Linkov is a Focus Area Lead at the US Army Engineer Research and Development Center and Adjunct Professor of Engineering and Public Policy at Carnegie Mellon University. Dr. Linkov has managed multiple risk assessments and risk management projects. Many of his projects have included application of the state-of-the-science modeling and software tools (e.g., probabilistic and Bayesian Monte-Carlo, spatially-explicit modeling) to highly complex sites and engineering problems and projects (e.g., insuring emerging risks, risk-based prioritization of remedial projects, developing performance metrics for oil spill response). Dr. Linkov is currently involved in several projects that examine factors responsible for nanotoxicology and nanomaterials risks. These projects investigate fate and transport of nanoparticles in the environment, ecotoxicology, assessment of nano-enabled product life cycle and risks. He serves as US Army representative in the National Nanotechnology Initiative NEHI and NSET Worksing Groups. Dr. Linkov organized three continuing education workshops in the area of nanomaterials health and safety and an international conference on "Nanomaterials: Environmental Risks and Benefits" (Portugal, April 2008). He was part of Organizing Committee for the "*Nanosensors" Conference* (Washington, DC, May 2009), "*International Environmental Nanotechnology Conference: Applications and Implications"* (Chicago, IL, 7-9 October 2008), and *Nanotechnology-enables Sensing Workshop* (Washington, DC May 2009). He has participated on numerous international and national panels on nanotechnology. The Governor of Massachusetts has appointed Dr. Linkov as a Scientific Advisor to the Massachusetts Toxic Use Reduction Institute. He is the recipient of the prestigious Chauncey Starr Award for exceptional contribution to Risk Analysis. Dr. Linkov has a BS and MSc in Physics and Mathematics (Polytechnic Institute, Russia) and a Ph.D. in Environmental, Occupational and Radiation Health (University of Pittsburgh). He completed his post doctoral training in Biostatistics and Toxicology and Risk Assessment at Harvard University.

Vladimir Murashov, Ph.D.

Dr. Vladimir Murashov is a Special Assistant on Nanotechnology to the Director of the National Institute for Occupational Safety and Health (NIOSH) in the U.S. Department of Health and Human Services in Washington, D.C. Prior to his appointment as Special Assistant on Nanotechnology, Dr. Murashov served as a Senior Scientist in the Office of the Director, NIOSH from 2003-2005. Dr. Murashov received his Ph.D. in Chemistry from Dalhousie University in Halifax, Canada in 1998. He completed his postdoctoral

studies in University of British Columbia in Vancouver, Canada in 2001, when he joined NIOSH as a Senior Service Fellow to conduct computational chemistry studies. Dr. Murashov is a globally recognized expert in nanotechnology safety and health. He serves as a subject matter expert on various panels and advisory boards and is frequently invited to make presentations at major international conferences on nanotechnology. Dr. Murashov has been a member of the Nanoscale Science, Engineering and Technology Subcommittee of the National Science and Technology Council's Committee on Technology and its working groups representing NIOSH since 2004. He leads projects under the International Organization for Standardization Technical Committee on Nanotechnology, Organization for Economic Cooperation and Development Working Party on Manufactured Nanomaterials and World Health Organization. He has written numerous articles in the area of materials chemistry and risk management of nanotechnology.

Martin Philbert, Ph.D.

Dr. Philbert is a Professor of Toxicology and Senior Associate Dean for Research at the University of Michigan School of Public Health. His research focuses on the development of flexible polymer nanoplatforms for optical sensing of ions and small molecules and the early detection and treatment of brain tumors. Other research interests include the mitochondrial mechanisms of chemically-induced neuropathic states. Dr. Philbert served as the Vice-Chair of the National Academies National Research Council (NCR) Committee for the Review of the Federal Strategy to Address Environmental, Health, and Safety Research Needs for Nanoscale Materials and chaired the FDA Science Board Committee on bisphenol A. Dr. Philbert served on the National Advisory Environmental Health Council of the National Institute of Environmental Health Sciences and provides consultation to Federal agencies on a variety of issues surrounding emerging nanotechnologies. He is a standing member of the US FDA Science Advisory Board and the US EPA Board of Scientific Counselors.

Jenny R. Roberts, Ph. D.

Dr. Jenny R. Roberts is a Research Biologist in the Health Effects Laboratory Division at the National Institute for Occupational Safety and Health (NIOSH). She is currently the principal investigator on two projects aimed at assessing pulmonary toxicity of a variety of metal nanowires and silver-based nanomaterials, and collaborates with other principal investigators on projects aimed at evaluating health effects related to pulmonary exposure to metals. Jenny received her Ph. D. from the Physiology and Pharmacology Department in the medical school at West Virginia University (WVU). Jenny has ten years of experience as a scientist at NIOSH, is a member of the Society of Toxicology, and has recently been appointed to an adjunct assistant professorship at WVU. During the past ten years, her research has focused on animal models to evaluate lung inflammation, injury, immunomodulation, and development of pulmonary disease that may occur in occupational settings in response to respiratory exposures to individual metals, metal mixtures (fly ash and welding fume), and, more recently, metal-based nanomaterials. She has co-authored over 50 peer-reviewed publications an

presents annually at international scientific meetings. Most recently, in April, 2009, Jenny attended a workshop addressing testing of silver nanoparticle toxicity resulting in recommendation of forms and sizes of silver that will be incorporated into the Organisation of Economic Cooperation and Development's (OECD) nanoparticle testing program.

Christie M. Sayes, Ph.D.

Dr. Christie Sayes is currently a tenure-track Assistant Professor at Texas A&M University where she is PI of the *Nanomaterials & Nanotoxicology Research Laboratory* in the department of Veterinary Physiology & Pharmacology and the Department of Biomedical Engineering. She completed a post-doctoral fellowship at the DuPont Global Centers - Haskell Laboratory for Health and Environmental Sciences and is actively studying the health effects of various nanomaterials *in vitro* and *in vivo* systems. She has made significant correlations between physicochemical properties and toxicological profiles, which in turn have help to shape the landscape of nanotoxicology & nanomedicine. In addition, her work advances nanotechnology by conducting application and implication research, simultaneously. Christie has a Ph.D. in Chemistry, specializing in nanoscience, from Rice University. While studying at Rice, she pioneered many cytotoxicity studies, including biocompatibility investigations with carbon, metal, and oxide nanomaterials to various *in vitro* systems. Dr. Sayes has a BS in Chemistry from Louisiana State University, magna cum laude. She has authored numerous research publications, reviews, patents, and book chapters. She has ongoing collaborations with academic, industry, and government. Christie has received awards including the *Welch Fellowship Supplemental Award*, the *Harry B. Weiser Graduate Student Award for Research*, the *Houston Livestock and Rodeo Endowed Scholarship*, the *International Toxicology of Nanomaterials Young Investigator Award*, and the *Society of Toxicology - Inhalation Specialty Section - Postdoctoral Award*. She represents Texas A&M in the 2009 Searle Scholars Program and the Burroughs Wellcome Fund Program. Christie is on the Executive Committee of Texas A&M Toxicology Program and a member of the Intercollegiate Faculty of Material Science and Engineering. She is a member of Society of Toxicology, Society of Environmental Toxicology & Chemistry, and American Chemical Society.

Paul Westerhoff, Ph.D.

Professor Paul Westerhoff is the Interim Head of the School of Sustainable Engineering and The Built Environment, and member of the Civil, Environmental and Sustainable Engineering faculty, at Arizona State University (ASU). He obtained a Ph.D. from the University of Colorado at Boulder, a MS from University of Massachusetts and BS from Lehigh University. Dr. Westerhoff joined ASU in August 1995 and was promoted to full professor as a University Exemplar in 2007. Dr. Westerhoff has a strong publication and research record, has garnered wide recognition for his work related to treatment and occurrence of emerging contaminants in water, and has been active in multidisciplinary research. He has lead research funded by AWWARF, USEPA, NSF, DOD and local organizations investigating the fate of nanomaterials in water, use of

nanomaterial-based technologies for water and reuse treatment, reactions and fate of oxo-anions (bromate, nitrate, arsenate) during water treatment, characterization, treatment and oxidation of natural organic matter in watersheds, formation of disinfection by-products, removal of taste and odor micropollutants. He has over 85 peer reviewed journal article publications and has been involved in over 200 conference presentations. He belongs to ASCE, AWWA, AEESP, ACS, IOA, IWA, AWPCA, and IHSS and serves on numerous voluntary committees for these organizations. He currently is a member of the AWWARF Expert Panel on Endocrine Disruptors, Pharmaceuticals and Personal Care Products, the WateReuse Foundation Research Advisory Board, and the Water Research Foundation/AWWARF Public Council. Westerhoff has received several research awards including the 2005 ASCE Walter L. Huber Research Award and the 2006 WEF Paul L. Busch Award.

Il Je Yu, Ph.D., DABT, CIH, CSP, RQAP-GLP

Dr. Yu holds position as Professor, Fusion Technology Research Institute, Hoseo University. Dr. Yu has more than 17 years experience in toxicology and has served as a director of Center for Occupational Toxicology (1992-2006), Korean OSHA, Ministry of Labor and a director of Biosafety Evaluation Headquarter, Korea Environment & Merchandise Testing Institute (KEMTI), and consultant and expert in numerous investigations across Korea and East Asia. His Lab is one of leading GLP facility in Korea to provide safety evaluations for chemicals, pharmaceuticals, pesticides and medical devices. He has evaluated health impacts from many chemicals and drugs, and has presented a variety of health risk concepts to policy makers, government regulators, citizen groups, and individuals involved in all aspects of the legal process. Dr. Yu holds a Ph.D. in pathology from the State University of New York, Health Science Center at Brooklyn (1989), had a post-doctoral training in Cold Spring Harbor Laboratory and was certified in toxicology by the American Board of Toxicology (original certification in 1997 with recertifications in 2002, 2007), and registered toxicologist in UK and EU (2007). He is a Certified Industrial Hygienist (1999) in USA, a Certified Safety Professional (2000) in USA, and a Registered Quality Assurance Professional in GLP (2005) in USA. He is also served as adjunct professors of college of Pharmacy, Sunkyunkwan University in Suwon and College of Medicine, Chung-Ang Universtiy. His research has focused on components of health risk models including mechanistic studies aimed at quantifying exposure of critical organ systems, and includes more than 100 scientific publications. Dr. Yu has experience with both chemical and physical agents (including pollutants, pesticides, solvents, vapors, metals, microbial agents, and electric and magnetic fields), exposure scenarios (including environmental, occupational, residential, and clinical), and routes of exposure (including inhalation, oral, and percutaneous) during his tenure at Korean OSHA (Korean Occupational Safety & Health Agency) and KEMTI. He has conducted health-effects evaluations of a variety of workplaces. He contributed a great deal in nanotoxicology research during his tenure at KEMTI by conducting silver and gold nanoparticle inhalation toxicity experiments and assessing exposure to nanoparticles and nanotubes.