

2006 U.S. EPA, NSF, and NIOSH STAR Nanotechnology Environmental Implications Progress Review Workshop

Crowne Plaza Washington National Airport
1480 Crystal Drive
Arlington, VA 22202

November 13–14, 2006

Draft Agenda

DAY 1, Monday, November 13, 2006

- 8:30 – 8:50 a.m. Welcome
Stephen A. Lingle, Division Director, Environmental Engineering Research Division, Office of Research and Development (ORD), U.S. Environmental Protection Agency (EPA)
- 8:50 – 9:00 a.m. EPA Introduction
Nora Savage, Environmental Engineering Research Division, ORD, EPA
- 9:00 – 9:25 a.m. EPA Nanotechnology White Paper
Kathryn Gallagher, Science Policy Council, EPA
- 9:25 – 9:45 a.m. National Environmental and Health Implications (NEHI), National Nanotechnology Initiative (NNI)
Clayton Teague, Director, National Nanotechnology Coordination Office, Nanoscale Science, Engineering, and Technology Subcommittee, NEHI, NNI
- 9:45 – 10:05 a.m. ***BREAK***
- 10:05 – 10:20 a.m. National Science Foundation (NSF)
Dr. Cynthia J. Ekstein, Bioengineering and Environmental Systems Division, NSF
- 10:20 – 10:35 a.m. National Institute for Occupational Safety and Health (NIOSH)
Dr. W. Allen Robison, Office of Extramural Programs, NIOSH
- 10:35 – 10:50 a.m. National Institute of Environmental Health Sciences (NIEHS)
Dr. Sally S. Tinkle, Division of Extramural Research and Training, NIEHS
- 10:50 – 11:10 a.m. Bhavik Bakshi—Life Cycle Energy Analysis of Vapor Grown Carbon Nanofibers

DAY 1, Monday, November 13, 2006 (Continued)

- 11:10 – 11:30 a.m. Alison Elder—Metal Nanoparticle Uptake and Effects Following *In Vitro* Exposures
- 11:30 – 11:50 a.m. Patrick O’Shaughnessy—Assessment of Nanoparticle Measurement Instruments
- 11:50 a.m. – 1:00 p.m. ***LUNCH***
- 1:00 – 1:20 p.m. Peter Perrotta—Effects of Nanomaterials on Human Blood Coagulation
- 1:20 – 1:40 p.m. Judy Xiong—Monitoring and Characterizing Airborne Carbon Nanotube Particles
- 1:40 – 2:00 p.m. Ron Turco—Effects of Fullerenes (nC₆₀ or C₆₀) on Soil Microbiological Functions
- 2:00 – 2:20 p.m. Bahman Asgharian—Mechanistic Dosimetry Models of Nanomaterial Deposition in the Respiratory Tract
- 2:20 – 2:40 p.m. Kent Pinkerton—Aerosolization of Respirable Carbon Nanotubes: A Potential Health Hazard?
- 2:40 – 3:00 p.m. ***BREAK***
- 3:00 – 3:20 p.m. Jacob McDonald—Development and Characterization of Inhalation Atmospheres for Assessment of Nanoparticle Toxicity
- 3:20 – 3:40 p.m. Chris Theodorakis—Acute and Developmental Toxicity of Metal Oxide Nanoparticles to Fish and Frogs
- 3:40 – 4:00 p.m. Nancy Monteiro-Riviere—Continued Studies of Nanoparticle Interactions With Skin
- 4:00 – 4:20 p.m. Terry Gordon—Role of Particle Agglomeration in Nanoparticle Toxicity
- 4:20 – 4:40 p.m. Vicki Grassian—Inhalation Exposure Study of Titanium Dioxide Nanoparticles With a Primary Particle Size of 2-5 nm
- 4:40 – 5:30 p.m. ORD Laboratory Panel
Chair: Kevin Dreher
- 5:30 p.m. ***ADJOURN***

DAY 2, Tuesday, November 14, 2006

- 8:00 – 8:20 a.m. Mary Jane Cunningham—A Toxicogenomics Approach for Assessing the Safety of Single-Walled Carbon Nanotubes in Human Skin and Lung Cells

DAY 2, Tuesday, November 14, 2006 (Continued)

- 8:20 – 8:40 a.m. Mamadou Diallo—Cellular Uptake and Toxicity of Dendritic Nanomaterials: An Integrated Physicochemical and Toxicogenomics Study
- 8:40 – 9:00 a.m. Jean-Claude Bonzongo—Assessing the Potential Impacts of Nanomaterials on Biota and Ecosystem Functions
- 9:00 – 9:20 a.m. David Barber—Biochemical, Molecular, and Cellular Responses of Zebrafish Exposed to Metallic Nanoparticles
- 9:20 – 9:40 a.m. Paul Westerhoff — Fate, Transformation, and Toxicity of Manufactured Nanomaterials in Drinking Water
- 9:40 – 10:00 a.m. John Veranth—Responses of Lung Cells to Metals in Manufactured Nanoparticles
- 10:00 – 10:20 a.m. **BREAK**
- 10:20 – 10:40 a.m. Mason Tomson—Fate and Transport of Nano-C₆₀ in Soils and the Use of Nano-Iron Oxides for Arsenic Removal From Drinking Water
- 10:40 – 11:00 a.m. Robert Hurt—Bioavailability of Carbon Nanotube Catalyst Residues
- 11:00 – 11:20 a.m. Kurt Pennell—Fate and Transport of Carbon Nanomaterials in Unsaturated and Saturated Soils
- 11:20 – 11:40 a.m. Linsey Marr— Characterization of Water-Stirred Fullerenes in Aqueous and Aerosolized Forms
- 11:40 a.m. – 12:00 noon Pat Holden—Transformations of Biologically Conjugated CdSe Quantum Dots Released Into Water and Biofilms
- 12:00 noon – 1:00 p.m. **LUNCH**
- 1:00 – 1:20 p.m. P. Lee Ferguson—Chemical and Biological Behavior of Single-Walled Carbon Nanotubes in the Estuarine Environment
- 1:20 – 1:40 p.m. Jaehong Kim—Fate and Transformation of C₆₀ Nanoparticles in Water Treatment Processes
- 1:40 – 2:00 p.m. Paul Bertsch—The Bioavailability, Toxicity, and Trophic Transfer of Manufactured ZnO₂ Nanoparticles: A View From the Bottom
- 2:00 – 2:20 p.m. Tohren Kibbey—Hysteretic Accumulation and Release of Nanomaterials in the Vadose Zone
- 2:20 – 2:40 p.m. CP Huang—The Toxicity of Catalytic Nano-TO₂ Particles Toward Algae, Daphnia, and Bacteria: Effect of Particle Size

DAY 2, Tuesday, November 14, 2006 (Continued)

2:40 – 2:50 p.m. Wrap-Up

2:50 p.m. ***ADJOURN***