

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

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2nd ANNUAL MASSACHUSETTS NANOTECHNOLOGY WORKSHOP

***Promoting the Safe Development of Nanotechnology in
Massachusetts***



THURSDAY JANUARY 29, 2009
9AM to 12:30PM or
9AM to 4:30PM measurement training session

At the FEDERAL RESERVE BANK OF BOSTON
600 ATLANTIC AVENUE
BOSTON, MA 02110

Hosted by:

The Massachusetts Interagency Nanotechnology Committee:
Department of Environmental Protection
Department of Public Health
Division of Occupational Safety
Executive Office of Housing and Economic Development
Office of Business Development
Office of Technical Assistance and Technology
Toxics Use Reduction Institute

PASS THE WORD! Help us spread the news about the workshop by forwarding this to colleagues who are interested in attending

WORKSHOP OVERVIEW

Purpose: This workshop provides a forum for a continuing dialogue with stakeholders from industry, government, research, academia, and others on approaches to protecting workers, public health and the environment from exposure to engineered nanoparticles. The focus is on existing Best Practices and Good Current Practices, the opportunities they present to support safe nanotechnology in Massachusetts, and techniques to measure airborne nanoparticle releases in the workplace.

Hear presentations from:

- Dr. Charles Geraci, Coordinator, Nanotechnology Research Center and Chief, Document Development Branch, National Institute for Occupational Safety and Health (NIOSH)
- Dr. Michael Ellenbecker and Dr. Candace Tsai, Toxics Use Reduction Institute. Center for High-rate Nanomanufacturing. University of Massachusetts, Lowell

Learn about:

- Currently available best practices (BPs) and good current practices (GCPs) for industry and laboratories
- State of the art workplace monitoring techniques including demonstrations and hands-on training

Join in open discussions about:

- Practices to protect workers and the environment
- Gaps that need to be filled, in the context of life-cycle case studies
- Feasible and effective protection strategies and how to incorporate them into practice
- Next steps to support safe nanotechnology development in Massachusetts

Breakout sessions:

Four groups will identify the lifecycle of a specific nanotechnology/product, appropriate applications of best and good current practices, identify gaps and recommend new or revised practices.

REGISTRATION

Online registration is available from December 8, 2008 through January 28, 2009 at 5PM. You can also register on site on January 29, 2009; however, we encourage you to register early as space is limited.

Registration Fee:	\$50.00
Registration information:	http://register.donahue.umassp.edu/events/112116
TURP Credits:	6 (full day); 3 (morning only)
A.B.I.H. CM points:	A request has been submitted for points

**The Safe Development of Nanotechnology in Massachusetts
Preliminary Workshop Agenda
Thursday January 29, 2009
Federal Reserve Bank, Boston, MA**

9:00 to 9:20 AM: Welcome

- Laurie Burt, Commissioner, Massachusetts Department of Environmental Protection
- Laura Marlin, Commissioner, Division of Occupational Safety

9:20 to 10:20 AM: Overview of Interim Best Practices and Good Current Practices

- Dr. Charles Geraci, CIH, Coordinator, Nanotechnology Research Center and Chief, Document Development Branch, National Institute for Occupational Safety (NIOSH). *Approaches to Safe Nanotechnology: Managing the Health and Safety Concerns with Engineered Nanomaterials*. Please review: <http://www.cdc.gov/niosh/topics/nanotech/safenano/>
- Dr. Michael Ellenbecker, CIH, Director, Toxics Use Reduction Institute (TURI), and the Center for High-rate Nanomanufacturing (CHN), University of Massachusetts Lowell. *Interim Best Practices for Working with Nanoparticles*. Please review [http://www.nano.neu.edu/press/documents/Best Practices for Working with Nanoparticles.pdf](http://www.nano.neu.edu/press/documents/Best_Practices_for_Working_with_Nanoparticles.pdf)
- Open Discussion:
 - o Industry and researchers' perspectives and feedback on the practices
 - o Incorporating practices for nanotechnologies into existing chemical management strategies
 - o Suggestions on alternative practices

10:20 to 10:30 AM: Break

10:30 to 11:45 AM: Application of Interim Best Practices and Good Current Practices

- Workshop participants will break into four groups to discuss specific nanotechnology uses. They will identify the lifecycle of the nanotechnology, appropriate applications of BPs and GCPs, gaps and recommendations for new or revised BPs and GCPs. The following nanotechnologies will be discussed:
 - o Paint with silver nanoparticles
 - o Groundwater remediation with iron nanoparticles
 - o Cosmetics/sunscreen with titanium oxide and zinc oxide nanoparticles
 - o A research setting using carbon nanotubes
- Group discussion framework
 - o Are the BPs and GCPs comprehensive, effective and feasible?
 - o Are there gaps in the BPs and GCPs?
 - o What areas have the most pressing concerns?
 - o Recommendations for new/refined BPs and GCPs

11:45 AM to 12:30 PM: Reports from Breakout Sessions, Next Steps & Concluding Remarks

12:30 to 1:30 PM: Lunch break

1:30 to 2:00 PM: Introduction to the Measurement of Nanoparticles

- *Dr. Candace Tsai, postdoc, TURI and CHN*

Concurrent Sessions

2:00 to 3:00 PM:

Advanced Techniques for the Measurement of Nanoparticles with Nanoparticle Counter Demonstration

- *Dr. Michael Ellenbecker, Director, TURI*
- *Dr. Candace Tsai, TURI and CHN*

Equipment for this session includes: Fast Mobility Particle Sizer, methods utilizing transmission electron microscopy (TEM) and scanning electron microscopy (SEM), data analysis techniques

Demonstration of the NIOSH Nanoparticle Emission Assessment Technique

- *Dr. Charles Geraci, Coordinator, Nanotechnology Research Center and Chief, Document Development Branch, National Institute for Occupational Safety and Health (NIOSH)*
- *Dr. Mark Methner, CIH nanotechnology field research team leader, NIOSH and Laura Hodson, CIH NIOSH*

Equipment for the session includes: Condensation particle counter, Optical particle counter, Air sampling pumps and Filter cassettes for elemental and TEM analysis, data analysis techniques.

3:00 to 3:15 PM Break

3:15 to 4:15PM:

Repeat of Concurrent Sessions by TURI and NIOSH

- *Dr. Michael Ellenbecker, Director, TURI, and Dr. Candace Tsai, TURI and CHN*
- *Dr. Charles Geraci, CIH, NIOSH, Dr. Mark Methner, CIH, NIOSH and Laura Hodson, CIH, NIOSH*

4:15 to 4:30PM: Closing Remarks and Workshop Evaluation