

Safe Nano Design

Molecule → Manufacturing → Market

AGENDA OVERVIEW

Date: August 14 – 16, 2012

Location: College of Nanoscale Science & Engineering (CNSE) of the University at Albany

Event Organizer: National Institute for Occupational Safety and Health (NIOSH) Prevention through Design Program

Event Coordinators

- D. Heidel, Prevention through Design Program, NIOSH
- C. Geraci, Nanotechnology Research Center, NIOSH
- S. Brenner, CNSE

Event Purpose

Participants at this workshop will provide input into the safe commercialization of nano products resulting in the development of guidelines for the safe synthesis of nanoparticles and associated products, using a Prevention-through-Design approach.

Agenda Overview

August 14

9 am—12 noon	Optional tour of CNSE
12 noon—1 pm	Lunch
1 pm—5 pm	Plenary opening session

Following welcoming remarks from NIOSH and CNSE, plenary session speakers will frame the need to apply prevention through design to the commercialization of nano products. Speakers representing the nanotechnology industry, both large and small, will discuss encountered challenges and potential solutions for ensuring worker health and safety. In addition, the value of worker participation in PtD-related activities in the nano industry will be discussed by a labor leader. Our plenary session will conclude with an overview of the legal perspectives for “designing-in” protections for workers.

5 pm—7pm	Reception
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August 15

9 am—5 pm Break-out sessions with a lunch break from 12 noon—1 pm

Two concurrent break-out sessions including brief presentations, case studies, “lessons learned,” or new areas of research will prompt moderated discussions that will foster the development of outcomes to meet the goals of the session.

Session 1: Design of safer nano molecules

Participants will discuss the design of safer nanoparticles; that is, molecules that exhibit the same functionality but are potentially less toxic to human health. Experts will lead discussions on molecule modification and surface modification to reduce toxicity while maintaining functionality; structural and physical changes to reduce toxicity while maintaining functionality; tools to characterize nanomaterials and appropriate screening tests, and nanoparticle hazard indices and bands, based on the latest nano toxicology.

Session 2: Process containment and controls

Participants will discuss appropriate exposure containment and control technology and equipment, based on the considerations of risk of exposure to workers. Participants will discuss task-related control needs and case studies from research laboratories to product manufacture; task-related control potential solutions from equipment developers and suppliers; and an overview of control banding approaches, exposure monitoring techniques, and the latest in analytical methods.

August 16

9 am—12 noon Plenary session

Our final workshop day will begin with a session discussing the value of occupational health and safety management systems. Participants will discuss ways to “design-in” worker health and safety into the facilities, processes, equipment selection, and operation of nano research, synthesis, & product formulation operations. Effective management systems approaches that organizations have adopted to ensure worker H&S will be discussed.

12 noon—1 pm Lunch

1 pm—3 pm Closing session

At this session, the elements of an effective systems approach to design safer nanomolecules, fabricate them, and manufacture them into products all while ensuring the health and safety of the workers will be framed. Participants will review the outcomes from each breakout session, reach consensus on the points of agreement, and determine the additional research that may be recommended.