

# Engineered Nanomaterials – No Small Issue

---

**October 4, 2018 Workshop**  
**Sacramento, Cal-EPA, Sierra Hearing Room**

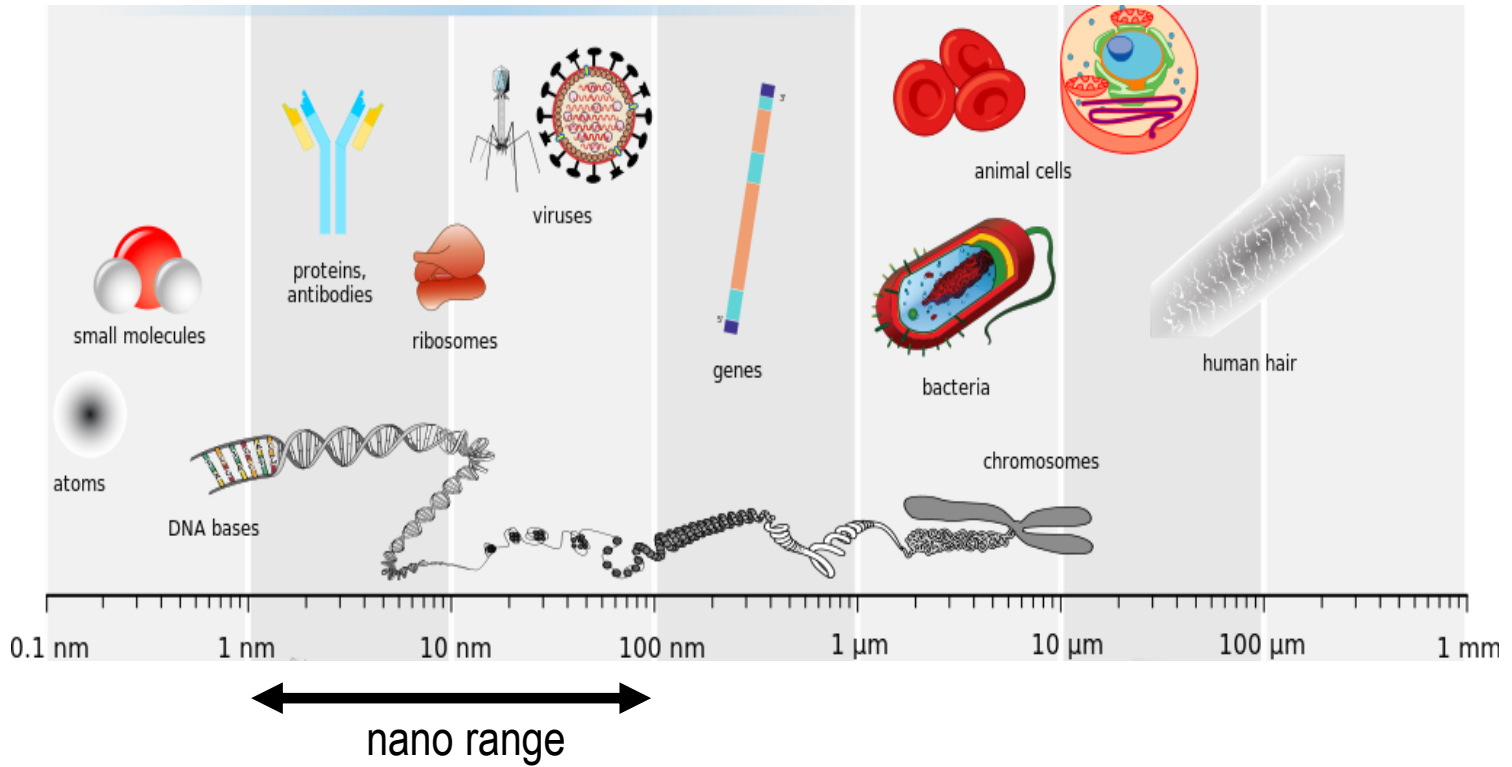
**Gabriele Windgasse, Dr.PH**

California Department of Public Health

**Welcome and Overview**

**Planning Group:** CDPH: Rick Kreutzer, Danny Kwon  
Cal-OSHA: James Seward  
CARB: Linda Smith, Jeffrey Williams  
OEHHA: John Budroe, Karen Riveles

# The Nano Scale

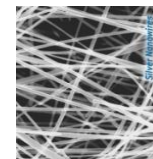
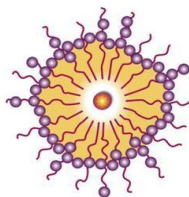
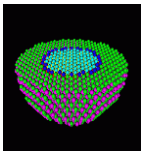


## Nano Materials (Ultrafine PM: < 100 nm)

Naturally occurring	Incidental	Engineered
ocean spray erosion virus	combustion laser printers welding fumes	designed properties/ functionalities

# ENM: Unique Properties...due to Quantum Effects

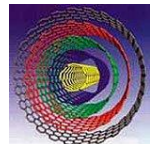
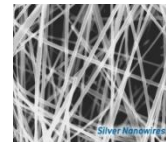
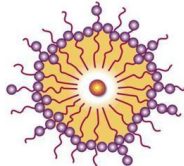
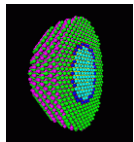
- Nano properties  $\neq$  macro properties
- Surface area / gram
- Size distribution
- Shape
- Surface modification



# Opportunities and Challenges

- Great potential for beneficial uses
- Increasing number of products
- Large gaps in data, knowledge and infrastructure
- Unknown exposures to consumers and workers
- Unknown releases into the environment

## Unknown consequences for Public Health



# Engineered Nanomaterials – No Small Issue



## Workshop Planning Group – Contacts:

### California Department of Public Health

Rick Kreutzer, MD, Assistant Deputy Center Director

Gabriele Windgasse, DrPH, Chief, Site Assessment Section

Danny Kwon, MPH, Sr. Health Assessor

### California Occupational Safety and Health Agency

Jim Seward, MD, Clinical Professor UCSF and UC Berkeley

### California Air Resources Board

Linda Smith, PhD, Chief of the Health and Exposure Branch

Jeffrey Williams, PhD, Research Division

### Office of Environmental Health Hazard Assessment

John Budroe, PhD, Chief, Air Toxicology and Risk Assessment Section  
Karen Riveles, PhD, Staff Toxicologist, emergency Response Coordinator