

# **Developing Nanotechnology: Perspectives on Benefits and Risks**

L.S.Andrews

ACC CHEMSTAR

Nanotechnology Panel

ELI, May 2005



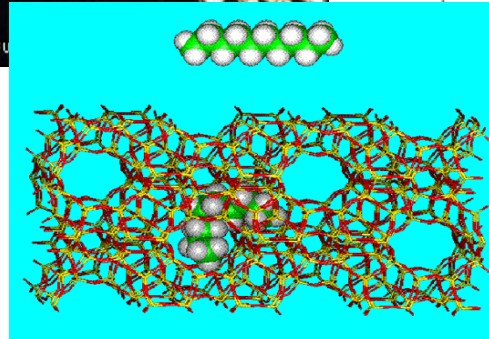
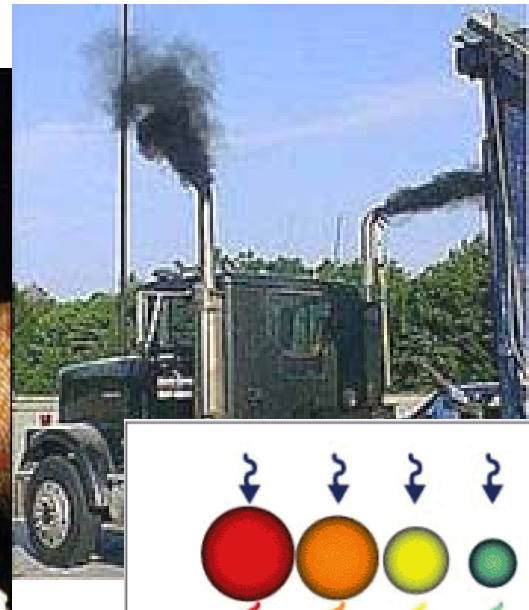
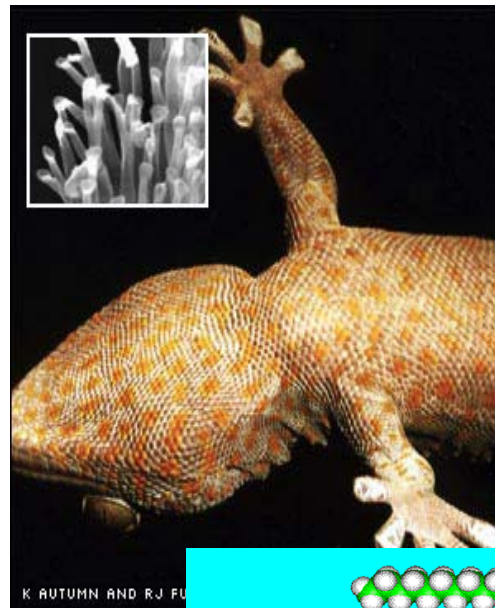
# Developing Nanotechnology

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- Background
- Stewardship
- Research Needs

# Nanoscale Materials

- Natural
- Byproducts
- Engineered



# Top 10 Nanotechnology Consumer Products - 2003 (Forbes)



*Cosmetics*



*Eddie Bauer Khakis*



*Holmenkol Ski Wax*



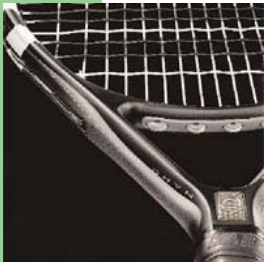
*Franz Ziener Jacket*



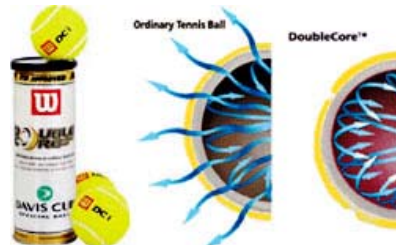
*Smith Techlite*



*Nucelle Sunscreen*



*Babolat Racquet*



*Wilson Tennis Balls*

## Additional Products



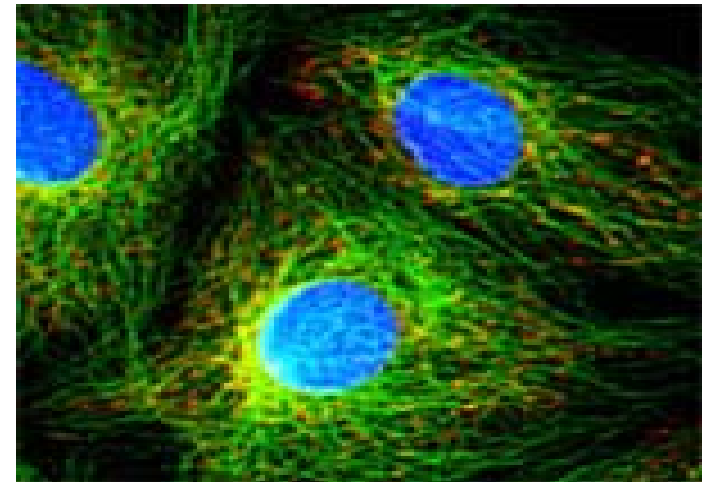
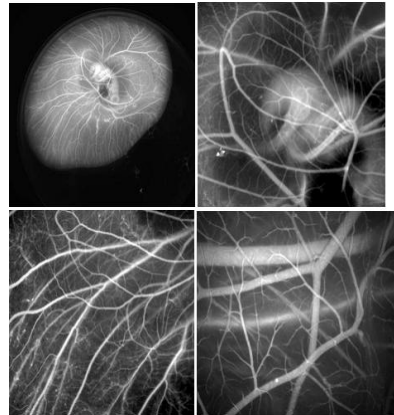
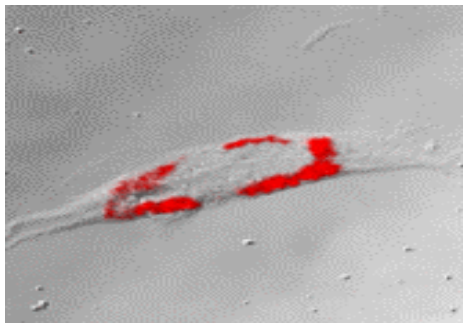
*Solefresh socks*



*GMC Safari*

# New Properties – New Risks?

- Quantum Dots can be attached to cell components (for example, antibodies) to directly visualize interactions



From: Peter D. Lichty, MD MOH FACOEM and John Seabury, CIH  
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# ACC CHEMSTAR Nanotechnology Panel Charter

To promote and represent the issues of members through:

product stewardship,

communications,

regulatory and scientific advocacy,

research and testing.

# ACC CHEMSTAR Members – May 2005

Air Products and Chemicals

Arkema

BASF

Bayer Material Science

Ciba Specialty Chemicals

Degussa

Dow

Dupont

Elementis

Eastman Kodak

Cabot

PPG

Proctor & Gamble

Rohm and Haas

Sasol NA

Southern Clay Products

General Electric

# **ACC CHEMSTAR Nanotechnology Panel Goals – May 2005**

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Establish and recommend useful approaches to defining and categorizing products of nanotechnology

Recommend product stewardship activities for development of safe products and processes

Advocate for EHS research that informs safe use and regulation that establishes public trust without impeding innovation



# Panel Viewpoints

- We support:
  - a multi-stakeholder dialogue on responsible development and regulation of nanotechnology
  - development of a broadly accepted means to collect existing and future health and environmental toxicity, workplace and environmental exposure data for nanomaterials
  - development of guidelines and procedures for tiered testing and evaluation of new nanomaterials

# Panel Viewpoints

- We support:
  - ongoing efforts to harmonize terminology, protocols for testing and regulation internationally
  - the need for increased government funding for EHS research methods development
  - promoting product stewardship along the value chain

# NNI – Consultative Board for Advancing Nanotechnology

- Partnership for R&D Planning and Implementation
- Environment, Safety and Health Workgroup Recommendations
  - Measurement and Detection of Nanomaterials
  - Worker Protection and Industrial Hygiene
  - Toxicity of Nanomaterials

# NNI EHS Research Priorities

- Develop toxicity test strategy for particulates
- Determine best dose-metrics for particulates
- Develop aquatic toxicity test methods
- Develop and validate exposure monitoring
- Develop methodologies to establish safe exposure levels

# Developing Nanotechnology

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Thank you.