

# IRGC Research Breakout Frame 1 Issues From discussion on July 6

>25 people, most technical, from  
government, academia, industry

# Must be funding for Nano-research

- **MOST IMPORTANT RECOMMENDATION MISSING**
- How to improve funding of research
  - Have countries promise to set a percentage of nanotechnology \$ aside for risk related research
  - Encourage governments to pool resources to fund complementary and well connected risk researchers around the globe (look to human genome project, climate change for examples)
- You cannot expect international cooperation in risk governance without integrated and well coordinated ***global*** research efforts.

# Basic Research vs. Hazard Assessment

- Hazard data for specific nanoparticles?
  - Change size or surface composition = new particle
  - Companies and regulators need to know what features of a nanoparticle *could* make it dangerous
- For emerging technologies more basic or mechanistic research should be emphasized
- New recommendation: set a grand challenge for researchers to develop predictive models for nanotoxicology

# Use existing knowledge

- Recommend the production of a summary of existing and older knowledge about particles/colloids be made available
  - Colloids in water/surface chemistry
  - Pulmonary toxicology ...
  - Naturally occurring nanoparticles
- This information best for hypothesis development ... may not translate directly
- In our group majority felt we had only 10% of the needed information for risk management

# General comments




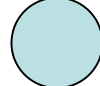










- Do not lump together nanoparticles into nanotechnologies
- Recommend standard reference or benchmark materials for hazard assessment
- Industry (with government) should find a way to make risk data available
- In presenting frames, do not make it appear that frame 1 is easy or complete
- Guidelines on when a company should start the risk management process...


# Major Changes to Table 3


- Most thought its current form was a negative for the document .. preachy, wrong and categorizations too narrow
  - Example :communication is everyones job
  - People may resent being told what to do
- Let different activities belong to more than one stakeholder group, soften language
- HOW? The report missed how people will be incentivized to do these vital actions

# Suggested table 3

Table 3. Needed actions, status and possible participant groups

Actions	Government	Industry	Academia	NGOs
Do basic research on nanotoxicology			 	
Fund basic research on nanotoxicology	 			
Synthesize technical results for public				
Promote international cooperation and DATA exchange				

 OK Now

 Improve

# Specific comments on Table I

## HAZARD EFFECTS suggested rewrites

- Make it clear when a system contains a free nanoparticle versus a bound nanoparticle or nanostructures, and alter testing accordingly
- Underlying biological responses to nanoparticles understood and used for predictive modeling
- Use predictive models as an initial screen for materials engineering and characterization
- Standard (not best) metrics for assessing particle toxicity and ecotoxicity
- Pre-market testing and a full consideration of the secondary effects of a product
- Complete life-cycle assessment which includes manufacturing process, energy use, and overall ecological impact.

# Exposure recommendations

*Generally there were not enough comments in this category*

- Develop management strategies that minimize workplace contact (fewer workers, containment ...)
- Create an inventory of products, production, use and disposal in industry.
- Data on the fate, transformation, distribution and persistence of engineered nanoparticles in the environment (air, water, soil and anthroposphere)
- Support scenario-planning activities to identify and prepare for unusual or unanticipated exposure routes

# Our Charge

- To evaluate and prioritize the proposed risk governance proposals for nanotechnology products
- To identify opportunities for improvement in the strategies
- Determine areas of agreement and disagreement within the group

A) We considered the 50,000 ft view of Table 1 .. the idea  
B) Then briefly talked about details in Table 1  
C) Concluded with Table 3 (recommended actions)