

ENVIRONMENTAL DEFENSE

No Small Matter: Using Partnerships to Get Nano Right the First Time

Environmental Law Institute/Woodrow Wilson Center
Forum on Nanotechnology
May 25-26, 2005

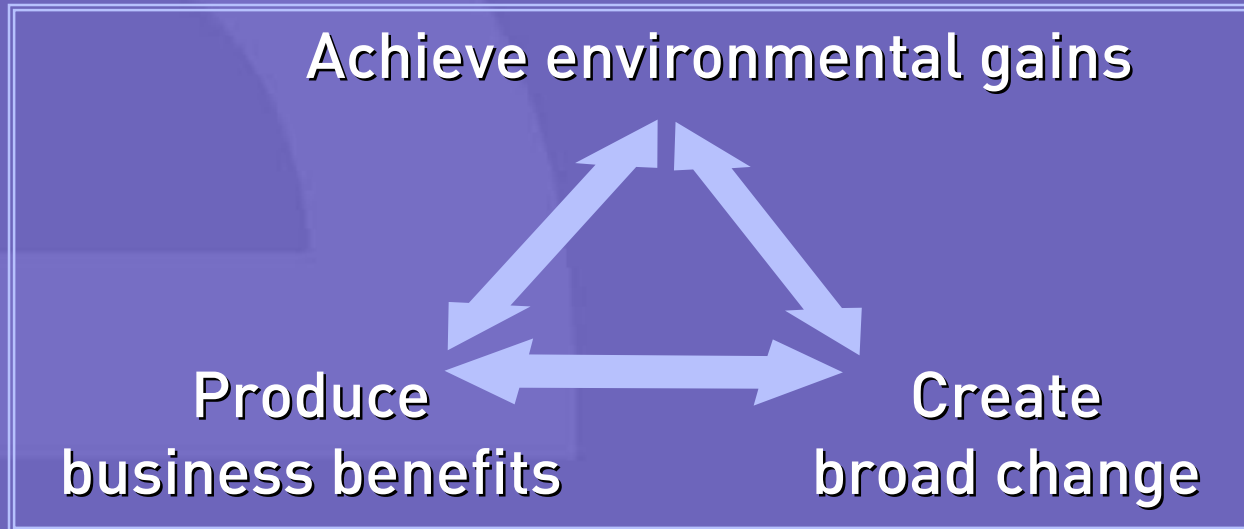
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ENVIRONMENTAL DEFENSE

finding the ways that work

Corporate Partnership Model



Partnership Characteristics

Results: Environmental and business benefits

Credibility: Separate expenses, no greenwashing

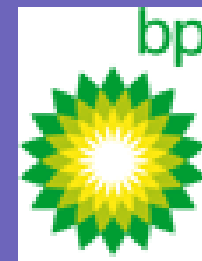
Trust: Written confidentiality agreement

Commitment: Senior management buy-in

Accountability: Public announcement and report

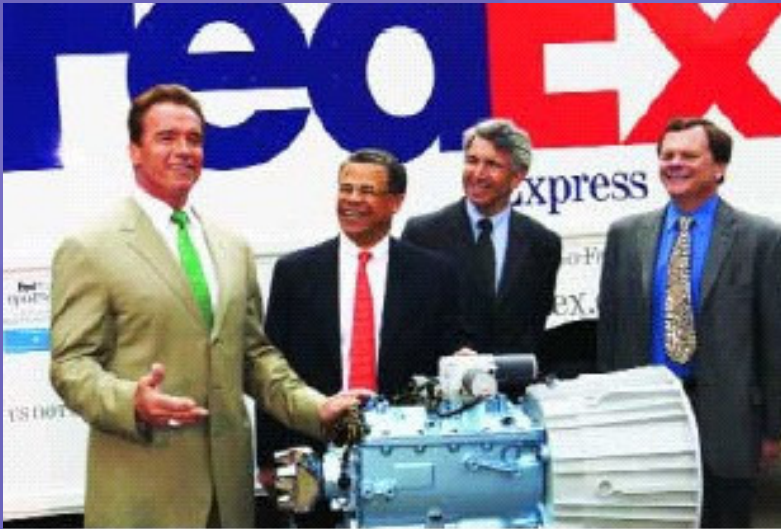
Replicability: Disseminate tools and methods

Examples of Partnerships



FedEx

Creating a new generation of delivery trucks.



- fuel efficiency \uparrow 50%
- air pollution \downarrow 90%
- same functionality
- cost-competitive

McDonald's

Providing incentives for healthier meat production.



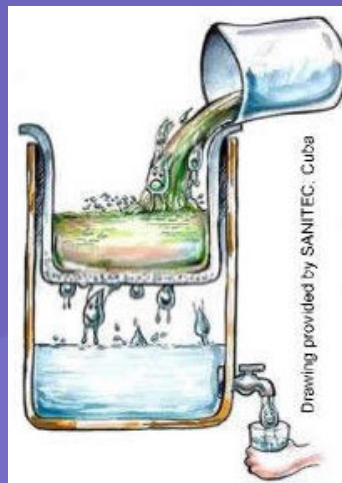
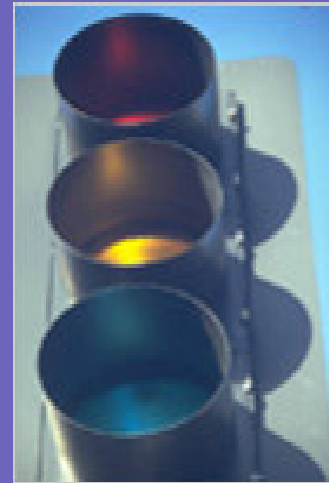
- Eliminating antibiotics as growth promoters
- Measuring and reducing antibiotic use overall

High Production Volume (HPV) Challenge Program



- *Toxic Ignorance (1997)*
 - 70% of top-volume commercial chemicals lacked publicly available **screening** data
- HPV Challenge – 1998
 - 2,200+ chemicals sponsored by 450+ manufacturers
 - Data by 2005

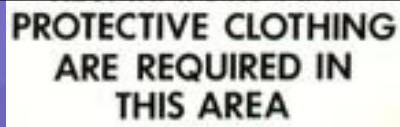
Nanotechnology Can Bring Breakthroughs



Dr Jekyll → Mr. Hyde ?



\$65B liability costs to insurance industry



\$400M cleanup costs to GE (so far)

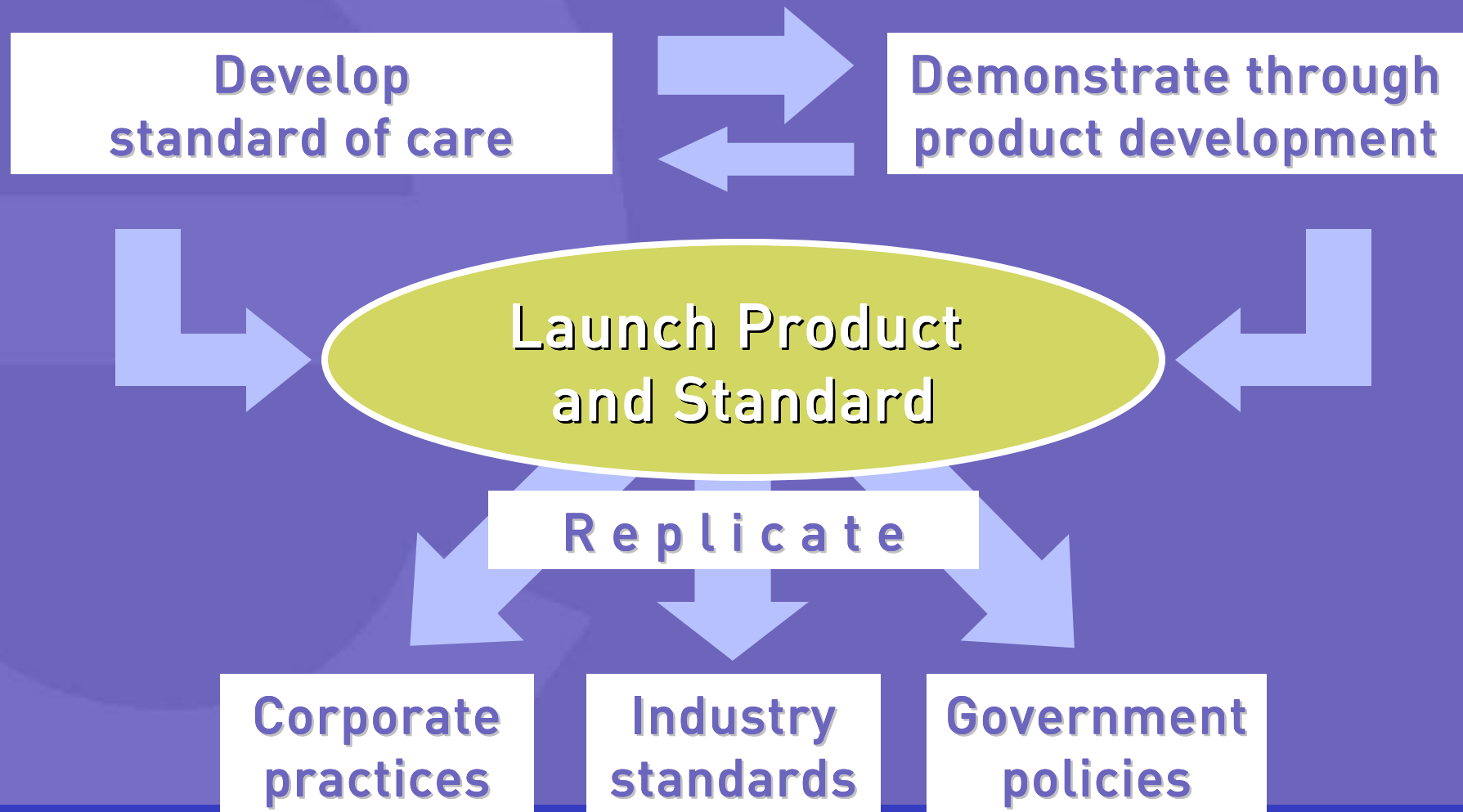


\$100M+ in export losses to US farmers (per year)

Companies Can Act Now

- Call for proactive risk identification & management
- Advance understanding of risks
- Influence supply chain behavior
- Develop and demonstrate standard of care
- Engage wide range of stakeholders

Partnership Phases/Goals



Elements of a Standard of Care

- Risk Identification
- Risk Management
- Transparency & Accountability
- Feedback Mechanisms

... All From a Full Lifecycle Perspective

Demonstrating Practicality

- Integrate with product development
 - Phased risk evaluations and controls
 - Application specific controls
- Manage costs
 - Leverage federal research
 - Partner with other companies
 - Market incentives for testing

Creating a Model

- Replication by other companies
 - In other industry sectors
 - Through industry standard
- Adoption by government
 - Through existing policy
 - Through new policy

Proactive Risk Identification & Management

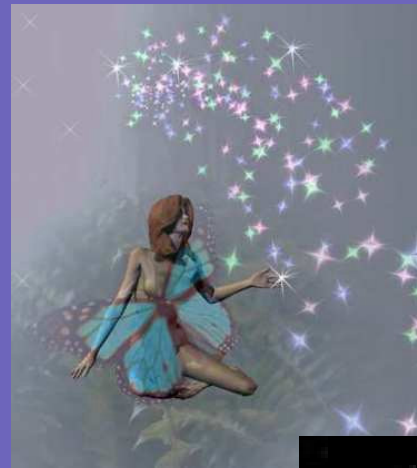
- Acknowledge that nanomaterials are different
 - *Hazards cannot be inferred from bulk materials*
 - *Nanomaterials aren't all the same*
- Commit to up-front testing
 - *Sufficient testing to identify risks prior to commercialization*
 - *Support funding for federal EHS research (\$100M)*

Proactive Risk Identification & Management, cont.

- Adopt management standards
 - *Risks addressed across the lifecycle*
 - *Protective interim risk management in advance of testing*
 - *Appropriate risk management in response to testing, monitoring*
- Embrace transparency
 - *Public disclosure of all risk-related information*
 - *Labeling, accurate MSDS disclosures*

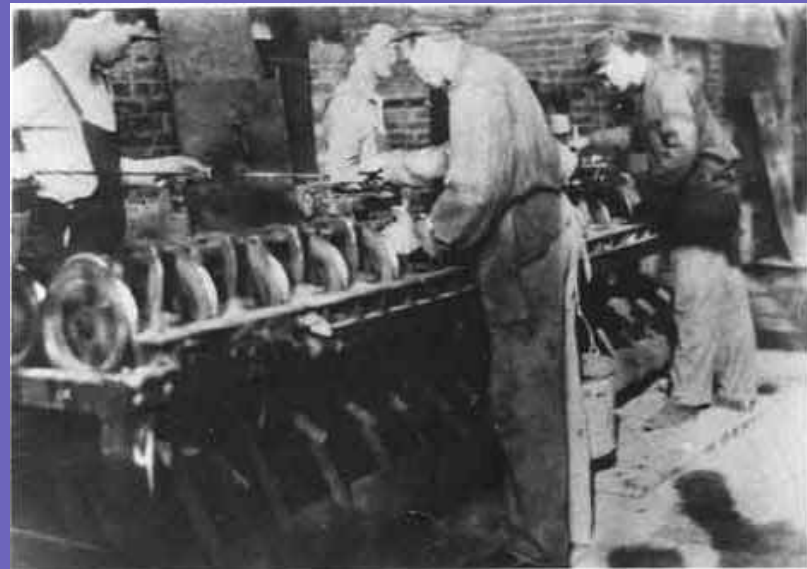
Interim Safety Steps - Environment

- Avoid dispersive uses until hazard and exposure/fate data available
- Assess and disclose lifecycle risks in advance of commercialization
- Release/environmental monitoring



Interim safety steps - workers

- Assume toxicity until shown otherwise
- Worker training, industrial hygiene, PPE
- Workplace, worker health monitoring
- Wastes treated as hazardous materials



Engage Broad Range of Stakeholders

- Environment
- Health
- Labor
- Community
- Consumer
- Social Impact

Next steps

- Actively seeking partners
- Stay tuned!