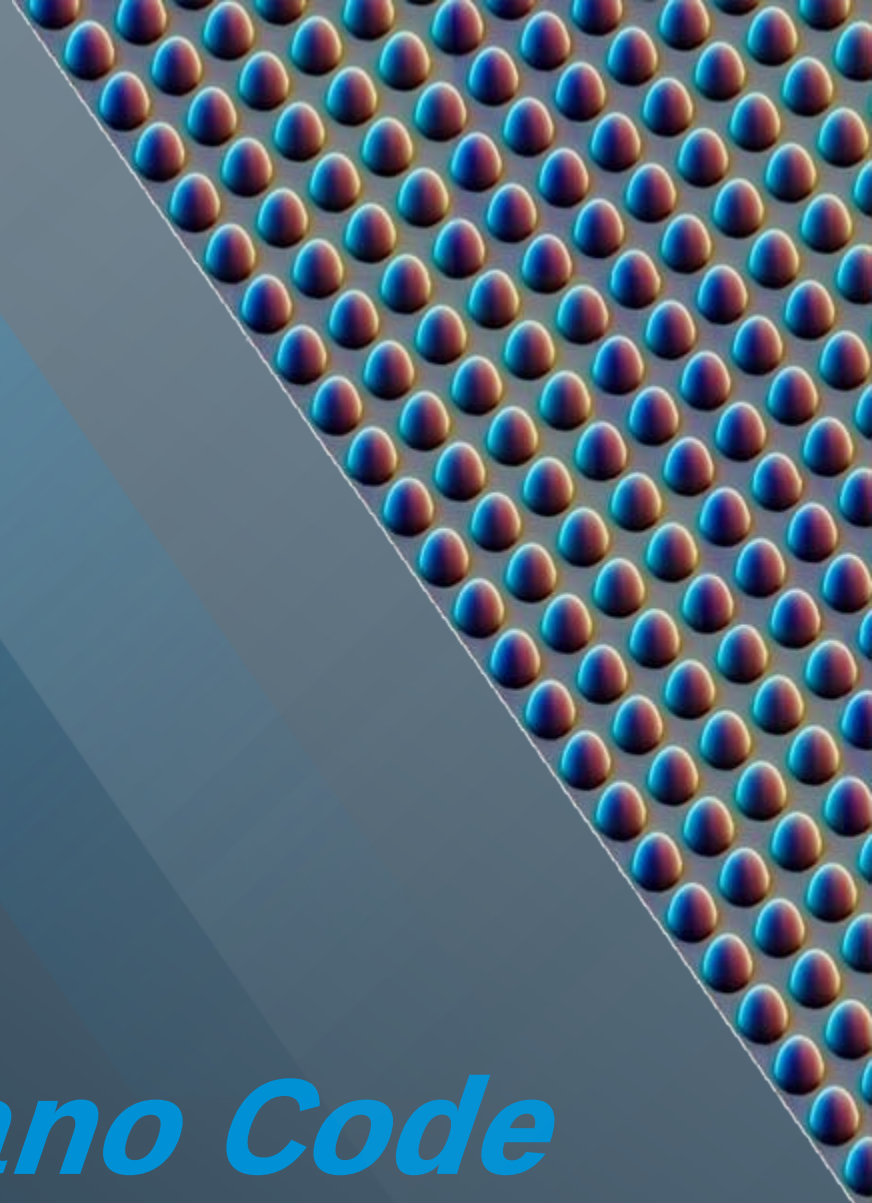
NIA

Nanotechnology
Industries Association



10th April 2008:
Arizona Nanotechnology - Small is Big:
Global Perspectives on Nanotechnology

Responsible Nano Code

– A timely initiative in support of the advancement of responsible nanotechnologies

Nanotechnology Industries Association (NIA)

History

- Formed in 2005 by a number of industrial companies active in nanotechnology
- Called-for by the nanotechnology industries
- 'Start-up' funded by UK Government (DTI) for 3 years
- **Coming soon: opening of Brussels office**

Current Status

> 90 industrial members (March 2008)

- Operating across Europe (and liaising with US, Australia, Japan, Asia Pacific, etc.)
- Advising federal & national Governments (e.g. EC, UK, Germany, Australia, US, etc.)
- Contributing to EC's regulatory working groups (e.g. 'food' (DG SANCO), 'medical devices' (DG Enterprise & Industry))
- Advising the OCED (WPMN & WPN) through BIAC*

* OECD: Organisation for Economic Co-operation and Development
WPMN: Working Party on Manufactured Nanomaterials (*i.e.* part of the OECD initiative on 'Chemical Safety')
WPN: Working Party on Nanotechnology (*i.e.* part of the OECD 'Committee for Scientific and Technological Policy')
BIAC: Business and Industry Advisory Committee to the OECD

NIA – The Membership

NIA – The Membership

Unique Features:

- providing a purely industry-led perspective, derived from the views of the collective membership (companies at different stages of their life-cycle and with a variety of interests).

Corporate Members:

Apaclara
Applied Nanodetectors
AWE
BASF
BP
Büchi
Buehler
CEMMNT
Cenamps
Centrum für Angewandte Nanotechnologie
Ciba
Croda International
Datum Alloys
Eminate
Endor Nanotechnologies
Epson
Exilica
Gems Sensors
Hosokawa Micron
I-CanNano
Intertek MSG
ICI
Ilford Photo
IMERYS Minerals
Innos
Innovia Films
Ionbond
JEOL UK
Johnson & Johnson
Johnson Matthey
L'Oreal
Lubrizol
Maelstrom
MaterialsSolutions
MacDermid
Naneum
NanoCentral
NanoForce
NanoGap
NanoLake
NanoSight
Nanopartner
NanoTEC Industrial Coatings
Nanotec NI
Nanotecture
Nano-X
National Physical Laboratory
Orchid Chemicals and Pharmaceuticals
Orla Protein Technologies
Oxford Biosensors
Oxford Instruments
Oxonica
Pall Europe
PERA
Procter & Gamble Technical Centres
Q-Flo
QinetiQ
QinetiQ Nanomaterials
Rolls-Royce
Scott Bader
SEA Solutions
Semefab
Shell
Smith & Nephew
Solvay
Sun Chemical
Surrey Nano Systems
Tata Chemicals
Tamil Nadu Technology Development & Promotion Centre
TechniTex Faraday Limited
Teer Coatings
The Technology Partnership
Thomas Swan & Co.
Unilever
Visteon Customer and Technical Centre
Xennia Technologies

Associate Members:

Bergeson & Campbell
Beveridge & Diamond
Bond Pearce
Dickinson Dees
FirstVentures
Harrison Goddard Foote
Ian Silcock, Barrister
Neville Craddock Associates
Nanotech Risk Management
NoMo-ir
TechnesiumTC
The Acta Group EU

Affiliate Members:

Australian Nano Business Forum
Association of the British Healthcare Industry
British Healthcare Trade Association
Canadian High Commission
Chemical Industries Association
Chemistry Innovation KTN
DEFRA
Display & Lighting KTN
Materials UK
Nanotechnology KTN
NEPIC
UK Trade & Investment

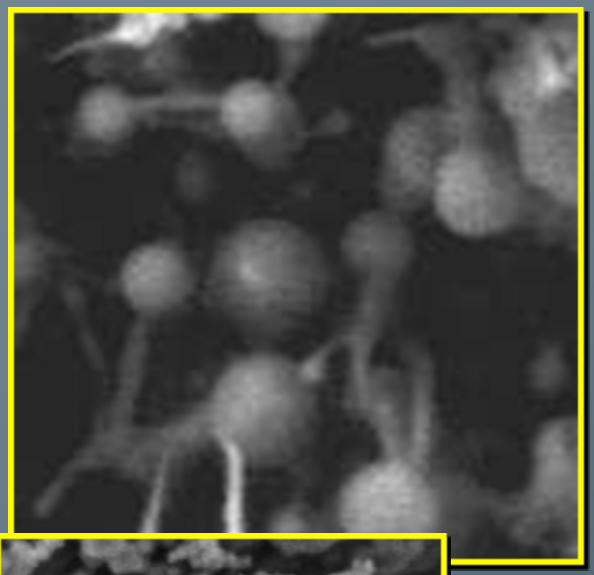
(list not complete)

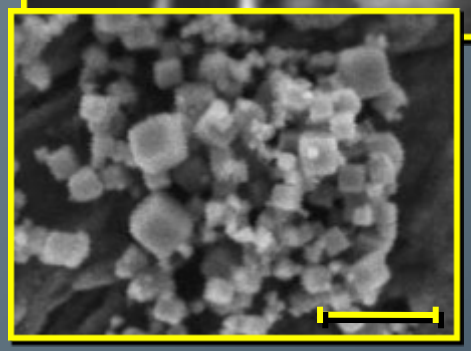
Commercialisation: *A 'Supply Chain' Problem*

Nano(structured) Materials

Intermediate Products with nanoscale Features

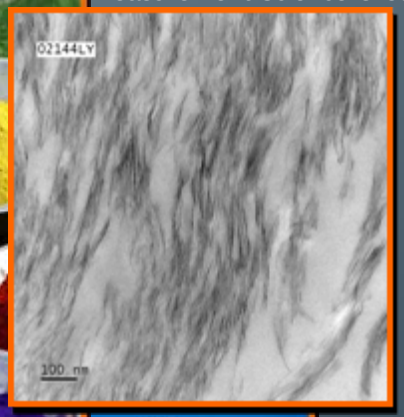
Final Products incorporating enabling Nanotechnology





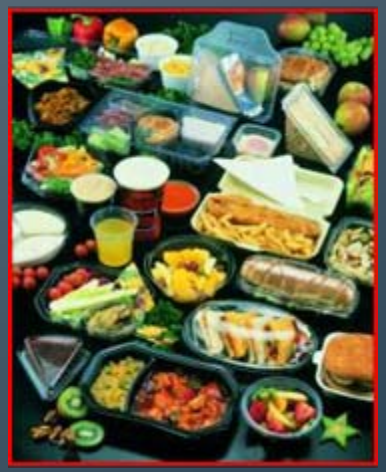
[source: Intrisiq]

[source: Intertek Measurement Science Group]



[http://www.brimham.com]

[http://www.rheotek.com]



[http://www.nivekonline.co.uk]

[PPG's CeramiClear® Clearcoat; source: http://corporateportal.ppg.com]

Magic Nano: *The Story of Supply Chains gone wrong*

News Release
ETC Group
April 7, 2006
www.etcgroup.org

Nanotech Product Recall Underscores Need for Nanotech Moratorium: *Is the Magic Gone?*

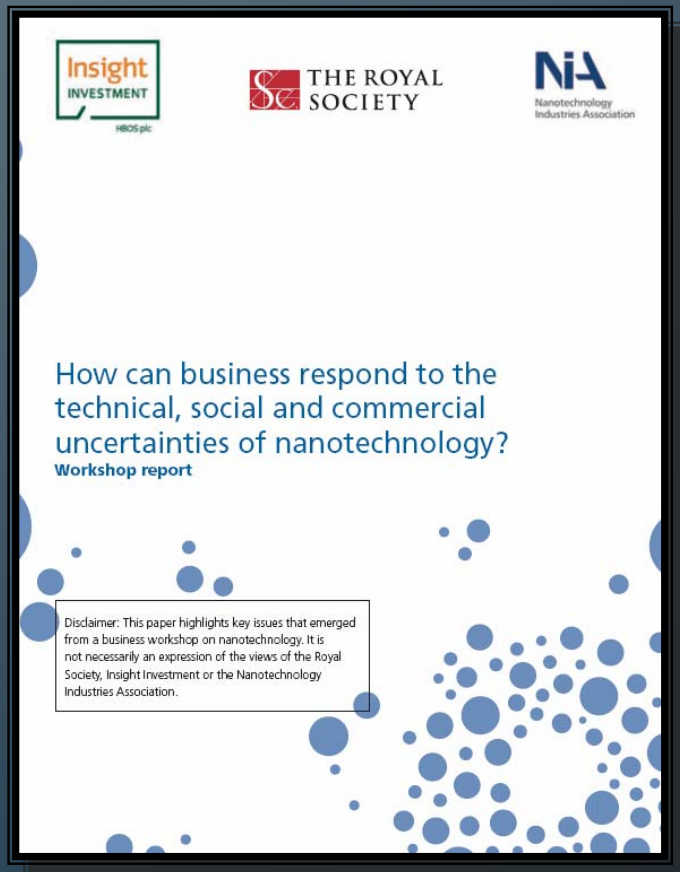
NIA – *Responsible NanoCode*

Background

- 2003/2004 Royal Society/Royal Academy of Engineering joint report on 'Nanoscience and Nanotechnologies: Opportunities and Uncertainties'

Creation of the *Responsible NanoCode* (2006 – 2007)

- Royal Society felt there was a gap – industry not engaged
- Insight had identified potential investment issues
- RS & Insight jointly approached the NIA to enhance engagement with business
- November 2006: **'RS-Insight-NIA'-Workshop** to discuss the businesses' opinion of uncertainties and risks (17 companies and other stakeholders)
- Main **workshop recommendation**: Develop a Code of Conduct and a forum to discuss issues relating to nanotechnology safety
- Creation of the Code of Conduct: May – September 2007
- International public consultation: September – December 2007



Responsible Nano Code - Objectives

- To establish a **consensus** of what constitutes **good practice** in business across the nanotech 'value chain'
- To develop a **voluntary, principles-based Code of Conduct** that can be adopted by businesses involved in developing, manufacturing and retailing products containing nanotechnologies
- To **help them** align their internal processes with **good practice**

The Code is NOT Intended to:

...supersede or replace current or future regulation

...to be an auditable set of standards

...offer detailed guidance on performance expectations

...provide any new definitions, characterisation or measurement of nanotechnologies

Responsible Nano Code – The Working Group

Companies

- BASF
- Johnson & Johnson
- Johnson Matthey
- Oxonica
- Smith & Nephew
- Tesco
- Thomas Swan
- Unilever

Unions / NGOs

- Amicus
- Practical Action
- Which?

Academics / scientists

- Institute of Occupational Medicine
- Napier University
- University of Sheffield
- University of Cardiff

Founding Partners

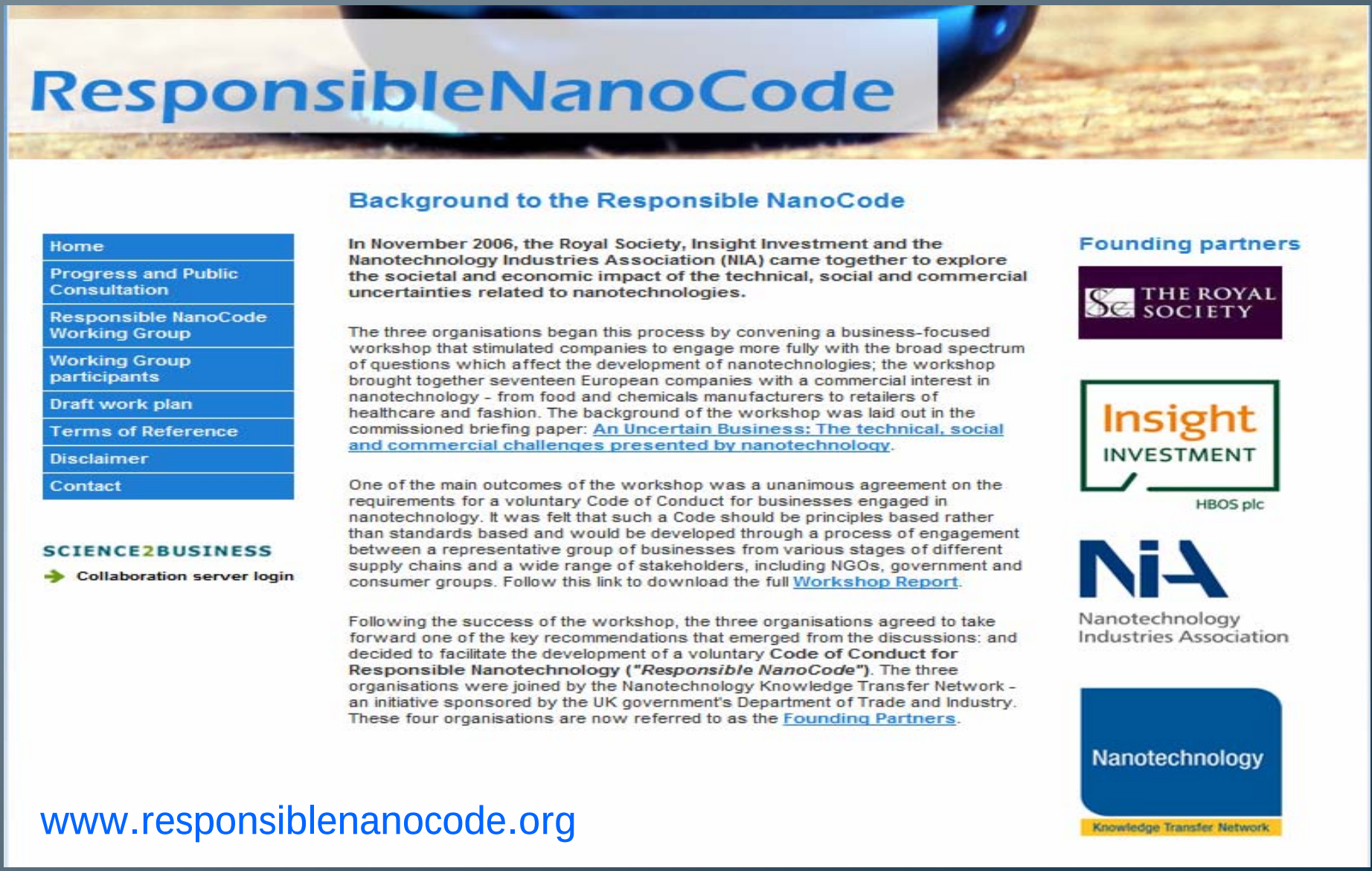
- Royal Society
- Insight Investment
- UK Knowledge Transfer Network
- Nanotechnology Industries Association

Responsible Nano Code – Monitoring & Compliance

- Comply or explain focus – companies adopting the code must comply with its principles...
- ...explain if they do not, why not
- Report how they comply, usually in Annual and Social reports or statements and on their website
- Compliance criteria and guidance devised by multi-stakeholder panel

... to be decided by the *Monitoring & Compliance Working Group*

NanoSafety – The Story of Supply Chains



www.responsiblenanocode.org

Principle One – Board Accountability

Each organisation shall ensure that accountability for guiding and managing its involvement with nanotechnologies resides with the Board or is delegated to an appropriate senior executive or committee.

Examples of how the organisation can demonstrate implementation of the Code may include:

1. Assigning accountability for nanotechnology, and for the implementation of the Code, to the Board or an appropriate senior level executive or committee.

2. Clearly articulate how responsibility for nanotechnologies, and for implementation of the Code, is assigned within the organisation.

Responsible Nano Code - NOT APPROVED

Principle Two – Stakeholder Involvement

Each organisation shall identify its nanotechnology stakeholders, proactively engage with them and be responsive to their views.

Principle Three – Worker Health & Safety

Each organisation shall ensure high standards of occupational health and safety for its workers handling nano-materials and nano-enabled products. It shall also consider occupational health and safety issues for workers at other stages of the product lifecycle.

Principle Four – Public Health, Safety & Environmental Risks

Each Organisation shall carry out thorough risk assessments and minimise any potential public health, safety or environmental risks relating to its products using nanotechnologies. It shall also consider the public health, safety and environmental risks throughout the product lifecycle.

Responsible Nano Code - NOT APPROVED

Principle Five – Wider Social, Environmental, Health and Ethical Implications and Impacts

Each organisation shall consider and contribute to addressing the wider social, environmental, health and ethical implications and impacts of their involvement with nanotechnologies.

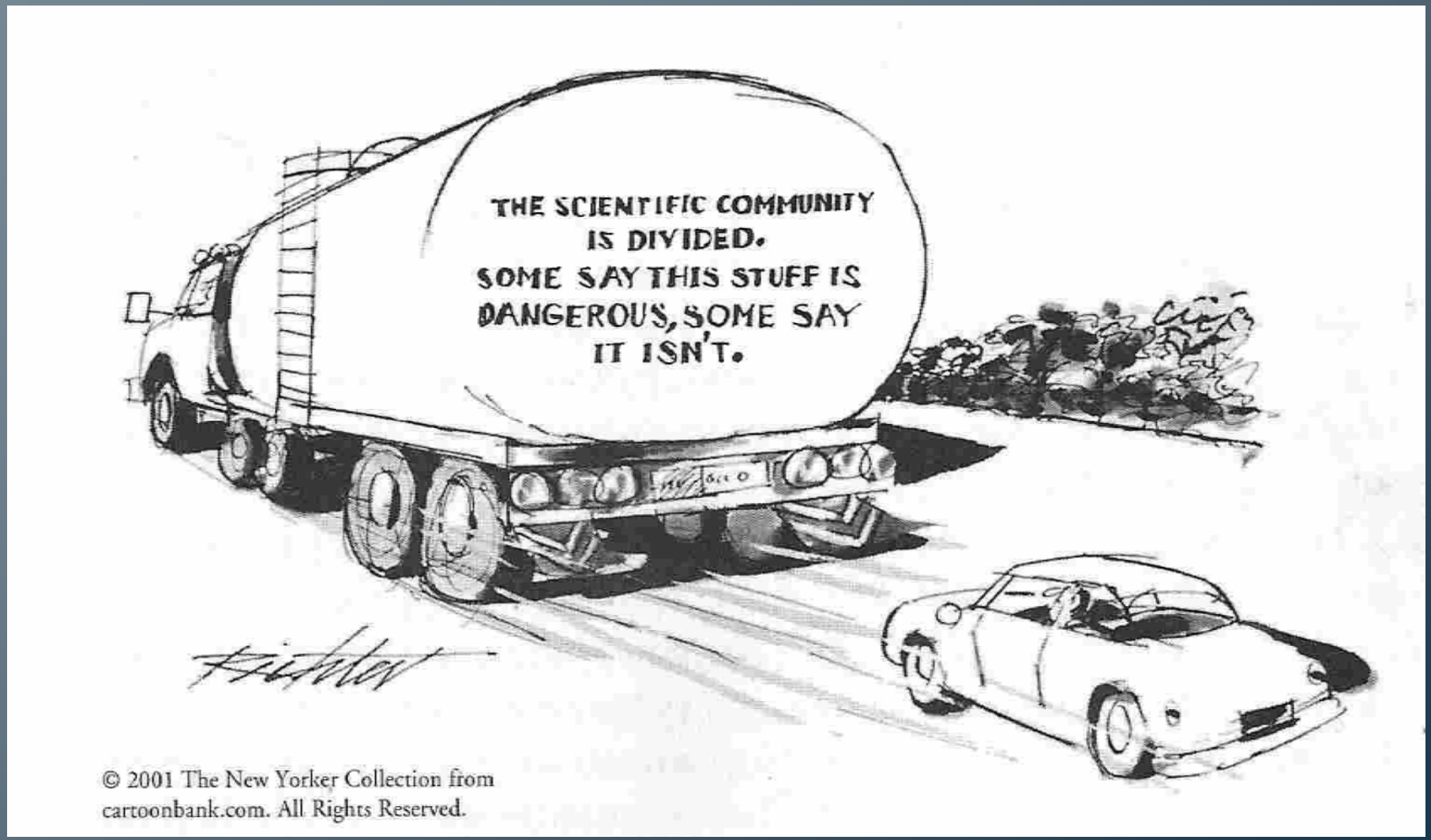
Principle Six – Engaging with Business Partners

Each organisation shall engage proactively, openly and co-operatively with business partners to encourage and stimulate their adoption of the Code.

Principle Seven – Transparency and Disclosure

Each organisation shall be open and transparent about its involvement with and management of nanotechnologies and report regularly and clearly on how it implements the Responsible Nano Code.

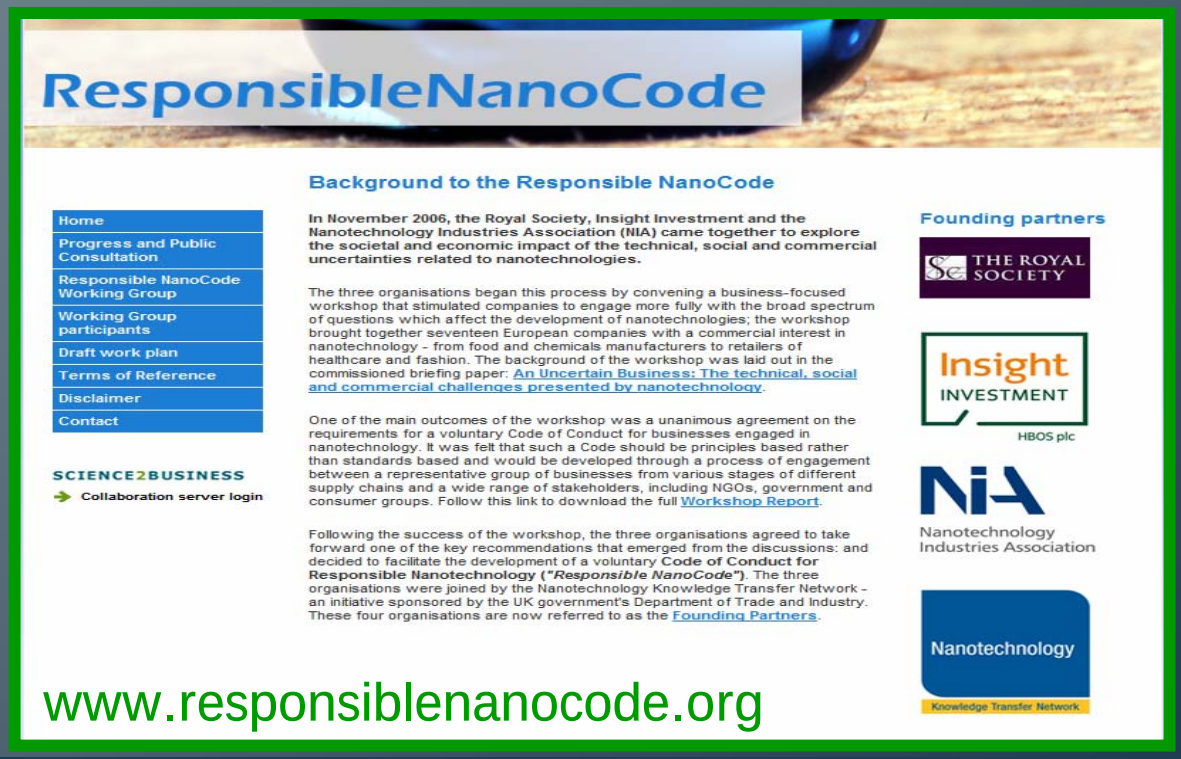
NanoRisk: *The Lack of Evidence*



Responsible Nanotechnologies

[Drs Roger Latham and Peter Oettgen, Harvard Medical School]

"Wherever this field leads, it is likely to follow the well-known pathway of incredible results leading to unrealistic expectations followed by sobering complications and disappointments - and ultimately, cautious optimism."



NIA

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Thank you!