What I am about to tell you
We start a long journey
We gather experience
We build and build
We achieved structures
Bridging Nanotechnology

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Your research enables you to produce information that can be used directly in regulatory systems to support predictability and coherence in policymaking.

This information can affect millions (or billions) of people’s lives.
Communication between stakeholders is essential for the advancement of society

Translation between different geographical areas and cultures is equally critical

Trust in fundamental issues of scientific integrity, reproducibility, knowledge and data-sharing, governance, and broader communication as they relate to nanotechnology
Community of Research
Scientific methods

Data sharing and computation

Policy issues

Broader communication
Scientific methods – relevance, reliability and repeatability
Test-systems ... exposure, uptake and effects of ... along the life cycle of the NM/-product

Guideline developments ... relevant transparent protocols that ensure reproducible and repeatable results

Models that combine physicochemical modelling with exposure, bioavailability and hazard information on key nano-properties
Little consensus on models for bioavailability and exposure assessment

More "ecological" focus in US and easier adaptation of "simpler measures" test in EU

In the U.S. the responsibility is distributed across several federal agencies and in the EU it is distributed between different Directorate-Generals within EU commission and in the independent member states
Data sharing and computational modelling
Data compilation that are amenable to **computational analysis, modelling, and theory development**

**Common ontologies**, access criteria, formats, and standards for data curation and completeness

Adaption of the **ISA-TAB-nano** file format

General and specific “**read-across**” models that reduce the need for testing and case-by-case evaluation

**Common Road Map** developed
Policy issues
Many similarities in laws governing the use in commerce of toxic or hazardous substances

Both represent a coherent body of unified legislation and are beholden to protect from risk while promoting public trust

They have mature infrastructure to examine new rules, enforce compliance with law, and make use of global harmonization
However, US and EU have generally adopted **differing outlook policy** prescriptions for how NMs should be governed. The EU’s legal concept presumes that materials are unsafe, but this is a rebuttable presumption, while the US considers a chemical for NM safe until it is proven harmful. **Regulation has begun to narrow** the difference between the EU and US systems.
Broader communication
The approaches to risk communication are broadly convergent

Communication to authorities, professional users and consumers is based on the best knowledge, with an emphasis on independence, competence, quality and transparency.

There are rules and guidance relating to conflicts of interest, transparency, stakeholder involvement, regulatory impact assessment... within the governmental structure.
Control-banding has been identified as a suitable risk control method for managing nanoparticle exposure.

New ways to communicate help to build trust along supply chains and reassure both professional users and consumers.
Way forward
Communicate that we have come a long way and know a lot. Further methods on nano-specific effects, with emphasis on novel hazard methods e.g. AOPs, long term effects. Focus on relevant and robust analytical methods that can be easily available.

A common understanding of how to include NM uncertainty parameters into the risk assessment models. Accepted cyber-infrastructure and tools to support data compilation, targeting developing of nanoinformatics tools.
Nano-informatics with tool for safer by design development
Development in policy areas to ensure good and agreed governance of nano
Continuous sharing of information with ALL stakeholders to have a transparent and broadly (global) accepted governance
Communicate progress into other areas such as advanced materials, nano-medicine and general nano-manufacturing
TRUST