

PERSPECTIVES ON RESOURCES CONTRIBUTING TO
A KNOWLEDGE INFRASTRUCTURE FOR
NANOSAFETY

**BRIEF REMARKS ON EU FUTURE NANO NEEDS (UCD
LEAD) AND UNIFORM DESCRIPTION SYSTEM FOR
NANOMATERIALS (CODATA – VAMAS LEAD)**

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FNN – ONE MAJOR GOAL TO CORRELATE FEATURES (SHAPE, SIZE, CORONA,?) WITH EHS OUTCOMES

- FIND APPROPRIATE NP FEATURE (S) AS BASIS FOR CATEGORISATION
- VALIDATE FEATURE ACTUALLY PREDICTS BEHAVIOR OF NEW NANOMATERIALS
- FINDING NP ARE NOT TOXIC IN THEMSELVES
- NP S IN REAL SYSTEMS APPEAR ALMOST ALWAYS COATED – ENDOTOXINS, OTHER BIO/ENVIRON SUBSTANCES
- NO FEATURE HAS YET CORRELATED WELL
 - SHAPE APPEARS IMPORTANT BUT
 - SHAPE OF UNCOATED NP NOT SAME AS SHAPE OF COATED NP

UNIFORM DESCRIPTION SYSTEM FOR NANOMATERIALS – CODATA AND VAMAS – MULTI-DISCIPLINARY; MULTI-USER FOCUS

- BASED ON EXISTING MATERIALS DESCRIPTION SYSTEMS
- USES SCIENTIFIC LANGUAGE AND AUTHORITATIVE DEFINITIONS
- HAS NOT USED ONTOLOGICAL TECHNOLOGY
- BROAD INTERNATIONAL REVIEW
- FINDING THAT MANY COMMON TERMS AND CONCEPTS NOT WELL-DEFINED, EVEN IN STANDARD ONTOLOGIES
- UPDATE SPRING 2016
- FREELY AVAILABLE, FUNDING FOR WORKSHOPS ONLY

WHAT WE HAVE LEARNED SO FAR

- VERY FEW SYSTEMATIC “CAUSE AND EFFECT” EXPERIMENTS IN NP EHS
 - ZETA POTENTIALS AS AN EXAMPLE
- RESEARCH FOCUSING ON BREAKTHROUGHS; NOT KNOWLEDGE INFRASTRUCTURE
- LACK OF ACCUMULATED DATA MAKES KNOWLEDGE DISCOVERY EXTREMELY DIFFICULT
- NP DATA REPOSITORIES SEVERELY LACKING, NANOMATERIAL REGISTRY (NMR) EXCEPTION
 - NEW NP DATA REPOSITORIES SHOULD REQUIRE MORE METADATA TO BE REPORTED
 - CODATA UDS, eNANOMAPPER, ISA-TAB, NMR NEED TO BE FUNDED TO WORK TOGETHER
 - RESULTING STANDARD FOR REPORTING DATA NEEDS TO BE COMMUNITY-DRIVEN, OPEN ACCESS
- NP ARE UNEVENLY CHARACTERIZED IN STUDIES — ESPECIALLY POST-PROCESSING
 - AFTER MATERIALS ARE BOUGHT/MADE AND DURING TESTING
- THIS IS NORMAL PROCESS OF SCIENCE — WHICH INDEPENDENT VARIABLES REALLY MATTER
- NEED FEEDBACK FROM INFORMATICS COMMUNITY TO MEASUREMENT COMMUNITY