U.S. Consumer Product Safety Commission
LOG OF MEETING

SUBJECT: NNI Nanoinformatics Conference

DATE OF MEETING: November 15, 2023

PLACE OF MEETING: National Nanotechnology Coordination Office (NNCO), 470 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024

LOG ENTRY SOURCE: Joanna Matheson (HSTR)

COMMISSION ATTENDEES: Joanna Matheson (HSTR), Treye Thomas (EXHR)

NON-COMMISSION ATTENDEES: Contact NNCO for a complete list.

SUMMARY OF MEETING:

Nanoinformatics, the organization, processing, and communication of nanoscale data, is an important subset of informatics science. The NNI organized this Nanoinformatics Conference to support greater interdisciplinary and international connections within the informatics community. While significant NNI efforts have focused on environmental, health, and safety (nanoEHS) data, nanoinformatics has broader impacts, advancing materials discovery, optimizing fabrication techniques, and facilitating applications in fields as diverse as biomedicine, microelectronics, and environmental sustainability. The NNI anticipates that the techniques, tools, and approaches to address the complexity of nanoscale data may provide breakthrough perspectives and new collaborations to tackle pressing environmental and societal challenges.

Christopher Marcum, White House Office of Science and Technology, in his keynote talk spoke 2023 being the Year of Open Science. Open Science meant new public access policies across the government following FAIR principles. Examples were provided of the agency activities including providing training, toolkits as well as data sharing.

The conference highlighted lessons learned, as well as opportunities and challenges for leveraging data across multiple scales and disciplines. Beyond national levels, participants discussed existing systems (*e.g.*, EU's Nanocommons and NanoSolveIT, the EPA's Ontosearcher tool and NaKnowBase) for data management, sharing data internationally and sustainability not only of the data, but the methods to collect and analyze data. Lessons learned included developing software first before database creation, having a data curator and a data dictionary (instead of a glossary), moving to a cloud-based platform, and using RDF as a data format/model. RDF may be able to handle the different nomenclature issues encountered with nanomaterials. EPA's Ontosearcher tool is to help improve manual curation, automating the ontology and mapping it to data. An international effort is underway to use semantic web applications (RDF) to integrate adverse outcome pathways to other databases.