Accelerating Adoption of NAMs with FAIR Principles

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Riding on the coattails of "omics" and "big data" are concepts like "ontologies" and "FAIR data". But what do these mean and how are they relevant to the day-to-day work of scientists and regulators working on chemical health and safety? This presentation introduces key concepts in FAIR (findable, accessible, interoperable, and reusable) data principles for data creators and consumers along with answers to the questions "why should I care?" and "how can I incorporate them into my research?" We will show case studies on how "little" data sets common to toxicology become "big" data and how various "omics" studies become pathways to insight using FAIR annotation. The impact of improving data FAIRness on the assessment and use of new approach methodologies (NAMs) will be discussed. Case studies presented will draw upon data resources from the National Toxicology Program such as the Chemical Effects in Biological Systems (CEBS) and the Integrated Chemical Environment (ICE) which are undergoing efforts to adopt and promote FAIR principles. This project was funded with federal funds from the NIEHS, NIH under Contract No. HHSN273201500010C.