

NIH Conference on  
Knowledge Environments for Biomedical Research

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Session 1: Information Representation  
*Panel Remarks*



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# Which tasks?

- ◆ Information integration
- ◆ Depending on the degree of human involvement
  - Hypothesis generation / validation
  - Knowledge discovery
  - Automated reasoning
- ◆ Knowledge standardization
  - Common format
  - Common semantics



# Which formalisms?

- ◆ SKOS – Thesaurus
  - Simple Knowledge Organization Schema
- ◆ RDF – Concept-Relationship-Concept triples
  - Resource Description Framework
- ◆ Description Logics / Frames
  - OWL Web Ontology Language
  - Protégé (frames / OWL)
  - OBO Open Biomedical Ontology
- ◆ Rule languages
- ◆ Formal logic



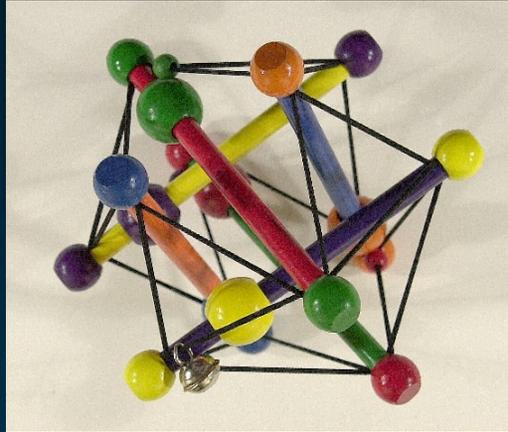
# Which identifiers?

## ◆ For concepts

- Namespaces, ontologies, knowledge bases
  - OBO – Open Biomedical Ontologies
  - UMLS – Unified Medical Language System
  - NCBI Entrez (Entrez Gene, GenBank, UniGene, ...)
- Mappings across information sources

## ◆ For relationships





# Medical Ontology Research

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