
Harnessing the Semantic Web to Answer Scientific Questions:

A Health Care and Life Sciences Interest Group demo

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The Lilly logo is written in a red, cursive script font.

Answers That Matter.

Agenda

- W3C Health Care and Life Sciences Interest Group
 - Scientific Domain Focus
 - Technological Approach
 - Answering Scientific Questions
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W3C Health Care & Life Sciences IG

HCLSIG is chartered to develop and support the use of Semantic Web technologies and practices to improve collaboration, research and development, and innovation adoption in the Health Care and Life Science domains

More details on HCLS are available at:
<http://www.w3.org/2001/sw/hcls/>

Benefits of Semantic Web to Life Sciences

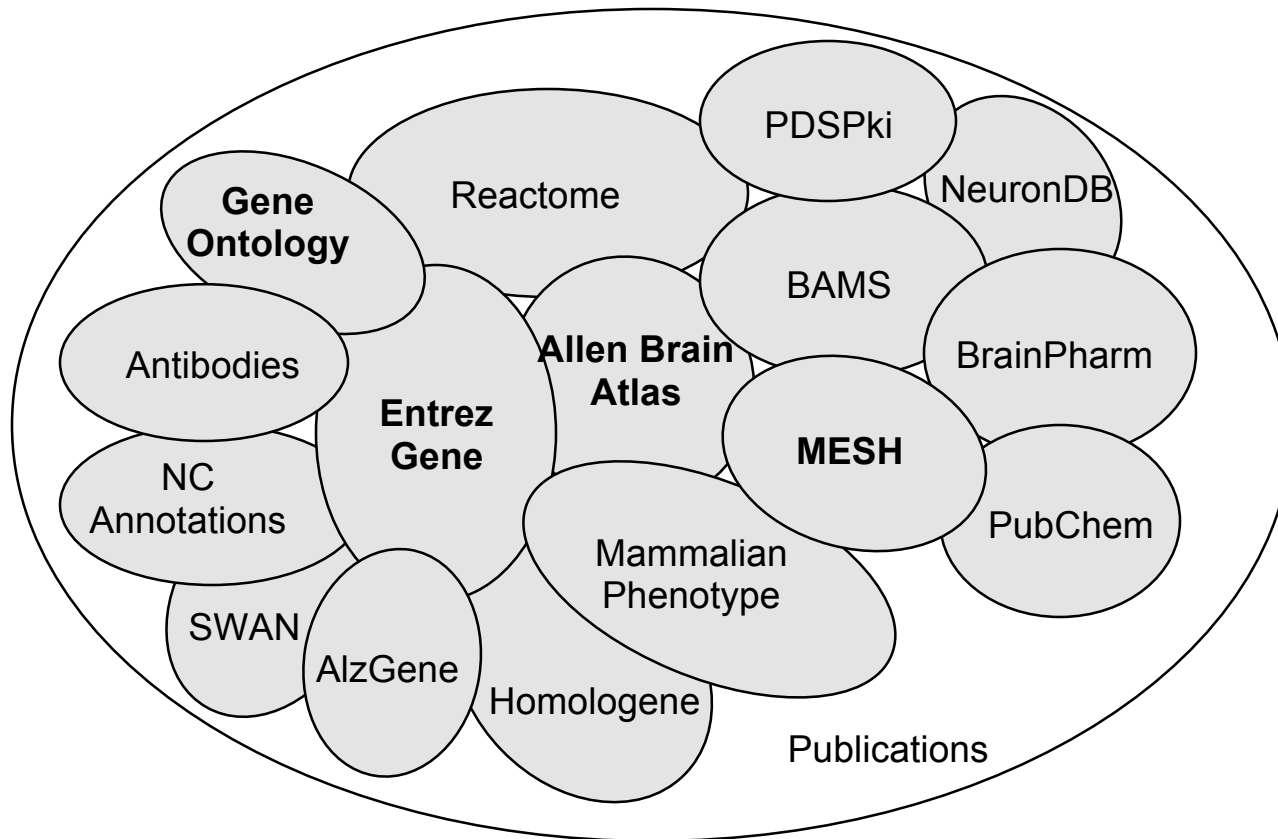
- Fusion of data across many scientific disciplines
 - Easier recombination of data
 - Querying of data at different levels of granularity
 - Capture provenance of data through annotation
 - Perform inference across data sets
 - Machine processable approach
 - Data can be assessed for inconsistencies
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Scientific Domain Focus

- Use case focuses on Alzheimer's Disease
 - AD is a devastating illness that impacts 26.6 million people worldwide
 - Prevalence is predicted to quadruple to 106.8 million by 2050
 - An active Web community exists for AD research
 - Many different types of evidence need to be integrated
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Scientific Data Sets

- Integration and analysis of heterogeneous data sets
 - Hypothesis, Genome, Pathways, Molecular Properties, Disease, etc.



Technological Approach

- Careful modeling that reflect biology to enable integration of data sources
 - All bio-entities were assigned URIs
 - Most data translated to RDF and managed in a triple store
 - Other data maintained in original store and mapped to RDF
 - Using a reasoner to infer triples to increase expressiveness of queries
 - Query data with SPARQL and visualization tools
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Answering Scientific Questions
