NCBO Overview and Biositemaps

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National Center for Biomedical Ontology

• Mission
  – To create software for the application of ontologies in biomedical science and clinical care

• NCBO Partners
  – Stanford University - Dr. Mark A. Musen
  – Mayo Clinic - Dr. Christopher G. Chute
  – University of Buffalo - Dr. Barry Smith
  – University of Victoria - Dr. Margaret-Anne Storey
National Centers for Biomedical Computing
(http://www.ncbcs.org)
BioPortal

• Library of Ontologies
  – NCBO BioPortal includes Biomedical ontology content, e.g. UMLS terminologies

• Architecture
  – Backend includes LexEVS and Protégé
  – Web Interface uses Ruby on Rails, Flex, and PHP

• Web services
  – REST Web services
Ontology Web Services

• Access Ontologies and Views (Value sets)
  – Search
  – Term
  – Hierarchy
  – Mapping
  – Notes

• Widgets
  – Auto-complete
  – Visualization

• Create ontology-based annotations
  – Annotator
  – Ontology Recommender
  – Lexicon Builder

• Access ontology-based index of annotations
  – Resource Index
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Biositemaps: From the Beginning

– The NCBCs originally listed software and data resources on a wiki
– The wiki was not easily scalable or searchable, and was usable only by humans
– And then, Google sitemaps provided a key insight

http://lovelycharts.com
Biositemaps

- Machine-readable resource associated with a website
- Resources are described in terms of an information model
- Supported by the Biomedical Resource Ontology
- Can be discovered by search engines such as Google

www.biositemaps.org
Biositemaps

National Centers for Biomedical Computing

Clinical and Translational Science Awards

www.ncbcs.org

www.ctsaweb.org
Biositemaps Information Model (v 2.6)

• Required Properties
  – Resource Name
  – Organization
  – Research Program
  – Description
  – Resource Type
  – URL
  – Contact Person
  – Biositemap Author
Biositemaps Information Model (v 3.2.1)

• Required Properties
  – Resource Name
  – Organization
  – Research Program
  – Description
  – Resource Type
  – URL
  – Contact Person
  – Biositemap Author

• Additional Properties
  – Related Areas of Research
  – Related Activities
  – Publication Identifier

http://biositemaps.ncbcs.org/informationModel.html
Biositemaps Editor

WebProtégé is an open source, lightweight, web-based ontology editor. The main goal in developing WebProtégé was to support the process of collaborative ontology development in a web environment and to facilitate knowledge acquisition from domain experts.
**Resource Discovery System**

A catalog of > 1,400 biomedical resources

A set of tools and services for easy sharing of and linking of resources to articles, websites etc.
Biositemaps Summary

• Initially developed in parallel to related efforts initiated by NIF, the CTSAs, and other groups
• Provides a shared framework with which to harmonize access to biomedical resources
• Adopts “Web oriented” philosophy of distributed information without central control
• Uses a formal Biomedical Resource Ontology to enhance precision and recall when searching for resources online
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