

Collaborating with the National Center for Biomedical Ontology

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NIH Roadmap

National Centers for Biomedical Computing

Home

NCBC Summary

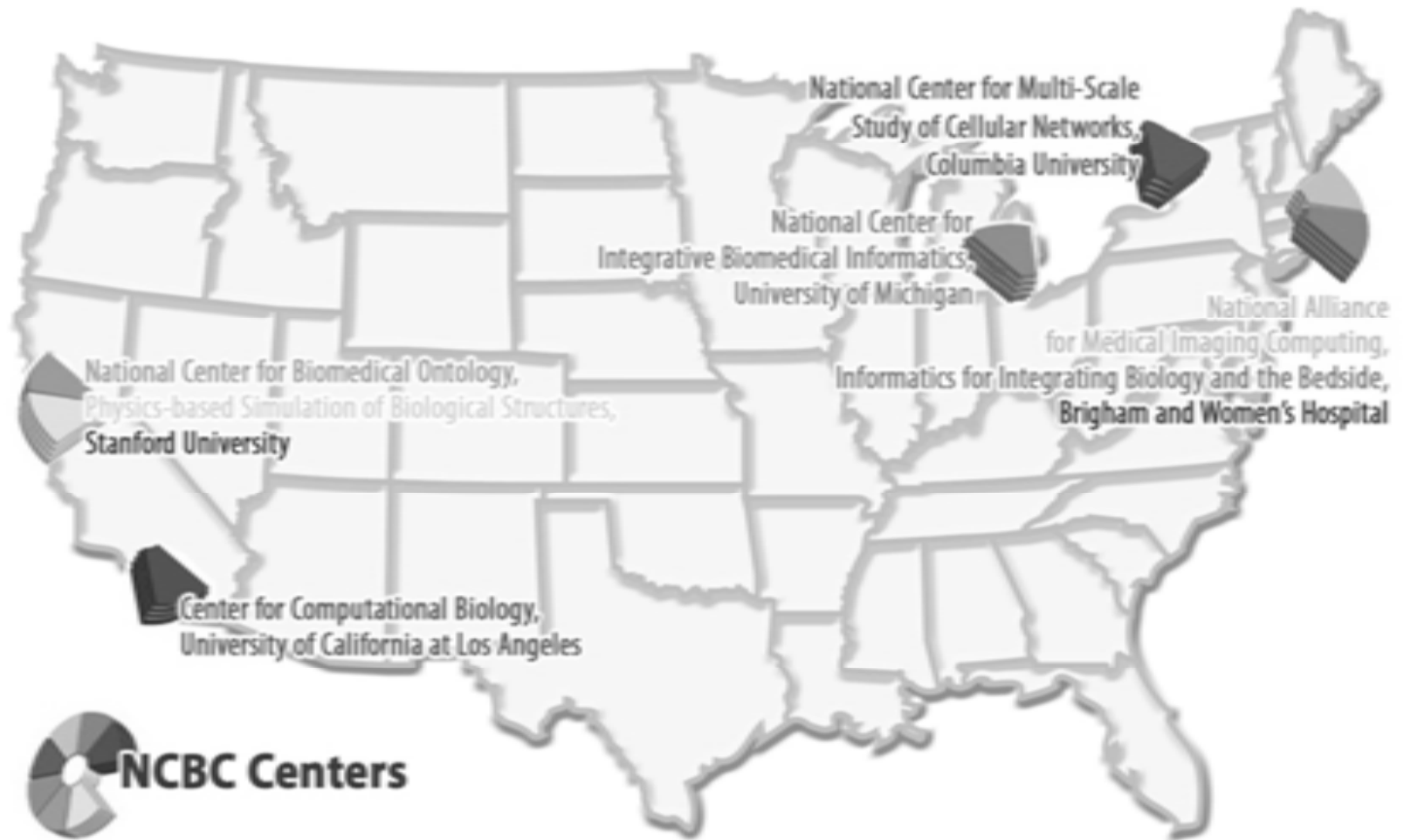
SDIWG

Tools and Applications

Ontology Working Group

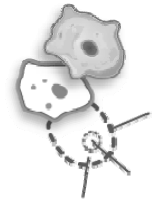
DBP Interactions

ATTENTION: Final Report from National Centers for Biomedical Computing 2006 All Hands Meeting



<http://www.ncbcs.org>

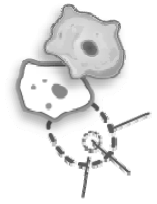
The National Center for Biomedical Ontology



- One of three National Centers for Biomedical Computing launched by NIH in 2005
- Collaboration of Stanford, Mayo, Buffalo, Washington University, Johns Hopkins, and the Medical College of Wisconsin
- Primary goal is to make ontologies accessible and usable
- Research will develop technologies for ontology dissemination, use, indexing, alignment, and peer review



NCBO: Key activities



- We **create and maintain a library** of biomedical ontologies.
- We **build tools and Web services** to enable the use of ontologies.
- We **collaborate with scientific communities** that develop and use ontologies.



Search:

Search

Search Site

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Sign In

The NCBO is one of seven National Centers for Biomedical Computing funded by the NIH Roadmap. We are truly a national center, fueled by researchers in informatics, computer science and biomedicine across the country striving to support biomedical research, providing tools to improve the management and analysis of biomedical data and knowledge.

About NCBO

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Forums

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Seminars

BioPortal

Workshops

Team

About NCBO

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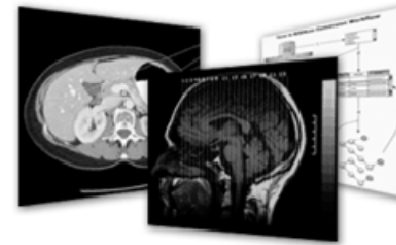
www.bioontology.org

Software Tools & Services



- [BioPortal](#)
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Collaboration



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Education & News



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Subscribe to the NCBO RSS Feed! Get updates on News, Events, Publications, Forum and Blog posts!

Welcome to the NCBO Bioportal

Use BioPortal to access and share ontologies that are actively used in biomedical communities. You can search for terms in ontologies (try typing "Melanoma" in the "Search all ontologies" box in the left column), browse a list of ontologies in BioPortal (type "NCI Thesaurus" in the "Find an ontology" box in the middle column), search biomedical resources that we automatically annotated with ontology terms (try typing "Melanoma" in the "Search resources" box in the right column). You can [create ontology-based annotations for your own text](#), [link your own project that uses ontologies to the description of those ontologies](#), [find and create relations between terms in different ontologies](#), review and comment on ontologies and their components as you browse them. [Sign in to BioPortal](#) to submit a new ontology or ontology-based project, provide comments on ontologies or add ontology mappings.

Search all ontologies

[Advanced Search](#)

Find an ontology

[Browse Ontologies >](#)

Search resources

[Advanced Resource Search](#)

Most Active Ontologies

Ontology	Version	Notes	Mappings
Human developmental anatomy, timed version	1.3	0	168488
Human developmental anatomy, abstract version	1.3	0	146067
NCI Thesaurus	09.07	11	91995
Cell Cycle Ontology (H. sapiens)	1.01	0	61199
Cell Cycle Ontology (S. cerevisiae)	1.01	0	58563

Statistics

Ontologies	168
Concepts	723,806
Resources Indexed	11

Latest Notes

[Term name misspelled? leaf vsular tissue \(Minimal anatomical terminology\)](#) 10/11/09 whetzel

[Incorrect mapping SDN \(Rat Strain Ontology\)](#) 09/23/09 whetzel

[RE:NEMO.owl subontologies/modules scalp_surface_region \(Neural ElectroMagnetic Ontologies\)](#) 08/22/09 gfrishkoff

[NEMO subontologies/modules entity \(Neural ElectroMagnetic Ontologies\)](#) 08/22/09 gfrishkoff

[NEMO.owl subontologies/modules scalp_surface_region \(Neural ElectroMagnetic Ontologies\)](#) 08/22/09 gfrishkoff

Latest Mappings

[human \(Human developmental anatomy, timed version\) => Humans \(Medical Subject Headings\)](#) 10/03/09 yongqunh@med.umich.edu

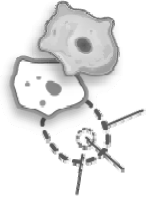
[Humans \(Medical Subject Headings\) => human \(Human developmental anatomy, timed version\)](#) 10/03/09 yongqunh@med.umich.edu

[sand_fly \(Parasite Life Cycle\) => Phlebotomus \(SNOMED Clinical Terms\)](#) 08/17/09 preets1511

[Phlebotomus \(SNOMED Clinical Terms\) => sand_fly \(Parasite Life Cycle\)](#) 08/17/09 preets1511

[amastigote \(Parasite Life Cycle\) => Amastigote form of protozoa \(SNOMED Clinical Terms\)](#) 08/14/09 preets1511

BioPortal allows us to experiment with new models for



- Dissemination of knowledge on the Web
- Integration and alignment of online content
- Knowledge visualization and cognitive support
- Peer review of online content

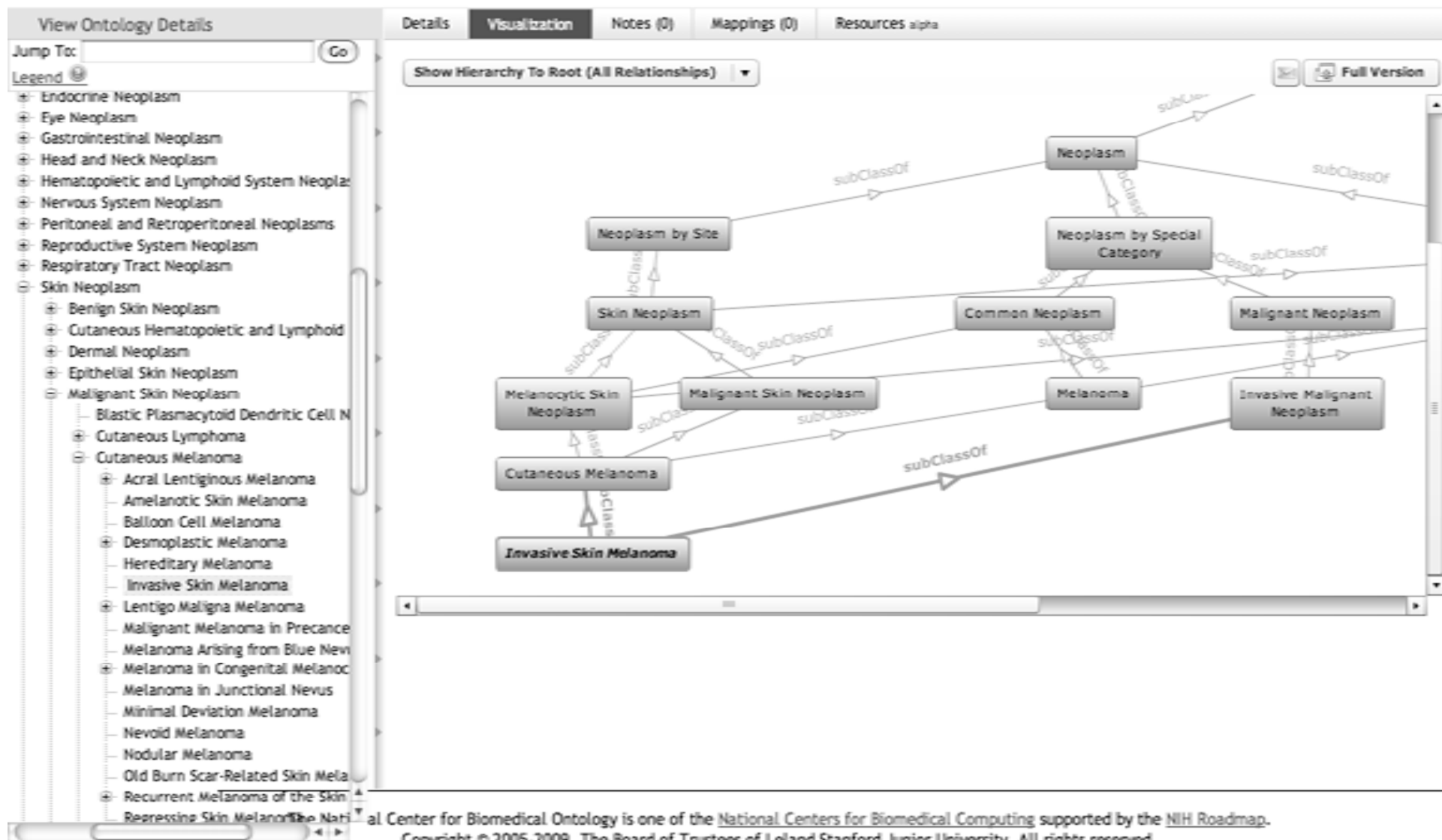
Access all ontologies that are available in BioPortal: You can filter this list by category to display ontologies relevant for a certain domain (try selecting "Anatomy or Experimental Conditions" in the "Filter by category" menu below). You can also filter ontologies that belong to a certain group such as ontologies from the [OBO Foundry](#), or ontologies from the [Cancer Biomedical Informatics Grid \(caBIG\)](#). [Subscribe to the BioPortal RSS feed](#) to receive alerts for submissions of new ontologies, new versions of ontologies, new notes, and new projects. You can subscribe to feeds for a specific ontology at the individual ontology page. Add a new biomedical ontology to BioPortal using the [Submit New Ontology](#) link (you need to [sign in](#) to see this link).

SUBMIT ONTOLOGY	Submit New Ontology
FILTER BY CATEGORY	<input type="text" value="All Categories"/>
FILTER BY GROUP	<input type="text" value="All Groups"/> Link To This Filter
FILTER BY TEXT	<input type="text"/>



[Subscribe to all updates](#)

ONTOLOGY NAME	▲	FORMAT	VERSION	AUTHOR	UPLOADED ON	GROUP	STATUS
ABA Adult Mouse Brain (ABA)		OWL	1.0	Allen Institute for Brain Science	08/08/2009		Explore
African Traditional Medicine (ATMO)		OBO Format	1.101	Ghislain Atemezang	06/28/2009		Explore
Amino Acid (amino-acid)		OWL	1.2	Nick Drummond, Georgina Moulton, Robert Stevens, Phil Lord	04/25/2009		Explore
Amphibian gross anatomy (AAO)		OBO Format	1.8	AmphiAnat list	07/30/2008	OBO Foundry	Explore
Amphibian taxonomy (ATO)		OBO Format	See Remote Site	AmphiAnat list	08/14/2009		
Animal natural history and life history (ADW)		PROTEGE	See Remote Site	Http://animaldiversity Administrators	04/27/2009		
Ascomycete phenotype ontology (APO)		OBO Format	1.6	Fungal_anatomy Administrators	09/01/2009		Explore
Basic Formal Ontology (BFO)		OWL	1.1		07/24/2009		Explore
Basic Vertebrate Anatomy (basic-vertebrate-gross-anatomy)		OWL	1.1		01/16/2007		Explore
Bilateria anatomy (BILA)		OBO Format	See Remote Site	Thorsten Heinrich	04/13/2009		
Biological imaging methods (FBbi)		OBO Format	1.1	Image Administrators	07/30/2008		Explore





Users can view and create mappings

BioPortal | Browse | Search | Projects | Annotate | All Mappings | All Resources Alpha | Sign In

Human developmental anatomy, timed version | Cell Line Ontology | **Cell Cycle Ontology (H. sapiens)**

Cell Cycle Ontology (H. sapiens) Version 1.01

protein | Link Here | Subscribe

View Ontology Details

Jump To: Go

Legend

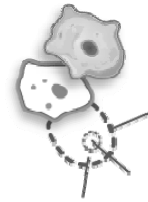
- biological entity
 - biological continuant
 - biological reference
 - cell cycle continuant
 - cellular_component
 - gene
 - cell cycle gene
 - gene product
 - protein**
 - cell cycle protein
 - modified protein
 - molecular_function
 - organism
 - small molecule
 - biological process

Details | Visualization | Notes (0) | **Mappings (27)** | Resource Index

"New Point-to-Point Mapping"

MAPPING TO	SOURCE	MAPPED BY	MAPPED ON	NOTES
Protein (Cardiac Electrophysiology Ontology)	LOOM	amirg	08/13/09	View Notes
Protein (Galen)	LOOM	amirg	08/13/09	View Notes
protein (SNP-Ontology)	LOOM	amirg	08/13/09	View Notes
protein (Cell Cycle Ontology (S. pombe))	LOOM	amirg	08/13/09	View Notes
protein (Sequence Ontology)	LOOM	amirg	08/13/09	View Notes
protein (Cell Cycle Ontology (S. cerevisiae))	LOOM	amirg	08/13/09	View Notes
protein (Cell Cycle Ontology (A. thaliana))	LOOM	amirg	08/13/09	View Notes
Protein (Foundational Model of Anatomy)	LOOM	amirg	08/13/09	View Notes

Biomedical Resource Ontology in BioPortal



BioPortal [Browse](#) [Search](#) [Projects](#) [Annotate](#) [All Mappings](#) [All Resources Alpha](#) [Sign In](#) [Register](#) [Help/About](#) [Se](#)

Biomedical Resource Ontology [NCI Thesaurus](#)

Biomedical Resource Ontology Version 2.7.1 [Software](#) | [Link Here](#) | [Subscribe](#)

View Ontology Details [Details](#) [Visualization](#) [Notes \(3\)](#) [Mappings \(0\)](#) [Resource Index](#)

Jump To: [Go](#)

Legend

- Activity
- Area of Research
- Biositemaps Information Model
- core:Collection
- core:Concept
- core:ConceptScheme
- Deprecated Activity
- Deprecated Area of Research
- Deprecated Resource
- Resource
 - Funding Resource
 - Information Resource
 - Material Resource
 - People Resource
 - Service Resource
 - Software
 - Training Resource

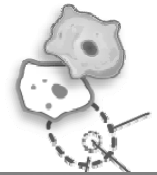
Show Network Neighborhood

[Full Version](#)

```
graph BT; Resource[Resource] -- subClassOf --> Software[Software]; Software -- subClassOf --> DTC[Data Transfer and Communication]; Software -- subClassOf --> Algorithm[Algorithm]; Software -- subClassOf --> MS[Modeling and Simulation]; Software -- subClassOf --> DSPS[Data Processing Software]; Software -- subClassOf --> DA[Data Analysis];
```

The diagram illustrates the class hierarchy of the Biomedical Resource Ontology. At the top is the class 'Resource'. Below it is 'Software', which is a subclass of 'Resource' (indicated by a solid line with an open triangle arrowhead pointing to 'Resource'). 'Software' is further divided into several subclasses: 'Data Transfer and Communication', 'Algorithm', 'Modeling and Simulation', 'Data Processing Software', and 'Data Analysis'. Each of these subclasses is connected to 'Software' by a solid line with an open triangle arrowhead pointing to 'Software'.

“Notes” in BioPortal



Biomedical Resource Ontology Version 2.7.1

Software | Link Here | Subscribe

View Ontology Details

Jump To:

Legend

- Activity
- Area of Research
- Biositemaps Information Model
- core:Collection
- core:Concept
- core:ConceptScheme
- Deprecated Activity
- Deprecated Area of Research
- Deprecated Resource
- Resource
 - Funding Resource
 - Information Resource
 - Material Resource
 - People Resource
 - Service Resource
 - Software
 - Algorithm
 - Data Acquisition Software
 - Data Analysis Software
 - Data Processing Software
 - Data Storage Repository
 - Data Transfer and Communication
 - Integration and Interoperability Tool
 - Interactive Tool
 - Knowledge Mining and Capturing
 - Modeling and Simulation
 - Software Distribution
 - Training Resource

Details Visualization **Notes (3)** Mappings (0) Resource Index

Comment: Software needs structure, too many top level subclasses DavidStates at 08/09/08 06:56

"binary executable" is not a top level subclass of software, it is a form of software distribution and there are several other subclasses of software distribution (source code, web site, library, toolkit, etc.).

Similarly, "network editor" is just one class of interactive editing tools. Lots of others.

These are just a couple of examples. Software really needs a complete reorganization.

[Reply](#)

Comment: RE:Software needs structure, too many top level subclasses PeterLyster at 08/12/08 08:29

The BRO used the initial design principle of: when in doubt make it flat at the top. This is a design principle whose purpose is to get the class names 'on the board and agreed upon' first, i.e., it is a componentization of the design process. This is a way of avoiding getting into debates about hierarchical location too early in the process. We can discuss location in the hierarchy in the future; that is appropriate.

[Reply](#)

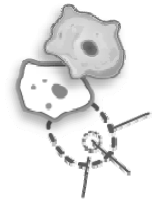
Comment: RE:Software needs structure, too many top level subclasses PeterLyster at 08/12/08 08:43

I (Peter Lyster) copy marginal notes that I also place in the 'Portals' class. I think this helps to explain the design principles.

We adopted the design principle of (i) initially align the BRO top level with NIFSTD (**Data Resource; Bibliographic Resource; Software; Research Supplies; Portals; Funding Source**) (see agreement that was made in broad tcon of 20080416 http://na-mic.org/Wiki/index.php/SDIWG:Meeting_Minutes_20080416). As with the discussion on 'Software' class, the goal was to get a reasonable first cut and then stabilize the BRO development process; then the development team (called 'tiger team' after the April tcon) agreement (interdigitate etc) on the overall list of class names (this was successfully done by Rubin, Martone, and Lyster between July 28 and August 1 2008). This process was highly successful, and validated the logic behind taking one step at a time; (ii) continue to work with NIFSTD and other stakeholders to plan current and future efficient and effective mappings. It is good to revisit in th future the position of upper-level classes such as 'portals' or 'funding source'.

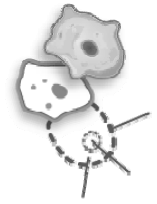
[Reply](#)

Community-Based Annotation as Peer Review



- Makes ontology evaluation a democratic process
- Assumes users' application of ontologies will lead to insights not achievable by inspection alone
- Assumes end-users will be motivated to comment on and engage in dialog about ontologies in the repository

BioPortal is building an online community of users who



- Develop, upload, and apply ontologies
- Map ontologies to one another
- Comment on ontologies via “notes” to give feedback
 - To the ontology developers
 - To one another
- Make proposals for specific changes to ontologies
- Stay informed about ontology changes and proposed changes via “push” technology
- Incorporate BioPortal services into their own technologies

Word Add-in For Ontology Recognition - Home - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://ucsdbiolit.codeplex.com/

CodePlex Open Source Community

Register Sign In CodePlex Home

Search all CodePlex projects Search

Home Releases Discussions Issue Tracker Source Code Stats People License RSS

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Home

Project Description
A Word 2007 add-in that enables the annotation of Word documents based on terms that appear in Ontologies

Summary
Microsoft External Research's goal with this project is to enable communities who maintain ontologies to more easily experiment and to enhance the experience of authors who use Microsoft Word for content creation, incorporating semantic knowledge into the content. This add-in should simplify the development and validation of ontologies, by making ontologies more accessible to a wide audience of authors and by enabling semantic content to be integrated in the authoring experience, capturing the author's intent and knowledge at the source, and facilitating downstream discoverability.

The goal of the add-in is to assist scientists in writing a manuscript that is easily integrated with existing and pending electronic resources. The major aims of this project are to add semantic information as XML mark-up to the manuscript using ontologies and controlled vocabularies (from the National Center for Biomedical Ontology) and identifiers from major biological databases, and to integrate manuscript content with existing public data repositories.

As part of the publishing workflow and archiving process, the terms added by the add-in, providing the semantic information, can be extracted from Word files, as they are stored as custom XML tags as part of the content. The semantic knowledge can then be preserved as the documented is converted to other formats, such as HTML or the XML format from the National Library of Medicine, which is commonly used for archiving.

The full benefit of semantic-rich content will result from an end-to-end approach to the preservation of semantics and metadata through the publishing pipeline, starting with capturing knowledge from the subject experts, the authors, and enabling this knowledge to be preserved when published, as well as made available to search engines and presented to people consuming the content.

This project resulted from an initial and ongoing collaboration between Microsoft External Research and Dr. Phil Bourne and Dr. Lynn Fink, at the University of California San Diego. Additional collaboration with the staff from Science Commons aims to make the add-in relevant to a wider audience and also to preserve semantic data along the publishing pipeline.

Audience
This project is focused on researchers and software developers in domains utilizing ontologies-- as well as publishers, archivists, and early adopters in the scientific, technical, and scholarly publishing fields.

Specific features

- » Inline Syntax Coloring of Informative Words
- » Built-in Knowledge of Ontologies and Controlled Vocabularies maintained and delivered by NCB

Done

Downloads
Current release:
Technology Preview - March 2009
Tue Mar 10 2009, Alpha
269 downloads
[More info](#)

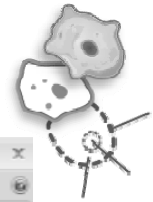
Activity 7 30 All days

Page Views	950
Visits	209
Pages Per Visit	4.55
Work Items Closed	7
Discussion Posts	1

Analytics powered by **WebTrends.**

http://ucsdbiolit.codeplex.com

Automated recognition of ontology terms *before* publication



Background

Tuberculosis (TB) remains a major cause of mortality in developing countries, and in these countries diabetes prevalence is increasing rapidly. Diabetes increases the risk of TB. Our aim was to assess the potential impact of diabetes as a risk factor for incident pulmonary tuberculosis, using India as an example.

Methods

We constructed an epidemiological model using data on tuberculosis incidence, diabetes prevalence, and the difference between the two. We estimated the difference between the two with diabetes. We estimated the difference between the two with diabetes. We estimated the difference between the two with diabetes.

Results

In India in 2000 there were an estimated 20.7 million adults with diabetes, and 900,000 incident adult cases of pulmonary tuberculosis. Our calculations suggest that diabetes accounts for 14.8% (uncertainty range 7.1% to 23.8%) of pulmonary tuberculosis and 20.2% (8.3% to 41.9%) of smear-positive (i.e. infectious) tuberculosis.

We estimate that the increased diabetes prevalence in urban areas is associated with a 15.2% greater smear-positive tuberculosis incidence in urban than rural areas – over a fifth of the

BioLit Info Pane

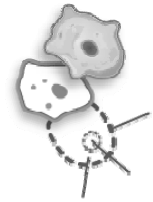
BROWSER INFO

incidence

- INCIDENT DISEASE ONTOLOGY
 - quality
 - quality of infectious disease
 - incidence
- INCIDENT DISEASE ONTOLOGY
 - quality
 - quality of infectious disease
 - incidence

Ontology Name:

BioLit Web resource: automated recognition of ontology terms and database IDs *after* publication



BioLit

- Tools ▶
- Views ▶
- Related Articles ▶
- Information ▶

Article Search:

Go

Found 53 terms.

- Pathway Ontology ▲
 - [metabolic syndrome](#) (1)
- Human Disease Ontology ▲
 - [infectious diseases](#) (4)
 - [lung disease](#) (5)
 - [syndrome](#) (2)
- Infectious Disease Ontology ▼
- Mammalian Phenotype Ontology ▲
 - [impaired glucose tolerance](#) (5)
 - [insulin resistance](#) (1)
- Physico-chemical Methods and Properties Ontology ▼
- Physico-chemical Process Ontology ▼
- BRENDA Tissue/Enzyme Source Ontology ▼
- C. elegans Phenotype Ontology ▼
- Environment Ontology ▼
- C. elegans Development Ontology ▼
- Plant Structure Ontology ▼

Diabetes and tuberculosis: the impact of the diabetes epidemic on tuberculosis incidence

Catherine R Stevenson, Nita G Forouhi, Gojka Roglic, Brian G Williams, Jeremy A Lauer, Christopher Dye, Nigel Unwin
BMC Public Health (BMC Public Health. 2007; 7:234) [[PubMed central](#)]

Background

Tuberculosis (TB) remains a major cause of **mortality** in developing countries, and in these countries diabetes **prevalence** is increasing rapidly. Diabetes increases the risk of TB. Our aim was to assess the potential impact of diabetes as a risk **factor** for incident pulmonary tuberculosis, using India as an example.

Methods

We constructed an epidemiological model using data on tuberculosis **incidence**, diabetes **prevalence**, population **structure**, and relative risk of tuberculosis associated with diabetes. We evaluated the contribution made by diabetes to both tuberculosis **incidence**, and to the difference between tuberculosis **incidence** in urban and rural areas.

Results

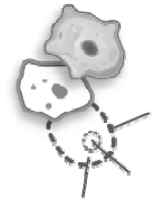
In India in 2000 there were an estimated 20.7 million adults with diabetes, and 900,000 incident **adult** cases of pulmonary tuberculosis. Our calculations suggest that diabetes accounts for 14.8% (uncertainty range 7.1% to 23.8%) of pulmonary tuberculosis and 20.2% (8.3% to 41.9%) of smear-positive (i.e. infectious) tuberculosis.

We estimate that the increased diabetes **prevalence** in urban areas is associated with a 15.2% greater smear-positive tuberculosis **incidence** in urban than rural areas – over a fifth of the estimated total difference.

Conclusion

Diabetes makes a substantial contribution to the burden of incident tuberculosis in India, and the **association** is particularly strong for the infectious form of tuberculosis. The current diabetes **epidemic**

IO informatics uses Ontology Services



Service: BioPortal

Ontologies:

Ontology	Version	Creator	Description
Cell Behavior Ont...	0.0	Benjamin Zafra	The Cell Behavior Ontology is designed as a str...
Drosophila devel...	1.15	Http://obo Admi...	A structured controlled vocabulary of the devel...
NMR instrument ...	See Remote Site	Http://svn Adm...	Descriptors relevant to the experimental condi...
Medical Subject ...	2009_2009_02_...	Stuart Nelson, M...	Medical Subject Headings (MeSH)/National Libr...
Electrocardiogr...	0.1.5	Raymond L. Wri...	The Electrocardiography (ECG) Ontology is a Dr...
Protein modificat...	See Remote Site	Paimod Administ...	PSI-MOD is an ontology consisting of terms that...
NeU Vocabulary	beta	Patty Kostkova	A SKOS vocabulary for the infectious disease d...
PRotein Ontology...	1.14	Daren Natale	PRotein Ontology (PRO) has been designed to ...
Mouse adult gros...	1.195	Anatomy JAX	A structured controlled vocabulary of the adult...
Tick gross anatomy	1.2	Http://www Ad...	The anatomy of the Tick, Families: Ixodidae, Ar...
Ontology for Biom...	0.9	OBi Consortium	OBi models the design of an investigation, the p...
SNP-Ontology	1.6	Adrien Coulet	SNP-Ontology is a domain ontology that provide...
African Traditiona...	1.101	Ghislain Remond...	African Traditional Medicine Ontology (ATMO) d...
BiTop	dev	Holger Stenzhorn	A top-domain ontology that provides definitions f...
Spatial Ontology	1.15	Http://obo Admi...	A small ontology for anatomical spatial referenc...
GeoSpecies Ont...	beta	Peter J. DeVries	This ontology was designed to help integrate sp...
Chemical entities ...	1.58	Chabi Administra...	A structured classification of chemical compos...
Loggerhead nest...	See Remote Site	Http://www Ad...	A demonstration of ontology construction as a g...
MeGO	1_8	Ariane Toussaint	bacteriophage and plasmid reproduction and m...
Pseudogene	0.1	Gersten Lab	
C. elegans devel...	1.3	Worm_develop...	A structured controlled vocabulary of the devel...

Close Import

Ready

Entity List Entity Details Relationship

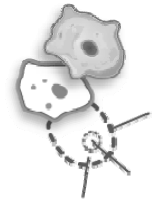
Name / Content	Class	Type
----------------	-------	------

Relations

Back Forward

5:28 PM

Wikipathways uses Ontology Services



special

Ontology Index

List Image Tree

Species :

- All Species
- Anopheles gambiae
- Arabidopsis thaliana
- Bos taurus
- Bacillus subtilis
- Caenorhabditis elegans
- Canis familiaris
- Danio rerio
- Drosophila melanogaster
- Escherichia coli
- Equus caballus
- Gallus gallus
- Homo sapiens**
- Mus musculus
- Oryza sativa
- Pan troglodytes
- Rattus norvegicus
- Saccharomyces cerevisiae
- Xenopus tropicalis

Ontologies :

Pathway Ontology

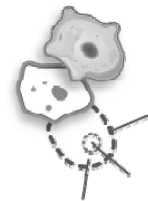
- regulatory pathway (42)
- signaling pathway (4)
- classic metabolic pathway (19)
- disease pathway (1)

Disease

- temp holding (2)

regulatory pathway (42)

- homeostasis pathway (0/6)
- cell death pathway (0/6)
- pathways of replication, repair, gene expression, protein biosynthesis (0/15)
 - cell cycle checkpoint pathway (1/1)
 - translation pathway (1/1)
 - transcription pathway (5/5)
 - DNA repair pathway (3/5)
 - >> **Homologous recombination**
 - >> **Mismatch repair**
 - >> **Non-homologous end joining**
- transport pathway (8/8)
- immune response pathway (4/7)



Ontology Tags

Pathway Ontology : cell adhesion signaling pathway, immune response pathway, inflammatory response pathway

Disease : Signal Transduction Pathway Deregulation, disease of response to stimulus

Cell Type : lymph gland plasmacyte

altered DNA repair pathway

Pathway ontology

DNA repair pathway

Pathway ontology

Abnormal DNA Repair

Human disease

DNA Repair Deficiency

Human disease

To add a tag, either select from the available ontology trees below or type a search term in the search box.

+ Disease

+ Cell Type

Ontology Tags

Pathway Ontology : cell adhesion signaling pathway, immune response pathway, inflammatory response pathway

Disease : Signal Transduction Pathway Deregulation, disease of response to stimulus

Cell Type : lymph gland plasmacyte

Term : altered DNA repair pathway

ID : PW:0000292



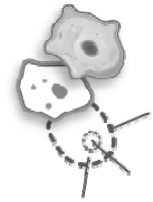
To add a tag, either select from the available ontology trees below or type a search term in the search box.

+ Pathway Ontology

+ Disease

+ Cell Type

ISAcreator uses Ontology Services



file view help

OVERVIEW

Assay measuring protein expression profiling using mass spectrometry

fact char prot para

— Growth control of the e...
 — BII-S-1
 → s_BII-S-1.txt
 → a_proteome.txt
 → a_metabolome.txt
 → a_transcriptome.txt
 + BII-S-2

Data Transformation Name	Derived Data File	Factor Value[limiting nutrient]	Factor Value(rate)	Unit
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:sulphur	0.1	l/hr
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:carbon	0.1	l/hr
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:Nitrogen	0.1	l/hr
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:sulphur		l/hr
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:carbon		l/hr
atatransformation1	PRIDE_Exp_Complete_Ac_8761.xml	CHEBI:Nitrogen		l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:sulphur	0.2	l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:carbon	0.2	l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:Nitrogen	0.1	l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:sulphur		l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:carbon		l/hr
atatransformation2	PRIDE_Exp_Complete_Ac_8762.xml	CHEBI:Nitrogen		l/hr
atatransformation3	PRIDE_Exp_Complete_Ac_8763.xml	CHEBI:Nitrogen	0.2	l/hr
atatransformation3	PRIDE_Exp			
atatransformation3	PRIDE_Exp			
atatransformation3	PRIDE_Exp			
atatransformation3	PRIDE_Exp			
atatransformation3	PRIDE_Exp			

+ STUDY - STUDY < OVERVIEW

INFORMATION

ontology term information
 Nitrogen
 source ref: CHEBI
 accession no: 17997

ontologylookup recenthistory

recommended search all ontologies

term: search

— 279 results in 18 ontologies

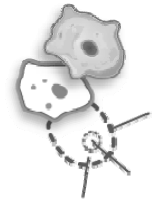
+ CCO - Cell Cycle Ontology

— CHEBI - Chemical Entities of Biological

- -carboxy-2-methylphenylazo nit
- Nitrogen oxide cation << 29120 >>
- Nitrogen << 17997 >>
- boron-carbon-nitrogen nanotube << 508
- diatomic nitrogen << 33266 >>
- elemental nitrogen << 33267 >>

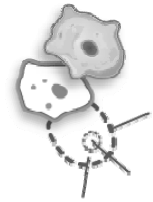
selected term(s)

ECG Gadget uses Ontology Services



The screenshot displays the CVRG Grid Node web application interface. The main window shows an ECG waveform with a highlighted segment. A tooltip box over the waveform contains the following text: **A. MN Code 1-1-1** Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.03 sec. The application includes a sidebar with navigation options: Connect, Store, Visualize, Analyze, and Review. The Visualize section is active, showing a list of leads (Lead I, Lead II, Lead III, All Leads) with Lead II selected. Below the waveform, there is an 'Ontology' field containing the text 'MN Code 1-1-1' and an 'Annotation' field containing the text 'Q/R amplitude ratio $\geq 1/3$, plus Q duration ≥ 0.03 sec.'. At the bottom of the annotation area are 'Save', 'Delete', and 'Close' buttons. The interface also features a 'Time & Amplitude' section with input fields for 'Second: 1 .00' and a 'Language' selector at the bottom right with options for English, 中文, German, 日本, and Spanish.

Biositemaps Editor



The screenshot displays the Biositemaps Editor interface. The main window is titled "BIO SITEMAPS EDITOR" and features the logo of the National Institutes of Health (NIH) in the top right corner. The interface is divided into several sections:

- Resource Descriptions:** A list of resources including BioPortal, Jambalaya, LexGrid, OBA, OBO_Converter, OBO_Edit, OBR, Phenote, PROMPT, and Protége.
- Resource Properties:** A form for configuring a resource. The "Resource Name" is "BioPortal", "Organization" is "Stanford University", "Center or Institute" is "National Center for Biomedical Ontology", and "Research Program" is "NCBC". The "Description" is "A Web portal to a virtual library of ontologies and ontology tools".
- Resource Type:** A section for selecting a resource type. It shows a list of types under "BRO (2 Items)", including "BRO:Ontology_Development_and_Management" and "BRO:Web_Service". An "Add new" button is highlighted with a red box.
- Related Areas Of Research:** A section for selecting related areas of research. It shows a list of areas under "BRO (2 Items)", including "j:0:Bioinformatics" and "j:0:Research_IT". An "Add new" button is visible.
- Related Activities:** A section for selecting related activities. It shows a list of activities under "BRO (2 Items)", including "j:1:Community_Engagement" and "j:1:Software_Development".

A dialog box titled "Select a resource type" is open, showing a class hierarchy of available types. The "visualization" class is selected, and its sub-classes are listed, including "BRO:Data_Transfer_and_Communication", "BRO:Integration_and_Interoperability_Tool", "BRO:Interactive_Tool", "BRO:Communication_and_Collaborative_Work", "BRO:Data_Editor", "BRO:Graphical_Composition", "BRO:Interactive_Network_Analysis", "BRO:Interactive_Web-Based_Tool", "BRO:Knowledge_Mining_and_Capturing", "BRO:Software_Development_Resource", "BRO:Visualization", "BRO:Data_Exploration", "BRO:Graph_Viewer", "BRO:Heat_Map", "BRO:Imaging", "BRO:Sequence_Visualization", "BRO:Website", "BRO:Workbench", "BRO:Knowledge_Mining_and_Capturing", "BRO:Modeling_and_Simulation", and "BRO:Software_Distribution". The "Cancel" and "OK" buttons are visible at the bottom of the dialog.

At the bottom of the main window, a message states: "This biositemap was not saved yet". Below this message are "Cancel" and "Save" buttons.

The footer text reads: "The Biositemap Editor is a component of The National Center for Biomedical Ontology. The National Center for Biomedical Ontology is one of the National Centers for Biomedical Computing supported by the NIH Roadmap."

Protégé BioPortal-reference plug-in



P3F-exp1-4_test Protégé 3.4 (file:/work/protége/projects/Alan-frames/2009.05.04/P3F-exp1-4_test.pprj, Protégé Files (.pont and .pins))

File Edit Project Code Window Help

ICD Tab Slots Forms Missing resource bundle for tab queries

CLASS BROWSER
For Project: P3F-exp1-4_test

Class Hierarchy

- THING
 - SYSTEM-CLASS
 - google(SCT:123)
 - HeartDisease(SCT)
 - ICD_Category_class
 - Heart disease
 - Myocardial Infarct
 - Hypertensive disease
 - Kidney disease
 - Standard_term
 - yahoo(SCT:345)

CLASS EDITOR
For Class: Myocardial Infarct (instance of Metadata, Formal Representation, Diagnostic Criteria, Etiology, Functional Impact, All information)

Metadata Formal Representation Diagnostic Criteria Etiology Functional Impact All information

Unique Ref Term (International English)
Myocardial Infarct

ICD-ID
Generated by the system

Type
Diagnosis

Text Definition
Infarction of myocardium caused by ischaemia

Comment on Definition
Explicitly excludes infarction from other causes - see exclusions

Synonyms

Synonym	language
Heart attack	en,colloquial
Acute coronary syndrome	en
Coronary thrombosis	en

Editorial Status
In_discussion

References

Preferred term	code	Id System	url				
Myocardial Infarct	22296006	SCT	http://stage.bioontology.org/visualize/39934/SCTID:57054005				
acute anterolateral myocardial infarction	DOID:10651	SCT	http://stage.bioontology.org/visualize/39948/DOID:10651				
Myocardial Infarction	Myocardial_infarction	NCI Thesaurus	http://stage.bioontology.org/visualize/39478/Myocardial_infarction				
myocardial infarction	EFO_0000612	Experimental Factor Ontology	http://stage.bioontology.org/visualize/39715/EFO_0000612				

Superclasses
Heart disease

Simbios uses NCBO Ontology Web Widgets



7. Classify your project (required)

a) Choose one or more terms from the Biological Resource Ontology that most closely describe your project. These will be used in searches so others can more easily find your work.

1) Search for a term by starting to enter it in the box below - all terms that contain what you entered will be shown below the box. Select one of these, *or*. . .

2) Alternatively, you can try browsing the [Biological Resource Ontology](#). Only terms under BRO:Resource are allowed. You are most likely to find suitable terms under BRO:Resource → BRO:Software → BRO:Modeling_and_Simulation. Enter the term or any part of it in the box below *without* the BRO prefix and continue as in 1).

Restriction: only terms from the BRO:Resource branch of the Biological Resource Ontology allowed.

Samples: Neuromuscular_Model, Molecular_Dynamics

Ontology terms:

Computational_Model	Remove
Protein_Model	Remove
Standalone_Application	Remove
Structure-Based_Protein_Classification	Remove

[Add](#) (click after choosing a term)

b) Please also choose one or more keywords for your project. These will also be used in searches so others can more easily find your project.

Keywords: (required)

allosteric communication	Remove
allostery	Remove

[Add](#) (one at a time)

To save changes, click [Save Project Info](#) here or at the bottom of the page.

8. Short Purpose/Synopsis (required)

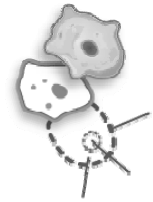
Please provide a synopsis of your project. This will be displayed in the search results.

Restriction: 255 characters

Samples:

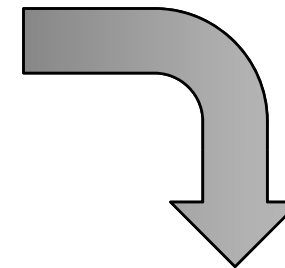
- 1) Provide an easy-to-use application for manipulating RNA structures
- 2) Provides the code base for creating, simulating, and visualizing three-dimensional finite-element models of skeletal muscle.
- 3) Geometric models in VTK/XML PolyData format for download, for use in cardiovascular applications.

NCBO Annotator: The Basic Idea



Process textual metadata to tag text automatically with as many ontology terms as possible.

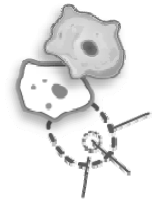
GDS Summary		
Accession:	GDS906 View Expression (GEO profiles)	
Title:	Bladder smooth muscle cell response to mechanical stretch	
DataSet type:	gene expression array-based (RNA / in situ oligonucleotide)	
Summary:	Expression profiling of cultured bladder smooth muscle cells subjected to repetitive mechanical stimulation for 4 hours. Chronic overdistension results in bladder wall thickening, associated with loss of muscle contractility. Results identify genes whose expression is altered by mechanical stimuli.	
Platform:	GPL96: Affymetrix GeneChip Human Genome U133 Array Set HU-U133A	
Citations:	Adam RM, Eaton SH, Estrada C, Nimgaonkar A et al. Mechanical stretch is a highly selective regulator of gene expression in human bladder smooth muscle cells. <i>Physiol Genomics</i> 2004 Dec 15;20(1):36-44. PMID: 15467014	
Sample organism:	Platform organism:	Homo sapiens
Feature count:	Value type:	count
Series:	Series published:	07/25/2004
Last GDS update:	12/20/2004	



Expression, Expression of bladder, bladder, smooth, bladder muscle, muscle, smooth muscle, cells, mechanical, mechanical stimulation, stimulation, Chronic, results, bladder overdistension, associated, associated with, with, loss, genes, altered

NCBO Annotator

<http://bioportal.bioontology.org/annotate>



- Give your text as input
- Select your parameters
- Get your results ... in text or XML

The screenshot displays the NCBO Annotator interface. At the top, the 'Open Biomedical Annotator' window contains the following elements:

- Ontologies:** A text box containing 'SNOMEDCT' and a 'Choose...' button.
- Semantic Types:** A text box containing '7,T033,T200,T026,T029,T023,T038,T017,T047,T048,T191,T019,T121,T195,T020,T050' and a 'Choose...' button.
- Options:** Radio buttons for 'Annotate Text' (selected) and 'Get Annotations By Resource Element Alpha'. A 'Change...' button is also present.
- Text:** A text area containing 'Melanoma is a disease of the melanocytes affecting the bowel and the eye'. The words 'disease', 'bowel', and 'eye' are underlined.
- Annotate:** A button with a magnifying glass icon and the text 'Annotate'.

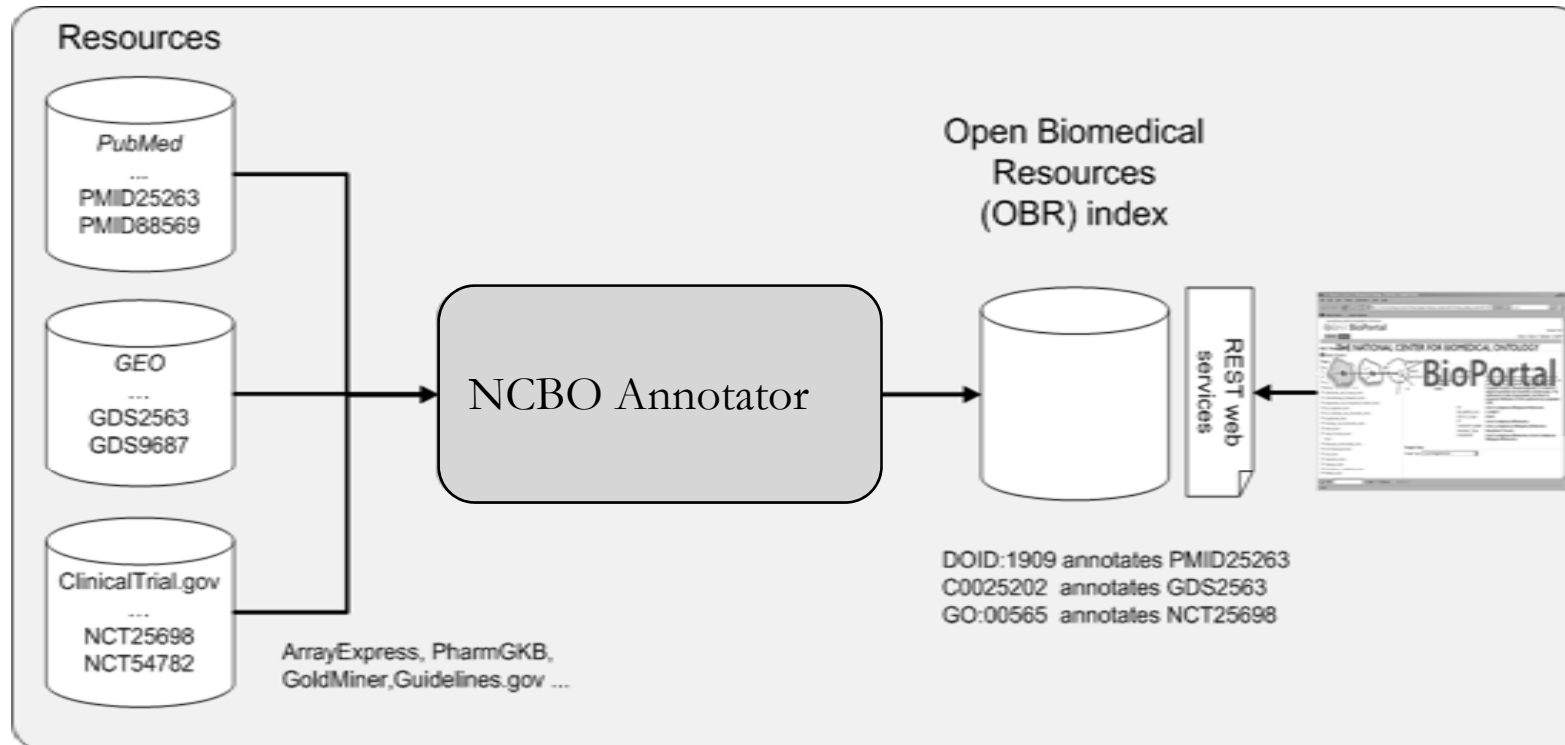
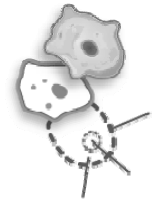
Below the input form, the 'Ontologies' panel (1) shows a filter set to 'UMLS and BioPortal Ontologies' with 'Select All' and 'Select None' buttons. A single ontology, 'SNOMED Clinical Terms, 2008_07_31', is checked.

The 'Annotation Tag Cloud' panel (5) displays 'Annotation statistics':

- Expanded annotations generated from the is_a transitive closure (ISA_CLOSURE): 0
- Expanded annotations generated from mappings (MAPPING): 0
- Direct annotations generated from concept recognition on the given text (MGREP): 5

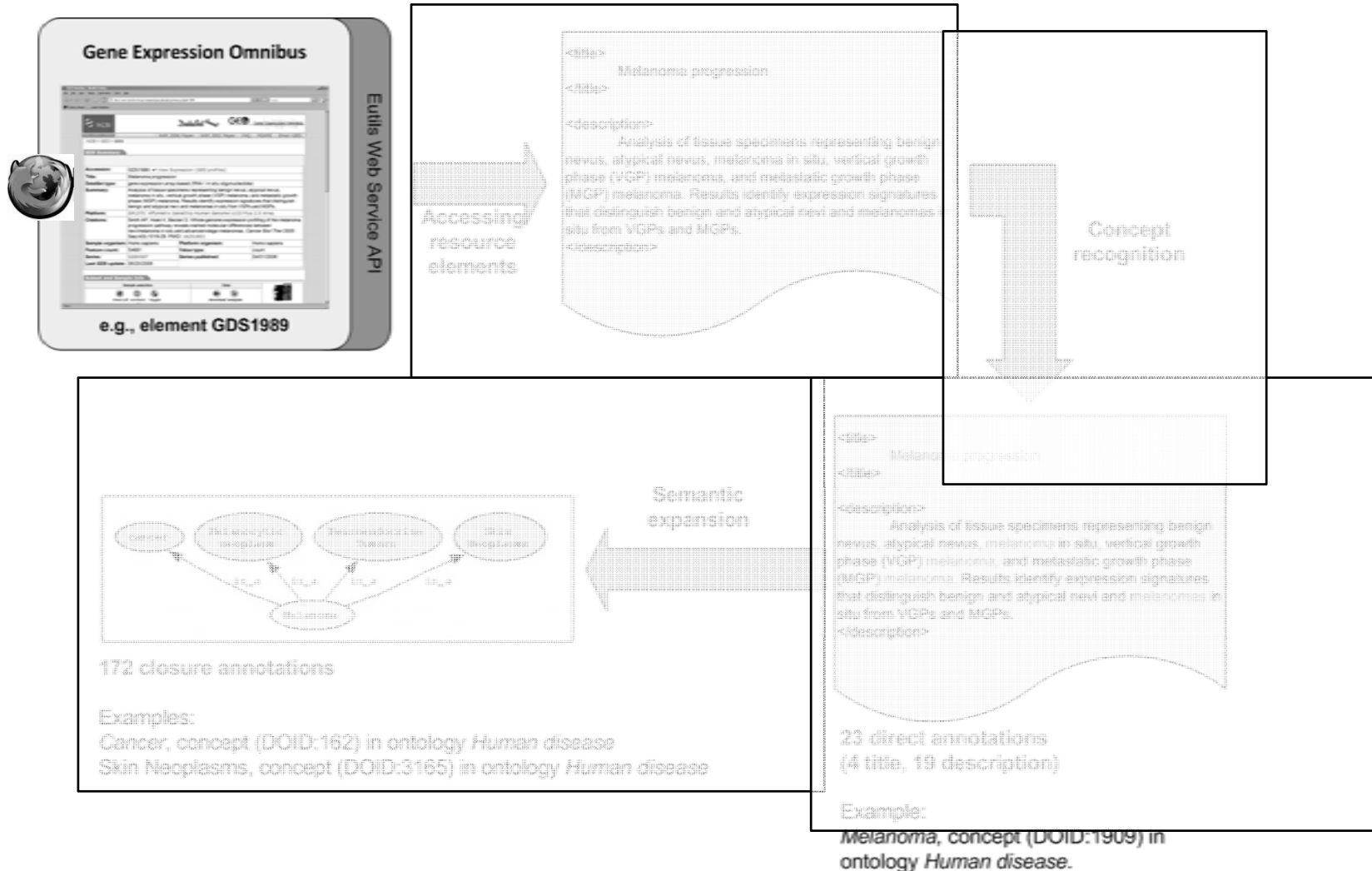
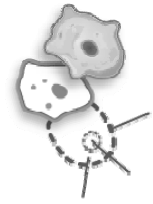
The tag cloud itself shows the words 'Melanoma', 'Eye', and 'Disease' in large, bold, underlined font. Smaller, underlined words 'Entire eye' and 'Intestines' are also visible.

Resources Index: The Basic Idea



- The index can be used for:
 - Search
 - Data mining

Example: Indexing GEO



View Ontology Details

Jump To:

Legend

- ⊕ Endocrine Neoplasm
- ⊕ Eye Neoplasm
- ⊕ Gastrointestinal Neoplasm
- ⊕ Head and Neck Neoplasm
- ⊕ Hematopoietic and Lymphoid System Neoplasm
- ⊕ Nervous System Neoplasm
- ⊕ Peritoneal and Retroperitoneal Neoplasms
- ⊕ Reproductive System Neoplasm
- ⊕ Respiratory Tract Neoplasm
- ⊖ Skin Neoplasm
 - ⊕ Benign Skin Neoplasm
 - ⊕ Cutaneous Hematopoietic and Lymphoid
 - ⊕ Dermal Neoplasm
 - ⊕ Epithelial Skin Neoplasm
 - ⊖ Malignant Skin Neoplasm
 - Blastic Plasmacytoid Dendritic Cell N
 - ⊕ Cutaneous Lymphoma
 - ⊖ Cutaneous Melanoma
 - ⊕ Acral Lentiginous Melanoma
 - Amelanotic Skin Melanoma
 - Balloon Cell Melanoma
 - ⊕ Desmoplastic Melanoma
 - Hereditary Melanoma
 - Invasive Skin Melanoma
 - ⊕ Lentigo Maligna Melanoma
 - Malignant Melanoma in Precance
 - Melanoma Arising from Blue Nev
 - ⊕ Melanoma in Congenital Melanoc
 - Melanoma in Junctional Nevus
 - Minimal Deviation Melanoma
 - Nevoid Melanoma
 - Nodular Melanoma
 - Old Burn Scar-Related Skin Mela
 - ⊕ Recurrent Melanoma of the Skin
 - Regressing Skin Melanoma

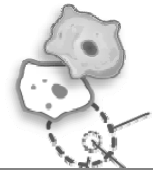
Details Visualization Notes (0) Mappings (0) Resources alpha

Show Hierarchy To Root (All Relationships)

Full Version

al Center for Biomedical Ontology is one of the National Centers for Biomedical Computing supported by the NIH Roadmap.
Copyright © 2005-2009, The Board of Trustees of Leland Stanford Junior University. All rights reserved.

NCBO Indexed Resources



View Ontology Details


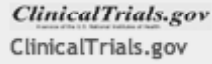



Jump To:

Legend

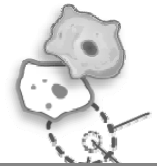
- ⊕ Hematopoietic and Lymphoid Neoplasm
- ⊕ Nervous System Neoplasm
- ⊕ Peritoneal and Retroperitoneal Neoplasm
- ⊕ Reproductive System Neoplasm
- ⊕ Respiratory Tract Neoplasm
- ⊖ **Skin Neoplasm**
 - ⊕ Benign Skin Neoplasm
 - ⊕ Cutaneous Hematopoietic Neoplasm
 - ⊕ Dermal Neoplasm
 - ⊕ Epithelial Skin Neoplasm
 - ⊕ Malignant Skin Neoplasm
 - ⊕ Melanocytic Skin Neoplasm
 - ⊕ Scrotal Neoplasm
 - ⊕ Skin Appendage Neoplasm
- ⊕ Thoracic Neoplasm
- ⊕ Urinary System Neoplasm
- ⊕ Neoplasm by Special Category
- ⊕ Non-Neoplastic Disorder
- ⊕ Polyp
- ⊕ Psychiatric Disorder
- ⊕ Radiation-Related Disorder
- ⊕ Rare Disorder
- ⊕ Syndrome
- ⊕ Finding
- ⊕ Drug, Food, Chemical or Biomedical Material

Details | Visualization | Notes (0) | Mappings (3) | **Resource Index**

This tab shows records in public data sources that we have automatically annotated with the terms associated with the class Skin Neoplasm or its subclasses based on the textual descriptions of those records.

 UniProt KB	The mission of UniProt is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of protein sequence and functional information.	Annotations:0
 ClinicalTrials.gov	ClinicalTrials.gov provides regularly updated information about federally and privately supported clinical research in human volunteers. ClinicalTrials.gov gives you information about a trial's purpose, who may participate, locations, and phone numbers for more details. The information provided on ClinicalTrials.gov should be used in conjunction with advice from health care professionals. Before searching, you may want to learn more about clinical trials.	Annotations:129
 DrugBank	DrugBank is offered to the public as a freely available resource. Use and redistribution of the data, in whole or in part, for commercial purposes requires explicit permission of the authors and explicit acknowledgment of the source material (DrugBank) and the original publication.	Annotations:4
 Biositemaps	Biositemaps represent a mechanism for computational biologists and bioinformaticians to openly broadcast and retrieve meta-data about biomedical data, tools and services (i.e., biomedical resources) over the Internet.	Annotations:0
 Gene Expression Omnibus Gene Expression Data Sets	A gene expression/molecular abundance repository supporting MIAME compliant data submissions, and a curated, online resource for gene expression data browsing, query and retrieval.	Annotations:8

Links to specific resources



[BioPortal](#)
[Browse](#)
[Search](#)
[Projects](#)
[Annotate](#)
[All Mappings](#)
[All Resources Alpha](#)
[Sign In](#)

[NCI Thesaurus](#)

NCI Thesaurus Version 09.07

[Skin Neoplasm](#) | [Link Here](#) | [Subscribe](#)

View Ontology Details



Jump To: [Go](#)

Legend [?](#)

- ⊕ Hematopoietic and Lymphoid Neoplasm
- ⊕ Nervous System Neoplasm
- ⊕ Peritoneal and Retroperitoneal Neoplasm
- ⊕ Reproductive System Neoplasm
- ⊕ Respiratory Tract Neoplasm
- ⊖ **Skin Neoplasm**
 - ⊕ Benign Skin Neoplasm
 - ⊕ Cutaneous Hematopoietic Neoplasm
 - ⊕ Dermal Neoplasm
 - ⊕ Epithelial Skin Neoplasm
 - ⊕ Malignant Skin Neoplasm
 - ⊕ Melanocytic Skin Neoplasm
 - ⊕ Scrotal Neoplasm
 - ⊕ Skin Appendage Neoplasm
- ⊕ Thoracic Neoplasm
- ⊕ Urinary System Neoplasm
- ⊕ Neoplasm by Special Category
 - ⊕ Non-Neoplastic Disorder
 - ⊕ Polyp
 - ⊕ Psychiatric Disorder
 - ⊕ Radiation-Related Disorder
 - ⊕ Rare Disorder
 - ⊕ Syndrome
- ⊕ Finding
- ⊕ Drug, Food, Chemical or Biomedical Material

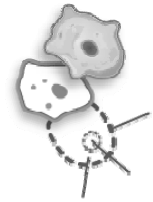
Details | Visualization | Notes (0) | Mappings (3) | **Resource Index**


This tab shows records in public data sources that we have automatically annotated with the terms associated with the class Skin Neoplasm or its subclasses based on the textual descriptions of those records.

 UniProt KB	The mission of UniProt is to provide the scientific community with a comprehensive, high-quality and freely accessible resource of protein sequence and functional information.	Annotations:0
 ClinicalTrials.gov	ClinicalTrials.gov provides regularly updated information about federally and privately supported clinical research in human volunteers. ClinicalTrials.gov gives you information about a trial's purpose, who may participate, locations, and phone numbers for more details. The information provided on ClinicalTrials.gov should be used in conjunction with advice from health care professionals. Before searching, you may want to learn more about clinical trials.	Annotations:129


Title: Tretinoin With or Without Fenretinide in Treating Patients With Dysplastic Nevus Syndrome	
ElementId: NCT00003601	Score: 39.9
Title: Imatinib Mesylate in Treating Patients With Locally Advanced or Metastatic Dermatofibrosarcoma Protuberans or Giant Cell Fibroblastoma	
ElementId: NCT00085475	Score: 38.5
Title: A Short Course of Neoadjuvant Gleevec (Imatinib Mesylate) in Dermatofibrosarcoma Protuberans	
ElementId: NCT00176709	Score: 28.8

GMiner uses NCBO Annotation Services





gminer



THE NATIONAL CENTER FOR BIOMEDICAL ONTOLOGY

[Home](#)
[Logout: simont@mcw.edu](#)

Views

- Platforms
- Samples
- Series
- Datasets
- Annotations
- [Annotation Cloud](#)
- Ontologies
- [Ontology Terms](#)
- Results

Welcome to GMiner

All Terms

Age ANAL **And** At For From
injuries Male Procedures Rat
Rattus Rattus norvegicus
RNA Standard therapy
Tissues To Total Treatment With

Rat Strain Ontology

ACI ACIN AN AS **AT** B C
CD COP F344 G P R SD
SD/HsdFoen SD/NTac SDJ SDN TX
U

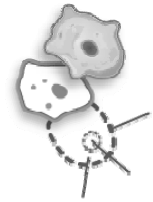
Mouse adult gross anatomy

amygdala blood brain
brainstem fat frontal cortex hand
heart hippocampus kidney
kidney cortex **liver** lung nose
pituitary gland serum supraoptic
nucleus testis trunk urinary
bladder urothelium

Medical Subject Headings, 2009_2008_08_06

ANAL Animals Biotin Cells
Complementary RNA control
Formaldehyde Inhalation injuries
Male Procedures **Rattus**
Rattus norvegicus **RNA**
Strains therapy Time Tissues **TO**

See our wiki to learn more!



Using NCBO Technology In Your Project - NCBO Wiki - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.bioontology.org/wiki/index.php/Using_NCBO_Technology_In_Your_Proje

UMLS: Metathesaurus x http://rest.bioon.../1025/MP-0000929 x Using NCBO Technology In Your Pr... x

page discussion view source history

Using NCBO Technology In Your Project

There are several ways in which you can use the NCBO technology on your own Web site or in your application.

Ontology Web Services

All the content that the NCBO BioPortal uses (and more!) is available via REST services. You can use the NCBO REST Services:

- to access all BioPortal ontologies, their different versions, and metadata for those versions
- to access information about any ontology concept in BioPortal (its definition, synonyms, and other properties)
- to search across all ontologies in BioPortal
- to get hierarchy information for BioPortal ontologies (such as parents, children, or siblings of a class, roots or leaves of a class hierarchy)

Annotator Web Service

A service that identifies mentions of biomedical ontology concepts in text that users submit. You can use the annotator service to tag automatically any item of interest with terms from UMLS and BioPortal ontologies.

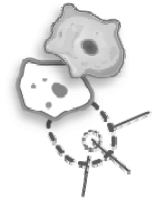
Ontology Widgets

Put elements of BioPortal, custom-tailored for your ontology of interest, on your own Web site or in your Web form. To add these widgets, you need only to copy simple HTML or Javascript code to your own Web page (go to the "Ontology Widgets" tab on the page for individual ontology details to get the code pre-configured for the widgets using your ontology of interest). The widgets are described in detail at the Ontology Widgets page. The main kinds of widgets you get are:

- **Term-selection field on a form:** You can add a text field to your Web form that will let users enter a term from a controlled vocabulary (e.g., terms from a single ontology)
 - **Example use case:** Suppose you are running a tissue microarray database and users upload sample descriptions to your database using a web form. There is usually a field for the user to enter the diagnosis for the tissue sample that she is entering. Usually, this field is a text-box or a drop down menu populated with a list of controlled terms. The free text-box is prone to errors, the drop-down gets too unwieldy with large terminologies. Using the NCBO term-selection widget to have users easily select a term from an ontology or controlled vocabulary (such as the NCI Thesaurus) to fill in the field. For example, when the user starts typing "cutaneous me", the term "cutaneous melanoma" pops up.
 - **What does the term-selection field get you:**
 - Look-ahead so that you don't need to type the whole term
 - Controlled vocabulary provides consistency of the way different users use the term (if you want to put "Malignant melanoma", it will always be the same term from NCIT, regardless of how a user started typing it
 - When a new version of your controlled vocabulary becomes available in BioPortal, the widget will automatically use that new version.
- **Ontology search widget:** You can add to your Web site a search box that searches a specific BioPortal ontology. When the user selects the term of interest (with the help of the look-ahead feature), he can jump to the BioPortal page for the corresponding concept in BioPortal.
 - **Example use case:** Suppose your web site provides textbook information for anatomy students. When describing a particular organ or organ part, you want to enable access to the formal definition of that organ part in the Foundational Model of Anatomy (FMA) developed at the University of Washington. Your web pages can contain a widget that enables you to search FMA in BioPortal and jump directly to the definition of the selected term.
- **Track updates (RSS Feed widget):** you can put a widget on your site that will have a live feed of all the changes to your ontology of interest, such as uploads of a new version, comments from other users, new mappings for concepts in your ontology.
- **Ontology visualization widget:** You can put a widget on your Web site that visualizes your entire ontology of interest, or some part of it, as on the "Visualize" tab in BioPortal.

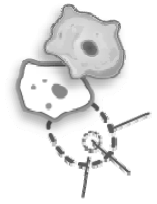
www.bioontology.org/wiki/index.php/Using_NCBO_Technology_In_Your_Project

Ways to collaborate with NCBO



- Be a user!
- Propose a Driving Biological Project (DBP)
- Get a collaborating research grant (NIH R01)
- Initiate an industrial or academic joint projects

Current Driving Biological Projects



- **caNanoLab:** Workers at Stanford and Wash U developing searchable catalog of therapeutic nanoparticles



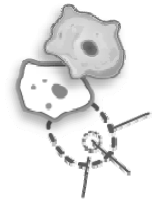
- **Cardiovascular Research Grid:** Workers at Hopkins developing ontology of ECGs and electrophysiological studies



- **Rat Genome Database:** Workers at MCW use ontologies to annotate genomic data

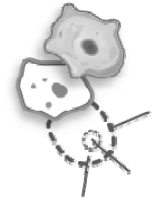


Current “Collaborating R01” grants



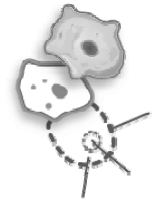
- **UW:** Creating views of ontologies
- **UCSD:** Using ontologies to annotate neuroimaging data
- **UC Denver:** Ontology enrichment through published literature
- **Pittsburgh:** Ontology enrichment through EMR data
- **Wright State:** Semantic data integration

Some other collaborative activities



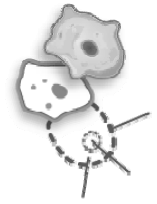
- **CollaboRx, Inc.** — Resource annotation
- **NextBio, Inc.** — Ontology-based search
- **Google, Inc.** — Web of Trust
- **University of Karlsruhe** — Use of OMV in BioPortal metadata
- **World Health Organization** — Ontology support for ICD11

Other NCBO components

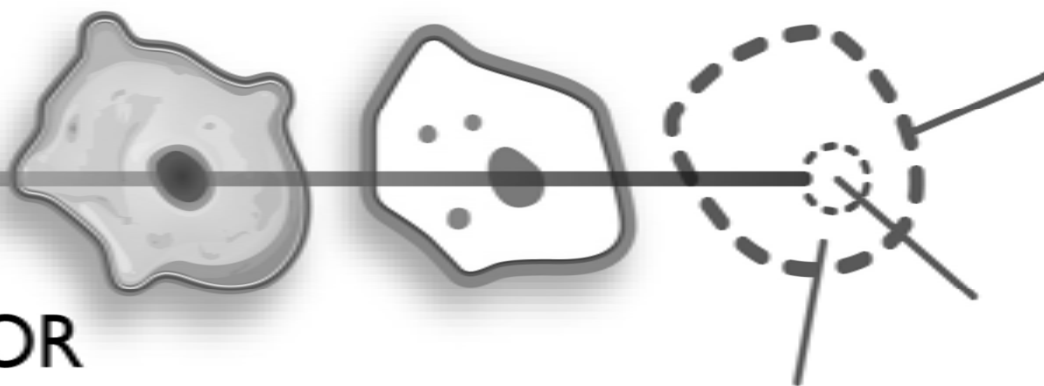


- Education and training
 - Graduate students
 - Post docs
 - Visiting researchers
- Outreach and dissemination
 - Specialized workshops
 - Support for conferences
 - ISMB Bio-ontologies SIG
 - International Conference on Biomedical Ontology

NCBO needs HCLS!



- To push on our technology
- To drive our requirements
- To help disseminate ontology-based methods in biomedicine
- To help promote W3C recommendations in biomedicine
- To help us in our mission to educate the community and to encourage best practices



NATIONAL CENTER FOR

BIOMEDICAL ONTOLOGY

<http://bioontology.org>