

# THE NATIONAL CENTER FOR BIOMEDICAL ONTOLOGY

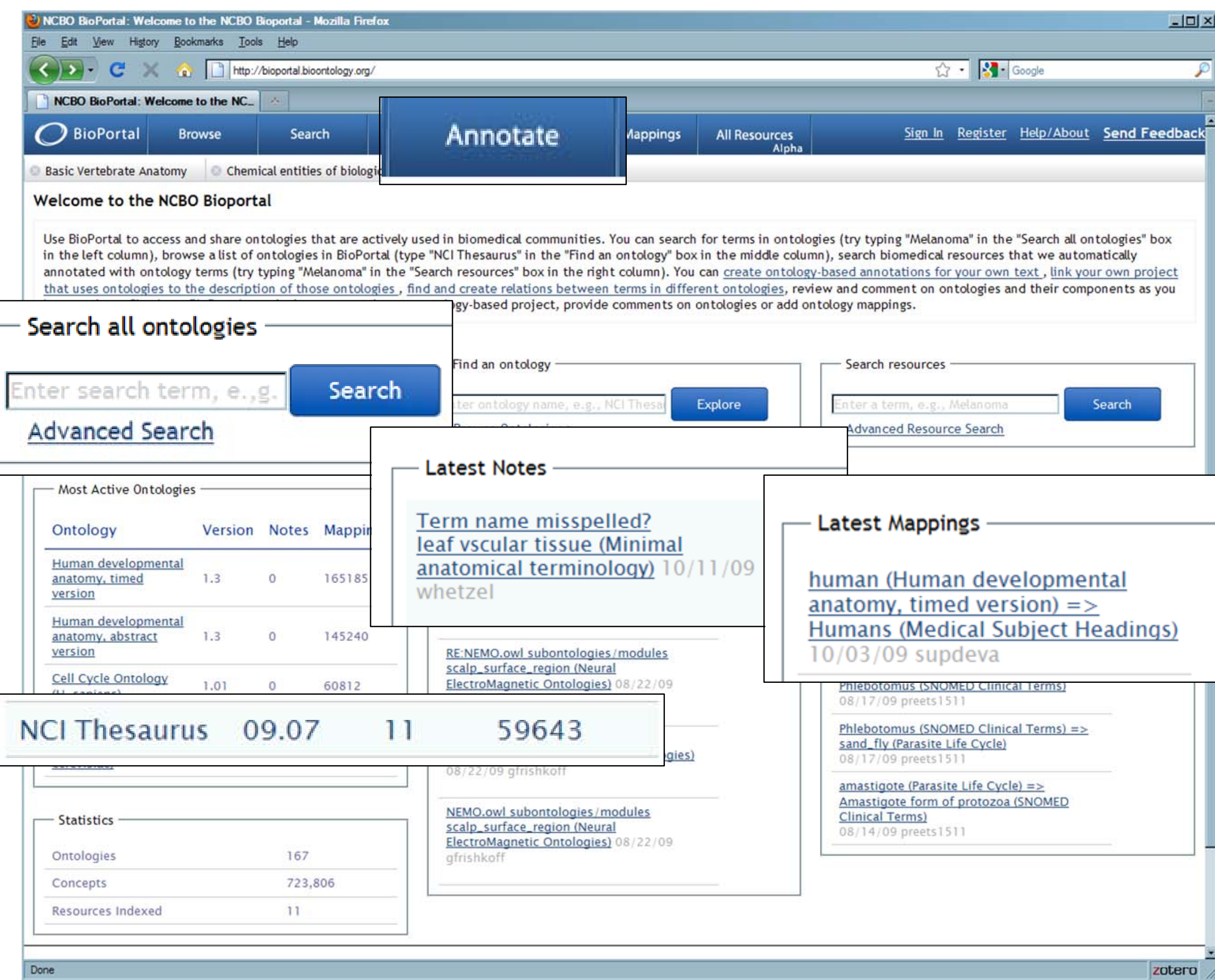


## NCBO Annotator: Semantic Annotation of Biomedical Data

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[www.bioontology.org](http://www.bioontology.org)

The National Center for Biomedical Ontology Annotator [1] is an ontology-based web service for annotation of textual biomedical data with biomedical ontology concepts. The biomedical community can use the Annotator service to tag datasets automatically with concepts from more than 200 ontologies coming from the two most important biomedical ontology & terminology repositories: the Unified Medical Language System (UMLS) Metathesaurus and NCBO BioPortal. Such annotations contribute to create a biomedical semantic web that facilitates translational scientific discoveries by integrating annotated data.

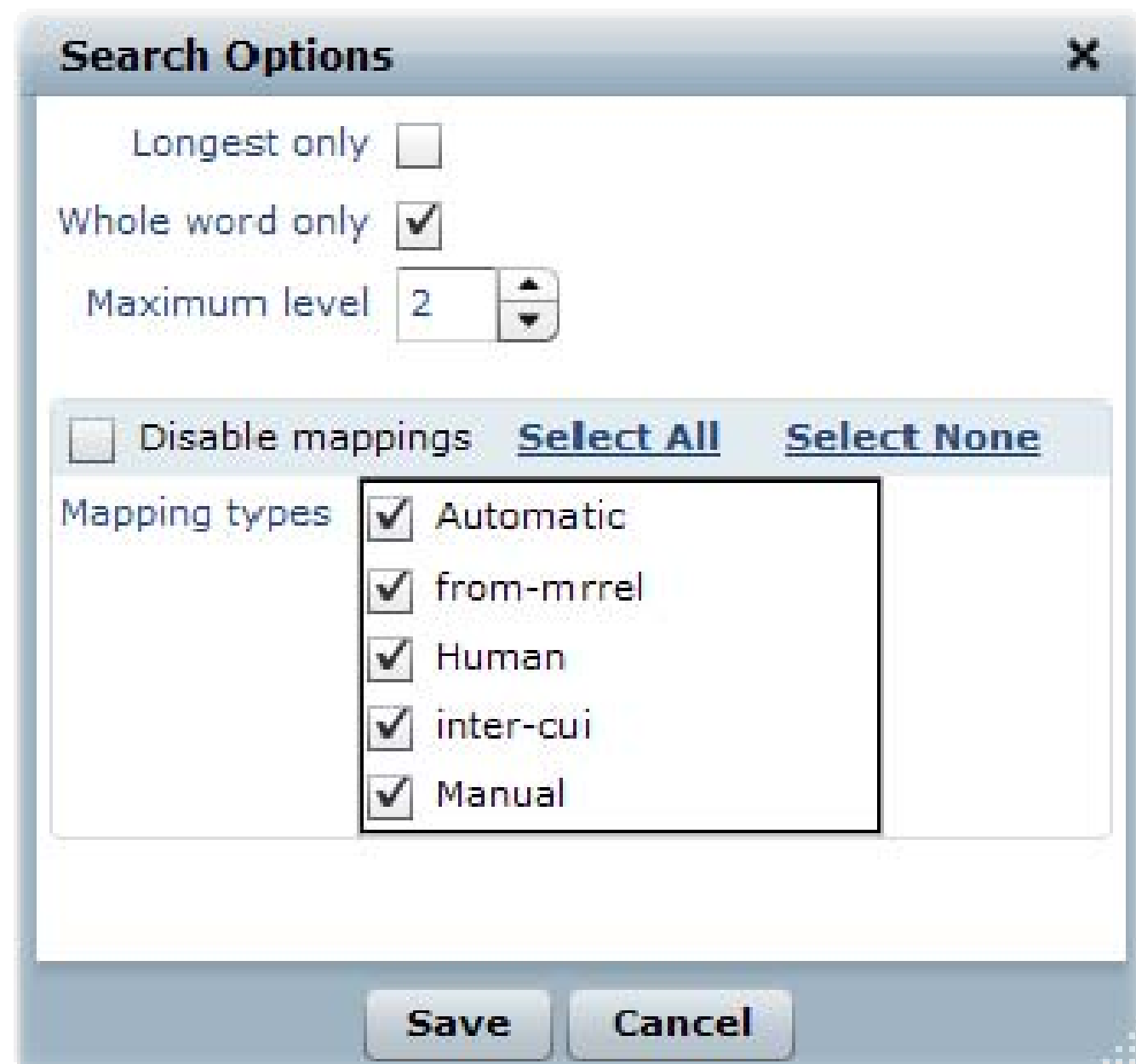


### BIOPORTAL

Select the ontologies you want to use to annotate your text.

Select the semantic types you want to use to restrict the annotations to.

Select the workflow options.



Filter the annotation cloud per ontology.

```
<obs.common.beans.AnnotationBean>
- <obs.common.beans.AnnotationBean>
  <score>18.0</score>
  <-concept>
    <localConceptID>39228</localConceptID>
    <preferredName>Melanoma</preferredName>
    <-synonyms>
      <string>[M]Naevocarcinoma</string>
      <string>Malignant melanoma</string>
    <-string>
      Malignant melanoma, morphology (morphologic abnormality)
    </string>
    <string>Malignant Melanoma</string>
  </concept>
</obs.common.beans.AnnotationBean>
```

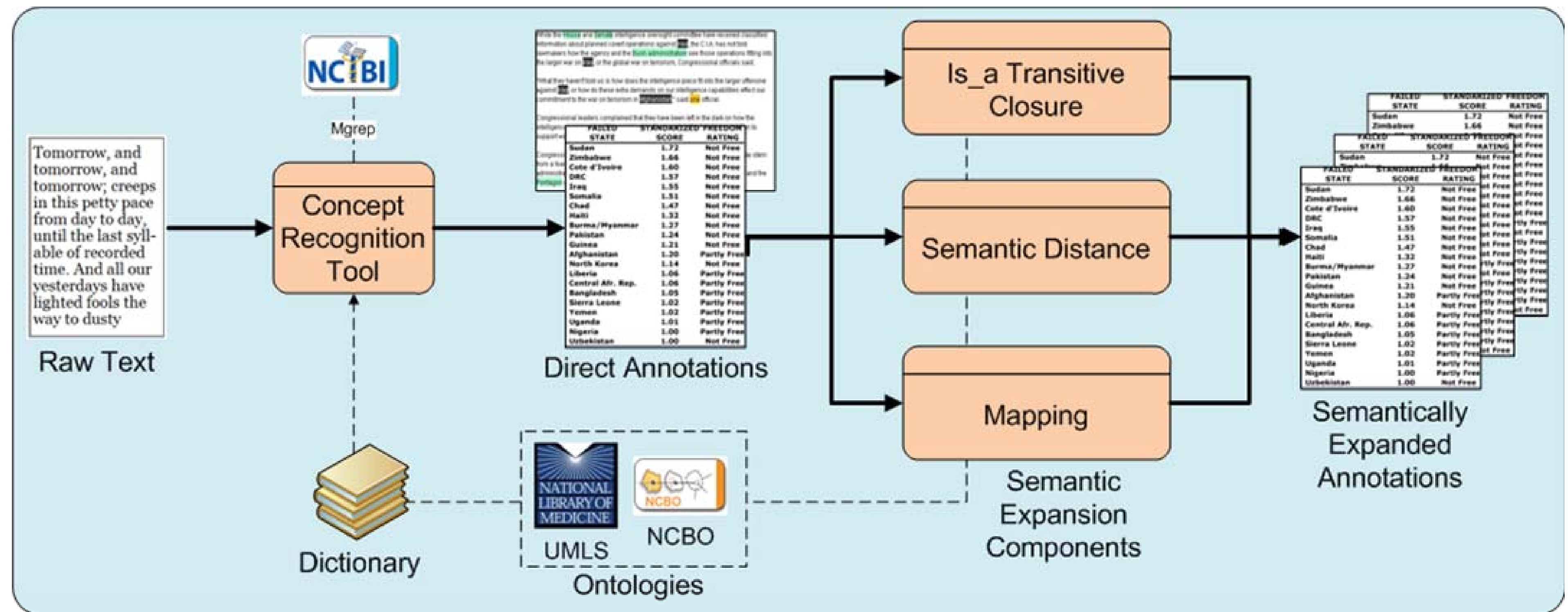
Using the REST web service API, get your result in text, tab-delimited, XML or OWL

### ANNOTATOR USER INTERFACE IN BIOPORTAL

Click on a concept in the cloud, to get the details of the annotation with this concept.

From here, you can also go back to the concept in BioPortal!

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



### ANNOTATOR WORKFLOW

First, direct annotations are created from raw text based on syntactic concept recognition according to a dictionary that uses terms (concept names and synonyms) from both UMLS and NCBO BioPortal ontologies. Second, different components expand the first set of annotations step using the knowledge represented in one or more ontologies.

The Annotator is incorporated in the NCBO BioPortal (<http://bioportal.bioontology.org>) [2] a web repository for biomedical ontologies where users can browse, search and comments ontologies both online and via a web services API.

Give the text to annotate or get the annotations for a specific element from a public biomedical resource (e.g., GEO, PubMed, Clinicaltrials.gov) [3].

Get your annotations!

Learn the number of different kind of annotations generated.

A tag cloud of concepts is generated to represent the annotations. The bigger a concept in the cloud is, the higher the score of the corresponding annotation is.

The score of an annotation is computed by taking into consideration the annotation context (term frequency, synonym or not, ancestor or not, etc.).

