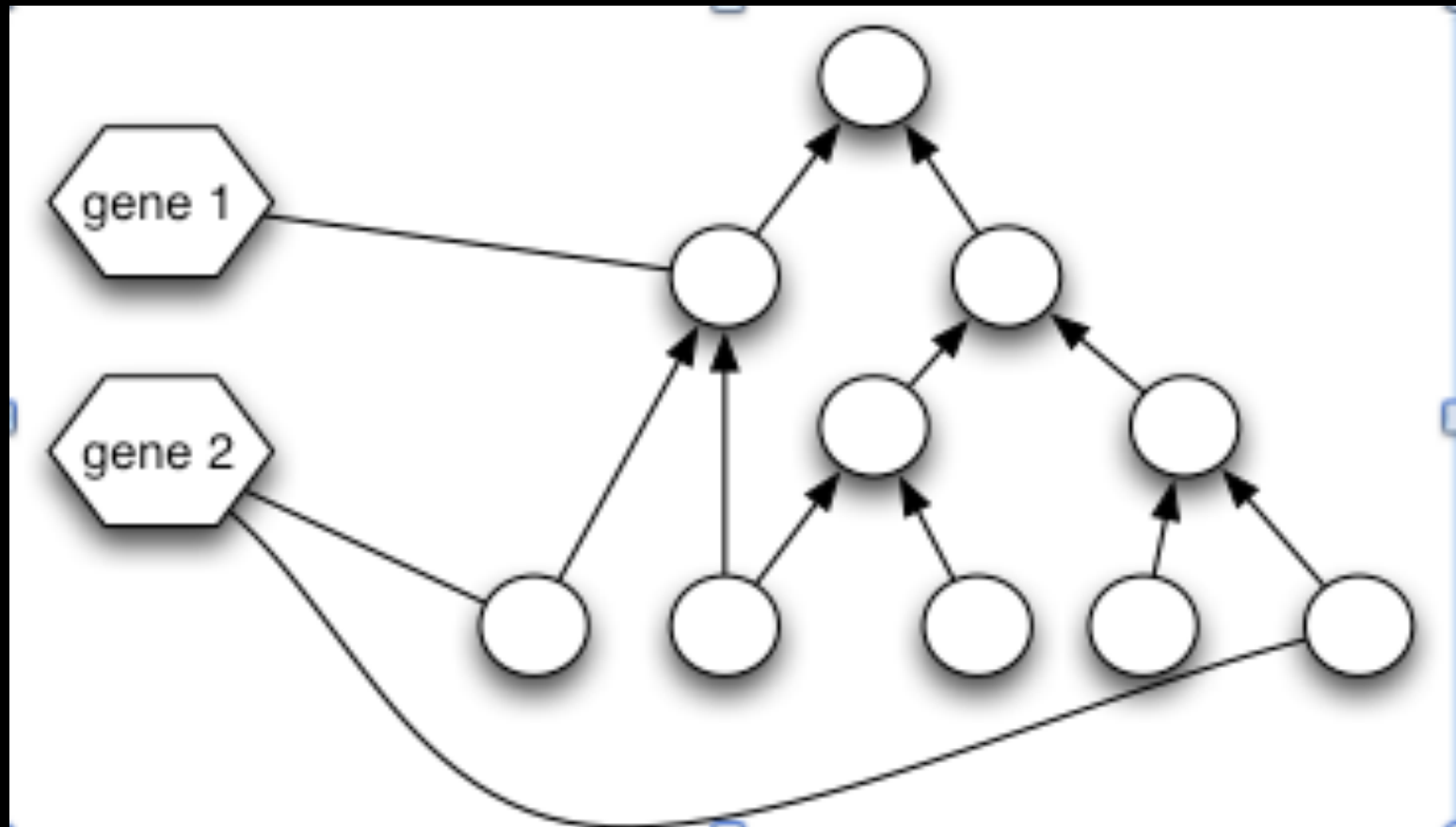


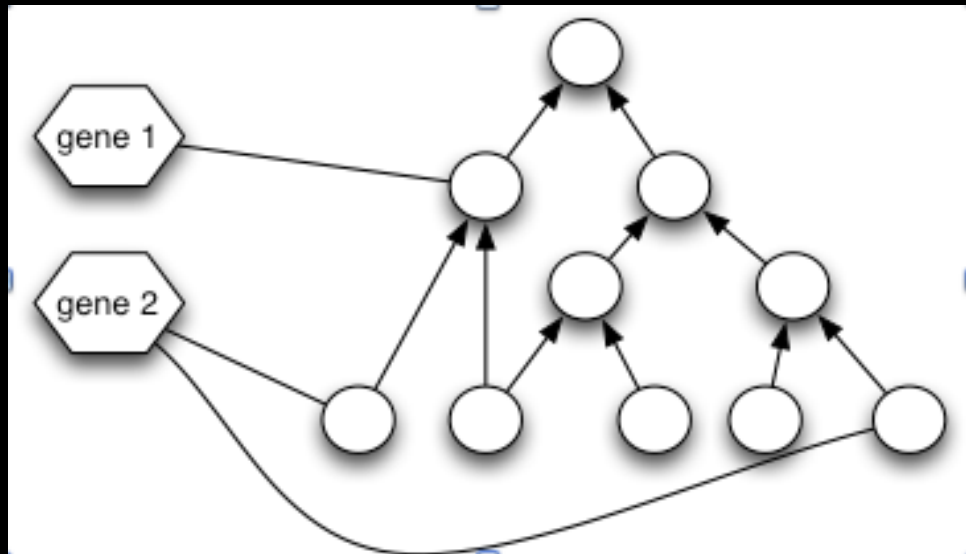
GO Galaxy

# The Gene Ontology



# The Gene Ontology

- New
  - Multi-ontology graph
    - Connects to CHEBI, anatomy ontologies, cell types
    - <http://beta.geneontology.org/page/download-ontology>
  - Annotation extensions



# Not just search and queries

- Term enrichment and interpretation of experiments
- Annotation set Processing
- Ontology processing
- Function prediction
- Visualization
- Testing evolutionary hypotheses
- ...

# GO Term Enrichment Analysis

- Given a set of genes (proteins, chromosomal region)
- Find the properties (e.g. GO terms) present in these genes greater than some background population
- GO tools registry
  - Over 50 term enrichment tools registered
    - <http://www.geneontology.org/GO.tools.shtml>

# GO-centric Processing and Analysis

- Existing solutions
  - Specialized web interfaces E.g. DAVID\*
    - Difficult to customize
    - Hard to chain tasks together
    - Reproducibility
  - Command line ‘powertools’
    - Hard for non-hackers

\*<http://david.abcc.ncifcrf.gov/>

# Using Galaxy for GO tasks

- Allows plug and play with different tools
  - E.g. different enrichment algorithms with different visualization
- Creation of workflows
- Empowers more users to do complex tasks
- Reprdocubility

# GO Galaxy Workshop Goals

- Introduce GO Galaxy environment
- Walk through core capabilities
- Beta test
- **Start a dialog**
  - Tool developers
  - Users
  - Curators



# Outline

- Fetching the GO and GO annotations into your Galaxy workspace
- Mapping annotations to a GO slim
  - Pre-defined slims
  - Custom slims
- Term Enrichment
- Workflows

# GO galaxy

Galaxy


Analyze Data Workflow Shared Data Help User

Tools Options

Get Data  
GOtools  
OBO/OWL Tools  
Annotation  
Term Enrichment  
Text Manipulation  
GFF  
NCBO services  
NIFtools  
OBO Diff Tools  
Annotation (advanced)  
Workflows

Warning: Galaxy is in active development and unscheduled restarts may occur at any time!

Welcome to the Gene Ontology's Galaxy installation, an exciting and useful way to do all your favourite analyses in one place.

 **GENEONTOLOGY**  
Unifying Biology

For more info, see [The GO Wiki](#)

Awesome sauce! Galaxy is running!

- URLs:
  - <http://galaxy.berkeleybop.org>
  - <http://bit.ly/gogalaxy01>
  - <http://bit.ly/gogalaxy02>
- Finding out more:  
<http://wiki.geneontology.org/index.php/Galaxy>

# Feedback

- This workshop:
  - <http://bit.ly/GOISB2013>
- Tools requests:
  - [go-help@genome.stanford.edu](mailto:go-help@genome.stanford.edu)