

Ontology Development Report

GO Consortium Meeting, Cambridge, UK

January 2007

Ontology Summary

	December 2005	December 2006	New	% change
Molecular function	7384	7514	130	+1.8%
Biological process	10291	12555	2264	+22.0%
Cellular component	1681	1848	167	+9.9%
Total	19356	21917	2561	+13.2%

Note: the table does not include obsolete terms (992 in December 2005; 1011 in December 2006).

Ontology development highlights

- Complete is_a paths for cellular component
 - Includes new high-level terms such as 'cell part', 'nuclear part', etc.
- Complete is_a paths for biological process, including major changes:
 - Processes are now organized under the major categories of multicellular organismal processes, cellular processes (including single-celled organisms), and multi-organism processes (formerly 'interaction between organisms'). These categories are disjoint.
 - The major processes 'development' and 'metabolism' have been changed to 'developmental process' and 'metabolic process' respectively. Most of the child terms of 'metabolism' have also been changed to 'metabolic process', likewise for biosynthesis and catabolism terms.
 - The term 'physiological process' has been merged into its parent term, 'biological process', and all terms that included 'physiological' have either had their names changed to remove this word, or have been merged into their parent term.
 - Homeostasis has been reworked to reflect that it covers the homeostasis of chemicals and homeostasis of cells, tissues, etc.
 - Pattern specification has been reworked.
 - Protein biosynthesis and translation have been merged into one term.
 - New high-level terms for regulation have been added.
 - Also see http://gocwiki.geneontology.org/index.php/Isa-complete_BP and http://gocwiki.geneontology.org/index.php/Regulation_cross-products.
- Immunology revision — approx. 700 terms added to cover areas such as mucosal immunity, tolerance induction, and B cell differentiation. The high-level structure for immune system process terms has also been improved (content meeting topic).

- Central nervous system development additions — Several experts participated in a content meeting, leading to 500 new BP terms and >1000 changes to the graph. Many new terms were added, definitions were modified and the structure of the ontology was edited "live" during the course of the meeting. Complete is_a paths were added after the meeting.
- Another round of PAMGO additions (approx. 500 terms) is essentially ready to commit.
- Blood pressure regulation — 66 new terms have been added to facilitate the comprehensive annotation of mammalian genes involved in the regulation of blood pressure (for example, the terms have been used for 49 annotations for 23 mouse genes).
- Progress towards integrating cell type ontology (CL) terms into GO
 - changes to GO term names (as well as CL terms) to reconcile GO and CL
 - several rounds of curator review and feedback on OBOL output of proposed cross-product terms
 - much more detail available at http://berkeleybop.org/mediawiki/index.php/GO:Logical_Definitions
- Collaboration initiated with Jonathan Liu et al. at MIT on "GO Engineering" — they use information entropy analysis of GO terms and annotations to identify GO terms that may be misplaced relative to other terms. The early phases of this collaboration suggest that GO curators can use the output of the MIT analysis to find areas in GO that need improvement, and in many cases the analysis also suggests possible solutions.

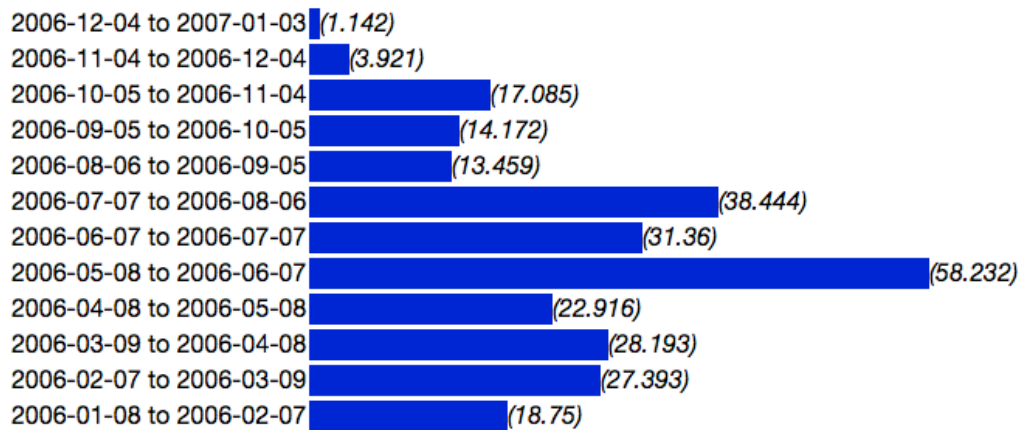
Topics for current and future work

- Continuing improvements to is_a-complete biological process ontology
- Response to drug (http://gocwiki.geneontology.org/index.php/Response_to_drug)
- *Sensu* terms (http://gocwiki.geneontology.org/index.php/Sensu_Plans)
- Peripheral nervous system development
- Cardiovascular physiology
- Transport & transporters
- DNA repair
- Muscle biology

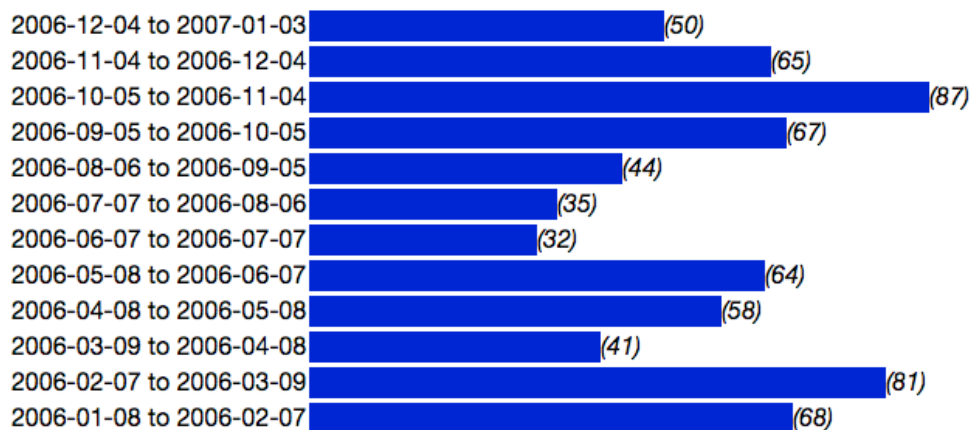
SourceForge summary

SourceForge reporting for the curator requests tracker, January–December 2006

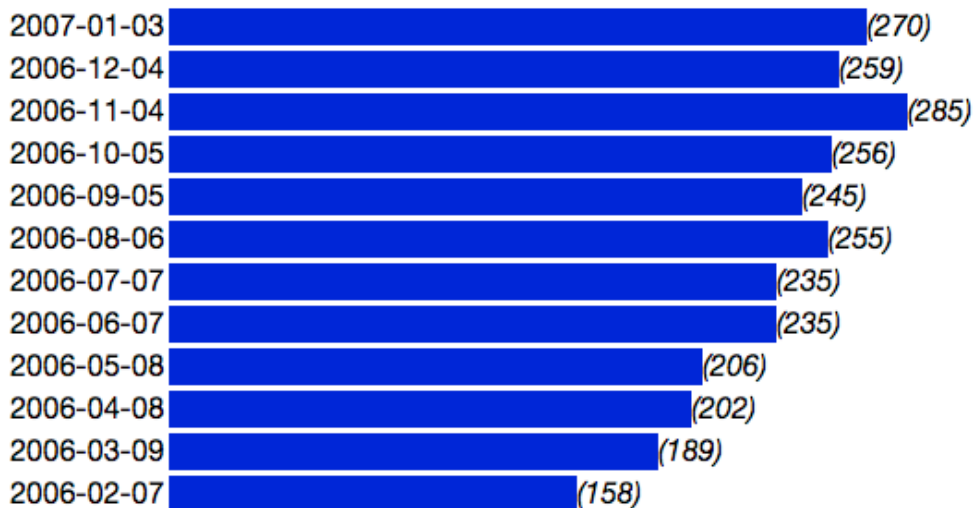
Average Turnaround Time For Closed Items (days)



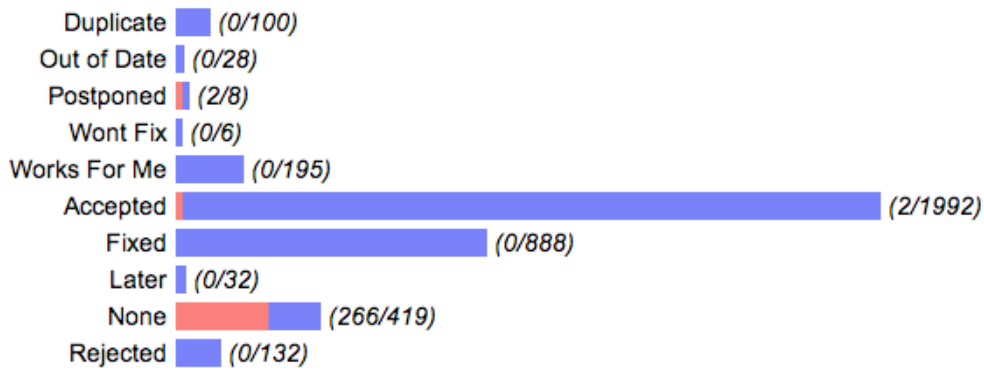
Number of Items Submitted



Number of Items Still Open



Distribution By Resolution: Curator requests



Key: (Open / All)

Term history

GO term history, January 2001–December 2006

