

TermGenie: The Tool and Review Process

GO Consortium Meeting
April 2013

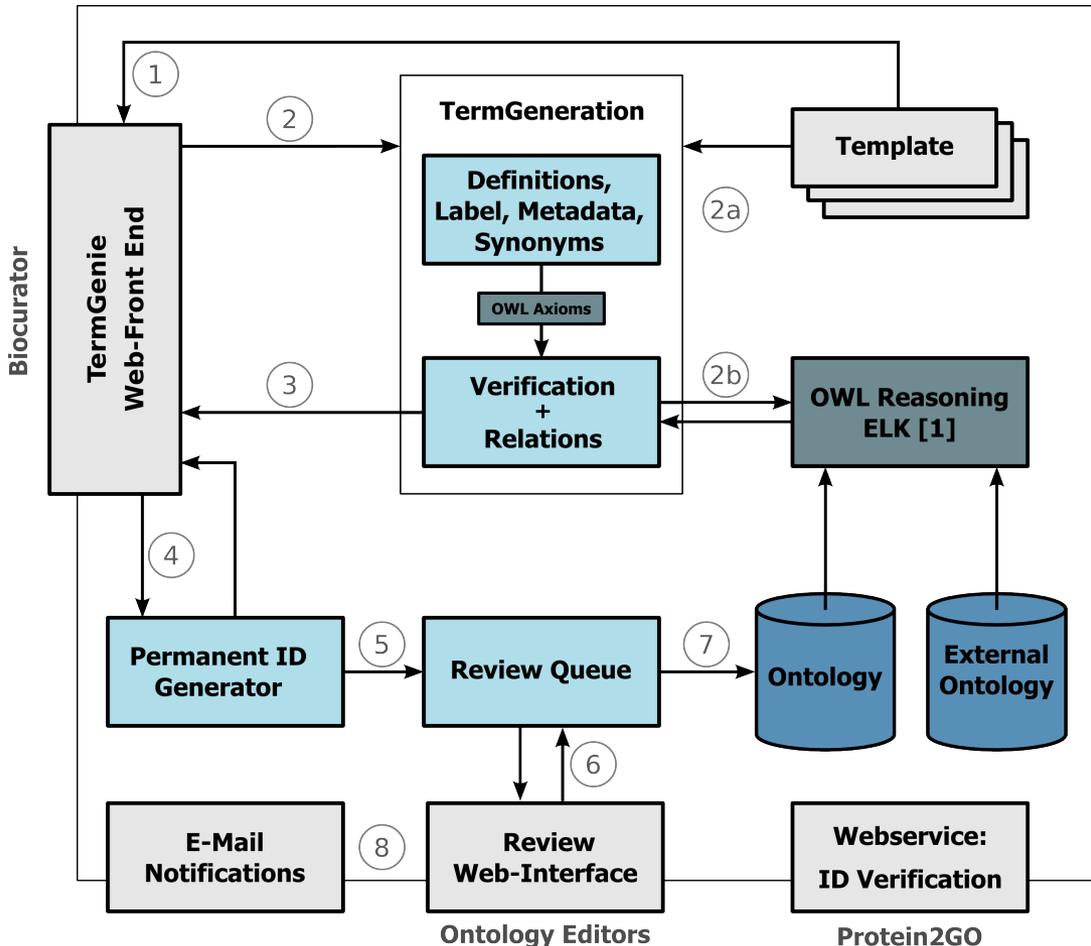
Churchill College, Cambridge

(slides mainly nabbed from Heiko)

TermGenie: The Tool

- Easy to use (web-based tool: no installation required)
- Quick turn-around-time for curators: create a new class and permanent identifier within minutes
- Multiple templates (19 currently) that can reference external ontologies (10 templates currently reference ChEBI), with option to add new templates.
- Reduced workload for editors
- Reasoning:
 - Automated placement of new terms
 - Easier maintenance of the ontology
- **NEW FEATURE:** the new **FREE-FORM** TermGenie gives more options for users

TermGenie Workflow



1. Retrieve existing templates for user selection

2. TermGeneration (a) Generate textual data and OWL axioms (b) Use reasoning to check for existing classes and new or changed relations

3. Review of generated classes by the user

4. After review, assign permanent identifiers to the new classes

5. Add the new classes into the queue for review

6. Senior ontology editors review the classes: accept, modify, obsolete

7. Commit the changes to the ontology

8. Send confirmation e-mail to the user

19 Templates

› **Step 1:** Target Ontology *GeneOntology*

› **Step 2:** Templates

Once you have selected the ontology, the available term generation patterns can be selected from a menu. Select Template

After selecting an on below to start the next step.

- regulation: biological_process
- regulation: molecular_function
- cc_transport
- cc_transport_from_to
- chemical_binding
- chemical_export
- chemical_import
- chemical_response_to
- chemical_transmembrane_transport
- chemical_transmembrane_transporter_activity
- chemical_transport
- chemical_transport_from_to
- chemical_transporter_activity
- involved_in
- involved_in_mf_bp
- metabolism_catabolism_biosynthesis
- occurs_in
- part_of_cell_component
- regulation_by

› **Step 3:** Review a

› **Step 4:** Final ma

Impressum
Error Console

Available TermGenieTemplates



Search

Clear

- ChEBI
 - cc_transport
 - cc_transport_from_to
 - chemical_binding
 - chemical_export
 - chemical_import
 - chemical_response_to
 - chemical_transmembrane_transport
 - chemical_transmembrane_transporter_activity
 - chemical_transport
 - chemical_transport_from_to
 - chemical_transporter_activity
 - metabolism_catabolism_biosynthesis
- cellular_component
- interaction
- other
- processes
 - involved_in
 - involved_in_mf_bp
 - occurs_in
- regulation
- signaling
- transport
 - cc_transport
 - cc_transport_from_to
 - chemical_export
 - chemical_import
 - chemical_transmembrane_transport
 - chemical_transmembrane_transporter_activity
 - chemical_transport
 - chemical_transport_from_to
 - chemical_transporter_activity

Add template

Cancel

You can now search the templates by category, in a tree-view:
e.g. chemicals
e.g. transport

Terms for Commit Review

In this panel all the terms pending commits can be reviewed by the ontology editors.
There are 2 pending commits to review.

The Review Process

Details for commit #9156

User email `lionel.breuza@isb-sib.ch`
Date 4/3/13 12:21 AM
Commit TermGenie commit for user: lb reviewed by bf
Message *No need to add IDs, they will be added to the commit message by TermGenie during commit.*
[Edit Message](#)

Term [Generate Image](#)

Hierarchy

Add
[Edit term](#)
[Make Obsolete](#)

```
[Term]
id: GO:1902044
name: regulation of Fas signaling pathway
namespace: biological_process
def: "Any process that modulates the frequency, rate or extent of Fas signaling pathway." [GOC:TermGenie, PMID:17245429]
synonym: "regulation of Apo-1 signaling pathway" EXACT [GOC:TermGenie]
synonym: "regulation of CD95 signaling pathway" EXACT [GOC:TermGenie]
synonym: "regulation of FAS ligand-Fas signaling pathway" NARROW [GOC:TermGenie]
synonym: "regulation of Fas receptor signaling pathway" EXACT [GOC:TermGenie]
synonym: "regulation of Fas-FasL signaling pathway" NARROW [GOC:TermGenie]
synonym: "regulation of FasL signaling pathway" RELATED [GOC:TermGenie]
synonym: "regulation of FasR signaling pathway" EXACT [GOC:TermGenie]
is_a: GO:0009966 {is_inferred="true"} ! regulation of signal transduction
intersection_of: GO:0065007 ! biological regulation
intersection_of: regulates GO:0036337 ! Fas signaling pathway
relationship: regulates GO:0036337 {is_inferred="true"} ! Fas signaling pathway
created_by: lb
creation_date: 2013-04-03T07:21:23Z
```

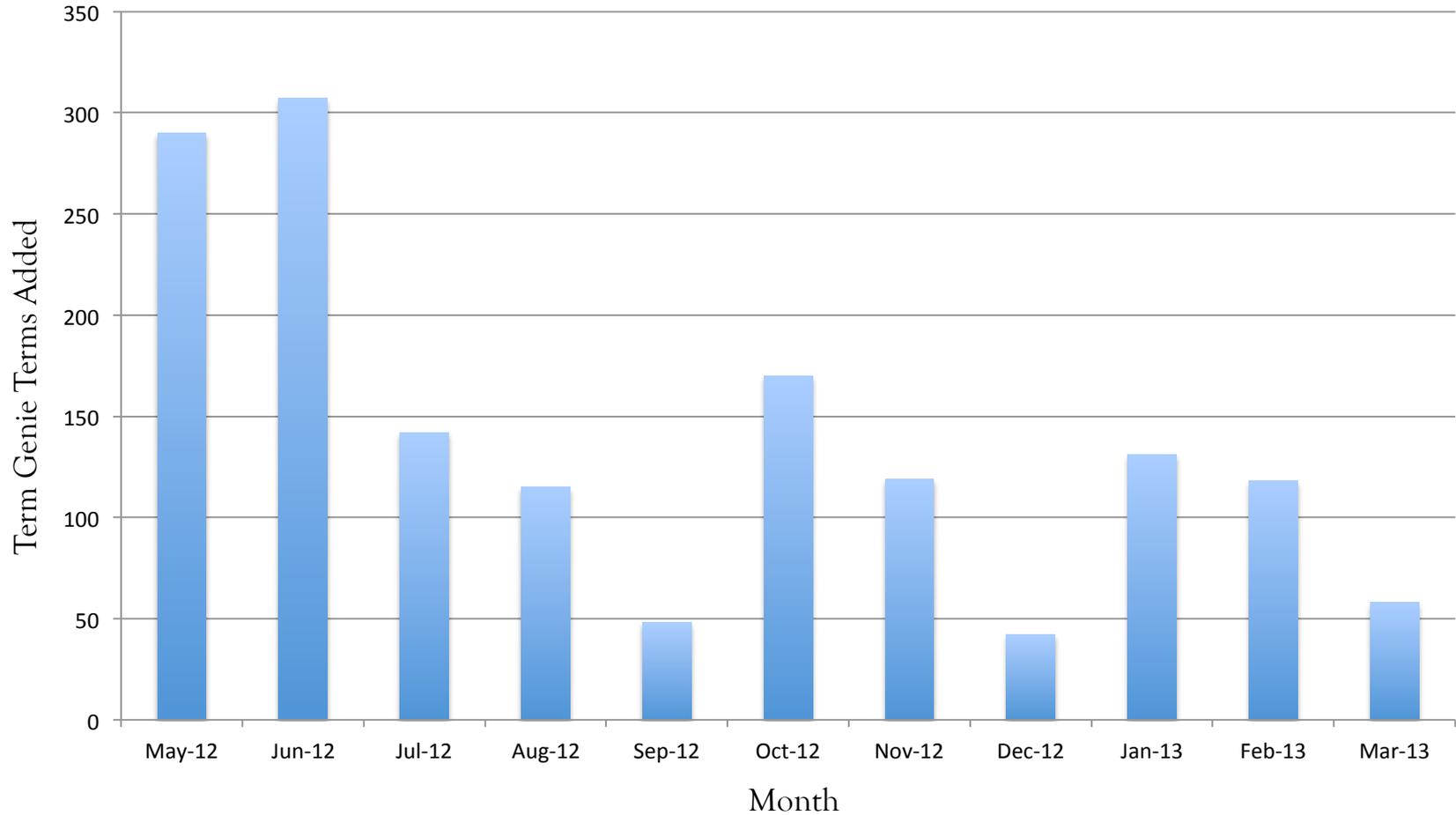
[Commit](#)

- Editors review the submitted terms, working on weekly rota
- Editors can:
 - a) accept term (most common)
 - b) accept term with minor-edits (e.g. revised definition, relationships, synonyms etc)
 - c) reject term (usually after checking references, and alongside correspondence with user)
- Requires 10-30 mins per day

Workflow for a new TG template

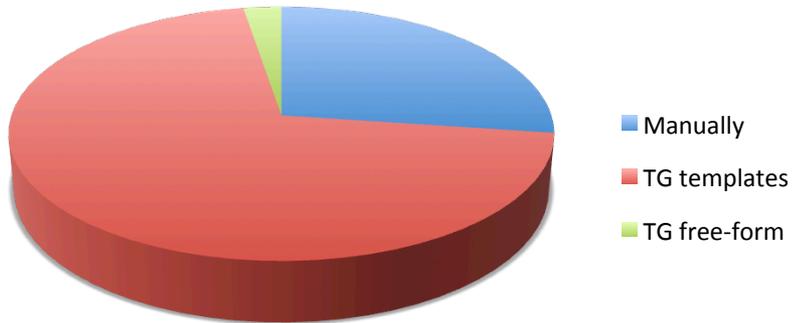
1. User or editor identifies a common pattern: Is it suitable for a template?
 2. Create an OWL definition (genus + differentia)
 3. Check inferences
 4. Check existing terms and missing cross-products
 5. Repeat 3 & 4 until there are sufficient cross-products and suitable inferences for new terms
 6. Add the template
 7. Testing with the senior ontology editors
 8. Announce the Template
 9. Keep a look at the QC checks (i.e. Jenkins, asserted inferences)
- Requires lots of prep work by the editors to place all the xps.
E.g. ChEBI alignment:
TermGenie is a direct pay-off for this work

TG additions per month

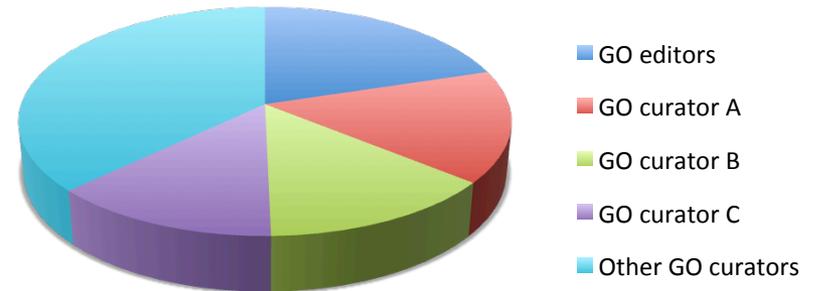


TermGenie Stats - last year (April 2012-March 2013)

New GO terms added (n=2867)



Submitters of GO terms added via TG templates (n=36)



Origin of obsoleted GO terms (n=100)

