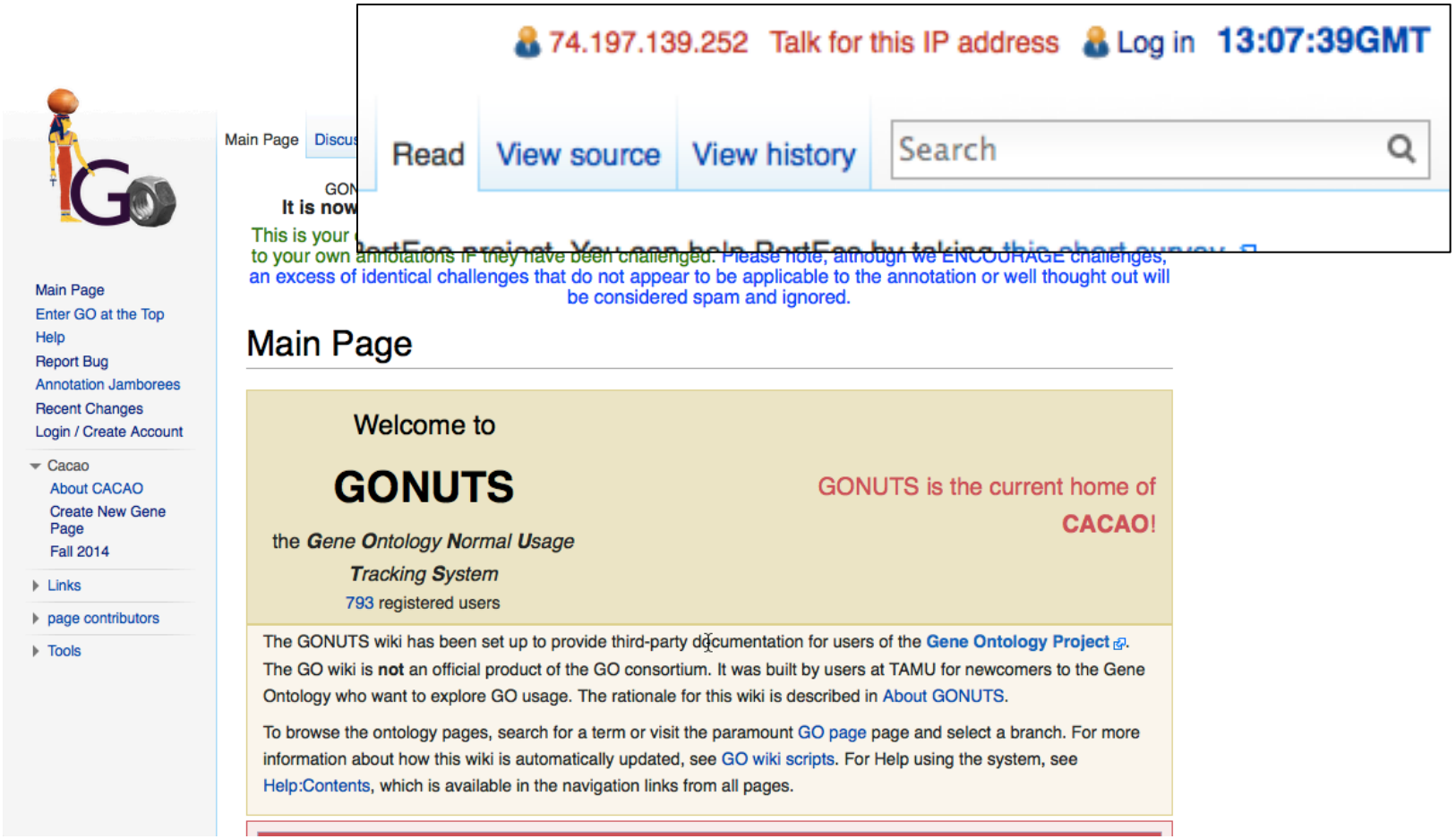
CACAO training part 2

Jim Hu and Suzi Aleksander
For UW Parkside
Fall 2014

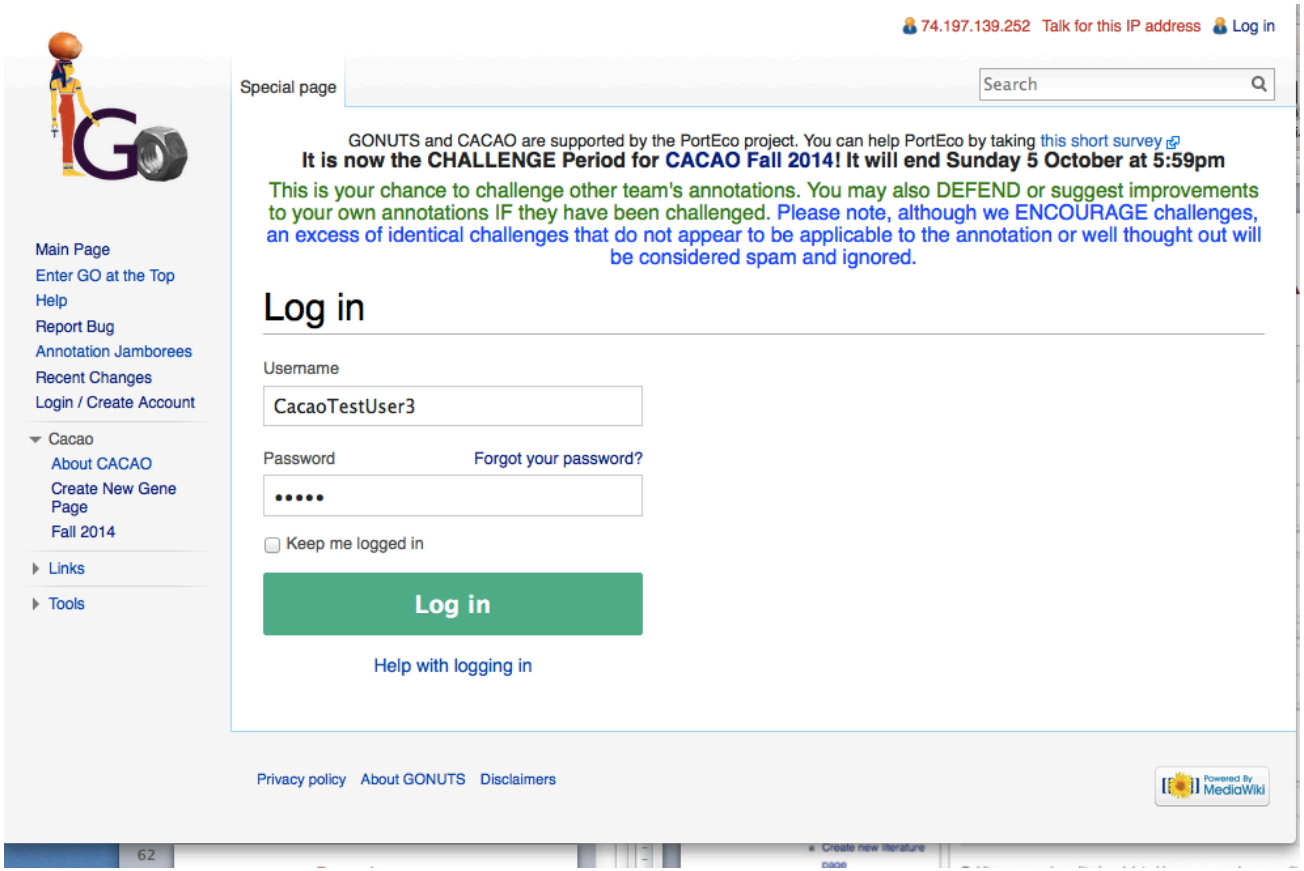
Outline for today

- Making annotations
- The CACAO scoreboards
  - Session page
  - Team page
  - User page
- Making challenges

Log in


74.197.139.252 Talk for this IP address Log in 13:07:39GMT
Main Page
Read
View source
View history
Search
Main Page
Enter GO at the Top
Help
Report Bug
Annotation Jamborees
Recent Changes
Login / Create Account
Cacao
About CACAO
Create New Gene Page
Fall 2014
Links
page contributors
Tools
an excess of identical challenges that do not appear to be applicable to the annotation or well thought out will be considered spam and ignored.
Main Page
Welcome to
GONUTS
the Gene Ontology Normal Usage Tracking System
793 registered users
GONUTS is the current home of CACAO!
The GONUTS wiki has been set up to provide third-party documentation for users of the Gene Ontology Project.
The GO wiki is not an official product of the GO consortium. It was built by users at TAMU for newcomers to the Gene Ontology who want to explore GO usage. The rationale for this wiki is described in About GONUTS.
To browse the ontology pages, search for a term or visit the paramount GO page page and select a branch. For more information about how this wiki is automatically updated, see GO wiki scripts. For Help using the system, see Help:Contents, which is available in the navigation links from all pages.

Log in


74.197.139.252 Talk for this IP address Log in
Special page
Search
GONUTS and CACAO are supported by the PortEco project. You can help PortEco by taking this short survey
It is now the CHALLENGE Period for CACAO Fall 2014! It will end Sunday 5 October at 5:59pm
This is your chance to challenge other team's annotations. You may also DEFEND or suggest improvements to your own annotations IF they have been challenged. Please note, although we ENCOURAGE challenges, an excess of identical challenges that do not appear to be applicable to the annotation or well thought out will be considered spam and ignored.
Main Page
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Help
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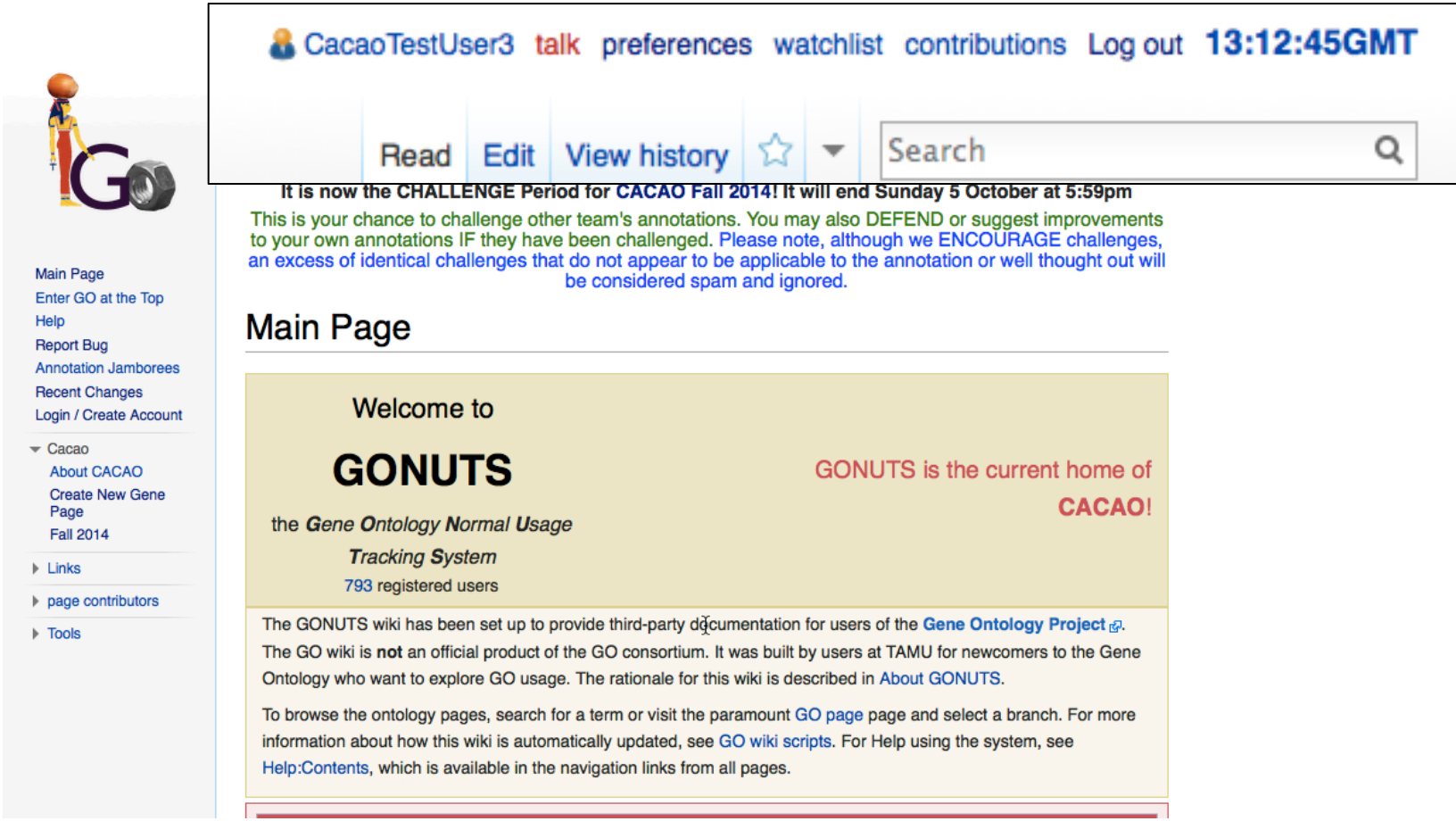
Links
Tools
Log in
Username
CacaoTestUser3
Password
Forgot your password?
Keep me logged in
Log in
Help with logging in
Privacy policy
About GONUTS
Disclaimers
Powered By MediaWiki

Log in


CacaoTestUser3 talk preferences watchlist contributions Log out 13:12:45GMT
Read Edit View history
Search
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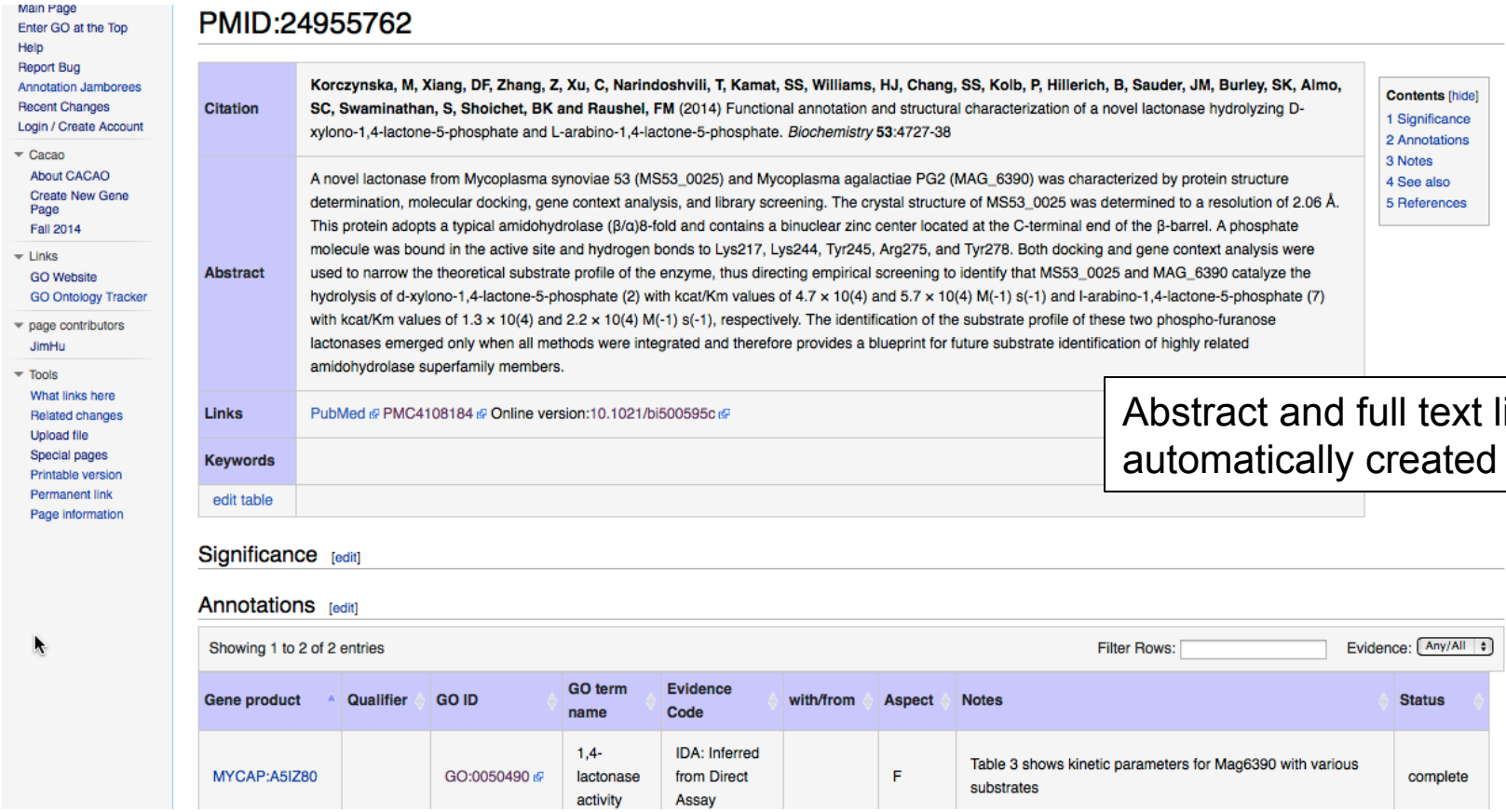
Making annotations

- Review
  - Log in on GONUTS
  - Find paper (PMID) and protein (UniProt)
    - Create a reference/PMID page
  - Create gene page
  - Edit the annotations table: Add a row
    - GO ID
    - Evidence
      - With/from if needed
    - Reference
    - Note

PMID pages

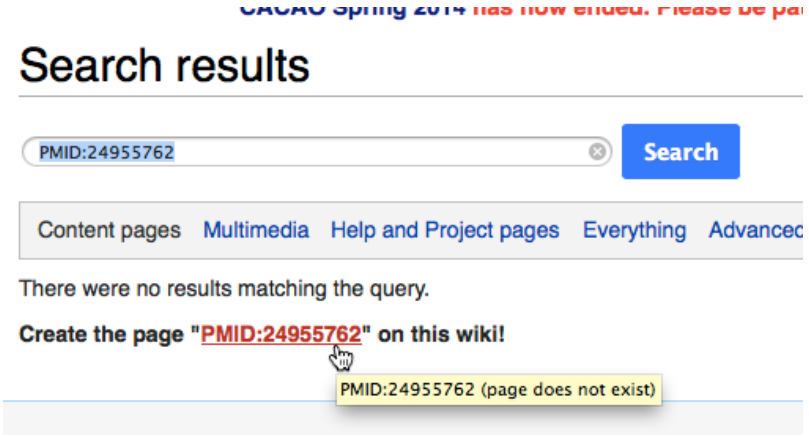


Abstract and full text links are automatically created

Anywhere the reference is used in an annotation table is shown

How to create PMID pages

- Search and click the red link
- Make a reference in a table and click the link in a citation
- Edit the URL in the browser
- If you get a message that there is no text, reload the page!



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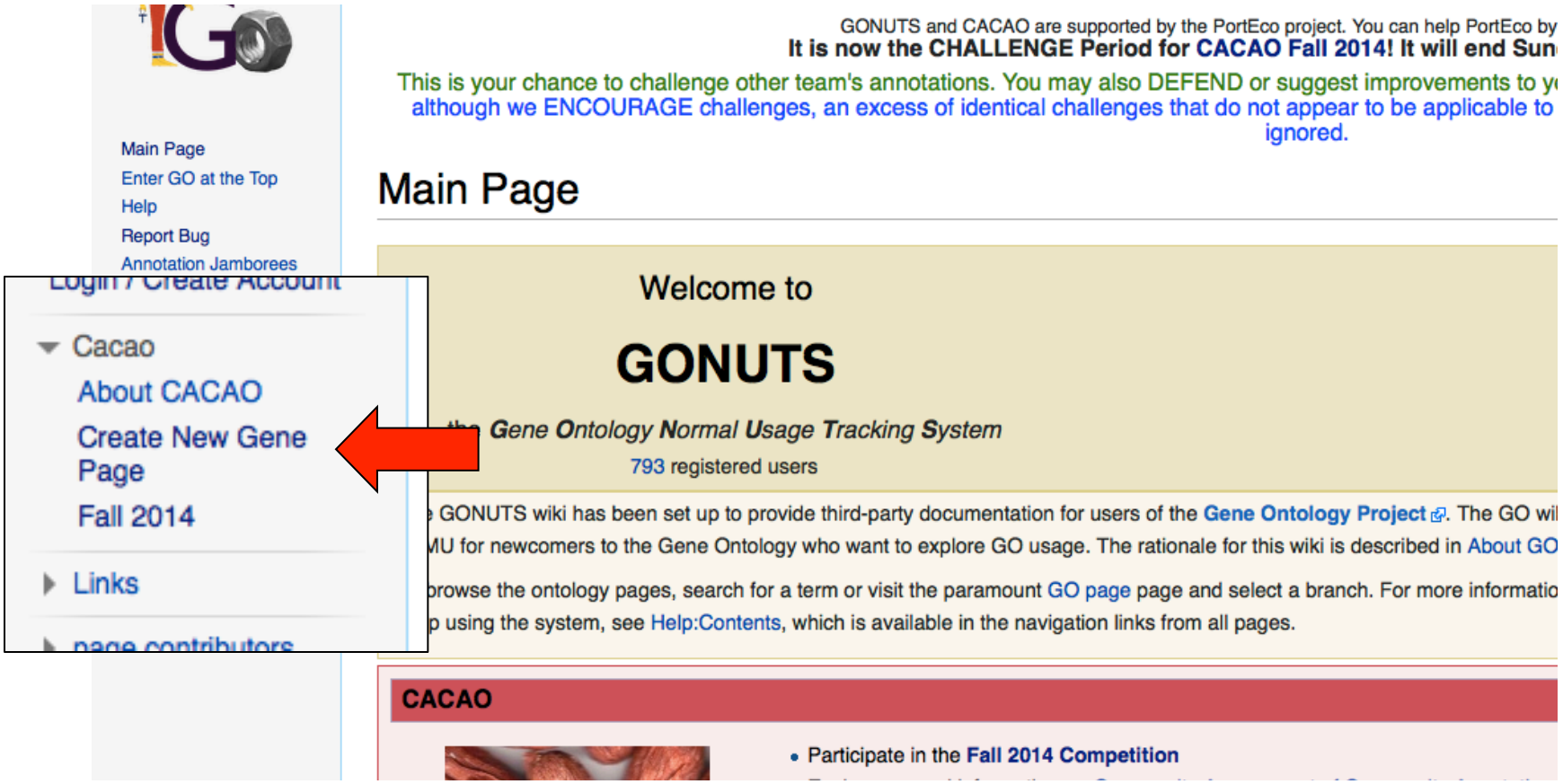
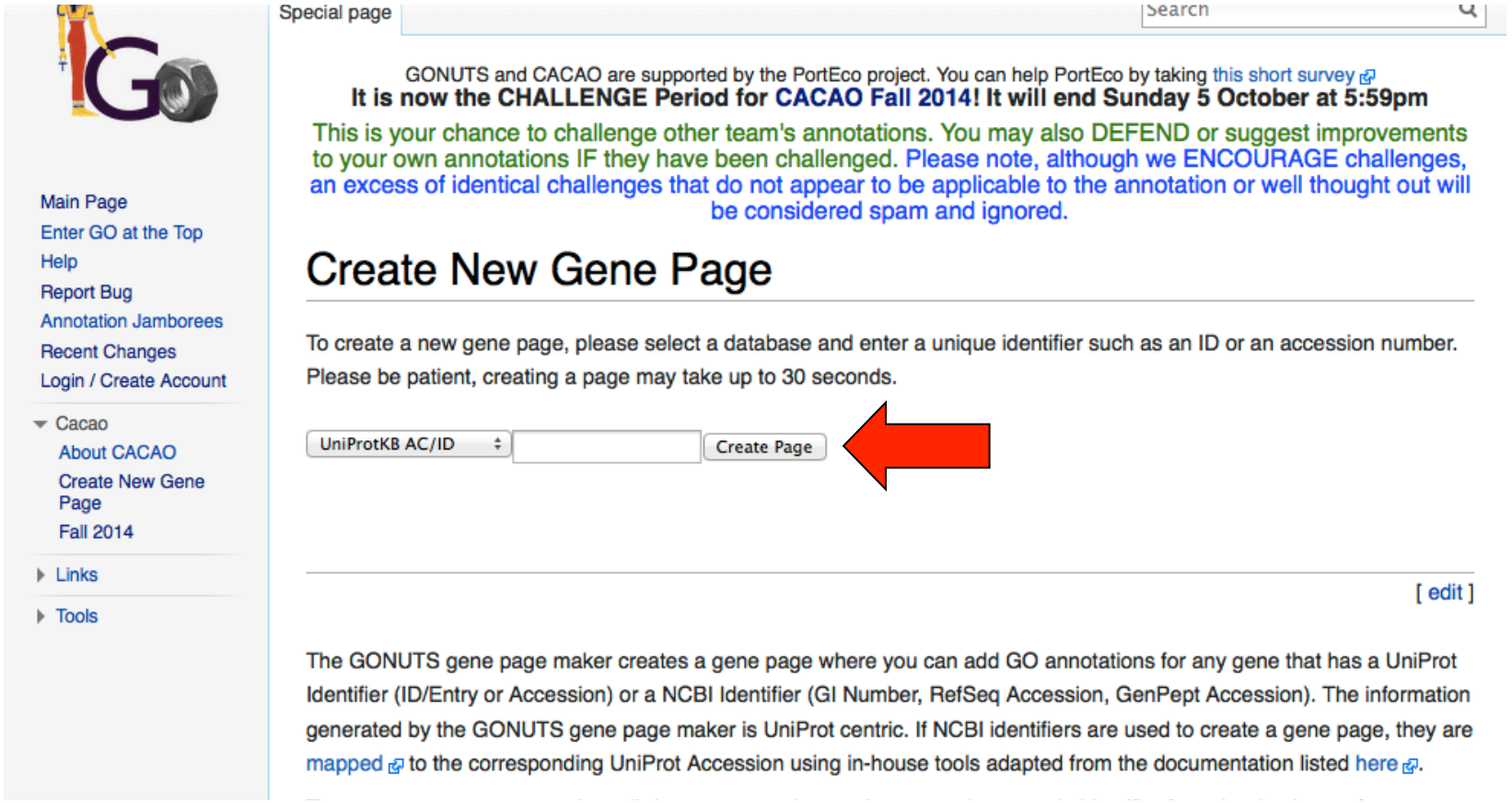
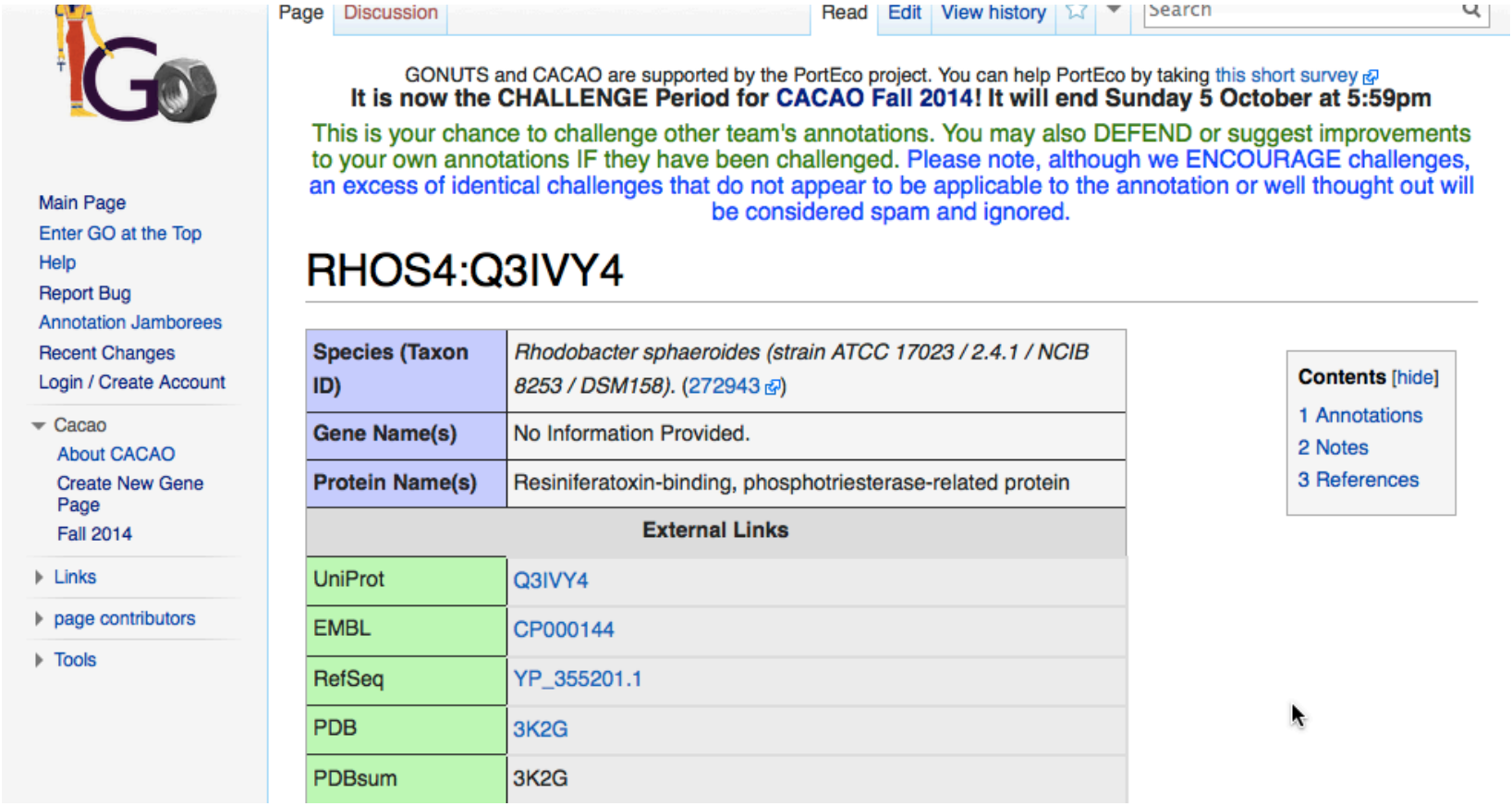
Create a gene page



Create a gene page



Create a gene page



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    - Evidence
      - With/from if needed
    - Reference
    - Note

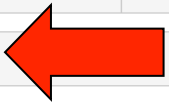
Making annotations

Annotations [edit]

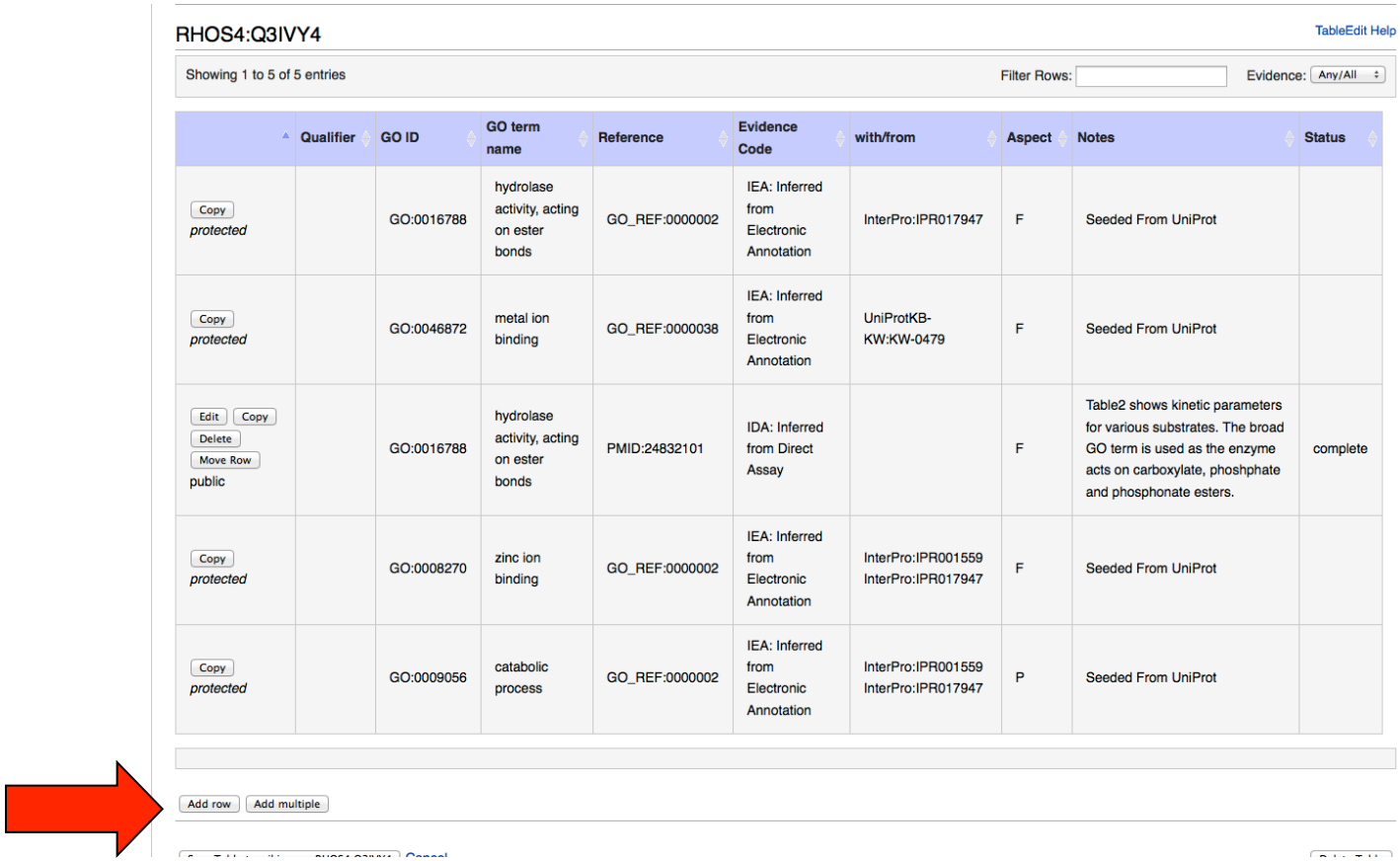
Showing 1 to 5 of 5 entries Filter Rows: Evidence: Any/All

Qualifier	GO ID	GO term name	Reference	Evidence Code	with/from	Aspect	Notes	Status
	GO:0008270	zinc ion binding	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR001559 InterPro:IPR017947	F	Seeded From UniProt	
	GO:0009056	catabolic process	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR001559 InterPro:IPR017947	P	Seeded From UniProt	
	GO:0016788	hydrolase activity, acting on ester bonds	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR017947	F	Seeded From UniProt	
	GO:0046872	metal ion binding	GO_REF:0000038	IEA: Inferred from Electronic Annotation	UniProtKB-KW:KW-0479	F	Seeded From UniProt	
	GO:0016788	hydrolase activity, acting on ester bonds	PMID:24832101[1]	IDA: Inferred from Direct Assay		F	Table2 shows kinetic parameters for various substrates. The broad GO term is used as the enzyme acts on carboxylate, phoshphate and phosphonate esters.	complete

edit table



Making annotations



RHOS4:Q3IVY4

TableEdit Help

Showing 1 to 5 of 5 entries

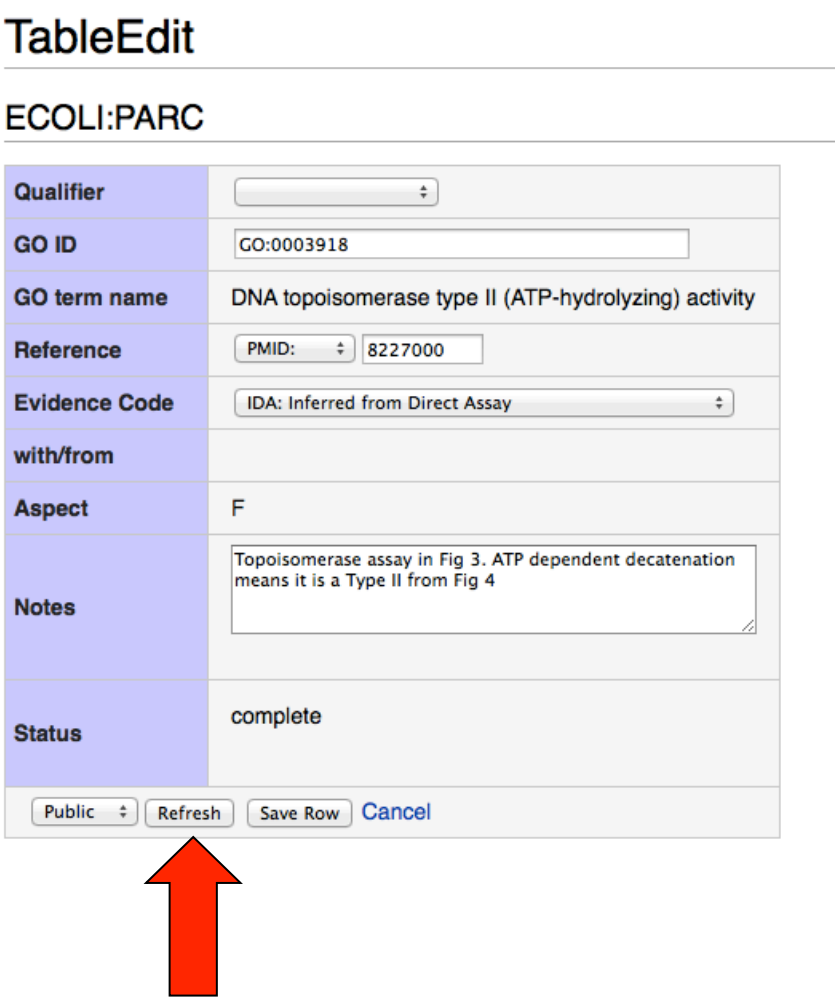
Filter Rows:

Evidence: Any/All

	Qualifier	GO ID	GO term name	Reference	Evidence Code	with/from	Aspect	Notes	Status
Copy *protected*		GO:0016788	hydrolase activity, acting on ester bonds	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR017947	F	Seeded From UniProt	
Copy *protected*		GO:0046872	metal ion binding	GO_REF:0000038	IEA: Inferred from Electronic Annotation	UniProtKB-KW:KW-0479	F	Seeded From UniProt	
Edit Copy Delete Move Row public		GO:0016788	hydrolase activity, acting on ester bonds	PMID:24832101	IDA: Inferred from Direct Assay		F	Table2 shows kinetic parameters for various substrates. The broad GO term is used as the enzyme acts on carboxylate, phoshphate and phosphonate esters.	complete
Copy *protected*		GO:0008270	zinc ion binding	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR001559 InterPro:IPR017947	F	Seeded From UniProt	
Copy *protected*		GO:0009056	catabolic process	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR001559 InterPro:IPR017947	P	Seeded From UniProt	

Add row Add multiple

Edit row form



GO term warnings

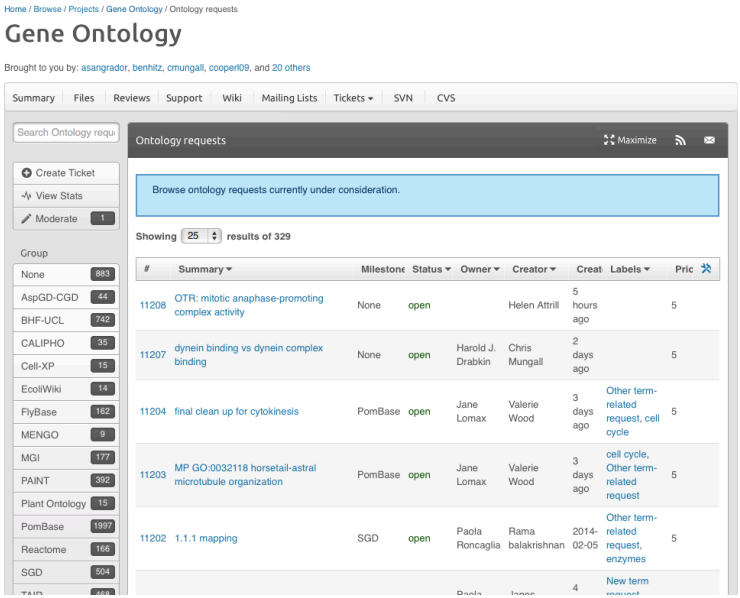
- We don't allow terms that tend to get misused
  - Binding terms
    - Should be used where the binding function by itself is the relevant function
    - Not for substrates and cofactors
  - Response to terms
    - Should be used where the gene product is used to do something in response to the stimulus/stress
    - Not just for changes in gene expression
- Watch out for taxonomy problems
  - Sometimes GO definitions are too specific for eukaryotes or mammals
    - Something that sounds OK isn't
    - Problem can be in the parent terms!

Do you need a new GO term?

- Sometimes things are missing in GO
- BUT, GO is not intended to capture everything.
  - DO: propose new terms for functions, processes, and components that express general concepts
  - DON'T: propose terms that are too specific
    - examples.
      - regulation of expression of a specific gene
      - Phosphorylation of a specific protein (as opposed to a class of proteins)

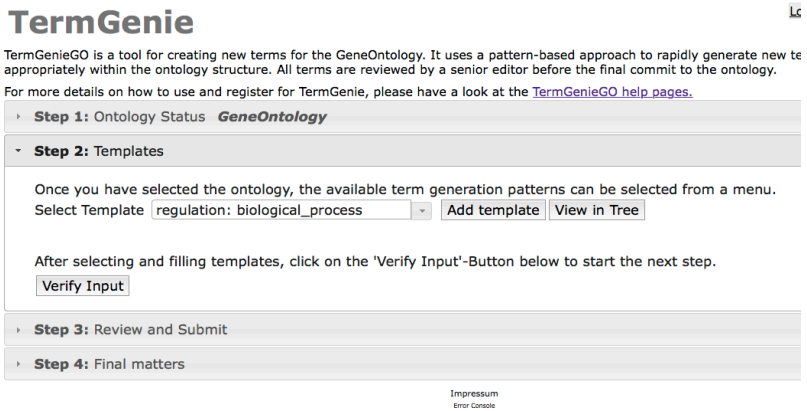
If you need a new GO term

- http://sourceforge.net
  - Gene Ontology project > Ticket tracker > More > Ontology requests
- New term request
  - "NTR:" in subject
  - Definition
  - Where in the ontology
  - Explanation of why it is needed w/reference(s)



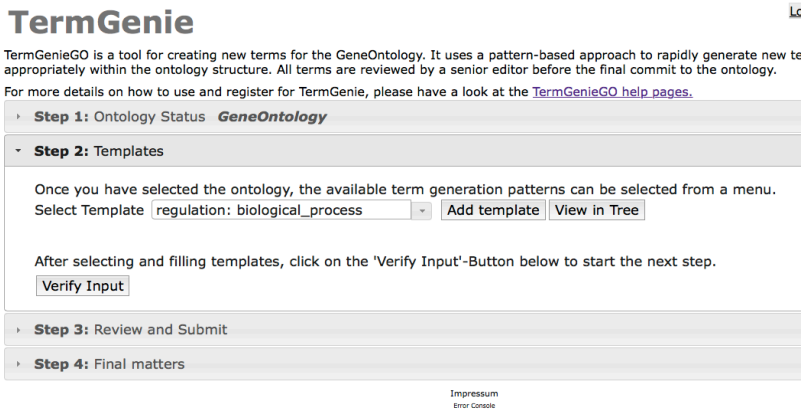
If you need a new GO term

- http://go.termgenie.org
- Use when the new term follows one of the template patterns
  - e.g. regulation
- Gives a temp GO ID
  - This will NOT be in GONUTS right away

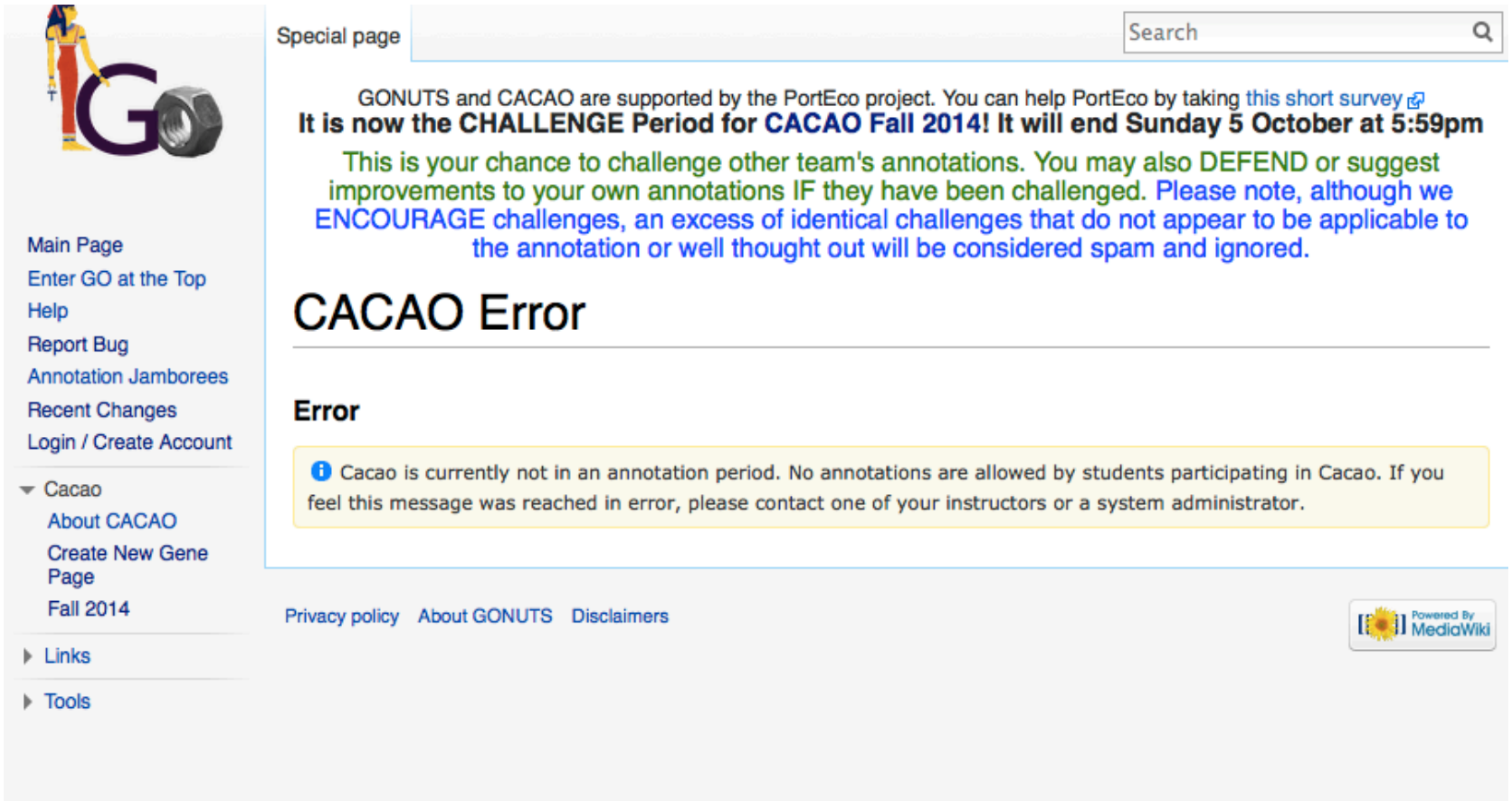


If you need a new GO term

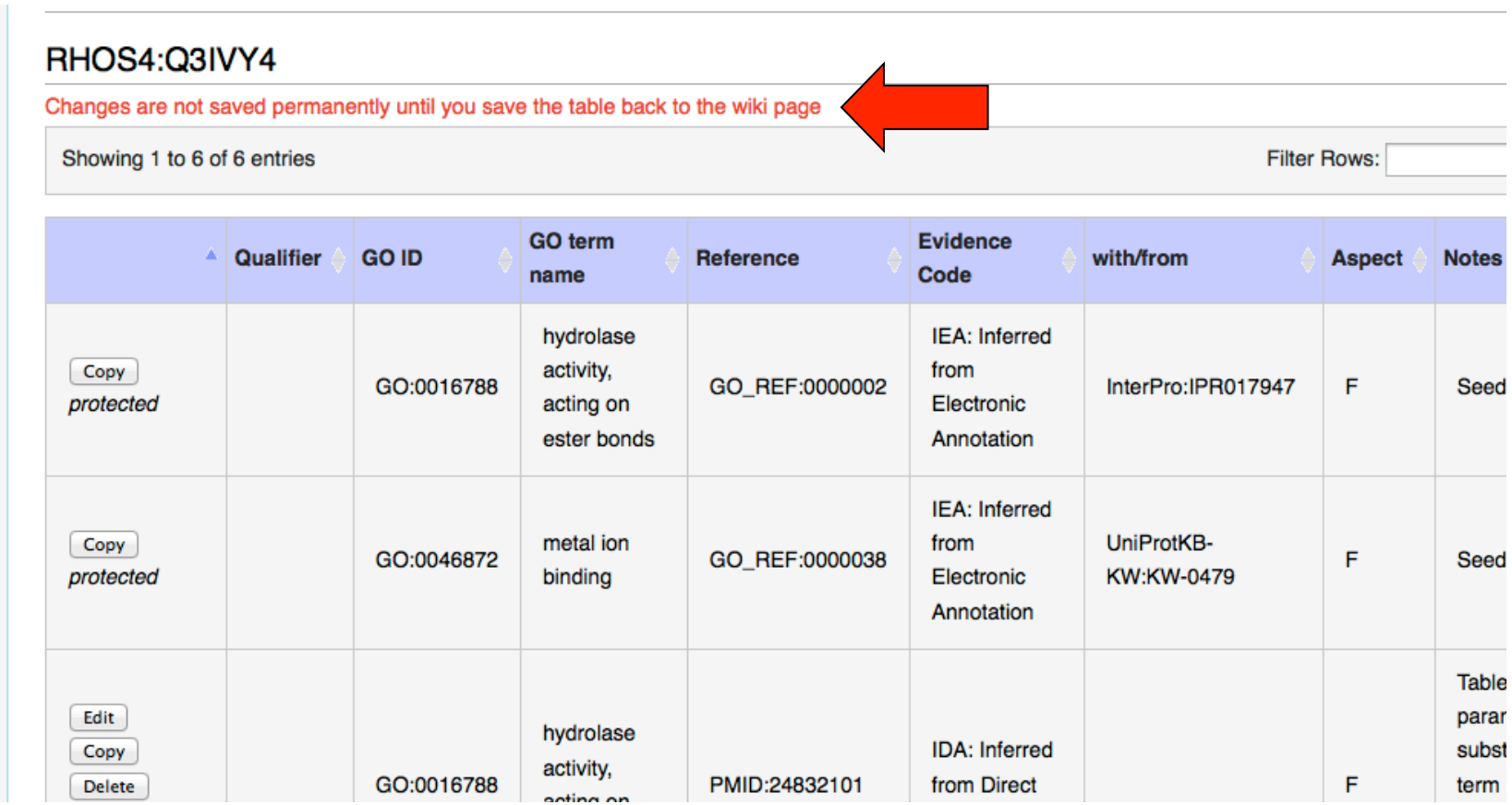
- Annotate to a less specific term
  - Include in your note either
    - Link to sourceforge ticket
    - TermGenie temp ID
- Ask us for help with these!



Only during annotation periods



Save the row AND save the table



RHOS4:Q3IVY4

Changes are not saved permanently until you save the table back to the wiki page

Showing 1 to 6 of 6 entries

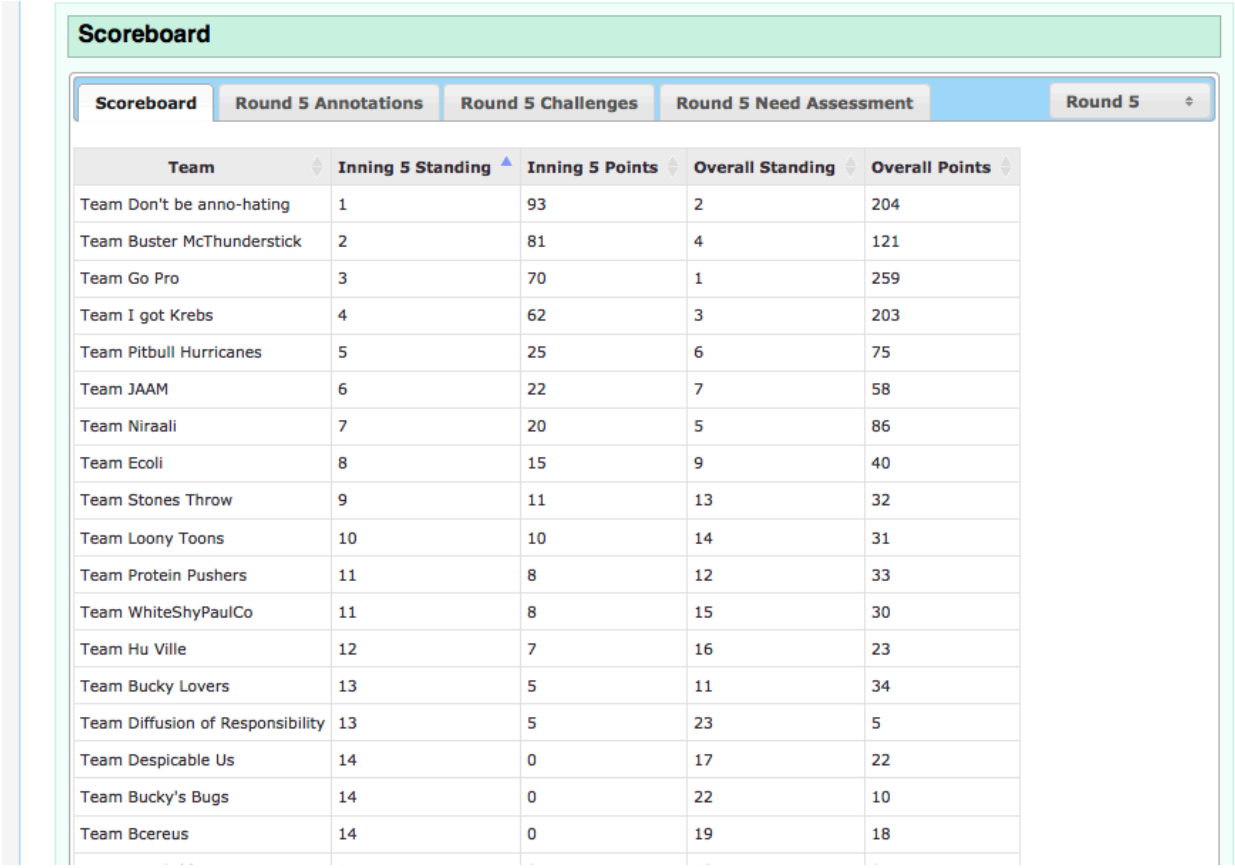
Filter Rows:

	Qualifier	GO ID	GO term name	Reference	Evidence Code	with/from	Aspect	Notes
Copy *protected*		GO:0016788	hydrolase activity, acting on ester bonds	GO_REF:0000002	IEA: Inferred from Electronic Annotation	InterPro:IPR017947	F	Seed
Copy *protected*		GO:0046872	metal ion binding	GO_REF:0000038	IEA: Inferred from Electronic Annotation	UniProtKB-KW:KW-0479	F	Seed
Edit Copy Delete		GO:0016788	hydrolase activity,	PMID:24832101	IDA: Inferred from Direct		F	Table paran subst term

Outline for today

- Making annotations
- The CACAO scoreboards
  - Session page
  - Team page
  - User page
- Making challenges

Session Scoreboard



Scoreboard

Scoreboard | Round 5 Annotations | Round 5 Challenges | Round 5 Need Assessment | Round 5

Team	Inning 5 Standing	Inning 5 Points	Overall Standing	Overall Points
Team Don't be anno-hating	1	93	2	204
Team Buster McThunderstick	2	81	4	121
Team Go Pro	3	70	1	259
Team I got Krebs	4	62	3	203
Team Pitbull Hurricanes	5	25	6	75
Team JAAM	6	22	7	58
Team Niraali	7	20	5	86
Team Ecoli	8	15	9	40
Team Stones Throw	9	11	13	32
Team Loony Toons	10	10	14	31
Team Protein Pushers	11	8	12	33
Team WhiteShyPaulCo	11	8	15	30
Team Hu Ville	12	7	16	23
Team Bucky Lovers	13	5	11	34
Team Diffusion of Responsibility	13	5	23	5
Team Despicable Us	14	0	17	22
Team Bucky's Bugs	14	0	22	10
Team Bcereus	14	0	19	18

Session Scoreboard

Scoreboard | Round 5 Annotations | Round 5 Challenges | Round 5 Need Assessment | Round 5

Showing 1 to 10 of 202 entries

First Previous 1 2 3 4 5 Next Last

Status	Page	User	Date/Time	GO Term (Aspect)	Reference	Evidence	Notes	Links
	PIG:IL6	Drl5141, Team Go Pro	2013-11-04 08:55:36 CST	GO:2000866 - positive regulation of estradiol secretion (P)	PMID:24139936	IDA	Day 15 and 16 of Pregnancy figure 4 show that increased IL-6 leads to increased estradiol 17beta secretion.	challenge
	PIG:IL1B	Drl5141, Team Go Pro	2013-11-04 08:58:57 CST	GO:2000866 - positive regulation of estradiol secretion (P)	PMID:24139936	IDA	Day 15 and 16 of Figure 4 show that increased IL-1beta resulted in an increase in estradiol 17 beta	challenge
	PIG:TNFA	Drl5141, Team Go Pro	2013-11-04 09:02:33 CST	GO:2000866 - positive regulation of estradiol secretion (P)	PMID:24139936	IDA	Figure 4.	challenge
	MYXVL:MT5	Kohli3, Team WhiteShyPaulCo	2013-11-04 09:27:39 CST	GO:0016032 - viral process (P)	PMID:8676463	IMP	Figure 5. Defective growth of M-T5- virus in a CD4+ rabbit T-cell line (RL5).	challenge
	MYXVL:MT5	Kohli3, Team WhiteShyPaulCo	2013-11-04 09:57:33 CST	GO:0019050 - suppression by virus of host apoptosis (P)	PMID:8676463	IMP	Figure 7.	challenge

Session Scoreboard

Scoreboard | Round 5 Annotations | **Round 5 Challenges** | Round 5 Need Assessment | Round 5

Showing 1 to 5 of 5 entries (filtered from 85 total entries)

First | Previous | 1 | Next | Last

Author,Group	Challenging User,Group	Date Last Challenged	Page	GO Term (Aspect)	Reference	Evidence	Reason for Last Challenge	Links	History
Drl5141, Team Go Pro	Larichardson, Team WhiteShyPaulCo	2013-11-17 16:45	HUMAN:TRAIP	GO:0034504 - protein localization in nucleus (P)	PMID:19151749	IMP	Shown in Figure 6. The GO TERM is not correct it should be that in TRIP negatively regulates the TNF-mediated activation of NF-κB which is the GO term GO:0050709 which is negative regulation of protein secretion.	challenge or judge	C: 1 A: 3
Drl5141, Team Go Pro	Roosheel, Team I got Krebs	2013-11-17 16:06	HUMAN:KSYK	GO:0005737 - cytoplasm (C)	PMID:19151749	IDA	I think the qualifier is not needed?	challenge or judge	C: 1 A: 3
Drl5141, Team Go Pro	Roosheel, Team I got Krebs	2013-11-14 17:06	HUMAN:KSYK	GO:0010803 - regulation of tumor necrosis factor-mediated signaling pathway (P)	PMID:19151749	IMP	Evidence code should be IMP	challenge or judge	C: 1 A: 4
Drl5141, Team Go Pro	Roosheel, Team I got Krebs	2013-11-14 17:04	HUMAN:NLRC3	GO:0032715 - negative regulation of interleukin-6 production (P)	PMID:22863753	IMP	PMID: 22863753	challenge or judge	C: 2 A: 5
Drl5141, Team Go Pro	Meganmikkelson, Team Don't be anno-hating	2013-11-12 20:05	PIG:TNFA	GO:2000866 - positive regulation of estradiol secretion (P)	PMID:24139936	IDA	Missing Figure. Notes should include Figure 4	challenge or judge	C: 1 A: 2

Filter Rows: dri

Team scoreboards

Showing 1 to 10 of 23 entries

First | Previous | 1 | 2 | 3 | Next | Last

Status	Page	User	Date/Time	GO Term (Aspect)	Reference	Evidence	Notes	Links
	CAEEL:APN1	Jlensmire, Team Protein Pushers	2013-09-14 21:18:52 CDT	GO:0006284 - base-excision repair (P)	PMID:22819077	ISA with/from UniProtKB:P22936	Figure 1 shows C.elegans APN-1 shows homology to Yeast Apn1, which is involved in DNA repair	challenge
	EBOZM:VP40	Lleopold, Team Protein Pushers	2013-09-14 22:23:23 CDT	GO:0046788 - egress of virus within host cell (P)	PMID:23297401	IMP	Figure 8	challenge
	CAEEL:APN1	Jlensmire, Team Protein Pushers	2013-09-15 11:59:26 CDT	GO:0017005 - 3'-tyrosyl-DNA phosphodiesterase activity (F)	PMID:22819077	IDA	Figure 10C shows that APN-1 exhibits a 3' repair diesterase activity	challenge
	CAEEL:APN1	Jlensmire, Team Protein Pushers	2013-09-15 12:17:10 CDT	GO:0006284 - base-excision repair (P)	PMID:22819077	IDA	Figure 10 shows that APN-1 has the ability to repair various DNA lesions	challenge
	BOMMO:Q5CCJ5	Jlensmire, Team Protein Pushers	2013-09-15 12:36:31 CDT	GO:0008284 - positive regulation of cell proliferation (P)	PMID:23781494	IDA	Figure 6	challenge
	SALTI:MGTC	Jlensmire, Team Protein Pushers	2013-09-15 13:21:17 CDT	GO:0009405 - pathogenesis (P)	PMID:19436747	IMP	Figure 2. MgtC mutants showed decreased survival in human cells as compared to the WT	challenge
	EBOZM:VP40	Lleopold, Team Protein Pushers	2013-09-25 16:53:47 CDT	GO:0019076 - release of virus from host (P)	PMID:23297401	IMP	Figure 2B, 2C show that when certain key amino acids are mutated (L213A, L295A, V298A) they do not induce the same amount of surface pressure into the plasma membrane as compared to WT	challenge

User scoreboards

User:Lleopold

My Annotations

Showing 1 to 7 of 7 entries — First | Previous | 1 | Next | Last

Status	Page	Date/Time	GO Term (Aspect)	Reference	Evidence	Notes	Links
	HPV16:VE5	2013-10-13 10:09:56 CDT	GO:0005886 - plasma membrane (C)	PMID:19712955	IDA	Figure 3 shows localization to the plasma membrane via immunofluorescence data	challenge
	HPV16:VE5	2013-10-13 10:32:31 CDT	GO:0019048 - modulation by virus of host morphology or physiology (P)	PMID:20686024	IDA	Figure 8 depicts the inhibition of endosome vesicle fusion by HP16 E5 protein	challenge
	EBOZM:VP40	2013-09-25 16:53:47 CDT	GO:0019076 - release of virus from host (P)	PMID:23297401	IMP	Figure 2B, 2C show that when certain key amino acids are mutated (L213A, L295A, V298A) they do not induce the same amount of surface pressure into the plasma membrane as compared to WT	challenge
	EBOZM:VP40	2013-11-10 15:34:32 CST	GO:0020002 - host cell plasma membrane (C)	PMID:23297401	IMP	Figure 8: Western blots of cells transfected with WT VP40 and several hydrophobic mutants demonstrate that C-terminal domain plasma membrane penetration is critical for viral egress.	challenge
	EBOZM:VP40	2013-09-25 17:11:46 CDT	GO:0031235 - intrinsic component of the cytoplasmic side of the plasma membrane (C)	PMID:23297401	IMP	Figure 3	challenge
	EBOZM:VP40	2013-09-14 22:23:23 CDT	GO:0046788 - egress of virus within host cell (P)	PMID:23297401	IMP	Figure 8	challenge
	HPV16:VE5	2013-11-10 14:52:22 CST	GO:0072657 - protein localization in membrane (P)	PMID:19712955	IDA	Figure 3 shows protein localization to the plasma membrane via immunofluresence assay	challenge

Show 10 entries — Filter Rows:

Annotations challenged by Lleopold

Showing 1 to 3 of 3 entries — First | Previous | 1 | Next | Last

Status	Author,Group	Page	GO Term (Aspect)	Reference	Evidence	Links	Page history
	Smahoney2, Team Pitbull Hurricanes	SALT1:D0ZSD6	GO:0043190 - ATP-binding cassette (ABC) transporter complex (C)	PMID:24169575	IMP	challenge	C: 1

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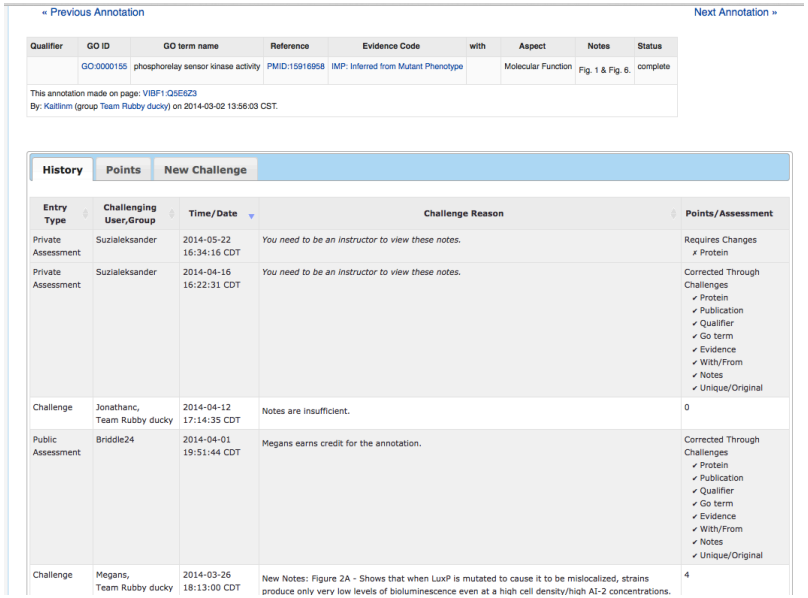
Challenges


« Previous Annotation

Next Annotation »

Qualifier	GO ID	GO term name	Reference	Evidence Code	with	Aspect	Notes	Status
	GO:0000155	phosphorelay sensor kinase activity	PMID:15916958	IMP: Inferred from Mutant Phenotype		Molecular Function	Fig. 1 & Fig. 6.	complete

This annotation made on page: VIBF1:Q5E6Z3
By: Kaitlinm (group Team Rubby ducky) on 2014-03-02 13:56:03 CST.

History | Points | New Challenge

Entry Type	Challenging User,Group	Time/Date	Challenge Reason	Points/Assessment
Private Assessment	Suzialeksander	2014-05-22 16:34:16 CDT	*You need to be an instructor to view these notes.*	Requires Changes ✗ Protein
Private Assessment	Suzialeksander	2014-04-16 16:22:31 CDT	*You need to be an instructor to view these notes.*	Corrected Through Challenges ✓ Protein ✓ Publication ✓ Qualifier ✓ Go term ✓ Evidence ✓ With/From ✓ Notes ✓ Unique/Original
Challenge	Jonathanc, Team Rubby ducky	2014-04-12 17:14:35 CDT	Notes are insufficient.	0
Public Assessment	Briddle24	2014-04-01 19:51:44 CDT	Megans earns credit for the annotation.	Corrected Through Challenges ✓ Protein ✓ Publication ✓ Qualifier ✓ Go term ✓ Evidence ✓ With/From ✓ Notes ✓ Unique/Original
Challenge	Megans, Team Rubby ducky	2014-03-26 18:13:00 CDT	New Notes: Figure 2A - Shows that when LuxP is mutated to cause it to be mislocalized, strains produce only very low levels of bioluminescence even at a high cell density/high AI-2 concentrations.	4

- There are many ways to get to the challenge view
- You will see a history of the challenges and assessments
- If the judges have already looked at it, there will be clues about what we think is good and bad about this annotation

Challenges

Cacao

« Previous Annotation Next Annotation »

Qualifier	GO ID	GO term name	Reference	Evidence Code	with	Aspect	Notes	Status
	GO:0050490	1,4-lactonase activity	PMID:24955762	IDA: Inferred from Direct Assay		Molecular Function	Table 3 shows kinetic parameters for Ms0025 with various substrates	complete

This annotation made on page: MYCS5:Q4A724
By: Vangals (group Team Thoth) on 2014-09-21 18:01:48 CDT.

History | Points | **New Challenge** | New Assessment | Fix Annotation

Please provide the reason for this challenge and any supporting evidence. Please enter plaintext or wikitext, no HTML.

Submit a new challenge

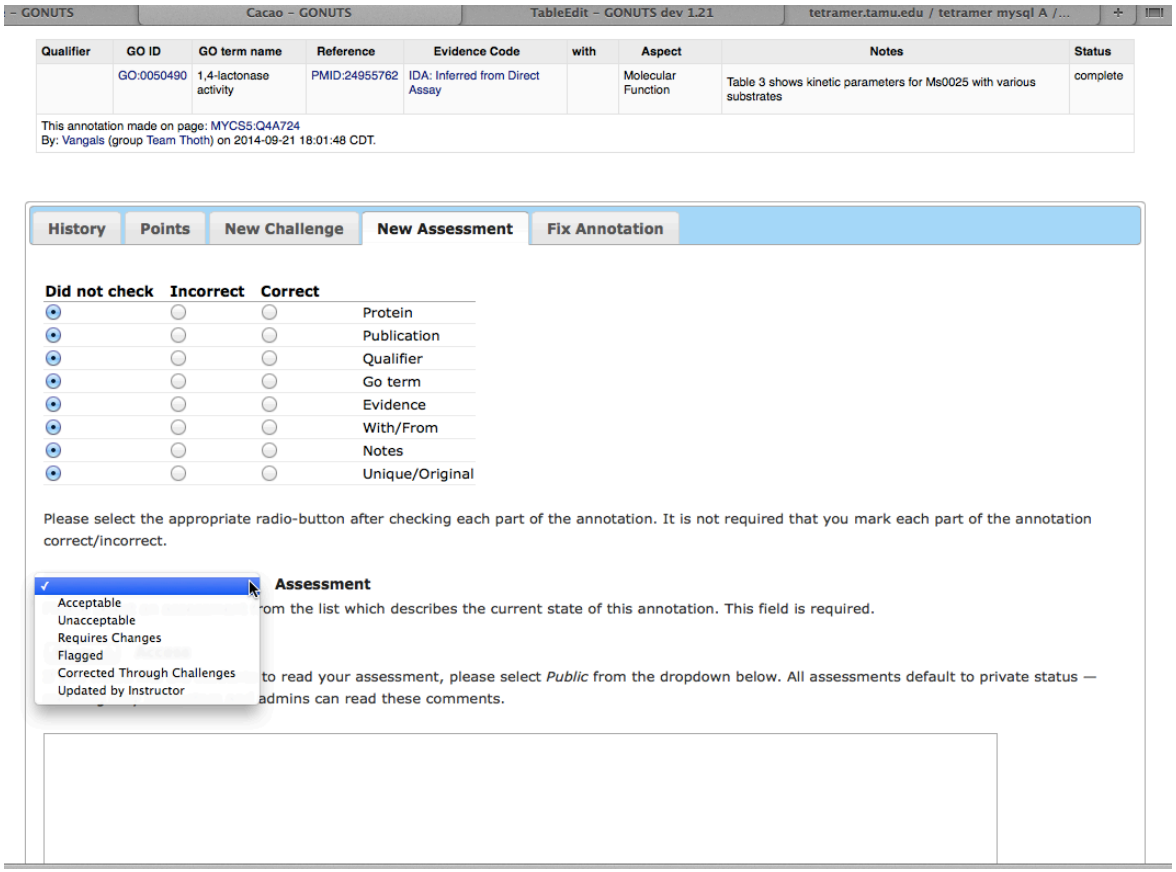
Challenges

- Explain what is wrong
  - As with annotations, the default is that your challenge is wrong unless you can convince us clearly
- You can use wikitext markup in your challenge
  - Useful for links:
    - Internal link [[page_name]]
    - Internal link with link text [[page_name|link text]]
      - Category page links need a ':' prefix
    - External link [[URL link text]]
  - Examples:
    - link to a GO term [[:Category:GO:0050490_!_1,4-lactonase_activity| Category:GO:0050490_!_1,4-lactonase_activity]]
    - Link to a UniProt page [http://www.uniprot.org/uniprot/Q4A724 Q4A724]
  - Links and wikitext are not required (but they make life easier)

Challenges

- You cannot lose points for making bad challenges
  - But you will annoy the judges if you are not thoughtful
- Look at the other challenges
  - Whoever challenges a particular aspect of the annotation first gets credit, UNLESS
    - The later challenge does a better job of correcting the whole annotation
- Try to figure out if the annotation is fixable
  - If you can't salvage part of the annotation, the "fix" should be a new annotation.

What the judges do



Remember

- Asking for help is not cheating in CACAO
- Contact us: ecoliwiki@gmail.com is read by both Jim and Suzi