**Wikipathways at Wikipedia: Protocol for generating and updating pathway templates at Wikipedia**

This protocol describes how to generate and upload WikiPathways content to Wikipedia. It is intended for human pathways only.

Examples:

Template: <http://en.wikipedia.org/wiki/Template:GlycolysisGluconeogenesis_WP534>  
Transcluded pathway: <http://en.wikipedia.org/wiki/Fluracil#Interactive_pathway_map>  
Use of image only: <http://en.wikipedia.org/wiki/Nicotine#Pharmacodynamics>

**Contents**

1. Main protocol
2. Running the html export plugin in PathVisio

**Main protocol**

1. Assess which existing pathway templates need to be updated: <https://docs.google.com/spreadsheet/ccc?key=0Aijky8P3l9GjdHNCamNLMFlrM1k4cFlXakh2UndQMFE#gid=0>
2. Export pathways as html in PathVisio. For details see “Running the html export plugin in PathVisio” below.
3. Run GeneWiki-parser.pl to create imagemap file.
4. Upload/update the png version of the pathway to Wikimedia Commons (<http://commons.wikimedia.org/wiki/Main_Page>).
5. Create a template at Wikipedia, using the image map created in step 4.

For example, if the pathway is “Heart Development”, WP1591, then create a template page like this:

<http://en.wikipedia.org/wiki/Template:HeartDevelopment_WP1591>

The imagemap will contain transcluded content from a template documentation page (<http://en.wikipedia.org/wiki/Template:Interactive_pathway_maps/doc>) and a check list for how to edit the imagemap after upload.

1. Edit the imagemap at Wikipedia according to instructions included in the image map and below.

* **Transclude into the main article**

Locate main pathway article where the full pathway should be transcluded. For example, for the TCA Cycle pathway, this is the article for Citric Acid Cycle. Transclude the image map into an appropriate place in the article by adding the line

{{TCACycle\_WP78}}

* **Edit the image reference.**

Find the reference to the image in the template, at the top. Change this to reference the image uploaded to WikiMedia Commons. Also edit the “alt” reference to a combination of the pathway name and WP ID. The references should look like this:

Image reference Image:TCACycle WP78.png|right|alt=TCACycle\_WP78

Alt reference alt=TCACycle\_WP78

* **Edit the template description and link to WikiPathways.**

Towards the bottom of the template is a Description. Edit this to reflect the title of the pathway, and also the link to WIkiPathways, unless it is already correct.

Description Description=TCA Cycle

WikiPathways link [http://www.wikipathways.org/index.php/Pathway:WP78 edit]

* **Add a self-contained reference to the template.** (Additions shown in bold)

In Edit mode, find this entry at the top of the template

<ref name="WikiPathways">

Change it to

<ref name="WikiPathways" **group="§"**>

At the bottom of the template, before the last line, add the corresponding reference:

**{{clear}}{{reflist|group="§"}}**

</div><noinclude>{{reflist}}[[Category:WikiPathways]]</noinclude>

* **Edit the default template link .**

In Edit mode, find the default link and change it to link to the main pathway article, for example the Citric Acid Cycle pathway for the TCA Cycle pathway. The new link should look like this:

default [http://en.wikipedia.org/wiki/Citric\_acid\_cycle#Interactive\_pathway\_map go to pathway article]

* **Update links on pathway objects**

The GeneWiki-parser.pl tries to find the corresponding Wikipedia article for gene pathway objects, and if found will replace a link to an outside resource with that of the Wikipedia article. Pathway objects will have a colored underline depending on the result of this process.

The goal is to have as many pathway objects as possible link to Wikipedia articles.

Underline colors:

**Red**: No article found, the link will be the unsuccessful search result of the biogps plugin.

**Green**: Link to outside resource.

**Blue**: Link successfully replaced with Wikipedia link.

**=> Red and green underlined objects should be changed if possible, blue underlined objects should be double-checked.**

**Process:**

1. In the template, locate red underlined objects by searching for “biogps”. It will look like this:

rect 177.09689795536426 420.8753748575901 209.6789875076032 440.8753748575901 [http://plugins.biogps.org/cgi-bin/gwgenerator.cgi?id=2271 search for article]

The URL will include the gene product’s identifier. Use this to identify the gene (on Entrez or similar), then search Wikipedia for the gene name. If found, replace the link with the Wikipedia link. Make sure to use a link without redirect. Also change the wording of “search for article” to “go to article”.

1. Note the x and y location of the rectangle defined in the link you just updated. Search for the corresponding rectangle in the “annotations” section by searching for the x coordinate and change the link color from red to blue. The entry will look like this:

{{Annotation|0|0|[[<div style="display:block; width:32.582089552239px; height:0px; overflow:hidden; position:relative; left:177.09689795536426px; top:425.87537485759px; background:transparent; border-top:3px red solid"></div>]]}}

Note that the y coordinate will be ~5 pixels off due to the size of the rectangle.

1. Locate all entries for the rectangle in the “annotations” (4 per rectangle) section and change the header for each entry to correspond to the new link (the title of the Wikipedia article it links to). For example, the entry might be:

|2271=  
{{Annotation|0|0|[[<div style="display:block; width:25.582089552239px; height:12px;  
 overflow:hidden; position:relative; left:177.09689795536426px; top:408.87537485759px;  
 background:transparent; border:4px black solid"></div>]]}}

The “2271” should be changed to “Fumarase”.

1. Locate any non-wikipedia links by manual inspection of the first section of the template. For example, look for links to HMDB and other outside resources. Use the identifier to find the name of the gene/metabolite, then search Wikipedia for a relevant article. If found, replace the link. Also change the wording of “search for article” to “go to article”.
2. Repeat steps 2 and 3 above.
3. Click on all Wikipedia-linked pathway objects (blue underline):

* Confirm that the link goes to the correct page without redirect.
* Add interactive pathway map to article where appropriate.

**Running the html export plugin in PathVisio**

Assumptions:

* PathVisio jar exists in /Users/khanspers/Documents/workspace-pv/{PathVisio folder}
* Html export jar and org.kohsuke.args4j jar are located in “htmlexport”

Command line:

./pathvisio.sh -p /Users/khanspers/Documents/workspace-pv/htmlexport