

## **Groups Overview**

Video Script

**Associated with “01\_BioCyc-Groups\_Overview\_062713.mov”**

This webinar will introduce you to web groups, a feature of Pathway Tools based websites. Web Groups lets you create and store sets of genes, metabolites and other BioCyc objects. Groups can be generated from within BioCyc from search results, and you can create them from uploading your data from a file.

Groups – also known as “Knowledge Spreadsheets” – are a data exploration tool that let you explore the properties of a set of entities. For example, you can view the molecular weight, pKa, and chemical structures of a set of metabolites, and you can easily compute the metabolic pathways in which a set of genes are involved.

Groups are also a collaboration tool: you can share groups with your colleagues. For example, you could store gene sets of interest to your work by defining each gene set as a separate group, and you can share those groups with colleagues through BioCyc.

Groups can also aid you in analysis of gene expression, proteomics, and metabolomics data. For example, given a group of metabolites of interest, you can perform an enrichment analysis to ask whether that metabolite set contains more substrates from specific metabolic pathways than would be expected by chance... which in this case, we see that a large number of amino acids of similar structure were matched.

Or, given a group of up-regulated genes in a gene expression experiment, you can quickly compute the set of all regulators of those genes, or ask whether the gene set is enriched for specific Gene Ontology terms or metabolic pathways.

You can also paint that gene set onto a metabolic map diagram. You can define groups for any organism database in BioCyc. Groups is also available for the desktop version of Pathway Tools – see the Pathway Tools User’s Guide.

Please continue to our other webinars for details on how to use Web Groups.