Model Organism Translatability

Capturing model organism biology that roughly aligns with human drug target biology will allow for easier comparison of the model to human organism biology. This will improve the outcome of model translatability analyses by highlighting where model organism biology is congruent and incongruent with human biology.

You can view an example of how to accomplish this by going to: TripTych Demos – specifically this demo (requires modern WebGL browser). Dexter Pratt's demo shows two 2-D network visualizations (mouse and human biological networks) with 3-D mappings between them to show where they are known to correlate. This particular visualization is very powerful in highlighting where the two organisms correlate and where they do not correlate.

For background on the challenges of Model Organism translatability: http://ec.europa.eu/research/health/pdf/summary-report-25082010_en.pdf

Examples of biology non-translatable between human and mouse include:

- Carcinogenic effects of Ppar-alpha agonists in mouse, but not human (PMID 18006136)
- Human interleukin-8, a mediator of inflammation with no direct rodent equivalent
- Human clathrin heavy chain isoform CHC22, not present in mouse, mediates glucose metabolism (PMID 19478182)