Reviewer's report

Title: Synthesis-View: visualization and interpretation of SNP association results for multi-cohort, multi-phenotype data and meta-analysis

Version: 1 Date: 9 September 2010

Reviewer: David Reif

Reviewer's report:

The authors present a visualization tool geared toward genetic studies of a staged/follow-up design or meta-analysis across cohorts. This tool is straight-forward to use, freely-available, and provides effective summary graphics. The authors should be congratulated for creating an effective user manual that contains reproducible examples.

- Major Compulsory Revisions

1. The authors should consider adding basic meta-analysis statistics to this package. From the current setup (see Figures 6-7 for examples), the data structures needed are already in place. The advantage of including such analytical options within the software is that the reported results can match directly with figures. If deemed beyond the scope of the introductory manuscript, the authors should at least discuss this possibility.

2. Related to item #1 (above), the authors should include a textual/tabular output option to go with associated plots. It is understood that the emphasis here is on visualization, but including an associated output option assures that summary measures annotated in figures can be correctly reported. Otherwise, there will be a separate calculation step for users.

- Minor Essential Revisions

1. The authors should address the “100-SNP” ceiling. Is this a practical resolution limitation? If so, the authors should discuss some methods/filters for preparing data for this constraint. As a future direction, the software could include such pre-visualization filters to extend its utility beyond 100-SNP data. For example, large datasets may be filtered to display only SNPs within certain chromosomal regions, optimal tag-SNPs, or the most significant meta-analysis SNPs (as per MCR#1, above). This sort of pre-filter analysis is possible outside of Synthesis-View, but it will limit use of this software to sophisticated analysts.

2. Given the implementation choice, it would be fairly trivial to add more cosmetic options to the web interface (plotting characters, colors, etc.).

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.