Reviewer's report

Title: Differential Susceptibility to Obesity Between Male and Female Mice

Version: 1 **Date:** 23 October 2008

Reviewer: Melinda Wilson

Reviewer's report:

This manuscript by Hong, et al. entitled “Differential Susceptibility to Obesity Between Male and Female Mice” investigates the gender differences in weight gain in mice. The primary finding of this study is that ovariectomy of female mice induces a similar the weight gain as that observed in male mice. A couple of concerns are raised that should be addressed to improve the overall impact of this manuscript.

Major Revisions:

1) One-way ANOVA is not the appropriate statistical test to make conclusions between the gender groups. A two-way ANOVA (gender group x diet) at each timepoint should be analyzed. Additionally, a repeated-measure analysis of weight over time or a two-way ANOVA (time x diet) within each group could also be included. Additionally, there is no indication of the statistical differences presented in Figure 1.

2) While feeding paradigms (calorie restricted, low fat and high fat) are interesting, the overall finding that ovariectomy increases body weight in female mice has been described numerous times in the literature. Therefore, the statement “a direct comparison in the susceptibility to body weight gain between males, females, and ovarietomized females has not been made” is too strong. This is an overstatement of the novelty of this study. The authors should focus the discussion on the addressing the effects of the different feeding paradigms as this is the most novel part of the study.

Minor Revisions:

3) More details about the body composition assessment should be provided in the methods section.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.