Reviewer's report

Title: Methylation of Leukocyte DNA and Ovarian Cancer: Relationships with Disease Status and Outcome

Version: 1  Date: 3 February 2014

Reviewer: Kenneth Nephew

Reviewer's report:

The author address an important question and the findings that differentially methylated CpGs can be used to distinguish between cases and controls has broad implications for ovarian cancer biology and also highly relevant to other cancers. The authors used appropriate methods, a large sample size, and extensive statistics. The data appear to be robust. The paper is well written and strengths and limitations are addressed and compared to similar studies in the literature.

• Major Compulsory Revisions

None

• Minor Essential Revisions

It would be helpful to expand on the leukocyte isolation and characterization in the methods.

Remove ref 43, an abstract from 2008, and replace it with a published manuscript, if available; if not, modify the text as needed.

Did the authors examine repetitive elements, such as LINE1, which has recently been assessed in WBC from ovarian cancer patients by Akers, Karpf and co-workers, 2013? If so, the findings on LINE1 should be included and the paper by Akers et al. cited in the discussion.

• Discretionary Revisions

In the discussion, the authors should consider including the point that the methylation platforms used in the study are limited in scope and with deeper whole genome-wide DNA methylation detection approaches gradually being adopted additional informative methylation marks may likely be discovered.

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'