Memo

To: Scott Evans, editor, *CHANCE*
From: David Cottrell and Michael C. Herron, Dartmouth College
Date: February 21, 2017
Re: Revisions to women's marathon submission

This memorandum is a response to your February 16, 2017, email regarding our manuscript, "All in the family: German twin finishing times in the 2016 women's Olympic marathon." Thank you very much for inviting us to submit a revision of our manuscript to *CHANCE*, and this memorandum explains how we have updated it in light of comments from you and the Editorial Board.

- "Am not convinced of quadratic model. Two points in upper right may have influenced this. What is p-value for linear vs quadratic? What happens if those 2 points are removed? Could also simply plot differences from personal best as frequency dist'n. Could also plot projected from half vs actual."

- "Marathon finish may be linearly related to the fastest previous marathon with perhaps age in a model. An interesting though experiment may be, if they were blindfolded, would they have finished together?"

- "I printed this out in black and white. Would help see them if Hahners were darkest color."

- "a similar conclusion is reached?"

  We changed the language in the paper so it uses this phrasing.

- "pairs are not completely independent as same runner can be in different pairs. Not as though runners are drawn with replacement."

- "due to subsequent DNF's?"

  We changed the language in the paper so it uses this phrasing.

- "I don't get this part. If Yi is function of Xi, personal best, won't estimates be same for each simulation? What I would try for an analysis would be look at distribution of finishing times, expecting it to be normal, as most human performance is fairly normal (most are average, some above, some below). I'd use the observed mean and variance of the finishers plus a random error, and see what this theoretical dist'n looks like. How often are finishers within x seconds of each other? Could also use historical marathon data from other races."

- There are errors in figure labels, "5a" and "5b"

  We apologize for this oversight and have fixed the associated labeling errors.

- "Would help to expand left side bins, as these are the finishes of main interest."

- "what are interval widths in seconds? Hard to see."

- "Suddenly Latin?"

  We have changed the Latin to, all things equal.

- "likely"