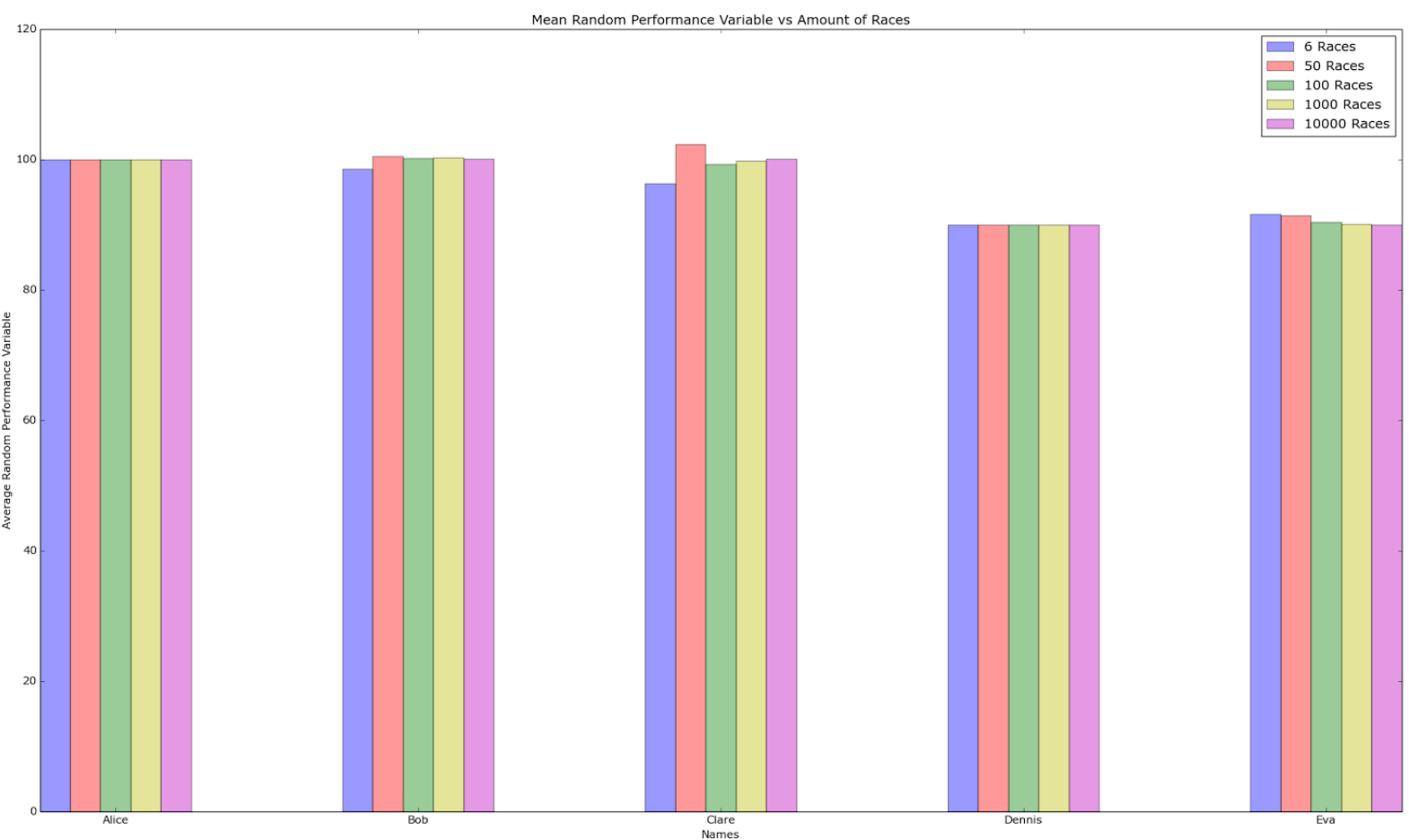


Sailing Coursework Consistency vs Inconsistency

I've looked in to the effects of consistency vs inconsistency and the outcome that it has over a different period of races. My hypothesis is that as the over a small amount of races that being consistent will be more beneficial. Over a larger amount of races I expect the inconsistent racers to be coming out on top, especially if their worst result is still getting discarded. Over an absurdly large number of races I expect everyone to even out due to sailors getting closer to their true mean.



The graph above shows my hypothesis pretty accurately, the inconsistent sailors are all over the place in the earlier stages when there are fewer races, however as the number of races starts to increase they converge to just higher than their mean random performance variable. I feel that the impact on having a sailor's worst race removed will benefit the inconsistent sailors more due to allowing them to capitalize on their fluctuations from the mean. For example if Alice had the results [1,2,1,3,2,2] and Bob

had the results [2,1,2,1,1,5], Bob would win overall due to his extremes being lower than Alice's.

So is this a fair system? In all honesty it is relatively fair, when we model people on statistics we don't take into account any of the external factors and the sailors decision making. Bob may be more inconsistent because he likes to take risks, that doesn't necessarily make him a worse sailor than Alice, as you can see over time he is just as good as her.

The one thing I would consider changing is the removal of your worst result, but as someone who has raced in several regattas before I know why it's there. Occasionally people have a bad day, and when one thing goes wrong everything tends to go wrong, it's very difficult to recover from some mistakes whilst sailing which is why there is the need for this rule.

So instead of changing the rule I feel that the sailors themselves should adapt and learn to work with it, sailors should be willing to take more risks if they have X amount of good races behind them, especially if they have averaged well in the first $n-1$ (n = total amount of races) races as they have nothing to gain from getting the same results as before.

To conclude I think that the system that is currently in place is as fair as it can be without completely changing the entire scoring system. There are pros and cons to each of the types of sailors, if it was a short regatta I would put my money on a consistent sailor such as Alice and for a longer regatta I would always back someone like Bob due to the benefit he gets from having the worst results discarded.