-Additional total SC measures (missing SKIVE male observations)

-shortening SAC section (add a figure)

-career?

-Hassold dataset?

Counting MLH1 foci in multiple oocytes for each female and in multiple spermatocytes for each male allowed us to examine determinants of variation in recombination rate within mice. While this trait will be examined in greater detail in future manuscript, we not that the general pattern is that females have almost twice as much inter-cellular variance in MLH1 foci compared to males (Figure 1 and Table 2).

**# B[Reserve for chapter 3?] Within-individual variation in the genome-wide recombination rate is higher in females**

Counting MLH1 foci in multiple oocytes for each female and in multiple spermatocytes for each male allowed us to examine determinants of variation in recombination rate within mice. To do this, we considered the same models as above, but replaced mean MLH1 focus count (for a mouse) with within-mouse variance in MLH1 focus count (for a mouse) as the dependent variable. Sex is the only variable that affects MLH1 focus count in all models (M1: p < 10^{-6} --`r LmerMLH1\_CV\_results$sex.results` ; M2: p = 0.03 -- `r` ; M3: p = 0.03 -- ``).

In general, females have almost twice as much inter-cellular variance in MLH1 foci compared to males (Figure 1). Since estimates of within-mouse variance may be more susceptible to technical error from staining, we repeated the analyses using a subset of cells with high quality scores (1 or 2; Materials and Methods). The results are similar: sex is the strongest effect (M1 p < 10^{-6}; M2 p = 2.310^{-4} -- ; M3 p = 2.2810^{-4} -- ). When both quality-curated and full datasets are considered, strain does not significantly and consistently affect variance in MLH1 focus count in either sex. These results show that sex is a primary determinant of inter-cellular variance in the genome-wide recombination rate across diverse genetic backgrounds.

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Q12 MLH1.var -- M1 -LmerMLH1\_M1\_Q12\_VAR\_results -- LmerMLH1\_M1\_Q12\_VAR\_results, M2 -sum.MLH1var\_M2\_Q12.co\_eff, M3 -MLH1var\_M3\_Q12\_sum