Background from X-chrosome paper:

1. A lot of examples of different types of GE interaction effect, and counter example of where the heteroskedasity will not imply GE interaction;

2. Test for variance should be used as a initial screening for GE interaction!

3. There is a classical G, E independence assumption, E assumed normal

Background from JLS paper:

1. people want to use multivariate analysis to take account the potential complex structure, but interactions are rarely addressed.

2. Give a lot of reasons why direct testing will be hard!

3. Likelihood type of method can increase power, but require strict model assumption

4. Again, E is assumed normal!

5. Additive structure is not critical, but will be critical for our case.

Background from gJLS paper:

1. For big GWAS problem, not ideal to do simulation type of method or graphical method

Background from theoretical/empirical null paper:

1. Likelihood based method may not work for empirical null