Tentative Project Design

1. Develop selection lines by
   A. Direct selection for long or short horn size
   B. Eliminate sexual antagonism (no-SA) by eliminating fecundity selection
      a. Breeding happens in mass culture, but all females contribute equal offspring to subsequent generation
      b. Expect horn size to increase due to sexual selection on males
2. Assemble the genome and map trait loci using combination GWAS / linkage mapping.
   A. Generate recombinant lines by crossing high and low selection lines
   B. Sequence whole genomes of selection lines to phase SNPs in recombinants
   C. Use linkage info from recombinants to scaffold assembly and map SNP associations with horn size
3. Compare loci from no-SA regime to those mapped by direct selection

Courses Taken So Far

COURSE	INSTRUCTOR	SEMESTER
BIOMETRY	Dr. Walter Schargel	Fall ‘16
BIOINFORMATICS	Dr. Jeff Demuth	Fall ‘16
EVOLUTION	Dr. Paul Chippindale	Spring ‘17
ESSENTIALS OF GENOMICS	Dr. Matthew Fujita and Dr. Todd Castoe	Spring ‘17