Competence areas from Schedl lecture content, Advanced Genetics

- Think genetically about biology, genomics and disease

- Understand approaches and logic for investigating gene function in model organisms (forward and reverse genetics, deducing function from phenotype)
- Understand the nature of variation/mutations (including Muller’s morphs) in model organisms and humans, including experimental design to test genetic mechanism
- Synthesis/assembly pathway versus regulatory/binary switch pathway – understand what they are and data used to assemble the gene-gene genetic relationships
- Phenotype – used in deducing wild type function; penetrance vs expressivity
- Genetic screens. Basics, not details. (Will get more in other lectures.)
- Cell autonomous versus cell non-autonomous gene function, logic not the details. (Will also get more in other lectures)

- Critical thinking about strengths and weaknesses of genetic approaches, and alternative interpretation of results

> Do not need to know the details of the various experiments done in C. elegans – but should know what was the goal and what were the genetic concepts involved