

## Genetics Laboratory 2202

### F3 Screen Homework

**(Due one week after completion of the last day of the F3 screen laboratory)**

**10 pts total**

You should have analyzed four clutches of embryos in Part 3 of the zebrafish F3 screen. As part of this data, you should have all of the numbers and phenotype information you need to make a hypothesis about the nature of the cross. For example, if you found that ~25% of embryos in a clutch had a mutant phenotype and ~75% of embryos in a clutch had a wildtype phenotype, then you would logically hypothesize, that the adult F2 fish were heterozygous for a recessive mutation, and that your embryos are 25% homozygous mutant (etc.).

In this homework, you will report the Chi-squared analysis that you have done to determine the probability that your hypotheses are correct. Please also put this in your laboratory notebook so that it is complete.

For each cross, you should have the following information:

1. Your hypothesis about the cross-it is probably easiest to represent this as a labeled Punnett square:

2. A table listing phenotype, observations, and the expected results if your hypothesis is correct:

3. Your Chi-squared calculations

4. Degrees of freedom

5. Your calculated P-value and conclusion on the validity of this hypothesis based on this P-value.