

## Biology

Contract #	Term	Course	Contract Title	Contract Description
298011	Fall 2015	BIOL-3216K	Isolating Specific Mutant Genes of Yeast When Exposed to Copper	We will be performing experiments in order to isolate specific mutant genes from yeast when it is exposed to copper. I will be learning various lab techniques that will enhance my own understanding of genetics and provide experience for future biological lab work. These techniques include streaking petri dishes for isolating yeast, using UV light to induce mutagenesis and create new mutations in yeast DNA, performing complementation tests where we look for relationships between new mutants, learning how to create a medium for the yeast to grow on in petri dishes, and learning proper lab equipment sterilization techniques using an autoclave device. Our goals are to isolate new mutations of a gene called Brn1 and confirmed those mutations are new mutants of Brn1. Brn1 is the specific gene we plan to isolate, which causes our yeast strains to turn brown when exposed to copper in its medium.
289018	Fall 2015	BIOL-5216U	Alternative Staining of Elastic and Reticulate Fibers	This project will focus on the different types of histochemical staining techniques. Once slides have been prepared, fibers of various connective tissues will be stained with different special stains which will specifically bind to the three types of fibers found in connective tissue. The special stains used will be hematoxylin, eosin, Van Gieson, G.M.S, and a typical silver staining. This will allow for comparison of presence of the different fibers within various tissues, such as umbilical, tonsils, spleen, etcetera.
289019	Fall 2015	BIOL-5286U	Examining Parasitoids in Grasshoppers	This project will examine parasitoids (parasites that eventually kill the organism in which they reside) that are occasionally found in grasshoppers. The specimens will be collected at The Lynnhaven Wildlife Sanctuary, located in Fortson, Harris County, Georgia. One hundred (less if there are not 100 available) grasshoppers will be collected, with the only requirement being that they are adults. After capture, grasses will be collected at the same site of capture to provide food for the grasshoppers to keep them alive throughout the duration of the experiment. Once back at the lab, the grasshoppers will be monitored for parasitoids. There is a maximum time frame (a little under two weeks) in which the parasitoids should be easily identifiable. When this window has passed, all remaining grasshoppers will be set free.
305012	Fall 2015	BIOL-5515U	Immunology Experimental Design	I will be working with the three graduate students in the class to design an experiment for the entire class. We will seek to evaluate important topics in immunology using available resources.
305011	Fall 2015	BIOL-5286U	DNA Barcoding of Plants in Georgia Long-Leaf Pine Savannahs	Dr. Barone and I are going to collect plant samples from a Long-Leaf Pine Savanna in south Georgia, and perform DNA extraction, isolation, and species-specific genetic barcodes.

Biology

303012	Fall 2015	BIOL-3216K	In My Genes: Genetic Mutation and Autosomal Transmission	My contract will consist of the mapping of genetic variations within my genes through the means of crafting two individual pedigrees and an overlapping pedigree showing a possible connection between the two variations (if applicable). I will research both albinism and the CCR5 protein in order to write a paper answering the following questions: What is the CCR5 protein and what is its purpose? What is the causation of albinism and what is its genetic importance? Is it possible to carry the genotype for albinism but only show partial manifestation and how could this be tested? Is there a connection between the delta-32 mutation of the CCR5 protein and albinism?
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