Hypothesis
Plasma concentrations of five inflammatory markers (mannan-binding lectin, transferrin, ceruloplasmin, iron, and haptoglobin) consistently differ between healthy quail and quail infected with *Aspergillus fumigatus*.

Proposed future research
There are two aspects of future research to consider which include the continuation of my summer project and suggested research to strengthen or augment the research. During my study, I tested samples from quail experimentally infected with *Aspergillus is* 2010 and I helped with another experimental inoculation in August 2011. The study will continue to test the plasma concentrations of infected and healthy quail from the 2011 inoculation study. The data will go towards a future publication.

Future research that could improve upon my findings would involve measuring the concentrations of inflammatory markers in plasma of quail infected with a common avian respiratory infections cause by each a bacteria and virus. Looking at pathogens that specifically affect the respiratory system would be the best choice because the aim of the study was to find good diagnostic tests to help clinicians differentiate between *Aspergillus* and other respiratory pathogens without needing to use more invasive sample collecting methods for tests like a lung biopsy or fungal culture. As the study stands, we cannot say whether the resulting differences in inflammatory markers between healthy and *Aspergillus* infected quail are due to an infection in general or are specific to aspergillois.

Results
No difference was found in the plasma concentration of mannan-binding lectin and haptoglobin between healthy and infected birds. When the concentrations of mannan-binding lectin and haptoglobin were compared to fungal culture results enumerated as colony forming units there was no significant trend. The assay for mannan-binding lectin was a titer that utilized the complement cascade. Both sheep red blood cells and rabbit red blood cells were used, but the cells did not fully lyse at the highest titer with either. No changes in lysis were observed when the concentrations of different test components were adjusted, which included red blood cells, quail plasma, yeast, and overall test solution. The lack of full lysis may just be that there is not difference between healthy and *Aspergillus* infected quail in the plasma concentrations of mannan-binding lectin. Ceruloplasmin, transferrin and iron had a significant difference in plasma concentration between healthy and infected quail. The greatest difference was observed in plasma ceruloplasmin concentration. Also, ceruloplasmin and transferrin concentrations significantly increased as *Aspergillus* colony forming units increased, but iron did not have a significant change.