PLSC 731: Paper Review

Aguade – Nucleotide sequence variation at two genes of the phenylpropanoid pathway, the *FAH1* and *F3H* genes, in Arabidopsis thaliana

1. What role(s) doe the products of the phenylpropanoid pathway have in plants?

2. What enzymes are in the phenylpropanoid pathway?

3. How has nucleotide variation been used to study the role of selection vs. mutation-drift?

4. How can you determine if the sample was representative?

5. What population genetic parameters were estimated?

6. What type of variation was observed for the *FAH1* and *F3H* genes?

7. Discuss the results of the Tajima's D test for the two genes.

8. List the four gamete types observed in the 947-1478 region of the *FAH1* gene.

9. Was their any evidence for linkage disequilibrium within these genes? What evidence supports your answer?

10. How many haplotypes and major groups were detected for each of the two genes?

11. Where were the peaks of diversity located within the two genes?

12. How do the general patterns of diversity compare with other *Arabidopsis* genes that have been studied? Are these patterns consistent for all genes?

13. What is the effect of a population expansion upon the pattern of variation?