

**Statistics 833 (Autumn 2009)**  
**Statistical Methods for Analyzing Genetic Data**

<b>Instructor</b>	Prof. Shili Lin, 440A Cockins Hall, 2-7404						
<b>Lectures</b>	TR 11:30 - 12:48 am; 0048 Derby Hall						
<b>Office Hours</b>	TF 9:00-9:48 am, or by appointment						
<b>Grader</b>	Ms. Jingyuan Yang						
<b>Website</b>	<a href="http://www.stat.osu.edu/~shili/stat833.html">http://www.stat.osu.edu/~shili/stat833.html</a> .						
<b>Course Requirements</b>	You are responsible for: material covered in class, assigned readings, homework assignments, and final project. Class attendance is required.						
<b>Topics</b>	Overview and history - statistical genetics, -omics and bioinformatics Basic principles of population genetics Gene frequency estimations and equilibriums Likelihood computation on pedigrees Peeling algorithm, Lander-Green algorithm, Monte Carlo methods Linkage analysis; lod score and IBD method Association study; population and family based Haplotype analysis and other topics Software tutorial						
<b>Homework</b>	There will be 4 assignments. You are allowed to discuss with other students on the homework, but do not simply copy any part of another student's homework or solutions from any other sources. No late homeworks will be accepted.						
<b>Midterm</b>	Thursday, November 12, 2009.						
<b>Final Project/Project</b>	You are expected to work on a final project and present your findings towards the end of the quarter. Be sure to start working on it early.						
<b>Grades</b>	The final numerical grade will be determined as follows: <table style="margin-left: 100px;"><tr><td>Homework</td><td>30%</td></tr><tr><td>Midterm Exam</td><td>40%</td></tr><tr><td>Project</td><td>30%</td></tr></table>	Homework	30%	Midterm Exam	40%	Project	30%
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Project	30%						
<b>References</b>	Lange K (2003) <i>Mathematical and Statistical methods for genetic analysis</i> , 2 <sup>nd</sup> Ed Ott J (1999) <i>Analysis of human genetics linkage</i> Thompson EA (2000) <i>Statistical inference from genetic data on pedigrees</i> Weir BS (2007) <i>Genetic Data Analysis 3</i>						
<b>Special Accomodations</b>	If you need any accomodations based on the impact of a documented disability, contact the instructor privately to discuss your specific needs. You should also contact the Office of Disability Services to coordinate special accomodations.						
<b>Academic Misconduct</b>	Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with university policy.						