



## Section on Statistical Genetics

School of Public Health, Department of Biostatistics

### 1<sup>st</sup> Annual NSF-funded Short Course on Statistical Genetics & Statistical Genomics



#### Mon 7/21/2008

#### Heritage 2 Meeting Room

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
08:00 – 09:00 AM	Registration	
09:00 - 09:15 AM	Introductory Remarks	<i>Hemant K. Tiwari, Ph.D.</i>
09:15 – 10:00 AM	Discussion: Interests & Expectations	Participants
10:00 – 10:15 AM	<b>BREAK</b>	
10:15 - 12:00 PM	Introduction to Biostatistics	<i>Warren Ewens, Ph.D.</i>
		<i>Robert Elston, Ph.D.</i>
10:15 - 12:00 PM	Introduction to Genetics & Genomics	<b>Arlington Meeting Room</b>
12:00 – 1:30 PM	<b>Lunch</b>	
01:30 - 02:00 PM	Case-Control design & Stratification	<i>David B. Allison, Ph.D.</i>
02:00 – 03:15 PM	Binary TDT/ Quantitative TDT	<i>Warren Ewens, Ph.D.</i>
03:15 – 03:30 PM	<b>BREAK</b>	
03:30 – 04:15 PM	Structured Association Testing	<i>David B. Allison, Ph.D.</i>
04:15 – 05:00 PM	Discussion	All Faculty

#### Tue 7/22/2008

#### Heritage 2 Meeting Room

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
08:00 – 09:00 AM	Software Demonstration (PLINK – GWAS)	<i>Hemant K. Tiwari, Ph.D.</i>
09:00 – 09:15 AM	<b>BREAK</b>	
09:15 – 10:30 AM	Haplotyping & Fine Mapping	<i>Kui Zhang, Ph.D.</i>
10:30 – 11:45 AM	Microarray Analysis: Design	<i>Guilherme Rosa, Ph.D.</i>
11:45 – 01:15 PM	<b>Lunch</b>	
01:15 - 02:30 PM	Microarray Analysis: Pre-Processing	<i>Grier Page, Ph.D.</i>
02:30 – 02:45 PM	<b>BREAK</b>	
02:45 – 04:00 PM	Microarray Analysis: Inference	<i>Sandra Rodriguez-Zas, Ph.D.</i>
04:00 - 05:15 PM	Basic Experimental Cross QTL analysis	<i>Xiangqin Cui, Ph.D.</i>
05:15 – 05:45 PM	Discussion	All Faculty

We would like to thank our sponsors for their support:

[National Science Foundation](#)



GENOME EXPLORATIONS  
Discovery Through Innovation



The University of Alabama at Birmingham  
1665 University Boulevard, RPHB 327  
Birmingham AL 35294-0022  
+01 205 975 9169



# Section on Statistical Genetics

School of Public Health, Department of Biostatistics

## AGENDA

### Wed 7/23/2008

### Heritage 2 Meeting Room

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
08:00 – 09:00 AM	Software Demonstration (R/MANOVA – Genomics Microarray)	<i>Xiangqin Cui, Ph.D.</i>
09:00 – 09:15 AM	<b>BREAK</b>	
09:15 – 10:30 AM	Multiple QTL analysis & R/qtlbim Part I: Bayesian model selection approach	<i>Brian Yandell, Ph.D.</i>
10:30 – 11:45 AM	Part II: Bayesian hierarchical generalized linear model approach	<i>Nengjun Yi, Ph.D.</i>
11:45 – 01:15 PM	<b>Lunch</b>	
01:15 - 02:30 PM	Measuring fitness & detecting selection on multivariate phenotypes	<i>Bruce Walsh, Ph.D.</i>
02:30 – 02:45 PM	<b>BREAK</b>	
02:45 – 04:00 PM	Genome-wide Marker assisted selection (GWMAS)	<i>Guilherme Rosa, Ph.D.</i>
04:00 - 05:15 PM	Detecting selection using molecular signature	<i>Yunxin Fu, Ph.D.</i>
05:15 – 05:45 PM	Discussion	All Faculty

### Thu 7/24/2008

### Heritage 2 Meeting Room

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
08:00 – 09:00 AM	Software Demonstration (HDBSTAT, Power Atlas – Genomics Microarray)	<i>Jelai Wang</i>
09:00 – 09:15 AM	<b>BREAK</b>	
09:15 – 10:30 AM	Methods, Examples, and Implications of Integrative Biology	<i>Atul Butte, Ph.D.</i>
10:30 – 11:45 AM	GWAS, CNVs, and Pathway Analysis	<i>Carl Langefeld, Ph.D.</i>
11:45 – 01:15 PM	<b>Lunch</b>	
01:15 - 02:00 PM	Discussion	All Faculty
03:00 – 06:00 PM	Software Demonstration & Hands-on R/QTLBIM (MCMC) – QTL Analysis R/QTLBIM (Shrinkage) – QTL Analysis HAPLOVIEW, HAPLORE – Haplotype Analysis JMP – CNV Analysis, Pathway	<i>Brian Yandell, Ph.D.</i> <i>Nengjun Yi, Ph.D.</i> <i>Kui Zhang, Ph.D.</i> <i>Amit Patki/Kelly Vaughan, Ph.D.</i>
06:00 – 07:00 PM	<b>DINNER</b>	Centennial 1 & 2 Room
07:00 - 09:00 PM	Hands-on	Faculty ( <i>Hemant K. Tiwari, Ph.D.</i> )

### Fri 7/25/2008

### Heritage 2 Meeting Room

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
09:00 - 12:00 PM	Roundtable Discussion	Faculty ( <i>David B. Allison, Ph.D.</i> )

Course Website: <http://www.soph.uab.edu/ssg/nsfstatgen/nsffirstannual>

**NSF Disclaimer:** This material is based upon work supported by the National Science Foundation under Grant No. (NSF MCB-0650606). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



The University of Alabama at Birmingham  
1665 University Boulevard, RPHB 327  
Birmingham AL 35294-0022  
+01 205 975 9169