Instructor: Jun Li, Assistant Professor, Department of Chemistry and Biochemistry
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Phone: 405-325-9385
Email: junli@ou.edu
Web address: http://omics.ou.edu

Description about the course
This genomics course is the graduate studies. We will focus particular on genome-wide association and genetic mapping. You will learn to analysis reference genome sequences, design an association project, perform an association studies, and perform actual wet lab experiments.

Grade
Students will be given grade of A (90-100), B (80-89), C (70-79), D (60-69) and F (<60) using the following evaluation criteria.
20% class participation (attend the class and participate discussion)
20% quiz
20% project presentation
20% project 1 (parental testing)
20% project 2 (mosquito and malaria)

Text Books
Text Book (none):

Class Time and Location
MW: 1:00-2:15pm pm, Library 0225

Office Hours
On appointment.
Office location: SLSRC3770

Project paper 1
Project paper will focus on parental testing. You are asked to identify 20 genetic markers in human populations. The genetic markers can be single nucleotide polymorphisms, microsatellites, indel or others. Through literatures, you shall also provide the following information for each marker: their linkage disequilibrium, frequency in different populations, relationship with diseases.

Project paper 2
Project paper will focus on malaria-mosquito system. It will be at least 10 pages long (text, double spaced, 11pt, Arial, 1 inch for margin, exclude references and figures). Students are encouraged to do literature search to understand the current problems or interesting topics (background). Then propose a solution. Your solution shall be supported by literatures and basic theory. Why your proposed approaches may works well, give an alternative solution if your approaches fail. Please see me if you don’t know how to do literature research.

Format of the project paper:
A: Abstract
B: Introduction or review of the field
C: Current problems/knowledge gaps/community requirement, Hypothesis
D: Experimental design
E: Expecting results
F: Potential problems and solutions
G: References
H: Figures
You need to add your own ideas as long as it showed that you have thought about the topic logically with literature support.

**Project presentation**
Students will give a presentation of their project (half present project 1, and half present project 2) in class. 15-20 minutes presentation and 5-10 minutes for discussion.

**University Policies Regarding Reasonable Accommodation and Codes of Behavior:**

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the instructor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

Each student should acquaint her or him self with the University's codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination based on physical handicap.

**Plagiarism and Academic Misconduct**

Students engaging in academic misconduct (including cheating, plagiarism, and any other action that may improperly affect evaluation) will be subject to sanctions in accordance with the Norman Campus Academic Misconduct Code. I will recommend "F" for the course and expulsion from the University for all such violations.

**Suggestions For Success**

This course is designed to be interdisciplinary in nature. Some concepts might be new to student in chemistry & biochemistry students. I encourage the students to give me feedback on time. For example, a student may ask me to explain a concept that I miss. Students are encouraged to visit me or send me an email.

Note: The instructor reserves the right to change any items contained in this syllabus. This includes, but is not limited to: course content, scheduled dates, and fraction(s) of final grade assigned to individual components of the course.
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topics</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Jan 13</td>
<td>Syllabus, instructor and student know each other, students’ potential interesting topics</td>
<td>From now on, student shall think about their interesting topic for presentation and term paper</td>
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<tr>
<td>Jan 15-17</td>
<td>Introduction to genomics</td>
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<td>Jan 20</td>
<td>No class, Martin Luther King Day</td>
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<td>Jan 22-24</td>
<td>Mosquito and malaria</td>
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<td>Jan 27-Feb 3</td>
<td>Morgan/medelian genetics, genetic markers, and SNPs</td>
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<tr>
<td>Feb 3-Feb 14</td>
<td>Phenotype, genotype and QTL analysis</td>
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<td>Feb 17</td>
<td>Case study (science)</td>
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<td>Feb 19-26</td>
<td>Linkage disequilibrium and whole genome association study</td>
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<td>Feb 28</td>
<td>Case study (GR paper)</td>
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<td>March 3-12</td>
<td>Direct association study for malaria resistance in mosquitoes</td>
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<tr>
<td>March 14</td>
<td>Case study (PNAS)</td>
<td>project 1 due</td>
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<td>March 15 - 23</td>
<td>Spring break</td>
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<td>March 24 – April 14</td>
<td>Study papers and student presentation on project 1</td>
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<td>April 16 – 28</td>
<td>Study papers and student presentation on project 2</td>
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<td>April 30</td>
<td>Questions and answers for projects</td>
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<td>May 2</td>
<td>Prepare the project, no class</td>
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<td>Mar 5</td>
<td>Project due in D2L drop box</td>
<td>project 2 due</td>
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