Molecular Biology 380.01
Spring 2005

Professor Leslie Gregg-Jolly
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Email: Greggjol
Office hours: Tue. 2:00 - 3:00 pm
Fri. 10:30 - 11:30 am, or Email for appointment

Course web site:
URL: http://web.grinnell.edu/courses/bio/s05/bio380/

Course list-serve:
bio380-s05@lyris.grinnell.edu

Required texts:


3. Investigations, Departments of Biology and Chemistry, Grinnell College.

4. reference text, preferably from one of the following (in order of recommendation):
   


Recommended text:
Barker, K. At the Bench: A Laboratory Navigator. 1998, Cold Spring Harbor Laboratory Press. available on reserve in the science library.

Lecture schedule 2005:
I. Techniques
   
   Tues. Jan. 25 Introduction/overview of cloning
Chapters 1-3 and 6

Thurs. Jan. 27  Introduction to Southern analysis for lab
Tues. Feb. 1 Principles of DNA isolation

Thurs. Feb. 3 Vectors
Chapters 4 & 5

Tues. Feb. 8 Vectors and making libraries
**Required** HHMI Seminar, 4:15pm
Anne Spence

Thurs. Feb. 10 Screening libraries
Chapter 7
(literature citations for presentation due)

Tues. Feb. 15 DNA analysis: sequencing and PCR
(initial project consultations this week)

II. Applications of Molecular Biology

Thurs. Feb. 17 Student presentations

Fri. Feb. 18 noon Seminar: Jodi Enos-Berlage, *Investigating surface colonization by bacteria and the effect of calcium levels on bacterial physiology*

Tues. Feb. 22 Student presentations

Thurs. Feb. 24 Conferences for independent projects

Tues. Mar. 1 Conferences for independent projects

Thurs. Mar. 3 Introduction to microarrays
(Bibliography for project proposals is due)

Fri. Mar. 4 noon seminar: Jean Porterfield, *Determining the genetic relationships among species and populations using DNA data, and using that information to address ecological and evolutionary questions*

Tues. Mar. 8 Microarrays & Genomics

Thurs. Mar. 10 Tentative field trip

Fri. Mar. 11 noon seminar: Karen Hicks, *Photoperiodic induction of flowering and circadian regulation of Arabidopsis*

Tues. Mar. 15 Presentations of student proposals

Thurs. Mar. 17 Presentations of student proposals
Written proposal due at the beginning of class
**Spring Break**

Tues. Apr. 5  Bioinformatics: Dr. Daniel Jameson  
Thurs. Apr. 7  Bioinformatics: Dr. Daniel Jameson

III. Topics in Molecular Biology (subject to change)

Tues. Apr. 12  Translation: Structure and function  
**Required:** HHMI Seminar 4:15: Anders Liljas

Thurs. Apr. 14  Molecular switches/responding to the environment  
Tues. Apr. 19  Molecular switches/responding to the environment  
Thurs. Apr. 21  Lab meeting/progress reports  
Tues. Apr. 26  Lab meeting/progress reports  
Thurs. Apr. 28  Small RNAs  
Tues. May 3  Small RNAs  
HHMI Seminar 4:15

Thurs. May 5  Social and ethical implications of molecular biology  
Tues. May 10  Social and ethical implications of molecular biology  
Thurs. May 12  Final paper due, 2 copies before class

Wed. May 18  Portfolio due by 2:00pm