WELCOME TO BIOLOGY SEMINARS “ANTIBIOTICS, PROGRESS, AND CHALLENGES”. This seminar series provides the opportunity for senior students to present a scientific topic to your peers. The primary purpose of the seminar is to give students experience making oral presentations and to teach critical thinking.

COORDINATOR: Dr. Alexandra Martynova-Van Kley
EMAIL: avankley@sfasu.edu
TELEPHONE: 468-2569

COURSE DESCRIPTION The seminar is going to be focused on understanding the biology of microbes, their behavior, how they cause disease, how they develop resistance to antimicrobials. You may choose microbiological, chemical, biochemical, computational, and genomic approaches that provide insights into mechanisms of resistance, treatment strategies and drug discovery of antimicrobials.

PRESENTATION TOPICS & SOURCES: For each presentation student will select a topic representing recent critical steps in the development of biological sciences. Students could use a Nobel Prize speech. In addition, presentations must be based on at least 7 references from the primary literature (Cell, Biochemistry, Physiology, Ecology, Journal of Biochemistry, Scientific Monographs, Science, Nature, TX Journal of Science, etc.) including and relating to the work. Student must clear the topic with the instructor by the due date. All topics will be announced to all the students in the class ahead of time in order for everybody to be ready for the discussion after the presentation.

ABSTRACTS: The abstract should be a 200-word description of your presentation. (See the handout). The abstract has to be submitted in two version: electronically and as a hard copy.

BIBLIOGRAPHY: A minimum of 10 references should be used in preparation for your seminar coming from the primary literature. Others can come from published books, symposium proceedings, and literature review articles. Web pages, which are not subject to any form of peer review, are not acceptable sources (although they can sometimes lead you to good references for published articles). A copy of the front page of each article or publication you used must be turned in on the day of your presentation along with a bibliography (Literature Cited list) of all the sources you used.

PRESENTATION: You will sign up for your presentation date. Presentations should last no more than 15 minutes. This format (often you are allowed only 12 minutes!) is typical for presentations at scientific meetings. Expect questions from your classmates and me after your presentation. Your talk should include visual aids to support your ideas and concepts. Keep the use of videos to a minimum (check presentation evaluation pdf form in grading criteria section). You have to turn in your presentation (ppt) electronically and as a handout before your presentation.

PARTICIPATION: Attendance is mandatory. Students will be expected to be present at all class meetings and presentations. Students are expected to compose and turn in as a hard copy at least 5 written questions for each topic presented in the class that day (for other students presentations) and take part on discussion after each presentation.

CONSULTATIONS: Each student must meet individually with me at least once to clear the content of their topic. Students are also encouraged to meet with me periodically to discuss progress on their presentations.

BIOLOGY SPECIAL FIELDS TEST: (see handout)! The Biology Department requires that all majors take the special fields test before they graduate. Taking this test is therefore a requirement for Biology 470. You will be provided an opportunity to sign up to take this on-campus test. Students failing to take the test will receive a withheld grade (WH) for the course.

Web page for the class: http://martynova-vankley.com/bio470/
Schedule

08/30  Class meeting. Syllabus etc
09/06  Class meeting: Topics due (think of two possibilities); schedule presentation date
09/13  Class meeting: How to make a good presentation, bibliography, abstract
09/20  Come see me! (office consultation time, room 236)
09/27  Come see me! (office consultation time, room 236)
10/04  Come see me! (office consultation time, room 236)
10/11  Class meeting. Abstracts and bibliography due at noon by e-mail. Bring presentation drafts (at least 10 slides) printed along with abstracts to class
10/18  Come see me! (office consultation time, room 236)
10/25  Come see me! (office consultation time, room 236)
11/01  Come see me! (office consultation time, room 236)
11/08  Come see me! (office consultation time, room 236)
11/15  Class meeting: presentations
11/22  Thanksgiving
11/29  Class meeting: presentations
12/06  Class meeting: presentations
12/13  Finals

Checklist

- Abstract & Bibliography (electronic version and a hard copy)
- Oral presentation (electronic version and a handout)
- At least 5 written questions for each student’s topic/presentation
- Participation in discussions after each presentation
- Office consultation meeting (at least 3)
  - Attendance
  - MFT

Grading Criteria

- Abstract & Bibliography (electronic version and a hard copy)
- Oral presentation (electronic version and a handout)
- At least 5 written questions for each student’s topic/presentation
- Participation in discussions after each presentation
- Office consultation meeting (at least 3)
- Attendance
- MFT

Examples of topics:

1. Mechanisms of antibiotics (types/classes, specific examples, what types of bacteria they suppress)
2. Antibiotic resistance (history, present, future)
3. New antibiotics (new molecules, discovery, and effect on drug resistant bacteria)
4. Antibiotic resistance in cancer patients
5. Antibiotic resistance in immunocompromised patients
6. Antibiotic resistance in domestic/farm animals
7. The Antibiotic Resistance Crisis
8. Multidrug resistance
9. Mutation key to antibiotic resistance – co-evolution, social thing
10. Superbugs - being resistant to drugs which they have never even been in contact with.

Program Learning Outcomes:

Program Learning Outcome #1: The student will demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of complexity (molecular/cellular through population/communities/ecosystems), biological principles and processes.

Program Learning Outcome #2: The student will clearly communicate scientific information; provide clear structure and transitions; demonstrate scientific tone, language, and form.
Program Learning Outcome #5: The student will demonstrate preparation for future career and educational goals utilizing the knowledge and training during their academic program.

**Student Learning Outcomes:**

Students who complete Seminar in Biology will be able to:

1. Describe the ways in which fungi impact the daily lives of humans using specific examples (PLO 1).
2. Evaluate primary literature (PLO 1, 5).
3. Effectively communicate scientific information in oral and written form. (PLO 2, 5).

**Academic Integrity (A-9.1)**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty**

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**Withheld Grades Semester Grades Policy (A-54)**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Students with Disabilities**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Acceptable Student Behavior**

Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1).

Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc.

The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.

Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.