BIOLOGY 864 (01) AND 862 (04)
PLANT-ANIMAL-MICROBE ASSOCIATIONS
SPRING 2015

Instructor: **Prof. José R. de la Torre, Ph.D.**
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Office Hours: Mondays 14:10-16:00

Instructor: **Prof. Edward F. Connor, Ph.D.**
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Office Hours: M 13:00-14:00, Tu 10:00-11:00, W 13:00 - 14:00

Schedule Wednesdays, 14:10 – 16:00
Location Hensill Hall 501 on the SFSU Main Campus

Course Description:

Over the past few decades, we have come to appreciate that microbial organisms account for a substantial proportion of the Earth's biomass. Indeed, few places on the surface of our planet can be considered devoid of life and microbial communities have even been found to thrive in environments previously deemed too extreme to support life.

A growing literature shows that microbes often mediate interactions between species and with the environment. Microbes may play a role in mediating trophic interactions such as the role of the obligate endosymbiotic bacterium of aphids (*Buchnera aphidicola*), host-pathogen, host-parasite, or predator prey interactions such as *Janthobacterium lividum*'s apparent effect on the chrytrid fungal pathogen of amphibians, and also in mediating physiological adaptations such as temperature tolerance.

In what organisms and systems do microbes play a significant role in mediating species interactions or interactions with the environment? What are the characteristics of an interaction that would suggest that microbes may be playing a role? How do we go about studying the effects of microbes on species interactions and interactions with the environment?

Enrollment:

This graduate-level course is primarily intended for Microbiology and Ecology and Evolution graduate students interested in exploring the interactions of plants-animals-and microbes. Under exceptional circumstances, advanced undergraduate students will be allowed to enroll. ***Consent of the instructor is required for continued enrollment.***

Learning Objectives

By the end of this course, students will be able to:

- Read, understand and critique papers published in the scientific literature.
- Search the primary research literature to identify articles of relevance to the topics discussed in class.
- Develop and present a 40 minute lecture based on the selected research topic.
- Describe the general methods utilized in microbial, plant, and animal ecology.
- Prepare an annotated bibliography of their research topic.

Format:

- In the first week of class, we will jointly develop a list of topics to be explored by the class through presentations of primary research. These topics can be taken from the list provided by the instructor (see below), or may develop from discussions in class.
- Each student will be expected to choose a topic within this broad framework on which to prepare an oral presentation, research and read the pertinent primary scientific literature on this topic, choose papers for the whole class to read, and to prepare an annotated bibliography. Students should consult with the instructors prior to settling on a topic, or if after assessing the literature they think it necessary to shift topics, or narrow or broaden the scope of their topic. Presenting students are encouraged to request help from the instructor and/or classmates on how to organize their presentation and prepare visual aids.
- The selected research article(s) must be provided to the rest of the class at least one week prior to the presentation.
- Presentations will be evaluated by the entire class according to the following criteria:
    - *Preparation and organization of presentation.*
    - *Whether the presenter was persuasive and demonstrated an understanding of the material.*
    - *How well the speaker communicated (clarity, tone, audibility).*
    - *Usefulness of additional information and the degree to which the presenter relied on the projected images.*
    - *How well the presentation engages the audience*
    - *Overall performance of presenter.*

Potential Topics:

Possible topics to explore over the course of the semester include:

- *Bioluminescence*
- *Tetraodotoxins*
- *Nutritional symbioses*
- *Enemy avoidance symbioses*
- *Pathogenicity*
- *Thermal tolerance symbioses*
- *Others after consulting with the instructors*

Grading:

Participation in class discussions	*30%*
Presentation evaluations	*10%*
Research article presentation(s)	*30%*
Final annotated bibliography	*30%*
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Total	*100%*

Attendance:

As we will only meet 15 times over the course of the semester, attendance is mandatory. Class participation is a significant portion of the final grade. Students will be permitted only one absence over the semester and must inform the instructor in advance of any planned absences.

Class Website & E-mail Policy

Course material, including handouts and assignments, will be made available online through the iLearn system (*http://iLearn.sfsu.edu/*). If you encounter any problems downloading or printing these files, please contact the instructor immediately.

Students are encouraged to e-mail questions to the instructors. Whenever e-mailing questions, please include "**BIOL 862 or 864**" in the subject line and identify yourself by signing the message with your **full name** and **SFSU ID number**. If appropriate, responses will be posted on iLearn or discussed in class—

without identifying the student. ***In general, e-mails will receive responses within a day or two.***

Changes to the Syllabus or Lecture Schedule

The syllabus and lab schedule are subject to change. Changes to the syllabus or lab schedule will be announced in class and/or posted on iLearn.

Holidays and Furloughs

There will be no class on the following days: ***March 25, 2015*** ***Spring Break***

Statement on plagiarism and cheating

Students are expected to maintain a high level of academic integrity in all work pursued at SFSU. ***Cheating or plagiarism will not be tolerated under any circumstances in this class.*** Cheating on an examination will result in an automatic zero points for that exam. Plagiarism, defined as either direct copying or loose paraphrasing of text from any published work (including online) without appropriate referencing, or use of another person's work or ideas without appropriate attribution, will result in an automatic zero points for that entire assignment. There will be no second chances. Furthermore, any incidence of cheating or plagiarism will be reported to the Chair of the Biology Department, the Dean of the College of Science and Engineering, and the Office of Student Affairs for possible disciplinary action. Consequences can include penalties up to expulsion from the University.

Cell phones & pagers

Please silence cell phones and pagers before arriving in class.

American with Disabilities (ADA) Accommodation

The University is committed to providing reasonable academic accommodation to students with disabilities. Students with disabilities who need accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by e-mail (dprc@sfsu.edu).

Important Deadlines for Add/Drop/Withdrawal:

February 6, 2015

Deadline to drop courses without a W.

February 6, 2015

Deadline to add courses with instructor-issued permit number.

February 7 – April 24, 2015

Withdrawal period --no documentation required.
Withdrawals will result in a "W" grade on transcript records.

April 25 – May 15, 2015

Withdrawal is permissible only for **serious and compelling reasons**. Students must file a petition to be reviewed by the Instructor and the Department Chair. Approved withdrawals will result in a "W" grade on transcript records.

"Withdrawals are not normally permitted during the final three weeks except in verified cases of accident or serious illness where the cause of withdrawal is due to circumstances clearly beyond the student's control and where the assignment of an incomplete is not practical. Ordinarily, withdrawals in this category will involve total withdrawal from the University." (SFSU Bulletin)