SOCR 415   **Pollinator management in agroecosystems (2 Cr)**   **SP 2019**

When: Tue and Thur, 9:00 AM to 9:50 AM   **Where:** Microbiology A 108

Instructor: Dr. Arathi Seshadri

Office: C138 Plant Sciences   **Office hours:** By appointment

Email: Canvas e-mail   **Tel:** (970) 491 6804

Course Objectives:
- Develop an understanding of the interaction between plants & pollinators
- Familiarize with different managed pollinators and their role in agriculture and the ecosystem
- What are the current local and global pollinator concerns and the potentials for management?
- Develop critical thinking and writing skills for scientific communications

Reference: Pollination and Floral Ecology (Willmer 2011); Bee Pollination in Agricultural Ecosystems (James RR and Pitts-Singer TL; 2008; Other posted readings.

Class lectures: You are expected to attend classes regularly and participate in discussions. Topics will derive information from recent scientific articles and reports. Relevant research articles will be posted on Canvas after day's lecture.

Course Evaluation:
There will be 4 assignments to be submitted on Canvas by the stated deadline. **No late submission allowed.** There will be 2 in class tests. Lower one of the two test scores will be dropped from the final grade calculations. **No missed test allowed.**

Assignment	Date posted (by 5 PM)	Date due (by 5 PM)
1	Feb 7	Feb 14
2	Feb 28	Mar 7
3	Mar 28	Apr 4
4	Apr 18	Apr 25

Grading:
Student grades will be based on points accumulated from the following:

4 assignments (20 points x 4)	80
2 in class tests (20 points x 2)	40
Drop lower one of the test scores	–20
Course Total	100 points

Grading Scale: > 89 = A, 79 to 89 = B, 69 to 79 = C, 59 to 69 = D, < 59 = F

<u>No curving or individual extra credits.</u>

Tentative Topics Schedule

Week	Topic
Jan 22-24	Introduction to plant pollination and reproduction
Jan 29-31	Plant reproductive strategies – pollination of fruit crops
Feb 5-7 Feb 7 @5 pm	Planning for increasing pollination efficiency with bee pollination services Assignment 1 posted
Feb 12-14 **Feb 14 @5 pm**	Plant-pollinator interactions **Assignment 1 due**
Feb 19-21	Sociobiology of bees – solitary to highly eusocial bees
Feb 26-28 Feb 28 @5 pm	Life cycle and Reproduction of bees Assignment 2 posted
Mar 5-7 **Mar 7 @5 pm**	Honeybees – from honey production to pollination services **Assignment 2 due**
Mar 12-14 **Mar 14**	Beekeeping Concepts and practices **In class Test 1**
Mar 18-23	**Spring break**
Mar 26-28 Mar 28 @5 pm	Bumblebees and their role in greenhouse pollination Assignment 3 posted
Apr 2-4 **Apr 4 @5 pm**	Alfalfa bees, Mason bees and non-bee pollinators **Assignment 3 due**
Apr 9-11	Challenges facing pollinators – disease, nutrition, chemicals …
Apr 16-18 Apr 18 @5 pm	Chemical intensive agriculture, commercial beekeeping and pollinator safety Assignment 4 posted
Apr 23-25 **Apr 25 @5 pm**	Genetically Modified crops – loss of natural habitats, gene flow **Assignment 4 due**
Apr 30- May 2	Changes to land use patterns, local issues impacting pollinators, interactions between managed and wild pollinators, urban beekeeping
May 7-9 **May 7**	Current status and the future for pollinators and pollination services **Test 2**

Plagiarism and Academic Integrity

At CSU, we take the issue of academic integrity very seriously. You are expected to do your own work and to not access notes or the web during an exam, copy from someone else's exam or to provide exam answers to another student during an exam. We reserve the right to proctor all exams and will take actions to ensure that all students are following this policy.

"Plagiarism includes the copying of language, structure, ideas, or thoughts of another, and representing them as one's own without proper acknowledgment. Examples include a submission of purchased research papers as one's own work; paraphrasing and/or quoting material without properly documenting the source" (CSU Policies and Guiding Principles, 2017-2018). Plagiarism is a form of theft and copying someone else's work does not fulfill the purpose of the assignment, *i.e.* to develop critical thinking and analysis skills. You demonstrate this by presenting your own, new, synthesis and analysis in your writing. Simply copying or paraphrasing from source materials does not demonstrate this, however insightful the source(s) may be. Good writing generates new knowledge. This should be your goal in this class, in other courses at CSU and in your career after you leave here.

In this course all written work will be checked for plagiarism issues by both the instructor and originality checking software such as VeriCite. If you are caught plagiarizing materials you will receive a 0 for the assignment/exam, and depending upon the severity of the offense, an F in the course. All examples of plagiarism or academic dishonesty and will be reported to the Office of Conflict Resolution and Student Conduct Services for additional disciplinary action as outlined in the student handbook under the heading "academic integrity/Misconduct" (http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/).

Service Animals in the Classroom

This course will follow all the policies regarding service animal access to the classroom. The full university policy may be found here: http://policylibrary.colostate.edu/policy.aspx?id=747

POLICY STATEMENT

The University will not discriminate against individuals with disabilities who use service dogs, nor, subject to the terms of this Policy, deny those persons access to programs, services and facilities of the University. In addition, only under certain limited conditions as stated in this policy, the University may permit an individual with a documented disability to have an Emotional Support Animal in a University residential facility. Pets are not permitted in any University building, including residence halls, except for the Veterinary Teaching Hospital and other veterinary facilities in accordance with their rules and policies, or when otherwise specially allowed with advance approval from Environmental Health Services for bona fide academic or University business purposes.

Service Dogs

Subject to some limitations, a service dog may accompany an individual with a disability throughout campus, such as in classrooms, recreational facilities and campus residences. It is strongly encouraged, but not required, that a service dog be identifiable to others through a visible signifier (e.g., vest or harness). Individuals with a disability who require a service dog in the classroom should contact Resources for Disabled Students (RDS) for assistance with accommodations.

Emotional Support Animals

An emotional support animal (ESA) is one that alleviates one or more identified symptoms or effects of a person's disability. ESAs are not permitted in university buildings, except in the rare situation where use of an ESA in University housing is approved in advance by the University upon the submission of appropriate documentation, as set forth in this policy. ESAs are not permitted in non-residential buildings such as classrooms, laboratories, business offices, recreational facilities, dining halls, or the Lory Student Center; they are limited to the disabled individual's residence in a University residence hall, apartment, or other housing unit, and permitted only with prior approval.

Canvas Email System Utilization

Using the University's systems or networks for personal gain; for example, by selling access to your eID or to university systems or networks, or by performing work for profit with university resources (e.g. selling your notes or promoting a personal agenda) in a manner not authorized by the University is strictly forbidden within the CSU Code of Conduct and also CSU's policy for Acceptable Use for Computing and Networking Resources. All cases of this type of code violation will be reported to the Office of Conflict Resolution and Case Management and dealt with following CSU legal counsel guidance.