

BSPM 450/550– Molecular Plant-Microbe Interactions

Instructors:

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Course Description:

A class on the molecular mechanisms involved in the interactions between plants and pests (microbes, insects and other plants)

Pre-requisites

Basic knowledge of genetics, basic knowledge of molecular biology

Learning Outcomes:

Acquire advanced knowledge about Molecular Plant-Microbe and Plant-Pest Interactions

Classwork:

Each week students will learn about fundamental aspects of Molecular Plant-Microbe Interactions through lectures. **Graduate** students will be asked to complete problem sets based on the scientific articles based on lecture material. **Cell phones must be turned off during class; violators will be asked to bring treats for the class.**

Grading:

Final grade will be based on:

	BSPM 450	BSPM 550
Exam I	30%	25%
Exam II	30%	25%
Final Exam	30%	30%
Participation	10%	10%
Homework	-----	10%

Textbook:

There is no assigned textbook for this class. Reading material (Review chapters, Book chapters and Scientific Articles) will be posted on Canvas.

Attendance Policy:

Attendance is highly recommended. Any absences must be well justified and explained to the instructor.

Accommodations for Students with a Disability Policy:

Any student who suspects s/he may need an accommodation based on the impact of a disability should contact the class instructor privately to discuss the student's specific needs and provide written documentation from the Office of Resources for Disabled Students. If the student is not yet registered as a student with a disability, s/he should contact the Office of Resources for Disabled Students.

An important note about academic integrity:

At Colorado State University we take academic integrity very seriously. At minimum, academic integrity means that no one will use someone else's work as his or her own, and that the contents of someone's work represent solely his or her own efforts.

Plagiarism is the unauthorized or unacknowledged use of another person's academic or scholarly work. Done on purpose, it is cheating. Done accidentally, it is no less serious. Regardless of how it occurs, plagiarism is a theft of intellectual property and a violation of an ironclad rule demanding "credit be given where credit is due."

If you plagiarize in your work or accept and/or provide unauthorized help you could lose credit for your work, fail the assignment, or fail the course, or even result in expulsion from the university. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed according to the principles published in the CSU General Catalog (see page seven, column two: <http://www.catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf>).

For the CSU Student Honor Pledge please visit:

<http://tilt.colostate.edu/integrity/honorpledge/index.cfm>

For more information of how to practice academic integrity please visit:

<http://learning.colostate.edu/integrity/index.cfm>

Library & Research Help:

The CSU Libraries Help Desk <http://lib.colostate.edu/helpdesk> provides both research (Ph. 970-491-1841) and technical (Ph. 970-491-7276) support. Neyda Gilman is the faculty librarian supporting this course. Please don't hesitate to contact her for assistance at neyda.gilman@colostate.edu or 970-491-7436. Find her weekly open (drop-by) office hours posted at <http://libguides.colostate.edu/neydagilman>.

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	Topic
	INTRODUCTION TO THE COURSE; OVERVIEW OF MPMI (Argueso)
	EXPERIMENTAL METHODS IN MPMI (Argueso)
	PATHOGENESIS CONCEPTS AND DEFINITIONS (Broders)
	BACTERIAL PATHOGENESIS (Guest lecture: Dr. Alejandra Huerta)
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	FUNGAL PATHOGENESIS (Broders)
	EVOLUTION OF PATHOGENESIS (Broders)
	INTRODUCTION TO VIRUSES (Guest lecture: Dr. Hermin Schotholf)
	HOST RESISTANCE TO VIRUSES (Guest lecture: Dr. Hermin Schotholf)
	EXAM I
	DEFENSE RESPONSES IN PLANTS (Argueso)
	PAMP-TRIGGERED IMMUNITY (Argueso)
	EFFECTOR-TRIGGERED SUSCEPTIBILITY (Argueso)
	QUALITATIVE RESISTANCE, R GENES, STRUCTURE AND FUNCTION (Argueso)
	EFFECTOR-TRIGGERED IMMUNITY (Argueso)
	REGULATION OF PLANT CELL DEATH (Argueso)
	SYSTEMIC ACQUIRED RESISTANCE/INDUCED SYSTEMIC RESISTANCE (Argueso)
	PLANT HORMONES IN IMMUNITY (Argueso)
	SPRING BREAK
	EXAM II
	QUANTITATIVE RESISTANCE (Broders)
	POPULATION RESPONSES: NATURAL POPULATIONS (Broders)
	POPULATION RESPONSES: AGRICULTURAL SYSTEMS (Broders)
	PLANT SUSCEPTIBILITY (Broders)
	BENEFICIAL ASSOCIATIONS: RHIZOBIA (Broders)
	BENEFICIAL ASSOCIATIONS: MYCORRHYZAE (Broders)
	ENDOPHYTIC ASSOCIATIONS (Broders)
	MOLECULAR PLANT-NEMATODE INTERACTIONS (Guest lecture: Dr. Jane Stewart)
	MOLECULAR PLANT-INSECT INTERACTIONS (Guest lecture: Dr. Paul Ode)
	MOLECULAR PLANT-PLANT INTERACTIONS
	PHYTOBIOMES (Guest lecture: Dr. Jan Leach)
	FINAL EXAM