

Syllabus for PLP 6303 Host-Parasite Interactions II (3 Credits)

Instructor: Dr. Wen-Yuan Song
Office: 2431 Fifield Hall
Office hours: Tuesday 9:30 – 11:00 a.m. or by appointment
Phone number: 273-4652
E-mail: wsong@ifas.ufl.edu

A. Course Description

Host-Parasite Interactions II focuses on molecular mechanisms of plant immune systems. Emphasis will be placed on effector- and PAMP (Pathogen-Associated Molecular Pattern)-triggered immunity. Systemic acquired resistance will also be presented. Strategies used in transgenic plants for disease control will be discussed. There will be two lectures and a discussion every week. Upon completion of this course, students should be familiar with the fundamental concepts and the methods used in this rapidly expanding research area.

B. Time and Location

2306 Fifield Hall

Lecture:	Monday and Wednesday	10:40 am – 11:30 am
Discussion:	Friday	10:40 am – 11:30 am

C. Textbook and Readings

There will be no formal textbook for this course.

Handouts will be available in class.

Readings will be available in room 2562 for copying.

D. Grading

Grades will be determined based on the number of total points obtained from the following:

Review paper:	100 points
Discussion:	200 points
Mid-term exam:	300 points
Final exam:	300 points
Class participation:	100 points

Total points possible: 1000

A = 900-1000 (90-100%)

B = 800-899 (80-89.9%)

C = 700-799 (70-79.9%)

D = 600-699 (60-69.9%)

E = less than 600 (<60%)

These numbers are subject to change depending on class performance.

E. Prerequisites:

Host Parasite Interaction I (PLP 6502)

or

Plant Molecular Biology (PCB 6528)

or

course in Genetics/Biochemistry

F. Topic outline (Spring, 2012)

- 1 Introduction
- 2 Molecular cloning of disease resistance genes
- 3 Biochemical characterization of resistance proteins
- 4 Tools for detection of protein-protein interactions
- 5 Proteins interacting with resistance gene products
- 6 Ubiquitin-mediated protein modification
- 7 Ubiquitin ligases involved in animal and plant innate immunity
- 8 Positive and negative regulators of disease resistance identified by genetic screening (part I)
- 9 Positive and negative regulators of disease resistance identified by genetic screening (part II)
- 10 Molecular basis of gene-for-gene interactions
- 11 Alteration of host cell transcriptome by the *Xanthomonas* AvrBs3/PthA effectors
- 12 Host resistance genes against *Xanthomonas*
- 13 Review
- 14 **Mid-term exam**
- 15 Pathogen-associated molecular patterns (PAMPs) (part 1)
- 16 Pathogen-associated molecular patterns (PAMPs) (part 2)
- 17 PAMP receptors (part 1)
- 18 PAMP receptors (part 2)
- 19 MAPK cascades in plant defense signaling (part 1)
- 20 MAPK cascades in plant defense signaling (part 2)
- 21 Suppression of PAMP-triggered immunity by pathogen effectors
- 22 Systemic acquired resistance (part 1)

23	Systemic acquired resistance (part 2)
24	Systemic acquired resistance (part 3)
25	Virus induced gene silencing
26	RNA interference and T-DNA mutagenesis
27	Arabidopsis and rice genome sequences
28	Review
29	Final exam

ACADEMIC HONESTY: As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." We agree to comply with the new Honor Code, which specifies that "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Further information on academic honesty and integrity is available from the Graduate School at:

http://gradschool.rgp.ufl.edu/handbook/graduate_student_handbook/integrity.html

UF COUNSELING SERVICES: Resources are available on campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

1. **University Counseling Center:** 301 Peabody Hall, 392-1575, personal and career counseling.
2. **Student Mental Health:** Student Health Center, 392-1171, personal counseling.
3. **Sexual Assault Recovery Services (SARS):** Student Health Care Center, 392-1161, sexual assault counseling.
4. **Career Resource Center:** Reitz Union, 392-1601, career development assistance and counseling.

ACCOMMODATIONS: Students requesting classroom accommodations must first register with the Dean of Students Office (Students with Disability Office, Peabody Hall, room 202 at 352-392-1261). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodations. Further information is available from the Disability Resource Center at <http://www.dso.ufl.edu/OSD/>.

SOFTWARE USE: All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator.

Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

UF POLICY ON E-MAIL: Official University business e-mail will be communicated to students using the student's University GatorLink e-mail account. That is, official email will be sent exclusively to GatorLinkUserName@ufl.edu. This is the e-mail address displayed in the online phonebook. Students may continue to use the forwarding mechanism to deliver their email to other mail services, if they wish. However, it is the student's responsibility to insure that the forwarding address is current to receive office communications from the University.

ATTENDANCE: Students are expected to attend all lectures and discussions. If you are unable to attend at the scheduled time, please notify me by email as early as possible. Make-up exams or other work will need to be arranged three days prior to a scheduled absence.