Syllabus - **PLP 6502 Host-Parasite Interactions I (3 Credits)**
FALL, 2025

Instructors:

Dr. Jeffrey Rollins
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Dr. Frank White
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Dr. Svetlana Y. Folimonova
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Course Time/Location:

Room 2564, Fifield Hall
M, W: 10:40 AM -11:30 AM
F: 10:40 AM - 12:35 PM

Course Resources (Canvas): http://elearning.ufl.edu/

Off Campus Video Conferencing: The 'Zoom' video conferencing application will be used to live-stream the lectures and content. All students, at RECs and here in Gainesville, are welcome to attend lectures and discussions through this link. From a personal computer use the link found on the Canvas site.

Lectures will be recorded and copies posted under the "Zoom Conferences" tab on the course Canvas page.

A. Objectives: The first course objective, taught by Dr. Frank White, is to provide early perspectives on the genetics of resistance (gene-for-gene theory), avirulence, pathogen races, and common plant biochemical and molecular activities of plant/pathogen interactions. This will be followed by the mechanisms by which different bacterial pathogens cause disease, overcome and suppress plant defenses, and manipulate hosts to their advantage. The second course objective, taught by Dr. Jeffrey Rollins, is to provide an understanding of the mechanisms by which fungal pathogens have evolved to interact with plants and cause disease. The underlying physiology, molecular mechanisms and regulation of pathogen development and production of virulence factors are covered. The third course objective, taught by Dr. Svetlana Folimonova, covers the topics related to plant virus-host interactions and provides in-depth coverage of mechanisms that viruses exploit to cause diseases in plants and the types of plant resistance to viruses. This section presents the most recent data on host factors and cellular structures that viruses hijack in order to complete their life cycle, and discusses the role of viruses in host evolution.
The course is divided into three sections by instructor and pathogen-type (bacteria, fungi & viruses). In each section, current information and hypotheses using different host-parasite interaction perspectives as examples will be presented. Two lecture periods (Monday and Wednesday) will be followed by a discussion session (Friday). Discussions will focus on research articles in which the experimental

approaches used to advance hypotheses and contribute to an overall understanding of host-parasite interactions will be critically evaluated.

B. Prerequisites: Introductory courses in Plant Pathology, Genetics and Biochemistry/Molecular Biology.

C. Lectures and Discussions of Research Papers: Lectures will be given on Monday and Wednesday 9:35 AM-10:25 AM. Research paper discussions will take place on Fridays 9:35 AM-11:20 AM. There will be no formal textbook for this course. Selected references, including review and research articles will be provided as required reading throughout the semester. Additional research articles will be provided for active class discussion. BE PREPARED TO DISCUSS EACH ASSIGNED PAPER.

D. Attendance: Students are responsible for satisfying all academic objectives as defined by the instructor. Discussion accounts for 25% of the final grade, as such, absences may negatively affect your grade. Absence from a Discussion Session with an acceptable reason may be made up through a written assignment at the discretion of the Instructor. Acceptable reasons for absence from class include illness, serious family emergencies, special curricular requirements (e.g., field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) are also excused. Other reasons also may be approved by Dr. Gabriel, Dr. Rollins or Dr. Folimonova.

D. Exams: Three equally weighted exams will be given during the semester. Exams will be a combination of essay, short answer and problem solving. The essay questions involve interpretation of data or experimental design.

E. Grading: The course grade will be based on the three exams and the participation and preparation for the discussion sessions.

Exam 1:	25%
Exam 2:	25%
Exam 3:	25%
Discussion:	25%
	100%

Grading Scale

93-100%	A
90-92%	A-
86-89 %	B+
83-85%	B
80-82 %	B-
76-79 %	C+
73-75%	C
70-72%	C-
66-69 %	D+
63-65	D
60-62	D-
Below 60 %	E

Academic Policies and Campus Resources

Please follow this link (https://go.ufl.edu/syllabuspolicies) for up-to-date UF academic policies and resources regarding :

- Accommodations for Students with Disabilities
- Academic Honesty
- UF Counseling Services (University Counseling Center; Student Mental Health, Sexual Assault Recovery Services: Career Resource Center)
- Software Use
- UF Policy on E-Mail
- Online Course Evaluation Process
- Academic Honesty:
- Services for Students with Disabilities
- E-learning technical support
- Other Policies and Resources

Schedule – **PLP 6502**, Fall 2025

Day	Date (2025)	Lecture Topic	Instructor
Fri	Aug-22	Introduction, History, Concepts	White
Mon	Aug-25	Susceptibility, Resistance, Avirulence	White
Wed	Aug-27	Host Defense	White
Fri	Aug-29	JOURNAL DISCUSSION 1	White
Mon	Sept-1	HOLIDAY	
Wed	Sept-3	Plant Pathogenic Bacteria: Overview	White
Fri	Sept-5	JOURNAL DISCUSSION 2	White
Mon	Sept-8	Bacterial signaling and regulation	White
Wed	Sept-10	Bacterial secretion - type I, II and toxins	White
Fri	Sept-12	JOURNAL DISCUSSION 3	White
Mon	Sept-15	Type III effectors and host immunity	White
Wed	Sept-17	Resistance and biotechnology	White
Fri	Sept-19	JOURNAL DISCUSSION 4	White
Mon	Sept-22	EXAM 1	White
Wed	Sept-24	Biotrophy, Necrotrophy and Models of Resistance and Susceptibility	Rollins
Fri	Sept-26	JOURNAL DISCUSSION 5	Rollins
Mon	Sept-29	Fungal Adaptations for Pathogenicity	Rollins
Wed	Oct-1	Prepenetration: Sensing and Development	Rollins
Fri	Oct-3	JOURNAL DISCUSSION 6	Rollins
Mon	Oct-6	Penetration by Chemical and Mechanical Force	Rollins

Wed	Oct-8	Host Colonization	Rollins
Fri	Oct-10	JOURNAL DISCUSSION 7	Rollins
Mon	Oct-13	Host-Selective and Nonselective Toxins	Rollins
Wed	Oct-15	Effector, Elicitor, Avirulence, Toxin: What's in a name?	Rollins
Fri	Oct-17	HOLIDAY	
Mon	Oct-20	Biotroph Effectors	Rollins
Wed	Oct-22	Hemibiotroph Effectors	Rollins
Fri	Oct-24	Oomycete Effectors & Review	Rollins
Mon	Oct-27	EXAM 2	Rollins
Wed	Oct-29	Viruses as important pathogens; Viral infection cycle; Outcomes of virus infection	Folimonova
Fri	Oct-31	Viruses and plant host immune responses; RNA silencing I	Folimonova
Mon	Nov- 3	RNA silencing II: mechanism and classes of small RNAs	Folimonova
Wed	Nov-5	Viral suppressors of RNA silencing	Folimonova
Fri	Nov-7	JOURNAL DISCUSSION	Folimonova
Mon	Nov-10	Dominant R gene-mediated host resistance against viruses	Folimonova
Wed	Nov-12	Recessive resistance against viruses; Sustainability of plant resistance to viruses	Folimonova
Fri	Nov-14	JOURNAL DISCUSSION	Folimonova
Mon	Nov-17	Host factors involved in virus replication and movement	Folimonova
Wed	Nov-19	Rapid evolution of viruses; The role of viruses in host evolution	Folimonova
Fri	Nov-21	JOURNAL DISCUSSION	Folimonova
Mon	Nov-24	HOLIDAY	

Wed	Nov-26	HOLIDAY	
Fri	Nov-28	HOLIDAY	
Mon	DEC 1	Review	Folimonova
Wed	Dec-3	EXAM 3	Folimonova