Distributed Graduate Seminar – Spring 2026

The Plant Health Management Ecosystem

1-credit distributed graduate seminar, linking across institutions

Hosted at University of Florida as **PLP6932** – Spring Semester
Tuesdays, **10:40-11:30 in Florida**, time details below, Jan 13 – Apr 28, 2026

How can we understand and improve the broader ecosystem of people, institutions, and plant systems that determine whether plant health management is successful?

Course goal
Collaboratively develop the new concept of the 'plant health management ecosystem' and publish high-impact papers about it in leading journals, including key case studies

Topical learning objectives
1. Evaluate current models of related systems, such as business ecosystems, innovation ecosystems, public health ecosystems, and biosecurity/biosurveillance ecosystems
2. Evaluate current needs and gaps in plant health management
3. Create the new 'plant health management ecosystem' framework, and use it to identify actionable ways to improve real-world systems

Structural learning objectives
1. Create concepts and case studies through discussions in an international community of scientists
2. Evaluate use of large language models to review iterations of concept and manuscript development

Benefits to students selected for participation
1. **Expand your thinking** about complex plant health systems and how to maximize your research impact
2. **Coauthor a peer-reviewed paper in a leading scientific journal**: Students who complete seminar requirements and fulfill standard authorship requirements will be coauthors of a scientific paper developed during the class
3. **Network with leading scientists** across institutions
4. **Develop transferable skills** in systems thinking, interdisciplinary synthesis, and collaborative publication

Case study systems will include
1. Laurel wilt management in avocado and forest systems
2. Bacterial spot management in tomato

3. Additional systems based on collaborators' interests, such as wheat health management

Requirements: Instructor approval

Course prerequisites: no formal prerequisites, but experience evaluating disease management systems would be helpful.

How to apply: Visit www.garrettlab.com/phm-ecosystem for updated versions of the syllabus and course info

Seminar organizers include:
Karen A. Garrett (garrettlab.com), Professor at University of Florida
Email: karengarrett@ufl.edu
Aaron Plex Sulá (plexaaron@ufl.edu), GRA at University of Florida
Jacob Robledo, MS (jacoborobledobur@ufl.edu), GRA at University of Florida

Course materials access: invitation to Teams will be provided to collaborators

Office hours: To be arranged based on collaborators' schedules

Course outline

Outline as of 2 January 2026 – topics and topic order subject to change based on group discussions

Each week, students are expected to bring one or more topics for discussion (along with relevant references) for development of the PHME concept and/or the case studies

Week	**Topics**	**Discussion leader**	**Meeting considerations across time zones**
Jan 13	Introductions and organizational plan for the distributed graduate seminar (DGS)	Karen Garrett (UF)	
Jan 20	Business ecosystems, and components relevant to the PHME	Karen Garrett (UF)	
Jan 27	Innovation ecosystems, and components relevant to the PHME		
Feb 3	Public health ecosystems, and components relevant to the PHME		

Feb 10	"Real" ecosystem ecology, and components relevant to the PHME		
Feb 17	Biosecurity/biosurveillance ecosystems, and components relevant to the PHME		
Feb 24	Research ecosystems, and components relevant to the PHME		
Mar 3	Policy ecosystems, and components relevant to the PHME		
Mar 10	Update of PHME framework for case studies		**Check new time zone considerations**
Mar 17	**----- Spring break at UF ----- No meeting**		
Mar 24	Network analysis, and components relevant to the PHME		
Mar 31	Agent-based systems, and components relevant to the PHME		**Check new time zone considerations**
Apr 7	Science of science, and components relevant to the PHME		
Apr 14	Potential remaining points for inclusion in manuscript		
Apr 21: last regular class	Discussion of manuscript content and structure	Karen Garrett (UF)	
Apr 28: Finals week	Discussion of manuscript draft(s) and planning for finalization	Karen Garrett (UF)	

Cross-cutting topics to revisit in most meetings

- What data sources and models are useful for characterizing the PHME?
- What spatial extent and spatial resolution are best for particular types of questions?
- What hypotheses relevant to PHMEs already exist and what new hypotheses can we develop and potentially test?
- How can PHMEs be improved such that they support the UN Sustainable Development Goals?

- How can AI best be integrated in PHMEs?
- How can policies improve PHMEs?
- What are the sets of outcomes that stakeholders want from PHMEs? How is success defined?
- Which stakeholders would we like to make use of the PHME concept, and how can we make it most useful for them?

Grading at UF

Grading at UF is S/U (Satisfactory/Unsatisfactory), based on
20% Seminar discussions
80% Weekly written contributions to project

Seminar discussions. When discussing the seminar projects, all students are expected to contribute questions and ideas, and feedback for others' ideas.

Weekly written contributions. Each week, students provide a brief written paragraph with appropriate citation(s). The topics for the weekly contribution will be discussed and decided on during the seminar in the preceding week.

Students enrolled for course credit at institutions other than UF should discuss grading with the instructor at their own institution.

A student can choose to participate in the seminar without committing to working as a full author on a resulting paper after the semester is over. If a person brings up interesting points in our discussions but doesn't wish to commit as an author, we'll include that person in the acknowledgements of the relevant manuscript.

Criteria for authorship

The workshop is designed to give students experience in working as an author on a scientific paper. Students will not automatically be granted authorship; standard authorship criteria will be discussed in the class. The order of authorship will be determined based on the level of contributions of the authors, including their contributions through finalizing the manuscript for submission to a journal and through the revisions of the manuscript after the seminar is over.

Attendance and make-up policies at UF

This is a synchronous course, to make the most of interactions among collaborators. Discussion among collaborators is an important part of the learning experience, so attendance is required. Three course meetings can be missed without explanation (with the exception of dates when the student has a particular responsibility beyond weekly updates). If the weekly seminar is missed, the student can submit their written

contribution for that week later. Please alert the instructor if there is a serious health problem or other emergency.

Academic Policies and Resources at UF

Please see this link for additional information for UF students:
UF Syllabus Policy Links - Online Course Syllabi - University of Florida

Info for other institutions participating in the distributed graduate seminar

What we'll provide at UF, as the host institution

- We'll organize the weekly meeting of the distributed graduate seminar and resources in Teams
- We'll provide the starting set of recommended readings, and you're welcome to add recommendations
- We'll lead discussions on days that don't have guest discussion leaders
- We'll lead development of the collaborative manuscript(s)

What we'd ask from faculty members at a collaborating institution

- It's good if at least one or two students from your institution participate – though it could work if you as a faculty member are the only collaborator
    - It's probably simplest if your students sign up for a special topics course with you as the special topics course teacher at your institution
- It would be good if you'd like to be a guest discussion leader at one of the meetings of the distributed graduate seminar (or more, if you like)

Background on distributed graduate seminars (DGSs)

The US National Center for Ecological Analysis and Synthesis (NCEAS) helped develop the concept of distributed graduate seminars
https://www.nceas.ucsb.edu/distributed-graduate-seminars

A result of one NCEAS distributed graduate seminar was this paper in plant pathology: Cheatham, M. R., M. N. Rouse, P. D. Esker, S. Ignacio, W. Pradel, R. Raymundo, A. H. Sparks, G. A. Forbes, T. R. Gordon, and K. A. Garrett. 2009. **Beyond yield: Plant disease in the context of ecosystem services**. Phytopathology 99:1228-1236. [open access link]