

# Plant Pathology Guide for Graduate Students

A quarter-by-quarter plan

## A. Year 1 - Fall Quarter (when most students arrive).

Welcome to UC Riverside! We are glad you have chosen us for your graduate training.

**1. Housing.** The most important item is to find housing if you have not already done so prior to your arrival. Word-of-mouth among other students is a good source, as students frequently may need an extra roommate to share the cost of renting a house or large apartment. You can contact the housing office at [www.housing.ucr.edu](http://www.housing.ucr.edu) to obtain more information on housing. There are various internet sites that may be helpful, such as [www.rent.com](http://www.rent.com), [www.apartmentguide.com](http://www.apartmentguide.com), and many others. The Press-Enterprise or classified newspapers found in shopping malls are a good source also. Rent varies according to location, so beware! To live within walking distance of the campus, be prepared to spend about \$925/month for a one-bedroom apartment. Houses near UCR rent for \$1,600/month, which is within the range of shared expense among a few students.

**2. Staff of the graduate program.** The Graduate Advisors are Dr. James Ng (Graduate Advisor for Enrolled Students) and Dr. A.L.N. Rao (Graduate Advisor for Recruitment and Scholarships/Funding). Dr. Ng will deal with academic affairs and Dr. Rao will deal with recruitment of new students and the financial aspects for enrolled students. Dr. Katherine Borkovich is Chair of the Plant Pathology and Microbiology Department; and Laura McGeehan is the Student Services Advisor (SSA) that handles the day-to-day operation of the program. You can rely on these individuals to help you with questions, concerns, advice, problems, etc. The phone numbers, e-mail addresses, and office locations of the staff, students, and faculty are listed in the appendix at the back of this document.

**3. Helpful literature.** You can request hard copies of the UCR Graduate Student Handbook by requesting it from the SSA. You may download the UCR Graduate Student Handbook from <http://graduate.ucr.edu/forms/GSHandbook.pdf>.

**4. Registration.** This is a priority item to focus your attention. **Pay attention to the final date for registration as listed in the Fall Schedule: you will pay a penalty if you do not register before then.** The SSA will assist you with the mechanics of on-line registration, and direct you to the offices of the Graduate Division, Registrar, or other Academic Departments as needed. Before you register, however, you need to know what courses you will be taking. If you have already chosen a major professor, you should meet with him/her to seek advice on what courses to take. If you have not

chosen a major professor, the Graduate Advisor will help you in this task. Enroll in at least **12 graduate student units**. This usually will consist of a mixture of 2 or 3 formal classes, a seminar, and some research units. Only 200 or 300-series courses are graduate courses.

**5. Major Professor.** Some of our students enter the program with a major professor, who will provide you with support and guidance in your research and other aspects of your graduate career.

If you have not selected a major professor, you should meet with the Graduate Advisor who will give you advice on choosing one. This will involve reviewing the list of Plant Pathology faculty and their research interests, and making appointments to chat with several of the faculty that you might like to work with. If you wish, the Graduate Advisor will assist in placing you in one or more faculty laboratories for a lab rotation in your first year. A lab rotation accomplishes the following: 1) exposes the student to research in a faculty member's laboratory, 2) earns research credits for registration, and 3) provides a physical location (desk, bench space). During the rotation, you should start reading the scientific literature related to that lab's research and get involved in the research life of the laboratory that you may choose as your "home away from home" for the next few years. There is no fixed time limit on a lab rotation, but they are generally for 5 to 10 weeks. Students often rotate in the labs of one to three professors. A student should choose a Major Professor by the end of spring quarter, or earlier. Please let your SSA know when you have chosen a major professor.

**6. Student Advisory Committee (Guidance Committee).** In consultation with the Graduate Advisor, you need to select your Student Advisory Committee sometime during the first year. The nomination of this committee should be submitted to the SSA using the Advisory Committee Form (see Forms Section of handbook) and approved by the departmental Graduate Affairs Committee (GAC), which consists of the Graduate Advisors and other faculty. The Advisory Committee should consist of your **Major Professor as Chair plus two other faculty members**. The two other faculty members will be available to provide input for selecting courses throughout your matriculation, and can also provide other advice as appropriate. Your committee members can often solve issues and problems; you should deliberate with them in addition to, or prior to, involving the Graduate Advisor. Often, the Advisory Committee will later become your Thesis (or Dissertation) Committee when you prepare your thesis defense (M.S. students) or shortly after you have been advanced to candidacy (Ph.D. students). However, your research interests may change during your matriculation, so that the Advisory Committee may not necessarily be the same as the thesis committee.

**7. Selecting courses.** Near the beginning of your time at UC-Riverside, you need to plan your course schedule. See the Program Course Plan to help you form your schedule. This will need to be reviewed and approved by the department's Graduate Affairs Committee (GAC).

With guidance from your major professor and Student Advisory Committee, or the Graduate Advisor, if you have not yet selected a lab, plan a set of courses for the one to two years of training which generally includes the 6 required courses: Intro to Plant Pathology (PLPA 120), Fungal Diseases of Plants (PLPA 200), Phytopathogens: Nematodes (PLPA 206), Viral Diseases of Plants (PLPA 207), Intro to Mycology (PLPA 234) and Colloquium on the Principles of Plant Pathology (PLPA 265). You also need to complete any deficiencies that you may have had in your preparation for graduate training. For additional courses, consult the UC Riverside/Plant Pathology Requirements document (see appendix 1-2) for further guidance. Also, include enrollment in Plant Pathology seminar (PLPA 250) every quarter when offered (Fall and Winter). M.S. students have a minimum unit requirement that is listed in the UCR catalog and in this document. No formal unit requirement exists for students to graduate from the Ph.D. program. Please note that you must maintain a minimum of 12 units each quarter, which include research units.

The one to two year plan of courses that you propose in your initial meeting with the Student Advisory Committee can be changed at a later date. Generally, as student progress through the program they think of additional courses to take, and modify their curriculum plan accordingly with approval of their major professor and the graduate advisor. The Graduate Affairs Committee (GAC) should be consulted if major changes in the curriculum are planned, however. There are no course unit requirements for the Ph.D. beyond the core courses listed previously. You must either take these or demonstrate sufficient knowledge through previous experience or training. Additional guidance in selecting courses, including "tracks" which list courses that may be appropriate for sub-specialties within Plant Pathology, are listed at the end of this document.

## B. Year 1 - Winter Quarter

**1. Registration and courses.** Enroll in at least **12 graduate student units. Pay attention to the deadline in the schedule or you will receive a bill from accounting if you do not register in time.** This deadline normally is at the end of the fall quarter.

Be aware of the occasional need to present a seminar in PLPA 250 each year, including in your first year. This means that Spring Quarter you will likely need to make a presentation. Start thinking about potential topics; the professor in charge of PLPA 250 will contact you and let you know.

**2. Research.** If you have chosen a major professor, the intensity of your involvement in laboratory research normally increases during this period. With your major professor, discuss possible research projects, which could become your Thesis or Dissertation Research. Read the literature on these topics and begin to learn the techniques you will need to complete the research. If you have been rotating between labs, hopefully you are starting to get an idea about what your "permanent" lab will be. You will need to

sign up for training classes on the Environmental Health and Safety (EH & S) website as soon as possible. Please see the Graduate Advisor for more information. When starting work in a lab, ask the professor if there are any lab-specific safety practices you should be aware of.

## C. Year 1 - Spring Quarter

**1. Registration.** Enroll in at least **12 graduate student units, again paying attention to the deadline that comes near the end of the winter quarter.**

**2. Major Professor.** If you have not already done so, select a Major Professor and a research project that will be the basis of your thesis (dissertation) before the end of this term. This is particularly important to students (the majority) who do not hold UCR long-term fellowships. The Plant Pathology Program reserves most of its operating budget to fund first year students and generally relies on the faculty to support students during the summer and beyond. Thus, it is important that you find a faculty member who has your best interests in hand, in terms of research and financial support.

**3. Annual Student Evaluation.** During the Spring Quarter, you will meet with your Advisory Committee in order for your Advisor to prepare the Annual Evaluation. You should provide the committee with a copy of your transcript from UCR and any other institution where you studied. You should also provide an outline of your proposed research project for the committee's critical evaluation. The committee will review your curricular plans for the coming year; your major professor will be responsible for writing the Annual Evaluation (*see form in Appendix 6-7 Section of the handbook*).

**4. M.S. Students:** Students need to stay in communication regarding completing their degree requirements. Note: in some cases, additional time is needed. If so, you and your advisor need to be in agreement on this issue, which should be brought to the attention of the Graduate Advisor.

**3. Opportunities to serve as a teaching assistant.** The Plant Pathology program does not require its students to serve as a teaching assistant (TA), however on occasion our students do serve in this capacity. Acting as a TA can provide useful experience for those students planning on a career in education, adds to the student's communication skills, and in some cases a TA appointment may be a component of the student's financial support package. If a student is interested in serving as a TA, they should first consult with their major professor to get their permission and to plan when this might best be done. Graduate students receive periodic solicitations from the College of Natural and Agricultural Sciences (CNAS) for TA applications, typically during Spring quarter. Opportunities are not limited to those within the department as students can be appointed to TAships in classes in Biology, Biochemistry, etc. If a student is selected

for a TAship, they should also complete the campus Teaching Assistant Development Program (TADP) orientation prior to or concurrent with the teaching assignment.

## D. Year 1 - Summer Quarter

1. **Now** you are free of classes—at least until Fall! Now is your chance to devote all of your energy into research.

2. Discuss with your major professor if there are any scholarly meeting or other career advancing activities from campus that could be accommodated in your first summer. You should probably bring this up in the Spring Quarter if arrangements need to be made.

## E. Year 2 - Fall, Winter, and Spring Quarters

1. **Enroll** in at least **12 graduate student units/quarter – paying attention to the deadline**. Continue taking classes, if needed, and participating in research. Discuss with your major professor about attendance/presenting at a regional or national scientific meeting.

### 2. If you are in the masters program:

a. M.S. Plan I (Thesis): Although the normal time for completion of an M.S. degree is two years, the actual time may differ slightly. A minimum of 36 units of graduate (200 level) and upper division (100 level) courses are required for the master's degree. At least 24 of these units must be 200 level courses in Plant Pathology or Nematology. Of these 24 graduate level courses, no more than 6 units of courses from the 290 to 299 level may be used towards this requirement.

During the second year, you should meet regularly with your Master's Thesis Committee -- at least once each quarter -- to ensure that you are on the right track with your research and avoid surprises when you submit a draft of your thesis to the committee. Also, discuss with your Major Professor your plans for the future. If you want to switch from an M.S. to a Ph.D. program, you need to file an official form with the Graduate Division that must first be approved by your committee and the Graduate Advisor. The form is called "Petition for Change in Major, Credential or Degree Objective" (Form 1), it can be downloaded from the Graduate Division website, [www.graduate.ucr.edu](http://www.graduate.ucr.edu) or picked up in the College of Natural and Agricultural Sciences Graduate Student Affairs Center, 1140 Batchelor Hall. If you plan on going to another university, you should apply to those schools in the fall quarter. If you intend to find a job, you should initiate inquiries several months before you complete your thesis.

Anticipate that it will take you at least two to three months to write your thesis, after completing your experiments. The Graduate Division has specific rules and regulations governing theses and holds regular workshops on preparing the thesis (usually once each quarter). Obtain a copy of a recent M.S. thesis to be sure that you are following the correct format required by the Graduate Division. You need to file an Application for Advancement to Candidacy with Graduate Division no later than the first week of the quarter in which the degree is to be awarded. Completion of your Master's degree requires a formal presentation of your research to your Research Committee, who must sign their approval of completion of this requirement. Once this is signed, *congratulations! You have completed the M.S. (Plan I) degree in Plant Pathology!*

b. M.S. Plan II (Comprehensive): A minimum of 36 units of graduate (200 level) and upper division (100 level) courses are required for the master's degree. At least 18 of these units must be 200 level courses in Plant Pathology or Nematology. None of these courses may be numbered 297 or 299. Every candidate must take a comprehensive written and oral examination in the major subject from their faculty committee. When you pass this exam, *congratulations! You have completed the M.S. (Plan II) degree in Plant Pathology!*

### 3. If you are in the Ph.D. program:

a. Courses: After their second year, most students have taken all or most of their courses. Their minds then turn towards passing the qualifying examination.

**QUALIFYING EXAMINATIONS ARE A DISTINCT ASPECT OF THE PH.D. REQUIREMENT.**

b. Qualifying Exams: The exams are generally taken at the end of the student's sixth academic quarter (second year), although this timing is dependent on completion of course work essential for the student's program. You must have completed ALL course work requirements prior to the written and oral qualifying examinations.

The composition of the Qualifying Exam consists of three parts, which is administered by the Qualifying Exam Committee in the following chronological order: the Dissertation proposal, the written exam, and the oral exam. After successful completion of the Oral Examination, you will be "advanced to candidacy."

c. The Qualifying Exam Committee: You should nominate faculty members for your Qualifying Exam Committee after consulting with your Major Professor and Graduate Advisor. Contact each prospective member to ensure that they are willing to serve on the qualifying exam. Submit your suggestions on the PLPA Qualifying Exam Nomination Form (*see Appendix 6-7 Section of the handbook*) to the Graduate Affairs Committee, who will review this with its members and make final selections including the chair for the Qualifying Exam Committee.

This committee will consist of 5 members: 4 must be faculty participating in the Plant Pathology graduate program and the other must not be a member of the department. ***Your major professor is not permitted to serve on this committee.*** Some, but not necessarily all members of your committee members should have scientific expertise in your area of research specialization. It is appropriate to consider professors from whom you have taken classes. Breadth in Plant Pathology is important in making your selection of faculty. Establish a tentative date and time for the written and oral exams. Submit to the GAC nominations for the exam committee. When approved by the GAC, the SSA will file a "Nomination for Qualifying Examination for the Degree of Doctor of Philosophy (form 2) with Graduate Division. Once your committee is approved you may contact the professors on your committee to see if they have study questions on file.

Upon approval of the Qualifying Exam Committee, the chair will contact the Graduate SSA and review the student's file to ensure that he/she can proceed to the next step. The Committee Chair will discuss with you the materials that the student is responsible for in the written and qualifying exam.

All committee members must be members of the Academic Senate, unless approval for a non-senate member has been granted by the Dean of the Graduate Division. The committee is subject to approval by the Graduate Affairs Committee and Graduate Division.

d. The Dissertation Proposal: A Dissertation proposal is a scholarly original document that should be submitted to all members of the Qualifying Exam Committee at least two weeks prior to the written exams. The proposal should be typed and double-spaced. Although the exact style of the proposal can vary, the proposal should include the following:

- A summary in your own words of relevant background information (2-3 pages)
- Full justification for the dissertation research (1 page)
- Current research progress (3-4 pages)
- Future research directions (3-4 pages)
- Bibliography to demonstrate a command of the relevant literature (2-3 pages)

In the section entitled future research directions, it is important that the specific hypothesis or research question(s) being addressed are carefully stated. Identify specific aims or objectives which address these issues, the methods to be employed, and possible results. Be sure to include proper controls, and indicate how data might be interpreted and what might be done next if the results do not support any hypotheses that are stated.

The pages shown are not page limits, merely guidelines. Each student is being asked to demonstrate his/her understanding of the current and proposed research *and* the

scientific method. Since this research directly reflects the student's major professor's research program and interests, it is natural for the major professor to have a guidance role for the proposed research directions. Although he/she can approve the content of the proposal, the Committee does not want the major professor to directly participate in the organization and writing of the Dissertation Proposal.

The student should understand that the proposal does not determine the research requirements for the Ph.D.; this dissertation proposal is simply a vehicle to introduce the Qualifying Exam Committee to the student's current accomplishments and research strategies. It is conceivable that different projects/topics will eventually be researched.

Students are strongly encouraged to plan a public presentation of their research in PLPA 250 before taking the qualifying exams.

e. Written Exam: This will be designed to test the student's ability to synthesize and integrate basic concepts in Plant Pathology. In addition, the Committee expects the student to have a substantive knowledge in the student's area of specialization.

The written exam will normally be held over a period of two days. The exam will consist of a question or set of questions submitted from each committee member that have been forwarded to the chair of the qualifying committee. Questions from the outside member are optional, and may be answered on a third exam day. The chair may request comments from the student's major professor on any aspect of the exam and make modifications that are in agreement with the major professor and all committee members. The chair of the committee will indicate to the student the time length expected for each question set. Normally up to 3 hours are allotted for each professor's questions. The student may choose the order of question sets during the exam period. The student is encouraged to discuss the area of examination to be covered by each committee member directly with each member prior to the exam. Books, notes, or other reference material are not permitted, unless a committee member indicates otherwise.

Each committee member will grade the answers, which will be returned to the exam chair along with their evaluation. The chair, in consultation with the committee, will determine if the student has passed or failed the exam. The chair will discuss the results with the student, and may allow the student to view his/her answers. However, the exam must remain under the direct control and possession of the chair. The student must successfully complete the written exam before going on to the oral exam.

The outside member has the option to submit written questions for the first part of this exam, but must notify the student and the Committee Chair of his/her option. A faculty member from another institution or a non-academic senate member (e.g., Cooperative Extension Specialist) may be included as a committee member, but this requires prior



approval from the Dean of the Graduate Division. The Committee Chair should elicit help from the Graduate Advisor in obtaining this approval.

f. Oral Exam: Normally, the oral examination should be scheduled within 7-10 days of completing the written examination. The exam chairperson will bring a form entitled "Report on Qualifying Examination for the Degree of Doctor of Philosophy & Nomination of Dissertation Committee (form 3) obtained from the SSA. Prior to the meeting, the Committee Chair should pick up your file in the student affairs office so that the members of the examination committee may view this should they have questions about your background. You should be prepared to briefly describe your academic history (3-5 min), long-term scientific career goals (2 min), and research project (15 min). This will be followed by questions from each committee member, who will each have approximately 20 min to ask questions: it is *likely* that questions will be related either to the research project (directly or indirectly) or to further explore your breadth of training in Plant Pathology. You will be asked to leave the room at the end of the examination, at which time the members of the committee will discuss your performance.

Upon successful completion of the oral qualifying exam, all members will sign the form. Five or four out of five "yes" grades constitute a pass. **You must also at least indicate the chairperson of your dissertation committee (your major professor) on the form 3. Two other faculty members will serve on the dissertation committee as well, and must be formally named within one quarter passing your oral exam.** These names must be provided to the SSA, who will forward the names for approval by the Graduate Affairs Committee. The signed form 3 should be passed on to the Graduate Advisor or Program Chair for approval and then on to the Graduate Division within 48 hours of the exam. You will then be advanced to candidacy.

If the student fails the oral examination, the Qualifying Exam Committee will recommend one of the following options: additional coursework, intensive independent study in the specific area(s) of weakness, or dismissal from the program. Failure to successfully complete the oral examination at the second administration will result in dismissal of the student from the program. The time of the second oral exam will be dependent on the remedial work recommended by the Qualifying Exam Committee; it is expected that the exam will be re-administered within six months to one year. There will be no need to repeat portions of the written examination that have been passed satisfactorily, but the research proposal should be revised to reflect progress.

g. Annual Student Evaluation: In late spring or early summer, you will need to meet with your committee for your annual evaluation. The evaluation is usually completed by the Student Advisory Committee before the qualifying exam is taken, however this sometimes varies depending on the timing of the qualifying exam. If your Dissertation Committee has a different composition than your Student Advisory Committee, you are strongly recommended to meet with the Dissertation Committee soon after the

qualifying exam to bring them up to date on your research plan. They may have suggestions that will be helpful in your work

## **E. Years 3, 4, etc.**

**1. Time to completion.** Most students will have now passed their qualifying exams and can pursue their research full-time. The time to complete the Ph.D. degree is variable and depends on progress in research and scientific maturation.

**2. Registration is still required.** Between the time of your qualifying exam and filing your thesis (i.e. completing graduate school), it is important to remember that you still must register for classes. Participation in PLPA 250 is also required.

**3. Dissertation committee.** The student should meet regularly—at least once per year—with his/her dissertation committee. An annual student evaluation also needs to be done. In consultation with the major professor and the dissertation committee, it will be decided when the student's work has advanced to the point where a Ph.D. dissertation can be written.

**4. The Dissertation.** The dissertation must be prepared to satisfy the scientific and educational requirements of the student's dissertation committee and in a format acceptable to the UCR Graduate division. Instructions for preparing your dissertation for filing will be sent to you by the Graduate Division at the time you advance to candidacy. The Graduate Division also holds a dissertation preparation workshop once a quarter; announcements are posted and/or emailed.

The completion of a dissertation demonstrates ability to conduct independent, original research. The student's Dissertation Committee (major professor and at least two other members) advises the student in planning, conducting and analyzing the research and writing the thesis. As described below, students defend the dissertation before the Committee in a departmental seminar. Final approval is by the Dissertation Committee and the Dean of Graduate Division.

**5. Filing Fee Status.** During the quarter in which you expect to graduate, you may submit a request for Filing Fee status from Graduate Division, which will reduce your cost of tuition and fees. You may do this only once: should you not complete your thesis and need to register for another term, you will not be granted a fee waiver. You should check with the SSA to be sure what the deadline is for filing your thesis with the Graduate Division. This deadline is usually about one to two weeks before the quarter ends. Make sure that you have planned enough time to write and defend the dissertation!

**6. Completing the Dissertation.** There are two important elements to getting the

Ph.D. program completed, (1) the dissertation defense and (2) getting your committee to give their final approval and signature to the dissertation. Students need to plan these out carefully. Note that Graduate Division has strict deadlines during each quarter for filing the dissertation; if not filed by this date, the student will need to register for the next quarter.

When the preparation of the dissertation has neared its completion, you need to contact Graduate Advisor and schedule a date for defense of your thesis. Once a date has been set for the defense, you must notify the SSA at least three weeks in advance, so that they may prepare a "Report on Final Examinations for the Degree of Doctor of Philosophy" (form 5) for your defense. Much like the form 3, this form must be submitted to the SSA to report the results within 48 hours.

The dissertation defense is an oral presentation that is open to the public, and works very much like a final seminar. You will be given about 35 minutes to present your work. At the end of the presentation, anyone is free to ask questions. At the end of the general question and answer session, the committee generally meets privately with the student to go over questions and issues that might remain. Some concerns may require (hopefully) minor revisions of the dissertation.

Once the committee is satisfied with the dissertation, they will each need to sign the dissertation (you will need to print out pages of the form for them). Make sure that you get enough copies made!

Writing the dissertation and making the final corrections usually takes several months. DO NOT underestimate the time that it will take for the committee to read the dissertation, for you to revise it to their liking, and for them to provide final approval. Usually, your major professor will have corrected your dissertation so that the committee members' comments will most likely relate to scientific concepts and not grammar or writing style, however it is possible that your committee will require many changes. Therefore, giving the dissertation to the committee at least two weeks before the defense is a must, and even further ahead is highly recommended. You should be in communication with your committee members well in advance (several months is not too early!) to inform them of when to expect copies to read. It is usually expedient to provide the committee with chapters as they are completed, instead of waiting until the entire dissertation is written.

Once your committee is satisfied, the Final Examination form (which also needs to be signed by the Graduate Advisor or Program Chair) needs to be filed along with the dissertation with Graduate Division. Only they can give final approval for the granting of the Ph.D. degree. NOTE: It is not a good idea to have someone else file your dissertation for you. The peskiest little things crop up at the last minute, which only you can handle!

*Congratulations, you have now earned the Academic title of a Ph.D.!*

*Pleased to meet you Dr.*\_\_\_\_\_.

## F. Appendices

### Appendix 1. Forms to be filed by Students

#### Masters

##### **Application for Candidacy for Master of Science**

Used by Masters students preparing to graduate.

Can be picked up in Graduate Division.

#### Ph.D.

##### **Nomination for Qualifying Examination for the Degree of Doctor of Philosophy**

###### **(Form 2)**

To be filed upon choosing a Qualifying Exam Committee.

Student provides a list Committee Members and date of written and oral exams.

Please contact the SSA in the CNAS Student Affairs Center to get the form prepared.

##### **Report on Qualifying Examination for the Degree of Doctor of Philosophy & Nomination of Dissertation Committee**

###### **(Form 3)**

To be completed and returned to Graduate Division upon successful completion of Qualifying Exams: must be submitted within 48 hours of exams.

Please contact the SSA in the CNAS Student Affairs Center to get the form prepared.

##### **Filing Fee Status**

Can only be requested by students who have completed all degree requirements, except for filing their dissertations/theses or sitting for their master's comprehensive examinations during the final quarter of residence. Students on Filing Fee status pay only one-half of the Registration Fee. Only one quarter of Filing Fee is allowed. The form to request Filing Fee can be found on the Graduate Division website.

##### **Report on Final Examinations for the Degree of Doctor of Philosophy**

###### **(Form 5)**

To be filed upon completion of Dissertation.

The SSA in the CNAS Student Affairs Center will prepare this form in advance of the final defense.

## Appendix 2. Courses for Graduate Programs in Plant Pathology

Students with undergraduate coursework in most of the following areas will be well prepared for a graduate program in Plant Pathology: Biology, Chemistry (Organic and Biochemistry), Mathematics, Physics, Statistics, Genetics, Cell Biology, Botany, Plant Anatomy, Plant Physiology, Soils, Microbiology, Mycology, and Introductory Plant Pathology. If requirements have not been met, students may be required to take make-up courses concurrent with graduate studies, depending on their overall goals and program expectations.

### CORE COURSES

(Required for all students unless granted a special waiver following a petition to GAC)

PLPA 120 Intro Plant Pathology	3 Units
PLPA 200 Fungal Diseases of Plants	4 Units
PLPA 206 Phytopathogens: Nematodes	3 Units
PLPA 207 Bacterial and Viral Diseases of Plants	2 Units
PLPA 234 Introduction to Mycology	5 Units
PLPA 265 Colloquium in Plant Pathology	3 Units

### Courses Highly Recommended

PLPA 230 Molecular Plant-Microbial Interactions

### MUST ENROLL EACH QUARTER WHEN OFFERED (Fall and Winter):

PLPA 250 Seminar in Plant Pathology 1 Unit

All students are expected to present a seminar in PLPA 250 when called for.

A typical seminar by year would be:

- Year 1 – Topic of Choice
- Year 2 – Thesis Proposal\_Seminar
- Year 3 – Topic of Choice
- Year 4 – Thesis Progress

Suggested One-Year Core Course Curriculum Plan

Quarter	Course	Title	Units	Lecture Hrs/Wk	Lab Hrs/Wk
Fall	PLPA 120	Intro Plant Pathology (10 wks)	3	3	0
Fall	PLPA 234	Intro Mycology (10 wks)	5	4	3
Fall	PLPA 250	Seminar in Plant Pathology	1	1	0
Winter	PLPA 207	Bacterial and Viral Diseases of Plants (10 wks)	3	2	3
Winter	PLPA 200	Fungal Diseases of Plants (10 wks)	3	2	3
Winter	PLPA250	Seminar in Plant Pathology	1	1	0
Spring	PLPA 206 (Odd Years)	Phytopathogens: Nematodes (10 wk)	2	1	3
Spring	PLPA 265	Colloquium in Plant Pathology (10 wks)	3	3	0
		<b>TOTAL UNITS for YEAR 1 CORE</b>	<b>21</b>		

ADDITIONAL PROPOSED PROGRAMS OF STUDY FOR THE Ph.D.:

Additional course suggestions for tracks in Mycology, Virology, Nematology, and Bacterial/Molecular Plant Pathology are shown on the following pages. These are only suggestions, and additional courses of study can be designed to suit the needs of the individual student.

## Courses Offered in the Department of Plant Pathology

Blue = Undergraduate, Red = Graduate Core Courses, Black = Other Grad. Courses

2016-2017 2017-2018	FALL (Odd)	WINTER (Even)	SPRING (Even) (subject to change)
	120 & 120L (Introduction to Plant Pathology) - Future will have Grad Course Number	200 (Plant Fungal Diseases)	123 (Introduction to Comparative Virology)
	134 & 134L (Introduction to Mycology)	207 (Plant Bacterial and Viral Diseases)	
	226 (Microbial Genetics)		
	230 (Molecular Plant-Microbial Interactions)		
	234 (Introduction to Mycology)		
	250 (Plant Pathology Seminar)	250 (Plant Pathology Seminar)	265 (Colloquium in Plant Pathology)
	261 (Seminar in Genetics, Genomics and Bioinformatics)	261 (Seminar in Genetics, Genomics and Bioinformatics)	

2016-2017 2017-2018	FALL (Even)	WINTER (Odd)	SPRING (Odd)
	120 & 120L (Introduction to Plant Pathology) - Future will have Grad Course Number	200 (Plant Fungal Diseases)	123 (Introduction to Comparative Virology)
	134 & 134L (Introduction to Mycology)	203 (Plant Bacterial Disease)	206 (Phytopathogens: Nematodes)
	226 (Microbial Genetics)	207 (Plant Bacterial and Viral Diseases)	
	234 (Introduction to Mycology)		
	250 (Plant Pathology Seminar)	250 (Plant Pathology Seminar)	265 (Colloquium in Plant Pathology)
	261 (Seminar in Genetics, Genomics and Bioinformatics)	261 (Seminar in Genetics, Genomics and Bioinformatics)	261 (Seminar in Genetics, Genomics and Bioinformatics)



## BACTERIAL/MOLECULAR "TRACK" IN PH.D. PROGRAM

Students lacking background in biochemistry or molecular biology should consider taking:

BCH 110A, B	General Biochemistry	(4+4 credits)
BIOL 107A	Molecular Biology (Lecture) Biochem 110C	(4)
BIOL 109	Laboratory in Cell and Molecular Biology	(5)

Students are expected to take the core courses: (4+4+4+3)

All students encouraged to select classes from the following:

PLPA 230	Molecular Plant-Microbial Interactions	(3)
PLPA 240	Field Plant Pathology	(1)
PLPA 246	Diagnosis of Plant Disease	(2)
PLPA 265	Principals of Plant Pathology	(3)

Plant Related:

BCH 183	Plant Biochemistry	(3)
BPSC 143	Plant Physiology	(4)
BPSC 237	Plant Cell Biology	(4)
BPSC 233	Plant Responses to the Abiotic Environment	(4)
BPSC 231	The Plant Genome	(4)

Microbe-Related:

BIOL 221	Microbial Genetics	(4)
SWSC 133	Environmental Microbiology	(4)
PLPA 219	Molecular Virology	(3)

General:

BIOL 201	Molecular Biology	(4)
PLPA 205	Signal Transduction Pathways in Microbes and Plants	(4)
GEN 240A	Advances in Bioinformatics & Genomics	(4)
CMDB 206	Gene Silencing	(3)

<b>BACTERIAL/MOLECULAR TRACK</b>			
<b>Courses</b>	<b>Course Name</b>	<b>Offered</b>	<b>Instructor</b>
<b>Lacking background in Biochem or molecular biology</b>			
BCH 110A	GENERAL BIOCHEM	Fall 2016	Ziegler M
BCH 110B	GENERAL BIOCHEM	Winter 2017	Spindler, Luben
BCH 110C	GENERAL BIOCHEM	Spring 2016	Martinez, Spindler
BIOL 107A	MOLECULAR BIOL	Fall 2016 Winter, Spring	Ray, Dahanukar
BIOL 109		Winter, Odd years (not since 03W)	
<b>Plant-related</b>			
BCH 183	PLANT BCH & PHARM PLANT METABL	Fall 2016	Eulgem
BPSC 143	PLANT PHYSIOLOGY	Winter 2017	Lovatt
BPSC 237	PLANT CELL BIOLOGY	Fall 2016	Raikhel
BPSC 233		Spring, Even years (not since 08S)	
BPSC 231	THE PLANT GENOME	Winter Quarter 2017	Bailey-Serres, Chen
<b>Microbe-related</b>			
BIOL 221		Fall, even years (not offered)	
SWSC 133		Winter Quarter (not since 08S)	
PLPA 219		Fall Quarter (not offered)	
<b>General</b>			
BIOL 201	MOLECULAR BIOLOGY	Fall 2016	Sladek, Le Roch
PLPA 205	SIGNL TRNS PATHWYS- MICROBS&PLN	Spring 2018, even years	Borkovich
GEN 240A	ADVNCES- BIOINFORMATCS & GENOMI	Winter 2017	Judelson
CMDB 206	GENE SILENCING	Winter 2017, odd years	Ding, Chen

## **NEMATOTOLOGY "TRACK" IN THE PH.D. PROGRAM**

Students with deficiencies may consider taking:

PLPA 134	Biology of Fungi	(4)
PLPA 120	Introduction to Plant Pathology	(4)

Students are expected to take the core courses: (4+4+4+3)

Nematode-related courses:

NEM 159	Biology of Nematodes	(3)
NEM 205	Nematode Identification (1 Week Summer)	(.1)
PLPA 230	Molecular Plant-Microbial Interactions	(3)
PLPA 246	Diagnosis of Plant Disease	(2)
NEM 250	Seminar in Nematology	(1)

Additional Courses of Possible Interest:

PLPA 235	Epidemiology of Plant Disease	(4)
BIOL 107A	Molecular Biology	(4)
BIOL/ENTM 112	Insect Systematics	(2)
BIOL 117	Introductory Population & community Ecology	(4)
BIOL/ENTM 127	Insect Ecology (alternate to BIOL 117)	(4)
BIOL 151	Invertebrate Zoology	(5)
BIOL 157	Parasitology	(5)
BPSC 150	Principles of Plant Breeding	(4)
SWSC 134	Soil Conditions & Plant Growth	(4)
SWSC 120	Soil Ecology	(3)
SWSC 133	Environmental Microbiology	(4)
SWSC 211	Microbiol Ecology	(3)

Plant Related Courses:

BPSC 231	The Plant Genome	(4)
BPSC 237	Plant Cell Biology	(4)
BPSC 233	Plant Responses to the Abiotic Environment	(4)
BPSC 236	Principles of Light Microscopy	(4)

Insect Related Courses:

ENTM 124	Agricultural Entomology	(5)
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Biochem, Cell and Molecular, Genetics Courses:

BCH 182	Lab Recomb, DNA Techniques	(4)
BCH 210	Biochem. of Macro-Molecules	(3)
BIOL 200	Cell Biology	(4)
BIOL 201	Molecular Biology	(4)
BIOL 221	Microbial Genetics	(4)

<b>NEMATODOLOGY TRACK</b>			
<b>Courses</b>	<b>Course Name</b>	<b>Offered</b>	<b>Instructor</b>
<b>Students with deficiencies</b>			
PLPA 134	INTRODUCTION TO MYCOLOGY	Fall 2016	Adaskaveg
PLPA 120	INTRODUCTION TO PLANT PATHOLOG	Fall 2016	Stanghellini
<b>Nematode-related courses:</b>			
NEM 159	BIOL OF NEMATODES	Winter 2017	Baldwin, Platzer
NEM 205		Summer Quarter (not since 01U)	
PLPA 230	MOLECULR PLNT-MICRBIAL INTRACT	Fall 2017, odd years	Jin, Kaloshian
PLPA 246		Winter Quarter (not since 03S)	
NEM 250	NEMATODOLOGY	Fall, Winter, Spring	Becker, Roberts
<b>Additional Courses of Possible Interest:</b>			
PLPA 235		Spring, odd years (not since 07S)	
BIOL 107A	MOLECULAR BIOL	Fall 2016 Winter, Spring	Ray, Dahanukar
BIOL/ENTM 112	SYSTEMATICS	Winter 2017	Heraty, Springer
BIOL 117		Spring Quarter (not since 10S)	
BIOL/ENTM 127	INSECT ECOLOGY	Winter 2017	Walton
BIOL 151	INVERTEBRATE ZOOLOGY	Fall, Winter, Spring	De Ley
BIOL 157	PARASITOLOGY	Fall 2016	Platzer
BPSC 150		Winter Quarter (not offered)	
SWSC 134	SOIL CONDITIONS AND PLANT GROW	Winter 2017	Crowley
SWSC 120	SOIL ECOLOGY	Spring 2017	Crowley, De Ley
SWSC 133		Winter Quarter (not since 08S)	
SWSC 211	MICROBIAL ECOLOGY	Spring Quarter 2017	Borneman, Crowley
<b>Plant Related Courses:</b>			
BPSC 231	THE PLANT GENOME	Winter 2017	Bailey-Serres, Chen
BPSC 237	PLANT CELL BIOLOGY	Fall 2016	Raikhel
BPSC 233		Spring, Even years (not since 08S)	
BPSC 236		Winter Quarter (not since 07W)	
<b>Insect Related Courses:</b>			
ENTM 124	AGRICULTURAL ENTOMOLOGY	Fall 2016	Perring
<b>Biochem, Cell and Molecular, Genetics Courses:</b>			
BCH 182		Fall Quarter (not since 95F)	
BCH 210	BIOCHEM OF MACROMOLECULES	Spring 2017	Hille, Fan
BIOL 200	CELL BIOLOGY	Winter 2017	Atkinson, De Fey
BIOL 201	MOLECULAR BIOLOGY	Fall 2016	Sladek, Le Roch
BIOL 221	MICROBIAL GENETICS	Fall 2016	Borkovich, Ma

## **VIROLOGY "TRACK" IN THE PLANT PATHOLOGY PH.D. PROGRAM**

Students in this track should have an above-average understanding of the nature and role of nucleic acids and proteins in cell biology. Familiarity with recombinant DNA techniques will be beneficial.

Students with deficiencies may consider taking:

PLPA 123	Comparative Virology	(4)
	Introduction to Plant Pathology	(4)
BIOL 107A	Molecular Biology	(4)

Students are expected to take the core courses: (4+4+4+3)

And are strongly encouraged to also take:

PLPA 219	Molecular Plant Virology	(3)
PLPA 230	Molecular Plant-Microbial Interactions	(3)
PLPA 240	Field Plant Pathology	(1)
PLPA 246	Diagnosis of Plant Disease	(2)
PLPA 265	Principles of Plant Pathology	(3)

Additional courses of interest include:

BPSC 132	Plant Anatomy	(5)
BPSC 135	Plant Cell Biology	(3)
BPSC 143	Plant Physiology	(4)
BPSC 150	Principles of Plant Breeding	(4)
BPSC 153	Plant Genomics and Biotechnology	(4)
ENTM 100	General Entomology	(4)
BCH 183	Plant Biochemistry	(3)
BCH 110	General Biochemistry	(4+4+4)
BIOL 109	Lab in Cell & Molecular Biology	(5)
BIOL 121	Microbiology	(3+3)
BIOL 128	Immunology	(3)
PLPA 134	Biology of Fungi	(4)
PLPA 235	Epidemiology of Plant Disease	(4)
PLPA 221	Chemical Control of Plant Disease	(3)

Plant Related Courses:

BPSC 231	The Plant Genome	(4)
BPSC 233	Plant Responses to the Abiotic Environment	(4)
BPSC 236	Light Microscopy	(4)
BPSC 237	Plant Cell Biology	(4)

Insect Related Courses:

ENTM 124	Agricultural Entomology	(5)
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Biochem, Cell and Molecular, Genetics Courses:

BCH 182	Lab Recomb, DNA Techniques	(4)
BCH 210	Biochem of Macro-Molecules	(3)
BIOL 200	Cell Biology	(4)
BIOL 201	Molecular Biology	(4)
BIOL 221	Microbial Genetics	(4)
CMDB 206	Gene Silencing	(3)

<b>VIROLOGY TRACK</b>			
<b>Courses</b>	<b>Course Name</b>	<b>Offered</b>	<b>Instructor</b>
<b>Students with deficiencies may consider taking:</b>			
PLPA 123	INTRO TO COMPARATIVE VIROLOGY	Spring 2016	Rao, Ding
PLPA 120	INTRODUCTION TO PLANT PATHOLOG	Fall 2016	Stanghellini
BIOL 107A	MOLECULAR BIOLOGY	Fall 2016 Winter, Spring	Ray, Dahanukar
<b>Are strongly encouraged to take:</b>			
PLPA 219		Fall Quarter (not since 09F)	
PLPA 230	MOLECULR PLNT-MICRBIAL INTRACT	Fall 2016, odd years	Jin, Kaloshian
PLPA 240		Fall Quarter (not offered)	
PLPA 246		Winter Quarter (not since 03S)	
PLPA 265	COLLOQ IN PLANT PATHOLOGY	Spring Quarter 2013	Ng, Borkovich
<b>Additional courses of interest include:</b>			
BPSC 132	PLANT ANATOMY	Fall 2016	DeMason
BPSC 135	PLANT CELL BIOLOGY	Winter 2017	Gonehal, Yang
BPSC 143	PLANT PHYSIOLOGY	Winter 2017	Lovatt
BPSC 150		Winter Quarter (not offered)	
BPSC 153	PLANT GENOMICS & BIOTECHN LAB	Spring 2017	Close
ENTM 100	GENERAL ENTOMOLOGY	Fall 2016	Walker
BCH 183	PLANT BCH & PHARM PLANT METABL	Fall 2016	Eulgem
BCH 110A	GENERAL BIOCHEM	Fall 2016	Ziegler M
BCH 110B	GENERAL BIOCHEM	Winter 2017	Spindler, Luben
BCH 110C	GENERAL BIOCHEM	Spring 2017	Martinez, Spindler
BIOL 109		Winter, Odd years (not since 03W)	
BIOL 121	INTRODUCTORY MICROBIOLOGY	Fall 2016	Staff
BIOL 128	IMMUNOLOGY	Spring 2017	Zidovetzki
PLPA 134		Fall 2016	Adaskaveg
PLPA 235		Spring, odd years (not since 07S)	
PLPA 221		Winter Quarter (not since 05W)	
<b>Plant Related Courses:</b>			
BPSC 231	THE PLANT GENOME	Winter Quarter 2017	Bailey-Serres, Chen
BPSC 233		Spring, Even years (not since 08S)	
BPSC 236		Winter Quarter (not since 07W)	
BPSC 237	PLANT CELL BIOLOGY	Fall 2016	Raikhel
<b>Insect Related Courses:</b>			
ENTM 124	AGRICULTURAL ENTOMOLOGY	Fall 2016	Perring
<b>Biochem, Cell and</b>			

<b>Molecular, Genetics Courses:</b>			
BCH 182		Fall Quarter (not since 95F)	
BCH 210	BIOCHEM OF MACROMOLECULES	Spring 2017	Hille, Fan
BIOL 221	MICROBIAL GENETICS	Fall Quarter (not offered)	
CMDB 206	GENE SILENCING	Winter 2017, odd years	Ding, Chen

## **MYCOLOGY "TRACK" IN THE PLANT PATHOLOGY PH.D. PROGRAM**

Students with deficiencies may consider taking:

PLPA120	Introduction to Plant Pathology	(4)
STAT 120 AB	Experimental Techniques for Biologists	(4+4)

Students are expected to take the core courses: (4+4+4+3)

As well as:

PLPA 240	Field Plant Pathology	(1)
PLPA 220 AB	Morphology and Taxonomy Fungi	(4+4)
PLPA 245	Field Mycology	(1)
PLPA 246	Diagnosis of Plant Diseases	(2)
PLPA 265	A Colloquium on the Principles of Plant Pathology	(3)
PLPA 230	Molecular Plant-Microbial Interactions	(3)

The following are strongly recommended courses. Students should take as many of these enrichment courses as their time, research project, and Advisor will allow. At least half of these courses should be taken to properly prepare a student to complete in the specialized areas of mycology study.

PLPA 221	Chemical Control of Plant Diseases	(3)
PLPA 230	Molecular Plant-Microbial Interactions	(3)
PLPA 235	Epidemiology of Plant Diseases	(4)
PLPA 245	Field Mycology	(1)
PLPA 246	Diagnosis of Plant Diseases	(2)
PLPA 265	A Colloquium on the Principles of Plant Pathology	(3)
SWSC 133	Environmental Microbiology	(5)
SWSC 134	Soil Conditions and Plant Growth	(4)
SWSC 211	Microbial Ecology	(3)

<b>MYCOLOGY TRACK</b>			
<b>Courses</b>	<b>Course Name</b>	<b>Offered</b>	<b>Instructor</b>
<b>Students with deficiencies may consider taking:</b>			
PLPA120	INTRODUCTION TO PLANT PATHOLOG	Fall 2016	Stanghellini
STAT 120 AB		Fall Quarter, Winter Quarter (not offered)	
<b>Students are expected to take the core courses as well as:</b>			
PLPA 240		Fall Quarter (not offered)	
PLPA 220 AB		Fall Quarter, Winter Quarter (not since 09W)	
PLPA 245		Fall Quarter (not since 01F)	
PLPA 246		Winter Quarter (not since 03S)	
PLPA 265	COLLOQ IN PLANT PATHOLOGY	Spring Quarter 2017	Ng, Borkovich
PLPA 230	MOLECULR PLNT-MICRBIAL INTRACT	Fall 2016, odd years	Jin, Kaloshian
<b>The following are strongly recommended courses:</b>			
PLPA 221		Winter Quarter (not since 05W)	
PLPA 230	MOLECULR PLNT-MICRBIAL INTRACT	Fall 2016, odd years	Jin, Kaloshian
PLPA 235		Spring, odd years (not since 07S)	
PLPA 245		Fall, odd years (not since 01F)	
PLPA 246		Winter Quarter (not since 03S)	
PLPA 265	COLLOQ IN PLANT PATHOLOGY	Spring 2017	Ng, Borkovich
SWSC 133		Winter Quarter (not since 08S)	
SWSC 134	SOIL CONDITIONS AND PLANT GROW	Winter Quarter 2017	Crowley
SWSC 211	MICROBIAL ECOLOGY	Spring Quarter 2017	Borneman, Crowley



## Appendix 4. Contacts in Plant Pathology

### NPPS Administrative Staff

<b>Name</b>	<b>Title</b>	<b>Office</b>	<b>Campus Number</b>
<a href="#">Cheryl Gerry</a>	Financial & Administrative Officer	<a href="#">1425 Boyce Hall</a>	951-827-3814
<a href="#">Debbie Van Zanten</a>	Financial Operations Manager	<a href="#">1491 Boyce Hall</a>	951-827-3815
<a href="#">Emelyn Lutzker</a>	Payroll Specialist	<a href="#">2258G Geology Bldg</a>	951-827-4228
<a href="#">Ivan Kong</a>	Financial Analyst	<a href="#">1481 Boyce Hall</a>	951-827-4233
<a href="#">Margarita Flores</a>	Administrative Asst/Event Coordinator	<a href="#">1447 Boyce Hall</a>	951-827-3598
<a href="#">Joann Braga</a>	Purchasing/Travel Assistant	<a href="#">1463 Boyce Hall</a>	951-827-7259
<a href="#">Lorraine Poisson</a>	Financial Analyst	<a href="#">1481 Boyce Hall</a>	951-827-3048
<a href="#">Nancy Ferguson</a>	Purchasing/Travel Supervisor	<a href="#">1463 Boyce Hall</a>	951-827-4222
<a href="#">Michael Bullock</a>	Purchasing Assistant	<a href="#">1463 Boyce Hall</a>	951-827-3816
<a href="#">Tricia Smith</a>	Enrollment Management	<a href="#">2316 Webber Hall</a>	951-827-4737
<a href="#">Valerie Schulte</a>	Financial Analyst	<a href="#">1481 Boyce Hall</a>	951-827-6994
<a href="#">Laura McGeehan</a>	Student Services Advisor	<a href="#">1140C Batchelor Hall</a>	951-827-5688

## Appendix 5. Departmental Policy on Dishonesty and Scientific Misconduct

Listed below are the policies of UCR and the Graduate Program in Plant Pathology concerning:

### INTOLERANCE OF ACADEMIC DISHONESTY AND SCIENTIFIC MISCONDUCT

#### 1. ACADEMIC DISHONESTY

The faculty of the University of California, Riverside, believe that the vast majority of our students maintain high standards of academic honesty. However, occasional incidents of academic dishonesty do occur. Many such acts are committed through ignorance. Often, a student accused of cheating will vehemently deny the charge, claiming that he/she did not know the act violated established policy. The following statement is intended to clarify what constitutes academic dishonesty and to describe the procedures and consequences if a student is accused of and found guilty of breaking the rules that apply to all UC Riverside students. At UCR, academic dishonesty is a serious offense and will not be tolerated.

##### 1a. The policy

University of California, Policies applying to Campus Activities, Organizations, and Students, Section 102.01 (1996): Academic dishonesty requiring discipline is defined as "All forms of academic misconduct, including but not limited to, cheating, fabrication, plagiarism, or facilitating academic dishonesty as may be further specified in campus regulations." (The complete policy is published each quarter in the Schedule of Classes.)

##### 1b. Academic dishonesty defined

CHEATING: It is cheating to copy from another student's examination, quiz, laboratory work, or homework assignment. The use of pre-prepared notes or other resources, in any form, during an examination, unless such use is expressly authorized by the instructor, also constitutes cheating. If a student knowingly allows someone else to copy from their homework, laboratory work, or examination, they are in violation of section 102.01. Revising a work after its final evaluation and representing the revised version as being the original work is cheating. Forging or otherwise unauthorized changing of an earned grade is also academically dishonest. Arranging for someone else to take an examination under your identification also constitutes an act of cheating. In this last instance, both parties are liable.

**PLAGIARISM:** According to Webster's Dictionary, plagiarism is the act of stealing and passing off as one's own the ideas or words of another--without properly referencing the original source. Please note that the faculty will pay attention not to whether you meant to plagiarize, but whether you did plagiarize. Additionally, submitting the same paper twice or fulfilling the requirements of two subjects with one paper is academically dishonest. In short, one can plagiarize oneself and be sanctioned for the violation. You may use ideas and words from other sources, but you must document their use with citations, usually in the form of footnotes, attributed quotations, literature cited, etc.

For example, consider the following quote from a hypothetical research paper by Dr. Smith in the journal *Phytopathology* in 1999:

"Our studies show that conidia can sense the chemical composition of the infection court."

Here are appropriate ways of using this information in a paper:

According to Smith (1999), conidia recognize chemicals within the infection court. (There are no quotes used here because the words are paraphrased, not simply repeated.)

OR

Conidia can sense chemicals on leaf surfaces, such as in the infection court (Smith, 1999).

OR

Smith (1999) states that "...conidia can sense the chemical composition of the infection court."

(Quotes are required when you cite something word for word. However, you should avoid relying on direct quotes in your papers; paraphrasing with an appropriate citation is preferable).

**UNAUTHORIZED COLLABORATION:** Collaboration occurs when a student works with other students to study, do lab work, review books or develop a presentation or report. Students must receive very clear permission from the instructor to participate in collaborations. Unauthorized collaboration is an example of an academically dishonest act. What one instructor may view as a collaboration may be seen as cheating by another. The important thing to note is that if the limits of collaboration are not clear, it is the student's responsibility to ask the instructor for very clear and specific direction.

**MANUFACTURE OF DATA:** It is academically dishonest to manufacture or deliberately alter data submitted in connection with laboratory reports, term papers, thesis research, publications, other written material, etc.

### **1c. Procedures and sanctions in regards to academic dishonesty**

The sanctions for violation of student code 102.01 can include obtaining a reduced or failing grade in a course, temporary suspension, or expulsion from the University. In cases where dishonesty brings into doubt the reliability of thesis research, research assistantships or fellowships may be terminated.

The above information is not designed to threaten or intimidate the student. Rather, it is presented to inform the individual of the consequences. The important thing to remember is that if there is any doubt in one's mind that an act is in violation of the above policies, then the prudent response would be not to do the act.

## **2. SCIENTIFIC MISCONDUCT**

(portions adapted from the policy statements of the University of Maryland, United Kingdom Research Councils and "Misconduct in Science" by V. Hammer).

### **2a. Introduction**

Integrity in research and scholarly activities is the responsibility of the entire academic community. Scholars work in an environment in which there is an important sense of trust. Published material is assumed to have been obtained during the author's investigations. Falsification or fabrication of such data is intolerable. Each scientist, and the University, is responsible for promoting practices that discourage scientific misconduct.

All scientists, including graduate students, share responsibility for developing and maintaining standards to assure the highest ethical conduct of research and detection of abuse of these standards. Fraud or misconduct in carrying out academic activities undermines the integrity of the educational system and the scientific enterprise, and erodes the public trust in the university community to conduct research and communicate results using the highest standards and ethical practices. Consequently, misconduct in scholarly work by members of the department or University is a breach of their employment contract and will not be tolerated.

### **2b. Definition of scientific misconduct.**

In general terms, scientific misconduct can be recognized to cover two broad categories, the distinction being in terms of the focus of the dishonesty. Thus the first arises where there is fabrication or falsification of the research results; the second arises where there is plagiarism, misquoting or other misappropriation of the work of other researchers. Colluding in or concealing the misconduct of others is also misconduct. Honest errors do not constitute scientific misconduct.

In other words, scientific misconduct involves any form of behavior which entails an act of deception whereby one's work or the work of others is misrepresented, and includes fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting or reporting research. Other terms such as research fraud, scholarly misconduct or research misconduct, are subsumed within the term scientific misconduct as defined in the following specific examples:

Falsification of data: Ranging from fabrication to deceptive selective reporting of findings and omission of conflicting data, or willful suppression and/or distortion of data.

Plagiarism: The appropriation of the language, ideas, or thoughts of another and representation of them as one's own original work.

Improprieties of authorship: Improper assignment of credit, such as excluding others; misrepresentation of the same material as original in more than one publication; inclusion of individuals as authors who have not made a definite contribution to the work published; or submission of multi-authored publications without the concurrence of all authors.

Misappropriation of the ideas of others: An important aspect of scholarly activity is the exchange of ideas of ideas among colleagues. New ideas gleaned from such exchanges can lead to important discoveries. Scholars also acquire novel ideas during the process of reviewing grant applications and manuscripts. However, improper use of such information could constitute fraud. Wholesale appropriation of such material constitutes scientific misconduct.

Violation of generally accepted research practices: Serious deviation from accepted practices in proposing or carrying out research, improper manipulation of experiments to obtain biased results, deceptive statistical or analytical manipulations, or improper reporting of results.

Failure to Comply with governmental and Institutional Requirements Affecting Research: These include but are not limited to serious or substantial, repeated, willful violations involving the use of funds, care of animals, human subjects, drugs, recombinant products, new devices, or radioactive, biologic or chemical materials.

Other miscellaneous inappropriate Behavior: These include: inappropriate accusation of misconduct; withholding or destruction of information relevant to a claim of misconduct, or retaliation against persons involved in the allegation or investigation; deliberate misrepresentation of qualifications or accomplishments to advance the research program to obtain external funding, or other professional advancement; and misappropriation of funds or resources for personal gain.

## **2c. Scientific negligence versus scientific misconduct.**

While scientific misconduct as defined above is a serious (and often punishable) breach of accepted practices, all scientists must be on guard against being intellectually negligent. This might be manifested in paying inadequate attention to negative results, or not performing enough controls. A lack of rigor in the scientific method, or carelessness in interpreting data, can result in the scientist (and eventually the public) being deceived. In such cases, the scientist likely did not set out from the beginning with the intent to defraud but instead shows that he/she has human faults. Such a trait may be considered by many to be inappropriate for a scientist to exhibit! Indeed, negligent, careless, sloppy, and reckless work is just as much a violation of moral duty as fraud. The potentially disastrous effects for science and society that result from incorrect information are the same regardless of the intentions of the author. Perhaps most troubling is the damage inflicted upon the reputation of science: if the public can not trust scientists--who will fund scientific research?

## **2d. What is your code of scientific ethics?**

Some organizations have established a "code of ethics." These not only address some of the aspects of misbehavior mentioned above, but also the positive attributes of ethical scientific behavior. For example, the Agricultural Research Service of the USDA has the following code:

- I dedicate myself to the pursuit and promotion of beneficial scientific investigation, consistent with the mission of the Agricultural Research Service.
- I will never hinder the beneficial research of others.
- I will conduct, discuss, manage, judge and report science honestly, thoroughly, and without conflict of interest.
- I will encourage constructive critique of my personal science and that of my colleagues, in a manner that fosters harmony and quality amid scientific debate.
- I recognize past and present contributors to my science and will not accept unwarranted credit for the accomplishment of others.
- I will maintain and improve my professional skills and be a mentor to others.
- I will ensure safety and humane treatment of human and animal subjects and will prevent abuse of research resources entrusted to me.

## **What is your personal code?**

# Appendix 6. Departmental Forms

## PLPA ENROLLED STUDENT TRANSCRIPT EVALUATION

<b>NAME:</b>	<b>ADMISSION DATE:</b>	
<b>LOCAL ADDRESS</b>		
<b>PHONE #:</b>	<b>LAB ROOM #:</b>	<b>LAB PHONE #:</b>
<b>MAJOR PROFESSOR:</b>		
<b>ROTATION 1:</b>	<b>ROTATION 2:</b>	<b>ROTATION 3:</b>

<b>CORE COURSES TO BE TAKEN</b>	<b>QUARTER</b>
PLPA 200 – Fungal Diseases of Plants (4)	
PLPA 203 – Bacterial Diseases of Plants (4)	
PLPA 203 – Bacterial Diseases of Plants (4)	
PLPA 204 – Viral Diseases of Plants (4)	
PLPA 206 – Nematode Diseases of Plants (3)	
PLPA 250 – Seminar in Plant Pathology (1) MUST ENROLL EACH QUARTER	
<b>HIGHLY RECOMMENDED COURSES</b>	
<b>PLPA 231 – Physiology of Plant Diseases</b> <b>PLPA 265 – A Colloquium on the Principals of Plant Pathology</b>	
<b>**In addition to the core courses students must also pick a track and follow the specific curriculum as outlined in the attached forms.</b>	

<b>COURSE DEFICIENCIES</b>

### Curriculum Worksheet for Plant Pathology



*This form should be filled out by the student and provided to the Graduate Affairs Committee for review. The Graduate Advisor should be notified of any changes made after GAC approval.*

Student name: \_\_\_\_\_

Major professor (if known): \_\_\_\_\_

Date: \_\_\_\_\_

**Proposed curriculum plan**

YEAR:

FALL	UNITS	WINTER	UNITS	SPRING	UNITS
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	

YEAR:

FALL	UNITS	WINTER	UNITS	SPRING	UNITS
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	

YEAR:

FALL	UNITS	WINTER	UNITS	SPRING	UNITS
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	
PLPA		PLPA		PLPA	

**Comments/notes at the start of the first year**

Suggestions:

Approved by (grad. advisor name): \_\_\_\_\_ Date: \_\_\_\_\_

**Comments/notes at the start of the second year**

Members of Guidance Committee (the major professor and two other faculty):

Suggestions:

Approved by (grad. advisor name):

Date:

Other notes by the Graduate Affairs Committee:

# PLANT PATHOLOGY ADVISORY COMMITTEE ASSIGNMENT

**STUDENT:**

**MEMBERS OF ADVISORY COMMITTEE:**

Faculty Name, Chair (Major Prof.)	Date
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Faculty Name	Date
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Faculty Name	Date
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**PLANT PATHOLOGY**  
**QUALIFYING EXAM COMMITTEE NOMINATION**  
*Submit to Student Services Advisor*

**STUDENT:**

**MEMBERS OF QUALIFYING EXAM COMMITTEE:**

Please propose at least 2 alternates in addition to the 5 primary members.

\_\_\_\_\_  
Faculty Name, Committee Chair Date

\_\_\_\_\_  
Faculty Name, Committee Member Date

\_\_\_\_\_  
Faculty Name, Committee Member Date

\_\_\_\_\_  
Faculty Name, Committee Member Date

\_\_\_\_\_  
Faculty Name & Department, Outside Committee Member Date

\_\_\_\_\_  
Alternate #1

\_\_\_\_\_  
Alternate #2

**PROPOSED DATES OF WRITTEN EXAM:**

\_\_\_\_\_

**PROPOSED DATE OF ORAL EXAM:**

\_\_\_\_\_

**TIME AND LOCATION OF EXAM:**

\_\_\_\_\_

**ANNUAL REVIEW OF GRADUATE STUDENT PROGRESS**  
*Department of Plant Pathology*  
**2016-2017**

Name of student:

Program: M.S.

Ph.D.

Date prepared:

Quarter entered program:

Qualifying exam date(s): WRITTEN \_\_\_\_\_ ORAL \_\_\_\_\_

Dissertation title (*working title*):

\_\_\_\_\_

\_\_\_\_\_

Anticipated Exit Quarter: \_\_\_\_\_

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**ACADEMIC PROGRESS**

**REQUIRED COURSE WORK** (Please review requirement worksheet and comment if you have completed core courses and proposed course work to be taken):

Have deficiencies been satisfied?  Yes,  No, If no please indicate which deficiencies remain and when they will be met:

**RESEARCH** (Please briefly describe your research accomplishments this year and indicate goals for next year):

**ACCOMPLISHMENTS (Please indicate any special accomplishments, meetings attended, awards, publications, etc. received by you this year):**

**SUGGESTIONS/COMMENTS:**

Major Professor Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Committee Member Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Student Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Graduate Advisor Name: \_\_\_\_\_ Signature: \_\_\_\_\_

**Please submit the completed form to Laura McGeehan in 1140C Batchelor Hall.  
Deadline: 3<sup>rd</sup> Friday of July**