

**Department of Plant Pathology
Implementation Plan
2014 Annual Report**

(Implementation Plan submitted September, 2010)

1. Incoming chair to engage faculty in strategic discussions

Assessment method: Feedback during regular faculty meetings.

Results: Faculty meetings have been held a minimum of every 2 months, with minutes recorded, distributed to faculty, corrected as needed, and approved at each subsequent faculty meeting.

Analysis of results and reflection: Regular faculty meetings have opened the lines of communication significantly between the chair and faculty members. Faculty members have been very receptive to the regular meetings.

Ongoing improvement actions: The chair will continue to hold faculty meetings at least every two months and distribute the minutes to all faculty members.

**2. More creative approach to management of departmental resources/
professional development**

Assessment method: Discussion in faculty meetings, as necessary

Results: The department was successful in an internal (college) competition for funds (\$100,000) for a major equipment item, which is also used by other departments in the college. The department matched with \$19,000 to cover the full cost.

Some reassignment of space was undertaken in light of a recent retirement.

Analysis of results and reflection: Equipment replacement greatly helps the competitiveness of research programs. However, with increasing difficulty obtaining funding for new equipment, the department's research competitiveness could erode considerably. Currently, aging growth chambers are a concern.

A faculty retirement alleviated the pressure on laboratory space experienced by the department since the move to the Plant Sciences Building. However, should that position be replaced, space issues will again be a major concern.

Ongoing improvement actions: Efforts are needed, and should be coordinated with other departments, to obtain USDA, NSF or NIH funding for instrumentation. The chair will continue to bring such opportunities to the attention of faculty and

encourage and facilitate such submissions.

3. Increase faculty number from 13 to 15 by 2014

Assessment method: Assessment of full-time faculty FTE.

Results: There was no increase in faculty numbers due to the lack of funds.

Analysis of results and reflection: Shrinkage of the department over the past four years inevitably reduces our competitiveness for quality students and for funding. In addition, it is more difficult to teach a full complement of courses in the discipline, both because there are fewer faculty to teach them and because there often are insufficient numbers of students needing those courses. At times, when there are only one or two students who require a course, faculty undertake to provide the necessary instruction. But, this is an inefficient system.

Ongoing improvement actions: A strong case can be made for an increase of two faculty lines in Plant Pathology, with primary Research and secondary Teaching appointments.

4. Refill faculty vacancies as soon as possible

Assessment method: Length of time between position vacancy and position fulfillment.

Results: One Professor completed phased retirement in December, 2013; an Extension Professor located at the University of Kentucky Research and Education Center (UKREC) notified the college of intention to retire effective December 31, 2014; and one Associate Extension Professor located at the main campus in Lexington left for an industry job in May, 2014. A search was initiated in June for a replacement at UKREC, and another search was initiated in August, 2014 for the vacant Extension faculty position in Lexington. Insufficient funds were available to support replacing the regular-title faculty position.

Analysis of results and reflection: Searches are ongoing to fill the two extension title faculty positions in Plant Pathology. As for the regular title vacancy, no search can be conducted until sufficient funds are identified that can support that position. This is unfortunate because the department needs additional expertise in its traditional field of excellence, plant virology, as well as in plant bacteriology and nematology.

Ongoing improvement actions: The four Extension faculty positions are critical to serving the needs of Kentucky growers in dealing with plant disease issues. Every effort will be made to continue to maintain a complement of four Extension Specialists in Plant Pathology. Should funds become available to do so, the regular

title series position also should be filled.

5. Creative solutions for replacing limited state funding support

Assessment method: The chair and the business officer assess the department budget situation regularly (at least once per month), and submit a budget annually in a department faculty meeting.

Results: The department budget was balanced in FY 2013. In response to a college-wide call for funding proposals relevant to multistate projects, and after consulting with the department faculty at large, we requested \$100,000 for a multipurpose molecular imager, and matched that with funds from our department and other departments that utilize the imager. This was a much-needed upgrade of departmental equipment.

Analysis of results and reflection: Expenditures by the department must be minimized due to diminishing funds available over the past several years. A major concern is equipment, much of which is becoming unreliable and obsolete. Federal programs to compete for equipment funds are highly restrictive in the number of proposals allowed per institution, and while the department competes internally to be allowed to submit such proposals, success is understandably rare. Internal options for equipment replacement or repair are very limited, though we were able this year to avail ourselves of federal formula funds for a major replacement. There are other equipment items that will similarly require replacement or repair in the near future.

Ongoing improvement actions: Further equipment replacements and upgrades will depend on availability of funds. Decisions to pursue funding will continue to be made by consultation with all department faculty.

6. Continue iterative process for modifying and improving graduate course requirements and offerings

Assessment method: Student competency is assessed by questionnaires filled out at advisory committee meetings, qualifying exams, seminars, and exit exams. Student evaluations provide guidance for improving courses.

Results: On a 5-point scale, graduate student performances had the following average ratings over a 3-year period: Seminars and committee meetings: 3.44; Qualifying exams: 3.05; Exit exam/defense 3.95.

Analysis of results and reflection: Seminars and committee meetings can occur before or after qualifying examinations in a student's program, so we expect the ratings of these to be similar. The lower qualifying exam ratings may reflect the fact that the tests generally address broader subject matter than do the seminars and committee meetings. Nevertheless, the department is striving to increase average

qualifying exam scores. The Exit exam/defense scores should generally be much higher than those of seminars, committee meetings and qualifying examinations, reflecting the expectation for increased competency as the student nears the end of his or her graduate program. In keeping with that expectation, Exit exam/defense scores were higher than other scores.

Ongoing improvement actions: For the purposes of the department teaching program, the current curriculum is considered appropriate, although the department has agreed that changing one of the required first-year courses from 2 to 3 credit hours would provide for more in-class discussion time to enhance the value of that course.

In addition to high expectations for performance in coursework, the students are encouraged to get as much experience as possible in advisory committee meetings and seminar presentations. Furthermore, they are encouraged to do practice qualifying examinations, though the instances of such practice exams have declined in the past year. Discussions among faculty about how to encourage practice exams have led to the consensus that advisors and advisory committees should encourage this, but it should not be mandatory.

The department is currently negotiating with the two premier agriculture universities in Brazil to establish dual degree programs, and a formal proposal is under consideration with the Universidade Federal de Viçosa for such a program. For this reason, there is ongoing discussion among the department faculty concerning any curriculum adjustments that may be necessary to facilitate the dual degree program. Nevertheless, and considering that the vast majority of students are not likely to be involved in such a dual degree (funding for such students will probably be very limited), the priority remains to optimize the curriculum for domestic and a wide range of international students, such as are currently enrolled.

7. Consider reforming the Ph.D. Qualifying Exam to make it a more effective experience

Assessment method: Student competency is assessed both on the basis of the proportion of Ph.D. students who pass the exam, and by questionnaires filled out at the qualifying exams.

Results: No students took qualifying exams in 2013, while four took the exam in the Spring of 2014. On a scale of 1-4, the average score for qualifying exams was 3.05.

Analysis of results and reflection: The current format and options to change that format were discussed at a department faculty meeting. No sentiment was expressed to change the format. The right and responsibility was reaffirmed for the Director of Graduate Studies (DGS) to add questions to the written portion of any qualifying exam in order to maintain balance and fairness. Furthermore, there is

always a desire for students to exhibit the highest possible levels of competency in qualifying examinations, and ways to better prepare the students are regularly a matter of discussion. The faculty generally considers practice examinations to be an excellent mechanism to familiarize the students with the process, thereby allowing them to better demonstrate their competency. Although past students have availed themselves of practice exams, most students do not. Nevertheless, faculty advisors generally place their students in situations similar to qualifying exams during weekly laboratory meetings.

Ongoing improvement actions: The department will continue to conduct questionnaires at qualifying exams (as well as committee meetings) in order to assess whether we are improving. Results will be reported in faculty meetings, and possible ways to improve student competencies ahead of the exams will continue to be considered and implemented as practicable.

8. Recruit more domestic graduate students and enhance quality

Assessment method: Student numbers, scores on evaluations in qualifying exams and seminars, number of students successfully completing qualifying examinations, and number of students successfully completing final examinations.

Results: In 2013-2014, one student successfully completed an M.S. and three students completed Ph.D. degrees. There was also the successful completion of three qualifying examinations, with no failures. The recruitment of five new graduate students to start in Fall 2014 yielded two domestic (US) students, two from Mexico, and one from China.

Analysis of results and reflection: Student numbers have dropped 17% in two years (from 18 to 16 in 2013, and to 15 in 2014) as a direct result of reduced funding levels from grants, increased tuition costs, and reduced availability of tuition scholarships (Dean's scholarships) from the Graduate School. Nevertheless, the Plant Pathology program continues to have a vibrant and diverse graduate class, which includes students from the US (2 students) and six other nations: Brazil (3), China (2), Egypt (2), Indonesia (1), Korea (2) and Mexico(2).

The department has had no difficulty getting high quality applicants, but the most important limiting factor in recruitment is identifying funds to support the students. It is very rare for students to accept offers without funding, and stipends plus tuition currently exceed \$30,000 annually. All students enrolled in Fall 2013, and 14 of 15 students enrolled in Fall 2014, received full stipend and tuition support.

Ongoing improvement actions: Because funding is the critical factor in recruiting high quality graduate students, all of the faculty continue a high level of activity in seeking funds from federally competitive (USDA, DoE, NSF and NIH) and state (KSEF) programs, as well as foundations (e.g., Gates Foundation) and private

sources (e.g., Monsanto).

9. Improve graduate student and postdoctoral scholar professional development opportunities

Assessment method: Employment of students and postdocs after leaving the department.

Results: All students and postdocs who have left the department, with one possible exception, have found gainful employment in an area related to their training. The exception is an M.S. student who, after completing his degree, returned home to Iraq, where the current civil unrest probably interferes with employment prospects. Of the three completed Ph.D.s, two continued as postdocs in the department, and the third was immediately hired as a master brewer in New Brunswick, Canada.

Analysis of results and reflection: Plant pathology is a very broad discipline, encompassing plants of many families, microorganisms, and parasites, from scales ranging from epidemiological to molecular. Therefore, students and postdoctoral trainees have a wide range of employment options. The high level of department success in placing students and postdocs reflects a high degree of respect for our training programs.

Ongoing improvement actions: Graduate students are made aware of the “Preparing Future Faculty” and “College Teaching and Learning Certificate” programs administered by the University of Kentucky Graduate School, and the department funds tuition for students to take the relevant GS courses. In addition, the department has agreed to hire one of its former graduate students to teach the undergraduate course, PPA 400G, as well as the graduate course, PPA 640, during the Fall 2014, in order to enhance her eligibility for teaching positions.

10. Job classifications should accurately reflect duties and responsibilities

Assessment method: Review of job descriptions by chair.

Results: The job analysis questionnaires (JAQs) for all department staff have been reviewed by supervisors and the chair as part of a University-wide digitization program. Some adjustments were made by supervisors in consultation with their staff to better reflect job expectations, and were approved by the supervisors, staff members, and chair.

Analysis of results and reflection: Regular reviews of the JAQs shall be done annually around the time of staff evaluations.

Ongoing improvement actions: The chair will continue to monitor this recommendation.