

**Annual Reports of Progress on Implementation Plan
Department of Plant Pathology
2014-2015**

1. Incoming chair to engage faculty in strategic discussions

Assessment method: Feedback during regular faculty meetings.

Results: Faculty meetings, which actually include representatives of students, postdocs, technical staff and office staff, have been held a minimum of every 2 months. Minutes are recorded, distributed to the department, 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, as well as with other sectors of the department. 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. Furthermore, the chair has recently adopted the habit of distributing the minutes to the entire department via the PPAALL listserv.

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

Assessment method: Discussion in faculty meetings, and with College and upper administration, as necessary.

Results: The department has worked with College administration to address critical equipment needs. Approximately \$225,000 of Federal Formula Funds were used to purchase instruments needed for analysis of plant metabolites and proteins and a new 4-color LED-based plant growth cabinet. These items will serve critical needs of researchers in multiple departments, particularly those housed in the Plant Sciences Building. Additionally, the College provided startup funds for two new Extension faculty hires, one based in Lexington and the other in Princeton, KY. The majority of these funds will be used for equipment acquisition to serve critical needs for applied research.

Analysis of results and reflection: Equipment replacement greatly helps the competitiveness of research programs. Last year's report noted that aging equipment was beginning to erode the department's research capabilities and competitiveness for outside funding. New purchases this year are an excellent start at addressing this issue.

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 and lack of space.

Analysis of results and reflection: Since this strategic goal was formulated in 2009, there has been further erosion of faculty numbers due to budget cuts. Currently, there are only 11 full time faculty FTE. Two vacancies in Extension faculty occurred in 2014-2015. Both have been filled: one at UKREC in Princeton at the full Extension Professor level, the other at the Lexington campus at the Assistant Extension Professor level. Both of these new Extension faculty members come with very strong records and were the first choice of the department and the college from each respective applicant pool.

Analysis of results and reflection: Replacement of the Extension faculty vacancies has maintained the traditional full complement of four Plant Pathology Extension Specialists (three in Lexington, and one in Princeton). This allows for close to comprehensive coverage of the plant disease Extension and diagnostic needs for the major commodities and stakeholders in the Commonwealth. Startup packages associated with these hires will help keep infrastructure updated for applied research. Steady reduction of the department faculty numbers, particularly in total research FTE, inevitably reduces the department's capacity for cooperative research projects, competitiveness for funding, and ability to recruit and educate quality students. The department continues to fully utilize available space, which is also a limitation to faculty expansion.

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 and Service appointments. Both recurrent funds and space must be identified to accomplish such a goal.

4. Refill faculty vacancies as soon as possible

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

Results: The department had two vacancies to fill. One faculty member left in June, 2014, after approximately one-month notice. That line was filled and the new Assistant

Extension Professor, Dr. Emily E. Pfeufer, started in April, 2015. Another faculty member retired in January 2015 after ample notice, and the position was filled with the new Extension Professor starting July 1, 2015. A Regular Title Series faculty member completed a phased retirement in 2014. There were insufficient funds to replace that faculty line. Another faculty member, Dr. Pradeep Kachroo, was promoted to Full Professor.

Analysis of results and reflection: No search for new research faculty members can be conducted until sufficient funds are identified that can support such positions. However, the department has identified needs for additional expertise in its traditional field of excellence, plant virology, as well as in plant bacteriology.

Ongoing improvement actions: The current group of Plant Pathology faculty members is dedicated, talented and successful in their efforts to establish and maintain productive research and extension programs, provide instruction to graduate and undergraduate students, and otherwise serve the Department, College, University and Commonwealth. It is crucial, therefore, to retain these high-quality faculty members. Efforts will continue to mentor junior faculty for success in achieving tenure, as well as to continue to advise and provide critical resources to all faculty, and to undertake timely promotion of Assistant and Associate Professors.

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 draw up a budget annually.

Results: The department budget was balanced in FY 2015. A critical need was identified in the area of graduate program support, as expenses have continued to rise steeply and financial support from sources within the University has steadily declined. In 2015, salary savings from the phased retirement of a faculty member were reallocated to the graduate program RCTF account to help address this growing gap.

Analysis of results and reflection: Costs of tuition and student health plans have and are projected to continue to rise much faster than inflation. Meanwhile Graduate School scholarships for tuition have been drastically cut. These two factors endanger the graduate program in Plant Pathology despite considerable interest from highly qualified domestic applicants and the key roles of graduate students in research and other activities. New funding sources need to be identified particularly for graduate student support.

Ongoing improvement actions: Efforts will continue to obtain grant funds, scholarships, and fellowships to support graduate students and their research projects.

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

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

Results: The following trends are noteworthy. Over the past three years the advisors have, on average, given decreasing scores on technical mastery of the subject area (Plant Pathology), with scores (5 point maximum) of 4.75 in 2012-13 (n = 16), 3.9 in 2013-14 (n = 12) and 3.7 in 2014-15 (n = 15). However, technical mastery scores at thesis/dissertation defenses have increased, at 3.9 in 2012-13 (n = 4), 3.9 in 2013-14 (n = 5) and 4.7 in 2014-15 (n = 2). Very similar trends were evident in the rubrics of critical scientific thinking and communication skills (oral and written).

Analysis of results and reflection: Additional data are needed to help determine whether, as is hoped, the relatively high scores at thesis/dissertation defenses reflect general enhancements of crucial skills (as represented by the rubrics) during the students' tenures in the department or, alternatively, do not represent a trend.

Ongoing improvement actions: The chair and DGS are pressing for greater compliance to ensure that the rubrics continue to be evaluated at regular committee meetings (annually or even more frequently). Curriculum and efforts to enhance graduate student learning are regularly discussed at department meetings. For example, faculty members are encouraged to send their students to scientific meetings to present their work.

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: The Academic Program Committee, and the faculty at large, have discussed possible changes in the qualifying exam format, but have decided that the best option now is to keep the current system. One student took the qualifying exam in Fall 2014, and passed. However, committee evaluations of the exam gave the student below our target of 3.0 (scores of 3.0, 2.5 and 2.8 in the three rubrics). It is possible that these scores reflect some difficulty with the language because the student is not a native English speaker.

Analysis of results and reflection: With most of the students being international, and English not their native language, they often exhibit difficulty communicating in seminars and qualifying exams. It is important to keep providing opportunities for them to practice written and oral communication throughout their M.S. and Ph.D. programs. Improvement of the student learning assessment process associated with the qualifying examinations is needed.

Ongoing improvement actions: Evaluations of qualifying examinations are now conducted by separate questionnaires regarding the written exam and the subsequent oral exam.

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: The Plant Pathology graduate program is highly diverse, including (as of Fall, 2015) students from the US (3 students) and six other countries: Brazil (2), China (1), Egypt (2), Korea (2) Mexico (2) and Taiwan (1). In 2014-2015, two students completed PhD degrees, and one student took and passed the PhD qualifying exam. Two domestic students with very strong academic records were recruited, one of whom subsequently left the program giving personal family reasons as the cause. Together with the withdrawal of another excellent domestic student at the end of the 2014 academic year, also for personal reasons, these events have continued to keep the domestic representation low (3 out of 13 students). Nevertheless, there appears to be an increase in serious inquiries by promising domestic applicants for the Spring and Fall 2016 semesters. A dual PhD degree program was established between this department and the Plant Pathology Department at the Universidade Federal de Viçosa (UFV) in Brazil, and has been approved by the UK Board of Trustees.

Analysis of results and reflection: Graduate student numbers in the Department continue to drop (almost 20% in two years). This is largely 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 be active and diverse, and attractive to promising domestic and international prospects. The newly instituted dual degree program with UFV should enhance recruitment of domestic students who want the international component in their training, as well as recruitment of highly qualified students from Brazil.

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 private sources (e.g., Monsanto). Furthermore, the department has identified additional funds sufficient to support one more graduate student, though further erosion of available tuition scholarships may prevent an increase in the department-funded graduate student number. The chair, DGS, and faculty are encouraged to publicize the new dual degree program in recruitment efforts.

9. Improve graduate student and postdoctoral scholar professional development opportunities.

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

Results: A comprehensive survey was conducted of those receiving PhD and MS degrees from the Department over the past 10 years. During that time the department graduated 30 students with PhD's and 5 students with MS degrees. All of the PhD students have been employed in related fields. Nine are postdocs, including most of those graduating from 2011 to 2015, as is typical for new PhD's in the field. Six are academic faculty, two are research leaders and six others are staff scientists in private or public institutions. Others are in such careers as Master Brewer, Business Leader, and Plant Disease Diagnostician. Likewise, at least three of those receiving an MS are employed in related fields, and one is not employed by choice. In 2014, one of the recently graduated PhD students was provided the opportunity to teach two courses in the department in order to make her more competitive for her preferred occupation, with the positive result that she then landed a funded position at the University of Florida.

Analysis of results and reflection: The high level of success in placing students, and the diversity of their occupations, indicates that the department is appropriately training students for the job market, and is well respected for that training. The department must continue efforts to train students and postdocs in plant pathology, research science, and oral and written communication.

Ongoing improvement actions: The department course curriculum emphasizes development of writing and oral communication skills, as well as proficiency in the discipline. Participation of students and postdocs in scientific meetings is strongly encouraged. Also, graduate students are encouraged to participate in "Preparing Future Faculty" and "College Teaching and Learning Certificate" programs, given by the University of Kentucky Graduate School, and the department funds tuition for students to take the relevant GS courses.

10. Job classifications should accurately reflect duties and responsibilities.

Assessment method: Review of job descriptions by chair and by the Human Resources Department.

Results: Three Agricultural Research Specialist positions (non-graded positions) were reclassified as Agriculture Research Specialist Sr, grade 46. The persons occupying those positions received raises to levels appropriate for a grade 46 position.

Analysis of results and reflection: The position upgrades have enhanced the equity of positions and pay among technical staff in the department.

Ongoing improvement actions: Regular reviews of the JAQs shall be done annually around the time of staff evaluations.