Unit Mission
The mission of the department is to improve humankind’s understanding of plant disease through research and, utilizing this knowledge base, to educate students and residents of Kentucky about plant diseases. By these means, the department serves to promote plant health throughout the Commonwealth and encourage the use of science-based, economically practical disease management practices which seek to minimize environmental consequences.

Unit Objective
PPA Objective 1.1 To recruit and retain high caliber graduate students

Related Goals/Metrics
Ag Goal 1. Prepare Students for Leadership in an Innovation-Driven Economy and Global Society
PPA Goal 1. Prepare Students for Leading Roles in an Innovation-driven Economy and Global Society
PPA Metric 1.1 To maintain enrollment at no less than one graduate student per faculty FTE
PPA Metric 1.2 To maintain a retention rate of at least 80%
PPA Metric 1.3 To maintain average-time-to-Ph.D. at less than six years
PPA Metric 1.4 To maintain at least 20% of the student body on fellowship support
UK Goal 1. Prepare Students for Leading Roles in an Innovation-driven Economy and Global Society.

Related Mission Area
Education

Strategies
Aggressively pursue funding from diverse sources.
Seek new space or reapporportion of existing space.

Assessment Method
Departmental records and/or Institutional Research, Planning and Effectiveness (IRPE) data will be used to track this information annually. Baseline data are listed below under Year 1 Descriptive Results.

Actual Results

Data Tables
Descriptive Results

Year 1
Fall 2009: 26 students to 13 faculty, giving a ratio of two students per faculty FTE. Retention rate is not applicable since is base year for data. These circumstances will continue to be monitored going forward.

Year 2
Fall 2010: 22 students to 12.9 faculty FTE, dropping slightly but remaining comfortably above the target ratio of one student per faculty FTE. Data reflect four students joining the program, two students completing degree, and six students leaving program without completing degree (including two of the new students). This represented a highly unusual year with respect to the number of students leaving the program for various reasons. Retention statistics will continue to be monitored going forward.

Year 3
As of the end of 2011, enrollment in the Plant Pathology Ph.D. program was 20 students for 11.5 faculty FTE, remaining comfortably above the target ratio of one student per faculty FTE. During 2011, 7 students completed PhD, 4 new graduate students were enrolled, and one student left the program.

Analysis of Results and Reflection

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Improvement Actions</th>
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<tbody>
<tr>
<td>Severe budget constraints will make it all but impossible to sustain graduate student enrollment at the Year 1 level. Nonetheless, the graduate student to faculty ratio is expected to continue to exceed 1:1.</td>
<td>No improvement -indeed, retrenchment- is foreseen with respect to graduate student enrollment.</td>
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<tr>
<th>Year 2</th>
<th>Improvement Actions</th>
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<tr>
<td>The number of students leaving without completing degrees (six) was very unusual and unlikely to be repeated in this program within the time frame of this strategic plan. In future years, the graduate student to faculty ratio is expected to continue to be 1:1 or greater.</td>
<td>Continued and greater emphasis on recruitment of high-quality students with strong work ethics and dedication to the discipline should enhance student retention. The departure of six students before the completion of their degrees is an anomaly that the department will, of course, track, however this situation has not happened in the past and, therefore, is not expected to happen again.</td>
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<tr>
<th>Year 3</th>
<th>Improvement Actions</th>
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<tbody>
<tr>
<td>The Director of Graduate Studies and the department chair are looking closely at applicants to the program to identify students with strong work ethic and dedication to the discipline. The graduate student to faculty ratio remains above 1:1, continuing to meet the goal.</td>
<td>The department will continue to emphasize recruitment and retention of high-quality graduate students. Recruitment becomes more difficult in an era of shrinking budgets, but this department has a national and international reputation as the top plant pathology program in the country, which helps with recruitment despite modest research assistant stipends. The department will continue to seek funding sources for graduate students and also engage in space utilization to enhance the graduate student experience.</td>
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<tr>
<th>Year 4</th>
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<th>Year 5</th>
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<tr>
<td>Unit Objective</td>
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<td>Related Goals/Metrics</td>
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<td>Related Mission Area</td>
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<td>Strategies</td>
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</table>

**Assessment Method**

Departmental records and/or IRPE data will be used to track these figures annually. Baseline data are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1

Three students were awarded a Ph.D. in 2009 (base year), with an average-time-to-Ph.D. of six years. Six students (=23%) were on fellowship support in Year 1. Such data will continue to be assessed in future years.

Year 2

In the most recently reported (2009) faculty scholarly productivity index rankings of 27 Plant Pathology doctoral programs in the nation (by Academic Analytics), the University of Kentucky program ranked first. One student was awarded a Ph.D. in 2010, five years after beginning the program. Four students were on fellowship support.

Year 3

Seven students were awarded Ph.D. degrees in 2011, with an average time to degree of 5.1 years after beginning the program. Three students were on fellowship support.

Year 4

Year 5
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<th>Improvement Actions</th>
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<tr>
<td><strong>Year 1</strong></td>
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<tr>
<td>Doctoral training is very intensive, in both classroom and laboratory. Seeking &quot;perfect outcomes&quot;, by both students and faculty advisors, may lead to unreasonably extended times-to-degree. Fellowship support is likely to become ever more competitive in the present difficult financial situation, so it is unclear, going forward, what percentage of the student body may receive such support.</td>
<td>Improved average-time-to-Ph.D. will be addressed through student counseling and faculty discussions. The need to pursue all reasonable avenues in seeking fellowship support will be addressed.</td>
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<td><strong>Year 2</strong></td>
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<tr>
<td>The top ranking by Academic Analytics, and the fact that the department has consistently ranked in the top 4 plant pathology programs over the past three rankings (for 2005, 2007 and 2009), indicates that the program serves the needs of graduate students very well. Time required to complete an acceptable thesis or dissertation depends upon the expectations of the advisor and advisory committee. A common yardstick is the number of publishable units incorporated as chapters; for example, one for MS and three for PhD. However, some research areas yield publications more frequently than others, and outcomes of scientific experiments are, by definition, unknown before they are conducted. Advisors and committees need to recognize such variables and the importance of a reasonable time to degree.</td>
<td>The department will continue to improve average-time-to-Ph.D. through student counseling and faculty discussions. All reasonable avenues for fellowship support will be actively explored and pursued by the department.</td>
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<td><strong>Year 3</strong></td>
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<tr>
<td>Over the past three years, 11 students have received Ph.D. degrees in the Plant Pathology program, averaging nearly 4 degrees awarded per year. Furthermore, the average time to degree of 5.1 years is well within the goal of less than 6 years. Faculty members are providing outstanding mentoring to graduate students so that degree completion stays on target.</td>
<td>Through strong mentoring, efforts continue to keep the average time-to-degree well under 6 years for Ph.D completion. Graduate student recruitment will continue in the effort to keep the number of enrolled students well over one per FTE. All reasonable avenues for fellowship support will be sought, including internal Graduate School fellowships and external fellowships. The director of graduate studies continues to focus on these metrics and encourage faculty to also concentrate on timely degree completion, while also recognizing that the students’ research and publication records are crucial to their career advancement.</td>
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<td><strong>Year 4</strong></td>
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<td><strong>Year 5</strong></td>
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<tr>
<td><strong>Unit Objective</strong></td>
<td>PPA Objective 2.1 To comprehend, more completely, the complex interrelationships of plants and their pathogens and parasites</td>
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<tr>
<td><strong>Related Goals/Metrics</strong></td>
<td>Ag Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social and Economic Capital of Kentucky and the World Beyond its Borders</td>
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<td>PPA Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social and Economic Capital of Kentucky and the World Beyond its Borders</td>
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<td>PPA Metric 2.1 To maintain extramural funding at no less than $100,000 per year per research faculty FTE</td>
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<td>PPA Metric 2.2 To maintain refereed publications at no less than two per year per research faculty FTE</td>
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<td>PPA Metric 2.3 To maintain plant disease management publications at no less than two per year per Extension faculty FTE</td>
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<td>PPA Metric 2.4 To maintain a faculty scholarly productivity ranking in the top ten, nationally, for Plant Pathology programs</td>
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<tr>
<td></td>
<td>UK Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social, and Economic Capital of Kentucky and the World beyond its Borders.</td>
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</tbody>
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| **Related Mission Area** | Research and Creative Work |

**Strategies**

Aggressively pursue extramural research funding, locally, regionally and nationally from commodity-oriented, corporate, state and federal sources. Seek new space or reapportionment of existing space.

**Assessment Method**

The College of Agriculture Kentucky Experiment Station Annual Reports and annual departmental reports will be used to track these data over the years. Baseline data are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1

In 2009, the Plant Pathology department published 34 refereed journal articles in 2009, representing 4.25 per research faculty FTE and 2.62 per total faculty member cohort for the year. The College of Agriculture Annual Report for 2009 (base year) indicated extramural funding of $2,336,296; this represents $292,037 per research faculty FTE (8 faculty).

Year 2

In 2010, faculty in the department authored 41 refereed journal articles, 4 book chapters, and 21 other research publications, and received $2,150,110 in grant funding, which represents $268,764 per research faculty FTE (8 faculty).

Year 3

In 2011, faculty in the department authored 25 refereed journal articles, 6 book chapters, and 22 other research publications. Research faculty received $1,353,367 in grant funding, which represents $180,449 per research faculty (7.5 FTE).

Year 4

Year 5
## Analysis of Results and Reflection

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<tr>
<td>The faculty has proven very successful in gaining major, competitive funding from national agencies. In a continuing, competively intensive environment, it is not clear if equivalent success can be maintained and greater effort may need to be directed towards alternative funding sources (e.g. foundations, industry). It is anticipated that the faculty will continue to assure prompt publication of investigative results in relevant, leading journals.</td>
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<tr>
<th>Year 2</th>
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<tr>
<td>The department continues to be highly selective in garnering resources for research and in publishing research findings on plant pathogens and plant-microbe/parasite interactions. The 2011 results show that faculty have increased publication numbers. The small decrease in grant dollars is expected, based on reduced resources at the federal level. Hires of two additional research faculty would help greatly to broaden coverage of the field, allowing research questions to be addressed for example on plant pathogenic bacteria and parasitic nematodes. However, current economic conditions and a lack of available laboratory and office space make prospects unlikely for such new hires in the next two years.</td>
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<tr>
<th>Year 3</th>
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<tr>
<td>The department continues to be highly productive in garnering resources for research and in publishing research findings on plant pathogens and plant-microbe/parasite interactions. The downturn in grant dollars follows the general trend at the university level.</td>
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| Year 4 |
| Year 5 |

## Improvement Actions

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<th>Improvement Actions</th>
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<tbody>
<tr>
<td>Research faculty members will continue their pursuit of extramural funding as well as timely publication of their programs' research findings in major, high-impact, refereed journals.</td>
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| |
| The department chair will continue to seek ways to hire additional faculty members, although with the current climate of additional budget cuts, efforts to hire new faculty may be moot. The department chair will continue to encourage faculty members to seek grants and pursue journal articles. |

<p>| The department would benefit by hiring at least two additional research faculty at such time as funds and space become available. Such faculty would help maintain traditional areas of expertise in plant virology, plant mycology, and plant disease physiology. Current prospects for the necessary resources, however, make such hires unlikely in the near future. The department chair will continue to encourage faculty to do more with less by discussing the budget situation in faculty meetings and during conversations with individual faculty members. |</p>
<table>
<thead>
<tr>
<th>Unit Objective</th>
<th>PPA Objective 2.2 To pursue applied research to provide state-of-the-art management recommendations for problematic plant diseases in Kentucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Goals/Metrics</td>
<td>Ag Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social and Economic Capital of Kentucky and the World Beyond its Borders</td>
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| Related Mission Area | Research and Creative Work |

**Strategies**

Aggressively pursue extramural research funding, locally, regionally and nationally from commodity-oriented, corporate, state and federal sources. Seek new space or reappropriation of existing space.

**Assessment Method**

The College of Agriculture Kentucky Experiment Station Annual Reports, annual departmental reports, Academic Analytics' data and/or other national rankings will be used to track this information over the years. Baseline data are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1

Fifteen plant disease management publications were listed for Plant Pathology in the College of Agriculture Annual Report for 2009 (base year), representing 3.75 per Extension faculty FTE. In the most recently reported (2007) faculty scholarly productivity index rankings of Plant Pathology doctoral programs in the nation (by Academic Analytics), the University of Kentucky program was fourth.

Year 2

The Plant Pathology Department published 21 plant disease management reports in 2010, representing more than six per Extension faculty FTE.

Year 3

The Plant Pathology Department hired a new Extension Specialist, who started her appointment in August, 2011, bringing the total to 4.0 FTE. Extension Plant Pathology published 22 plant disease management reports in 2011, representing more than five per Extension faculty FTE.

Analysis of Results and Reflection

Year 1

Informing the grower community of improved plant disease management strategies is an on-going goal for Extension Plant Pathology. While national rankings of program standings are necessarily problematic because of the particular data selected as the basis for comparative analysis, the University of Kentucky department will strive to maintain a high ranking in any reasonable, objective study.

Year 2

Extension faculty did conduct and report applied research pertinent to their plant commodity responsibilities. The Extension Specialists in Plant Pathology have proven highly active in their contacts and productive in publications and workshops. However, the current Extension faculty FTE of 3.4 in the department is less than optimal to cover disease diagnosis and management recommendations for food, fiber and amenity plants throughout the Commonwealth. The anticipated full retirement of the current post-retirement appointee will reduce this number to 3.0 FTE unless a replacement is hired.

Year 3

The Plant Pathology Extension program benefited from the hire of a new faculty member, and continued to be very active and productive.

Year 4

Year 5

Improvement Actions

Year 1

Extension faculty will continue to conduct and report applied research pertinent to their plant commodity responsibilities. It will be key that Extension faculty members seek far and wide for the funding necessary to support their laboratory and field studies.

Year 2

A critical need is to hire a new, full time, Extension Plant Pathologist on the faculty to address disease issues, particularly in fruit, nut and ornamental plants.

Year 3

An Extension Plant Pathologist was hired on August 1, 2011. All four extension faculty diligently continue to seek funding in support of laboratory and field studies.
<table>
<thead>
<tr>
<th>Unit Objective</th>
<th>PPA Objective 3.1 To recruit and retain top-tier faculty</th>
</tr>
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<tbody>
<tr>
<td>Related Goals/Metrics</td>
<td>Ag Goal 3. Develop the Human and Physical Resources of the College to Achieve Top 20 Stature</td>
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<td>PPA Goal 3. Develop the Human and Physical Resources of the University to Achieve the Institution’s Top 20 Goals</td>
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<td>PPA Metric 3.1 To increase faculty numbers from thirteen to fifteen</td>
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<td>PPA Metric 3.2 To aim for local, regional, national and international faculty professional achievement honors at no less than one per two years</td>
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<td>PPA Metric 3.3 To increase the total staffing level (clerical, technical, professional) by 15% by 2014</td>
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<td>PPA Metric 3.4 To maintain postdoctoral research scholar enrollment at no less than one per faculty FTE</td>
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<tr>
<td>Related Mission Area</td>
<td>Research and Creative Work</td>
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### Strategies
- Maintain the department's strong standing in its field, nationally.
- Maintain the department's recognition on campus.
- Aggressively pursue extramural research funding locally, regionally, and nationally from commodity-oriented, corporate, state and federal sources.
- Seek new space or reapportionment of existing space.

### Assessment Method
The department chair will gather this information from faculty members and departmental records for annual tracking. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

### Actual Results

### Data Tables
Descriptive Results

Year 1

In 2009 (base year), there were 13 faculty members. However, one was in phased retirement at 50% effort, and one held a post-retirement appointment at 40% effort. The number of members of the faculty will be monitored in succeeding years, with a desired five-year target of 15 faculty members. Two faculty received professional achievement honors in 2009; the Outstanding Plant Pathologist Award from the American Phytopathological Society's Southern Division (to J. Hartman) and the M.D. Whiteker Excellence in Extension Award from the Kentucky Association of State Extension Specialists (to D. Hershman).

Year 2

In 2010 the department had a total of 12.9 FTE, including 12 full-time faculty, one in phased retirement at 50% effort, and one with a post-retirement appointment at 40% effort. Faculty in the department authored 41 refereed journal articles, 4 book chapters, and 21 other research publications, and received $2,150,110 in grant funding. One faculty was invited to join the editorial board of PLoS Pathogens, a highly prestigious journal published by the Public Library of Science. One was requested by the U.S. Department of Agriculture to serve on a review committee for the Plant Pathology Department at the University of Nebraska, Lincoln. One of the department faculty received the Bobby Pass Excellence in Grantsmanship Award. Three Extension faculty received the Laura Clay Award at the Kentucky Women in Ag Conference, in recognition of their service on Ag Development Team II, which provided education to agricultural professionals serving in Afghanistan.

Year 3

The Plant Pathology Department hired a new Extension Assistant Professor, who started her appointment on August 1, 2011. In Fall 2011 the department had a total of 12.5 FTE, including 12 full-time faculty, plus one in phased retirement at 50% effort. The former department chair retired on January 3, 2012, and that faculty line has not been replaced due to anticipated, severe budget cuts. Faculty in the department authored 25 refereed journal articles, 6 book chapters, and 22 other research publications, and received more than $2 million in grant funding.

Year 4

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<tr>
<th>Year 1</th>
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<tr>
<td>In the present budgetary circumstances, and with current college space limitations, it will require bold action by Administration to allow the department to grow to a faculty of 15 by 2014. There seems no reason that, given the high standing of faculty members amongst their peers, they will not continue to receive professional achievement honors.</td>
<td>In Academic Year, 2009-2010, the department received a comprehensive review, with a majority of Review Team members coming from major Land-Grant Universities outside Kentucky. In the Final Report, there was the following key recommendation, &quot;The Review Team strongly endorses the departmental 5-year strategic goal of increasing the faculty numbers from 13 to 15 by the year 2014.&quot; The department will press for action at the college and/or main campus level, which will be necessary to fulfill this recommendation. Faculty will continue to be nominated for appropriate professional achievement honors.</td>
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<th>Year 2</th>
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<tr>
<td>The department chair pressed for action to be able to hire another faculty member, but his action failed due to the budget situation. However, faculty in the department continue to perform at a very high standard. In the present budgetary circumstances, and with current college space limitations, it is unlikely that Administration will allow the department to grow to a faculty of 15 by 2014.</td>
<td>Continued provision of necessary infrastructure for conduct of their research, extension and instruction is essential for retention of existing faculty. This and additional laboratory and office space will be required for recruitment of outstanding new faculty. Prospects to increase to 15 faculty remain dim in the current economic climate.</td>
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<tr>
<td>As of January 3, 2012, the department experienced a net decrease of more than one FTE to 11.5. In the present budgetary circumstances, and with current college space limitations, it is highly unlikely that the department can approach 15 FTE by 2014. Faculty in the department continue to perform at a very high standard. The hiring of a new Extension Assistant Professor was crucial to maintaining the strength of the department Extension program.</td>
<td>One faculty vacancy is anticipated at the end of CY 2013, and the plan is to fill that vacancy if funds and space are available. Continued provision of necessary infrastructure for conduct of research, extension, and instruction is essential for retention of existing faculty. Prospects to increase to 15 faculty remain dim in the current economic climate. The department chair will continue to encourage faculty members to do more with less.</td>
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<p>| Year 4 | Year 5 |</p>
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<tr>
<th>Unit Objective</th>
<th>PPA Objective 3.2 To recruit and retain outstanding staff</th>
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<tbody>
<tr>
<td>Related Goals/Metrics</td>
<td>Ag Goal 3. Develop the Human and Physical Resources of the College to Achieve Top 20 Stature</td>
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<td>PPA Goal 3. Develop the Human and Physical Resources of the University to Achieve the Institution’s Top 20 Goals</td>
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<td>Research and Creative Work</td>
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**Strategies**
Recruit from diverse sources.
Irrespective of personnel category -student, faculty or staff- targeted recruitment endeavors will be engaged as a significant activity.

**Assessment Method**
The department chair will track this information annually. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
**Descriptive Results**

**Year 1**

In 2009 (base year), there were 4.6 (one in phased retirement at 60% effort) clerical staff, 10.25 (a shared Computer Support Specialist II serves one quarter time in Plant Pathology) technical staff and 8 professional staff. Staff numbers in the different categories will be monitored in succeeding years. The desired five-year target is a 15% increase in staff numbers.

**Year 2**

In 2010 there were 4.6 (one in phased retirement at 60% effort) clerical staff, 10.25 (a shared Computer Support Specialist II serves one quarter time in Plant Pathology) technical staff and 8 professional staff. Staff numbers in the different categories will be monitored in succeeding years. Thus, staff numbers were static in 2010. The desired five-year target is a 15% increase in staff numbers.

**Year 3**

In 2011 there were 4.6 (one in phased retirement at 60% effort) clerical staff, 10.25 technical staff (a shared Computer Support Specialist II serves one quarter time in Plant Pathology), and 8 professional staff. Staff numbers in the different categories will be monitored in succeeding years. Thus, staff numbers were static in 2011. Current budget considerations make it unlikely that additional staff can be hired.

**Year 4**

**Year 5**

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<tr>
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<th>Improvement Actions</th>
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<tr>
<td><strong>Year 1</strong></td>
<td>The staffing level is presently barely adequate to cover departmental operations and will certainly be inadequate if additional faculty hiring occurs, as hoped. Action at the college level will be necessary for staff growth to occur.</td>
</tr>
<tr>
<td><strong>Year 2</strong></td>
<td>Maintenance of staff at current levels is desired and was achieved.</td>
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<tr>
<td>One of the clerical staff left for professional school, opening a vacancy which was filled. Thus, there was no net change in staff numbers.</td>
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<tr>
<td><strong>Year 3</strong></td>
<td>Maintenance of staff at current levels is desired and was achieved.</td>
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<tr>
<td>The Computer Specialist II, paid at 0.25% by this department, resigned. A replacement was identified and is also paid at 0.25% by this department. No other staff turnover occurred during 2011-2012. Current technical staff are performing at a very high level, as evidenced by the success of the research and extension programs. Clerical staff maintain an intense work schedule in support of the department efforts, and also perform at a very high level.</td>
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</table>
Unit Objective
PPA Objective 3.3 To recruit and retain superior postdoctoral scholars

Related Goals/Metrics
Ag Goal 3. Develop the Human and Physical Resources of the College to Achieve Top 20 Stature
PPA Goal 3. Develop the Human and Physical Resources of the University to Achieve the Institution’s Top 20 Goals
PPA Metric 3.1 To increase faculty numbers from thirteen to fifteen
PPA Metric 3.2 To aim for local, regional, national and international faculty professional achievement honors at no less than one per two years
PPA Metric 3.3 To increase the total staffing level (clerical, technical, professional) by 15% by 2014
PPA Metric 3.4 To maintain postdoctoral research scholar enrollment at no less than one per faculty FTE
UK Goal 3. Develop the Human and Physical Resources of the University to Achieve the Institution's Top 20 Goals.

Related Mission Area
Research and Creative Work

Strategies
Recruit from diverse sources.
Irrespective of personnel category -student, faculty or staff- targeted recruitment endeavors will be engaged as a significant activity.

Assessment Method
Departmental records, SAP employment records, and/or IRPE data will be used to track this information annually. Baseline data are listed below under Year 1 Descriptive Results.

Actual Results

Data Tables
Descriptive Results

Year 1

In 2009 (base year), there were 22 postdoctoral research scholars in the department. Given that there were 13 faculty members, the postdoctoral research scholar enrollment comfortably exceeded one per faculty FTE. The postdoctoral research scholar cohort number will continue to be monitored in future years.

Year 2

In 2010 there were 20 postdoctoral research scholars in the department. Given that there were 12 full-time faculty members, eight of whom had principally a research appointment, the postdoctoral research scholar enrollment comfortably exceeded one per faculty FTE. The postdoctoral research scholar cohort number will continue to be monitored in future years.

Year 3

As of Fall 2011, there were 19 postdoctoral research scholars in the department. This number greatly exceeded the target of one per faculty FTE.

Analysis of Results and Reflection

Year 1

Postdoctoral research scholars are vital to maintaining a well-rounded, dynamic and diverse research enterprise. Given the extremely competitive funding environment, it is unlikely that the base number of 22 postdoctoral research scholars will grow, but the intent will certainly be to maintain postdoctoral research scholar enrollment at no less than one per faculty FTE.

Year 2

Faculty have continued to be successful in obtaining extramural grants, which allows them to fund postdoctoral research scholars. The optimal number of postdoctoral research scholars in the unit depends on needs of individual research programs, available space and funding, and employment opportunities after completion of tenure as postdoctoral scholars. The two year trend suggests that the number of postdoctoral scholars per faculty has remained stable. Current economic conditions may necessitate a reduction in that number, but it seems likely that a ratio greater than one per faculty will be sustainable for the foreseeable future.

Year 3

The post-doctoral research scholars to faculty FTE ratio remains above 1:1, surpassing the goal. The current trend to exceed the 1:1 goal seems likely to continue, despite the downturn in extramural funding.

Improvement Actions

Year 1

The faculty will continue its aggressive pursuit of extramural funding which is key to maintaining a significant body of post-doctoral research scholars.

Year 2

The faculty will continue its aggressive pursuit of extramural funding which is key to maintaining a significant body of post-doctoral research scholars.

Year 3

The faculty will continue to aggressively pursue extramural funding which is key to maintaining a significant body of post-doctoral research scholars. The department chair will monitor trends regarding the number of postdoctoral scholars and discuss the numbers with faculty as needed.

Year 4

Year 5
<table>
<thead>
<tr>
<th>Unit Objective</th>
<th>PPA Objective 4.1 To maintain gender/racial/cultural diversity in the student body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Goals/Metrics</td>
<td>Ag Goal 4 Promote Diversity and Inclusion</td>
</tr>
<tr>
<td></td>
<td>PPA Goal 4. Promote Diversity and Inclusion</td>
</tr>
<tr>
<td></td>
<td>PPA Metric 4.1 To maintain female enrollment in the graduate student cohort at no less than 35%</td>
</tr>
<tr>
<td></td>
<td>PPA Metric 4.2 To maintain enrollment of graduate students not traditionally represented in science at no less than 15%</td>
</tr>
<tr>
<td></td>
<td>PPA Metric 4.3 To increase female faculty numbers by 50% by 2014</td>
</tr>
<tr>
<td></td>
<td>PPA Metric 4.4 To seek to hire no less than two minority staff members by 2014</td>
</tr>
<tr>
<td>Related Mission Area</td>
<td>UK Goal 4. Promote Diversity and Inclusion</td>
</tr>
</tbody>
</table>

**Strategies**
Irrespective of personnel category - student, faculty or staff - targeted recruitment endeavors will be engaged as a significant activity.
Recruit from diverse sources.

**Assessment Method**
Departmental records and/or IRPE data will be used to track this information annually. Baseline data are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1

Of the 26 graduate students enrolled in 2009 (base year), 15 were female (i.e. 58%). Also, of the 26 student cohort, one was an African American female, one an African American male, and two were Hispanic American females. Thus, 15% of the student enrollment was from groups not traditionally well represented in science. Individuals from ten different nations composed the student body. The gender/racial/cultural make-up of the graduate student cohort was diverse.

Year 2

Of the 25 graduate students enrolled in 2010, 14 were female (i.e. 56%). Also, of these 25 students, one was an African-American female, one was an African-American male, and two were Hispanic-American females. Thus, 14% of the student enrollment was from groups not traditionally well represented in science. Individuals from nine different nations composed the student body. During 2010, six students left the program, including the African-American female and three other females. Although this did not cause major demographic change, the reduction in student numbers and failure to retain a domestic minority student were of concern. The minority student who left did so at least partly because of economic reasons, considering it too expensive to her family to devote the necessary time to graduate study, and instead taking a company lab technician job.

Year 3

Of the 7 students completing Ph.D. degrees in 2011, one was African-American and one was Hispanic-American, and 4 were female. Of the 20 graduate students enrolled in the program at the close of calendar year 2011, 10 were female (i.e. 50%), one of whom was Hispanic-American. Individuals from nine different nations composed the student body. Thus, the gender/racial/cultural make-up of the graduate student cohort, and of those successfully completing their degrees, was diverse.

Year 4

Year 5
### Analysis of Results and Reflection

#### Year 1

Women have proven themselves interested in, and successful at, the study of plant pathology and there is no reason to foresee any change in this circumstance. Maintaining and growing enrollment from groups not traditionally well represented in science may prove a significant challenge.

#### Year 2

The department's focus on the recruitment of women and students from underrepresented groups holds steady in regard to outcomes. During a period of shrinkage in student numbers, continued retention of three out of four domestic minority students ensured maintenance of the proportion of minority and other graduate students in the program. However, additional student recruitment is necessary to maintain the target ratio of graduate students to faculty, and inclusion of U.S. minority representation in the new student class is desirable.

#### Year 3

Efforts to recruit students through regional teaching colleges and undergraduates in other colleges at UK, as well as students at KSU, are beginning to show some success. Successful completion of the PhD by members of groups underrepresented in the discipline is an important accomplishment, and those individuals will serve as outstanding role models for future prospective graduate students. It is noteworthy that two out of three domestic students completing the PhD were underrepresented minorities. Furthermore, of the two remaining domestic students in the program, one is Hispanic American. Thus, among domestic students the proportion of minorities has been and remains very high. However, a future increase in domestic students overall, and particularly in U.S. minority representation, is desirable to maintain diversity. Also, continued gender balance among domestic and international students is desirable.

#### Year 4

#### Year 5

### Improvement Actions

The department need only continue its past successful recruitment efforts to maintain female enrollment in the graduate student cohort at no less than 35%, for the base year (2009) figure is comfortably ahead of this target. On the other hand, intensive and targeted recruiting will need to be an on-going action to bolster enrollment of graduate students not traditionally well represented in science.

Recruitment efforts in the Plant Pathology graduate program will continue to target the domestic pool, and applications from minority students will be encouraged. Faculty will be encouraged to increase contacts with regional teaching colleges and undergraduates in other colleges, including 1890 schools such as Kentucky State University. Appropriate departments in such institutions will also be targeted for advertisement.

The Plant Pathology department will continue to actively recruit domestic students, particularly those from historically underrepresented groups, from 1890 schools such as Kentucky State University, regional teaching colleges, and undergraduates in other UK colleges.
<table>
<thead>
<tr>
<th>Unit Objective</th>
<th>PPA Objective 4.2 To enhance gender/racial/cultural diversity in the faculty</th>
</tr>
</thead>
</table>
| Related Goals/Metrics | Ag Goal 4 Promote Diversity and Inclusion  
| | PPA Goal 4. Promote Diversity and Inclusion  
| | PPA Metric 4.1 To maintain female enrollment in the graduate student cohort at no less than 35%  
| | PPA Metric 4.2 To maintain enrollment of graduate students not traditionally represented in science at no less than 15%  
| | PPA Metric 4.3 To increase female faculty numbers by 50% by 2014  
| | PPA Metric 4.4 To seek to hire no less than two minority staff members by 2014  
| | UK Goal 4. Promote Diversity and Inclusion |
| Related Mission Area | Overall |

**Strategies**

Irrespective of personnel category -student, faculty or staff- targeted recruitment endeavors will be engaged as a significant activity. Recruit from diverse sources.

**Assessment Method**

Departmental records will be used to track this information annually. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1

Of the 13 faculty on board in 2009 (base year), two were women (i.e. 15%). The target is to hire at least one, and ideally two, additional female faculty members in the next five years.

Year 2

There were no new faculty hires in the department.

Year 3

A new Extension Assistant Professor was hired, effective August 1, 2011. The applicant pool was diverse, including three females, two of whom were interviewed, and one hired. This increased representation of females to three out of the 12 full-time faculty, bringing the proportion of female full time faculty in the program to 25%.

Year 4

Year 5

Analysis of Results and Reflection

Improvement Actions

Year 1

It is unclear if, given present financial and space constraints, it will be possible to address pursuing any additional faculty hiring. Certainly, it will take bold action by college and/or campus administrators to allow such a step. Traditionally, turnover of on-board faculty members has been slow, suggesting that it is only through new, additional hires that female representation amongst the faculty can grow.

Year 2

The department was not able to get permission to advertise for a new faculty member. The current balance of two females among a total of 12 faculty will remain so long as there are no new faculty hires.

Year 3

The department did receive permission to hire a new faculty member in year three and the candidate chosen is a woman. The addition of a female faculty member this year represents excellent progress toward diversity of the faculty body in the department. Furthermore, the new faculty member, being an Extension Plant Pathologist, will present a very public face of diversity.

Year 4

Year 5

The intended action -the Administration permitting- is to increase the faculty cohort from 13 to 15 by 2014. Aggressive recruiting efforts will be made towards at least one, and ideally both, new hires being female. One such hiring would increase female faculty numbers by 50%. If the department receives permission to recruit a new faculty member, the department will follow college guidelines about hiring practices, which includes strong efforts to recruit women. These efforts will include making contacts at professional meetings, talking with colleagues at other institutions, and broadly advertising the open position.

Women and minorities will be encouraged to apply for any new faculty position should the Administration permit such a hire.

Having achieved an increase in female representation with a hire in 2011, future faculty searches (should hiring be permitted) will involve a similar strategy of encouraging female and minority applicants.
<table>
<thead>
<tr>
<th>Related Mission Area</th>
<th>Overall</th>
</tr>
</thead>
</table>

**Unit Objective**

- PPA Objective 4.3 To enhance gender/racial/cultural diversity in the staff

**Related Goals/Metrics**

- Ag Goal 4 Promote Diversity and Inclusion
- PPA Goal 4. Promote Diversity and Inclusion
- PPA Metric 4.1 To maintain female enrollment in the graduate student cohort at no less than 35%
- PPA Metric 4.2 To maintain enrollment of graduate students not traditionally represented in science at no less than 15%
- PPA Metric 4.3 To increase female faculty numbers by 50% by 2014
- PPA Metric 4.4 To seek to hire no less than two minority staff members by 2014
- UK Goal 4. Promote Diversity and Inclusion

**Strategies**

Irrespective of personnel category - student, faculty or staff - targeted recruitment endeavors will be engaged as a significant activity. Recruit from diverse sources.

**Assessment Method**

Departmental records will be used to track this information annually. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

**Actual Results**

**Data Tables**
Descriptive Results

Year 1
Of the 24 staff, two of whom were part-time, working in the department in 2009 (base year), 16 were female (i.e. 67%). None of the 24 were African American or Hispanic American though four were foreign-born, representing three different nations. The number and gender/ethnic composition of the staff will be monitored in succeeding years, with a target of hiring no less than two minority staff members by 2014.

Year 2
In 2010 the department had 24 staff, one of whom was part-time. Of these, 16 were female (i.e. 67%), none were African American or Hispanic American, and four were foreign-born, representing three different nations. One of the office staff (female) resigned to attend professional school, and one (female) was hired into her position, with no net change in ethnic composition. Although well advertised through the university hiring system, with encouragement of minority applications, no qualified minority members were identified.

Year 3
In 2011 the department had 24 staff, one of whom was part-time. Of these, 16 were female (i.e. 67%), none were African American or Hispanic American, and four were foreign-born, representing three different nations.

Year 4

Year 5

Analysis of Results and Reflection

Year 1
While both genders are well represented amongst the departmental staff and there is considerable cultural diversity, there are no staff members from minority American constituencies. This latter circumstance may reflect a historical deficiency of adequate scientific training amongst traditionally underrepresented groups making candidates largely unavailable. This circumstance has likely now changed, and greater diversity should be achievable going forward.

Year 2
Only one staff member retired in year 2. A lack of qualified minority applicants for the sole staff vacancy precluded any significant demographic change.

Year 3
There were no staff vacancies during the year, so the Plant Pathology staff demographics remain unchanged from the previous year.

Year 4

Year 5

Improvement Actions

Year 1
Hoped for staff expansion plus some resignation or retirement activity may provide opportunities to diversify the staff composition. The intent is that at least two minority staff members will be hired by 2014. Action in this regard may be frustrated by budget circumstances, since it is unclear at the present juncture whether one-for-one replacement, far less expansion, will be permitted.

Year 2
Should staff vacancies arise in future, underrepresented minorities will be encouraged to apply.

Year 3
When staff vacancies arise in future, the department will encourage underrepresented minorities to apply.
**Unit Objective**
PPA Objective 5.1 To educate Kentucky's agricultural community and homeowners about plant diseases and their management

**Related Goals/Metrics**
- Ag Goal 5 Improve the Quality of Life for Kentuckians through Extension, Outreach and Service
- PPA Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach and Service
- PPA Metric 5.1 To maintain engagement/outreach/public service contacts at no less than 10,000 per year per Extension faculty FTE
- PPA Metric 5.2 To maintain plant disease diagnoses at no less than 2,500 per year
- UK Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach, and Service.

**Related Mission Area**
Service

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### Strategies

Faculty recruitment to four, full-time Extension FTE's will be the highest priority.

By 2014, expansion to five, full-time Extension FTE's is the target.

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### Assessment Method

The College of Agriculture CatPaws reporting system and/or departmental records will be used to track this information annually. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

### Actual Results

### Data Tables

### Descriptive Results

#### Year 1

In 2009 (base year), the four faculty dedicated to Extension accounted for 53,975 engagement/outreach/public service contacts. This averages to 13,494 contacts per faculty member contributing to Extension's educational role, ahead of the target of no less than 10,000 contacts per Extension faculty FTE. Equivalent contact information will be monitored in succeeding years.

#### Year 2

In 2010, responsibilities of the Extension faculty were redistributed to minimize impact of the reduced FTE, and the newly retired Extension Professor was rehired at 40%, giving the department 3.4 FTE dedicated to Extension Plant Pathology. This group accounted for 60,907 engagement/outreach/public service contacts, for an average of 17,914 contacts per FTE.

#### Year 3

On August 1, 2011, a newly hired Extension Assistant Professor brought the total Extension FTE in the Department of Plant Pathology to 4.0. This group accounted for 64,325 engagement/outreach/public service contacts, for an average of 16,081 contacts per FTE.

#### Year 4

#### Year 5
### Analysis of Results and Reflection

**Year 1**
One of the pertinent faculty holds a post-retirement appointment. When that appointment is finished and if budgetary circumstances delay or prevent rehiring, then the degree of current Extension outreach activities will likely be compromised.

**Year 2**
Even though the numbers continue to rise, manpower is stretched. The Extension FTE of 3.4 stretched the ability of the department to address all needs. An increase to at least 4.0 FTE is highly desirable.

**Year 3**
The newly hired Extension Assistant Professor, has been very active, and complements the other three Extension Plant Pathologists in addressing needs of the Commonwealth.

**Year 4**

**Year 5**

### Improvement Actions

No improvement action is necessary at this time since substantial professional contacts and educational endeavors are being undertaken to educate Kentucky’s agricultural community and homeowners about plant diseases and their management. Improvement would only be practicable with enhanced manpower.

The most important action to undertake is the hiring of a new, full-time Extension Plant Pathologist.

The continued training of the new Extension Assistant Professor to address plant disease issues for ornamentals, fruit and nut crops will complement existing expertise in Extension Plant Pathology to provide a broad-based coverage of plant pathology-related issues in the Commonwealth.
Unit Objective
PPA Objective 5.2 To monitor and investigate plant diseases with respect to their impact on the resources and economy of Kentucky

Related Goals/Metrics
Ag Goal 5 Improve the Quality of Life for Kentuckians through Extension, Outreach and Service
PPA Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach and Service
PPA Metric 5.1 To maintain engagement/outreach/public service contacts at no less than 10,000 per year per Extension faculty FTE
PPA Metric 5.2 To maintain plant disease diagnoses at no less than 2,500 per year
UK Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach, and Service.

Related Mission Area
Service

Strategies
Faculty recruitment to four, full-time Extension FTE’s will be the highest priority.
By 2014, expansion to five, full-time Extension FTE’s is the target.

Assessment Method
The College of Agriculture CatPaws reporting system and/or departmental records will be used to track this information annually. Baseline data and the desired targets are listed below under Year 1 Descriptive Results.

Actual Results

Data Tables
Descriptive Results

Year 1
In 2009 (base year), the four faculty dedicated to Extension accounted for 53,975 engagement/outreach/public service contacts. In addition, in 2009, the total number of diagnoses recorded through the two plant disease diagnostic laboratory locations was 4,393. In both cases, the numbers exceed the targets of no less than 10,000 contacts per Extension faculty FTE and no less than 2,500 diagnoses per year. Equivalent contact and diagnosis data will be monitored in succeeding years.

Year 2
In 2010, the 3.4 faculty FTE dedicated to Extension accounted for 60,907 engagement/outreach/public service contacts. In addition, in 2010, the total number of diagnoses recorded through the two plant disease diagnostic laboratory locations was 4,828. In both cases, the numbers exceeded the targets of no less than 10,000 contacts per Extension faculty FTE and no less than 2,500 diagnoses per year. Equivalent contact and diagnosis data will be monitored in succeeding years.

Year 3
A new Extension Assistant Professor was hired, effective August 1, 2011, bringing the total Extension Plant Pathology FTE to 4.0. Extension accounted for 64,325 engagement/outreach/public service contacts, far exceeding the target. In addition, in 2011, the total number of diagnoses recorded through the two plant disease diagnostic laboratory locations was 4,296, also far exceeding the target.

Year 4

Year 5

Analysis of Results and Reflection

Year 1
The manpower level is the greatest concern for the continued monitoring and investigating of plant diseases with respect to their impact on the resources and economy of Kentucky. With a present important and pertinent faculty post-retirement appointee likely soon to enter full retirement, if budgetary circumstances delay or prevent hiring, study of local plant diseases and their consequences will be substantially impaired.

Year 2
Even though Kentucky's agricultural community is currently well-educated to monitoring plant diseases, a shrinking faculty body could be a detriment in a changing environment where the threat of new diseases is ever present. The plan to increase the number of Extension Plant Pathology faculty FTEs to 4.0, if realized, will enhance the department's ability to address plant disease issues in the Commonwealth.

Year 3
Maintenance of at least 4.0 faculty FTEs in the Extension Plant Pathology program is essential to serve the needs of the Commonwealth.

Year 4

Year 5

Improvement Actions

Year 1
Given that substantial professional contacts and diagnoses are presently occurring, no improvement is practicable without enhanced manpower. Kentucky's agricultural community is being well educated with regard to monitoring, investigating and seeking management strategies for plant diseases.

Year 2
The department will request permission to hire a new Extension Specialist at the Assistant Professor level, as a current Specialist on half-time appointment plans to retire.

Year 3
The department will seek to maintain at least 4.0 faculty FTEs in Extension Plant Pathology.
Unit Objective
PPA Objective 5.3 To provide, through the plant diagnostic laboratories, plant disease surveillance as well as real-time educational programming on plant disease activity and distribution

Related Goals/Metrics
Ag Goal 5 Improve the Quality of Life for Kentuckians through Extension, Outreach and Service
PPA Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach and Service
PPA Metric 5.1 To maintain engagement/outreach/public service contacts at no less than 10,000 per year per Extension faculty FTE
PPA Metric 5.2 To maintain plant disease diagnoses at no less than 2,500 per year
UK Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach, and Service.

Related Mission Area
Service

Strategies
Seek more and higher quality, plant disease diagnostic space.
Endeavor to identify a stable funding source(s) for diagnostic services.

Assessment Method
Departmental records regarding diagnoses will be monitored to track this information annually. Baseline data and the desired target are listed below under Year 1 Descriptive Results.

Actual Results
Data Tables

Descriptive Results
Year 1
In 2009 (base year), there were 4,393 total diagnoses recorded by the two plant diagnostic laboratory locations, in Lexington and Princeton. This number can fluctuate year-to-year with different seasons. On this occasion, the target of no less than 2,500 plant disease diagnoses per year was certainly exceeded. Diagnostic numbers will continue to be monitored in future years.

Year 2
In 2010, the plant disease diagnosis laboratories in Lexington and Princeton received a combined total of 4,455 samples and performed 4,828 diagnoses.

Year 3
In 2011, the diagnostic laboratories in Lexington and Princeton received a combined total of 3,883 samples and performed 4,296 diagnoses. A new dissecting microscope was purchased for the Plant Disease Diagnostics Laboratory at Princeton.

Year 4

Year 5
### Analysis of Results and Reflection

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Improvement Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manpower, space and quality-of-facility concerns exist with regard to the Plant Pathology Plant Disease Diagnostic Laboratory, which is split between two locations. Constraints of budget and college space pressures will likely allow no early resolution of the above concerns which, if ultimately left unaddressed, will affect the quality of plant disease surveillance and educational programming activities.</td>
<td>Plant disease surveillance and real-time educational programming on plant disease activity and distribution is presently occurring effectively through the plant diagnostic laboratories, which are functioning ahead of target. However, the department chair will closely monitor the effectiveness of the laboratories.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2</th>
<th>The department chair will press for funding to modernize the laboratories.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant disease surveillance and real-time educational programming on plant disease activity and distribution continue to occur effectively through the plant diagnostic laboratories, which are functioning ahead of target. However, working conditions for staff in the diagnosis laboratories would improve with more space and modern facilities. The plant disease diagnosis laboratory would benefit greatly by expanded modern laboratory space and facilities, and the Princeton site would also benefit by modernization.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3</th>
<th>The department will continue to seek additional funding sources for quality diagnostic equipment and facilities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to budget constraints, extensive modernization of the laboratories is not feasible at this time. Sample and diagnoses numbers declined by 12.8% from 2010 to 2011. The new dissecting scope at Princeton enhances the capabilities there, but both the Lexington and Princeton sites would still benefit greatly by additional modernization of laboratory space and facilities, which would make increases in total sample and diagnoses numbers more feasible.</td>
<td></td>
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<table>
<thead>
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