Assessment Report
For
Department Drug Discovery and Development
(Academic Unit Name)

2013-14 Academic Year  July 3, 2014
(Assessment Period Covered) (Date Submitted)

Includes Assessment Reports for the Instructional Programs listed below:

Title of Degree Program
Doctor of Philosophy in Pharmaceutical Sciences

Degree Level
Ph. D.

Submitted By: C. Randall Clark, Ph. D., Professor and GPO
(Department or Unit Representative)

Form A
Assessment Report
For

Doctor of Philosophy in Pharmaceutical Sciences  Ph. D.
(Instructional Degree Program)  (Degree Level)
Academic Year 2013-14  July 3, 2014
(Assessment Period Covered)  (Date Submitted)

*NOTE: There should be one form B for each degree program offered by your department.*

**Expected Outcomes of this Degree Program:**
*When they complete this degree program, students will be able to ...*

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Experimental Design</td>
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<tr>
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<td>When the students complete this degree program, they will be able to provide evidence of appropriate experimental design skills for the specific field of study.</td>
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<tr>
<td>2.</td>
<td>Data Analysis</td>
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<tr>
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<td>When the students complete this degree program, they will be able to demonstrate their ability to perform data analysis and interpret experimental results.</td>
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<tbody>
<tr>
<td>3.</td>
<td>Scientific Communication</td>
</tr>
<tr>
<td></td>
<td>When the students complete this degree program, they will be able to demonstrate acceptable scientific communication skills.</td>
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</tbody>
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<thead>
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<tbody>
<tr>
<td>4.</td>
<td>Professional Preparation</td>
</tr>
<tr>
<td></td>
<td>When the students complete this degree program, they will be competitive for entry into health related professional and graduate schools, post-graduate programs or the workplace.</td>
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<tbody>
<tr>
<td>5.</td>
<td>Scholarship Production</td>
</tr>
<tr>
<td></td>
<td>When the students complete this degree program, they will have published peer reviewed manuscripts or book chapters.</td>
</tr>
</tbody>
</table>

*If you wish to record additional expected outcomes, simply cut and paste one of the boxes above*
Assessment Report
For

Department of Drug Discovery and Development
(Instructional Degree Program)

Academic Year 2013-14
(Assessment Period Covered)

Ph.D.
(Degree Level)

July 3, 2014
(Date Submitted)

NOTE: There should be at least one form C for each expected outcome listed on form B. If you used more than one assessment method to gather information about an expected outcome, there should be one form C for each assessment method. Thus, if you studied three outcomes during the year and used two means of assessment to gather information about each outcome, you would provide a total of six different copies of form C.

Expected Outcome:

1. Students will provide evidence of appropriate experimental design skills for the specific field of study.

Assessment Method, Brief Description:

Dissertation Rubric (see Appendix)

Assessment Method, Full Description:

During the assessment period three students submitted a dissertation to their examining committee. The dissertation rubric (see appendix) was completed by each student’s major professor or members of their advisory committee. On a scale from 1 (needs improvement) to 3 (excels), each evaluator ranked all sections of the Dissertation Rubric for each student. All subsections of the METHODS/APPROACH and CONCEPTS/THEORY sections of the dissertation rubric were specifically used to assess the experimental design skills of the students.

Assessment Method, Findings:

Each of the three students received ratings of acceptable (2 points) or excels (3 points) in each subsection of the METHODS/APPROACH and CONCEPTS/THEORY sections of the dissertation rubric. More specifically, the average scores for the three students were:

METHODS/APPROACH
   Appropriate for question: 2.67
   Advantages/Disadvantages: 2.33

CONCEPTS/THEORY
   Logical: 3.00
   Appropriate: 2.33
   Aligned with questions: 2.33
   Strengths/Limitations: 2.33

Form C
Based on these data, no weaknesses were noted for this expected outcome.

Assessment Method, Use of Findings for Improvement:
All three students met this expected outcome as demonstrated by their dissertations. They each received a rating of acceptable or better for each of the subsections of the relevant sections of the Dissertation Rubric. Thus, no need for improvement is required at this time. These results will be discussed at the next available departmental faculty meeting for additional input. The department will continue to monitor student performance in this area.

Any Additional Comments?
None
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Expected Outcome:

2. Students will demonstrate their ability to perform data analysis and interpret experimental results.

Assessment Method, Brief Description:

Dissertation Rubric (see Appendix)

Assessment Method, Full Description:

During the assessment period three students submitted a dissertation to their examining committee. The dissertation rubric (see appendix) was completed by each student’s major professor or members of their advisory committee. On a scale from 1 (needs improvement) to 3 (exceeds), each evaluator ranked all sections of the Dissertation Rubric for each student. The Alignment with questions; Interpretation & insights; and Limitations subsections of the RESULTS/ANALYSIS section of the dissertation rubric was used to assess the data analysis and interpretation skills of the students.

Assessment Method, Findings:

Each of the three students received ratings of acceptable (2 points) or excels (3 points) in the Alignment with questions; Interpretation & insights; and Limitations subsections of the RESULTS/ANALYSIS section of the dissertation rubric. More specifically, the average scores for the three students were:

RESULTS/ANALYSIS
Alignment with questions: 2.67
Interpretation & insights: 2.67
Limitations: 2.33

Based on these data, no weaknesses were noted for this expected outcome.

Assessment Method, Use of Findings for Improvement:

All three students met this expected outcome as demonstrated by their dissertations. They each received a rating of acceptable or excels for each of the relevant subsections of the relevant section of the Form C
Dissertation Rubric. Thus, no improvement is required at this time. These results will be discussed at the next available departmental faculty meeting for additional input. In addition, a modification of the Dissertation Rubric to breakout the Clarity of presentation subsection of the RESULTS/ANALYSIS section into a new WRITTEN COMMUNICATIONS section will be considered. The department will continue to monitor student performance in this area.

Any Additional Comments?

None
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Ph.D.
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Expected Outcome:

3. Students will demonstrate acceptable scientific communication skills.

Assessment Method, Brief Description:

Dissertation Rubric (see Appendix)

Assessment Method, Full Description:

During the assessment period three students submitted a dissertation to their examining committee. The dissertation rubric (see appendix) was completed by each student’s major professor or members of their advisory committee. On a scale from 1 (needs improvement) to 3 (excels), each evaluator ranked all sections of the Dissertation Rubric for each student. The Summary subsection of the LITERATURE REVIEW section; Clarity of presentation subsection of the RESULTS/ANALYSIS section; and the Refers to introduction and Ties everything together subsections of the SUMMARY/CONCLUSIONS section were specifically used to assess the written communication skills of the students.

Assessment Method, Findings:

Each of the three students received ratings of acceptable or excels in every subsection of all sections of the dissertation rubric as well as in the Summary subsection of the LITERATURE REVIEW section; Clarity of presentation subsection of the RESULTS/ANALYSIS section; and the Refers to introduction and Ties everything together subsections of the SUMMARY/CONCLUSIONS section of the dissertation rubric. More specifically, the average for the three students were:

LITERATURE REVIEW
Summary section: 2.67

RESULTS/ANALYSIS
Clarity of presentation: 2.67

SUMMARY/CONCLUSIONS
Refers to introduction: 2.67
Ties everything together: 2.67

Form C
Based on these data, no weaknesses were noted for this expected outcome.

Assessment Method, Use of Findings for Improvement:

All three students met this expected outcome as demonstrated by their dissertations. They each received a rating of acceptable or excels for each of the relevant subsections of the relevant section of the Dissertation Rubric. Thus, no improvement is required at this time. These results will be discussed at the next available departmental faculty meeting for additional input. In addition, a modification of the Dissertation Rubric to breakout the Summary subsection of the LITERATURE REVIEW section; Clarity of presentation subsection of the RESULTS/ANALYSIS section; and the Refers to introduction and Ties everything together subsections of the SUMMARY/CONCLUSIONS section of the dissertation rubric into a new WRITTEN COMMUNICATIONS section will be considered. The department will continue to monitor student performance in this area.

Any Additional Comments?

None
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Expected Outcome:

4. Students will be competitive for entry into health related professional and graduate schools, postgraduate programs or the workplace.

Assessment Method, Brief Description:

Post-graduation follow-up

Assessment Method, Full Description:

During the assessment period three students graduated from this program. These students were contacted to determine their current employment status.

Assessment Method, Findings:

Each of the three students obtained positions prior to graduation from the program. One obtained a faculty position at a College of Pharmacy, another obtained a postdoctoral position at a School of Medicine, and the third is a scientist at a pharmaceutical company. No weaknesses were noted for this expected outcome.

Assessment Method, Use of Findings for Improvement:

These students have demonstrated their competitive capabilities on a national and international scale. They were successful at obtaining positions for their future growth as scientists and leaders in their fields of study. The department will continue to monitor these criteria for quality and success of our graduates.

Any Additional Comments?

None

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Expected Outcome:

5. Students will publish peer reviewed manuscripts or book chapters.

Assessment Method, Brief Description:

Post-graduation follow-up

Assessment Method, Full Description:

During the assessment period three students graduated from this program. These students were contacted to obtain a list of publications resulting from their Ph.D. studies.

Assessment Method, Findings:

On average, each of these graduates published 4.7 peer reviewed manuscripts in journals with excellent scientific reputations. In addition, on average, each of these students published 0.7 book chapters.

Assessment Method, Use of Findings for Improvement:

These students have demonstrated their competitive capabilities on a national and international scale. They were successful at presenting their research work to the scientific community via peer reviewed publications and presentations. The department will continue to monitor student performance in this area.

Any Additional Comments?

None

Form C
# APPENDIX

## Dissertation Rubric in Drug Discovery and Development

Student: ________________________  Evaluator: ____________________________

<table>
<thead>
<tr>
<th>Item</th>
<th>Needs Improvement</th>
<th>Satisfactory</th>
<th>Excels</th>
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<tbody>
<tr>
<td><strong>ABSTRACT</strong></td>
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<tr>
<td>Statement of purpose</td>
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<tr>
<td>Hypothesis &amp; design</td>
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<td>Findings</td>
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<tr>
<td>Importance/Relevance</td>
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<tr>
<td><strong>LITERATURE REVIEW</strong></td>
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<tr>
<td>Comprehensive</td>
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<tr>
<td>Current</td>
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<td>Summary</td>
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<tr>
<td>Future direction</td>
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<tr>
<td><strong>CONCEPTS/THEORY</strong></td>
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<td>Logical</td>
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<td>Appropriate</td>
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<td>Aligned with questions</td>
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<tr>
<td>Strengths/Limitations</td>
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<td><strong>METHODS/APPROACH</strong></td>
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<td>Appropriate for questions</td>
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<td>Advantages/Disadvantages</td>
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<td>Refers to introduction</td>
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<td>Ties everything together</td>
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<td>Presents broader perspective</td>
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<td>Implications/Applications</td>
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<tr>
<td>Future directions</td>
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