Assessment Report for the Auburn University College of Veterinary Medicine (AU-CVM) Biomedical Sciences Graduate Program (BMS)

In accordance with AU-CVM/BMS policies and procedures, the following are assessed for all AU-CVM/BMS graduate students annually:

**Technical and Intellectual Engagement**
Graduate students in the AU-CVM/BMS program will have a broad understanding of both the technical and intellectual foundations enabling and catalyzing advances in the biomedical sciences and related fields.

**Assessment Method 1:** Research laboratory engagement and development of technical proficiencies.

**Description:** Technical and analytical skills and, ultimately, independent proficiency with modern biochemical, biophysical, physiological, endocrinological, cellular and/or molecular techniques are central to graduate degree progression and, ultimately, employment in public or private sectors for life scientists. Requirements for development of such proficiencies can be diverse in the context of BMS graduate training. Substantial time and dedication are required to develop proficiency with modern bioanalytical research techniques. Therefore, disciplinary specialists who serve as members of graduate advisory committees assess student engagement, technical progress and performance in the laboratory annually. Following is the rubric applied to this assessment method and findings for 2013.

**Findings:**

<table>
<thead>
<tr>
<th>Lab engagement &amp; technical progress</th>
<th>Excellent</th>
<th>Adequate</th>
<th>No Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>62/94 (66%)</td>
<td>11/94 (12%)</td>
<td>21/94 (22%)</td>
</tr>
</tbody>
</table>

*Students enrolled for less than 1 year for which data were not collected.

**Use of findings for improvement:**
Findings are used to determine how best to engage graduate students in laboratory-based efforts and how research infrastructure and related resources might be developed and utilized in order to encourage more effective engagement and development of technical competency. New ideas emerging from review of these findings are communicated to the Office of Research and Graduate Studies through the Associate Dean for Research (in the context of required annual reporting) in order to monitor and develop strategies for advancement of laboratory resources and improvement of the graduate research environment. Assessment findings were acceptable with > 80% of scores at adequate or above. Therefore, no action is planned to modify the program at this time.

**Assessment Method 2:** Intellectual engagement and development

**Description:** Productive research and graduate training requires that graduate students demonstrate a commitment to professional and intellectual development as reflected, minimally, by regular engagement at laboratory meetings, relevant interdisciplinary discussions, and through contributions to the technical and intellectual advancement of programs and their competitiveness. Therefore, disciplinary specialists serving as members of graduate advisory committees assess professional development, commitment and engagement of graduate students annually. Following is the rubric applied to this assessment method and findings for 2013.
Findings:

<table>
<thead>
<tr>
<th>Professional engagement</th>
<th>Excellent</th>
<th>Adequate</th>
<th>No Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>64/94 (68%)</td>
<td>11/94 (12%)</td>
<td>19/94 (20%)</td>
</tr>
</tbody>
</table>

*Students enrolled for less than 1 year for which data were not collected.

Use of findings for improvement:
Findings are used to determine how best to encourage student engagement in activities essential to their professional and intellectual development. This includes activities such as developing and/or refining discipline-specific journal/literature review sessions and structuring lab meetings and/or college-level seminar series that contribute to the learning environment. Results of assessment indicate that > 80% of graduate students are actively engaged in relevant professional development activities. Therefore, no major programmatic changes were recommended at this time.

Communication
Graduates of the AU-CVM/BMS program will be able to communicate their ideas effectively to their peers and with others outside of their discipline.

Assessment Method 1: Development of oral communication skills

Description: Oral communication skills are essential to the success of scientists and educators. Therefore, all AU-CVM/BMS graduate students are expect to learn by: (i) presenting at least 2 formal science-based seminars annually; and (ii) attending at least 6 seminars presented by invited speakers through (ex.) AU-CVM departmental seminar series, the AU-CVM ‘Joy-Goodwin Lectureships’, Phi Zeta Research Day, and/or the Boshell Metabolic Diseases & Diabetes Research Day. Following is the rubric applied to this assessment method and findings for 2013.

Findings:

<table>
<thead>
<tr>
<th>Seminar type</th>
<th>Graduate Student Presentation</th>
<th>Invited Professional Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>60/94 (64%)</td>
<td>46/94 (49%)</td>
</tr>
</tbody>
</table>

Use of findings for improvement:
Delivery of and attendance at professional seminars ensures development of oral communication skills. Records of these activities (and the topics/disciplines represented) are used to develop seminar formats and related opportunities that will engage a breadth of students and faculty with the goal of enriching the graduate training environment and catalyzing professional discourse through interdisciplinary discussions. With a goal of 100% participation, the BMS program will endeavor to engage graduate students more effectively in seminar participation, particularly as this relates to attendance of outside speaker presentations.

Assessment Method 2: Development of written communication skills

Description: Written communication skills are essential to the success of scientists and educators. Scholarship, in the form of externally reviewed publications, is the primary medium through which a university – largely through the efforts of its faculty and graduate students - advances understanding and changes societal perspectives of the world, our place in it, and our adaptive capacity. Therefore, all
AU-CVM/BMS Graduate Program

AU-CVM/BMS graduate students are expected to engage in active scholarship by presenting and, ultimately, publishing their work (in concert with faculty mentors and relevant colleagues). Documentable efforts associated with written scholarship are typically related to the level of the graduate degree program (MS or PhD) and time in the program. Nevertheless, there is an expectation that students will learn to be disciplined scholars and become authors and co-authors of publications in professional journals or related scholarly formats. Such achievements require significant engagement of students and mentors, and are further enabled through the (external) peer review process. The process of generating written drafts, extensive preliminary texts, revised manuscripts and pre-publication proofs provides important experience and intensive training with regard to development of written communication skills appropriate to BMS disciplines. Consequently, progress towards these ends is assessed for all BMS students annually. Following is the rubric applied to this assessment method and findings for 2012 and 2013.

The Graduate Student Annual Review form asks students to list:
- Publications (include titles)
- Formal Presentations by students with externally reviewed, published abstracts.

Publications and presentations with published abstracts are identified as follows:
1) Peer-Reviewed Publications
2) Abstracts (externally reviewed)
3) Other (ex. books, chapters, contributions to extramural proposals)

<table>
<thead>
<tr>
<th>Publication type</th>
<th>Peer-Reviewed Publications¹</th>
<th>Abstracts¹</th>
<th>Other¹ (ex. books, chapters, extramural proposals)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1° Author</td>
<td>Co-author</td>
<td>1° Author</td>
</tr>
<tr>
<td>2013</td>
<td>14 (7)</td>
<td>18 (8)</td>
<td>35 (21)</td>
</tr>
</tbody>
</table>

¹Number in parentheses indicates unique student authors of 75 students completing at least 1 year.
Total number of unique student authors (all categories of publication) of 75 student: 30/75 = 40%

Use of findings for improvement:
Finding are used to assess: (i) the extent to which students are engaged in a discipline of scholarship through development and refinement of written communication skills; (ii) effectiveness of practices designed to engage students consistently in activities involving professional writing and written scholarship; and (iii) programmatic impact (local, regional, national, international). Publication efforts are reviewed with respect to quality and number of submissions for each student in light of their degree program. Performance criteria were met. Programmatically, the goal is to have 100% of AU-CVM/BMS students engaged in documentable, written scholarship. Assessment results for those in the program for at least one year (40% authored/co-authored) indicate that we have yet to attain this goal. These findings will be used to advance practices designed to engage graduate trainees more effectively in activities leading to submission and, ultimately, publication of their work.

http://www.vetmed.auburn.edu/graduate-program/policies-and-procedures