Learner Outcomes Evaluation Rubric for Biology Graduate Student Thesis and Capstone Defenses

Learner Outcome	Rank score for achievement of learner outcome (Circle or select one number or 'N/A' for each outcome)					Comments (Identify short-comings related to learner outcome)
Students will be familiar with topical research questions and hypotheses in their field of biology.	__1 No reference to primary scientific literature to explain importance of their research	__2	__3	__4 Student extensively and appropriately incorporates and references primary scientific literature in introductory material to build the case for the importance of their research	__N/A	
Students will be able to interpret hypotheses, methods and results presented in primary scientific literature.	__1 No comparison of results obtained in student's research with results in primary scientific literature. Student does not refer to results from primary literature in answering audience questions.	__2	__3	__4 Comparisons of results with previous studies in the literature are well-chosen and explained in adequate depth. Student can compare results with previous studies in response to audience questions	__N/A	
Students will be able to formulate testable research questions and hypotheses.	__1 Hypotheses or research questions were unclear; relationship between data collected and hypotheses or research questions was unclear.	__2	__3	__4 Hypotheses or research questions were clearly stated, were of a scope that could reasonably be answered in an MS thesis, the data collected were relevant to answering the hypotheses/questions	__N/A	
Students will be able to design and analyze experiments or observational studies that test research questions and hypotheses.	__1 Appropriate controls were not used; statistics were not used even though the questions and design lent themselves to statistical analysis; student unable to	__2	__3	__4 Controls were used appropriately; Conclusions were consistently based upon statistical analyses; Statistical analyses were appropriate for the experimental design; Student knowledgeably answered questions about the experimental design and statistics used	__N/A	

Students will be able to orally communicate scientific research in meeting-style presentations and in seminars.	__1 Organization was poor; slides did not complement information presented orally; speaking volume and pace were difficult; presentation did not appropriately match time specifications	__2	__3	__4 Organization of the presentation was logical; slides were designed effectively and were relevant to information communicated orally; speaking volume and pace were readily understood; presentation length was appropriate	__N/A	
Students will be able to communicate scientific research in writing.	__1 Thesis or capstone paper organization is difficult to follow often with material presented in inappropriate sections; writing is repetitive or lacks adequate detail; excessive grammatical errors; figures and tables are difficult to interpret and do not illustrate points stated in the text.	__2	__3	__4 Organization of the paper is clear and logical; subject matter covered in each section of the thesis or capstone paper is appropriate to that section; writing is concise with no proof-reading errors; figures and tables clearly communicate results and are appropriate.	__N/A	

Summary of Meaning of Scores

4 – Excellent: student exhibits an above-average level of competency in almost all aspects of the learning objective; no significant deficiencies (likely would compete for admission to top-level Ph.D. program)

3 – Good: student exhibits average level of competency in many aspects of the learning objective; deficiencies may be present in some aspects of the learning objective, but they are noticeably out-weighed by above-average performance in other aspects

2 – Satisfactory: student exhibits average level of competency in many aspects of the learning objective; deficiencies in some aspects of the learning objective approximately balance above-average performance in other aspects

1 – Poor: student's performance in many aspects of the learning objective is deficient with few aspects of the learning objective where student exceeds expectations.

Please turn in completed rubric to Marcia Norton