

Quantitative and Systems Biology
Ph.D. Dissertation Evaluation Rubric

Instructions: This form is meant to provide a common set of criteria to assess a written Ph.D dissertation. Each committee member should complete this evaluation form after reading the student's dissertation.

PLEASE RATE THE FOLLOWING: 4 = STRONGLY AGREE 1 = STRONGLY DISAGREE	
INTRODUCTION:	
Identifies a meaningful, original researchable problem or question:	
Hypothesis/hypotheses, solutions or approaches are presented that are tightly aligned to the problem or question.	
The literature review is accurate and correctly describes and contextualizes the problem at hand.	
The literature review demonstrates the ability of the student to synthesize literature and identify current gaps in knowledge.	
The literature review demonstrates the ability of the student to discriminate between the most important/informative papers versus less important/informative ones	.
The introduction is written in a manner that is accessible to both specialists and non-specialists in the field	
METHODS:	
Approach/methods selected are appropriate to allow evaluation of the hypothesis or to investigate the problem or question.	
Quantitative methods (e.g. statistics, mathematical models) and/or systems-level analyses are appropriately applied as part of the research plan.	
Novel methods are developed or previously described methods are refined and improved (as opposed to only applying highly standardized and common techniques).	
Methods are described in detail such that a reader could easily repeat the experiments or reproduce the investigation and/or results.	:
Methodological challenges are recognized and likely workable solutions/alternative approaches are proposed.	
RESULTS/DATA ANALYSIS	
Sufficient novel data was generated to test hypotheses or investigate a solution to the problem, including appropriate controls.	
Data were thoughtfully and carefully analyzed, attending to fundamental assumptions. Results are presented in an objective manner, leaving interpretation to the discussion section.	

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Figures were clearly designed to present results in easily interpretable fashion (i.e. appropriately labeled, information on error and sample sizes, etc.)	
DISCUSSION AND CONCLUSION:	.
The interpretation of the results is solid in relation to the hypothesis, problem or question	
The discussion connects the results to issues in the literature and conveys significance of the findings to the relevant field of study.	.
Basic strengths and weaknesses in the work are identified.	
The conclusions are consistent with the results and the limits of the results	
Practical and worthwhile future directions are described.	
MECHANICS:	
The suggested format of the dissertation was followed (margins, typeface, spacing, page numbering, headings, etc.).	
Spelling and grammar errors were not present or were so minor so that did not distract from the comprehensibility of the topic.	
The bibliography list was accurate and citations in the text easily mapped to the references.	
PROFESSIONALISM AND SIGNIFICANCE OF WORK:	
The dissertation work was conducted in a responsible and ethical manner and student conveyed an understanding of ethical concerns in the relevant field	
The dissertation provides new knowledge, conceptual frameworks, or methodology that will meaningfully contribute to the relevant field of biological sciences.	

Please note any additional comments to the student regarding the written dissertation below: