

1. Rubric

Since BCMB is a Program and not a Department, the BCMB faculty did not gather during the 2018 Fall Faculty Conference to design a Rubric. However, during the course of the 2018-2019 academic year, the BCMB Program has developed a Rubric to evaluate the BCMB Research Reports that all BCMB students have to write at the end of their required research experiences. This Rubric has been used to grade this year's Research Reports and will be used in future years. The Rubric is the first document attached to this email.

2. Student Assessment Plan (SAP)

During the 2018-2019 academic year we have updated and redesigned parts of the SAP (see second document attached to this email). Updates include use of Measurable Verbs from Bloom's Taxonomy as part of the Student Learning Outcomes. The SAP includes direct and indirect assessment tools. Here are items that we plan on working on next year to improve the SAP:

- Include a Curriculum Map (this was not required for Programs, but we will work on this next year).
- We have initiated a discussion for possible ways to directly assess Learning Outcome I (Recognize the ethical issues involved in both the conduct of research and in the dimensions of research) at a meeting in the Spring semester. We plan to finalize these plans early next year and to implement them probably as part of the BCMB Senior Seminar in the 2020 Spring semester.
- We have also discussed possible ways to further refine our indirect mechanisms to track learning outcomes. We plan to finalize these plans early next year and implement them by the end of the Spring semester. It is likely that we will use an exit survey for our graduating seniors similar to the one currently used by the Neuroscience Program.
- Next year we will also come up with a planned cycle for assessment of goals.

3. Response to Targeted Feedback

Use of Rubric for Research Reports: As indicated above, we developed a new Rubric for evaluation of BCMB Research Reports. After using the Rubric this semester, several BCMB faculty members have indicated to me that they found it to be an effective way to grade reports in a fair and structured manner. I, too, found it very useful in grading BCMB Research Reports from my three research students this past semester. In the Fall semester of the 2019-2020 academic year I will gather more feedback from faculty members on this Rubric and solicit thoughts for improvement.

Tracking post-graduates. In past years we have sent BCMB graduating seniors a short email asking them for basic information about their post-graduation plans. Whereas we are doing the same this year, we are planning to develop a more sophisticated exit survey that I hope we will have in place for next year. Although this has not been run by the entire BCMB faculty yet, I think it is likely that we will implement a more comprehensive exit survey based on the one currently in use in the Neuroscience Program.

Rubric for grading BCMB Research Reports (Spring 2019)

<i>Graded items:</i>	Exemplary (9-10)	Accomplished (8-9)	Satisfactory (7-8)	Unsatisfactory (1-7)	<i>Points earned</i>	<i>Weighted points earned</i>
Title and Abstract (5pts)	<ul style="list-style-type: none"> ■ The title concisely summarizes the main goal and/or results of the study. If appropriate, the name of the model system used in the study is included. The abstract is concise, and addresses the main points of the study. 	<ul style="list-style-type: none"> ■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level: 	<ul style="list-style-type: none"> ■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level: 	<ul style="list-style-type: none"> ■ Student does not do most of the things in the exemplary category. List things that need improvement: 		

<p>Introduction (15pts)</p>	<p>■ The introduction includes general background of the relevant field and, if appropriate, more specific background related to the project. The rationale for the project and the question addressed in the study are well-articulated. Hypotheses are clearly stated, testable, and should have scientific merit. If applicable, a short statement of the overall findings is presented. Appropriate citations are included.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
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Results (20pts)	<p>■ The rationale for the experiments and the description of the associated results are clearly and comprehensively presented. Appropriate controls are present and explained. Experimental design tests the hypothesis posed. If appropriate, the results are coherently organized using subheadings.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
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<p>Figures and Figure Legends (10pts)</p>	<p>■ The figures are well organized and deliver the results in a clear and succinct fashion. All required labels, including units of measurement, are included. If applicable, error bars on bar graphs are included. The figure legends succinctly and comprehensively describe the corresponding results. If applicable, statistical methodology and appropriate statistical representations are included in the legend. Figure numbers and titles are included.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
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<p>Tables (5pts)</p>	<p>■ Tables are thoughtfully prepared and effectively present and/or summarize the desired information. Table numbers, titles, and appropriate footnotes are included</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
<p>Materials and Methods (10pts)</p>	<p>■ The M&M section succinctly describes the fine details of the experiments performed and does not include the rationale for the experiments, the corresponding results, nor other extraneous information. Personal pronouns are not used. The M&M section is organized by grouping each experimental procedure under separate subheadings.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		

<p>Discussion/ Conclusion (15pts)</p>	<p>■ The Discussion includes a succinct summary of the overall results of the study and possible interpretation(s) of the data. Conclusions are clearly and logically drawn from data provided. A logical chain of reasoning from hypothesis to data to conclusions is clearly explained. Conflicting data, if present, are adequately addressed. A discussion of how the results of the study integrate within the field as a whole is presented. Possible future studies are presented.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
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References section (5pts)	<p>■ Citations are included throughout the report as appropriate. Only primary literature is cited (no references to textbooks, lab manuals, or websites should occur). The References section includes citations of all the articles cited throughout the report. The citations are formatted following a style that is commonly used within the discipline.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		
Quality of writing (15pts)	<p>■ The report contains no grammatical errors and the sentence structures are well thought-out. Sentences, paragraphs, and specific report sections flow in a logical and coherent fashion.</p>	<p>■ Student does most, but not all, of the things in the exemplary category. List those things that were not done at an exemplary level:</p>	<p>■ Student does many, but not most, of the things in the exemplary category. List those things that were not done at an exemplary or accomplished level:</p>	<p>■ Student does not do most of the things in the exemplary category. List things that need improvement:</p>		

	Total possible points:		
	Total points earned:		
	Overall grade:		

Additional comments: