Dear Assessment Committee,

This document serves as both an update regarding the Biology Department's assessment work related to the BIOL and HESC majors during the 2018-19 academic year and as a response to the committee's targeted feedback. Along with this document, we are submitting a copy of the rubrics that we began developing at the 2018 Fall Faculty Conference and the SAPs that we developed this year.

As you note in your letters to the department, our assessment related activities kicked off at the 2018 Fall Faculty Conference. At the conference, the department formed two subcommittees to develop new rubrics that assess (1) the various requirements that comprise the HESC major Capstone and (2) the BIOL Capstone presentation, embedded within BIOL 497 Biology Senior Seminar. The HESC and BIOL capstone subcommittees met multiple times during the Fall semester and completed the attached rubrics just before Thanksgiving break. As with all of the subcommittee work that we discuss in this document, the products (rubrics in this case) were distributed to the entire department for comments and revisions before they were finalized.

In addition to the Capstone rubrics, the two subcommittees also critically evaluated and then revised (or completely rewrote) the learning goals for both the BIOL major and the HESC major during the Fall 2018 semester. Those learning goals have been submitted to David Sutherland and can be found on our department's webpage. They are also included in the response materials we are submitting to your committee.

During winter break, we held a departmental retreat during which we developed the curriculum map for the BIOL major making explicit connections between our courses and the new learning goals. This was the first curriculum map to be developed by our department. As you will see in the BIOL SAP, we completed the map and plan to upload a user-friendly version to our website in the Fall.

Another major task of the retreat was to complete the redesign of BIOL 497 Biology Senior Seminar, which had been started by another subcommittee. Portions of BIOL 497 have been part of the Capstone in the BIOL major for many years. That course will continue to be crucial to the BIOL Capstone and will also be where we assess our student's achievement for most of our learning goals (see the BIOL SAP).

We continued to work in our subcommittees throughout the Spring semester to write new SAPs for the two majors, and herein address your comments regarding each SAP:

Health Sciences – We appreciate the feedback you provided regarding the action plan for the HESC major and the need for additional detail and substance. The HESC major is still quite new, and this work provided an opportunity to better consider which measures we should use to evaluate student outcomes. The HESC major is designed to help students prepare for post-graduate professional experiences. As such, the learning goals are focused primarily on

vocational exploration and practical application of skills developed through the core courses and internship requirements. Thus, many of our learning goals are assessed through completion of the senior capstone, which is completed throughout the senior seminar, where students reflect on and present about their internship experience and complete a professional resume. Rubrics for the capstone assignments (capstone paper, capstone presentation, and professional resume) are attached as part of this response. We have updated our assessment plan to include additional data collection through student exit surveys and collection of longitudinal data on success rates post-graduation. That said, we anticipate that our assessment strategy will change based on initial outcomes data for the upcoming year, and our annual assessment plan reflects a need for consistent evaluation as we begin to learn more regarding student outcomes. We have responded to all of the targeted feedback you provided and welcome any further feedback you have for our department.

Biology – We also appreciated the humor in your letter regarding the BIOL major when you stated that the SAP from 1998 "probably needs to be updated." Considering that most if not all of our first-year students this past year were born after that date, "probably" is an understatement. We have included in the new BIOL SAP everything you listed for a strong SAP and look forward to your feedback on it. The attached BIOL SAP document is where you will find the requested information regarding the targeted feedback you provided. The new BIOL SAP spells out which courses and/or activities we will use to assess whether our students have achieved the capstone level in each of the learning goals for the BIOL major. The redesigned BIOL 497 will be used to assess the majority of these learning goals. In addition, the senior comprehensive exam and a project in one of the core courses will be used to assess the remaining learning goals. Please note that the SAP only includes the assessment plan for core courses in the BIOL curriculum, as they will be considered to be the assessment of the learning goals for the department. Many upper-level electives in the major also expect students to achieve benchmark or milestone-levels in the learning goals. Those courses are typically taught by only one department member and the assessments are done by the individual instructors and are not considered to be department-level assessments.

We are continuing our assessment work as we write the self-study narrative for our departmental review. In August we will hold another retreat that will include, (1) writing our own comprehensive senior exam (and ensuring that the questions represent the levels of Bloom's taxonomy that we expect of our majors), (2) a possible overhaul of the BIOL major based upon years of assessments, and (3) a discussion of how to assess undergraduate research in our department.

Thank you for your efforts to help us improve our majors and the education that Biology and Health Science majors receive. Please contact me with any questions regarding the materials we are submitting.

Best wishes,
George Harper, on behalf of the Biology Department

The purpose of this rubric is to provide grading consistency among the faculty, and to assess how well our students are doing at meeting the department learning goals (DLGs). The three learning goals of the Hendrix College Chemistry Department that are relevant to the Capstone paper are:

1. acquire the fact-based knowledge necessary to understand chemistry as citizens and practice it as scientists,

3. develop the critical thinking skills necessary to assemble facts and data,

5. communicate chemistry effectively in written and oral forms.

Grade Calculation:

$$0.05 \times (A)\ \_\_\_\_ + 0.05 \times (B)\ \_\_\_\_ + 0.15 \times (C)\ \_\_\_\_ + 0.25 \times (D)\ \_\_\_\_ + 0.05 \times (E)\ \_\_\_\_ + 0.15 \times (F)\ \_\_\_\_ + 0.15 \times (G)\ \_\_\_\_ + 0.05 \times (H)\ \_\_\_\_ + 0.05 \times (I)\ \_\_\_\_ + 0.05 \times (J)\ \_\_\_\_ = \_\_\_\_\_$$

$\boldsymbol{A}: 4.00 - 3.84,\ \boldsymbol{A^-}: 3.83 - 3.50,\ \boldsymbol{B^+}: 3.49 - 3.17,\ \boldsymbol{B}: 3.16 - 2.84,\ \boldsymbol{B^-}: 2.83 - 2.50,\ \boldsymbol{C^+}: 2.49 - 2.17,\ \boldsymbol{C}: 2.16 - 1.84,\ \boldsymbol{C^-}: 1.83 - 1.50,\ \boldsymbol{D^+}: 1.49 - 1.17,\ \boldsymbol{D}: < 1.16$

Hendrix College Department of Chemistry Senior Capstone Paper Grading Rubric (2019/20)

Student Name: _____

Faculty Evaluator Name: _____ Reader (circle one): 1st 2nd

Grade: _____

	DLG	Grade	Poor (Grade D, 1.0)	Satisfactory (Grade C, 2.0)	Good (Grade B, 3.0)	Excellent (Grade A, 4.0)
A. Topic & Title (5 %)	N/A		☐ Topic is not relevant to the field of chemistry and is not based on recent research ☐ Title is not engaging and does not reflect the paper content	☐ Topic is somewhat relevant to the field of chemistry and is based on some recent research ☐ Title somewhat reflects the paper content	☐ Topic is relevant to the field of chemistry and is based on recent research ☐ Title is interesting and largely reflects the paper content	☐ Topic is highly relevant to the field of chemistry and is based on recent research ☐ Title is engaging and accurately reflects the paper content
B. Abstract (5 %)	5		☐ Abstract is not engaging and does not answer the "what," "why," "how," and "to what end" questions	☐ Abstract is somewhat engaging and answers some of the "what," "why," "how," and "to what end" questions	☐ Abstract is engaging and mostly answers the "what," "why," "how," and "to what end" questions	☐ Abstract is highly engaging, and answers all of the "what," "why," "how," and "to what end" questions
C. Introduction & Background Information (15 %)	1, 3, 5		☐ Introduction does not provide adequate description of the relevant background information and no context for the topic	☐ Introduction provides a description of some of the relevant background information and provides some context for the topic	☐ Introduction provides a detailed description of the relevant background information and provides context for the topic	☐ Introduction provides a highly detailed description of the relevant background information and provides context for the topic
D. Analysis of Information & Scientific Understanding (25 %)	1, 3		☐ Paper contains little relevant material ☐ No connections are made between information from different sources ☐ Chemical information is not accurately explained to the reader	☐ Paper contains a description of some relevant material ☐ Some connections are made between information from different sources ☐ Chemical information is sometimes accurately explained to the reader	☐ Paper contains an accurate description of a good amount of relevant material ☐ Good connections are made between information from different sources ☐ Chemical information is usually accurately explained to the reader	☐ Paper contains an accurate description of a large amount of relevant material ☐ Extensive connections are made between information from different sources ☐ Chemical information is always accurately explained to the reader

	DLG	Grade	Poor (Grade D, 1.0)	Satisfactory (Grade C, 2.0)	Good (Grade B, 3.0)	Excellent (Grade A, 4.0)
E. Conclusion (5 %)	5		☐ Conclusion does not summarize the information presented in the paper ☐ Conclusion does not defend a position, and does not discuss possible future directions for the research	☐ Conclusion summarizes some of the information presented in the paper ☐ Conclusion suggests a position, and/or discusses some possible future directions for the research	☐ Conclusion summarizes most of the information presented in the paper ☐ Conclusion defends a position, and/or discusses some possible future directions for the research	☐ Conclusion accurately summarizes all of the information presented in the paper ☐ Conclusion defends a position, and discusses possible future directions for the research
F. Paper Organization (15 %)	5		☐ Paper is disorganized and does not include informative headings and sub-headings ☐ The guidelines on formatting and paper length are not met	☐ Paper is somewhat organized with some use of informative headings and sub-headings ☐ Some of the guidelines on formatting and paper length are met	☐ Paper is organized with good use of informative headings and sub-headings ☐ Most of the guidelines on formatting and paper length are met	☐ Paper is well-organized with extensive use of informative headings and sub-headings ☐ All of the guidelines on formatting and paper length are met
G. Grammar & Syntax (15 %)	5		☐ Text is riddled with grammatical errors and shows no evidence of editing and proofreading ☐ Sentence and paragraph structure are poor and show little organization ☐ None of the relevant scientific terms and abbreviations are defined	☐ Text is grammatically correct some of the time and shows some evidence of editing and proofreading ☐ Sentence and paragraph structure are sometimes clear and well-organized ☐ Some of the relevant scientific terms and abbreviations are clearly defined	☐ Text is usually grammatically correct and shows evidence of editing and proofreading ☐ Sentence and paragraph structure are clear and usually well-organized ☐ Most of the relevant scientific terms and abbreviations are clearly defined	☐ Text is grammatically correct throughout and shows evidence of careful editing and proofreading ☐ Sentence and paragraph structure are always clear and well-organized ☐ All of the relevant scientific terms and abbreviations are clearly defined
H. Figures (5 %)	1		☐ Figures are not relevant, do not support the major points presented, and are not discussed within the text of the paper ☐ None of the figures include descriptive captions and appropriate references	☐ Some of the figures are relevant, support the major points presented, and are discussed within the text of the paper ☐ Some of the figures include descriptive captions and appropriate references	☐ Most of the figures are relevant, support the major points presented, and are discussed within the text of the paper ☐ Most of the figures include descriptive captions and appropriate references	☐ All figures are relevant, support the major points presented, and are discussed within the text of the paper ☐ All figures include descriptive captions and appropriate references

	DLG	Grade	Poor (Grade D, 1.0)	Satisfactory (Grade C, 2.0)	Good (Grade B, 3.0)	Excellent (Grade A, 4.0)
I. References (5 %)	1		☐ Paper indicates that literature search was not performed and appropriate peer-reviewed and primary literature sources are not used ☐ References are absent and/or not correctly cited within text and bibliography	☐ Paper indicates that a literature search was performed and appropriate peer-reviewed, primary literature sources sometimes are used ☐ References are sometimes correctly cited within text and bibliography	☐ Paper indicates that a broad literature search was performed and appropriate peer-reviewed, primary literature sources are mostly used ☐ References are usually correctly cited within text and bibliography	☐ Paper indicates that an extensive literature search was performed and appropriate peer-reviewed, primary literature sources are used ☐ References are always correctly cited within text and bibliography
J. Deadlines & Participation (5 %)	N/A		☐ Student met none of the deadlines and was not engaged with the reading and writing process ☐ Feedback provided to the student was not incorporated in to the next version of the paper	☐ Student met some of the deadlines and was somewhat engaged with the reading and writing process ☐ Feedback provided to the student was sometimes incorporated in to the next version of the paper	☐ Student met most of the deadlines and was engaged with the reading and writing process ☐ Feedback provided to the student was usually incorporated in to the next version of the paper	☐ Student met all the deadlines and was fully engaged with the reading and writing process ☐ Feedback provided to the student was always incorporated in to the next version of the paper

Paper Strengths:

Paper Weaknesses: