

# BCMB Program – Student Learning Outcomes and Student Assessment Plan

## Student learning outcomes

In order to develop into well-versed biochemists, and to be prepared for future education in graduate and professional schools or careers in the life science, BCMB majors will be able to:

- A. Describe, interpret, and integrate foundational and core concepts in the discipline.**
- B. Conduct appropriate scientific literature and database searches.**
- C. Develop hypotheses and propose appropriate experiments to test them.**
- D. Conduct research effectively as an individual and as a team member.**
- E. Design and/or conduct experiments and record/archive the data appropriately.**
- F. Perform experiments safely in the laboratory.**
- G. Analyze and interpret experimental results using appropriate quantitative tools.**
- H. Summarize and express information orally, visually and in writing.**
- I. Recognize the ethical issues involved in both the conduct of research and in the dimensions of research.**

## Student Assessment Plan (SAP)

Student learning outcomes will be *directly* assessed through the following mechanisms:

- **Senior Comprehensive Exam.** This exam is administered to all BCMB graduating seniors as part of Senior Seminar (BCMB 497) during the Spring semester of their senior year. The exam is prepared by the BCMB faculty and covers the central topics covered in the core courses for the major. The comprehensive exam is part of the Capstone Experience for BCMB majors and the grade on it is factored into the senior capstone grade. This exam directly relates to Learning Outcome **A**.
- **Quality of the work carried out in the context of the required research experience.** All BCMB majors are required to be involved in a meaningful research project before graduation. The research project is carried out in the context of BCMB 498 or BCMB X99. One of the elements of this experience that is factored into the grade for these courses is the quality of the work performed in the lab. This aspect of the research experience relates to Learning Outcomes **D, E, G**.

- **Final Research Report.** As part of the required research experience, BCMB majors prepare a Final Research Report written in the style of a scientific article. The grade on this report is factored into the senior capstone grade. This report directly relates to Learning Outcomes **A, B, C, E, F, H.**
- **Oral Research Presentation.** As part of the required research experience, BCMB majors present their research project and associated results to their BCMB major peers and BCMB faculty. This presentation is given as part of Senior Seminar (BCMB 497) and the grade on it is factored into the senior capstone grade. This presentation relates to Outcomes **A, B, C, F, H.**
- **Direct assessment of Learning Outcome I:** As part of their research requirement, BCMB students will be asked to take an online ethics training module. Learning outcomes from this module will be assessed directly through a quiz students will need to take to complete the research requirement.

Student learning outcomes will be assessed *indirectly* through the following mechanism:

- **Tracking students following graduation.** The BCMB Chair maintains a database with information on the career paths of BCMB students after they graduate from Hendrix.
- **Exit Survey.** Prior to graduation, BCMB students will be asked to fill out an exit survey using the EvaluationKIT platform. This survey will be used to assess various aspects of the program, including how successful the program has been in meeting the learning goals.

# Hendrix BCMB Senior Survey

The purpose of this questionnaire is to gather information concerning your experiences in the BCMB Program at Hendrix College and your future plans. This information will be used to evaluate our current BCMB Program, which means information that you give here will influence future BCMB majors. We greatly value your opinions and urge you to complete and submit the questionnaire before Monday, May 4<sup>th</sup>.

## 1. Your Evaluation of the BCMB Program at Hendrix College

For the next group of questions, please indicate by clicking in the circle how satisfied you were with each of the elements of the Hendrix BCMB program listed below. Click (n/a), not applicable, if you have no opinion, or if the item does not apply to you. PLEASE BASE YOUR JUDGMENTS ON THE BCMB PROGRAM AND NOT ON YOUR OVERALL EXPERIENCE AT HENDRIX.

### A. Courses and Faculty

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied	N/A
Breadth of curriculum						
Quality of curriculum						
Availability of courses						
Accessibility of faculty						
Quality of instruction						
Preparation for professional school						
Preparation for graduate school						

### B. Advising

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied	N/A
Availability of advisor						
Advisor's ability in providing insight and assistance						
Advisor's ability in assisting me in identifying and meeting major's requirements.						
Advisor's receptiveness of my goals						
Advisor's ability in assisting me with career planning						
Advisor's ability in assisting me with graduate school advising						

C. Research Requirement

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied	N/A
Availability of on-campus opportunities						
Guidance for finding off-campus opportunities						

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	N/A
The research experience was an important part of your education						

D. Overall

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied	N/A
Overall quality of BCMB program						

## 2. Your Evaluation of the BCMB Program's Contribution to Your Knowledge and Skill Development

For the next set of questions, please indicate by clicking in the circle your level of agreement, from strongly disagree to strongly agree, with each of the following statements. Click (n/a), not applicable, if you have no opinion, or if the item does not apply to you. PLEASE BASE YOUR JUDGMENTS ON THE BCMB PROGRAM AND NOT ON YOUR OVERALL EXPERIENCE AT HENDRIX.

### A. My experience in BCMB courses contributed to the development of the following learning goals:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	N/A
Describe, interpret, and integrate foundational and core concepts in the discipline.						
Conduct appropriate scientific literature and database searches.						
Develop hypotheses and propose appropriate experiments to test them.						
Conduct research effectively as an individual and as a team member.						
Design and/or conduct experiments and record/archive the data appropriately.						
Perform experiments safely in the laboratory.						
Analyze and interpret experimental results using appropriate quantitative tools.						
Summarize and express information orally, visually and in writing.						
Recognize the ethical issues involved in both the conduct of research and in the dimensions of research.						

### 3. Your Background and Future Plans

A. Were you a double major?

- Yes
- No

B. If your answer to the previous question was "Yes", what was your other major?

C. Are you a transfer student from another college or university?

- Yes
- No

If "Yes", approximately how many hours were transferred to Hendrix?

D. How many years were you at Hendrix?

E. What will your anticipated GPA be at graduation?

F. Have you applied to any postgraduate school (e.g., graduate school, medical school)?

- Yes
- No

G. If your response to the previous question was yes, to what type of programs did you apply?

(Choose all that apply)

- Master's Graduate Programs
- Doctoral Graduate Programs
- Medical School
- Other (please specify)

H. If your answer to question F was no, do you intend to apply within the next few years?

- Yes
- No

I. If you do not intend to apply to postgraduate schools, please answer the following questions regarding your future work plans.

	Yes	No	N/A
Have you applied for a job?			
If yes, have you been offered a position?			
Have you accepted a position?			

IF you have accepted a position, please briefly describe it.

### 4. Your Personal Views of the BCMB Program at Hendrix College

A. What do you think are the strengths of the BCMB major, as it is presently constructed?

B. What do you perceive as weaknesses in the BCMB major, as it is presently constructed?

C. Do you have any final comments or observations about your experience as a BCMB major at Hendrix?

THAT'S IT! Thank you for taking the time to respond to this survey - we really appreciate and value your responses.

