Decennial Assessment Plan for the Biomolecular Science Program

Please provide your year-by-year proposed schedule of ILO assessment:

Assessment of the Biomolecular Science Program

Timeline: Recent History

2017-18 **Program Review**, September 2017

2018-19 **Reporting Year**
Report described assessment of student participation in a significant, inquiry-driven research experience (ILO #4)

2019-20 **Program Review,** September 2017
Focused efforts on building community and elevating awareness of the program

2020-21 **Assessment Planning Year**
Bmols program faculty discuss and revise ILOs and collectively craft a plan for assessment.

Timeline: Plan

2021-22 **Action Year**
Continue efforts to build community and elevate awareness of the program.

2022-23 **Assessment activity 1**

Question: Does the biomolecular science concentration adequately support and promote an inclusive community among students and faculty?

Relevant Intended Learning Outcome: None. This assessment does not directly map onto a current program ILO.

Assessment Activity: Will be developed in consultation with IR&E. Assessment could include surveys of biomolecular science concentrators and faculty; focus

group of sophomores and juniors in biomolecular science courses; exit interviews of students that undeclare the concentration.

Summary of Plan: The external review of our program highlighted a surprisingly low awareness of the biomolecular science concentration amongst students. In addition, some concentrators reported a desire for more community events. These two findings, along with the low number of underrepresented students in our cohort of biomolecular science concentrators has led to some program changes. We have updated our display case and bulletin board and made some alterations to the BMolS 201 required seminar course. Program directors have also been intentional about hosting regular events. (Although the frequency of these events was negatively impacted by the SARS-CoV2 pandemic.)

Before attempting to formally evaluate the community aspect of our program, we would hope to elicit advice from IR&E. We can envision surveys or focus groups involving current students, faculty, or alums. However, we are open to additional suggestions and guidelines for undertaking this work.

It's possible that a focus on building community will increase the number of underrepresented students that enroll in the BMolS 201 course and/or complete the concentration. However, this change may take several years to manifest given the size of the program. While we track this, we aim to collect additional information through the proposed assessment activities.

Anticipated Action: Faculty are eager to use student feedback collected from this assessment activity to improve student engagement with the biomolecular science program. It would be particularly helpful to know which activities or program attributes were especially meaningful.

2023-24 **Reporting Year**

The report will summarize findings from the previous year's assessment.

2024-25 **Assessment Activity 2**

Question: Is the Biomolecular science concentration meeting our goals for effective delivery of content?

Relevant Intended Learning Outcome: ILO #2 - Students will demonstrate an understanding of the core concepts in the field, including molecular mechanism of energetics, information flow, and structure/function relationships. Students will also demonstrate an understanding of ways in which molecular pathways maintain the constancy of a cell or organism's internal environment, while embodying evolutionary change.

Assessment Activity: Evaluation of performance on national exam

Summary of Plan: The American Society for Biochemistry and Molecular Biology administers a certification exam to evaluate student knowledge and understanding of the core competencies in biochemistry and molecular biology. These “core competencies” map onto the specific content we hope to deliver and call out in this ILO.

Beginning in the spring of 2019, we have been actively recruiting senior biomolecular science concentrators to take this exam. Given our small number of concentrators, we aim to gather data from multiple years of students before assessing performance. Also, because the exam changes each year, multiple years of data will help us determine if performance maps onto specific questions or is consistent across multiple questions relating to the same broad category.

Anticipated Action: The assessment of the knowledge gained by our biomolecular science concentrators will be shared with program evaluators through the upcoming program review. It will also offer an opportunity for program faculty to consider whether the design of our courses is leading to student learning. If not, we will consider how we might change the time spent on relevant material as well as the teaching strategies employed.

2025-26 **Reporting Year**

The report will summarize findings from the previous year’s assessment. It will also include a plan for gathering any additional data we would like to include in the upcoming self-study.

2026-27 **Prepare Self-study**

2027-28 **Program Review**