Biology BA/BS

G1: Improve Student Scientific Literacy Skills

Goal Description:

Students completing an undergraduate degree in Biology will demonstrate scientific literacy skills.

Providing Department: Biology BA/BS

Progress: Draft

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

G1LO1: Select and Implement an Assessment of Scientific Literacy Skills

Learning Objective Description:

A committee of stakeholders (i.e. faculty, lab supervisors, instructors) will evaluate and select a scientific literacy assessment. The committee will integrate the skills and assessment into appropriate courses and curriculum. Practitioners will implement the scientific literacy assessment in both an introductory course and a shared upper-level course to gather data.

RELATED ITEM LEVEL 2

G1LO1I1: Select and implement an Assessment of Scientific Literacy Skills

Indicator Description:

List of possible scientific literacy assessments.

Develop analysis plan (stats and criteria for future years)

Criterion Description:

The development of the list of scientific literacy assessments and the analysis plan will be completed by the und of July 2024.

Findings Description:

The committee is currently still evaluating different assessments over the summer and will make a decision by August 1.

RELATED ITEM LEVEL 3

Action - G1LO1I1: Select and implement an Assessment of Scientific Literacy Skills

Action Description:

Select and implement an assessment tool by Aug 2024.

G2: Demonstrate Mastery of Core Concepts in the Field of Biology

Goal Description:

Students completing the core courses required for a BS will demonstrate knowledge of core concepts of cell biology, biodiversity, genetics and evolution.

Providing Department: Biology BA/BS

Progress: Draft

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Mastery Of Core Curriculum

Learning Objective Description:

Students completing the core courses required for a BS will demonstrate knowledge of core concepts of cell biology, biodiversity, genetics and evolution.

RELATED ITEM LEVEL 2

Mastery of Core Curriculum

Indicator Description:

All students, regardless of concentration area, take the same core courses (BIOL 1406, BIOL 1407, BIOL 3450, and BIOL 4361). Faculty teaching each of these courses will agree on a set of embedded questions to include on the final exam. Students will correctly answer these embedded questions.

Criterion Description:

Students will score 70% on the embedded questions.

Findings Description:

The list of embedded questions is still being formulated for the selected courses. However, The DFQW rate for the upper level courses (where the students should show mastery of core concepts is quite low, especially compared to the lower level courses.

RELATED ITEM LEVEL 3

Mastery of Core Curriculum

Action Description:

Complete the process of embedding standard questions into the listed courses and collect data.

G3: Student Engagement in Undergraduate Research

Goal Description:

Students will engage in the process of scientific discovery by participating in faculty mentored research.

Providing Department: Biology BA/BS

Progress: Ongoing

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Student Engagement in Undergraduate Research

Learning Objective Description:

Students will engage in the process of scientific discovery by participating in faculty mentored research.

RELATED ITEM LEVEL 2

Undergraduate Research

Indicator Description:

Students will enroll in BIOL 4095: Undergraduate Research Topics and participate directly in faculty mentored biological research, with the goal of producing publishable research and/or quality research that can be presented at scientific conferences.

Criterion Description:

50% of each graduating class will enroll in BIOL 4095. Using the departmental Faculty Evaluation Instrument, that in part documents faculty engagement with undergraduate researchers, the department chair will track the number of peer-reviewed publications and presentations at scientific conference on which our undergraduate students appear on the author line.

Findings Description:

We had 30 students complete the BIOL 4095 course with another 56 students conducting independent research but not for course credits. Between fall and spring semesters, we graduated about 120 undergraduate majors. While fell short of the 50% of the graduating class enrolling in 4095, a majority of our students did conduct research, to some degree.

RELATED ITEM LEVEL 3

Undergraduate Research

Action Description:

Work to encourage undergraduates to enroll in 4095.

G4: Improve Undergraduate Laboratory Data Collection and Communication

Goal Description:

Undergraduate STEM students apply skills/knowledge from lecture in application-based laboratories. We must have a base-line for lab impact/influence on student outcomes in order to improve it. The goal is to identify areas for improvement in subsequent semesters.

Providing Department: Biology BA/BS

Progress: Draft

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

G4LO1: Improve undergraduate laboratory data collection and communication

Learning Objective Description:

A committee of practitioners will evaluate data collection platforms and decide which data to share.

RELATED ITEM LEVEL 2

G4LO1I1 Improve undergraduate laboratory data collection and communication

Indicator Description:

A committee of practitioners will evaluate data collection platforms. The indicators will be a list of protocols.

Criterion Description:

A list of protocols will be generated and a final protocol will be chosen.

Findings Description:

The committee has decided to use excel as the platform to collect and store data with graduate students (supported by Steven Koether's grant) to collect and enter data from each of lab coordinator.

RELATED ITEM LEVEL 3

Action - G4LO1I1 Improve undergraduate laboratory data collection and communication

Action Description:

Implement the data collection and analyze results from this past year.

Update to Previous Cycle's Plan for Continuous Improvement Item

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Closing Summary

We did not hit the benchmarks for this degree plan. We will continue to investigate strategies on improving each of the metrics for the degree plan.

Update of Progress to the Previous Cycle's PCI:

We have spent the past year working to improve our benchmarks (which we have). We will continue these efforts moving forward.

New Plan for Continuous Improvement Item

Closing Summary:

We did not hit all or our benchmarks for this past year but have improved over previous years. We will continue to work to improve this numbers.